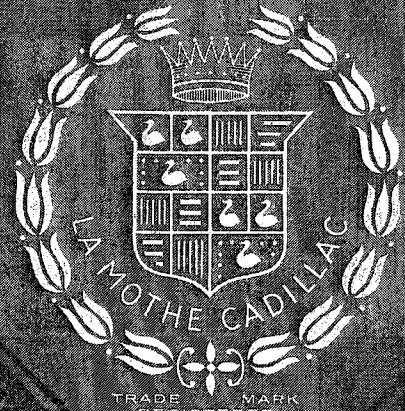
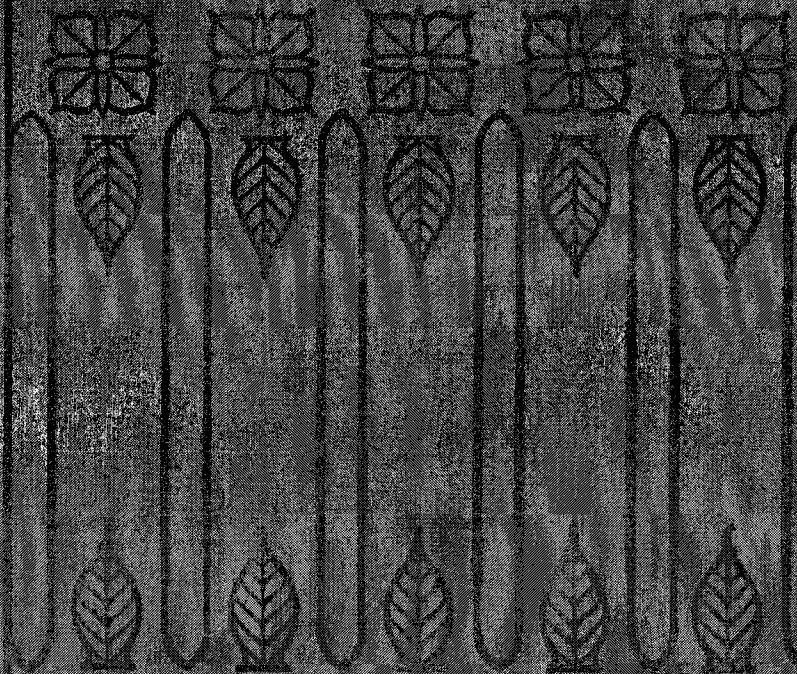


CADILLAC



TRADE MARK  
REGISTERED



*December, 1973*

*Dear Clymer Customer:*

*Please accept this collector's piece as a token of  
our best wishes and season's greetings.*

*As the country's largest publisher of books devoted  
to cars and motorcycles, we occasionally like to think  
back to the early days of our industry. This 1912  
Cadillac brochure, describing "the car that has no  
crank" (first practical electric self-starter) provides  
fascinating reading.*

*Your copy is a limited edition, exact reproduction.  
It was made possible through the skill and attention  
of experts, using the most sophisticated equipment  
currently available. It is a faithful duplicate right  
down to the gold ink and deeply embossed cover.*

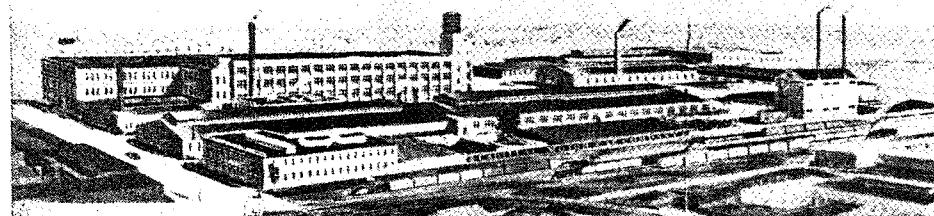
*Best Wishes,*



*Jeff Robinson  
President*

CADILLAC  
MOTOR CAR CO  
DETROIT, MICH

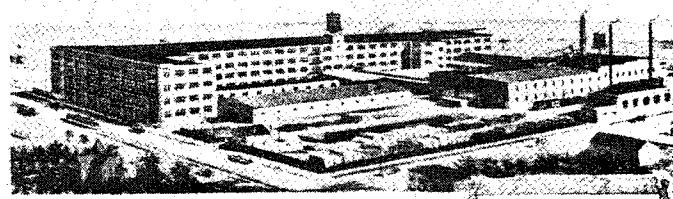
TRADE MARK  
REGISTERED  
THE CADILLAC  
NAME AND TRADE  
MARK ARE OWNED  
BY THE CADILLAC  
MOTOR CAR COMPANY,  
DETROIT, MICHIGAN.



CABLE  
ADDRESS  
"CADAUTO"  
DETROIT

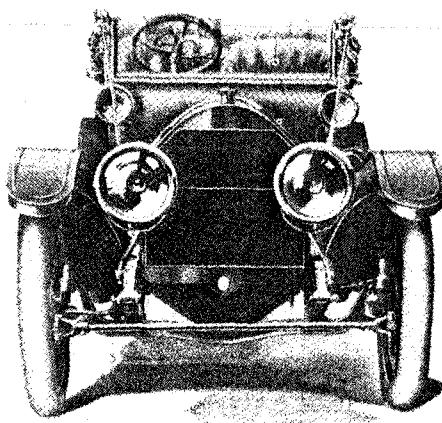


CODES  
ABC STND  
LIBBERS  
WESTERN  
UNION



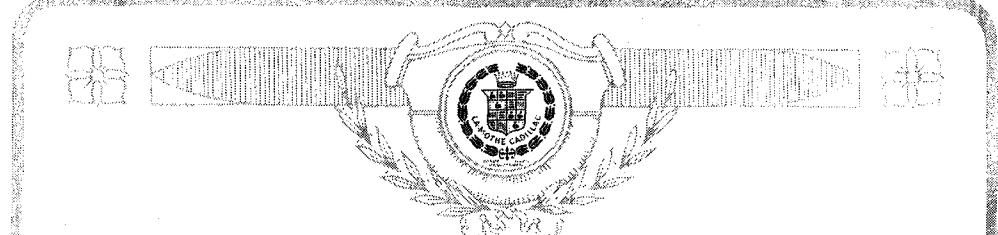
The largest producer  
of high grade motor  
cars in the world





THE CAR THAT HAS NO CRANK





## The Story of the Cadillac



ROGRESS. This in a word is "The Story of the Cadillac." Since the inception of the industry the Cadillac has become increasingly the criterion of excellence in practical construction. Each year the public looks to the Cadillac for that which represents the real progress in the development of the motor car; not for fads, not for features whose value ends in their utility as "talking points;" not for features which are here to-day and gone to-morrow; but features which are practical and features which mark real and substantial advancement.

The pre-eminent position of the Cadillac, its recognition as America's leading motor car, its recognition as the standard by which motor cars are judged, are not matters of chance.

For ten years the Cadillac has been manufactured and marketed upon well defined principles. The adherence to those principles has been the dominant factor in Cadillac success.

The Cadillac has never aspired to ideals set by others; it makes its own ideals and raises them higher and higher.

The Cadillac has never striven after the achievements of other plants—it is a school and model unto itself.

The word "success" has always been associated with the Cadillac. The word "failure" never. The Cadillac Company has never produced a model or a type for which it was obliged to make apologies.

The "Story of the Cadillac" is one of that mechanical and commercial advancement which makes for permanency. The Cadillac Company has never yielded to clamor by producing that which catered merely to fancy, nor that which took advantage of the uninformed. On the contrary it has produced only that which it knew to be right, that which it knew would give to the purchaser "value received" in abundant measure.

The Cadillac Company has never been obliged to resort to exaggeration and overdrawn claims to dispose of all the cars that it could make—and more. Its policy has ever been to under-claim rather than to over-claim. It is gratified that the public accepts its representations at their full worth; because the public has never been misled and because the public could always expect and has always received more than was offered.

The Cadillac car of today has behind it the experience of ten years, during which period its makers have produced more high grade cars than any other plant in the world. Every car—more than fifty

thousand of them—is a monument to the high ideals of the organization which produced it.

The Cadillac organization is an organization of specialists, each an expert in his particular vocation. There are specialists on motors, specialists on transmissions, specialists on gears, specialists on tools, specialists in foundry work, specialists in electricity, specialists in body construction, specialists in finishing, specialists in every branch, trained in accordance with the high ideals of the Cadillac Company.

A motor car, to be worthy the name, must be more than the mere assembly of frame, engine, transmission, axles and body, components obtained here, there and everywhere, that they may be had at the lowest price without regard to their harmonious relation each to the other.

Design, selection of materials and accuracy of workmanship are the three greatest essentials in a real motor car.

With the multitude of components in a motor car assembly, accurate knowledge of the adaptability of the various materials is vitally essential. A metal suitable for one part may be totally unfit for another.

Chrome nickel steel, bar screw steel, spring steel and steel of various kinds, all have their uses when correctly applied. Forgings, castings, stampings, and pressings, gray iron castings with proper alloys for cylinders, pistons, rings, etc., aluminum, copper, brass and bronze, all with their strong and weak points for various uses must be thoroughly understood.

Cadillac materials for every individual part are determined upon only after application of definite and concrete knowledge as to their adaptability and fitness for the functions and duties which they must perform.

Cadillac designs are approved only after the most severe tests which prove to the greatest possible degree that they are thoroughly efficient and worthy to be entrusted to uphold the name Cadillac and all that the name implies in the motoring world.

Cadillac workmanship is famous the world over, wherever the science of mechanics is known. It is famous for its accuracy, famous for its uniformity, famous for its standardization.

The Cadillac plant in its equipment of fine machinery, fine tools, jigs, fixtures and appliances is not equaled in the motor car industry. This equipment includes more than half a thousand special automatic labor saving machines. Of these, many are capable of turning out from two to ten times the volume of work produced by ordinary methods,—an important factor in making possible the Cadillac price and an important factor in making possible Cadillac quality. The equipment includes more than 100,000 tools, dies, jigs, fixtures and appliances, of which some 20,000 were made by us especially for Cadillac Cars.

The Cadillac system of inspection is so exacting that it practically precludes the possibility of an imperfect part being incorporated in the car so far as can be detected by the most accurate measuring instruments known to engineering science. From the time the raw materials reach the warehouse until they leave the plant in the finished product they are under the scrutiny of a corps of experts trained in accordance with the standards of the Cadillac organization. This inspection extends to the smallest pieces, including nuts, bolts and screws.

Cadillac standardization means the absolute interchangeability of parts. It means that when it is desired to replace a part, the new one will fit and fit correctly without alteration in the slightest degree.

The Cadillac Company is prepared to replace any part of any car it ever built. No Cadillac user was ever obliged to discard his car because he was unable to obtain some needed part. No Cadillac user was ever compelled to undergo the annoyance and expense of having some needed part made to order because the maker had gone out of business, had discontinued making parts for old models, or had to depend upon some outside parts maker to supply them.

In the Cadillac there are more than 250 parts on which there are more than 400 operations which are not permitted to deviate to exceed the one-thousandth part of an inch—about one-third to one-half the thickness of a hair—from the prescribed limits of measurements. There are some parts in which the limits of variations permissible is cut down to the half of one-thousandth part of an inch.

Standardization properly applied further means the correct alignment of parts and that they will work in harmony each with the other. It precludes the possibility of ill-fitting joints and bearings. It decreases the great power absorber—friction. It limits wear. It reduces "automobile troubles" to a minimum. It brings operating and maintenance cost down to the lowest notch.

Standardization properly applied produces a quiet and smooth running car. It produces a car in which the power is utilized to its greatest advantage; it produces a reliable and a durable car; it produces an economical car; all features in which the Cadillac stands without a rival.

The Cadillac is identified with no "class" excepting its own—a distinctive class. It finds its sale not especially among purchasers whose limit of investment is the Cadillac price. It appeals alike to the discriminating motorist who demands a dollar's worth for every dollar of investment, and to the motorist who places dependability, service and luxury above all price consideration.

In the marketing of its product, the Cadillac Company adheres in the greatest possible degree to certain well defined principles.

The Cadillac is an honestly constructed car sold at an honest price, a price which gives to the user the greatest real value obtainable in a motor car. Its list price is its selling price, a price which affords but a legitimate margin of profit to the maker and to the distributor.

The Cadillac Company is in a position to choose its distributors.

In so doing its aim is to exercise the same discrimination as in selecting the materials which enter into its product. In choosing its distributors, as in choosing its materials, it has in mind the interests and welfare of Cadillac users because it knows that upon the service and satisfaction rendered to those users depends the future of the Cadillac car.

The aim of the Cadillac Company is that its distributing organization shall be composed of business houses which are a credit to themselves, a credit to the Cadillac Company and a credit to the Cadillac car, houses that realize and act upon the realization that in the sale of a car their duty to the purchaser instead of being finished has only begun.

In following these standards, the Cadillac Company believes that it can say to the purchaser that he will find back of the Cadillac car a "service" which is not equaled in the motoring world.

As a commercial asset, one of the most pronounced advantages enjoyed by the Cadillac Company is the supreme and universal satisfaction and enthusiasm of more than fifty thousand users who are ever anxious to sound the praises of the Cadillac car.

Of special significance are the expressions of those whose motor car experience has not been confined to the Cadillac but has extended to cars of lower price and to cars of higher price and from one to the other.

These expressions, which you will hear voiced throughout the length and breadth of the land, leave no room to question:

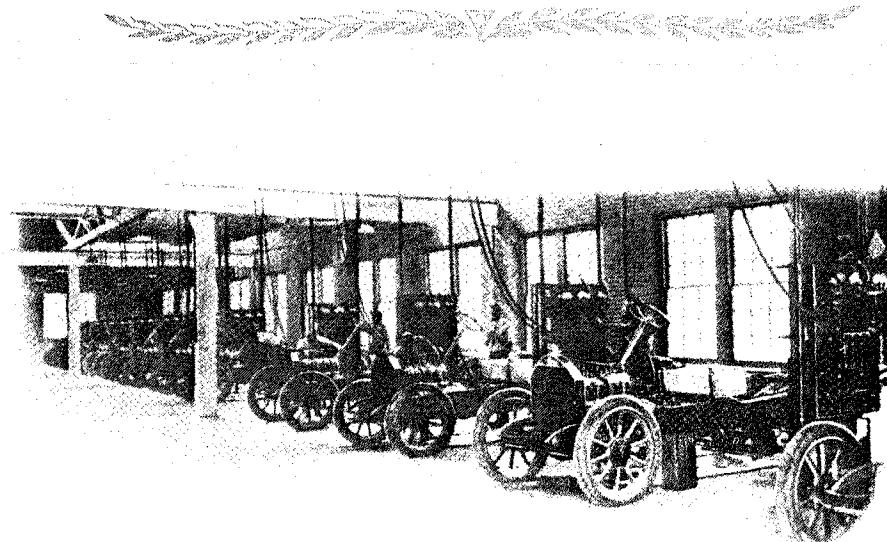
That the Cadillac is the most sturdy and the most dependable of motor cars.

That it is the car of most enduring service.

That in ease and luxurious riding qualities it has no occasion to acknowledge a superior.

That in economy of operation and maintenance there is none which enjoys a favorable comparison with it.

That in real and substantial motor car value the Cadillac stands pre-eminent.



#### DYNAMOMETER TESTING ROOM

Every Cadillac chassis is scientifically tested by dynamometer. They are proven for general efficiency, for soundness of every power transmitting unit and are required to meet our established standards.

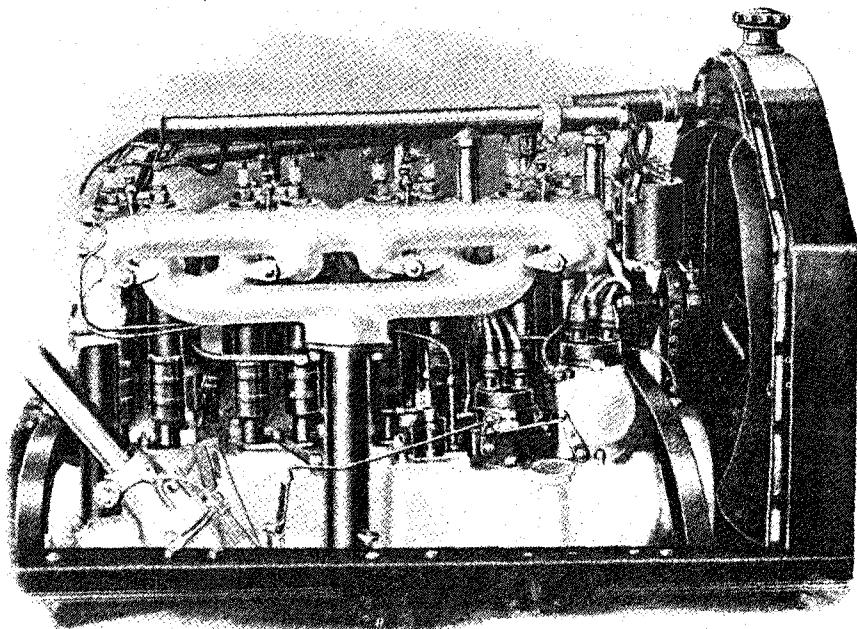
## ENGINE

If there is one feature of the Cadillac car which, more than another, emphasizes the superiority of Cadillac design, Cadillac workmanship and Cadillac efficiency, it is the engine; affording as it does, greater opportunities for demonstrating the high degree of excellence which has been attained.

More than forty thousand Cadillac four cylinder engines in service—some of them for eight years—are every day furnishing irrefutable evidence of the correctness of Cadillac principles of construction and Cadillac standards of workmanship.

It is constructed upon the "built-up" and "individual part" principle, a principle which has proven most conducive to efficiency, power, simplicity, smoothness of action, long life and economy. Notwithstanding the advanced manufacturing methods employed in the Cadillac plant, this type of engine is the most expensive to produce. While that construction may necessitate a higher selling price for the complete car than would be required were we to build it in the ordinary way, the extra cost is compensated for many times over by the greatly increased service and satisfaction it will render and the lessened expense for operation and maintenance.

It is of the four-cylinder, four-cycle, long stroke type,  $4\frac{1}{2}$  inch cylinder bore, by  $5\frac{3}{4}$ -inch piston stroke.



RIGHT SIDE OF ENGINE

The matter of horsepower cannot be determined by mathematics. It cannot be determined by the size of the bore, the length of the stroke, the piston displacement, the compression, or any one of the other formulas which give a maker an opportunity to claim a higher power rating for his engine than that which it is entitled. The one thing that determines the rating to which an engine is entitled is the **power it actually develops**—and nothing else.

The Cadillac engine by reason of its design, its superb workmanship and the infinite care and skill manifested in perfecting every minute detail, is capable of developing more actual power delivered at the rear wheels than any engine of its size and even many of a larger size that we know—and we believe we know of most of them. Repeated tests under many and varied conditions have shown the present Cadillac engine capable of developing fifty horse power.



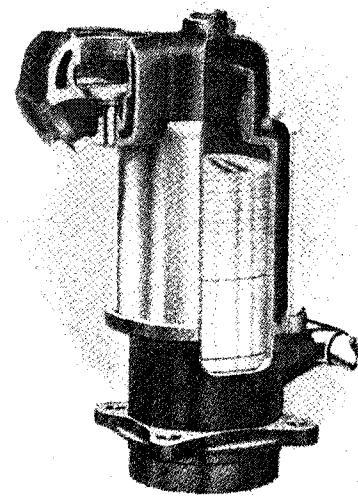
It is the product of that division of the Cadillac plant which, during the past decade, has produced a greater number of high grade gasoline motors and gears than any other plant in the world.

Each cylinder is cast by itself, as are also the cylinder heads which contain the valve chambers. The heads are attached to the cylinders by right and left threaded nipples. The water jackets which surround the cylinders are of spun copper. They are clamped into position in such manner and the surfaces between which they are clamped are so accurately finished, that we have never heard of a single case of leakage.

The proper circulation of water around the cylinders is of the utmost importance to the efficiency of the motor. By casting each cylinder by itself we are enabled to make the walls of uniform thickness, and by applying the copper jackets, there is uniform space for water circulation, resulting in even cooling of the entire cylinder with the resulting advantages.

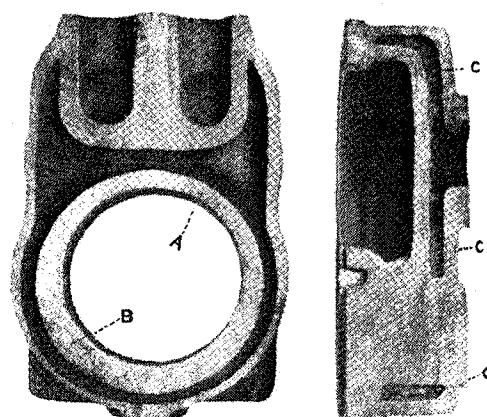
We show here some of the advantages of the Cadillac method of construction as against the ordinary practice of casting cylinders, valve chambers and water jackets together. In the illustration at the bottom of this page is shown a cylinder with valve chamber and water jacket cast integral. This illustration is made from a photograph of a cylinder and water jacket cut in two horizontally. Observe the varying thickness of the cylinder wall "A. B." With this condition it is impossible for the circulating water to cool the cylinder uniformly. The contraction and expansion of the metal will vary to such an extent that the bore of the cylinder will not retain perfect roundness. In consequence, it will bind the piston at certain points of its travel and fit so loosely at others that the lubrication is imperfect, that wear is uneven and disastrous and that there is a great waste of fuel with a corresponding loss of power.

In the smaller figure at the right will be seen the webs "C" which are sometimes formed when two parts of the core used in casting are not held firmly together. This web obstructs the circulation of the water, causing overheating of the cylinder with its undesirable consequences. It is something which is impossible to detect without destroying the cylinders.



CADILLAC CYLINDER AND PISTON

Note the even thickness of cylinder wall and uniform space for water circulation



ORDINARY CASTING OF CYLINDER WITH WATER JACKET INTEGRAL

Note varying thickness of cylinder walls and uneven water circulating space, also webs which interfere with circulation

We do not wish to be understood as saying that it is impossible to make such castings correctly, but it is a fact that many are not made correctly.

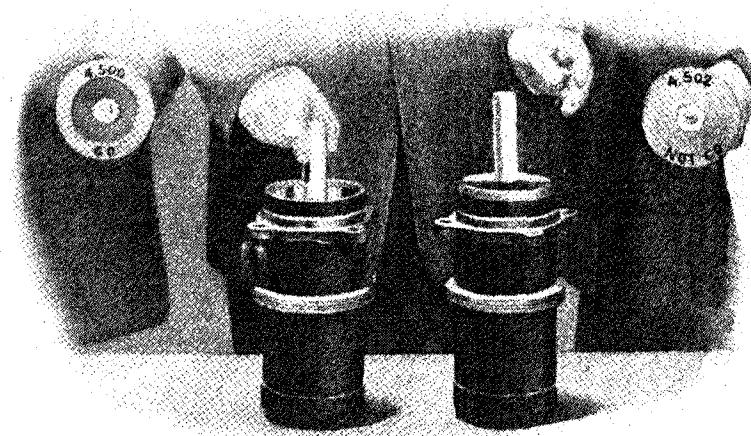
When cylinders, valve chambers and water jackets are made separately, as in the Cadillac, an injury to any one part calls for the replacement of only that particular part at a moderate cost, while in the case of the cylinder, valve chamber and water jacket cast together, and particularly when cast in pairs or all in one, an injury to any part necessitates taking down the motor, replacing the entire combination casting and reassembling.

Our cylinders, pistons and piston rings are cast in our own foundry from special grades of metal made after our own formulas, the result of exhaustive experience, experimenting and testing in our laboratories. This metal has a fine close grain and possesses unusual strength

and toughness. A critical inspection reveals an absence of the spongy portions and blow holes characteristic of many castings. It possesses the further and most essential quality of resisting to the greatest possible degree the influence of heat, consequently it is not so susceptible to contraction and expansion as other castings. The superior qualities of the Cadillac castings are so widely recognized and appreciated that for years our foundry has made cylinders, pistons and piston ring castings for a number of other automobile manufacturers making the highest priced cars in America.

The cooling system of the Cadillac is not equaled in any other motor car at any price. The radiator is our own design, made in our own factory. It is composed of 147 seamless copper tubes which pass vertically through 135 horizontal copper plates,—copper because it radiates or throws off heat better than other metals. In the method of manufacturing, we have inaugurated a wide departure from the usual practice of dipping the entire radiator in molten solder after assembling, a practice which is followed to cover poor workmanship and poor material, and a practice which has a decided tendency to reduce the radiating efficiency. The Cadillac method is to confine the solder as closely as possible to the points where the tubes pass through the plates without covering the plates themselves. All parts and passages with which the water comes in contact are made of either copper or brass—no iron or steel or other metal subject to rust. Before assembling, each individual tube is tested and the finished radiator is also tested by air and water pressure. The water circulation is promoted by a centrifugal pump. The air draft through the radiator is assisted by a ball-bearing, belt-driven rotary fan, with an adjustment provided for taking up any stretch in the belt. With our radiator construction, the copper jacketed cylinders and uniform water circulating space, we have a system that comes nearest perfection of any that has ever been devised. The radiator is mounted on the chassis by our three point contact method, therefore, it is not liable to distortion or damage resulting from the strains to which the car frame may be subjected.

The accompanying illustration shows the method of gauging cylinders. Every cylinder, after being ground, must stand this final test. Two plug gauges are provided.

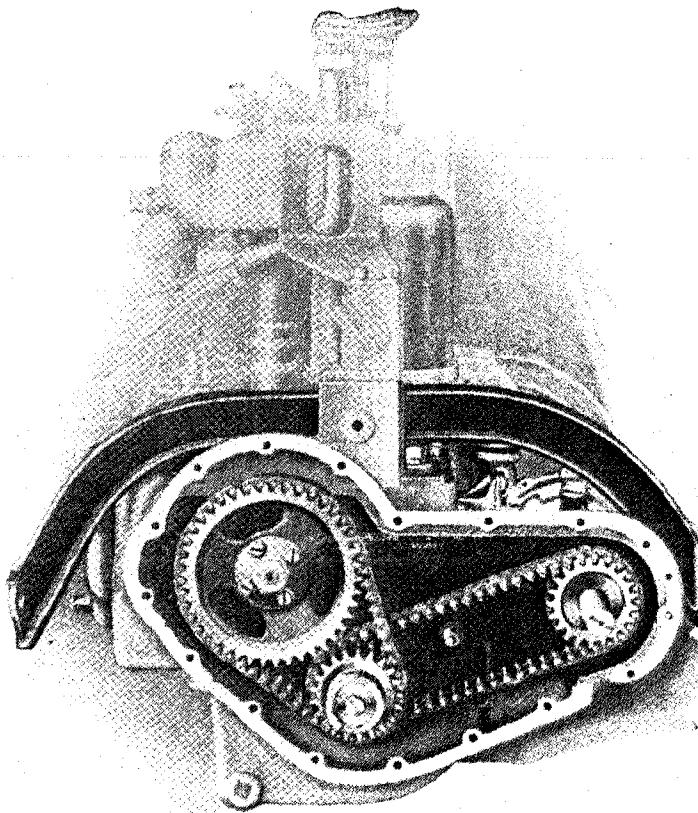


One is marked "4.500 Go", meaning that it is exactly four and one-half inches in diameter. The cylinder must be large enough to permit this gauge to enter. The other is marked "4.502 Not Go" meaning that its diameter is just two one-thousandths of an inch larger than four and a half inches, but the cylinder must not be so large that it will permit this gauge to enter. If a cylinder is too small to permit the "Go" gauge to enter, the inside is ground until it is the correct size. If the cylinder is large enough to permit the "Not Go" gauge to enter, it is discarded.

When you realize that one gauge is less than a hair's-breadth larger in diameter than the other; when you realize that one will enter the cylinder and the other will not; when you realize that there are more than 400 operations in the Cadillac car which are not permitted to vary more than the one-thousandth part of an inch, which is about



one-third to one-half the thickness of the average human hair, then can you form some conception of why Cadillacs are what they are, and why they render the constant service that they do.



**FORWARD END OF ENGINE**  
Showing silent chain driven camshaft and generator shaft

Cadillac pistons are gauged to similar accuracy, a snap gauge however being used which gauges the outside diameter of the piston.

The result is that neither cylinders nor pistons can possibly vary in diameter even a hair's-breadth. Consequently, ANY piston will fit ANY cylinder. They do not have to be "paired". If it ever should become necessary to replace a piston, all the owner has to do is replace the piston. He is not necessarily obliged to replace the cylinder also, or possibly a pair of cylinders, or the whole four, as might be the case were they cast in pairs or all together.

In finishing the cylinders and pistons, we do not stop at simply machining. Every one is ground to a polished surface, resulting in practically perfect compression and consequently maximum power. The piston rings are finished with the same precision and are also made from our own special formula, differing from that of which the cylinders and pistons are cast. This metal possesses exceptional spring qualities not easily affected by the heat of the motor. Therefore, they retain their efficiency long after the ordinary ring would be rendered practically worthless.

The piston connecting rods are drop forged steel of "H" section.

The crankshaft, a special nickel alloy steel, undergoes a special heat treating process which gives it great strength and its surfaces are accurately ground. It is of liberal proportions being  $\frac{3}{4}$  inches in diameter and is supported by five bearings of especially large surface, which is conducive to long service with the minimum of wear. The rear main bearing is  $\frac{4}{5}$  inches long and the other four are each  $2\frac{1}{8}$  inches long. These bearings are of Babbitt metal with bronze backing, which ten years of experience has proven to be the best bearing known for this service. The manner in which the crank-

shaft is supported insures that firmness, rigidity and alignment so vitally essential to a smooth running, vibrationless and durable motor and the unusually large bearings reduces the necessity for adjustments to a minimum.

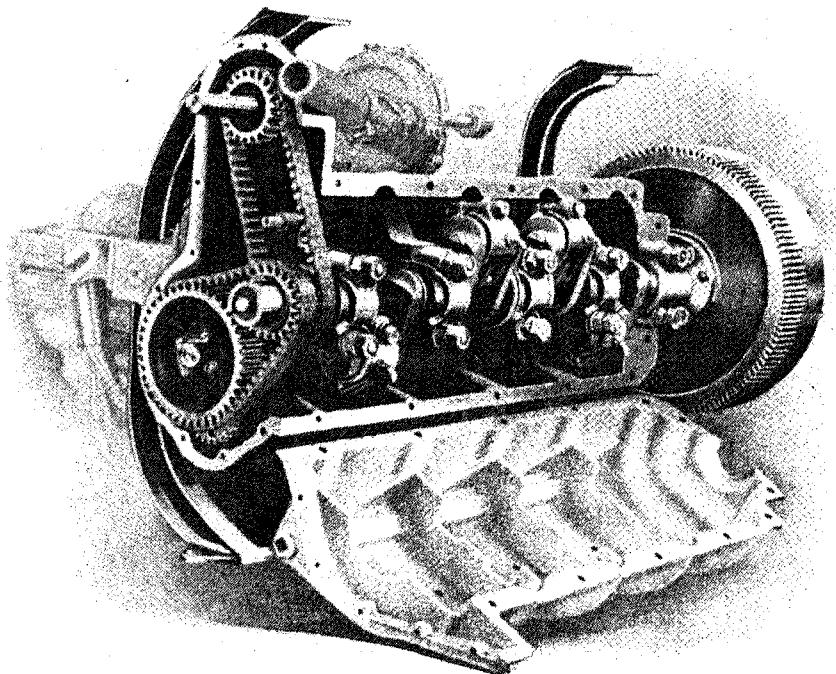
The crankshaft is offset; that is, instead of being placed directly in line with the middle of the cylinders it is set slightly to one side. The advantage of this is that the force of the explosion is expended to greater advantage than is possible in motors where the crank is in line with the middle of the cylinders.

This feature has been embodied in Cadillac cars for years; in fact, the offset crankshaft has been used in Cadillacs since their beginning, in 1902.

Upon the accuracy of the cams and camshaft and the accurate fit of the camshaft in its bearings depends the correct operation and timing of the valves, and the correct timing of the valves is one of the essentials in the development of maximum power. The camshaft is forged with cams integral, hardened and accurately ground. These parts are special heat treated high carbon steel. It is of liberal proportions being  $1\frac{3}{8}$  inches diameter and is supported by three substantial bronze bearings. The camshaft and the shaft which drives the pump and generator are driven by the crankshaft through the medium of silent chains thereby eliminating the use of meshed gears and inaugurating an important factor conducive to quietness in the engine.

The inlet and exhaust valves which are  $2\frac{1}{8}$  inches diameter are alike and interchangeable. They are all located on the right side of the motor and are operated by the single camshaft. The valve lifting rods do not bear directly on the cams; the lower end of each cam block is provided with a hardened steel roller and consequently the possibility of wear is reduced to an absolute minimum. This is a feature which, outside of the Cadillac, is found only in the highest priced cars. The valve stems are enclosed.

The engine is suspended from cross members, fore and aft, by our three point suspension plan. The rear of the engine is attached rigidly to the cross member while the forward end is pivoted. By this method the alignment of the engine is not materially affected by the twisting and binding strains to which the car may be subjected due to uneven road conditions.



BOTTOM VIEW OF ENGINE

Note substantial construction and the five large bearings

Also oil pan of engine with its oil compartments and distributing troughs.



## LUBRICATION

In the important matter of lubrication, the Cadillac is provided with the most efficient, the most positive and the most economical system ever devised, the oil consumption averaging from 400 to 600 miles per gallon. This system in its present perfected form, was originated by the Cadillac Company and the fact that it has been used on all four-cylinder Cadillacs since their beginning, in 1905, and the fact that it has successfully met every condition is the strongest possible testimony to its merit.

A quantity of oil is placed in the oil pan of the crank case which is divided into four compartments. An oil reservoir is located alongside the engine, cast integral with the base. In this reservoir is located a double acting force pump, the supply from which may be properly regulated to take care of the engine's requirements. The supply is forced from the reservoir up to and drops through the sight feed on the dash. From there it is forced to the crank case, maintaining the supply there. By means of splashes at the end of each connecting rod which dip into the oil at each revolution of the crank, the oil is thrown completely over and upon all the inside working parts of the engine, including main bearings, cylinders, etc.

With the Cadillac system the oil does not collect in either end of the crank case as the sloping troughs on the side distribute it from one compartment to the other, maintaining a uniform and constant level in each, regardless of road grades, up or down.

There is another prime advantage. There is not a multiplicity of feed pipes to watch that are liable to become clogged up and result in burned out bearings. On the contrary, there is but one and if the oil is shown by the sight feed to be feeding properly and the supply in the crank case adequately maintained, there is positive assurance that all bearings taken care of by this system are being perfectly lubricated.

No one thing is responsible for more "automobile troubles" in a well designed and correctly constructed car than imperfect lubrication. The Cadillac is unusually well provided with lubricating facilities throughout. Besides the perfect engine lubricating system and the constant oil bath of the universal joints, special attention is directed to the numerous grease cups throughout the car, including spring shackles and oscillating spring seats, their prominence acting as constant reminders of their importance. This is in striking contrast to the small oilers and oil holes found in many cars.

## CARBURETOR

Of vital importance to engine efficiency, scientific carburetion has received unusual attention by the Cadillac Company.

The six principal requirements are speed, pulling power, rapid acceleration, fuel economy, simplicity and ease of adjustment.

With these requisites in mind the Cadillac Company has evolved a carburetor which combines all of the essentials to the maximum degree and automatically adapts itself to the diversity of conditions demanded of it.

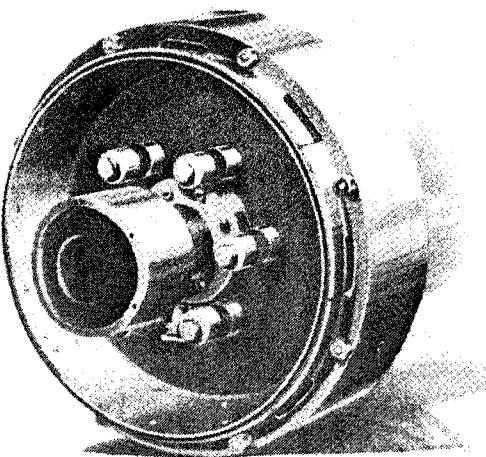
The gasoline supply is "fixed" and there is but one adjustment—the air, which is ample to take care of all varying requirements and conditions.

To assist vaporization it is liberally hot water jacketed and to facilitate starting, particularly in cold weather, an auxiliary air adjustment is provided, regulated by a small lever on the steering column.

## CLUTCH

One more distinctive feature of the Cadillac is its smooth acting, velvety clutch, which for efficiency, simplicity, dependability and easy action, is not even approached.

It is the leather faced cone type, made of pressed steel, giving it great strength without needless weight. The ring with which the cone engages is split at eight points of its periphery and part of each section is sprung inward. This causes the clutch to take hold gradually so that in starting there is that noticeable absence of shock and jar characteristic of most cars. It is devoid of the usual complications characteristic of other types, is extremely simple, requires the least attention of any motor car clutch ever designed and is easily removed if necessary.



## ELECTRICAL SYSTEM

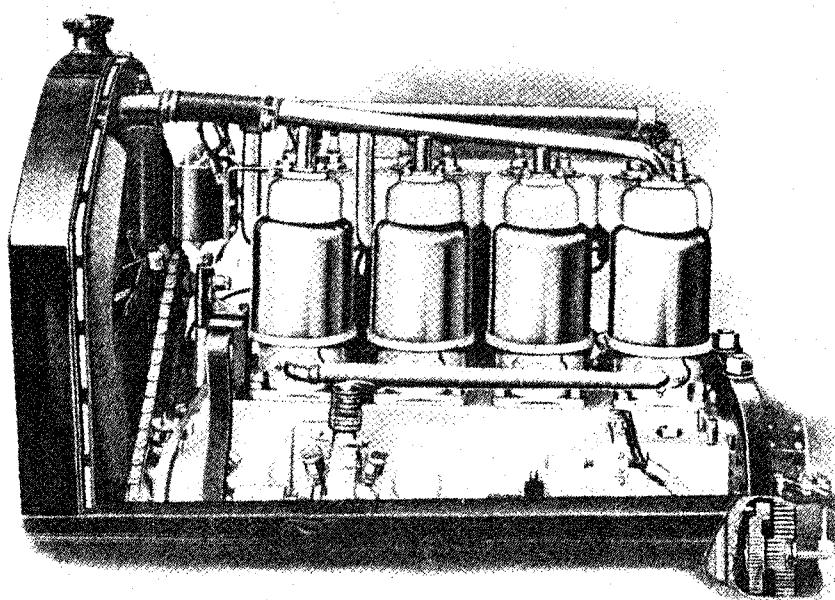
### AUTOMATIC CRANKING, LIGHTING, IGNITION.

The past year was and is known in the annals of the motor car as the year of "self-starters" so-called. It redounded to the credit of the Cadillac Company, however, to provide the motoring world with *the* device which really performed the function for which it was designed.

When the Cadillac plans became known, a "wild scramble" ensued by many makers for almost anything that bore the name—"self-starter". We will not attempt to depict the resulting disappointment experienced by thousands of motor car purchasers who found that "self-starter" meant,—much of the time—start it yourself. The disappointed ones will bear witness that the inference is not overdrawn.

The Delco Electrical Plant (patented) incorporated as an integral part of the Cadillac car,—not merely as an accessory—marked the greatest achievement for the advancement of the motor car since the inception of the industry and its use on twelve thousand Cadillacs demonstrated its dependability to be equal to that of every other part of the car.

A year's experience, however, together with researches, experimenting and development by the Cadillac experts, have enabled them to simplify and improve the system to a marked degree, and bring it to as near the point of 100 per cent efficiency as any device could be.



LEFT SIDE OF ENGINE  
Showing gear of electrical cranking device in mesh with fly-wheel teeth

The plant consists of a powerful but compact dynamo or generator located alongside the engine. When in operation, the engine drives the dynamo, generating current which charges a storage battery.

For starting, or strictly speaking, for cranking the engine, the closing of a switch automatically transforms the dynamo into a motor. Pushing forward on the clutch pedal causes a gear of the electric motor to engage with teeth in the fly-wheel and "turn it over". In other words the electric motor actually "cranks" the engine; it does mechanically exactly what otherwise would be done by hand. It does it easily and gradually, it does it positively. There is no sudden impact, there is no injurious gas forced into the cylinder to cause carbonization and corrosion.



After the engine has been started, the releasing of the clutch pedal causes the gears to disengage, the electric motor again becomes a dynamo and its energy is devoted to ignition and to charging the storage battery.

We wish to direct special attention to the simplifications and improvements in the system which have been developed by the Cadillac Company and which are incorporated in Cadillac cars.

By using two windings in the armature, we are enabled to operate on one voltage (six) instead of two, (six and twenty-four). By reason of this, a controlling switch and meter are not necessary thereby eliminating much wiring and numerous parts and reducing materially the personal attention required on the part of the user.

A further improvement is the voltage regulator which automatically governs the charging rate to the battery and the current to the lights. The more nearly the battery is discharged the higher is the charging rate, decreasing as the charge in the battery increases.

By operating on a single voltage the engine may be "cranked" more rapidly than is possible by the two volt plan. The use of a standard three cell battery instead of a twelve is a further step in advance.

The storage battery has a capacity of 130 ampere hours, and as soon as that capacity is reached the charging automatically ceases.

Practical tests have shown that the storage battery is of sufficient capacity to operate the cranking device and "turn over" the engine an hour or more, although it seldom requires more than a second or two. In fact, the Cadillac engine so frequently starts by the spark that the use of the electrical starter is not always required.

The car is equipped with two especially designed Gray & Davis electric head lamps, in which the position of the bulb is adjustable to focus the light rays. There are two side lights, tail light and speedometer light. There is also a plug to attach a handy lamp. The bulbs are of special design with filaments so constructed that a year's experience has shown cases of breakage to be so rare that they amount practically to nothing. The current for lighting is supplied from the storage battery whose charge is maintained by the dynamo. Each pair of lamps is supplied with a fuse to prevent burning out the wires in case of a short circuit.

The lighting of the lamps is a matter of simply closing the switches. The advantage and convenience of this will be quickly appreciated by the motorist who has attempted to light the ordinary lamps and found himself without a match or suffered the annoyance of having to get out in the wind, rain or mud to light up.

The dynamo also generates current for ignition. Up to 280 to 300 R. P. M. the ignition current comes from the storage battery; above that the speed current is direct from the dynamo through the high tension distributor to the spark plugs. For ignition purposes the dynamo performs not only all the functions of the most highly developed magneto, but possesses even greater efficiency, having more flexibility and a greater range of action. When compelled to drive slowly in crowded thoroughfares, over very bad roads or on hills, with the ordinary magneto, the driver may stall his motor because the magneto is not being driven fast enough to generate current, and it becomes necessary to switch to the battery—if he has one. With the Cadillac system, if it becomes necessary to drive so slowly that sufficient current should not be generated, the battery automatically cuts in. When the speed is increased the dynamo again automatically takes hold. It wholly obviates the necessity of the driver's keeping constantly on the alert to prevent stalling the engine.

The automatic spark advance is another feature which characterizes the system used on the Cadillac. This is accomplished by means of a ring governor. Ordinarily, if the driver is to obtain the best results and maximum engine efficiency, he must give constant attention to the spark by shifting the spark lever. With the Cadillac governor, the operator after placing the spark lever in the position for average running need give it no further attention. The governor automatically advances and retards the spark according to the speed of the engine. It automatically prevents the injuries which are possible by too much advance or too much retard. It insures maximum efficiency at all times.

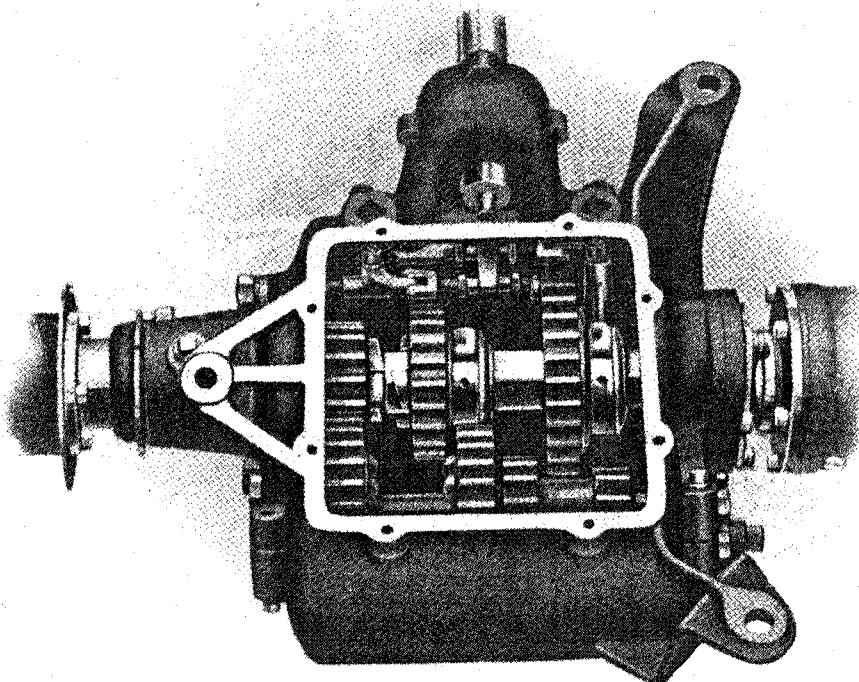
In addition to the ignition before described, the Cadillac is provided with the auxiliary Delco system with dry cell current, which has proven so satisfactory in the past. The extra system is separate and distinct, with its own set of spark plugs and in itself is thoroughly efficient for running the car, entirely independent of the main system.

The entire electrical plant has been designed with a view to compactness and efficiency. It is designed with the idea of simplicity and positiveness. It is designed to obviate to the greatest possible degree the necessity of attention. Above all, it does what it is designed to do.

## TRANSMISSION

The Cadillac transmission is to the ordinary transmission what the Cadillac engine is to the ordinary engine. There is but one Cadillac engine and there is but one Cadillac transmission. Experienced drivers pronounce it the most substantial, most durable, most quiet and most easily operated of any they have known.

It is our own design, manufactured in our own factory. It is the selective type of sliding gear in which the changes may be made from any gear direct to any other. There are three speeds forward and reverse, direct or high. The gears, the transmission shaft and clutch shaft are made of chrome nickel steel. The construction is Cadillac quality throughout. The utmost skill is exercised in cutting and finishing the gears and other parts according to the Cadillac system of limit gauges which insures hair's-breadth accuracy. These parts are then treated by a special process which gives them extreme strength, toughness and wear resisting qualities.



The gear teeth are "backed off," or beveled by machinery especially designed for the purpose and it is therefore done more accurately than is possible by ordinary methods. This facilitates the shifting of the gears without the crashing and grinding characteristic of some construction.

The main transmission shaft, the jack shaft and the clutch shaft revolve on five annular ball-bearings.

The gear box is of such construction that the lubricant is automatically distributed.

The gear shifts are made by a hand lever whose range of action is within an "H" shaped quadrant, located at the driver's right.

## STEERING MECHANISM

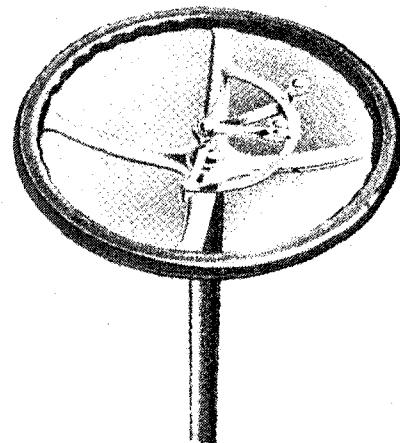
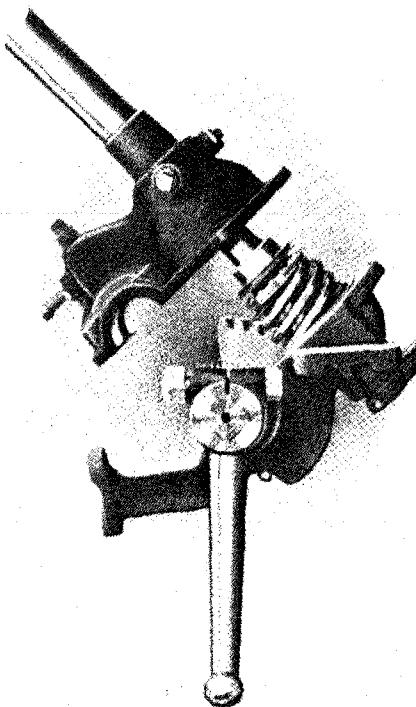
Another distinctive Cadillac feature is its steering gear whose principal features are its substantiality, its dependability, its positiveness, its ease of action and its adjustability to compensate for wear. It is of our own patented design and manufacture, of the worm and worm gear sector type. The parts are all accurately cut and hardened, and the worm gear is fitted with two ball thrust bearings. The teeth in the middle of the sector, being the ones which are in mesh when the car is driven straight ahead, naturally perform the greatest service and are therefore most susceptible to wear. To compensate for this, the center teeth are cut on a slightly less pitch radius so that any wear may be taken up without affecting the upper or lower teeth of the sector; consequently they do not bind when turning corners. We know of no other car equipped with a steering device capable of adjustment to the degree which characterizes our own.

A steering gear that is not provided with proper adjustments is apt to become worn to such an extent that the resulting back lash will make steering both uncertain and unsafe.

The adjustment provision of most gears is simply for original setting at the factories so that when the parts become worn they must be replaced by new ones. In our mechanism the provision for adjustment is more adequate than will probably ever be required.

The parallel rod which connects the steering knuckles of the front wheel is placed in front of the axle for the reason that this is the only mechanically correct position for it. With the parallel rod in front of the axle, the steering is steadier, safer and more certain than if placed behind the axle. Furthermore, it allows the car to be turned in smaller space and it keeps the front wheels more nearly parallel in turning, with consequently less grinding of the tires on the ground.

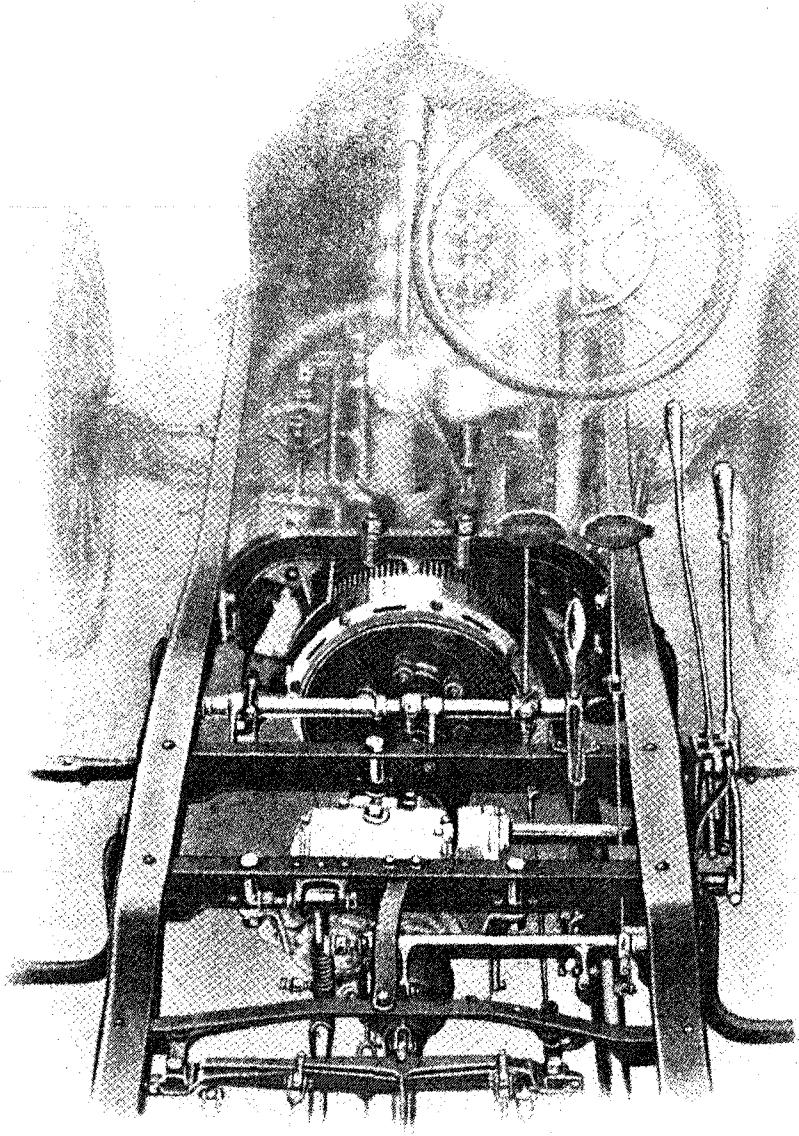
STEERING GEAR



STEERING WHEEL  
With Throttle and Spark Levers.

## STEERING WHEEL

The steering wheel is 18 inches in diameter with corrugated walnut rim and aluminum spider.



CADILLAC OPERATING MECHANISM

#### BRAKE AND CONTROL LEVERS

The Cadillac is equipped with the standard form of control. There are no confusing combinations on any one lever; each has its separate and distinct function. There are two hand levers at the driver's right; one applies the internal expanding hub brakes, the other is the speed change lever. There are also two foot levers; one operates the main clutch and the other applies the external contracting hub brakes. The two foot levers are adjustable to accommodate drivers of different leg reach.

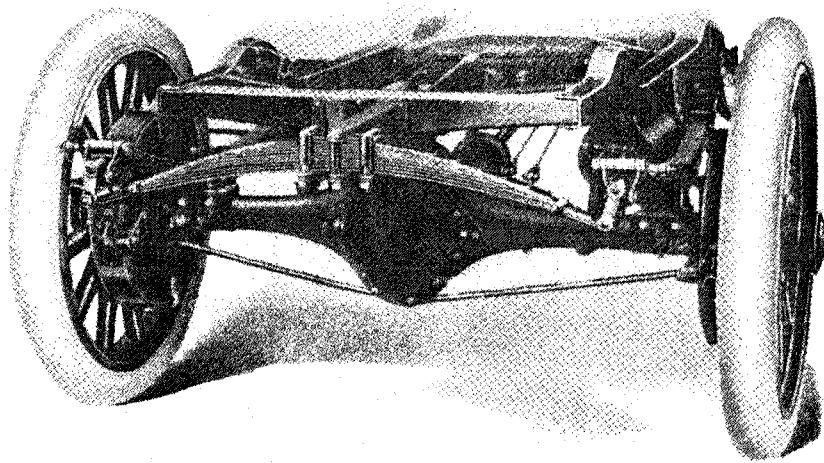
The throttle and spark levers are located conveniently at the steering wheel. An accelerator or foot throttle control is also provided.

## SPRINGS

The spring suspension of the Cadillac is generally conceded to be the most luxurious ever installed in a motor car. One has but to ride in a Cadillac to fully appreciate its superb riding qualities. It carries its own good road with it.

The forward suspension consists of two semi-elliptical springs, 36 inches long by 2 inches wide.

The rear suspension is of the three-quarter platform type, a type which is recognized as the most conducive to comfort, but which makers of cheaply constructed cars cannot afford to use and which few have sufficient knowledge to apply correctly. Like most other features, this is one which the Cadillac Company has perfected to a marked degree.



The side rear springs are 46 inches long, the rear cross spring  $39\frac{1}{2}$  inches long, all 2 inches wide.

As will be seen by the illustration, the side and rear members of the rear suspension are hung with universal joint shackle connections.

It remained for the designers of the Cadillac to devise means which would obviate the most common cause of spring breakage and at the same time not only conserve, but increase the spring efficiency.

First, the spring leaves themselves do not commence to taper until they have passed from between the clamping blocks. Second, the inside surfaces of the spring perch and clamping blocks are curved to correspond with the normal curvature of the springs and are held in position by three clips.

In ordinary construction, spring leaves commence to taper right in the middle and are held together between flat surfaced spring perch and clamping block. The result is that the spring leaves are distorted at the very outset and are therefore much more liable to crystallization and breakage during subsequent action. But in Cadillac construction first described, the leaves are always retained in their normal shape excepting when in action. This is also an important factor in preventing loosening of spring clips.

The shackle bearings are provided with compression grease cups to facilitate lubrication.

Like all other Cadillac construction, that of the springs is given more attention than is usual in most cars. The utmost care is exercised in the selection of the material, in the manufacture and in the testing of the springs themselves. All springs are made with hardened steel bushings and all parts are made within close limits to prevent rattling, to minimize wear and to preserve correct alignment.

The spring perches are not attached rigidly to the rear axle as in ordinary practice, but are of the oscillating type, moving upon the axle tube. This not only prevents undue straining and twisting of the springs in going over obstructions or into depressions, but with the previously mentioned refinements it permits the full benefits of spring efficiency to be realized.

## DRIVE

The drive is direct by special heat treated high carbon steel shaft, fitted with two universal joints having hardened and ground bushings and pins. The joints are enclosed in spherical housings and run in oil baths. The forward joint, which is telescopic, is so constructed that it is self centering, resulting practically in the elimination of friction and binding strains characteristic of ordinary construction. The drive shaft revolves on Timken bearings.

The torsion member is "V" shaped, tubular.

When the car is carrying a normal load the power is transmitted in practically a straight line from the motor to the rear axle, with the result that the maximum of the generated power is delivered to the ground.

The foregoing are some more of the reasons why the Cadillac shows more power than any other car having an engine of its size.

## AXLES

The rear axle is the Timken full-floating type with Timken bearings throughout. This is a type of axle which outside of the Cadillac will be found only on higher priced cars. In this axle the load of the car is carried on the housing, the live axle shafts simply transmitting the power to the rear wheels. The driving pinion and the bevel driving gear, made of special carbon steel, are both cut and finished in our own gear cutting division by Cadillac methods which insure their accuracy.

The front axle is drop forged, I beam section with drop forged yokes, steering spindles, spring perches, and tie rod ends. The upper ends of the steering spindles are fitted with Timken bearings.

The front wheels are fitted with Timken bearings.

## BRAKES

A thoroughly efficient and dependable brake system is one of the greatest essentials to the safety of the motorist.

The Cadillac is equipped with two pairs of powerful, double acting brakes, which operate directly on the rear wheel hub drum, 17 inches in diameter by  $2\frac{1}{2}$  inches wide. This affords a total braking surface of more than 500 square inches, and makes effectual brake application unusually smooth and easy. The regular service brakes contract upon the outside of the drums and are operated by a foot lever. The emergency brakes expand within the hub drums and are brought into action by a hand lever at the driver's right.

It is well-known that it is a difficult matter to adjust a pair of brakes so that the tension or gripping qualities will be uniform on both. To overcome this we have equalizing devices on both the service and emergency brakes which automatically take up any inequality in the tension and cause the pressure to be applied equally on both brake drums. This not only adds materially to the efficiency of the brakes, but is a large factor in preventing skidding. Freedom of action is further facilitated by the double acting joints with which the pull rods are fitted.

The brake bands are lined with asbestos containing a reinforcement of fine copper wires. Practical tests have proven this to be the most serviceable material obtainable for this purpose.

## WHEELS

The wheels are the best obtainable of the artillery type, made from well seasoned second-growth hickory with steel hubs. The spokes of which there are ten in the front wheels and twelve in the rear, are of ample dimensions to insure great strength.

Wheels are fitted with demountable rims.

## FRAME

The frame is strong and substantially braced, made of pressed steel, channel section, with  $2\frac{1}{2}$ -inch drop, so that the weight is carried closer to the ground yet not interfering with the clearance. Its width is 33 inches in the rear, reduced to 30 inches in the front, which permits a shorter turning radius. All cross members are hot riveted by pneumatic hammers, a process which prevents loosening of the rivets and parts.

## BODIES

The artistic body designs which characterize Cadillac cars are made possible by a unique system of designing and manufacture. This application of the fine arts to motor car construction marks a long advance step.

The bodies are first modeled in wax. From the wax pattern a plaster cast is made and from this a die is made for stamping the different parts from sheet steel. They are substantially re-inforced and supported by hardwood frame work. The stamping is done by the latest improved process which overcomes the undesirable features characteristic of former processes.

All open bodies are of steel and closed types of aluminum.

### FENDERS

The fenders are special Cadillac improved pattern, made in our own sheet metal division. They are strongly made, substantially attached to braces at flanges, leaving the surface free from rivet heads and are so designed that they will be found quite effectual in protecting the car and its occupants. They are finished in several coats of black enamel, each coat baked on at a high temperature and rubbed down before the succeeding coat is applied. This gives a finish which for durability is not excelled.

### TIRES

The Standard equipment for Cadillac cars is U. S., Hartford or Morgan & Wright tires, 36x4½. Demountable rims and one extra rim are included.

### FINISH

Cadillacs have always been noted for the excellence and durability of finish. As this work is done in our own plant we are able to give it the same careful supervision which characterizes all Cadillac workmanship.

The standard finish of open cars is Cadillac blue body and chassis, with fine light striping. The Torpedo will be finished in steel gray with black mouldings, black hood and black fenders, as an option, without extra charge.

The standard color of the Limousine and Coupe is Cadillac blue lower panels and doors, with upper panels and mouldings in black. Chassis and wheels Cadillac blue.

All trimmings are nickel plated.

The seats are luxuriously upholstered in selected full hides of hand buffed black leather, tufted over deep coil springs and fine quality genuine curled hair.

### EQUIPMENT

Cadillac Mohair top including side curtains. Windshield. Delco Dynamo with 130 A. H. battery for automatic cranking device, electric lights and ignition. Also Delco distributor ignition system with dry cell current. Lamps, Gray & Davis, especially designed for Cadillac Cars, black enamel with nickel trimmings; two head lamps with adjustable bulbs to regulate light rays; two side lamps, tail lamp, Hans gasoline gauge on dash; horn; foot rail in tonneau of open cars; robe rail, tire irons, set of tools including pump and tire repair kit, cocoa mat in all tonneaux except closed cars. Warner speedometer with electric light.

### CADILLAC TOPS

A Cadillac car is worthy of a Cadillac top. We manufacture our own tops because we want Cadillac users to have the best there is—something that will look well and wear well, something that will be in keeping and stay in keeping with the high quality of the car itself. They are given the same care that characterizes all Cadillac products.

They are so designed that they will give a well balanced and well proportioned outline, and the lines are in harmony with and give a rich finishing touch to the car.

The bows are the best selected ash with double steel sockets; the front and rear bows which sustain the greatest strain are substantially reinforced. Leather straps in front hold the top securely in position. The tops are well reinforced with webbing and padded with cotton wadding which aids materially in holding their shape.

The black mohair is the best material we can obtain for this purpose, durability, beauty and serviceability considered. It has a silky lustre that gives it a richness of appearance which no other material has.

With all tops we include side curtains, also a dust hood of same material to cover the top when laid back. When seat covers are ordered, we supply the dust hood of same material as seat covers. The underside of all dust hoods is made of rubber cloth to facilitate cleaning.

Side curtains are lighted with transparent material.

## SPECIFICATIONS IN BRIEF

**ENGINE**—Long stroke,  $4\frac{1}{2}$ -inch bore by  $5\frac{3}{4}$ -inch stroke, four cylinder, four cycle; cylinders cast singly. Valves enclosed. Camshaft and generator shaft driven by silent chains from crankshaft. Five-bearing crankshaft, 2 inches diameter. Bearings, bronze with Babbitt lining.

**HORSEPOWER**—40—50.

**COOLING**—Water. Copper jacketed cylinders, copper inlet and outlet water manifolds. Centrifugal pump. Radiator, tubular and plate type of unequalled efficiency. Fan attached to motor, running on two point ball-bearings; center distance of fan pulleys adjustable.

**IGNITION**—Two complete and independent systems. Delco Dynamo which furnishes current for ignition, electric cranking device and electric lights. Automatic spark control. Also Delco Distributor system with dry cell current.

**LUBRICATION**—Automatic splash system, oil uniformly distributed. Supply maintained by mechanical force-feed lubricator with single sight feed on dash.

**CRANKING DEVICE**—Delco electrical, patented.

**CARBURETOR**—Cadillac, water jacketed, single adjustment, auxiliary air adjustment on steering column.

**CLUTCH**—Cone type, large, leather faced with special spring ring in flywheel. Clutch readily removable and extremely easy of operation.

**TRANSMISSION**—Sliding gear, selective type, three speeds forward and reverse. Chrome nickel steel gears. Chrome nickel steel transmission shaft and clutch shaft running on five annular ball-bearings.

**DRIVE**—Direct shaft to bevel gears of special cut teeth to afford maximum strength. Drive shaft runs on Timken bearings. Two universal joints, the forward telescopic, each enclosed in housing and running in oil bath.

**AXLES**—Rear, Timken full floating type; special alloy steel live axle shaft; Timken roller bearings. Double torsion tubes arranged in triangular form affording unusual strength. Front axle, drop forged I beam section with drop forged yokes, spring perches, tie rod ends and steering spindles. Upper ends of spindles fitted with Timken bearings.

**BRAKES**—One internal and one external brake direct on wheels, 17 inch x  $2\frac{1}{2}$  inch drums. Exceptionally easy of operation. Both equipped with equalizers.

**STEERING GEAR**—Our own patented worm and worm gear sector type, adjustable, with ball thrust bearings.  $1\frac{3}{4}$  inch steering post, 18 inch steering wheel with corrugated walnut rim, aluminum spider.

**FRAME**—Double dropped ( $2\frac{1}{2}$  inch drop,) pressed steel, channel section, width 30 inches in front, 33 inches in rear.

**GEAR RATIOS**—Touring Car, Six Passenger Car, Phaeton, Torpedo and Coupe, 3.43 to 1; options 3.66 to 1 and 3.92 to 1. Roadster 3.05 to 1; option 3.43 to 1. Limousine, 3.66 to 1; option 3.92 to 1.

**WHEELS**—Wood, artillery type, fitted with demountable rims, special large hub flanges and special strength heavy spokes. Rear wheel spokes bolted to brake drums. Demountable rims.

**TIRES**—36 inches by  $4\frac{1}{2}$  inches.

**WHEEL BASE**—120 inches.

**TREAD**—56 inches. Option 61 inches.

**SPRINGS**—Front, semi-elliptical 36 inches long by 2 inches wide; Rear—three-quarter platform; Sides, 46 inches long by 2 inches wide. Rear cross  $39\frac{1}{2}$  inches long by 2 inches wide.

**CONTROL**—Hand gear-change lever and emergency brake lever at driver's right, inside the car. Service brake, foot lever. Clutch, foot lever. Throttle accelerator, foot lever. Spark and throttle levers at steering wheel. Carburetor air adjustment, hand lever under steering wheel.

**GASOLINE CAPACITY**—Touring Car, Six Passenger Car, Torpedo and Limousine 21 gallons. Phaeton, Roadster and Coupe, 17 gallons.

**OIL CAPACITY**—6 quarts, sufficient for 600 to 900 miles.

**BODIES**—Touring Car, Six Passenger Car, Phaeton, Torpedo and Roadster, steel, improved process of manufacture. Limousine and Coupe, aluminum; all bodies with fore doors.

**UPHOLSTERING**—Hand buffed black leather over genuine curled hair and deep coil steel springs.

**RUNNING BOARDS**—Linoleum covered, with metal binding.

**FINISH**—Cadillac blue body and chassis, striped. Torpedo option, steel gray with black mouldings, hood and fenders.

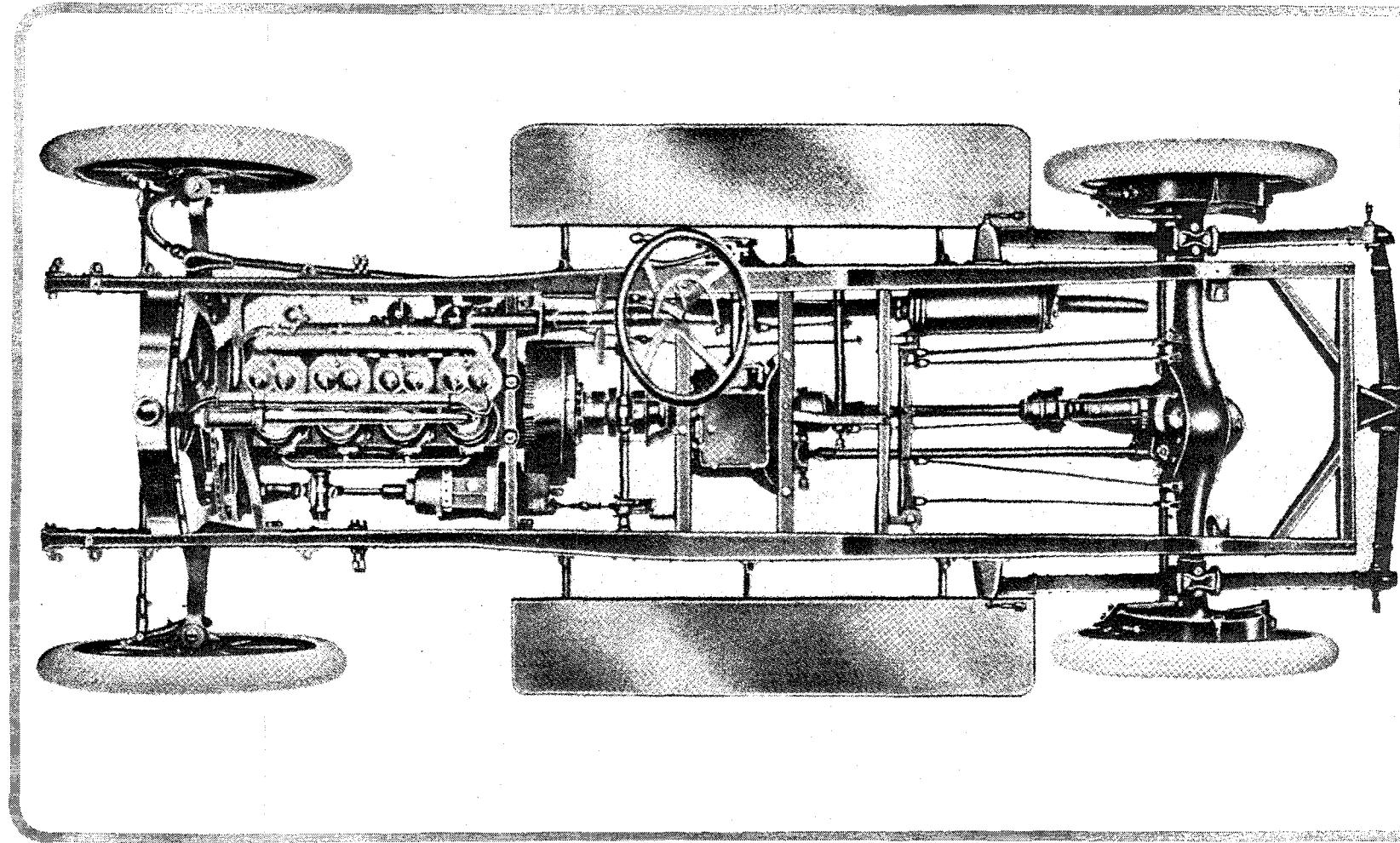
**STANDARD EQUIPMENT**—Cadillac Mobair Top, Windshield. Dynamo with 130 A. H. battery for automatic cranking device, electric lights and ignition. Also Delco distributor ignition system with dry cell current. Lamps, Gray & Davis, especially designed for Cadillac cars, black enamel with nickel trimmings; two head lights with adjustable globes to regulate light rays; two side lights, tail light. Hans gasoline gauge on dash, horn; foot rail in tonneau of open cars, robe rail, tire irons, set of tools including pump and tire repair kit; cocoa mat in all tonneaux except closed cars. Speedometer, Warner, with electric light.

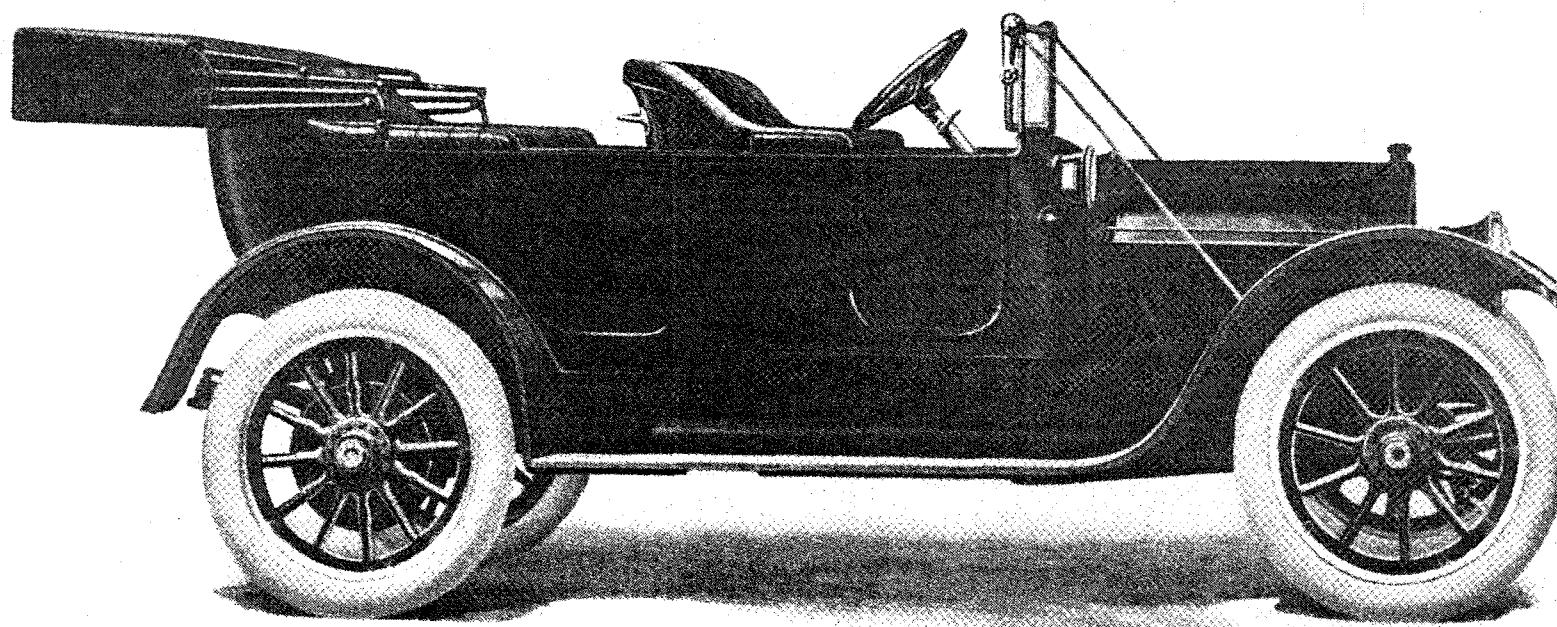
No allowance will be made for any part of standard equipment if ordered omitted.

**NOTE**—The Cadillac Motor Car Company reserves the right to make changes or improvements at any time without incurring any obligation to install same on cars previously sold.



**CHASSIS**



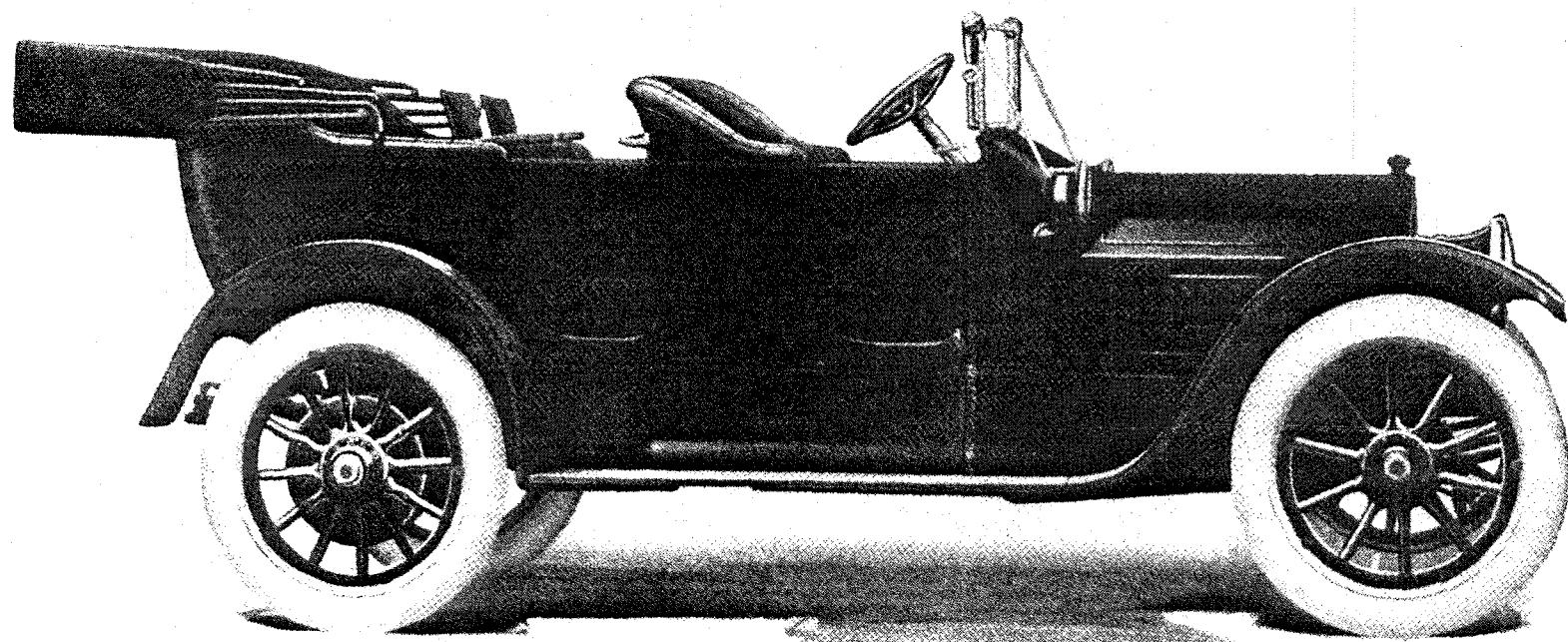


CADILLAC TOURING CAR

Five passenger  
Price \$1975, F. O. B. Detroit,  
including standard equipment



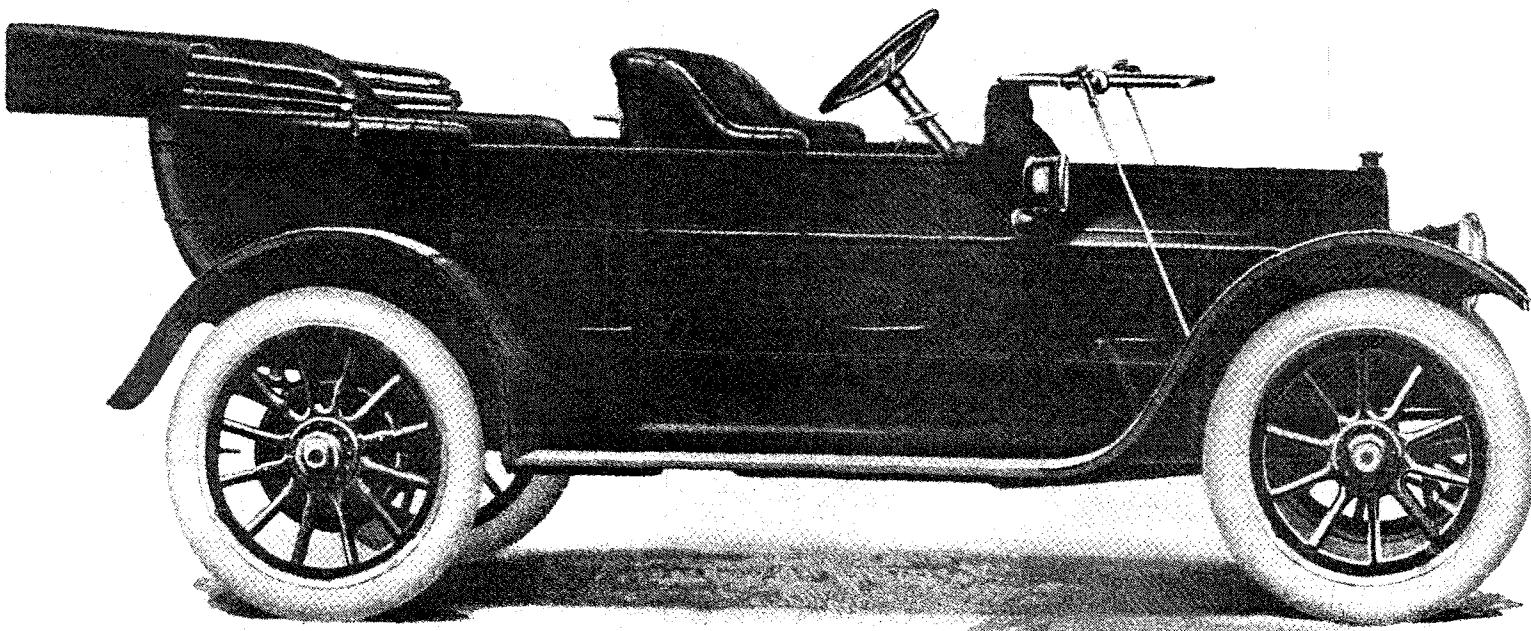
PAGE TWENTY-FOUR



CADILLAC SIX PASSENGER CAR

Price \$2075, F. O. B. Detroit,  
including standard equipment

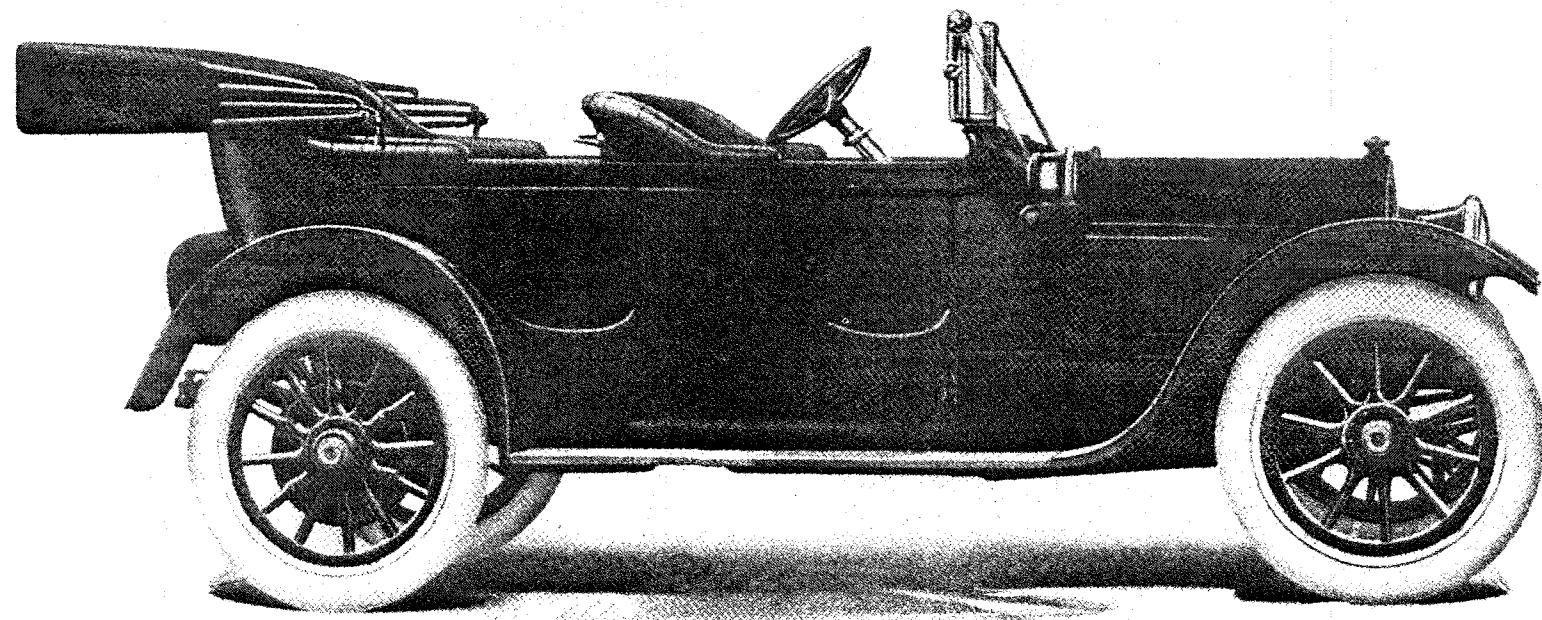




**CADILLAC TORPEDO**

Four passenger

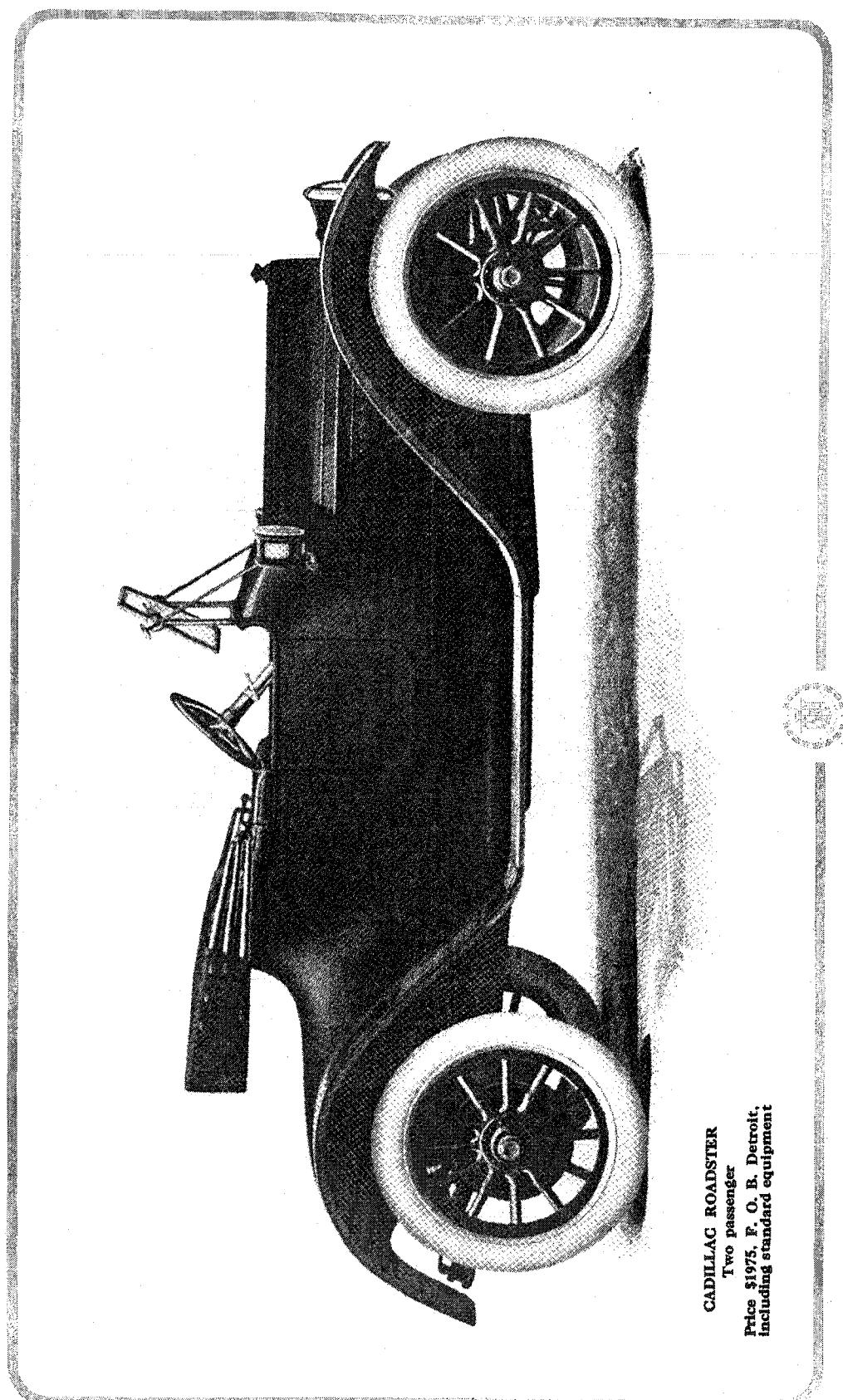
Price, \$1975, F. O. B. Detroit  
including standard equipment



**CADILLAC PHAETON**

Four passenger

Price \$1975, F. O. B. Detroit,  
including standard equipment

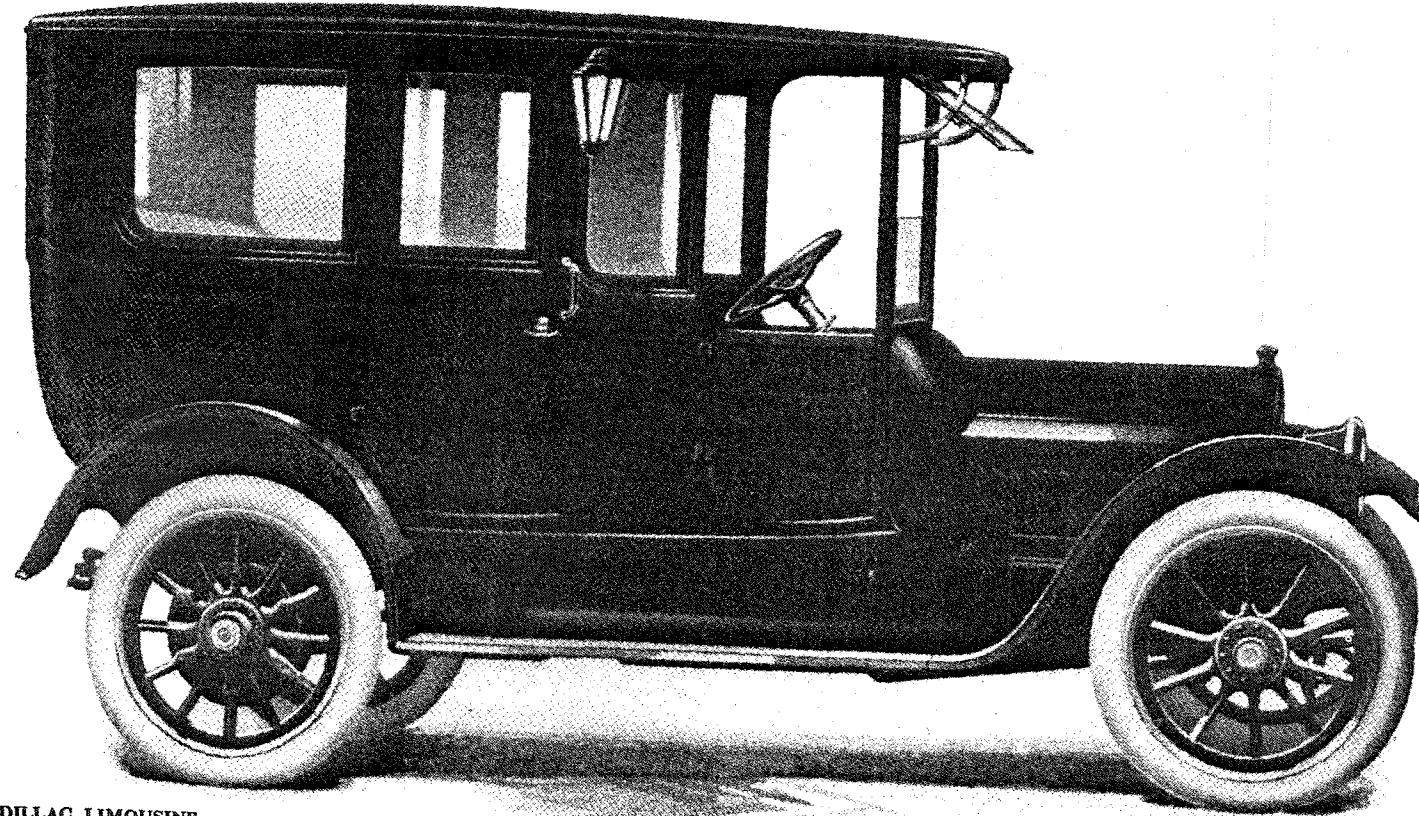


CADILLAC ROADSTER

Two passenger

Price \$1975, F. O. B. Detroit,  
including standard equipment

PAGE TWENTY-EIGHT



CADILLAC LIMOUSINE

Seven passenger

Price \$3250, F. O. B. Detroit,  
including standard equipment



## CADILLAC LIMOUSINE

The Cadillac Limousine has rapidly advanced to the position of leadership of enclosed cars.

It finds its greatest sales among those who place luxury, comfort, ease, richness, taste, dignity, elegance and refinement above all price consideration, and are satisfied with nothing short of that which represents these qualifications in the highest degree.



The body is made of aluminum by the latest improved methods. The forward or driver's compartment, which is three-quarter enclosed, is upholstered in hand buffed, dull finished, deep grained black leather with French roll across front of cushions. The top deck above forward compartment is American black walnut. Floor boards are covered with gray linoleum with aluminum binding. Storm curtains are provided for unenclosed portion.

The rear or passenger compartment with its two revolving seats, which may be folded up close to sides of body when not in use, affords accommodations for five passengers.

This compartment is upholstered in best quality blue broadcloth, trimmed with broad and narrow lace to match. The seat cushion has over-stuffed front of latest French construction.

Window sash, heel boards and finish mouldings are American black walnut.



Glass is selected crystal plate  $\frac{3}{16}$  inches thick, without bevel. Rear window is stationary, all others drop into pockets. Door windows are provided with stops for ventilating.

Window curtains are best grade silk, with silk tabs, operating on automatic rollers.

The lower portion of windshield is stationary, clear vision. The upper portion swings outward to any degree desired.

The interior fittings include speaking tube; rosewood lever lock handles; robe rail covered with goat skin on doors; two slip pockets on center partition, edges bound with narrow lace; toilet case.

The electric lighting equipment consists of two head lights, two pillar lights, two interior lights, tail light and speedometer light.

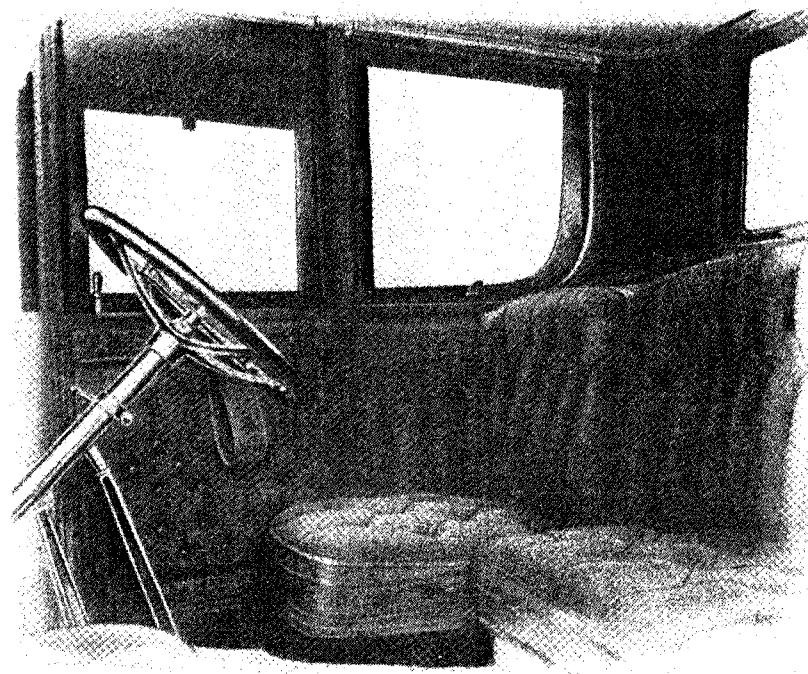
The doors, which open at angle of 100 degrees, are fitted with French head hinges, concealed knuckles and improved Yale locks.

The finish is the highest grade: doors and lower panels, Cadillac blue; upper panels and mouldings, black; chassis and wheels, Cadillac blue.

### CADILLAC COUPE

The Cadillac Coupe is a worthy companion of the Cadillac Limousine. It is the leading car of its type.

The body is made of aluminum by the latest improved methods. There are accommodations for four passengers, two alongside the driver and one on drop seat in front. The driver's seat is hinged, permitting entrance at and exit from the right side of the car.



INTERIOR OF COUPE

The upholstering is in hand buffed black leather, trimmed with broad and narrow lace. The ceiling, sashes, heel board, hood shelves and finish mouldings are American black walnut.

The side windows and door windows drop into pockets; the rear and front quarter windows are stationary. Glass is  $\frac{3}{16}$ " selected crystal plate, without bevel. Curtains are high grade silk with silk tabs, operating on automatic rollers.

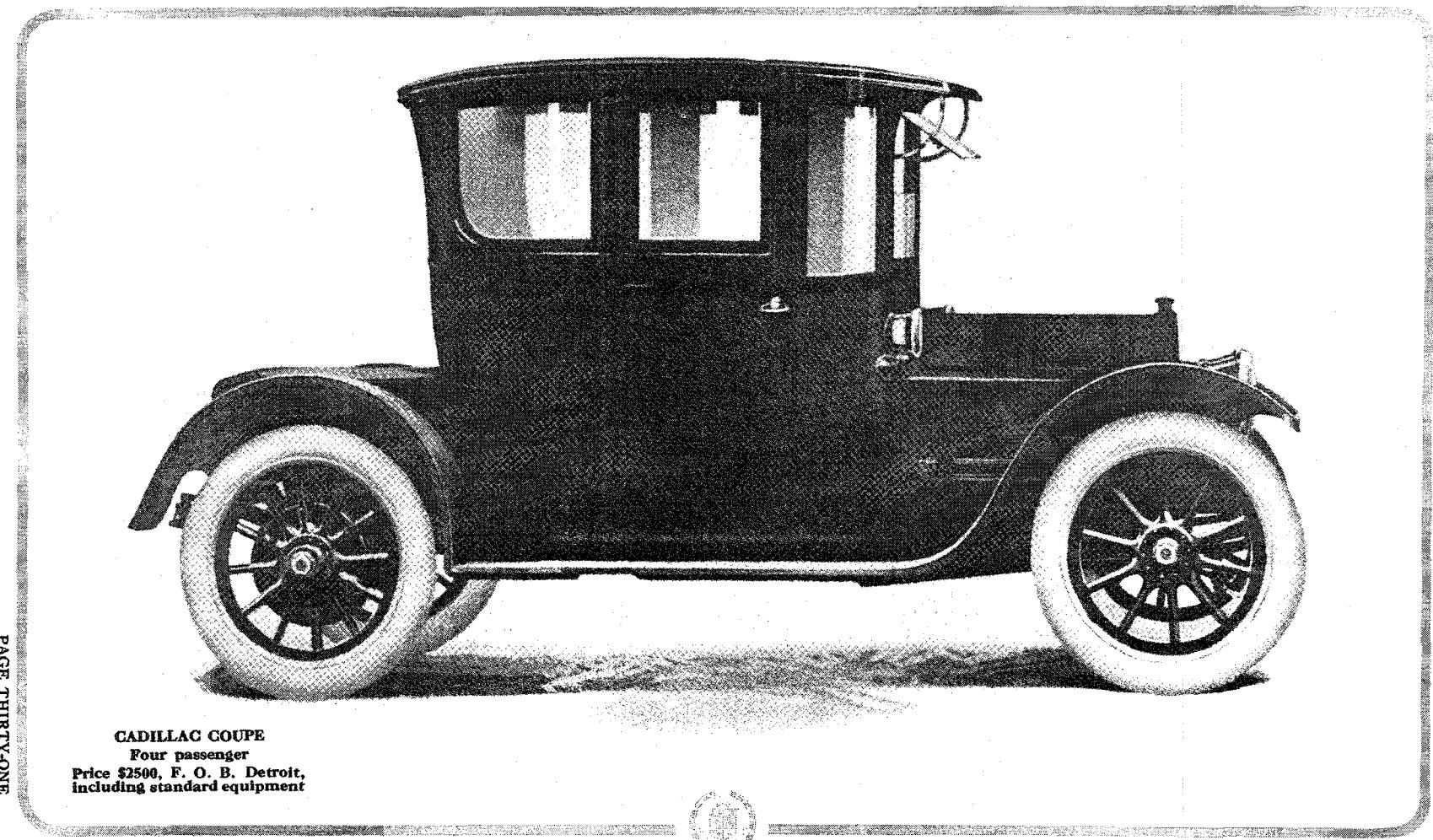
The lower portion of windshield is stationary, clear vision—the upper portion swings outward.

There is a compartment for small parcels back of driver's seat and space for suit case, tools, etc., under rear deck, which has hinged door on rear, with lock.

The electric lighting equipment consists of two head lights, two side lights, and tail light, also dome light and speedometer light.

Doors are fitted with stop hinges of latest French design, permitting door to open at angle of 100 degrees, and equipped with improved Yale locks.

The lower panels of body are finished in Cadillac blue; upper panels and mouldings black; chassis and wheels, Cadillac blue.



**CADILLAC COUPE**

Four passenger

Price \$2500, F. O. B. Detroit,  
including standard equipment

## EXTRAS

The following extra equipment will be furnished with Cadillac cars at prices quoted. These prices include fitting to car, unless otherwise stated. When equipment is ordered separate from car, no allowance will be made for fitting.

These extras are subject to withdrawal and prices subject to change without notice.

### SEAT COVERS

We make on order, slip covers for seats, of material made especially for us.

To obtain a good fit it is important that they be fitted to the car before it is shipped from the factory.

For cars already shipped we will furnish slip covers cut to pattern, but cannot guarantee to fit as well as when fitted to body at the factory.

Prices on slip covers are as follows:

Six Passenger Car.....	\$65.00
Touring Car.....	50.00
Torpedo .....	50.00
Phaeton .....	47.50
Roadster .....	32.50
Linen covers for rear compartment seats of Limousine.....	45.00
Linen covers for seats of Coupe.....	37.50

### BUMPER

Cadillac Special Diamond Bumper, high grade, made to our specifications Black enameled with nickelized trimmings.....	15.00
--	-------

### TRUNKS

Cadillac Special running board trunk (strapped securely to right hand running board), 18 in. wide, 10½ in. high, 36 in. long. Contains two suit cases.....	33.00
--	-------

Kamlee Tire Trunk, with detachable hat rack for lady's hat, attached inside of spare rim and tire on rear of car.....	16.50
---	-------

### CLOCK

Boston clock, full jeweled movement, eight day, stem wind, in combination with speedometer, (Price of speedometer not included).....	35.00
--	-------

### ELECTRIC HORMS

Klaxon, Type L.....	35.00
Tuto, long projector horn, finished in black enamel and nickel.....	25.00

### POWER TIRE PUMP

Manzel: Two cylinder power tire pump, with pressure gauge, safety valve and rubber tubing. Operated by sliding gears from generator driving shaft.....	25.00
--	-------

### HANDY LAMP

Electric handy lamp with eight foot cord.....	2.00
---	------

### WEED CHAINS

Weed chains for 36"x4½" tires, per pair.....	8.00
--	------

### TIRE GUARANTY

All tires and rims used on Cadillac cars are guaranteed by their respective makers. In case of claims they should be sent to the factory or any of the branches of said makers (not to us) transportation charges prepaid.

**PRICES** on automobiles and parts are positively net f. o. b. Detroit.

**DISCOUNTS**—We do not allow discounts excepting to bona fide automobile dealers with whom we make annual contracts for quantities of cars and who are properly equipped to conduct their business successfully and serve the best interests of Cadillac owners.



EDDILAG 1791

# **1912 CADILLAC MODEL "THIRTY"**

## **THE CAR THAT HAS NO CRANK**

CADILLAC LEADERSHIP WAS AGAIN DEMONSTRATED IN 1912 WITH THE INTRODUCTION OF THE FIRST ELECTRIC SELF STARTER, LIGHTING AND IGNITION SYSTEM IN THE INDUSTRY. FOR THIS ACHIEVEMENT CADILLAC WAS AWARDED THE PRESTIGIOUS DEWAR TROPHY A SECOND TIME.

BEFORE 1912 ALL CARS HAD TO BE CRANKED BY HAND. HAND CRANKING REQUIRED SIGNIFICANT PHYSICAL STRENGTH AND FREQUENTLY PROVED TO BE DANGEROUS. IF THE DRIVER NEGLECTED TO RETARD THE SPARK BEFORE CRANKING THE ENGINE, THE ENGINE MIGHT "KICK BACK". THIS OFTEN RESULTED IN PERSONAL INJURY SUCH AS A BROKEN ARM OR JAW.

THE STARTER OPERATES USING A 6 VOLT / 24 VOLT SYSTEM. WHILE IN THE CRANKING MODE THE STARTER OPERATES ON 24 VOLTS. AS THE ENGINE STARTS THE STARTER BECOMES A 6 VOLT GENERATOR AND POWERS THE IGNITION SYSTEM AND LIGHTS AS WELL AS RECHARGING THE TWELVE CELL STORAGE BATTERY.

BEFORE THE 1912 CADILLAC MOST LIGHTS WERE OF THE CARBIDE DESIGN WHICH OPERATED USING ACETYLENE GAS. A METERING VALVE WAS FIRST OPENED BY THE DRIVER TO ALLOW WATER TO DRIP ONTO THE CARBIDE ROCKS TO FORM THE ACETYLENE GAS. THE DRIVER THEN HAD TO IGNITE THE GAS AT EACH LAMP TO PROVIDE THE LIGHT.

THE DELCO IGNITION SYSTEM WAS FIRST INTRODUCED ON 1910 MODEL CADILLACS. IT WAS USED ALONG WITH THE EARLIER TEMPERAMENTAL MAGNETO AS A DUAL AND SECONDARY BACKUP SYSTEM.

THE FIVE PASSENGER TOURING CAR BODY CONSTRUCTION DESIGN USES STEEL PANELS OVER A HARDWOOD FRAMING STRUCTURE.

## **SPECIFICATIONS**

ENGINE.....	4 CYLINDER, L HEAD	WHEELBASE.....	116 "
BORE & STROKE.....	4 1/2" X 4 1/2"	TIRE SIZE.....	36" X 4"
DISPLACEMENT.....	286 CU IN	FUEL ECONOMY.....	13 MPG
HORSEPOWER.....	40	TOP SPEED.....	55 MPH
IGNITION....	DELCO COILS & MAGNETO	PRICE.....	\$1850

LIBRARY REFERENCE COPY

NOT TO CIRCULATE

CARD LIBRARY  
Miscellaneous  
Police system

piece prints or b/w  
1/10-1/31

1922

# Index of all Cadillac Models using Delco Equipment

## 1910 CADILLAC MODEL

Delco System No. 142

- |          |                 |
|----------|-----------------|
| No. 2004 | COIL BOX        |
| No. 1018 | IGNITION SWITCH |
| No. 5661 | IGNITION RELAY  |

## 1911 CADILLAC MODEL

Delco System No. 4411

- |          |                      |
|----------|----------------------|
| No. 5001 | DRY CELL DISTRIBUTOR |
| No. 5661 | IGNITION RELAY       |
| No. 2022 | IGNITION COIL        |
| No. 1007 | IGNITION SWITCH      |
| No. 1009 | IGNITION SWITCH      |

## 1912 CADILLAC MODEL

Delco System No. 1

- |           |                       |
|-----------|-----------------------|
| No. 1     | MOTOR GENERATOR       |
| No. 5401  | BATTERY BOX           |
| No. 5001  | DRY CELL DISTRIBUTOR  |
| No. 2022  | IGNITION COIL         |
| No. 1018  | IGNITION SWITCH       |
| No. 5661  | IGNITION RELAY        |
| No. 5049  | GENERATOR DISTRIBUTOR |
| No. 2045  | IGNITION COIL         |
| No. 10678 | RESISTANCE UNIT       |
| No. 1991  | STARTING SWITCH       |
| No. 5442  | CLUTCH MAGNET         |

## 1913 CADILLAC MODEL

Delco System No. 4

- |           |                       |
|-----------|-----------------------|
| No. 4     | MOTOR GENERATOR       |
| No. 5404  | BATTERY BOX           |
| No. 5440  | CLUTCH MAGNET         |
| No. 10686 | RESISTANCE UNIT       |
| No. 1978  | IGNITION SWITCH       |
| No. 5055  | GENERATOR DISTRIBUTOR |
| No. 2093  | IGNITION COIL         |
| No. 5059  | DRY CELL DISTRIBUTOR  |
| No. 2092  | IGNITION COIL         |
| No. 6051  | AMMETER               |
| No. 5677  | IGNITION RELAY        |
| No. 1979  | IGNITION SWITCH       |
| No. 10131 | TERMINAL BOARD        |

# Index of all Cadillac Models using Delco Equipment

## 1910 CADILLAC MODEL

Delco System No. 142

- |          |                 |
|----------|-----------------|
| No. 2004 | COIL BOX        |
| No. 1018 | IGNITION SWITCH |
| No. 5661 | IGNITION RELAY  |

## 1911 CADILLAC MODEL

Delco System No. 4411

- |          |                      |
|----------|----------------------|
| No. 5001 | DRY CELL DISTRIBUTOR |
| No. 5661 | IGNITION RELAY       |
| No. 2022 | IGNITION COIL        |
| No. 1007 | IGNITION SWITCH      |
| No. 1009 | IGNITION SWITCH      |

## 1912 CADILLAC MODEL

Delco System No. 1

- |           |                       |
|-----------|-----------------------|
| No. 1     | MOTOR GENERATOR       |
| No. 5401  | BATTERY BOX           |
| No. 5001  | DRY CELL DISTRIBUTOR  |
| No. 2022  | IGNITION COIL         |
| No. 1018  | IGNITION SWITCH       |
| No. 5661  | IGNITION RELAY        |
| No. 5049  | GENERATOR DISTRIBUTOR |
| No. 2045  | IGNITION COIL         |
| No. 10678 | RESISTANCE UNIT       |
| No. 1991  | STARTING SWITCH       |
| No. 5442  | CLUTCH MAGNET         |

## 1913 CADILLAC MODEL

Delco System No. 4

- |           |                       |
|-----------|-----------------------|
| No. 4     | MOTOR GENERATOR       |
| No. 5404  | BATTERY BOX           |
| No. 5440  | CLUTC HMAGNET         |
| No. 10686 | RESISTANCE UNIT       |
| No. 1978  | IGNITION SWITCH       |
| No. 5055  | GENERATOR DISTRIBUTOR |
| No. 2093  | IGNITION COIL         |
| No. 5059  | DRY CELL DISTRIBUTOR  |
| No. 2092  | IGNITION COIL         |
| No. 6051  | AMMETER               |
| No. 5677  | IGNITION RELAY        |
| No. 1979  | IGNITION SWITCH       |
| No. 10131 | TERMINAL BOARD        |

INDEX OF ALL CADILLAC MODELS USING DELCO EQUIPMENT

---

1914 CADILLAC MODEL

Delco System No. 27

No. 24	MOTOR GENERATOR
No. 5506	APPARATUS BOX
No. 5105	DISTRIBUTOR
No. 2104	IGNITION COIL
No. 1035	COMBINATION SWITCH
No. 1042	COMBINATION SWITCH
No. 5447	CLUTCH MAGNET
No. 5692	CIRCUIT BREAKER

51 MODEL—1915 CADILLAC

Delco System No. 69

No. 44	MOTOR GENERATOR
No. 10726	MOTOR CLUTCH
No. 2115	IGNITION COIL
No. 1045	COMBINATION SWITCH
No. 5696	CIRCUIT BREAKER
No. 5308	AUTO HORN
No. 5695	CIRCUIT BREAKER

53 MODEL—1916 CADILLAC

Delco System No. 98

No. 78	MOTOR GENERATOR
No. 5150	AUTOMATIC DISTRIBUTOR
No. 11973	MOTOR CLUTCH
No. 2115	IGNITION COIL
No. 1062	COMBINATION SWITCH
No. 1069	COMBINATION SWITCH
No. 5705	CIRCUIT BREAKER
No. 5310	AUTO HORN
No. 1061	AUTO HORN SWITCH

55 MODEL—1917 CADILLAC

Delco System No. 130

No. 98	MOTOR GENERATOR
No. 12677	MOTOR CLUTCH
No. 5150	DISTRIBUTOR
No. 2115	IGNITION COIL
No. 1077	COMBINATION SWITCH
No. 5705	CIRCUIT BREAKER
No. 5311	AUTO HORN
No. 1061	AUTO HORN SWITCH

57 MODEL—1918 CADILLAC

Delco System No. 177

No. 98	MOTOR GENERATOR
No. 12677	MOTOR CLUTCH
No. 5166	DISTRIBUTOR
No. 2115	IGNITION COIL
No. 1099	COMBINATION SWITCH
No. 5705	CIRCUIT BREAKER
No. 5312	AUTO HORN

INDEX OF ALL CADILLAC MODELS USING DELCO EQUIPMENT

---

**57 MODEL—1919 CADILLAC**

**Delco System No. 177**

- |           |                    |
|-----------|--------------------|
| No. 98    | MOTOR GENERATOR    |
| No. 12677 | MOTOR CLUTCH       |
| No. 5166  | DISTRIBUTOR        |
| No. 2115  | IGNITION COIL      |
| No. 1099  | COMBINATION SWITCH |
| No. 5742  | CIRCUIT BREAKER    |
| No. 5312  | HORN (EXTRA)       |

**59 MODEL—1920 AND 1921 CADILLAC**

**Delco System No. 291**

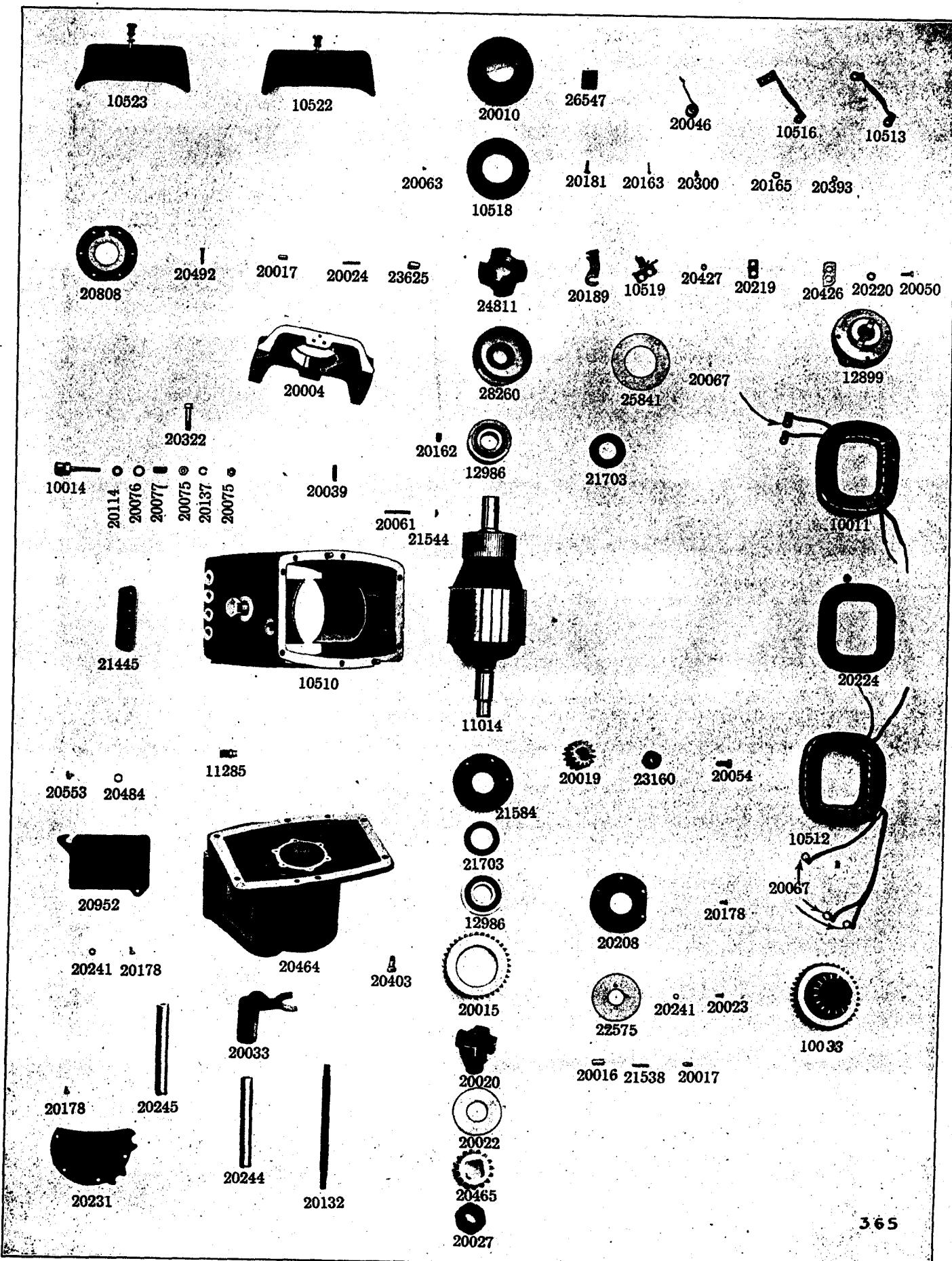
- |           |                    |
|-----------|--------------------|
| No. 162   | MOTOR GENERATOR    |
| No. 1150  | COMBINATION SWITCH |
| No. 2115  | IGNITION COIL      |
| No. 5206  | DISTRIBUTOR        |
| No. 5742  | CIRCUIT BREAKER    |
| No. 12677 | MOTOR CLUTCH       |

## Chart Showing Cadillac Models and the Delco Apparatus Used on Each Model

Cadillac Models	Year Used	Delco System	Motor Generator	Ignition Switch	Combination Switch	Ignition Coils and Boxes	Distributor	Apparatus Boxes	Ignition Relays	Circuit Breakers	Motor Clutch	Resistance Units	Clutch Magnet	Battery Box	Starting Switch	Auto Horns	Horn Switch	Terminal Boards
1910	1910	IGN 142		1018		2004			5661									
1911	1911	IGN 4411		1007*		2022	5001		5661									
1912	1912	1	1	1018		2022 2045	5001 5049		5661			10678*	5442	5401	1991			
1913	1913	4	4	1978 1979		2093 2092	5055 5059		5677			10686	5440	5404				10131
1914	1914	27	24		1035* 1042*	2104	5105	5506		5692			5447					
51	1915	69	44		1045	2115				5696 5695	10724					5308		
53	1916	98	78*		1062* 1069	2115	5150*			5705*	11973					5310	1061	
55	1917	130	98		1077	2115	5150*			5705*	12677					5311	1061	
57	1918	177	98		1099*	2115	5166			5705*	12677					5312		
57	1919	177	98		1099*	2115	5166			5742	12677					5312		
59	1920 1921	291	162		1150	2115	5206			5742	12677							

\*Refer to the note under the piece of apparatus in the catalog to determine the correct part to order.

PIECE PARTS CATALOG



No. 1 MOTOR GENERATOR

## No. 1 MOTOR GENERATOR

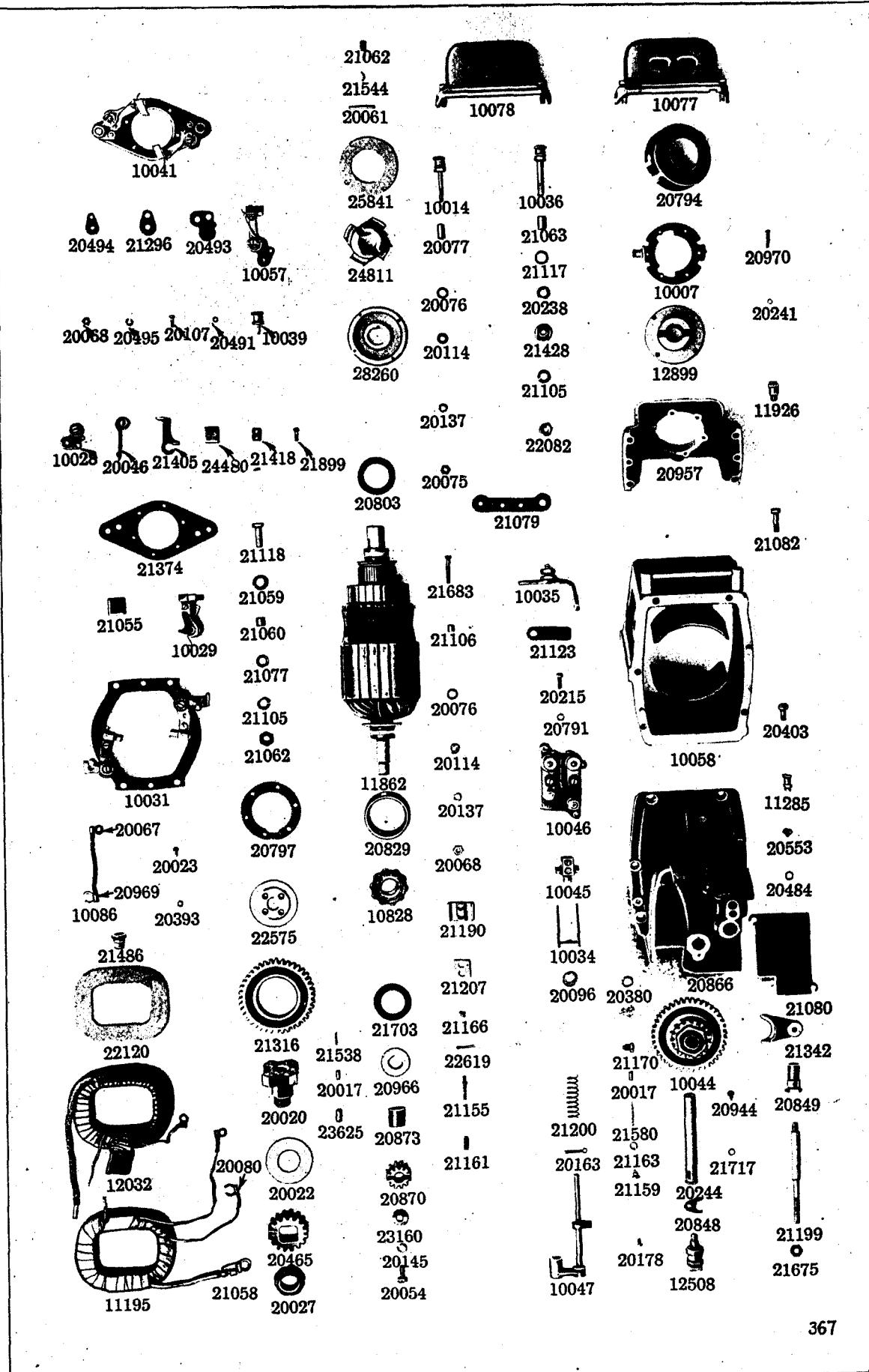
Piece Number	NAME OF PART	Quantity Required
1	<b>MOTOR GENERATOR COMPLETE</b>	1
10510	<b>Generator Frame Assembly</b> (Includes the next 2 Items)	1
20041	Pole Piece Screw (Not shown in Illustration)	2
20039	Dowel Pin for Pole Piece	4
10011	<b>Upper Field Coil Assembly Complete</b> (Includes the next Item)	1
20067	Terminal Clip for Spring Terminal Assembly 10014	2
10512	<b>Lower Field Coil Assembly Complete</b> (Includes the next Item)	1
20067	Terminal Clip for Spring Terminal Assembly 10014	3
10513	<b>Brush Connector Lead Assembly Complete</b> (Includes the next 2 Items)	1
22517	Sleeving for Lead Assembly 10513 (Not shown in Illustration)	1
20067	Clip for Lead Assembly 10513 (Not shown in Illustration)	2
10014	<b>Spring Terminal Assembly for connecting Generator</b>	4
21445	Insulator for Spring Terminal Assembly 10014 (Outer)	1
20077	Insulating Bushing for Spring Terminal Assembly 10014	4
20076	Insulating Washer for Spring Terminal Assembly 10014 (Inner)	4
20114	Plain Washer for Spring Terminal Assembly 10014	4
20075	Nut for retaining Spring Terminal Assembly 10014	8
20137	Lock Washer for Nut 20075	4
20224	Shield for Field Coil Assemblies 10011 and 10512	2
20004	Frame for Driving Clutch End of Generator	1
12986	<b>Ball Bearing Assembly for Frame 20004</b>	1
21703	Oil Retainer (Felt) (For Ball Bearing Assembly 12986 (Inner))	1
20208	Retainer for Ball Bearing Assembly 12986 (Inner)	1
20492	Screw for retaining Retainer 20208 and Bearing Retainer Assembly 10518	6
10518	<b>Bearing Retainer Assembly for Ball Bearing Assembly 12986 (Outer)</b>	1
20062	Stud for Retainer Assembly 10518 (Not shown in Illustration)	1
10519	<b>Generator Brush Bracket Assembly Complete</b> (Includes the next 2 Items)	2
20187	Stud for holding Generator Brush Arm Assembly 13516 (Not shown in Illustration)	1
20188	Stop Stud for Generator Brush Arm Assembly 13516 (Not shown in Illustration)	1
20050	Screw for attaching Generator Brush Bracket Assembly 10519	4
20220	Plain Washer for Screw 20054	4
20219	Insulator for Generator Brush Bracket Assembly 10519 (Upper)	2
20426	Insulator for Generator Brush Bracket Assembly 10519 (Lower)	2
20427	Insulating Bushing for Screw 20050	4
20189	Generator Brush Arm	2
26547	Brush for Brush Arm 20189	1
20181	Screw for attaching Brush 26547	1
21418	Lock Plate for Screw 20181 (Not shown in Illustration)	1
10516	<b>Generator Brush Lead Assembly Complete</b> (Includes the next 3 Items)	2
22517	Sleeving for Lead Assembly 10516 (Not shown in Illustration)	1
20067	Clip for Spring Terminal End of Lead Assembly 10516 (Not shown in Illustration)	1
20180	Clip for Brush Arm End of Lead Assembly 10516 (Not shown in Illustration)	1
11014	<b>Armature Assembly for Motor Generator</b>	1
20046	Spring for Generator Brush Arm 20189	2
20163	Cotter Pin for retaining Generator Brush Arm 20189	1
20065	Screw for retaining Cover 20010 (Not shown in Illustration)	1
20010	Cover for Generator Clutch Assembly 12899	1
20162	Clamp Screw for retaining Clutch Assembly 12899 (Not shown in Illustration)	1
21544	Key for Generator Clutch Assembly 12899	1
13671	<b>Generator Clutch Assembly Complete (Not shown in Illustrated)</b> (Includes the next 8 Items)	1
22262	Cam for Generator Clutch Assembly 13671 (Not shown in Illustration)	1
28260	Shell for Generator Clutch Assembly 13671	1
23625	Roll for Cam 22262	4
20024	Spring for Plunger 20017	4
20017	Plunger for Roll 24625	1
25841	Retainer for Roll 23625	4
20063	Screw for retaining Retainer 25841	1
20061	Pin for retaining Clutch	1
20464	Housing for Pinion End for Generator	1
21584	Retainer for Ball Bearing Assembly 12986 (Outer) (Pinion End)	6
20178	Screw for retaining Retainer 21584	6
20241	Lock Washer for Screw 20178	1
11285	Oiler Assembly for Housing 20464	1
10522	<b>Cover Assembly Complete (Upper)</b> (Includes the next 4 Items)	1
10521	Screw Assembly (Not shown in Illustration)	1
20056	Nut for Screw Assembly 10521 Not shown in Illustration)	1

**PIECE PARTS CATALOG**

**No. 1 MOTOR GENERATOR (Continued)**

Piece Number	NAME OF PART	Quantity Required
20211	Lock Washer for Nut 20056 (Not shown in Illustration) . . . . .	1
20059	Pin for Nut 20056 (Not shown in Illustration) . . . . .	1
10523	<b>Cover Assembly Complete (Lower)</b> . . . . . (Includes the next 4 Items)	1
10521	Screw Assembly (Not shown in Illustration) . . . . .	1
20056	Nut for Screw Assembly 10521 (Not shown in Illustration) . . . . .	1
20211	Lock Washer for Nut 20056 (Not shown in Illustration) . . . . .	1
20059	Pin for Nut 20056 (Not shown in Illustration) . . . . .	1
20484	Spring Washer for Screw 20553 . . . . .	2
20553	Screw for attaching Cover 20952 . . . . .	2
20952	Cover for End Housing Assembly 10520 (Top) . . . . .	1
20178	Screw for attaching Cover 20231 . . . . .	4
20241	Lock Washer for Screw 20178 . . . . .	4
20231	Cover for End Housing Assembly 10520 (End) . . . . .	1
20245	Shaft for Shifting Yoke 20038 . . . . .	1
20244	Shaft for Motor Clutch . . . . .	1
20132	Shifting Rod for Motor Clutch . . . . .	1
20033	Shifting Yoke for Shifting Rod 20132 . . . . .	1
23160	Clamp Washer for Motor Pinion 20019 . . . . .	1
20054	Clamp Screw for retaining Motor Pinion 20019 . . . . .	1
20145	Lock Washer for Clamp Screw 20054 (Not shown in Illustration) . . . . .	1
20019	Motor Pinion for Armature Shaft . . . . .	1
20403	Screw for attaching End Housing 20464 . . . . .	6
20775	Sleeve for Armature Shaft (Pinion Shaft) (Not shown in Illustration) . . . . .	1
12986	Ball Bearing Assembly for Pinion End of Armature Shaft . . . . .	1
21703	Oil Retainer (Felt) for Ball Bearing Assembly 12986 . . . . .	2
21584	Retainer for Ball Bearing Assembly (Outer) (Pinion End) . . . . .	1
20322	Screw for attaching End Frame 20004 . . . . .	4
20042	Dowel Pin for End Frame 20004 (Not shown in Illustration) . . . . .	2
20039	Dowel Pin for End Housing 20464 . . . . .	2
20178	Screw for attaching Retainer 21584 . . . . .	6
20241	Lock Washer for Screw 20178 . . . . .	6
20300	Screw for attaching Generator Brush Lead Assembly 10516 to Generator Brush Bracket . . . . .	4
20165	Plain Washer for Screw 20300 . . . . .	4
20393	Lock Washer for Screw 20300 . . . . .	4
12809	<b>Motor Clutch Assembly Complete (Old Style before Cadillac No. 65800)</b> . . . . . (Includes the next 11 Items)	1
20232	Pinion for Motor Clutch Assembly 12809 (Not shown in Illustration) . . . . .	1
20020	Cam for Motor Clutch Assembly 12809 . . . . .	1
20027	Clamp Nut for Motor Clutch Assembly 12809 . . . . .	1
20015	Gear for Motor Clutch Assembly 12809 . . . . .	1
20022	Retainer for Roll 23625 (Inner) . . . . .	1
22575	Retainer for Roll 23625 (Outer) . . . . .	1
20017	Plunger for Roll 23625 . . . . .	4
21538	Spring for Plunger 20017 . . . . .	4
23625	Roll for Cam 20020 . . . . .	4
20023	Screw for Retainer 20022 and 22575 . . . . .	4
20393	Lock Washer for Screw 20023 . . . . .	4
10033	<b>Motor Clutch Assembly Complete (After Cadillac Motor No. 65800)</b> . . . . . (Includes the next 11 Items)	1
20465	Pinion for Motor Clutch Assembly 10033 . . . . .	1
20020	Cam for Motor Clutch Assembly 10033 . . . . .	1
20027	Clamp Nut for Motor Clutch Assembly 10033 . . . . .	1
20015	Gear for Motor Clutch Assembly 10033 . . . . .	1
20022	Retainer for Roll 23625 (Inner) . . . . .	1
22575	Retainer for Roll 23625 (Outer) . . . . .	1
21538	Spring for Plunger 20017 . . . . .	4
20017	Plunger for Roll 23625 . . . . .	4
23625	Roll for Cam 20020 . . . . .	4
20023	Screw for Retainers 20022 and 22575 . . . . .	4
20241	Lock Washer for Screw 20023 . . . . .	4

## PIECE PARTS CATALOG



No. 4 MOTOR GENERATOR

## No. 4 MOTOR GENERATOR

Piece Number	NAME OF PART	Quantity Required
4	<b>MOTOR GENERATOR</b>	
10058	Generator Frame Assembly (Includes the next 2 Items)	1
20041	Screw for Pole Piece (Not shown in Illustration)	2
20039	Dowel Pin for Pole Piece (Not shown in Illustration)	4
10079	Field Coil Assembly Complete (Includes the next 10 Items)	1
21486	Insulating Bushing for Series Lead	1
20080	Terminal Clip for Spring Terminal Assembly 10036	1
20067	Terminal Clip for Spring Terminal Assemblies 10014 and 10037	2
21058	Terminal Clip for Spring Terminal Assembly 10080	1
21681	Terminal Clip for attaching Series Lead to Switch Cover Assembly 10046	1
22285	Binding Strip for Field Coil Assembly 10079 (Not shown in Illustration)	2
22284	Insulating Binding Strip for Field Coil Assembly 10079 (Outer) (Not shown in Illustration)	2
22283	Insulating Binding Strip for Field Coil Assembly 10079 (Inner) (Not shown in Illustration)	2
10029	Motor Brush Arm Assembly Complete (Includes the next 9 Items)	2
21051	Arm for Motor Brush Arm Assembly 10029 (Right Hand) (Not shown in Illustration)	1
21052	Arm for Motor Brush Arm Assembly 10029 (Left Hand) (Not shown in Illustration)	1
20970	Bolt for connecting Arm 21051 and 21052 (Not shown in Illustration)	1
21055	Brush for Motor Brush Arm Assembly 10029	1
21068	Hub for Arms 21051 and 21052 (Not shown in Illustration)	1
20495	Lock Washer for Nut 20068	1
20068	Nut for Bolt 20970	1
21124	Spring for Motor Brush Arm Assembly 10029 (Outer) (Not shown in Illustration)	1
21258	Stud for Arms 21051 and 21052 (Not shown in Illustration)	1
10028	Motor Brush Connector Assembly Complete	2
21413	Spring for Motor Brush Arm Assembly 10029 (Inner)	2
21077	Plain Washer for Screw 21118	2
20791	Lock Washer for Screw 21118	2
21118	Screw for retaining Motor Brush Arm Assembly 10029	2
21057	Plate for mounting Motor Brush Arm Assembly 10029 (Not shown in Illustration)	1
21407	Stud for Plate 21057 for holding Motor Brush Arm Assembly 10029 (Not shown in Illustration)	2
20125	Insulating Washer for Stud 21407 (Outer) (Not shown in Illustration)	2
20076	Insulating Washer for Stud 21407 (Inner) (Not shown in Illustration)	2
20114	Plain Washer for Nut 20075 (Not shown in Illustration)	2
20137	Lock Washer for Nut 20075 (Not shown in Illustration)	2
20075	Nut for retaining Stud 21407 (Not shown in Illustration)	2
21078	Insulating Bushing for Stud 21407 (Not shown in Illustration)	2
21428	Plain Washer for retaining Spring 21413 (Not shown in Illustration)	2
10014	Spring Terminal Assembly for connecting Generator (No. 1-2-3 Terminal from Left Side of Generator)	3
10036	Spring Terminal Assembly for connecting Generator (No. 4 Terminal from Left Side of Generator)	1
10035	Motor Terminal Assembly Complete (Includes the next 2 Items)	1
21087	Strap for connecting Motor Terminal to Spring Terminal Assembly 10036 (Not shown in Illustration)	1
21372	Stud for Strap 21987 (Not shown in Illustration)	1
20079	Washer for Stud 21062	1
21062	Nut for Stud 21372	1
21105	Lock Washer for Nut 21062	1
21106	Insulating Bushing for Screw 21683	1
20077	Insulating Bushing for Spring Terminal Assembly 10014	3
21063	Insulating Bushing for Spring Terminal Assembly 10036	1
21059	Insulating Collar for Screw 21073	1
21079	Insulator for Spring Terminal Assemblies 10014 and 10036	1
21073	Screw for retaining Brush Terminal (Not shown in Illustration)	1
21123	Insulator for Strap 21087	1
20075	Nut for Spring Terminal Assemblies 10014 and 10036 and Screw 21683	7
20039	Dowel Pin for locating Pole Piece (Not shown in Illustration)	2
21683	Screw for retaining Strap 21087	1
21060	Insulating Washer for Screw 21073 (Not shown in Illustration)	1
22120	Shield for Field Coil Assembly 10079	2
20114	Plain Washer for Screw 21683 and Spring Terminal Assembly 10014	4
20137	Lock Washer for Screw 21683 and Spring Terminal Assembly 10014	4
20076	Insulating Washer for Screw 21683 and Spring Terminal Assembly 10014	4
21117	Insulating Washer for Spring Terminal Assembly 10036	2
20238	Plain Washer for Spring Terminal Assembly 10036	2

## No. 4 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
22082	Clamp Nut for Spring Terminal Assembly 10036	1
11862	Armature Assembly for Motor Generator	1
21405	Generator Brush Arm	1
24480	Brush for Arm 21405	2
21418	Plate for Arm 21405	2
21899	Screw for attaching Brush 24480	2
22826	Lock Plate for Screw 21899 (Not shown in Illustration)	1
10038	Generator Brush Holder Plate Assembly Complete (Not shown in Illustration) (Includes the next Item)	2
12422	Stud for Plate Assembly 10038 (Not shown in Illustration)	1
10039	Spring Terminal Assembly for Generator Brush Holder Assembly 10041	2
21374	Holder for Generator Brush Holder Plate Assembly 10038	2
21296	Insulator for Plate 21209	2
23623	Insulator for Holder 21374 (Not shown in Illustration)	2
20494	Plate for Generator Brush Holder Assembly 10041 (Outer)	2
20495	Lock Washer for Nut 20068	4
20068	Nut for retaining Generator Brush Spring Terminal Assembly 10039 and Screw 20107	4
20107	Screw for retaining Plate 20494	2
20491	Insulating Bushing for Generator Brush Spring Terminal Assembly 10039 and Screw 20107	4
10007	Bearing Retainer Assembly Complete (Includes the next 5 Items)	1
10201	Bearing Retainer Assembly (Not shown in Illustration) (Includes the next Item)	1
20062	Stud for Retainer Assembly 10201 (Not shown in Illustration)	1
20802	Spring Nut for Bearing Retainer Assembly 10007 (Not shown in Illustration)	1
20801	Screw for Spring Nut 20802 (Not shown in Illustration)	1
20307	Spring for Screw 20801 (Not shown in Illustration)	1
20957	End Frame for Generator	1
12989	Ball Bearing Assembly for Armature Shaft (Not shown in Illustration)	1
22736	Shim for Ball Bearing Assembly 12989 (Not shown in Illustration)	2
20970	Screw for retaining Bearing Retainer Assembly 10007	6
20241	Lock Washer for Screw 20970	6
21704	Pipe Plug for Oil Hole in End Frame 20957 (Not shown in Illustration)	1
12899	Generator Clutch Assembly Complete (Includes the next 8 Items)	1
24811	Cam for Generator Clutch Assembly 12899	1
28260	Shell for Generator Clutch Assembly 12899	1
23625	Roll for Cam 24811	4
20024	Spring for Plunger 20017 (Not shown in Illustration)	4
20017	Plunger for Roll 23625	4
25841	Retainer for Roll 23625	1
20063	Screw for retaining Retainer 25841 (Not shown in Illustration)	4
20061	Pin for Shell 28260	1
20794	Cover for Generator Clutch Assembly 12899	1
20966	Collar for retaining Ball Bearing Assembly 12989 (Pinion End of Armature Shaft)	1
21544	Key for Generator Clutch Assembly 12899	1
20163	Cotter Pin for Motor Brush Arm Assembly 10029	2
20061	Pin for Set Screw 20162	1
20870	Motor Pinion for Armature Shaft	1
20808	Retainer for Ball Bearing Assembly 12989 (Commutator End) (Inner) (Not shown in Illustration)	1
21703	Oil Retainer (Felt) for Ball Bearing Assembly 12989 (Outer, Both Ends of Armature Shaft)	2
20803	Oil Retainer (Felt) for Ball Bearing Assembly 12989 (Inner, Both Ends of Armature Shaft)	2
20054	Screw for retaining Motor Pinion 20870	1
20162	Set Screw for Commutator End of Armature Shaft (Not shown in Illustration)	1
20873	Sleeve for retaining Collar 20966 (Pinion End of Armature Shaft)	2
20046	Spring for Motor Brush Arm Assembly 10029	1
23160	Clamp Washer for Screw 20054 (Pinion End of Armature Shaft)	1
20725	Lock Washer for Screw 20054	1
20798	Washer for retaining Ball Bearing Assembly 12989 (Pinion End of Armature Shaft, Inner) (Not shown in Illustration)	1
22735	Washer (Shim) for Armature Shaft (Not shown in Illustration)	1
10034	Switch Latch Arm Assembly for Switch Contact Block Assembly 10045	1
22620	Block for Operating Switch Cover Assembly 10046 (Not shown in Illustration)	1
21173	Roll for Block 22620 (Not shown in Illustration)	2
21174	Screw for retaining Roll 21173 (Not shown in Illustration)	2
10044	Motor Clutch Assembly Complete (Includes the next 11 Items)	1
20465	Pinion for Motor Clutch Assembly 10044	1
20020	Cam for Motor Clutch Assembly 10044	1
20027	Clamp Nut for Motor Clutch Assembly 10044	1
21316	Gear for Motor Clutch Assembly 10044	1
20022	Retainer for Roll 23625 (Inner)	1
22575	Retainer for Roll 23625 (Outer)	1
21538	Spring for Plunger 20017	4

Parts not listed in this catalog will not be sold separately

Revised to January 1, 1922

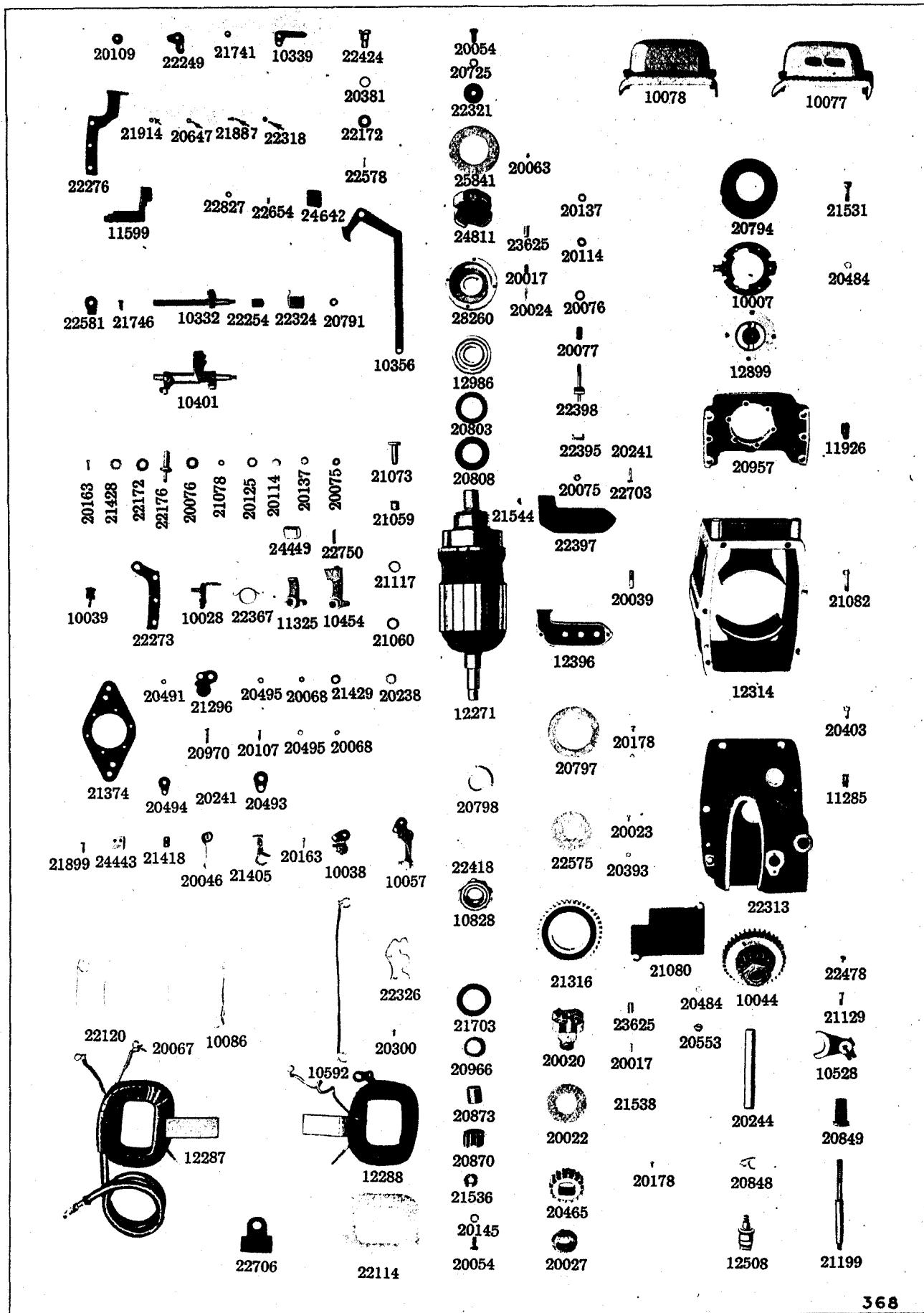
## No. 4 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
20017	Plunger for Roll 23625 . . . . .	4
23625	Roll for Cam 20020 . . . . .	4
20023	Screw for Retainers 22575 and 20022 . . . . .	4
20393	Lock Washer for Screw 20023 . . . . .	4
10046	Switch Cover Assembly Complete . . . . . (Includes the next 29 Items)	1
10049	Generator Switch Common Conductor Assembly (Large) . . . . .	1
10050	Switch Conductor Assembly (Generator) (Small) . . . . .	1
10051	Switch Conductor Assembly (Motor) (Medium) . . . . .	1
10040	Insulator Assembly for Terminal Plate Assembly 10052 and Plate 21188 . . . . . (Includes the next 3 Items)	1
21368	Insulator for Insulator Assembly 10040 . . . . .	1
21176	Separator for Insulator 21368 . . . . .	1
22009	Screw for Insulator Assembly 10040 . . . . .	2
10158	Spring Terminal Assembly for connecting Switch Cover Assembly 10046 . . . . .	1
10052	Switch Terminal Plate Assembly for Top Cover 21151 . . . . . (Includes the next 3 Items)	1
10162	Spacing Terminal Assembly for Switch Terminal Plate Assembly 10052 . . . . .	1
21189	Plate for Switch Terminal Plate Assembly . . . . .	1
20137	Lock Washer for Spring Terminal Assembly 10162 . . . . .	1
21106	Insulating Bushing for Screw 21530 . . . . .	1
21158	Insulating Bushing for Spring Terminal Assembly 10158 and Switch Conductor Assemblies 10040 and 10051 . . . . .	3
21156	Insulating Bushing for Screw 21169 . . . . .	1
21150	Cover for Switch Cover Assembly 10046 . . . . .	1
20347	Nut for Rod 21183 . . . . .	1
21456	Nut for Switch Conductor Assembly 10051 (Thin) . . . . .	1
21062	Nut for Switch Conductor Assemblies 10051 and 10049 . . . . .	2
21455	Insulating Plate for Switch Conductor Assemblies 10051 and 10049 (Inner) . . . . .	1
21188	Clamp Plate for Conductor Assembly 10051 and Screw 21169 . . . . .	2
21183	Rod for Switch Conductor Assemblies 10050 and 10051 and Generator Switch Common Conductor Assembly 10049 . . . . .	2
20076	Insulating Washer for Screw 21530 and 21169 . . . . .	2
20114	Plain Washer for Screws 21530 and 21169 . . . . .	2
20791	Lock Washer for Screws 21530 and 21169 . . . . .	2
21165	Insulating Washer for Spring Terminal Assembly 10158 (Outer) . . . . .	1
20146	Lock Washer for Spring Terminal Assembly 10158 and Nut 21062 . . . . .	3
20393	Lock Washer for Nut 20347 . . . . .	2
21454	Insulating Washer for Spring Terminal Assembly 10158 (Inner) . . . . .	1
21168	Plain Washer for Spring Terminal Assembly 10158 . . . . .	1
21169	Screw for retaining Clamp Plate 21188 . . . . .	1
21530	Screw for retaining Switch Terminal Plate Assembly 10052 . . . . .	1
21895	Insulating Bushing for Switch Conductor Assemblies 10050 and 10051 and Generator Switch Common Conductor Assembly 10049 . . . . .	4
21896	Insulating Bushing between Switch Conductor Assemblies 10051 and 10050 . . . . .	1
21190	Switch Contact Plate for Switch Conductor Assemblies 10050 and 10051 and Generator Switch Common Conductor Assembly 10049 . . . . .	1
20866	End Housing for Generator . . . . .	1
20849	Bushing in End Housing 20866 for Shift Rod 21199 . . . . .	1
20944	Screw for connecting Shift Rod 21199 . . . . .	1
21717	Lock Washer for Screw 20944 . . . . .	1
12989	Ball Bearing Assembly for Armature Shaft (Not shown in Illustration) . . . . .	1
22736	Shim for Ball Bearing Assembly 12989 (Not shown in Illustration) . . . . .	2
20178	Screw for retaining Retainer 20797 . . . . .	6
20797	Retainer for Ball Bearing Assembly 12989 . . . . .	1
20241	Lock Washer for Screw 20178 . . . . .	6
21704	Pipe Plug for Oil Hole in End Housing 20866 (Not shown in Illustration) . . . . .	1
10047	Switch Rod Operating Assembly Complete . . . . . (Includes the next Items)	1
21162	Pin for retaining Arms to Rod (Not shown in Illustration) . . . . .	2
20244	Shaft for Motor Clutch Assembly 10044 . . . . .	1
21544	Key for Shaft 20244 . . . . .	1
21704	Pipe Plug for Shaft 20244 (Not shown in Illustration) . . . . .	1
21166	Insulating Bushing for Switch Contact Plate 21190 . . . . .	2
20848	Clip for Shaft 20244 . . . . .	1
21080	Cover for End Housing Rod Assembly 10054 (Bottom) . . . . .	1
20096	Cup for Spring 21200 . . . . .	1
21207	Insulator for Switch Contact Plate 21190 . . . . .	1
21675	Nut for Shift Rod 21199 . . . . .	1
21162	Pin for Arm 21178 (Not shown in Illustration) . . . . .	1
21201	Pin for locating Switch Cover Assembly 10046 (Not shown in Illustration) . . . . .	2
20163	Cotter Pin for retaining Cup 20096 . . . . .	1
20017	Plunger for Switch Latch Arm Assembly 10034 . . . . .	1
21199	Shift Rod for Motor Clutch Assembly 10044 . . . . .	1

**PIECE PARTS CATALOG**

**No. 4 MOTOR GENERATOR (Continued)**

Piece Number	NAME OF PART	Quantity Required
21147	Screw for attaching Switch Cover Assembly 10046 (Outer) (Not shown in Illustration)	1
20215	Screw for attaching Switch Cover Assembly 10046 (Inner)	1
22618	Screw for Switch Contact Plate 21190 (Not shown in Illustration)	2
22619	Cotter Pin for Screw	1
21159	Screw for retaining Plunger 20017	1
21170	Screw for attaching Switch Latch Arm Assembly 10034	2
20178	Screw for attaching Clip 20848	1
20553	Screw for attaching Cover 21080	2
21161	Spring for Switch Contact Plate 21190	2
21200	Spring for Switch Operating Rod Assembly 10047	1
21580	Spring for Plunger 20017	1
20791	Lock Washer for Screws 21147 and 20215	2
20380	Lock Washer for Screw 21170	2
21105	Lock Washer for Nut 21675	1
20484	Spring Washer for Screw 20553	2
20142	Lock Washer for Screw 20178 (Not shown in Illustration)	1
21163	Lock Washer for Screw 21159 (Not shown in Illustration)	1
21342	Yoke for Shift Rod 21199	1
10077	<b>Lower Generator End Cover Assembly Complete</b> (Includes the next 5 Items)	1
20737	Plate for Screen 20736 (Not shown in Illustration)	1
20736	Screen for Cover Assembly (Not shown in Illustration)	1
21673	Rivet retaining Plate 20737 and Screen 20736 (Not shown in Illustration)	1
21531	Screw for attaching Lower Generator End Cover Assembly 10077 (Not shown in Illustration)	2
20484	Spring Washer for Screw 21531 (Not shown in Illustration)	2
10078	<b>Upper Generator End Cover Assembly Complete</b> (Includes the next 2 Items)	1
21531	Screw for attaching Upper Generator Cover Assembly 10078 (Not shown in Illustration)	2
20484	Spring Washer for Screw 21531 (Not shown in Illustration)	2
20403	Screw for attaching Generator End Housing	5
10086	<b>Brush Connector Lead Assembly</b> (Includes the next 3 Items)	1
22386	Clip for Brush End of Lead Assembly 10086 (Not shown in Illustration)	1
20067	Clip for Field Coil End of Lead Assembly 10086	1
22451	Insulator for Lead Assembly 10086 (Not shown in Illustration)	1
21082	Screw for attaching Generator End Frame	4
11285	Oiler Assembly for Ball Bearing Assembly 12989 (Commutator End)	1
11926	Oiler Assembly for Ball Bearing Assembly 12989 (Pinion End)	1
12508	Grease Cup Assembly in End Housing 20866 for Motor Clutch 10044	1
21370	Terminal Clip for connecting Series Lead to Switch Cover Assembly 10046 (Not shown in Illustration)	1
21699	Terminal Clip for Motor Terminal (Not shown in Illustration)	1
20969	Terminal Clip for Spring Terminal Assembly 10014, 10080, 10037, 10036 and 10158 (Not shown in Illustration)	5
21315	Terminal Clip for connecting Switch Conductor Assembly 10051 and Generator Switch Common Conductor Assembly 10049 (Not shown in Illustration)	2



No. 24 MOTOR GENERATOR

## No. 24 MOTOR GENERATOR

Piece Number	NAME OF PART	Quantity Required
24	<b>MOTOR GENERATOR COMPLETE.....</b>	1
12314	<b>Generator Frame Assembly.....</b> (Includes the next 2 Items)	1
20041	Screw for Pole Piece (Not shown in Illustration) .....	2
20039	Dowel Pin for Pole Piece (Not shown in Illustration) .....	4
10384	<b>Field Coil Assembly Complete (Not shown in Illustration).....</b> (Includes the next 6 Items)	1
22289	Terminal Clip for Series Lead (Not shown in Illustration) .....	2
20300	Screw for Terminal Clip 22289 (Not shown in Illustration) .....	2
22283	Insulating Strip for Field Coil Assembly 10384 (Inner) (Not shown in Illustration) .....	2
22284	Insulating Strip for Field Coil Assembly 10384 (Outer) (Not shown in Illustration) .....	2
22285	Binding Strip for Field Coil Assembly.....	2
20067	Terminal Clip for Terminal Stud 22398.....	3
10356	<b>Brush Switch Link and Lever Assembly Complete .....</b> (Includes the next 3 Items)	1
22240	Link for connecting Shift Rod 21199 (Not shown in Illustration) .....	1
14253	<b>Lever Assembly (Not shown in Illustration).....</b>	1
12396	<b>Terminal Block Assembly for Motor Generator .....</b>	1
22273	Motor Brush Stud Plate.....	1
22176	Stud for holding Lower Motor Brush Arm .....	1
10028	<b>Motor Brush Connector Assembly Complete .....</b>	1
20114	Plain Washer for Stud 22176 .....	1
21078	Insulating Washer for Stud 22176 .....	1
20076	Insulating Wsher for Stud 22176 (Inner) .....	1
20125	Insulating Washer for Stud 22176 (Outer) .....	1
20137	Lock Washer for Nut 20075 .....	1
20075	Nut for attaching Stud 22176 .....	1
10332	<b>Brush Arm Shaft Assembly.....</b> (Includes the next 2 Items)	1
22256	Spring Stud for Arm Shaft Assembly 10332 (Not shown in Illustration) .....	1
21162	Taper Pin for attaching Arm to Shaft (Not shown in Illustration) .....	1
11599	<b>Motor Brush Switch Arm Assembly.....</b> (Includes the next 4 Items)	1
22256	Spring Stud for Arm Assembly 11599 (Not shown in Illustration) .....	1
21173	Roll for Stud 22243 .....	1
22243	Stud for attaching Roll 21173 to Arm Assembly 11599 (Not shown in Illustration) .....	1
22247	Contact for Motor Brush Switch Arm Assembly 11599 (Not shown in Illustration) .....	1
24642	Brush for Motor Brush Switch Arm Assembly 11599 .....	2
22654	Screw for attaching Brush 24642 .....	1
22827	Lock Plate for Screw 22654 .....	1
22581	Collar for Shaft 22250 .....	1
21746	Screw for retaining Collar 22581 .....	1
22254	Sleeve for Shaft 22250 .....	1
22324	Spring for Brush Arm Shaft Assembly 10332 .....	1
22424	Screw for attaching Brush Switch Link and Lever Assembly 10356 .....	1
20381	Lock Washer for Screw 22424 .....	1
22578	Cotter Pin for Screw 22424 .....	3
22398	Terminal Stud for connecting Motor Generator .....	9
20075	Nut for Terminal Stud 22398 .....	3
20077	Insulating Bushing for Terminal Stud 22398 .....	3
22395	Clip for Terminal Stud 22398 .....	3
20076	Insulating Washer for Nut 20075 .....	3
20114	Plain Washer for Nut 20075 .....	6
20137	Lock Washer for Nut 20075 .....	1
21073	Screw for attaching Field Coil Assembly 10384 (Lower) .....	1
21059	Collar for Screw 21073 .....	1
21060	Insulating Bushing for Screw 21073 .....	1
21117	Insulating Washer for Screw 21073 .....	1
20238	Plain Washer for Screw 21073 .....	1
22114	Insulator for Field Coil Assembly 10384 (Lower) .....	1
22120	Insulator for Field Coil Assembly 10384 (Upper) .....	1
20065	Screw for Shaft 22250 (Not shown in Illustration) .....	1
20345	Lock Washer for Screw 20065 .....	1
22172	Plain Washer for under Cotter Pin 22578 .....	1
10086	<b>Brush Connector Lead Assembly Complete .....</b> (Includes the next 3 Items)	1
22386	Clip for Brush End for Lead Assembly 10086 (Not shown in Illustration) .....	1
20067	Clip for Brush Plate End of Lead Assembly 10086 (Not shown in Illustration) .....	1
22451	Insulator for Lead Assembly 10086 (Not shown in Illustration) .....	1
11325	<b>Lower Motor Brush Arm Assembly .....</b> (Includes the next Item)	1
22084	Spring Stud for Brush Arm Assembly 11325 (Not shown in Illustration) .....	1
24449	Brush for Lower Motor Brush Arm Assembly 11325 .....	2
22750	Screw for attaching Brush 24449 .....	1
22827	Lock Plate for Screw 22750 .....	1

Parts not listed in this catalog will not be sold separately

Revised to January 1, 1922

**PIECE PARTS CATALOG**

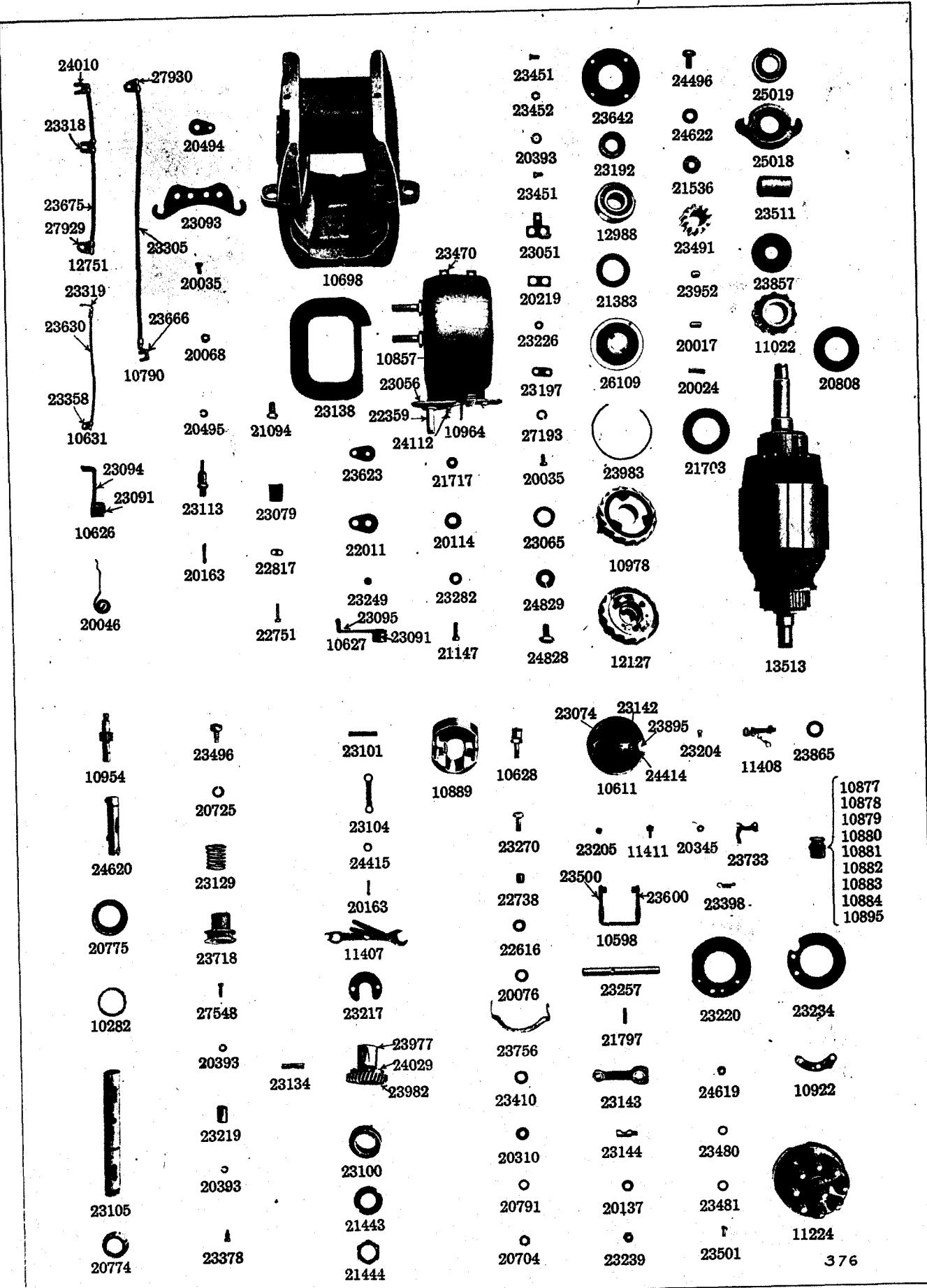
**No. 24 MOTOR GENERATOR (Continued)**

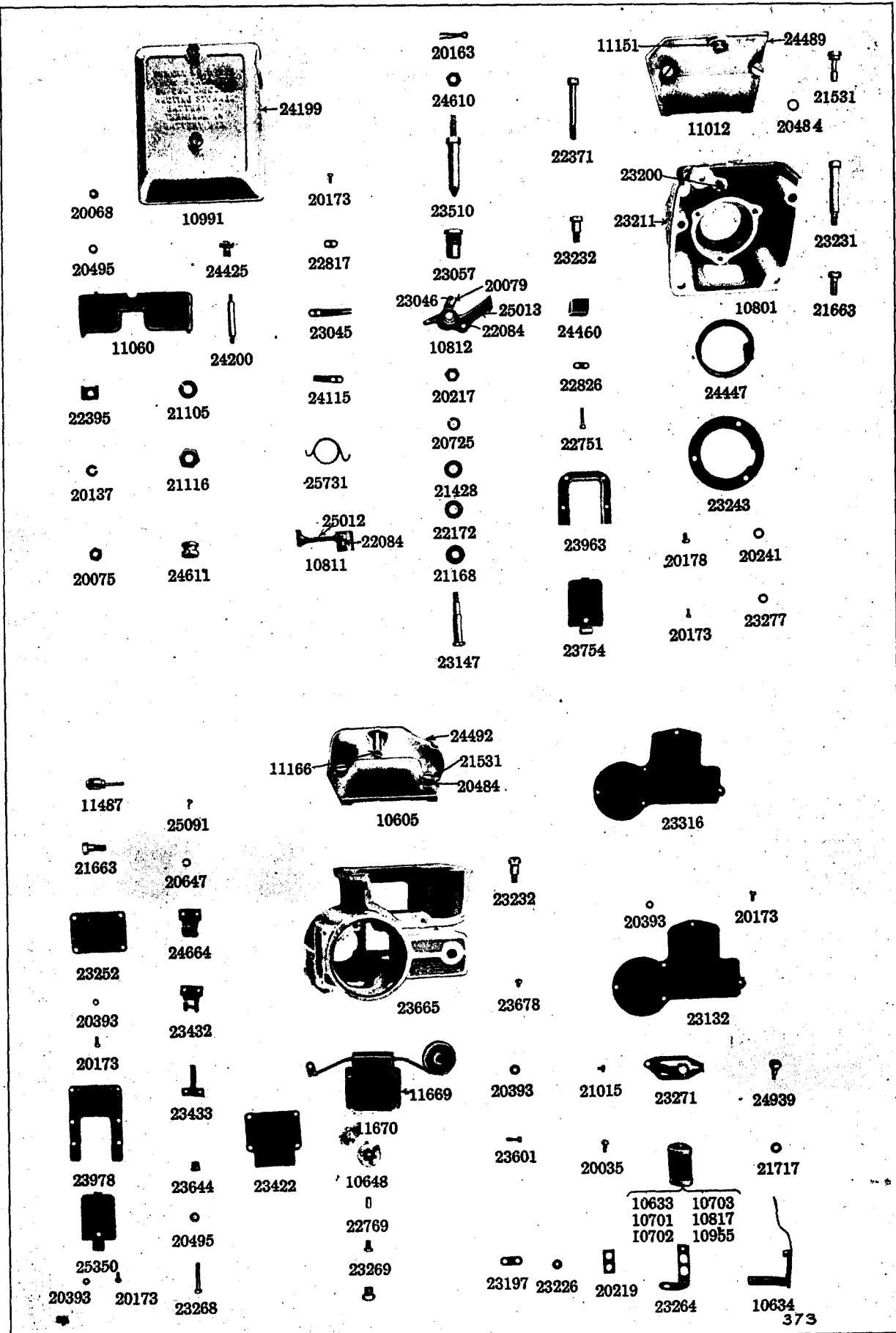
Piece Number	NAME OF PART	Quantity Required
22542	Stud for End of Shaft 22250 (Not shown in Illustration).....	1
20791	Lock Washer for Stud 22542.....	1
21428	Plain Washer for retaining Lower Motor Brush Arm Assembly 11325.....	1
22570	Wedge for Field Coil Assembly 10384 (Not shown in Illustration).....	2
22367	Spring for Lower Motor Brush Arm Assembly 11325.....	1
22172	Spring Washer under Cotter Pin 20163.....	1
20163	Cotter Pin retaining Plain Washer 21428.....	1
20039	Dowel Pin for locating Pole Piece.....	1
12271	Armature Assembly for Motor Generator.....	1
10038	Generator Brush Holder Plate Assembly Complete .....	2
	(Includes the next Item)	
21422	Stud for Plate Assembly 10038 (Not shown in Illustration).....	1
10039	Generator Brush Spring Terminal Assembly for Generator Brush Holder Assembly 10038 .....	2
	(Includes the next Item)	
21374	Holder for Generator Brush Holder Plate Assembly 10038.....	1
21296	Insulator for Plate 21209.....	2
23623	Insulator for Holder 21374 (Not shown in Illustration).....	2
20494	Plate for Generator Brush Holder Assembly 10038 (Outer).....	2
20495	Lock Washer for Nut 20068.....	4
20068	Nut for retaining Generator Brush Spring Terminal Assembly 10039 and Screw 20107 .....	4
20107	Screw for retaining Plate 20494.....	2
20491	Insulating Bushing for Generator Brush Spring Terminal Assembly 10039 Screw 20107 .....	4
10007	Bearing Retainer Assembly Complete for Ball Bearing Assembly 12986.....	1
	(Includes the next 5 Items)	
10201	Bearing Retainer Assembly (Not shown in Illustration) .....	1
20062	Stud for Retainer Assembly 10201 (Not shown in Illustration).....	1
20802	Spring Nut for Bearing Retainer Assembly 10007 (Not shown in Illustration).....	1
20801	Screw for Spring Nut 20802 (Not shown in Illustration) .....	1
20307	Spring for Screw 20801 (Not shown in Illustration) .....	1
20957	End Frame for Generator.....	1
12986	Ball Bearing Assembly for Commutator End of Armature Shaft.....	1
20970	Screw for retaining Bearing Retainer Assembly 10007 .....	6
20241	Lock Washer for Screw 20970.....	6
21704	Pipe Plug for Oil Hole in End Frame 20957 (Not shown in Illustration) .....	1
10592	Generator Brush Connector Lead Assembly Complete .....	1
	(Includes the next 2 Items)	
22386	Clip for Lead Assembly 10592 (Not shown in Illustration) .....	2
23089	Sleeving for Lead Assembly 10592 (Not shown in Illustration) .....	1
22326	Insulating Guard Plate for Lead Assembly 10592 .....	1
10382	Generator Clutch Assembly Complete (Smooth Type) (Not shown in Illustration) .....	1
	(Includes the next 8 Items)	
	(When ordering a Complete Clutch always order the New Style "Ratchet Type" No. 11348)	
24811	Cam for Generator Clutch Assembly 10382 (Not shown in Illustration) .....	1
22286	Shell for Generator Clutch Assembly 10382 (Not shown in Illustration) .....	1
20878	Retainer for Roll 23625 (Not shown in Illustration) .....	1
23625	Roll for Cam 24811.....	1
20024	Spring for Plunger 20017.....	1
20017	Plunger for Roll 23625.....	1
21477	Screw for retaining Retainer 20878 (Not shown in Illustration) .....	1
22321	Plain Washer for Generator Clutch Assembly (Not shown in Illustration) .....	1
11348	Generator Clutch Assembly Complete (Ratchet Type) .....	1
	(Includes the next 8 Items)	
24811	Cam for Generator Clutch Assembly 11348.....	1
24812	Shell for Generator Clutch Assembly 11348 (Not shown in Illustration) .....	1
23625	Roll for Cam 24811.....	4
20024	Spring for Plunger 20017.....	4
20017	Plunger for Roll 23625.....	1
25841	Retainer for Roll 23625.....	1
20063	Screw for retaining Retainer 25841.....	4
22321	Clamp Washer for Clutch Assembly .....	1
20054	Clamp Screw for Generator Clutch Assembly 11348 .....	1
20725	Lock Washer for Clamp Screw 20054.....	1
21544	Key for Generator Clutch Assembly 12899.....	1
21703	Oil Retainer (Felt) for Ball Bearing Assembly 12986 .....	2
20808	Retainer for Ball Bearing Assembly 12986 (Inner) .....	1
20798	Washer for retaining Ball Bearing Assembly 12986 (Outer) .....	1
10828	Inner Race and Balls Assembly for Pinion End of Armature Shaft.....	1
20803	Oil Retainer (Felt) for Inner Race and Balls Assembly 10828 .....	2
20966	Washer for retaining Inner Race and Balls Assembly 10828 (Outer) .....	1
20873	Sleeve on Armature Shaft for retaining Washer 20966 .....	1
20870	Motor Pinion for Armature Shaft.....	1
21536	Clamp Washer for Motor Pinion 20870.....	1
20054	Clamp Screw for Motor Pinion 20870 .....	1
20725	Lock Washer for Clamp Screw 20054 .....	1
21405	Generator Brush Arm.....	1

## No. 24 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
24443	Brush for Arm 21405.....	1
21418	Plate for Arm 21405.....	1
21899	Screw for attaching Brush 24443.....	2
22826	Lock Plate for Screw 21899 (Not shown in Illustration).....	1
20163	Cotter Pin for retaining Generator Brush Arm 21405 .....	2
20794	Cover for Generator Clutch Assembly 11348.....	1
20046	Spring for Generator Brush Arm 21405.....	1
22313	End Housing for Generator.....	1
22418	Outer Race for Inner Race and Balls Assembly 10828 .....	1
20797	Retainer for Outer Race 22418 (Inner).....	1
20178	Screw for retaining Retainer 20797.....	6
20241	Lock Washer for Screw 20178.....	6
20849	Bushing in End Housing 22313 for Shift Rod 21199 .....	1
21704	Pipe Plug for Oil Hole in End Housing 22313 (Not shown in Illustration) .....	2
10339	Contact Spring Assembly for Generator.....	1
10039	Spring Terminal Assembly for attaching Contact Spring Assembly 10339.....	1
22276	Bracket for mounting Contact Assembly 10339 .....	1
22249	Insulator under Contact Spring Assembly 10339 .....	1
21741	Insulating Bushing for Spring Terminal Assembly 10039 .....	1
21429	Insulating Washer for Spring Terminal Assembly 10039 .....	1
20109	Plain Washer for Spring Terminal Assembly 10039 .....	1
20495	Lock Washer for Nut 20068.....	1
20068	Nut for attaching Spring Terminal Assembly 10039 .....	1
21887	Screw for retaining Bracket 22276.....	1
20647	Lock Washer for Screw 21887.....	1
21914	Plain Washer for Screw 21887.....	1
22318	Insulating Bushing for Screw 21887.....	1
20244	Shaft for Motor Clutch.....	1
21544	Key for Shaft 20244.....	1
21704	Pipe Plug for Shaft 20244 (Not shown in Illustration) .....	1
10528	Generator Shifting Yoke Assembly Complete .....	1
	(Includes the next 2 Items)	
22883	Stud for attaching Link to Shift Rod (Not shown in Illustration).....	1
20390	Pin for retaining Stud 22883 (Not shown in Illustration).....	1
10078	Upper Generator End Cover Assembly Complete .....	1
	(Includes the next 2 Items)	
21531	Screw for attaching Upper Generator End Cover Assembly 10078.....	2
20484	Spring Washer for Screw 21531.....	2
10077	Lower Generator End Cover Assembly Complete .....	1
	(Includes the next 5 Items) *	
20737	Plate for retaining Screen 20736 (Not shown in Illustration).....	1
20736	Screen for Cover Assembly 10077 (Not shown in Illustration).....	1
21673	Rivet for retaining Plate 20737 and Screen 20736 (Not shown in Illustration).....	1
21531	Screw for attaching Lower Generator End Cover Assembly 10077.....	2
20484	Spring Washer for Screw 21531.....	2
20039	Dowel Pin for Generator End Frame 20957 and End Housing 22313.....	4
21082	Screw for attaching Generator End Frame 20957.....	4
20403	Screw for attaching End Housing 22313.....	5
20848	Clip for Shaft 20244.....	1
20178	Screw for retaining Clip 20848.....	1
20142	Lock Washer for Screw 20178.....	1
21199	Shift Rod for Generator Shifting Yoke and Motor Brush Switch Arm.....	1
20722	Plain Washer for Stud 22883.....	1
20163	Cotter Pin for Stud 22883.....	1
21080	Cover for nd Housing 22313.....	1
20553	Screw for attaching Cover 21080.....	2
20484	Spring Washer for Screw 20553.....	2
21129	Clamp Screw for Yoke 22307.....	1
22706	Terminal Clip for Battery Lead.....	1
22622	Ferrule for Terminal Clip 22706 (Not shown in Illustration).....	1
22397	Conduit Cover (On Top of Generator).....	1
22703	Screw for attaching Conduit Cover 22397.....	1
12508	Grease Cup Assembly in End Housing 22313 for Motor Clutch.....	1
11285	Oil Cup Assembly for Ball Bearing Assembly 12986 .....	1
11926	Oil Cup Assembly for Inner Race and Balls Assembly 10828.....	1
22452	Terminal Clip for Terminal 22398 (Not shown in Illustration) .....	3
10044	Motor Clutch Assembly Complete.....	1
	(Includes the next 11 Items)	
20465	Pinion for Motor Clutch Assembly 10044.....	1
20020	Cam for Motor Clutch Assembly 10044.....	1
20027	Clamp Nut for Motor Clutch Assembly 10044.....	1
21316	Gear for Motor Clutch Assembly 10044.....	1
20022	Retainer for Roll 23625 (Inner).....	1
22575	Retainer for Roll 23625 (Outer).....	1
21538	Spring for Plunger 20017.....	4
20017	Plunger for Roll 23625.....	4
23625	Roll for Cam 20020.....	4
20023	Screw for retainers 22575 and 20022.....	4
20393	Lock Washer for Screw 20023.....	4

PIECE PARTS CATALOG





No. 44 MOTOR GENERATOR

## No. 44 MOTOR GENERATOR

Piece Number	NAME OF PART	Quantity Required
44	MOTOR GENERATOR .....	1
10698	Generator Frame Assembly..... (Includes the next 5 Items)	1
24228	Screw for Binding Generator Frame (Upper) (Not shown in Illustration).....	1
24126	Screw for Binding Generator (Lower) (Not shown in Illustration).....	4
24494	Lock Washer for Screw 24126 (Not shown in Illustration).....	4
21147	Dowel Screw for Pole Piece (Not shown in Illustration).....	1
21717	Lock Washer for Screw 21147 (Not shown in Illustration).....	1
10964	Field Coil Assembly Complete..... (Includes the next 17 Items)	1
14279	Field Coil Assembly (Not shown in Illustration) .....	1
	(Includes the next Item)	
10660	Motor Brush Plate Assembly (Not shown in Illustration) .....	1
	(Includes the next 3 Items)	
24112	Spring Stud for Brush Plate Assembly 10660.....	1
22359	Stud for holding Series Motor Brush Arm Assembly 11189.....	1
22007	Plain Washer for Stud 22359 (Not shown in Illustration) .....	1
22520	Rivet for retaining Motor Brush Plate Assembly 10660 (Not shown in Illustration) .....	3
23051	Clip for Spring 23045.....	1
23197	Lock Plate for Screw 20035.....	1
20219	Insulator for Clip 23051.....	2
23226	Insulating Bushing for Screw 20035.....	2
20035	Screw for retaining Clip 23051.....	1
23451	Screw for retaining Lead Assembly 12790.....	1
23452	Nut for Screw 23451.....	1
20393	Lock Washer for Nut 23452.....	2
23451	Screw for retaining Terminal Clip on Field Coil Assembly 10964.....	2
23452	Nut for Screw 23451.....	2
20393	Lock Washer for Nut 23452.....	2
10811	Series Motor Brush Arm Assembly..... (Includes the next 3 Items)	1
22084	Spring Stud for Brush Arm Assembly 10811.....	1
25017	Insulating Bushing for Stud 25016 (Not shown in Illustration) .....	1
25016	Stud for Screw 24621 (Not shown in Illustration) .....	1
24460	Brush for Brush Arm Assembly 10811.....	1
22751	Screw for attaching Brush 24012.....	2
22826	Lock Plate for Screw 22751.....	1
11060	Terminal Block Assembly.....	1
20137	Lock Washer for Nut 20075.....	1
20068	Nut for attaching Stud 23655.....	1
23655	Stud for attaching Clip 22395.....	1
20495	Lock Washer for Nut 20068.....	1
22395	Clip for Stud 23655.....	1
20075	Nut for attaching Clip 22395.....	1
21428	Plain Washer for Series Motor Brush Arm Assembly 10811.....	1
22172	Spring Washer for retaining Series Motor Brush Arm Assembly 10811.....	1
20163	Cotter Pin for retaining Spring Washer 22172.....	1
25731	Spring for Series Motor Brush Arm Assembly 10811 .....	2
23138	Insulator for Field Coil Assembly 10964.....	8
27193	Insulating Washer for Screw 21147 (Not shown in Illustration) .....	2
20114	Plain Washer for Screw 21147.....	2
21717	Lock Washer for Screw 21147.....	2
21147	Screw for attaching Motor Brush Plate Assembly 10660 .....	2
23282	Insulating Bushing for Screw 21147 (Not shown in Illustration) .....	2
21116	Nut for Terminal Stud under Terminal Block Assembly 11060 (Small) .....	2
21105	Lock Washer for Nut 24611.....	2
24611	Nut for Terminal Stud under Terminal Block Assembly 11060 (Large) .....	2
22570	Wedge for Field Coil Assembly 10964 (Not shown in Illustration) .....	7
10889	Governor Ring Assembly for Distributor Shaft .....	1
	(Includes the next 2 Items)	
23448	Clip for Governor Ring Assembly 10889 (Not shown in Illustration) .....	1
24198	Screw for attaching Clip 23448 (Not shown in Illustration) .....	2
10954	Distributor Cam Adjustment Assembly Complete .....	1
	(Includes the next 3 Items)	
23874	Cam for Cam Adjustment Assembly 10954 (Not shown in Illustration) .....	1
23468	Pin for Cam 23874 (Not shown in Illustration) .....	1
23117	Screw for Distributor Cam Adjustment Assembly 10954 (Not shown in Illustration) .....	1
10922	Distributor Segment Assembly for mounting Contact Arm Assembly 11408 .....	1
	(Includes the next 3 Items)	
24070	Stud for mounting Stop 23733 (Not shown in Illustration) .....	1
24071	Stud for mounting Contact Arm Assembly 11408 (Not shown in Illustration) .....	1
24073	Stud for connecting Current Regulator Bracket .....	1
11408	Contact Arm Assembly for Distributor..... (Includes the next 3 Items. Do not count Old Style Parts)	1

## No. 44 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
11379	Connector Assembly for Contact Arm Assembly 11408 (Not shown in Illustration).	1
21801	Hub for Contact Arm Assembly 11408 (Not shown in Illustration).....	1
24069	Terminal Wire (Old Style) (Not shown in Illustration).....	1
24947	Screw for attaching Hub 24069 (Not shown in Illustration).....	2
10282	Retainer and Balls Assembly for Distributor Shaft Assembly 10699.	2
11061	Pinion and Hub Assembly for Distributor Shaft (Not shown in Illustration).....	1
	(Includes the next 3 Items)	
27548	Screw for attaching Pinion to Hub.....	2
20393	Lock Washer for Screw 27548.....	2
24029	Dowel Pin for Pinion and Hub Assembly 11061.....	1
23217	Retainer Plate for Pinion and Hub Assembly 11061 .....	1
21836	Screw for retaining Stop 23733 (Not shown in Illustration).....	1
23733	Stop for Contact Arm Assembly 11408.....	1
23480	Plain Washer for Screw 23501.....	2
23481	Insulating Bushing for Screw 23501.....	2
20035	Screw for attaching Distributor Segment Assembly 10922 .....	2
20345	Lock Washer for Screw 21836.....	1
23100	Advance Ring on Shaft 23105 for Hand Advance .....	1
23220	Mounting Plate for Shaft 23105.....	1
23134	Pin for Advance Ring 23100.....	1
21443	Clamp Nut for Shaft 23105.....	1
21444	Lock Nut for Clamp Nut 21443.....	1
23218	Clamp for Pin 23134.....	1
23378	Screw for retaining Clamp 23218.....	1
20393	Lock Washer for Screw 23378.....	1
11094	Distributor Shaft and Cone Assembly (Not shown in Illustration).....	1
	(Includes the next 2 Items)	
23105	Shaft for Distributor.....	1
27222	Cone for Shaft 23105 (Not shown in Illustration).....	2
23234	Insulating Washer for Distributor Segment Assembly 10922.....	1
23129	Spring for Collar 23718 on Shaft 23105.....	1
23718	Collar for Automatic Advance on Shaft 23105.....	1
23101	Pin for retaining Collar 23718 and Governor Ring Assembly 10889.....	2
24415	Plain Washer for Pin 23101.....	4
20163	Cotter Pin for retaining Pin 23101.....	4
23104	Advance Arm for connecting Collar 23718 to Governor Ring Assembly 10889.....	2
23496	Screw for retaining Governor Ring Assembly 10889 .....	2
24493	Lock Washer for Screw 23496.....	2
23098	Shaft for Distributor Cam Adjustment Assembly 10954 .....	1
20775	Cup for Retainer and Balls Assembly 10282.....	2
23398	Spring for Contact Arm Assembly 11408.....	1
12988	Ball Bearing Assembly for Distributor End of Armature Shaft.....	1
10634	Current Regulator Contact Arm Assembly .....	1
	(Includes the next 3 Items)	
23262	Roll for Contact Arm Assembly 10634 (Not shown in Illustration).....	1
23263	Stud for Contact Arm Assembly 10634 (Not shown in Illustration).....	1
24247	Rivet for Contact Arm Assembly 10634 (Not shown in Illustration).....	2
10631	Resistance Unit Connector Lead Assembly Complete .....	1
	(Includes the next 2 Items)	
23319	Clip for Resistance Unit End of Lead Assembly 10631 .....	1
23358	Clip for Field Coil End of Lead Assembly 10631 .....	1
10611	Distributor Rotor Assembly Complete.....	1
	(Includes the next 4 Items)	
23074	Connector for Distributor Rotor Assembly 10611 .....	1
23142	Screw for connecting Connector 23074.....	1
23895	Brush for Distributor Rotor Assembly 10611.....	1
24414	Spring for Brush 23895.....	1
10633		
10701		
10702	{Current Regulator Resistance Unit Assembly .....	1
10703	{(One to be used. Order by number stamped on Current Regulator Resistance Unit Assembly)	
10817		
10955		
10648	Resistance Unit Assembly for Distributor.....	1
10598	Advance Yoke Assembly.....	1
23257	Shaft for Advance.....	1
23144	Clamp Screw for Advance Lever 23143.....	1
23239	Nut for Clamp Screw 23144.....	1
20137	Lock Washer for Nut 23239.....	1
23143	Advance Lever for Advance Lever Shaft 23257 .....	1
11868	Spring Terminal Assembly for connecting Distributor.....	1
12411	Contact Screw Assembly for Contact Arm Assembly 11408 (Not shown in Illustration) .....	1
23665	End Frame for Generator.....	1
21383	Washer (Felt) for Ball Bearing Assembly 12988 .....	2

**No. 44 MOTOR GENERATOR (Continued)**

Piece Number	NAME OF PART	Quantity Required
23642	Retainer for Ball Bearing Assembly 12988 (Inner) . . . . .	1
21094	Screw for retaining Retainer 23642 . . . . .	4
23271	Bracket for Current Regulator Resistance Unit Assembly 10703 ,etc. (Upper) . . . . .	1
23678	Screw for attaching Bracket 23271 . . . . .	1
20373	Lock Washer for Screw 23678 . . . . .	3
23268	Screw for retaining Stud 23270 . . . . .	1
23269	Insulating Bushing for Stud 23270 . . . . .	1
22769	Insulating Bushing for Resistance Unit Assembly 10648 . . . . .	1
20495	Lock Washer for Nut 23644 . . . . .	1
23644	Nut for retaining Resistance Unit Assembly 10648 . . . . .	1
23270	Bushing for Resistance Unit Assembly 10648 . . . . .	1
24664	Clip for attaching Distributor Head Assembly 12568 (Single) . . . . .	1
20647	Lock Washer for Screws 21015 and 21531 . . . . .	5
25091	Screw for attaching Clips 24664, 23433 and 23432 . . . . .	4
23433	Clip for attaching Distributor Head Assembly 12568 (Long Tongue Clip) . . . . .	1
23432	Clip for attaching Distributor Head Assembly 12568 (With Clip 23433) . . . . .	1
21797	Screw for attaching Advance Yoke Assembly 10598 . . . . .	1
21015	Screw for retaining Bracket 23271 . . . . .	1
23978	Guide Plate for Cover Plate 25350 . . . . .	1
25350	Cover Plate for End Frame 23665 . . . . .	1
23264	Bracket for Current Regulator Resistance Unit Assembly 10703, etc. (Lower) . . . . .	1
20219	Insulator for Bracket 23264 . . . . .	2
23197	Lock Plate for Screw 20035 . . . . .	1
23226	Insulating Bushing for Screw 20035 . . . . .	2
24939	Screw for attaching Current Regulator Resistance Unit Assembly 10703, etc. . . . .	2
21717	Lock Washer for Screw 24939 . . . . .	2
20173	Screw for attaching Guide Plate 23978 . . . . .	6
20393	Lock Washer for Screw 20173 . . . . .	6
20035	Screw for attaching Distributor Segment Assembly 10922 . . . . .	1
20495	Lock Washer for Screw 20035 . . . . .	1
22616	Plain Washer for Screw 23205 and Spring Terminal Assembly 10628 . . . . .	2
20076	Insulating Washer for Screw 23205 and Spring Terminal Assembly 10628 (Outer) . . . . .	2
22738	Insulating Bushing for Screw 23205 and Spring Terminal Assembly 10628 . . . . .	2
23410	Insulating Washer for Screw 23205 and Spring Terminal Assembly 10628 (Inner) . . . . .	2
23756	Connector for connecting Spring Terminal Assembly 10628 and Screw 23205 . . . . .	1
20704	Nut for Screw 23205 and Spring Terminal Assembly 10628 . . . . .	2
20791	Lock Washer for Nut 20704 . . . . .	2
20310	Plain Washer for Nut 20704 . . . . .	2
23205	Screw for Contact Screw Assembly 12411 . . . . .	1
12127	<b>Generator Clutch Assembly Complete.</b> (Includes the next 6 Items)	1
10978	<b>Spiral Gear and Cam Assembly for Generator Clutch Assembly 12127.</b> . . . . .	1
26109	Shell for Generator Clutch Assembly 12127 . . . . .	1
23952	Roll for Spiral Gear and Cam Assembly 10978 . . . . .	3
20017	Plunger for Roll 23952 . . . . .	3
20024	Spring for Plunger 20017 . . . . .	3
23983	Binding Spring for Generator Clutch Assembly 12127 . . . . .	1
14898	<b>Ball Bearing Assembly for Pinion End of Armature Shaft</b> . . . . .	1
13513	<b>Armature Assembly for Motor Generator.</b> . . . . .	1
21703	Oil Retainer (Felt) for Inner Race and Balls Assembly 14898 . . . . .	2
20808	Retainer for Oil Retainer 21703 (Inner) . . . . .	1
24622	Lock Washer for Clamp Screw 24496 . . . . .	1
24496	Clamp Screw for Motor Pinion 23491 . . . . .	1
21536	Clamp Washer for Motor Pinion 23491 . . . . .	1
24829	Lock Washer for Clamp Screw 24828 (Clutch End) . . . . .	1
23065	Clamp Washer for Generator Clutch Assembly 12127 . . . . .	1
24828	Clamp Screw for retaining Generator Clutch Assembly 12127 . . . . .	1
23192	Spacing Collar on Armature Shaft next to Generator Clutch Assembly 12127 . . . . .	1
23511	Spacing Sleeve on Armature Shaft for retaining Washer 23857 . . . . .	1
23491	Motor Pinion for Armature Shaft . . . . .	1
23857	Washer for retaining Inner Race and Balls Assembly 14898 . . . . .	1
10801	<b>Motor End Frame Assembly.</b> (Includes the next Item)	1
23200	Spring Stud for End Frame Assembly 10801 . . . . .	1
10812	<b>Grounded Motor Brush Arm Assembly.</b> (Includes the next 3 Items)	1
22084	Spring Stud for Brush Arm Assembly 10812 . . . . .	1
23046	Roll for Brush Arm Assembly 10812 . . . . .	1
20079	Plain Washer for Roll 23046 . . . . .	1
24460	Brush for Grounded Motor Brush Arm Assembly 10812 . . . . .	1
22751	Screw for attaching Brush 24460 . . . . .	2
22826	Lock Plate for Screw 22751 . . . . .	1
23045	Spring for Generator Switch on Grounded Motor Brush Arm Assembly 10812 . . . . .	1
20173	Screw for attaching Spring 23045 . . . . .	2

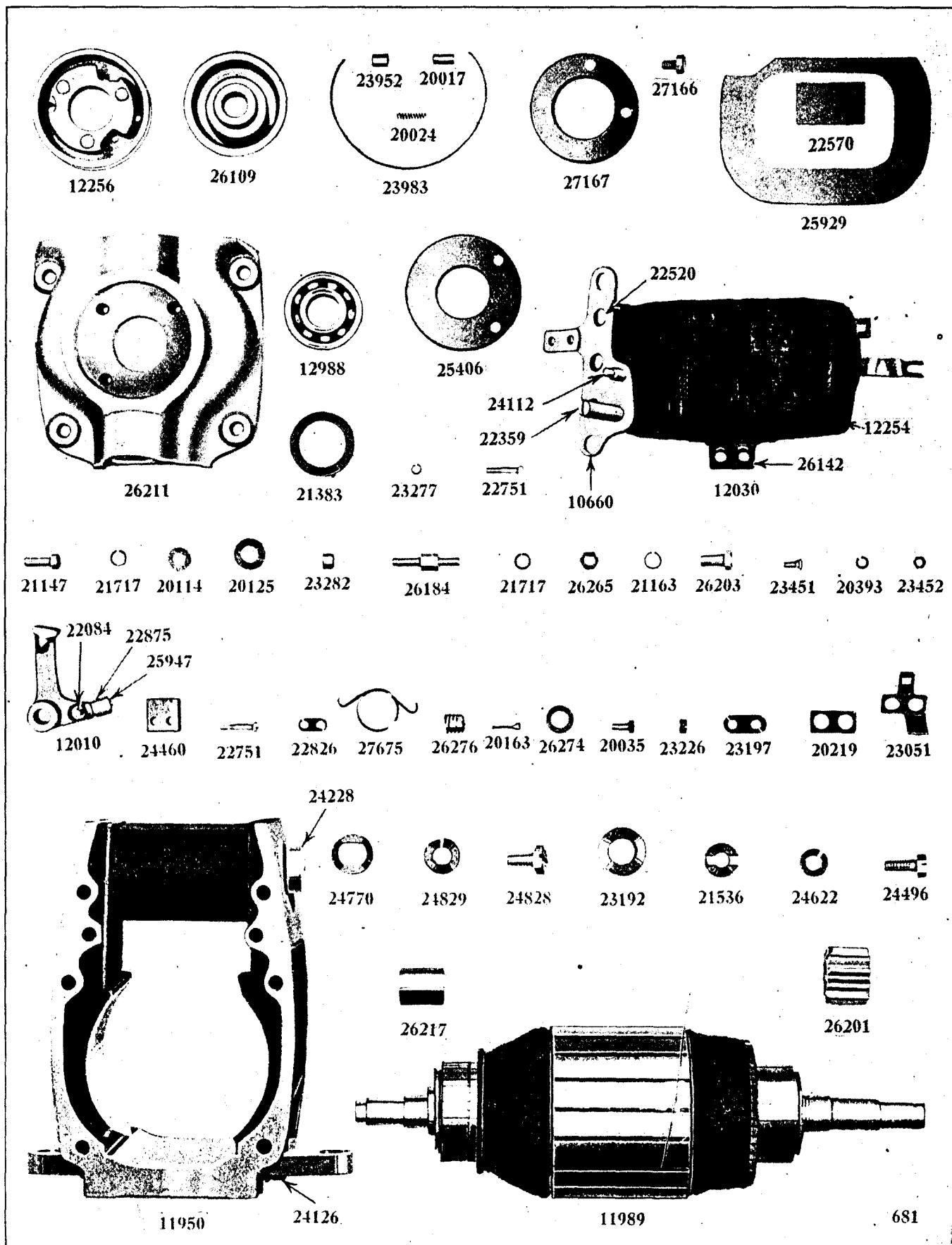
No. 44 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
22817	Lock Plate for Screw 20173.....	1
24115	Plate for Spring 23045.....	1
24621	Screw for Adjusting Grounded Motor Brush Arm Assembly 10812.....	1
24619	Nut for Screw 24621.....	1
21717	Lock Washer for Nut 24619.....	1
23147	Stud for Holding Grounded Motor Brush Arm Assembly 10812.....	1
20217	Nut for Stud 23147.....	1
20725	Lock Washer for Nut 20217.....	1
21168	Plain Washer for retaining Grounded Motor Brush Arm Assembly 10812 (Outer).....	1
21428	Plain Washer for retaining Grounded Brush Arm Assembly 10812 (Inner).....	1
22172	Spring Washer for retaining Grounded Motor Brush Arm Assembly 10812.....	1
25731	Spring for Grounded Motor Brush Arm Assembly 10812 .....	1
23243	Retainer for Ball Bearing Assembly 14898.....	1
20241	Lock Washer for Screw 20178.....	3
20178	Screw for retaining Retainer 23243.....	3
23057	Bushing for Rod 23510.....	1
23754	Cover Slide for Motor End Frame Assembly 10801 .....	1
23963	Guide for Cover Slide 23754 (Outer) .....	1
23964	Guide for Cover Slide 23754 (Inner) (Not shown in Illustration) .....	1
20173	Screw for Guides 23963 and 23964.....	4
23277	Lock Washer for Screw 20173.....	1
24111	Felt Plug for Oil Hole (Not shown in Illustration) .....	1
10626	<b>Generator Brush Arm Assembly (Left)</b> .....	1
23079	Brush for Generator Brush Arm Assembly 10626 .....	2
22751	Screw for attaching Brush 23709.....	1
22817	Lock Plate for Screw 22751.....	1
10627	<b>Generator Brush Arm Assembly (Right)</b> .....	1
	(Include the next Item)	
23079	Brush for Generator Brush Arm Assembly 10627 .....	1
22751	Screw for attaching Brush 23079.....	3
22817	Lock Plate for Screw 22751.....	1
12790	<b>Ground Connector Lead Assembly Complete</b> .....	1
	(Includes the next 2 Items)	
23666	Clip for Generator Switch End of Lead Assembly 12790 .....	1
27930	Clip for Brush Plate End of Lead Assembly 12790 .....	1
12751	<b>Outside Terminal Connector Lead Assembly Complete</b> .....	1
	(Includes the next 3 Items)	
27929	Clip for Brush Plate End of Lead Assembly 12751 .....	1
23318	Clip for Field Coil (Center of Lead Assembly 12751) .....	1
24010	Clip for Spring Terminal End of Lead Assembly 12751 .....	2
20046	Spring for Generator Brush Arm Assemblies 10626 and 10627 .....	2
20163	Cotter Pin for retaining Spring 20046.....	1
23093	Generator Brush Holder Bracket.....	2
20494	Plate for Stud 23113 (Inner) .....	4
23623	Insulator for Stud 23113.....	2
23113	Stud for Holding Generator Brush Arm Assemblies 10626 and 10627 .....	4
23249	Insulating Bushing for Stud 23113 and Screw 20035 .....	2
20068	Nut for Stud 23113.....	2
20495	Lock Washer for Nut 20068.....	2
22011	Plate for Stud 23113 (Outer) .....	2
20035	Screw for retaining Plates 22011 and 20494 .....	1
10991	<b>Generator Top Cover Assembly Complete</b> .....	1
	(Includes the next Item)	
24425	Clamp Nut for Top Cover Assembly 10991 .....	2
11012	<b>Motor End Top Cover Assembly Complete</b> .....	1
	(Includes the next 3 Items)	
20484	Spring Washer for Screw 21531.....	2
21531	Screw for attaching Top Cover Assembly 11012 .....	1
11151	<b>Oiler Assembly for Motor End Top Cover Assembly 11012</b> .....	1
10605	<b>Generator End Top Cover Assembly Complete</b> .....	1
	(Includes the next 3 Items)	
21531	Screw for attaching Top Cover Assembly 10605 .....	2
20484	Spring Washer for Screw 21531.....	2
14043	<b>Oiler Assembly for Generator End Top Cover Assembly 10605</b> .....	1
11383	<b>Flange and Washer Assembly Complete (Not shown in Illustration)</b> .....	1
	(Includes the next Item)	
25019	Felt Washer for Flange Assembly 11383.....	1
23510	Brush Lifting Rod.....	1
24610	Nut for Rod 23510.....	2
25307	Cotter Pin for retaining Nut 24610.....	1
11487	<b>Distributor Bearing Oiler Assembly</b> .....	1
23108	Screw for attaching Generator Brush Holder Bracket 23093 .....	1
21663	Screw for attaching Motor End Frame Assembly 10801 (Short) (Plain) .....	1
23232	Screw for attaching Motor End Frame Assembly 10801 (Short) (Dowel) .....	1
23231	Screw for attaching Motor End Frame Assembly 10801 (Long) (Dowel) .....	1
22371	Screw for attaching Motor End Frame Assembly 10801 (Long) (Plain) .....	1

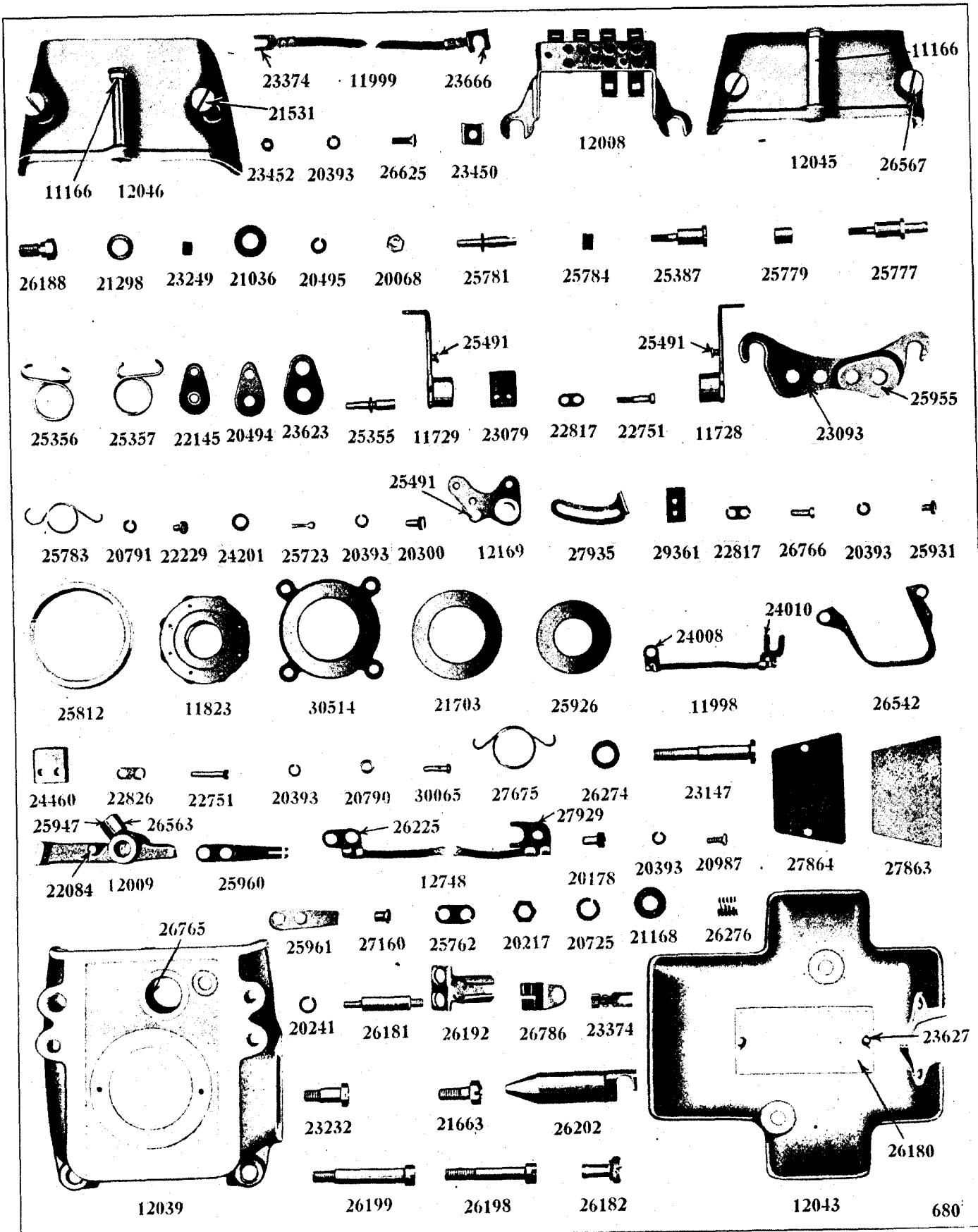
## No. 44 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
21663	Screw for attaching Generator End Frame 23665 (Plain) .....	2
23232	Screw for attaching Generator End Frame 23665 (Dowel) .....	2
23132	Bottom Plate for Generator End Frame 23665.....	1
23316	Gasket for Bottom Plate 23132.....	1
20393	Lock Washer for Screw 20173.....	5
20173	Screw for attaching Bottom Plate 23132 and Name Plate 23252.....	9
23252	Name Plate for Generator End Frame 23665.....	1
20393	Lock Washer for Screw 20173.....	4
24200	Stud for attaching Nut 24425 (On Generator Top Cover Assembly 10991).....	2
23204	Screw for attaching Condenser Assembly 11670 to Screw 23205.....	1
20345	Lock Washer for Screw 23204.....	1
23422	Gasket for Condenser Assembly 10861.....	1
24527	Insulator for Resistance Unit Guard (Not shown in Illustration) .....	1
10861	<b>Condenser Assembly Complete</b> ..... (Includes the next Item)	1
23601	Screw for attaching Condenser Assembly 10861 .....	4
12568	<b>Distributor Head Assembly Complete (Not shown in Illustration)</b> . (Includes the next 2 Items. Do not count Old Style Parts)	1
21425	Plunger (Old Style) for Distributor Head Assembly 12568 (Approximately $\frac{1}{8}$ / Diameter) (Not shown in Illustration) .....	1
27608	Plunger for Distributor Head Assembly 12568 (Approximately $\frac{1}{4}$ " Diameter) (Not shown in Illustration) .....	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter) (Not shown in Illustration) .....	1
27607	Spring for Plunger 27608 (Approximately $\frac{1}{4}$ " Diameter) (Not shown in Illustration) .....	1
10697	<b>Motor Terminal Clip Assembly Complete (Not shown in Illustration)</b> ..... (Includes the next 5 Items)	1
23654	Terminal Clip for Motor Terminal Assembly 10697 (Not shown in Illustration) .....	1
22395	Clip for Terminal Clip 23654 (Not shown in Illustration) .....	1
23656	Stud for attaching Clip 22395 to Terminal Clip 23654 (Not shown in Illustration) .....	1
20137	Lock Washer for Nut 20075.....	1
20075	Nut for Stud 23656.....	1
24453	Terminal Clip for connecting Generator Brush Arm Assemblies 10626 and 10627 (Not shown in Illustration) .....	2
23365	Fibre Ferrule for Terminal Clip 24453 (Not shown in Illustration) .....	2
23360	Terminal Clip for Spring Terminal Assembly 10628 (Not shown in Illustration) .....	1
23365	Fibre Ferrule for Terminal Clip 23360 (Not shown in Illustration) .....	1
25092	Insulator for Series Lead on Generator Top Cover Assembly 10991 (Not shown in Illustration) .....	1
23865	Rubber Washer for High Tension Terminal Assemblies .....	9
11407	<b>Wrench for Distributor</b> .....	1
10877	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (Blank)</b> .....	1
10878	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (1)</b> .....	1
10879	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (2)</b> .....	1
10880	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (3)</b> .....	1
10881	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (4)</b> .....	1
10882	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (5)</b> .....	1
10883	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (6)</b> .....	1
10884	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (7)</b> .....	1
10885	<b>High Tension Terminal Assembly for Distributor Head Assembly 12568 (8)</b> .....	1

PIECE PARTS CATALOG



No. 78 MOTOR GENERATOR



No. 78 MOTOR GENERATOR

**PIECE PARTS CATALOG**

**No. 78 MOTOR GENERATOR**

Note: No. 78 Motor Generator superseded by No. 98 Motor Generator, when ordering a complete new unit, order No. 98.

Piece Number	NAME OF PART	Quantity Required
<b>78</b>	<b>MOTOR GENERATOR COMPLETE.....</b>	1
<b>11950</b>	<b>Generator Frame Assembly.....</b>	1
	(Includes the next 3 Items)	
<b>24228</b>	Screw for binding Generator Frame (Upper) .....	1
<b>24126</b>	Screw for binding Generator Frame (Lower) .....	2
<b>24494</b>	Lock Washer for Screw 24126 (Not shown in Illustration) .....	2
<b>12254</b>	<b>Field Coil and Motor Brush Plate Assembly .....</b>	1
	(Includes the next 7 Items)	
<b>10660</b>	<b>Motor Brush Plate Assembly.....</b>	1
	(Includes the next 3 Items)	
<b>24112</b>	Spring Stud for Brush Plate Assembly 10660.....	1
<b>22359</b>	Stud for holding Series Motor Brush Arm Assembly 12010.....	1
<b>22007</b>	Washer for Stud 22359 (Not shown in Illustration) .....	1
<b>22520</b>	Rivet for retaining Motor Brush Plate Assembly 10660 .....	3
<b>26185</b>	Clip on Field Coil Assembly for Terminal Plate (Not shown in Illustration) .....	1
<b>26142</b>	Strap for Motor Terminal Clip 26192.....	1
<b>23051</b>	Clip on Motor Brush Plate Assembly 10660 for Generator Switch.....	1
<b>23197</b>	Lock Plate for Screw 20035.....	1
<b>20219</b>	Insulator for Clip 23051.....	2
<b>23226</b>	Insulating Bushing for Screw 20035.....	2
<b>20035</b>	Screw for retaining Clip 23051.....	2
<b>23451</b>	Screw on Clip 23051 for retaining Lead Assembly 11999 .....	1
<b>23452</b>	Nut for Screw 23451.....	1
<b>20393</b>	Lock Washer for Nut 23452.....	1
<b>23451</b>	Screw for retaining Terminal Clip on Field Coil Assembly 12254 .....	1
<b>23452</b>	Nut for Screw 23451.....	1
<b>20393</b>	Lock Washer for Nut 23452.....	1
<b>26203</b>	Screw for attaching Motor Terminal Clip 26192 .....	2
<b>21163</b>	Lock Washer for Screw 26203.....	2
<b>12010</b>	<b>Series Motor Brush Arm Assembly .....</b>	1
	(Includes the next 3 Items)	
<b>22084</b>	Spring Stud for Brush Arm Assembly 12010 .....	1
<b>22875</b>	Roll for Brush Arm Assembly 12010 .....	1
<b>25947</b>	Plain Washer for retaining Roll 22875.....	1
<b>24460</b>	Brush for Series Motor Brush Arm Assembly 12010 .....	1
<b>22751</b>	Screw for attaching Brush 24460 .....	2
<b>22826</b>	Lock Plate for Screw 22751 .....	1
<b>26276</b>	Spring for Series Motor Brush Arm Assembly 12010 (Inner) .....	1
<b>26274</b>	Plain Washer for retaining Series Motor Brush Arm Assembly 12010 .....	1
<b>20163</b>	Cotter Pin for retaining Series Motor Brush Arm Assembly 12010 .....	1
<b>27675</b>	Spring for Series Motor Brush Arm Assembly 12010 (Outer) .....	1
<b>25929</b>	Insulator for Field Coil Assembly 12254 .....	2
<b>20125</b>	Insulating Washer for Screw 21147 .....	4
<b>20114</b>	Plain Washer for Screw 21147 .....	2
<b>21717</b>	Lock Washer for Screw 21147 .....	2
<b>21147</b>	Screw for attaching Motor Brush Plate Assembly 10660 .....	2
<b>23282</b>	Insulating Bushing for Screw 21147 .....	2
<b>22570</b>	Wedge for Field Coil Assembly 12254 .....	7
<b>26184</b>	Dowel Stud for connecting Ground Lead (On Side of Frame) .....	1
<b>21717</b>	Lock Washer for Nut 26285 .....	2
<b>26265</b>	Nut for Dowel Stud 26184 .....	1
<b>26211</b>	End Frame for Generator .....	1
<b>12988</b>	<b>Ball Bearing Assembly for Generator Clutch End of Armature Shaft .....</b>	1
<b>25406</b>	Retainer for Ball Bearing Assembly 12988 (Inner) .....	1
<b>22751</b>	Screw for attaching Retainer 25406 .....	4
<b>23277</b>	Lock Washer for Screw 22751 .....	4
<b>24111</b>	Felt Plug for Oil Hole in End Frame 26211 .....	1
<b>21383</b>	Oil Retainer (Felt) for Ball Bearing Assembly 12988 .....	2
<b>12035</b>	<b>Generator Clutch Assembly Complete (Old Style before Serial No. 352610) .....</b>	1
	(Includes the next 6 Items)	
<b>12034</b>	<b>Generator Clutch Shell and Cam Assembly .....</b>	1
<b>26109</b>	<b>Shell for Generator Clutch Assembly 12035 (Inner) .....</b>	1
<b>23952</b>	Roll for Generator Clutch Shell and Cam Assembly 12034 .....	3
<b>20024</b>	Spring for Plunger 20017 .....	3
<b>20017</b>	Plunger for Roll 23952 .....	3
<b>23983</b>	Binding Spring for Generator Clutch Assembly 12035 .....	1
<b>12257</b>	<b>Generator Clutch Assembly Complete .....</b>	1
	(Includes the next 8 Items)	
<b>12256</b>	<b>Generator Clutch Shell and Cam Assembly .....</b>	1
<b>26109</b>	Shell for Generator Clutch Shell and Cam Assembly 12256 (Inner) .....	1
<b>23952</b>	Roll for Generator Clutch Shell and Cam Assembly 12256 .....	3
<b>20017</b>	Plunger for Roll 23952 .....	3
<b>20024</b>	Spring for Plunger 20017 .....	3

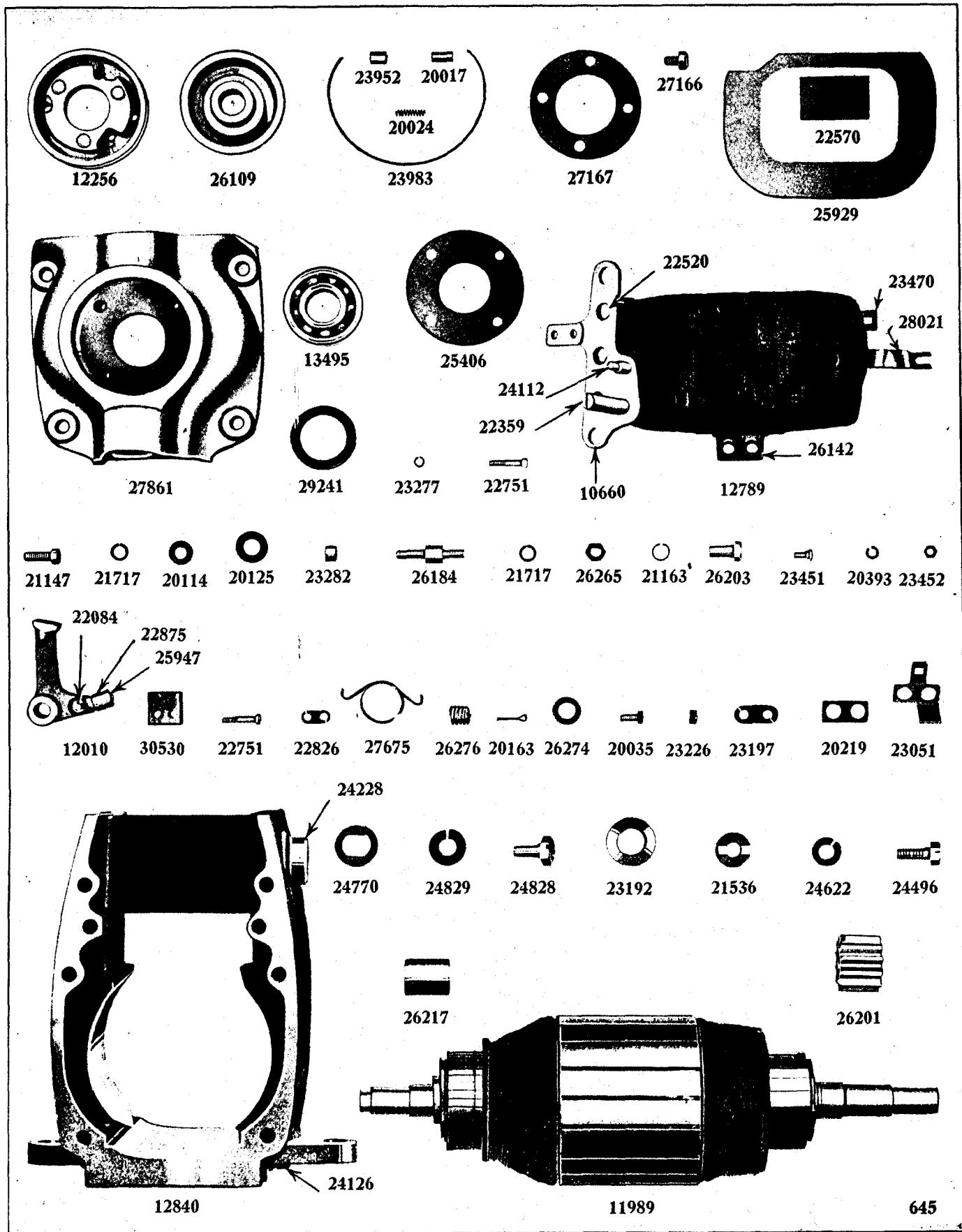
No. 78 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
23983	Binding Spring for Generator Clutch Assembly 12257 . . . . .	1
27167	Coupling for Generator Clutch Assembly 12257 . . . . .	1
27166	Screw for attaching Coupling 27167 . . . . .	1
11823	Inner Race and Balls Assembly for Pinion End of Armature Shaft . . . . .	1
11989	Armature Assembly for Motor Generator . . . . .	1
21703	Oil Retainer (Felt) for Inner Race and Balls Assembly 11823 . . . . .	2
20808	Retainer for Oil Retainer 21703 (Inner) (Not shown in Illustration) . . . . .	1
24622	Lock Washer for Clamp Screw 24496 . . . . .	1
24496	Clamp Screw for Motor Pinion 26201 . . . . .	1
21536	Clamp Washer for Motor Pinion 26201 . . . . .	1
24829	Lock Washer for Clamp Screw 24828 . . . . .	1
24770	Clamp Washer for Generator Clutch Assembly 12257 . . . . .	1
24828	Clamp Screw for Generator . . . . .	1
23192	Spacing Collar for Generator Clutch Assembly 12257 . . . . .	1
26217	Spacing Sleeve on Armature Shaft next to Washer 25926 (Pinion End) . . . . .	1
26201	Motor Pinion for Armature Shaft . . . . .	1
25926	Washer for retaining Inner Race and Balls Assembly 11823 (Outer) . . . . .	1
12039	Motor End Frame Assembly . . . . .	1
	(Includes the next 2 Items)	
23200	Spring Stud for End Frame Assembly 12039 (Not shown in Illustration) . . . . .	1
26765	Bushing for Rod 26202 . . . . .	1
12009	Grounded Motor Brush Arm Assembly . . . . .	1
	(Includes the next 3 Items)	
22084	Spring Stud for Brush Arm Assembly 12009 . . . . .	1
26563	Roll for Brush Arm Assembly 12009 . . . . .	1
25947	Plain Washer for retaining Roll 26563 . . . . .	1
24460	Brush for Grounded Motor Brush Arm Assembly 12009 . . . . .	2
22751	Screw for attaching Brush 24460 . . . . .	1
22826	Lock Plate for Screw 22751 . . . . .	1
25960	Spring on Grounded Motor Brush Arm Assembly 12009 for Generator Switch . . . . .	1
25961	Plate for Spring 25960 . . . . .	1
25762	Insulating Plate for Spring 25960 . . . . .	3
27160	Insulating Bushing for Screw 22654 . . . . .	2
21899	Screw for attaching Spring 25960 . . . . .	2
12748	Generator Brush Bracket to Switch Arm Lead Assembly Complete . . . . .	1
	(Includes the next 2 Items)	
27929	Clip for Brush Bracket End of Lead Assembly 12748 . . . . .	1
26225	Clip for Switch Arm End of Lead Assembly 12748 . . . . .	1
20790	Plain Washer for Screw 22654 . . . . .	2
20393	Lock Washer for Screw 22654 . . . . .	1
23147	Stud for holding Grounded Motor Brush Arm Assembly 12009 . . . . .	1
20217	Nut for Stud 23147 . . . . .	1
20725	Lock Washer for Nut 20217 . . . . .	1
21168	Plain Washer for Grounded Motor Brush Arm Assembly 12009 (Outer) . . . . .	1
26276	Spring for Grounded Motor Brush Arm Assembly 12009 (Inner) . . . . .	1
26274	Plain Washer for Grounded Motor Brush Arm Assembly 12009 (Inner) . . . . .	1
27675	Spring for Grounded Motor Brush Arm Assembly 12009 (Outer) . . . . .	1
30514	Retainer for Outer Race 25812 . . . . .	1
26193	Retainer for Outer Race 25812 (Old Style) before Serial No. 386208 . . . . .	1
20241	Lock Washer for Screw 20178 . . . . .	4
20178	Screw for attaching Retainer 30514 . . . . .	4
25812	Outer Race for Inner Race and Balls Assembly 11823 . . . . .	1
24111	Felt Plug for Oil Hole in End Frame Assembly 12039 . . . . .	1
11728	Generator Brush Arm Assembly (Right) . . . . .	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 11728 . . . . .	1
23079	Brush for Generator Brush Arm Assembly 11728 . . . . .	1
22751	Screw for attaching Brush 23079 . . . . .	2
22817	Lock Plate for Screw 22751 . . . . .	1
11729	Generator Brush Arm Assembly (Left) . . . . .	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 11729 . . . . .	1
23079	Brush for Generator Brush Arm Assembly 11729 . . . . .	1
22751	Screw for attaching Brush 23079 . . . . .	2
22817	Lock Plate for Screw 22751 . . . . .	1
11815	Third Generator Brush Arm Assembly (Old Style) (Straight) . . . . .	1
12169	Third Generator Brush Arm Assembly (Radial) . . . . .	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 12169 . . . . .	1
25782	Extension Brush Arm for Third Generator Brush Arm Assembly 11815 (Old Style) (Straight) . . . . .	1
27935	Extension Brush Arm for Third Generator Brush Arm Assembly 12169 . . . . .	1
29361	Third Brush for Extension Brush Arm 27935 . . . . .	1
22817	Lock Plate for Screw 26766 . . . . .	2
26766	Screw for attaching Third Brush 29361 . . . . .	2
25931	Screw for attaching Extension Brush Arm Assembly 12169 . . . . .	2

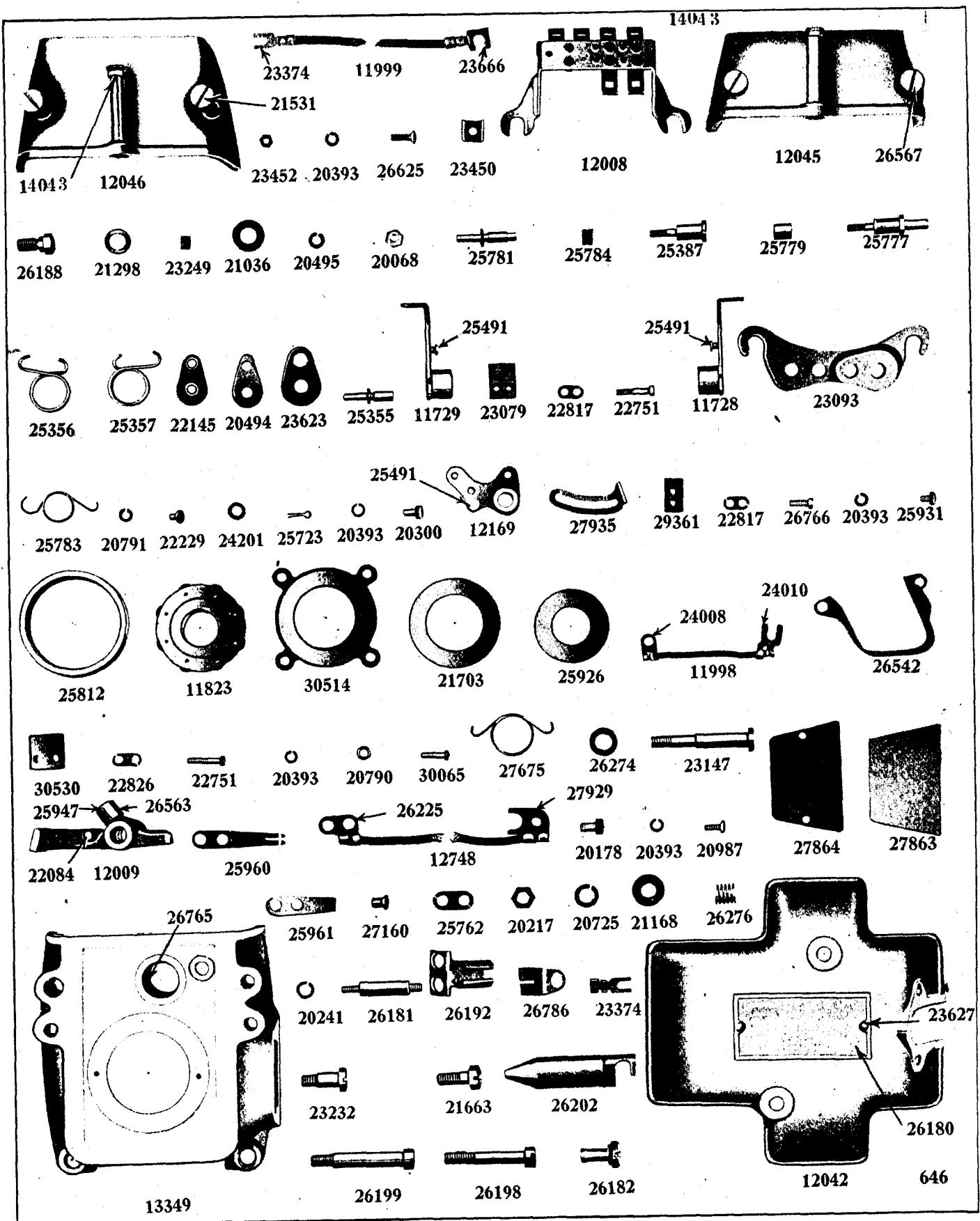
**PIECE PARTS CATALOG**

**No. 78 MOTOR GENERATOR (Continued)**

Piece Number	NAME OF PART	Quantity Required
20393	Lock Washer for Screw 25931.....	2
20810	Plain Washer for Screw 25931.....	2
11998	<b>Third Generator Brush to Field Coil Lead Assembly Complete</b> (Includes the next 2 Items)	1
24010	Clip for Field Coil End of Lead Assembly 11998.....	1
24008	Clip for Third Brush End of Lead Assembly 11998.....	1
25356	Spring for Generator Brush Arm Assembly 11729.....	1
25357	Spring for Generator Brush Arm Assembly 11728.....	1
25783	Spring for Third Generator Brush Arm Assembly 12169.....	1
23093	Generator Brush Holder Bracket.....	1
20494	Plate for Studs 14547, 25777, 25355 and 25387 (Inner).....	2
22145	Plate for Studs 14547, 25777, and 25387 (Outer).....	2
25955	Plate for Studs 25355 and 25387 next to Bracket 23093.....	2
23623	Insulator for Studs 14547 and 25777.....	2
25355	Stop Stud for Generator Brush Arm Assembly 11728.....	1
25387	Stud for holding Generator Brush Arm Assembly 11728.....	1
23249	Insulating Bushing for Studs 25777 and 14547.....	2
20068	Nut for Studs 14547, 25777, 25355 and 25387.....	4
20495	Lock Washer for Nut 20068.....	4
25777	Stud for holding Third Generator Brush Arm Assembly 12169 and Generator Brush Arm Assembly 11729.....	1
14547	<b>Stop Assembly Stud for Generator Brush Arm Assembly 11729.</b>	1
25784	Insulating Sleeve for Stop Stud 14547.....	1
25779	Insulating Bushing for Third Generator Brush Arm Assembly 12169.....	1
21036	Insulating Washer for Third Generator Brush Arm Assembly 12169 (Inner).....	1
21298	Insulating Washer for Third Generator Brush Arm Assembly 12169 (Outer).....	1
25723	Cotter Pin for retaining Third Generator Brush Arm Assembly 12169.....	1
24201	Plain Washer under Cotter Pin 25723.....	1
20300	Screw for attaching Third Generator Brush to Field Coil Lead Assembly 11998.....	1
20393	Lock Washer for Screw 20300.....	1
12008	<b>Terminal Bracket Assembly.</b>	1
11999	<b>Motor Brush Plate to Terminal Bracket Lead Assembly Complete.</b> (Includes the next 2 Items)	1
23666	Clip for Motor Brush Plate End of Lead Assembly 11999 .....	1
23374	Clip for Terminal Bracket End of Lead Assembly 11999 .....	1
26625	Screw for attaching Clip 23450.....	6
20393	Lock Washer for Nut 23452.....	6
23452	Nut for Screw 26625.....	6
23450	Clip for Terminal Bracket Assembly 12008.....	6
12043	<b>Generator Top Cover Assembly Complete.</b> (Includes the next 3 Items)	1
26180	Name Plate for Generator Top Cover Assembly 12043 .....	1
23627	Rivet for attaching Name Plate 26180.....	2
26182	Screw for attaching Generator Top Cover Assembly 12043 .....	2
12045	<b>Motor End Top Cover Assembly Complete.</b> (Includes the next 3 Items)	1
20484	Spring Washer for Screw 26567.....	2
26567	Screw for attaching Cover Assembly 12045.....	2
14043	<b>Bearing Oiler Assembly for Motor End Top Cover Assembly 12045.</b>	1
12046	<b>Generator End Top Cover Assembly Complete.</b> (Includes the next 3 Items)	1
21531	Screw for attaching Cover Assembly 12046.....	2
20484	Spring Washer for Screw 21531.....	2
14043	<b>Bearing Oiler Assembly for Generator End Top Cover Assembly 12046.</b>	1
26202	Rod for Lifting Motor Brush Arms.....	1
26188	Screw for attaching Generator Brush Holder Bracket 23093 .....	2
21663	Screw for attaching Motor End Frame Assembly 12039 (Short, Plain) .....	1
23232	Screw for attaching Motor End Frame Assembly 12039 (Short, Dowel) .....	1
26199	Screw for attaching Motor End Frame Assembly 12039 (Long, Dowel) .....	1
26198	Screw for attaching Motor End Frame Assembly 12039 (Long, Plain) .....	1
21663	Screw for attaching Generator End Frame 26211 (Plain) .....	2
23232	Screw for attaching Generator End Frame 26211 (Dowel) .....	2
26181	Stud for Screw 26182.....	2
26542	Guard for Motor Terminal Clip 26192.....	1
20791	Lock Washer for Screw 22229.....	1
22229	Screw for attaching Guard 26542.....	1
26826	Insulating Plate for Terminal Clip 26192.....	1
23374	Terminal Clip for connecting Terminal Bracket Assembly 12044 .....	4
26786	Terminal Clip used with Motor Terminal Clip 26192 .....	1
26192	Motor Terminal Clip .....	1



## No. 98 MOTOR GENERATOR



No. 98 MOTOR GENERATOR

## No. 98 MOTOR GENERATOR

Piece Number	NAME OF PART	Quantity Required
98	<b>MOTOR GENERATOR COMPLETE</b>	1
12840	<b>Generator Frame Assembly</b> (Includes the next 3 Items)	1
24228	Screw for Binding Generator Frame (Upper)	1
24126	Screw for Binding Generator Frame (Lower)	2
24494	Lock Washer for Screw 24126	2
13076	<b>Field Coil Assembly</b> (Includes the next 7 Items)	1
26142	Strap for Motor Terminal Clip 26192	1
23470	Clip on Field Coil Assembly for Third Brush	1
28021	Clip on Field Coil Assembly for Terminal Plate	1
10660	<b>Motor Brush Plate Assembly</b> (Includes the next 2 Items)	1
24112	Spring Stud for Motor Brush Plate Assembly 10660	1
22359	Stud for Holding Series Motor Brush Arm Assembly	1
22520	Rivet for retaining Motor Brush Plate Assembly	3
23051	Clip on Motor Brush Plate Assembly 10660 for Generator Switch	1
23197	Lock Plate for Screw 20035	1
20219	Insulator for Clip 23051	2
23226	Insulating Bushing for Screw 20035	2
20035	Screw for retaining Clip 23051	2
23451	Screw for Clip 23051 for retaining Lead Assembly 11999	1
23452	Nut for Screw 23451	1
20393	Lock Washer for Nut 23452	1
26203	Screw for retaining Motor Terminal Clip 26192	2
21163	Lock Washer for Screw 26203	2
12010	<b>Series Motor Brush Arm Assembly</b> (Includes the next 3 Items)	1
22084	Spring Stud for Brush Arm Assembly 12010	1
22875	Roll for Brush Arm Assembly 12010	1
25947	Plain Washer for retaining Roll 22875	1
30530	Brush for Series Motor Brush Arm Assembly 12010	1
22751	Screw for attaching Brush 24460	2
22826	Lock Plate for Screw 22751	1
26276	Spring for Series Motor Brush Arm Assembly 12010 (Inner)	1
26274	Plain Washer for retaining Series Motor Brush Arm Assembly 12010	1
20163	Cotter Pin for retaining Series Motor Brush Arm Assembly 12010	1
27675	Spring for Series Motor Brush Arm Assembly 12010 (Outer)	1
25929	Insulator for Field Coil Assembly 12849	2
20125	Insulating Washer for Screw 21147	4
20114	Plain Washer for Screw 21147	2
21717	Lock Washer for Screw 21147	2
21147	Screw for attaching Motor Brush Plate Assembly 10660	2
23282	Insulating Bushing for Screw 21147	2
22570	Wedge for Field Coil Assembly 12849	7
26184	Dowel Stud for connecting Ground Lead (On Side of Frame)	1
21717	Lock Washer for Nut 26265	2
26265	Nut for Dowel 26184	1
27861	End Frame for Generator	1
12988	<b>Ball Bearing Assembly for Clutch End of Armature Shaft</b>	1
25406	Retainer for Ball Bearing Assembly 12988 (Inner)	1
22751	Screw for Retainer 25406	4
23277	Lock Washer for Screw 22751	4
24111	Felt Plug for Oil Hole in End Frame 27861 (Not shown in Illustration)	1
21383	Oil Retainer (Felt) for Ball Bearing Assembly 13495	2
12257	<b>Generator Clutch Assembly Complete</b> (Includes the next 8 Items)	1
12256	<b>Generator Clutch Shell and Cam Assembly</b>	1
26109	Shell for Generator Clutch Shell and Cam Assembly 12256 (Inner)	1
23952	Roll for Generator Clutch Shell and Cam Assembly 12256	3
20017	Plunger for Roll 23952	3
20024	Spring for Plunger 20017	3
23983	Binding Spring for Generator Clutch Assembly 12257	1
27167	Coupling for Generator Clutch Assembly 12257	1
27166	Screw for attaching Coupling 27167	2
11989	<b>Armature Assembly for Motor Generator</b>	1
24829	Lock Washer for Clamp Screw 24828	1
24770	Clamp Washer for Generator Clutch Assembly 12257	1
24828	Clamp Screw for Generator Clutch Assembly 12257	1
23192	Spacing Collar on Armature Shaft next to Generator Clutch Assembly 12257	1
13349	<b>Motor End Frame Assembly</b> (Includes the next 2 Items)	1
23200	Spring Stud for Motor End Frame Assembly 13349 (Not shown in Illustration)	1
26765	Bushing for Rod 26202	1

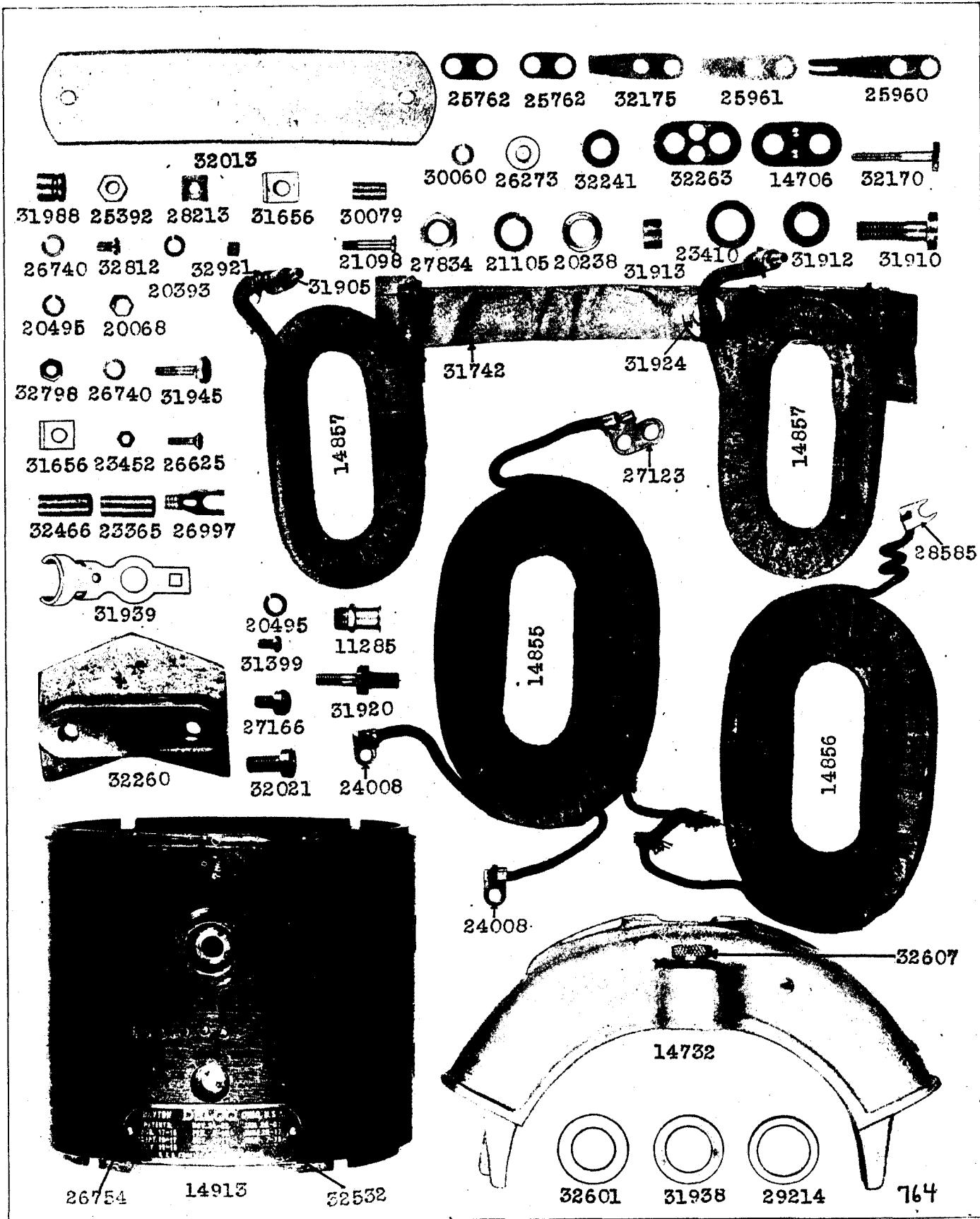
No. 98 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
27147	Retainer for Outer Race 25812 (Old Style before Serial No. 9809528) (Not shown in Illustration)	1
30514	Retainer for Outer Race 25812	1
20241	Lock Washer for Screw 20178	1
20178	Screw for retaining Retainer 30514	4
24111	Felt Plug Oil Hole in Motor End Frame Assembly 18849 (Not shown in Illustration)	4
15499	<b>Ball Bearing Assembly (Pinion End of Armature Shaft)</b>	1
	Note: When it is necessary to replace either an Old Style Outer Race or Inner Race and Rolls on the Old Style Roller Bearing on this Generator an entire new Ball Bearing Assembly must be ordered.	
	(Includes the next 2 Items)	
15526	<b>Inner Race and Balls Assembly for Ball Bearing Assembly 15499</b>	1
24447	Outer Race for Inner Race and Balls Assembly 15526	1
21703	Oil Retainer (Felt) for Inner Race Balls Assembly 15526	2
12009	<b>Grounded Motor Brush Arm Assembly</b>	1
	(Includes the next 3 Items)	
22084	Spring Stud for Grounded Motor Brush Arm Assembly 12009	1
26563	Roll for Brush Arm Assembly 12009	1
25947	Plain Washer for retaining Roll 26563	1
30530	Brush for Grounded Motor Brush Arm Assembly 12009	1
22751	Screw for attaching Brush 30530	1
22826	Lock Plate for Screw 22751	2
25960	Spring on Grounded Motor Brush Arm Assembly 12009 for Generator Switch	1
25961	Plate for Spring 25960	1
25762	Insulating Plate for Spring 25960	3
27160	Insulating Bushing for Screw 21899	2
21899	Screw for attaching Spring 25960	2
12748	<b>Generator Brush Brackets to Switch Arm Lead Assembly Complete</b>	1
	(Includes the next 2 Items)	
27929	Clip for Brush Bracket End of Lead Assembly 12748	1
26225	Clip for Switch Arm End of Lead Assembly 12748	1
20790	Plain Washer for Screw 30065	2
20393	Lock Washer for Screw 30065	2
23147	Stud for Holding Grounded Motor Brush Arm Assembly 12009	1
20217	Nut for Stud 23147	1
20725	Lock Washer for Nut 20217	1
21168	Plain Washer for Grounded Motor Brush Arm Assembly 12009 (Outer)	1
26276	Spring for Grounded Motor Brush Arm Assembly 12009 (Inner)	1
26274	Plain Washer Grounded Motor Brush Arm Assembly 12009 (Inner)	1
27675	Spring for Grounded Motor Brush Arm Assembly 12009 (Outer)	1
11728	<b>Generator Brush Arm Assembly (Right)</b>	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 11728	1
23079	Brush for Generator Brush Arm Assembly 11728	1
22751	Screw for attaching Brush 23079	2
22817	Lock Plate for Screw 22751	1
11729	<b>Generator Brush Arm Assembly (Left)</b>	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 11729	1
23079	Brush for Generator Brush Arm Assembly 11729	1
22751	Screw for attaching Brush 23079	2
22817	Lock Plate for Screw 22751	1
12169	<b>Third Generator Brush Arm Assembly (Radial)</b>	1
	(Includes the next Item)	
25491	Spring Stud for Brush Arm Assembly 12169	1
27935	Extension Brush Arm for Third Generator Brush Arm Assembly 12169	1
29361	Third Brush for Third Generator Brush Arm Assembly 12169	1
22817	Lock Plate for Screw 26766	1
26766	Screw for attaching Third Brush 29361	2
25931	Screw for attaching Extension Brush Arm 27935	2
20393	Lock Washer for Screw 25931	2
20810	Plain Washer for Screw 25931 (Not shown in Illustration)	2
11998	<b>Third Generator Brush to Field Coil Lead Assembly Complete</b>	2
	(Includes the next 2 Items)	
24010	Clip for Field Coil End of Lead Assembly 11998	1
24008	Clip for Third Brush End of Lead Assembly 11998	1
25356	Spring for Generator Brush Arm Assembly 11729	1
25357	Spring for Generator Brush Arm Assembly 11728	1
25783	Spring for Third Generator Brush Arm Assembly 12169	1
23093	Bracket for Brush Arms	1
20494	Plate for Studs 14547, 25777, 25355 and 25387 (Inner)	2
22145	Plate for Studs 14547, 25777, 25355 and 25387 (Outer)	2
25955	Plate for Studs 25355 and 25387 next to Bracket 23093 (Not shown in Illustration)	2
23623	Insulator for Studs 14547 and 25777	2
25355	Stop Stud for Generator Brush Arm Assembly 11728	1
25387	Stud for holding Generator Brush Arm Assembly 11728	1

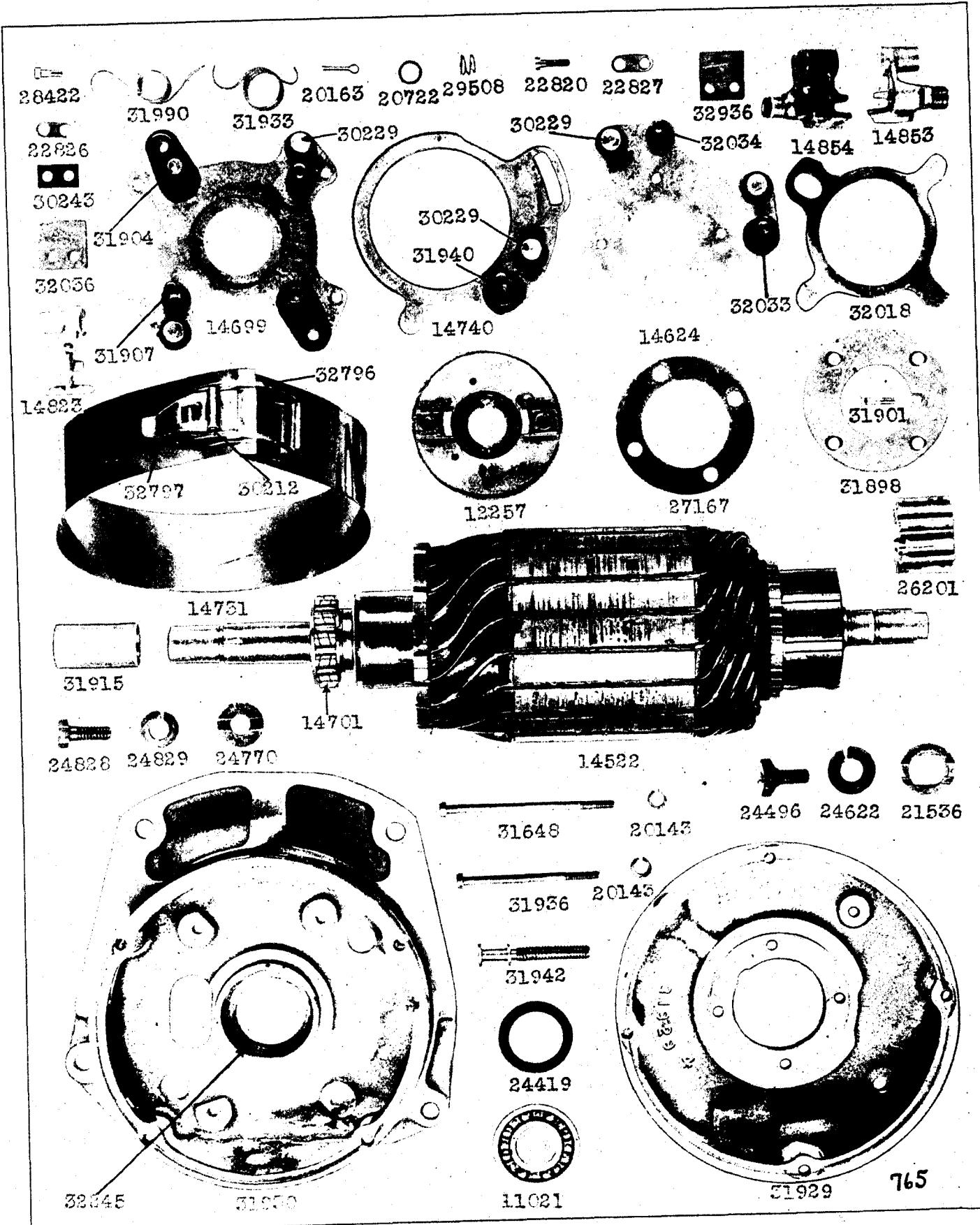
**No. 98 MOTOR GENERATOR (Continued)**

Piece Number	NAME OF PART	Quantity Required
23249	Insulating Bushing for Studs 25777 and 14547 .....	2
20068	Nut for Studs 14547, 25777, 25355 and 25387.....	4
20495	Lock Washer for Nut 20068.....	4
25777	Stud for holding Third Generator Brush Arm Assembly 12169 and Generator Brush Arm Assembly 11729.....	1
14547	<b>Stop Stud Assembly for Third Brush Arm Assembly 12169</b>	1
25784	Insulating Sleeve for Stop Stud 14547.....	1
25779	Insulating Bushing for Third Generator Brush Arm Assembly 12169 .....	1
21036	Insulating Washer for Third Generator Brush Arm Assembly 12169 (Inner).....	1
21298	Insulating Washer for Third Generator Brush Arm Assembly 12169 (Outer).....	1
25723	Cotter Pin for retaining Third Generator Brush Arm Assembly 12169.....	1
24201	Plain Washer under Cotter Pin 25723.....	1
20300	Screw for attaching Third Generator Brush to Field Coil Lead Assembly 11998.....	1
20393	Lock Washer for Screw 20300.....	1
12008	<b>Terminal Bracket Assembly</b> .....	1
11999	<b>Motor Brush Plate to Terminal Bracket Lead Assembly Complete.</b> (Includes the next 2 Items)	1
23666	Clip for Motor Brush Plate End of Lead Assembly 11999 .....	1
23374	Clip for Terminal Bracket End of Lead Assembly 11999 .....	1
26625	Screw for attaching Clip 23450.....	6
20393	Lock Washer for Nut 23452.....	6
23452	Nut for Screw 26625.....	6
23450	Clip for Terminal Bracket Assembly 12008.....	6
12043	<b>Generator Top Cover Assembly Complete.</b> (Includes the next 3 Items)	1
26180	Name Plate for Top Cover Assembly 12043.....	1
23627	Rivet for attaching Name Plate 26180.....	2
26182	Screw for attaching Generator Top Cover Assembly 12043 .....	2
12045	<b>Motor End Top Cover Assembly Complete</b> .....	1
	(Includes the next 4 Items)	
20484	Spring Washer for Screw 26567 (Not shown in Illustration).....	2
26567	Screw for attaching Cover Assembly 12045.....	2
14043	<b>Bearing Oiler Assembly for Motor End Top Cover Assembly 12045</b>	1
30639	Wick for Oiler Assembly 14043 (Not shown in Illustration).....	1
12046	<b>Generator End Top Cover Assembly Complete</b> .....	1
	(Includes the next 4 Items)	
21531	Screw for attaching Cover Assembly 12046.....	2
20484	Spring Washer for Screw 21531 (Not shown in Illustration).....	2
14043	<b>Oiler Assembly for Generator End Top Cover Assembly 12046</b>	1
30639	Wick for Oiler Assembly 14043 (Not shown in Illustration).....	1
26202	Rod for Grounded and Series Motor Brush Arm Assembly 12009 and 12010.....	1
26188	Screw for attaching Generator Brush Holder Bracket Assembly 12845.....	2
21663	Screw for attaching Motor End Frame Assembly 13349 (Short) (Plain).....	1
33529	Screw for attaching Motor End Frame Asembly 13349 (Short) (Dowel).....	1
26199	Screw for attaching Motor End Frame Assemby 13349 (Long) (Dowel).....	1
26198	Screw for attaching Motor End Fram Assemby 13349 (Long) (Plain).....	1
21663	Screw for attaching Generator End Frame 27861 (Plain) .....	2
33529	Screw for attaching Generator End Frame 27861 (Dowel).....	2
26182	Stud for Screw 26182.....	2
26542	Guard for Motor Terminal Clip 26192.....	1
20791	Lock Washer for Screw 22229.....	1
22229	Screw for attaching Guard 26542.....	1
33530	Cover for Motor End Frame (Side).....	1
27864	Gasket for Cover 33530.....	1
27863	Cover End Frame Assemblies (Bottom).....	2
27864	Gasket for Cover 33530.....	2
20987	Screw for attaching Cover 33530.....	4
33215	Screw for attaching Cover 33530.....	2
32817	Lock Washer for Screws 20987 and 33215.....	6
20808	Retainer for Oil Retainer 21703 (Inner) (Not shown in Illustration).....	1
25926	Washer for retaining Inner Race and Rolls Assembly 11823 (Outer).....	1
26217	Spacing Sleeve on Armature Shaft for retaining Washer 25926 (Pinion End).....	1
26201	Motor Pinion for Armature Shaft.....	1
21536	Clamp Washer for Motor Pinion 26201.....	1
24622	Lock Washer for Clamp Screw 24496.....	1
24496	Clamp Screw for Motor Pinion 26201.....	1
26826	Insulating Plate for Motor Terminal Clip 26192 (Not shown in Illustration).....	1
23374	Terminal Clip for connecting Terminal Bracket Assembly 12008.....	4
26786	Terminal Clip used with Motor Terminal Clip 26192 .....	1
26192	<b>Motor Terminal Clip</b> .....	1

PIECE PARTS CATALOG



No. 162 MOTOR GENERATOR



## No. 162 MOTOR GENERATOR

**PIECE PARTS CATALOG**

**No. 162 MOTOR GENERATOR**

Piece Number	NAME OF PART	Quantity Required
• 162	<b>MOTOR GENERATOR COMPLETE.</b>	1
31932	Frame for Motor Generator.....	1
32532	Name Plate for Motor Generator.....	1
32821	Pin for attaching Name Plate.....	2
32260	Pole Piece for Frame.....	4
32021	Screw for attaching Pole Piece.....	7
31920	Stud Screw for attaching Pole Piece.....	1
14857	<b>Motor Field Coil Assembly.</b> (Includes next Item)	2
31905	Stud for connecting Motor Field Coil.....	1
31924	Connector for Connecting Motor Field Coil .....	1
31742	Insulator for Connector 31924.....	1
32445	Insulator between Motor Field Coil and Pole Piece .....	4
14856	<b>Generator Field Coil Assembly (On same side as Generator Switch).</b> (Includes the next 3 Items)	1
27123	Clip for connecting Coils to Generator Switch .....	1
24008	Clip for connecting Field Coil to Brush Plate .....	1
28585	Clip for connecting Field Coil to Brush Plate .....	1
14855	<b>Generator Field Coil Assembly (Opposite Field Coil Assembly 14856).</b> (Includes the next Item)	1
24008	Clip for connecting Field Coil to Brush Plate .....	1
31910	Motor Terminal Stud.....	1
31912	Insulating Washer for Terminal Stud 31910 (Outside).....	1
23410	Insulating Washer for Terminal Stud 31910 (Inside).....	1
20238	Plain Washer for Terminal Stud 31910.....	1
31913	Insulating Bushing for Terminal Stud 31910.....	1
21105	Lock Washer for Nut 27834.....	2
27834	Nut for Terminal Stud.....	2
31929	End Frame for Generator end of Armature Shaft .....	1
11021	Ball Bearing Assembly.....	1
15386	<b>Third Brush Arm Plate Assembly.</b> (Includes the next 7 Items)	1
31940	Stud for Third Brush Arm.....	1
32147	Insulating Bushing for Stud 31940.....	1
29240	Insulating Washer for Stud 31940.....	2
20238	Plain Washer for Stud 31940.....	1
33526	Stud for Third Brush Arm Spring 30241.....	1
30241	Bushing for Stud 33526.....	1
30227	Insulating Washer for Stud 33526.....	3
14624	<b>Generator Brush Arm Plate Assembly.</b> (Includes the next 8 Items)	1
32033	Stud for Generator Brush Arm (Grounded) .....	1
32034	Stud for Generator Brush Arm (Insulated) .....	1
32147	Insulating Bushing for Stud 32034.....	1
29240	Insulating Washer for Stud 32034.....	2
30238	Plain Washer for Stud 32034.....	1
30229	Stud for Generator Brush Arm Spring .....	2
30241	Insulating Bushing for Stud 30229.....	2
30227	Insulating Washer for Stud 30229.....	1
24419	Felt Washer for Ball Bearing Assembly 11021 .....	1
33294	Retainer for Ball Bearing.....	1
31898	Retainer for Ball Bearing Assembly 11021.....	1
31901	Screw for attaching Retainer 31898.....	4
31945	Screw for locking Third Brush Plate.....	1
20165	Plain Washer for Screw 31945.....	1
26740	Lock Washer for Screw 31945.....	1
32798	Nut for Screw 31945.....	1
31942	Screw for adjusting Brushes (Old Style).....	1
14823	<b>Generator and Third Brush Arm Assembly (Old Style used before Serial No. 162-21351).</b> (Includes next 2 Items)	3
33220	Stop for Brush Arm (Old Style).....	3
22826	Lock Plate for Screw 22820.....	3
22820	Screw for attaching Brush (Before Serial No. 162-21351) .....	6
29508	Tension Spring for Generator Brush Arm (Small) .....	3
20722	Plain Washer for retaining Springs 29508.....	3
20163	Cotter Pin for retaining Springs 29508.....	3
15319	<b>Generator Brush Arm Assembly.</b> (Includes next 2 Items)	2
33353	Hub for Generator Brush Arm Assembly.....	1
31990	Spring for Generator Brush Arm Assembly .....	1

No. 162 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
15411	Thermostat and Third Brush Arm Assembly . . . . . (Includes next 5 Items)	1
33353	Hub for Third Brush Arm Assembly . . . . .	1
31990	Spring for Third Brush Assembly . . . . .	1
15166	Thermostat Resistance Assembly . . . . .	1
25091	Screw for attaching Resistance Assembly . . . . .	2
20647	Lock Washer for Screw 25091 . . . . .	2
33362	Brush for Generator and Third Brush Arm Assembly . . . . .	3
33355	Screw for attaching Brush 33362 . . . . .	6
33354	Stop Plate for Brush 33362 . . . . .	3
33357	Plate for Brush 33362 . . . . .	3
25091	Screw for attaching Lead to Thermostat and Third Brush Arm Assembly . . . . .	1
20647	Lock Washer for Screw 25091 . . . . .	1
31930	Motor End Frame . . . . .	1
14701	Inner Race and Rolls Assembly for Drive End of Armature Shaft . . . . .	1
32245	Outer Race for Inner Race and Rolls Assembly 14701 . . . . .	1
32170	Generator Switch Terminal Stud . . . . .	2
32920	Lock Plate for Switch Terminal Stud . . . . .	1
32263	Insulator for Stud 32170 (Next to end Frame) . . . . .	1
30079	Insulating Bushing for Stud 32170 . . . . .	2
32241	Insulating Washer for Stud 32170 . . . . .	2
26273	Plain Washer for Stud 32170 . . . . .	2
28213	Nut for Stud 32170 . . . . .	2
31656	Clip for Stud 32170 . . . . .	2
30060	Lock Washer for Stud 32170 . . . . .	2
25392	Nut for connecting Generator Lead to Stud 32170 . . . . .	1
14706	Insulator Assembly for separating Studs 32170 . . . . .	1
14699	Motor Brush Plate Assembly . . . . . (Includes the next 9 Items)	1
31907	Stud for Motor Brush Arms (Grounded) . . . . .	2
31904	Stud for Motor Brush Arm (Insulated) . . . . .	2
30229	Spring Stud for Grounded Motor Brush Arm Spring . . . . .	2
30241	Insulating Bushing for Stud 30229 . . . . .	2
30227	Insulating Washer for Stud 30229 . . . . .	2
30140	Insulating Bushing for Stud 31904 . . . . .	2
32017	Insulator for Stud 31904 . . . . .	4
31991	Plate for retaining Insulated Brush Arm Studs 31904 . . . . .	2
29499	Plate for retaining Insulated Brush Arm Studs 31904 . . . . .	2
14852	Motor Brush Arm Assembly (Insulated) . . . . .	1
15209	Motor Brush Arm Assembly (Grounded) . . . . .	1
14854	Motor Brush Arm Assembly (For Generator Switch) . . . . .	1
32936	Brush for Motor Brush Arms . . . . .	4
22820	Screw for attaching Brushes 32936 . . . . .	8
22827	Lock Plate for Screw 22820 . . . . .	4
31933	Brush Arm Springs (For Grounded Motor Brush Arm) . . . . .	2
32255	Brush Arm Springs for Insulated Brush Arms . . . . .	2
29508	Tension Spring for Motor Brush Arm . . . . .	4
20722	Plain Washer for Spring 29508 . . . . .	4
20163	Cotter Pin retaining Tension Springs 29508 . . . . .	1
14522	Armature Assembly . . . . .	1
32601	Spacing Washer for Armature Shaft (Drive end) . . . . .	1
32528	Washer for Armature Shaft . . . . .	1
32529	Washer for Armature Shaft . . . . .	1
32530	Fibre Plug for End Housing . . . . .	1
31938	Spacing Washer for Armature Shaft (For Roller Bearing (Inner)) . . . . .	1
29214	Washer for Armature Shaft (Next to Generator Clutch) . . . . .	1
29886	Washer for Armature Shaft (For Roller Bearing Outer) . . . . .	1
31915	Sleeve for Armature Shaft (Next to Pinion) . . . . .	1
26201	Pinion for Armature Shaft . . . . .	1
21536	Clamp Washer for Pinion . . . . .	1
24496	Screw for retaining Pinion . . . . .	1
24622	Lock Washer for Screw 24496 . . . . .	2
20068	Nut for attaching Field Coil Stud . . . . .	2
20495	Lock Washer for Nut 20068 . . . . .	2
31988	Bushing for Insulating Field Coil Stud on Motor Brush Plate . . . . .	1
32018	Lifting Plate for Motor Brushes . . . . .	4
20492	Screw for attaching Plate 32018 . . . . .	4
20495	Lock Washer for Screws 20492 . . . . .	4
31648	Screw for attaching Motor End Frame . . . . .	4
20143	Lock Washer for Screws 31648 and 31946 . . . . .	8
31936	Screw for attaching Generator End Frame . . . . .	4
26740	Lock Washer for Screw 31936 . . . . .	4
12257	Generator Clutch Assembly . . . . . (Includes the next 8 Items)	1
12256	Generator Clutch Shell and Cam Assembly . . . . .	1
26109	Shell for Clutch Shell and Cam Assembly 12256 . . . . .	1
23952	Roll for Clutch Shell and Cam Assembly . . . . .	3

## PIECE PARTS CATALOG

## No. 162 MOTOR GENERATOR (Continued)

Piece Number	NAME OF PART	Quantity Required
20017	Plunger for Roll.....	3
20024	Spring for Plunger.....	3
23983	Binding Spring for Generator Clutch Assembly .....	1
27167	Coupling for Generator Clutch Assembly .....	1
27166	Screw for attaching Coupling 27167.....	3
11285	Oiler Assembly for Drive end of Generator.....	1
24770	Clamp Washer for Generator Clutch.....	1
24828	Screw for retaining Generator Clutch.....	1
24829	Lock Washer for Screw 24828.....	1
31399	Screw for attaching Brush connecting Lead .....	1
20495	Lock Washer for Screw 31399.....	2
25762	Insulated Plate for Generator Switch Arm (Short) .....	1
32175	Insulator for Switch Arm (Long) (Old Style) .....	1
25960	Contact for Generator Switch.....	1
25961	Support Plate for Switch Contact.....	2
32257	Bushing for Screw 26068 (Old Style).....	1
32169	Locking Plate for Screw 26068 (Old Style).....	2
26068	Screw for attaching Switch Contacts (Old Style).....	2
32921	Bushing for Screw 21098.....	2
21098	Screw for attaching Switch Contacts.....	2
20790	Plain Washer for Screw 21098.....	2
20393	Lock Washer for Screw 21098.....	1
14732	Top Cover Assembly..... (Includes the next 2 Items)	1
32289	Insulator for Top Cover.....	2
24315	Rivet for attaching Insulator 32289.....	1
32051	Nut for attaching Top Cover Assembly (Old Style) (Used with Cover without Non-losable Screw) .....	1
20137	Lock Washer for Nut 32051.....	1
27041	Plain Washer for Nut 32051.....	1
32607	Nut for attaching Top Cover Assembly (Used with Cover with Non-losable Screws) .....	1
32608	Plain Washer for Nut 32607.....	1
14731	Cover Band Assembly..... (Includes next 3 Items)	1
32796	Clamp Spring for Cover Band.....	1
32797	Latch for Cover Band.....	1
30212	Pin for attaching Latch.....	1
32013	Cover Strap for Generator (Lower).....	2
32812	Screw for attaching Strap 32013.....	2
26740	Lock Washer for Screw 32812.....	1
31939	Motor Terminal Clip.....	3
26997	Generator Terminal Clip (Open).....	3
23365	Fibre Ferrule for Clip 26997.....	1
21656	Clamp Clip for connecting Motor Generator.....	1
23553	Screw for Clamp Clip 31656.....	1
23277	Lock Washer for Nut 23452.....	1
23452	Nut for Screw 23553.....	1

**PIECE PARTS CATALOG**

**No. 1007 IGNITION SWITCH**

Note: No. 1007 Ignition Switch superseded by No. 1009 Ignition Switch. When ordering a Complete new unit, order No. 1009)

(Not Illustrated)

Piece Number	NAME OF PART	Quantity Required
1007	IGNITION SWITCH COMPLETE.....	1
12094	Cover Assembly Complete..... (Includes the next 6 Items)	1
26477	Cover for Cover Assembly 12094.....	1
26478	Push Button for Cover 26477.....	1
24916	Stud for Push Button 26478.....	1
24593	Spring for Stud 24916.....	1
23578	Name Plate for Cover 26477.....	1
25197	Rivet for Name Plate 23578.....	2
14106	Frame Assembly (Service)..... (Includes the next 7 Items)	1
25251	Stud for mounting Switch (Short).....	1
24657	Stud for mounting Switch (Long).....	1
25187	Spring Stud for Frame Assembly 14106.....	1
25277	Stud for Retaining Cam 25276.....	1
25276	Cam for Locking Switch.....	1
24956	Nut for retaining Screw 25370.....	4
25193	Dowel Pin for retaining Stud 24657.....	1
24285	Nut for Frame Assembly 14106.....	4
24809	Plain Washer for Nut 24285.....	3
11529	Locking Plate Assembly..... (Includes the next Item)	1
25349	Spring Stud for Locking Plate Assembly 11529 .....	1
24590	Spring for Locking Plate Assembly 11529.....	1
11405	Key for locking Ignition Switch 1007.....	1
24808	Screw for retaining Cover Assembly 12094.....	4
11253	Spring Terminal Assembly (Battery and Magneto) (Includes the next 3 Items)	2
11437	Spring Terminal Assembly for Spring Terminal Assembly 11253.....	1
24833	Terminal Post for Spring Terminal Assembly 11253 .....	1
25191	Dowel Pin for Spring Terminal Assembly 11253 .....	1
11359	Spring Terminal Assembly (Center)..... (Includes the next 3 Items)	1
11437	Spring Terminal Assembly for Spring Terminal Assembly 11359 .....	1
14004	Terminal Post for Spring Terminal Assembly 11359 .....	1
24614	Dowel Pin for Spring Terminal Assembly 11359 .....	1
11614	Contact Assembly for Push Button (Long) .....	1
11314	Contact Assembly (Long Contact for Battery) .....	1
11315	Contact Assembly (Short Contact for Battery) .....	1
11375	Contact Assembly (Outer Contact for Magneto) .....	1
11357	Contact Assembly (Inner Contact for Magneto) .....	1
25370	Screw for retaining Contact Assemblies 11314, 11315, 11357 and 11375 .....	4
25375	Screw for retaining Contact Assembly 11614 .....	2
24803	Insulating Bushing for Screw 25375 .....	2
24804	Insulating Bushing for Screw 25370 .....	4
24656	Insulating Bushing for Lever Assembly 11155 .....	2
11155	Lever Assembly .....	1
25162	Plate for retaining Lever Assembly 11155 .....	1
24867	Screw for retaining Plate 25162 (Large) .....	1
24957	Screw for retaining Plate 25162 (Small) .....	1
25255	Plain Washer for Screw 24957 .....	1
24598	Connector for Contact Assemblies 11614 and 11315 .....	1
24592	Separator between Contact Assemblies 11314 and 11357 and Frame Assembly 11534 (Short) .....	2
24837	Insulator for Contact Assembly 11614 .....	3
24658	Insulator for Contact Assemblies 11314 and 11315 .....	5
24838	Insulator between Contact Assemblies 11357 and 11375 (Long) .....	1
24897	Insulating Washer for Screws 25370 and 25375 .....	6
24954	Insulating Plate for Ignition Switch Assembly 1007 .....	1
24971	Bushing for retaining Screw 25375 .....	2
24591	Separator between Contact Assemblies 11314 and 11357 and Frame Assembly 14106 .....	2
24959	Stop Screw for Locking Plate Assembly 11529 .....	1

## No. 1009 IGNITION SWITCH

(Not Illustrated.)

Piece Number	NAME OF PART	Quantity Required
1009	IGNITION SWITCH COMPLETE.....	1
11506	Cover Assembly Complete..... (Includes the next 6 Items)	1
26477	Cover for Cover Assembly 11506.....	1
28166	Push Button for Cover 26477.....	1
25200	Stud for Push Button 28166.....	1
24593	Spring for Stud 25200.....	1
23576	Name Plate for Cover 26477.....	2
14107	Frame Assembly (Service)..... (Includes the next 7 Items)	1
24786	Stud for mounting Switch (Short).....	1
24759	Stud for mounting Switch (Long).....	1
25193	Pin for retaining Stud 24759.....	1
25187	Spring Stud for Frame Assembly 14107.....	1
25277	Stud for retaining Cam 25276.....	1
25276	Cam for Locking Switch.....	1
24956	Nut for retaining Screw 25370.....	4
24285	Nut for Frame Assembly 14107.....	3
24809	Plain Washer for Nut 24285.....	2
11529	Locking Plate Assembly..... (Includes the next Item)	1
25349	Spring Stud for Locking Plate Assembly 11529 .....	1
24590	Spring for Locking Plate Assembly 11529 .....	1
11405	Key for locking Ignition Switch 1009 .....	1
24808	Screw for retaining Cover Assembly 11506 .....	4
11394	Terminal Assembly (Center).....	1
11437	Spring Terminal Assembly for Spring Terminal Assembly 11394 .....	1
	(Includes the next 3 Items)	
25120	Terminal Post for Spring Terminal Assembly 11394 .....	1
24614	Dowel Pin for Spring Terminal Assembly 11394 .....	1
11253	Terminal Assembly (Magneto and Battery) .....	2
	(Includes the next 3 Items)	
11437	Spring Terminal Assembly for Spring Terminal Assembly 11253 .....	1
24833	Terminal Post for Spring Terminal Assembly 11253 .....	1
25191	Dowel Pin for Spring Terminal Assembly 11253 .....	1
11504	Contact Assembly (Short Contact for Push Button) .....	1
11614	Contact Assembly (Long Contact for Push Button) .....	1
11592	Contact Assembly (Center Contact for Battery) .....	1
11315	Contact Assembly (Outer Contact for Battery) .....	1
11314	Contact Assembly (Inner Contact for Battery) .....	1
11357	Contact Assembly (Inner Contact for Magneto) .....	1
11375	Contact Assembly (Outer Contact for Magneto) .....	1
25370	Screw for retaining Contact Assemblies 11357, 11375, 11314, 11315 and 11592 .....	4
24968	Insulating Bushing on Screw 25370 for Contact Assemblies 11375 and 11357 .....	2
24805	Insulating Bushing on Screw 25370 for Contact Assemblies 11314, 11315 and 11592 .....	2
24971	Bushing for retaining Screw 24810 .....	2
24605	Insulating Bushing for Screw 24810 .....	2
24810	Screw for retaining Contact Assemblies 11504 and 11614 .....	2
11307	Spring Terminal Assembly for Frame Assembly 14107 .....	1
24954	Insulating Plate for Ignition Switch 1009 .....	1
25162	Plate for retaining Lever Assembly 11305 .....	1
24867	Screw for retaining Plate 25162 (Large) .....	1
24957	Screw for retaining Plate 25162 (Small) .....	1
25255	Plain Washer for Screw 24957 .....	1
24959	Stop Screw for Locking Plate Assembly 11529 .....	2
24656	Insulating Bushing for Lever Assembly 11305 .....	1
24598	Connector (Wide) .....	1
24807	Connector (Narrow) .....	3
24837	Insulator (Thick) .....	6
24658	Insulator (Thin) .....	1
24838	Insulator for Contact Assembly 11375 (Long) .....	1
24603	Insulator for Contact Assembly 11504 (Long) .....	2
24591	Separator for Contact Assemblies 11314 and 11357 .....	6
24897	Insulating Washer for Screws 25370 and 24810 .....	1
11305	Lever Assembly .....	1

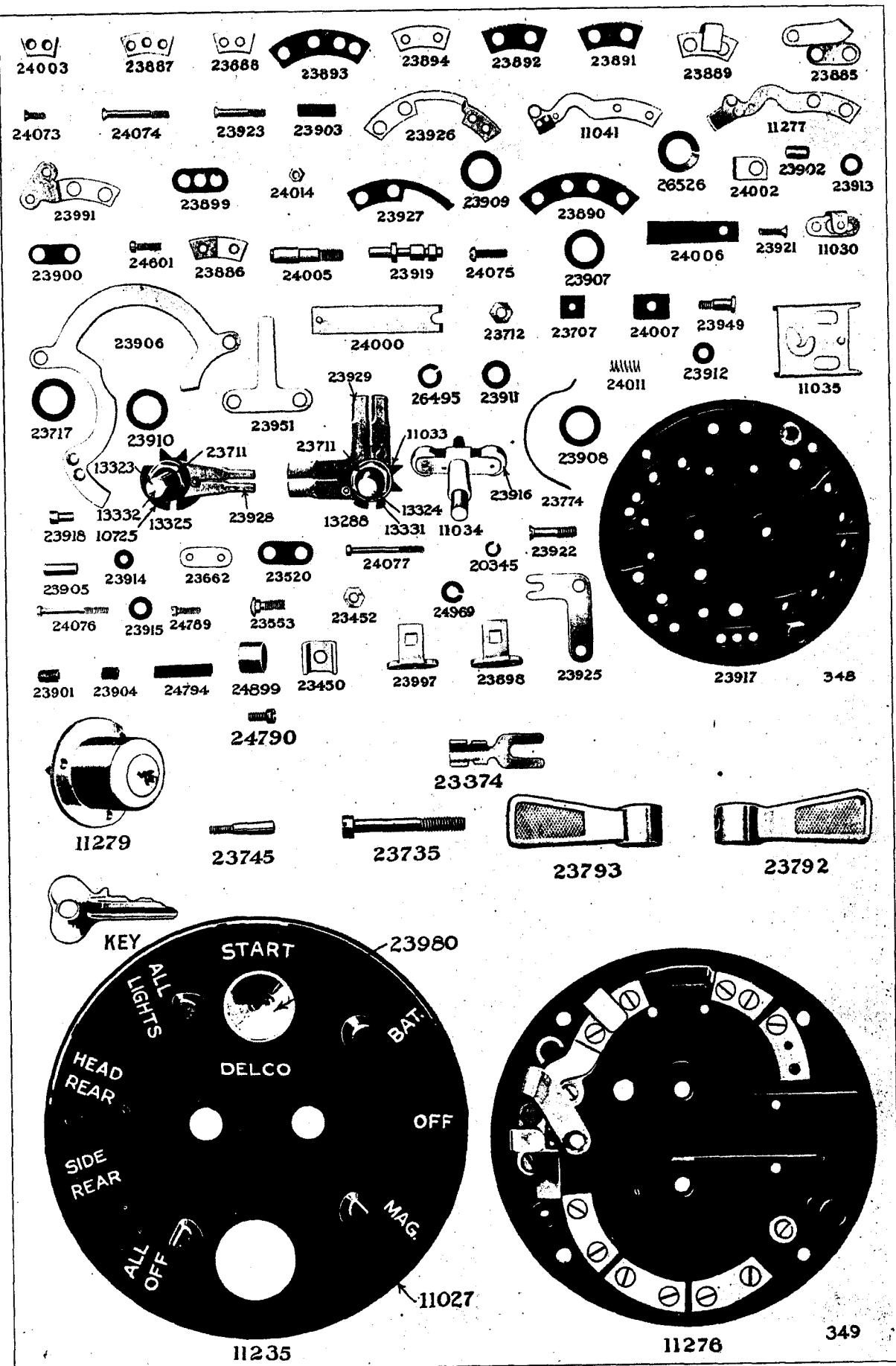
**PIECE PARTS CATALOG**

**No. 1018 IGNITION SWITCH**

(Not Illustrated)

Piece Number	NAME OF PART	Quantity Required
1018	IGNITION SWITCH COMPLETE.....	1
11542	Cover Assembly Complete..... (Includes the next 6 Items)	1
25231	Cover for Cover Assembly 11542.....	1
24644	Push Button for Cover Assembly 11542.....	1
24916	Stud for Push Button 24644.....	1
24593	Spring for Stud 24916.....	1
23580	Name Plate for Cover 25231.....	1
24304	Rivet for Name Plate 23580.....	2
14107	Frame Assembly (Service)..... (Includes the next 7 Items)	1
24786	Stud for mounting Switch (Short).....	1
24759	Stud for mounting Switch (Long).....	1
25193	Pin for retaining Stud 24759.....	1
25187	Spring Stud for Frame Assembly 14107.....	1
25277	Stud for retaining Cam 25276.....	1
25276	Cam for locking Switch.....	1
24956	Nut for retaining Screw 25370.....	4
24285	Nut for Frame Assembly 14107.....	3
24809	Plain Washer for Nut 24285.....	2
11529	Locking Plate Assembly..... (Includes the next 1 Item)	1
25349	Spring Stud for Locking Plate Assembly 11529 .....	1
24590	Spring for Locking Plate Assembly 11529 .....	1
11405	Key Assembly for locking Ignition Switch 1018 .....	1
11359	Terminal Assembly (Short Contact for Push Button)..... (Includes the next 3 Items)	1
11437	Spring Terminal Assembly for Spring Terminal Assembly 11359.....	1
14004	Terminal Post for Spring Terminal Assembly 11359 .....	1
24614	Dowel Pin for Spring Terminal Assembly 11359 .....	1
11614	Contact Spring Assembly (Long Contact for Push Button).....	1
24808	Screw for retaining Cover Assembly 11542.....	4
24837	Insulator between Terminal Assembly 11359 and Contact Spring Assembly 11614.....	2
24598	Connector for Contact Spring Assembly 11614 and Contact Spring Assembly 11315 .....	1
24897	Plain Washer for Screw 25375.....	1
24658	Insulating Plate for Screw 25375.....	1
24971	Bushing for retaining Screw 25375.....	2
25375	Screw for retaining Contact Spring Assembly 11614 .....	1
11253	Spring Terminal Assembly (Outer)..... (Includes the next 3 Items)	2
11437	Spring Terminal Assembly for Spring Terminal Assembly 11253 .....	1
24833	Terminal Post for Spring Terminal Assembly 11253 .....	1
25191	Dowel Pin for Spring Terminal Assembly 11253 .....	1
11252	Spring Terminal Assembly (Inner)..... (Includes the next 3 Items)	1
11437	Spring Terminal Assembly for Spring Terminal Assembly 11252 .....	1
25378	Terminal Post for Spring Terminal Assembly 11252 .....	1
25191	Dowel Pin for Spring Terminal Assembly 11252 .....	1
11307	Spring Terminal Assembly for Frame Assembly 14107 .....	1
11315	Contact Spring Assembly for Battery and Magneto (Short).....	2
11314	Contact Spring Assembly for Battery and Magneto (Long).....	2
25370	Screw for retaining Contact Spring Assemblies 11314 and 11315 .....	4
24805	Insulating Bushing for Screw 25370 .....	4
25162	Plate for retaining Lever Assembly 11260 .....	1
24867	Screw for retaining Plate 25162 (Large) .....	1
24957	Screw for retaining Plate 25162 (Small) .....	1
24656	Insulating Bushing for Lever Assembly 11260 .....	2
25255	Plain Washer for Screw 24957 .....	1
24591	Separator for Contact Spring Assembly 11314 (Long) .....	1
24592	Separator for Contact Spring Assembly 11314 (Short) .....	1
24959	Stop Screw for Locking Plate Assembly 11529 .....	1
24803	Insulating Bushing for Screw 25375 .....	2
25084	Insulating Plate for Ignition Switch 1018 .....	1
24897	Plain Washer for Screw 25370 .....	4
11260	Lever Assembly .....	1

PIECE PARTS CATALOG



No. 1035 COMBINATION SWITCH

## No. 1035 COMBINATION SWITCH

(No. 1035 Combination Switch is superseded by No. 1040 Combination Switch. When ordering a complete new Switch order No. 1040.)

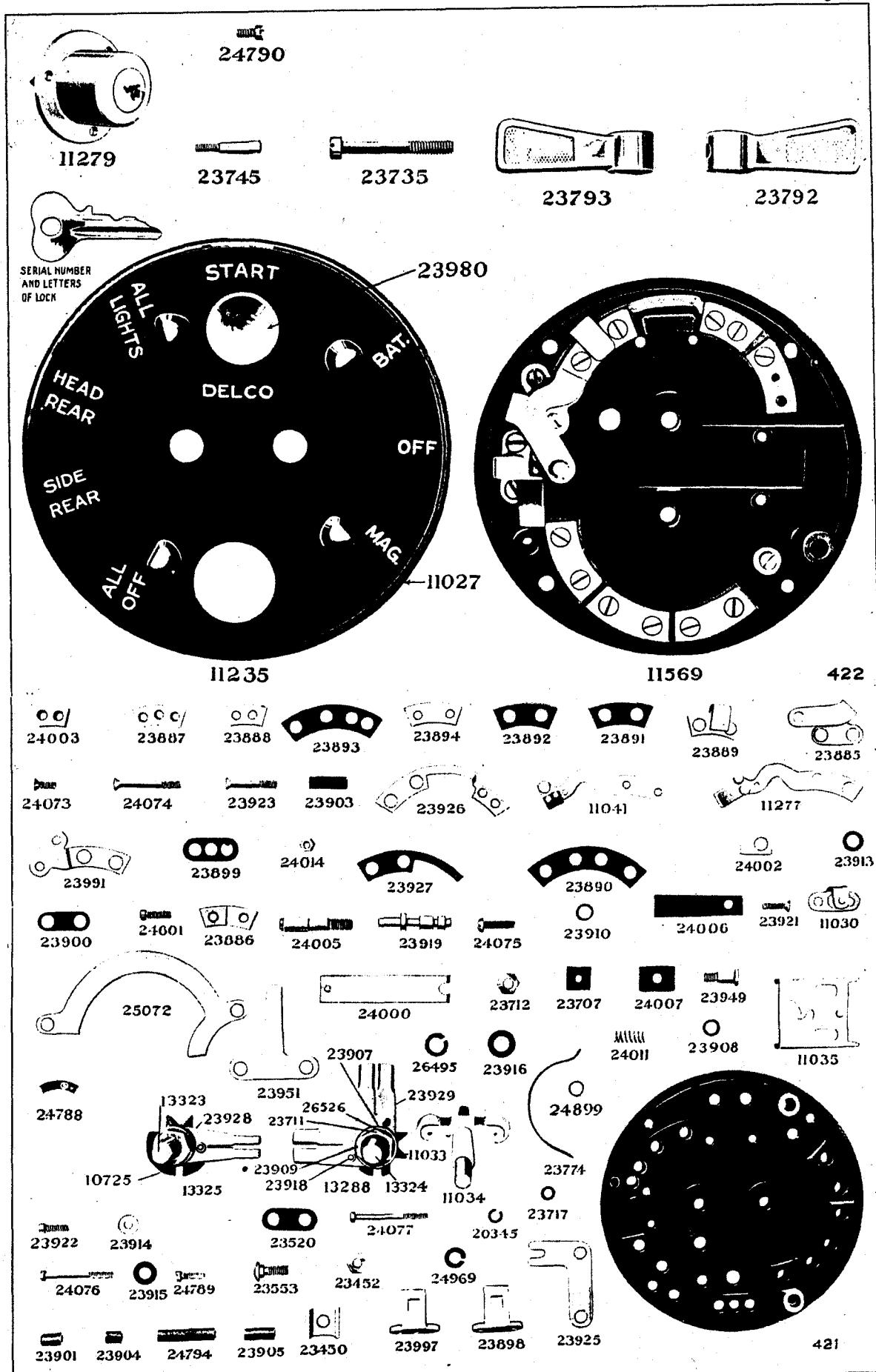
Piece Number	NAME OF PART	Quantity Required
1035	COMBINATION SWITCH COMPLETE.....	1
11235	Housing Assembly Complete..... (Includes the next 3 Items)	1
11027	Housing Assembly .....	1
23980	Push Button for Housing Assembly 11235.....	1
23979	Screw Stud for Push Button 23980 (Not shown in Illustration).....	1
11279	Lock Assembly for locking Switch..... (Includes the next Item)	1
29958	Key for Lock Assembly 11279 (Give Series No. of Lock).....	2
23374	Terminal Clip for connecting Switch.....	8
23917	Mounting Plate for Switch.....	1
23898	Terminal Post for Terminals 1, 2, 3, 4, 6, 7 and 8.....	7
23553	Screw for retaining Clip 23450.....	8
23452	Nut for Screw 23553.....	8
24969	Lock Washer for Nut 23452.....	8
23450	Clip for retaining Terminal Clip 23374.....	1
23997	Terminal Post for Terminal Post No. 5.....	1
23991	Connector for Terminal No. 8 and Contact Spring Assembly 11277.....	1
23662	Plate for Blank Terminal.....	1
11041	Contact Spring Assembly (Upper Contact Arm) for Starting Button.....	1
11277	Contact Spring Assembly (Lower Contact Arm) for Starting Button.....	1
23926	Plate for connecting Terminals No. 5 and 6 .....	1
23885	Bracket for supporting Plunger 23919.....	1
11030	Contact Bracket Assembly for Starting Button.....	1
23919	Plunger Stud for operating Contact Spring Assemblies 11041 and 11277.....	1
23894	Contact Plate for connecting Terminals No. 2, 3 and 6.....	1
23886	Plate for connecting Terminal No. 1.....	1
23887	Plate for connecting Plate 23888 and Plate 23906 .....	1
23888	Plate for connecting Terminal No. 5.....	1
23889	Plate for connecting Plate 23926 and Terminal No. 6 .....	1
23927	Insulating Plate under Plate 23926.....	1
23890	Insulating Plate for Contact Plate 23894 for Terminals No. 2 and 3 .....	2
23891	Insulating Plate for Plates 23886 and 23894.....	2
23892	Insulating Plate for Contact Spring Assembly 11041 (Thin).....	1
23893	Insulating Plate for Plates 23887 and 23888.....	1
23900	Insulator for Connector 23991.....	10
23520	Insulating Plate for Terminal Post No. 1, 2, 3, 4, 6, 7, 8 .....	1
23899	Insulating Plate for Terminal Post No. 5 .....	1
23901	Insulating Bushing for Screw 24077.....	2
23902	Insulating Bushing for Screw 23921.....	10
23903	Insulating Bushing for Screw 23923.....	1
23904	Insulating Bushing for Screw 23789.....	2
23905	Insulating Bushing for Screw 23922.....	1
23912	Plain Washer for Screw 23789.....	1
23911	Insulating Washer for Screw 23789.....	10
23923	Screw for retaining Terminals 1, 2, 3, 5, and 6 .....	2
24601	Screw for retaining Terminal No. 8.....	1
23922	Screw for retaining Terminal No. 1 (Short Screw).....	1
24789	Screw for retaining Terminal No. 4 (Short Screw).....	2
23921	Screw for retaining Terminal No. 7.....	1
15454	Brush Assembly Complete (For Lighting)..... (Includes the next 14 Items)	1
13324	Stud Assembly .....	1
	(Includes the next Item)	2
23747	Pin for Stud Assembly 13324 (Not shown in Illustration).....	1
23929	Contact Arm for Brush Assembly 15454.....	1
11033	Stop Disc Assembly..... (Includes the next Item)	1
23946	Stud for Stop Disc Assembly 11033 (Not shown in Illustration).....	1
23918	Insulating Bushing for Stop Disc Assembly 11033 .....	1
24899	Insulating Bushing for Stud Assembly 13324.....	1
23717	Plain Washer for Stop Disc Assembly 11033 .....	1
23910	Insulating Washer for Stop Disc Assembly 11033 .....	1
23711	Nut for Clamping Brush Assembly 15454.....	1
26526	Lock Washer for Nut 23711.....	1
23909	Plain Washer for Nut 23711.....	1
23907	Insulating Washer for Nut 23711.....	2
23908	Plain Washer between Contact Arms 23929.....	1

## PIECE PARTS CATALOG

## No. 1035 COMBINATION SWITCH (Continued)

Piece Number	NAME OF PART	Quantity Required
15453	Brush Assembly Complete (For Ignition) . . . . . (Includes the next 14 Items)	1
13323	Stud Assembly . . . . . (Includes the next Item)	1
23747	Pin for Stud Assembly 13323 (Not shown in Illustration) . . . . .	1
23928	Contact Arm for Brush Assembly 15453 . . . . .	2
10725	Stop Disc Assembly . . . . . (Includes the next Item)	1
23946	Stud for Stop Disc Assembly 10725 (Not shown in Illustration) . . . . .	1
23918	Insulating Bushing for Stop Disc Assembly 10725 . . . . .	1
24899	Insulating Bushing for Stud Assembly 13323 . . . . .	1
23717	Plain Washer for Stop Disc Assembly 10725 . . . . .	1
23910	Insulating Washer for Stop Disc Assembly 10725 . . . . .	1
23711	Nut for clamping Brush Assembly 13323 . . . . .	1
26526	Lock Washer for Nut 23711 . . . . .	1
23909	Plain Washer for Nut 23711 . . . . .	1
23907	Insulating Washer for Nut 23711 . . . . .	1
23908	Plain Washer for Contact Arms 23928 . . . . .	2
24005	Screw for retaining Brush Assemblies 15454 and 15453 . . . . .	2
23712	Nut for Screw 24005 . . . . .	2
20495	Lock Washer for Nut 23712 . . . . .	1
11034	Roller Arm Assembly . . . . .	1
24002	Contact Plate for Contact Spring Assembly 11277 . . . . .	1
23906	Upper Contact Plate for Brush Assemblies 15453 and 15454 . . . . .	1
23925	Plate for retaining Spring 23951 . . . . .	1
11035	Tumbler Assembly (Sliding Plate for Locking Switch) (Includes the next Item)	1
23938	Pin for Tumbler Assembly 11035 (Not shown in Illustration) . . . . .	1
24000	Slide (For Locking Plunger 23919) . . . . .	2
23774	Tension Spring for Roller Arm Assembly 11034 . . . . .	1
23951	Spring for operating Plunger 23919 . . . . .	1
24006	Insulator Plate for Spring 23951 . . . . .	1
24007	Insulator Plate for Tension Spring 23774 . . . . .	1
24003	Spacing Plate between Plates 23906 and 23887 . . . . .	1
24011	Spring for Tumbler Assembly 11035 . . . . .	1
24014	Nut for Screw 24077 . . . . .	1
23707	Nut for Screw 24075 . . . . .	1
24794	Insulating Bushing for Screw 24076 . . . . .	1
23901	Insulating Bushing for Screw 24601 . . . . .	1
24969	Lock Washer for Screw 23735 . . . . .	4
20345	Lock Washer for Nut 24014 . . . . .	2
23915	Insulating Washer for Plates 23906 and 24007 . . . . .	1
23916	Insulating Washer for Roller Arm Assembly 11034 . . . . .	1
23913	Insulating Washer for Screw 24077 . . . . .	2
23914	Plain Washer for Screws 24076 and 24077 . . . . .	2
23793	Lever for operating Brush Assembly 15453 . . . . .	2
23745	Screw for retaining Lever 23793 . . . . .	3
24790	Screw for retaining Lock Assembly 11279 . . . . .	2
23949	Screw for retaining Tumbler Assembly 11035 . . . . .	1
24077	Screw for retaining Plates 23906 and 24002 . . . . .	1
24074	Screw for connecting Plate 23906 and Blank Terminal (Long Screw) . . . . .	1
24076	Screw for retaining Terminal No. 4 (Long Screw) . . . . .	1
24073	Screw for retaining Plate 23906 (Short) . . . . .	1
24075	Screw for retaining Tension Spring 23774 . . . . .	1
23735	Screw for retaining Housing Assembly 11235 . . . . .	4

## PIECE PARTS CATALOG



No. 1042 COMBINATION SWITCH

## No. 1042 COMBINATION SWITCH

(No. 1042 Combination Switch is superseded by No. 1040 Combination Switch. When ordering a complete new switch order No. 1040.

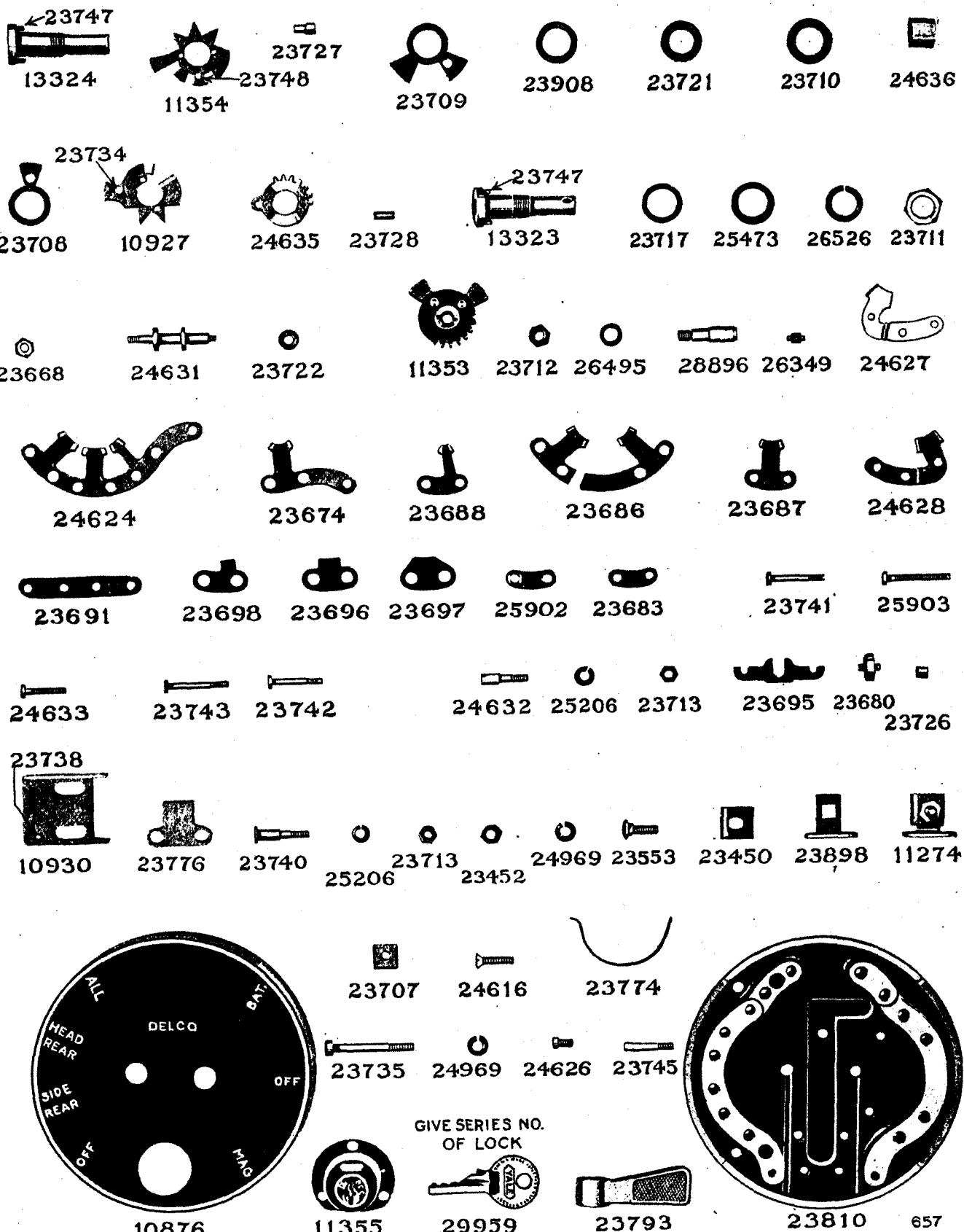
Piece Number	NAME OF PART	Quantity Required
1042	COMBINATION SWITCH COMPLETE.....	1
11235	Housing Assembly Complete..... (Includes the next 3 Items)	1
11027	Housing Assembly for Housing Assembly 11235.....	1
23980	Push Button for Housing Assembly 11235.....	1
23979	Screw Stud for Push Button 23980 (Not shown in Illustration).....	1
24952	Mounting Plate for Mounting Assembly 11569.....	8
23898	Terminal Post for Terminals 1, 2, 3, 4, 6, 7, 8 and 9.....	9
23553	Screw for retaining Clip 23450.....	9
23452	Nut for Screw 23553.....	9
20393	Lock Washer for Nut 23452.....	9
23450	Clip for retaining Terminal Clips to Combination Switch .....	1
23997	Terminal Post for Terminal Post No. 5.....	1
23991	Connector for Terminal No. 8 and Contact Spring Assembly 11277.....	1
11041	Contact Spring Assembly (Upper Contact Arm for Starting Button).....	1
11277	Contact Spring Assembly (Lower Contact Arm for Starting Button).....	1
23926	Plate connecting Terminals Nos 5 and 6.....	1
23885	Bracket for supporting Plunger Stud 23919.....	1
11030	Contact Bracket Assembly for Starting Button .....	1
23919	Plunger Stud for operating Contact Spring Assemblies 11041 and 11277.....	1
23894	Plate for connecting Terminals Nos. 2, 3, and 6 .....	3
23886	Plate for connecting Terminal No. 1.....	1
23887	Plate for connecting Plates 23888 and 23926.....	1
23888	Plate for connecting Terminal No. 5.....	1
23889	Plate for connecting Plate 23926 and Terminal No. 6.....	1
23927	Insulating Plate under Plate 23926.....	2
23890	Insulating Plate for Plate 23894 and Terminals Nos. 2 and 3.....	1
23891	Insulating Plate for Plates 23886 and 23894 and Contact Spring Assembly 11041 (Thick).....	2
23892	Insulating Plate for Contact Spring Assembly 11041 (Thin) .....	1
23893	Insulating Plate for Plates 23887 and 23888.....	1
23900	Insulating Plate for Connector 23991.....	10
23520	Insulating Plate for Terminal Post No. 1, 2, 3, 4, 6, 7, 8, 9.....	1
23899	Insulating Plate for Terminal Post No. 5.....	3
23901	Insulating Bushing for Screws 24077 and 24601 .....	2
23902	Insulating Bushing for Screw 23921 (Not shown in Illustration) .....	10
23903	Insulating Bushing for Screw 23923.....	1
23904	Insulating Bushing for Screw 23789.....	2
23905	Insulating Bushing for Screw 23922.....	1
23912	Plain Washer for Screw 24789 (Not shown in Illustration) .....	1
23911	Insulating Washer for Screw 24789 (Not shown in Illustration) .....	10
23923	Screw for retaining Terminals Nos. 1, 2, 3, 6, and 5.....	2
24601	Screw for retaining Terminal No. 8.....	1
23922	Screw for retaining Terminal No. 1 (Short Screw) .....	1
24789	Screw for retaining Terminal No. 4 (Short Screw) .....	2
23921	Screw for retaining Terminal No. 7.....	1
15454	Brush Assembly Complete (For Lighting) .....	1
	(Includes the next 14 Items)	1
13324	Stud Assembly .....	1
	(Includes the next Item)	1
23747	Pin for Stud Assembly 13324 (Not shown in Illustration) .....	2
23929	Contact Arm for Brush Assembly 15454 .....	1
	(Includes the next Item)	1
11033	Stop Disc Assembly .....	1
	(Includes the next Item)	1
23946	Stud for Stop Disc Assembly 11033 (Not shown in Illustration) .....	1
23918	Insulating Bushing for Stop Disc Assembly 11033 .....	1
24899	Insulating Bushing for Stud Assembly 13324 .....	1
23717	Plain Washer for Stop Disc Assembly 11033 .....	1
23910	Insulating Washer for Stop Disc Assembly 11033 .....	1
23711	Nut for clamping Brush Assembly 13288 .....	1
26526	Lock Washer for Nut 23711 .....	1
23909	Plain Washer for Nut 23711 .....	1
23907	Insulating Washer for Nut 23711 .....	2
23908	Plain Washer for Contact Arm 23929 .....	1
15453	Brush Assembly Complete (For Ignition) .....	1
	(Includes the next 14 Items)	1
13323	Stud Assembly .....	1
	(Includes the next Item)	1
23747	Pin for Stud Assembly 13323 (Not shown in Illustration) .....	2
23928	Contact Arm for Brush Assembly 15453 .....	1

**PIECE PARTS CATALOG**

**No. 1042 COMBINATION SWITCH (Continued)**

Piece Number	NAME OF PART	Quantity Required
10725	<b>Stop Disc Assembly.....</b> (Includes the next Item)	1
23946	Stud for Stop Disc Assembly 10725 (Not shown in Illustration) .....	1
23918	Insulating Bushing for Stop Disc Assembly 10725 .....	1
24899	Insulating Bushing for Stud Assembly 13323 (Not shown in Illustration) .....	1
23717	Plain Washer for Stop Disc Assembly 10725 .....	1
23910	Insulating Washer for Stop Disc Assembly 10725 .....	1
23711	Nut for clamping Brush Assembly 15453 .....	1
26526	Lock Washer for Nut 23711.....	1
23909	Plain Washer for Nut 23711.....	1
23908	Plain Washer for Contact Arm 13928.....	2
23907	Insulating Washer for Nut 23711.....	1
24005	Screw for retaining Brush Assemblies 15453 and 15454 .....	2
23712	Nut for Screw 24005.....	2
20495	Lock Washer for Nut 23712.....	2
23913	Insulating Washer for Screw 24077.....	1
23914	Plain Washer for Screws 24076 and 24077 .....	1
23793	Lever for operating Brush Assembly 15453 .....	2
23745	Screw for retaining Lever 23793 .....	2
24788	Segment for Terminal No. 5 (Upper).....	1
11279	<b>Lock Assembly for connecting Switch.....</b> (Includes the next Item)	1
29958	Key for Lock Assembly 11279 (Give Series No. of Lock) .....	2
24790	Screw for retaining Lock Assembly 11279.....	3
24077	Screw for retaining Plate 24002 and Segment 24788 .....	1
24074	Screw for retaining Terminal No. 9 (Long Screw) .....	1
24076	Screw for retaining Terminal No. 4 (Long Screw) .....	1
24073	Screw for retaining Plate 25072 (Short Screw) .....	1
24075	Screw for retaining Spring 23774 .....	1
23735	Screw for retaining Housing Assembly 11235 .....	1
11034	<b>Roller Arm Assembly.....</b>	1
24002	Contact Plate for Contact Spring Assembly 11277 .....	1
25072	Upper Contact Plate for Brush Assembly 13288 .....	1
23925	Plate for retaining Spring 23951 .....	1
11035	<b>Tumbler Assembly for Locking Switch.....</b> (Includes the next Item)	1
23938	Pin for Tumbler Assembly 11035 (Not shown in Illustration) .....	1
24000	Slide (For locking Push Button) .....	1
23774	Tension Spring for Roller Arm Assembly 11034 .....	2
23951	Spring for operating Plunger Stud 23919 .....	1
24006	Insulating Plate for Spring 23774 .....	1
24007	Insulating Plate for Tension Spring 23774 .....	1
24003	Spacing Plate between Plate 23887 and Segment 24788 .....	1
24011	Spring for Tumbler Assembly 11035 .....	1
24014	Nut for Screw 24077 .....	1
23707	Nut for Screw 24075 .....	1
24794	Insulating Bushing for Screw 24076 .....	1
20393	Lock Washer for Screw 23735 .....	2
20345	Lock Washer for Nut 24014 .....	1
23916	Insulating Washer for Roller Arm Assembly 11034 .....	1
23915	Insulating Washer for Plates 25072 and 24007 .....	2
23949	Screw for retaining Tumbler Assembly 11035 .....	2

PIECE PARTS CATALOG



No. 1045 COMBINATION SWITCH

## No. 1045 COMBINATION SWITCH

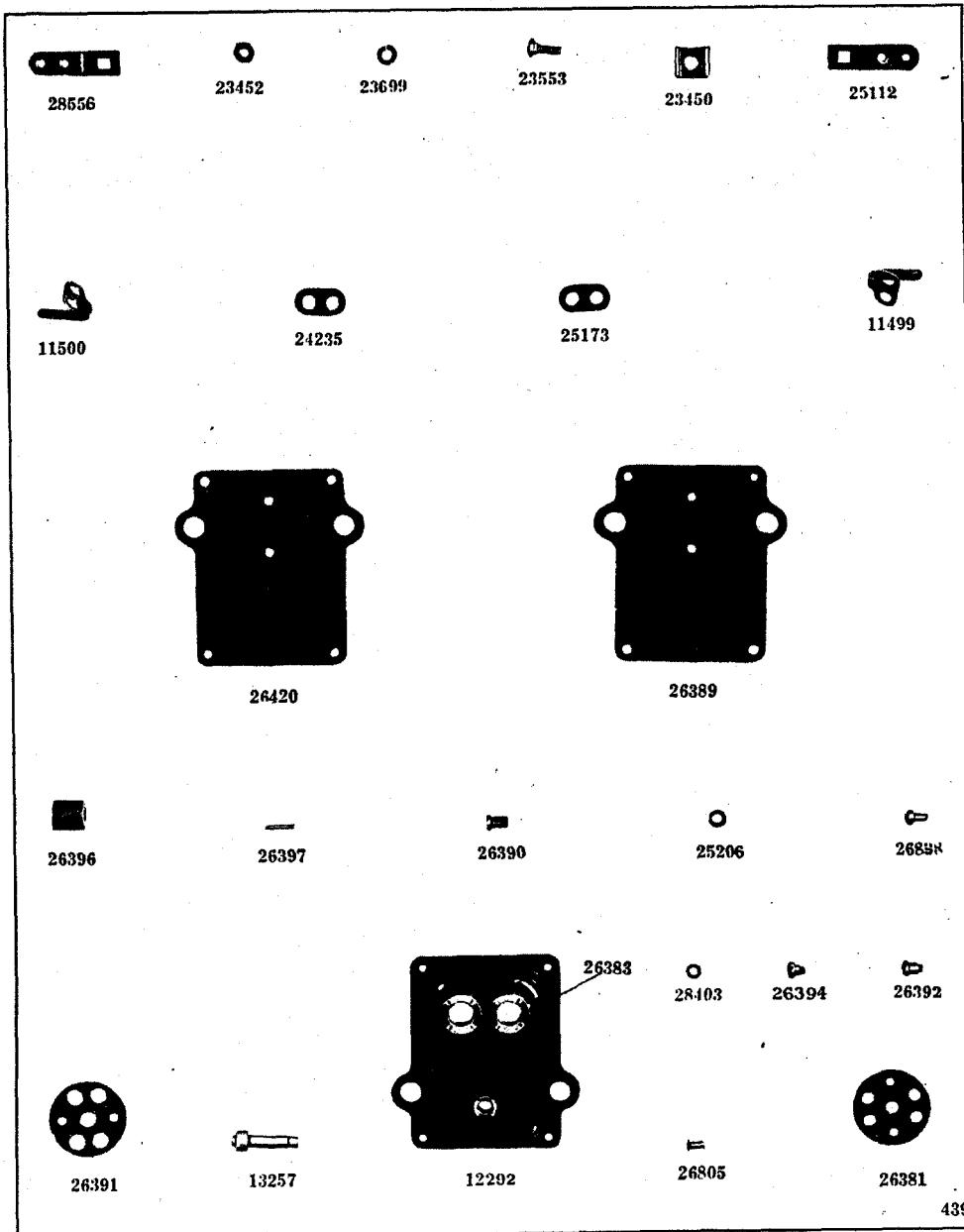
Piece Number	NAME OF PART	Quantity Required
1045	COMBINATION SWITCH COMPLETE.	1
10876	Housing Assembly	1
10930	Tumbler Assembly for locking Switch (Includes the next Item)	1
23738	Stud for Tumbler Assembly 10930	2
23740	Screw for retaining Tumbler Assembly 10930	1
23776	Spring for retaining Tumbler Assembly 10930	5
23713	Nut for Screws 23740, 24632 and Stud 24631	5
25206	Lock Washer for Nut 23713	2
24632	Stop Screw for Blade Assemblies 13326 and 13327	1
11353	Gear Wheel Assembly	3
23668	Nut for retaining Gear Wheel Assembly 11353 and Screw 23742	1
23722	Plain Washer for Nut 23668	1
23695	Retainer for Roller 23680	2
23680	Roller for Blade Assemblies 13326 and 13327	1
24631	Stud for Retainer 23695	1
11355	Lock Assembly (Includes the next Item)	1
29959	Key for Lock Assembly 11355 (Give Series No. of Lock)	2
24626	Screw for retaining Lock Assembly 11355	4
23735	Screw for retaining Housing Assembly 10876	4
20393	Lock Washer for Screw 23735	2
23793	Lever for operating Blade Assemblies 13326 and 13327	2
23745	Screw for retaining Lever 23793	2
28896	Stud for retaining Blade Assemblies 13326 and 13327	2
23712	Nut for Stud 28896	2
20495	Lock Washer for Nut 23712	8
23898	Terminal Post for Terminal Post	8
23553	Screw for retaining Clip 23450	8
23452	Nut for Screw 23553	8
20393	Lock Washer for Nut 23452	8
23450	Clip for retaining Terminal Clip 23774	10
23743	Screw for retaining Terminals Nos. 1, 2, 3, 5 and 6	10
23726	Insulating Bushing for Screw 23743	1
23691	Plate under Terminal No. 4	2
23742	Screw for retaining Plate 23691	1
24616	Screw for retaining Spring 23774	2
23774	Spring for Retainer 23695	1
23707	Nut for Screw 24616	1
23683	Plate for retaining Screw 23741	2
23741	Screw for retaining Terminal No. 4	2
25903	Screw for retaining Brush 24628	1
24628	Brush for Terminal No. 7	1
24627	Brush for Terminal No. 8	1
26349	Insulating Stud for Brushes 24627 and 24628	1
23810	Mounting Plate for Terminal Post	1
23686	Brush for Terminals Nos. 5 and 6 (Upper for Terminal No. 5 and Lower for Terminal No. 6)	1
23674	Brush for Terminal No. 5 (Lower)	1
23687	Brush for Terminals Nos. 2, 3 and 6 (Upper)	3
23688	Brush for Terminal No. 1 (Upper)	1
24624	Brush for Terminals Nos. 1, 2 and 3 (Lower)	1
23698	Insulating Plate for Terminal No. 1	1
23697	Insulating Plate for Terminal No. 6 (Lower)	4
23696	Insulating Plate for Terminals Nos. 2, 3 and 5	2
25902	Spacing Plate for Brush 24628	2
24633	Screw for retaining Brush 24627	1
13326	Blade Assembly Complete (For Ignition) (Includes the next 13 Items)	1
13323	Stud Assembly (Includes the next Item)	1
23747	Pin for Stud Assembly 13323	1
10927	Stop Disc Assembly (Includes the next Item)	1
23734	Stud for Stop Disc Assembly 10927	1
24635	Gear for Blade Assembly 13326	1
23711	Nut for Clamping Blade Assembly 13326	1
26526	Lock Washer for Nut 23711	1
23708	Blade for Blade Assembly 13326	2
23710	Insulating Washer for Blade 23708	2
23717	Plain Washer for Stop Disc Assembly 10927 (Thick)	2
25473	Plain Washer for Gear 24635 (Thin)	2

**PIECE PARTS CATALOG**

**No. 1045 COMBINATION SWITCH (Continued)**

Piece Number	NAME OF PART	Quantity Required
<b>24636</b>	Insulating Bushing for Stud Assembly 13323.....	1
<b>23728</b>	Insulating Bushing for Stop Disc Assembly 10927 .....	1
<b>13327</b>	<b>Blade Assembly Complete (For Lighting).....</b> (Includes the next 14 Items)	1
<b>13324</b>	<b>Stud Assembly .....</b> (Includes the next Item)	1
<b>23747</b>	Pin for Stud Assembly 13324.....	1
<b>11354</b>	<b>Stop Wheel Assembly.....</b> (Includes the next Item)	1
<b>23748</b>	Stud for Stop Wheel Assembly 11354.....	1
<b>23727</b>	Insulating Bushing for Stop Wheel Assembly 11354 .....	1
<b>23737</b>	Insulating Bushing for Stud Assembly 13324 (Not shown in Illustration) .....	1
<b>23711</b>	Nut for Clamping Blade Assembly 13327.....	1
<b>26526</b>	Lock Washer for Nut 23711.....	1
<b>23721</b>	Plain Washer for Nut 23711 (Thick).....	1
<b>23710</b>	Insulating Washer for Blade 23709.....	2
<b>23717</b>	Plain Washer for Stop Wheel Assembly 11354 (Thick) .....	2
<b>25473</b>	Plain Washer for Stop Wheel Assembly 11354 (Thin) .....	2
<b>23709</b>	Blade for Blade Assembly 13327.....	1
<b>23908</b>	Plain Washer for Nut 23711 (Thin).....	1
<b>23375</b>	Terminal Clip for connecting Switch (Large) (Not shown in Illustration) .....	2
<b>23374</b>	Terminal Clip for connecting Switch (Small) (Not shown in Illustration) .....	6

PIECE PARTS CATALOG



No. 1061 AUTO HORN SWITCH

## No. 1061 AUTO HORN SWITCH

Piece Number	NAME OF PART	Quantity Required
1061	AUTO HORN SWITCH COMPLETE.....	1
14110	Cover Assembly Complete (Service) (Includes the next 6 Items)	1
12292	Cover Assembly .....	2
	(Includes the next 2 Items)	2
26963	Bushing for Plunger Assembly 13257 (Not shown in Illustration) .....	1
26383	Hub for Cover Assembly 14110 .....	1
13257	Plunger Assembly .....	1
26396	Cap for Plunger Assembly 13257 .....	4
26397	Pin for retaining Cap 26396 .....	4
26898	Screw for retaining Cover Assembly 12292 .....	1
25206	Lock Washer for Screw 26898 .....	1
12077	Base Assembly Complete .....	1
	(Includes the next 25 Items)	1
26420	Base for Base Assembly 12077 .....	1
26389	Insulator for Base 26393 .....	1
26391	Insulator (Thick) (Round) .....	1
26381	Insulator (Thin) (Round) .....	1
26390	Stud Stop for Contact Spring Assembly 11500 .....	2
26394	Screw for attaching Terminal Assembly 12076 .....	2
26392	Screw for attaching Terminal Assembly 13095 .....	1
12076	Terminal Assembly Complete (Crooked Terminal) .....	1
	(Includes the next 5 Items)	1
28556	Terminal for Terminal Assembly 12076 .....	1
23450	Clip for retaining Terminal Clip 23374 .....	1
23553	Screw for retaining Clip 23450 .....	1
23452	Nut for Screw 23553 .....	1
23699	Lock Washer for Nut 23452 .....	1
11507	Terminal Assembly Complete (Straight Terminal) .....	1
	(Includes the next 5 Items)	1
25112	Terminal for Terminal Assembly 11507 .....	1
23450	Clip for retaining Terminal Clip 23374 .....	1
23553	Screw for retaining Clip 23450 .....	1
23452	Nut for Screw 23553 .....	1
23699	Lock Washer for Nut 23452 .....	1
24235	Insulator for Contact Spring Assembly 11499 (Lower) .....	1
25173	Insulator for Contact Spring Assembly 11499 (Upper) .....	1
11500	Contact Spring Assembly (Lower Contact) .....	2
11499	Contact Spring Assembly (Upper Contact) .....	2
26805	Rivet for retaining Insulators 26391 and 26392 .....	2
28403	Washer for Rivet 26805 .....	2
23374	Terminal Clip for connecting Switch (Not shown in Illustration) .....	2

## PIECE PARTS CATALOG



24624



23674



26498



26499



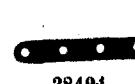
23687



23688



23683



28494



26654



25206



23713



28896



26195



28497



26525



26530



23697



23740



25206



23713



24632



25206



23713



23450



23553



24969



23452



23908



25473



23717



23909



23710



26526



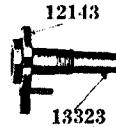
23711



11274



23898



13323

26531

26527



26497



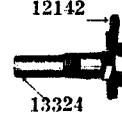
26496



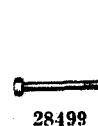
26524



26544



13324



28499



24969



10930



23776



23774



24616



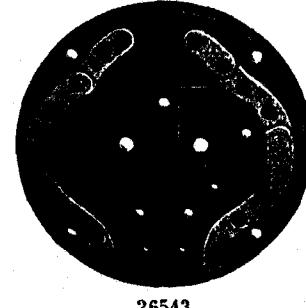
23707



27014



27013



26543



24626

Serial Number and  
Letters of Lock

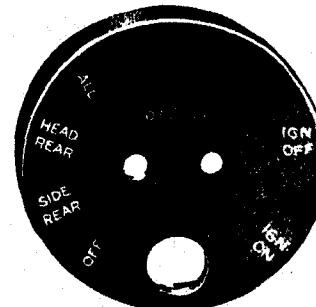
23715



11355



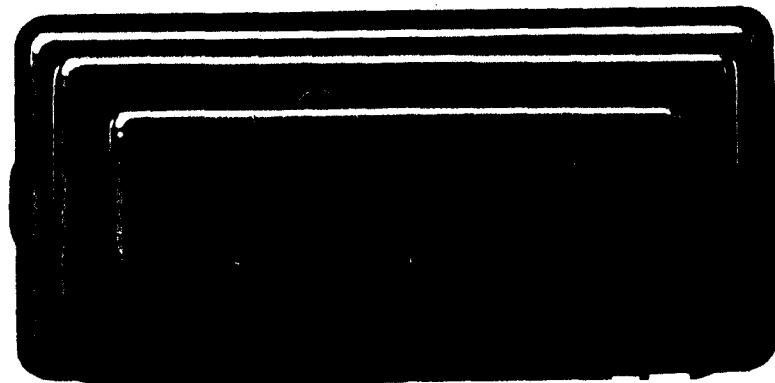
23793



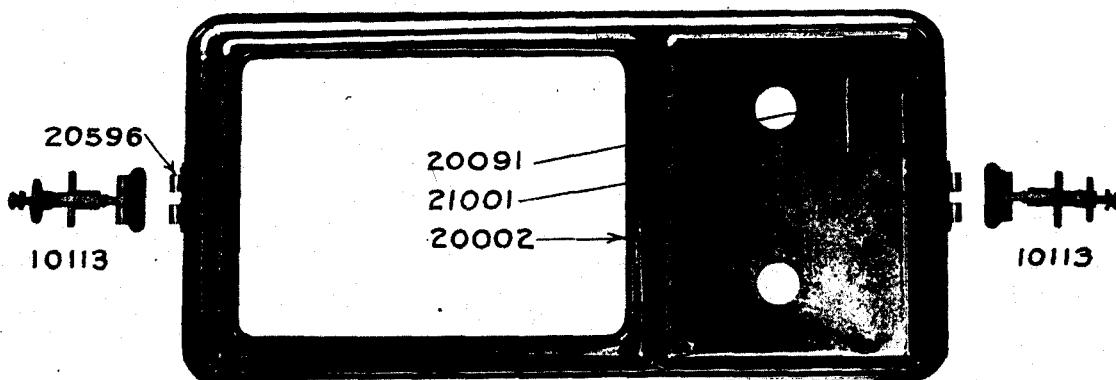
12144

423

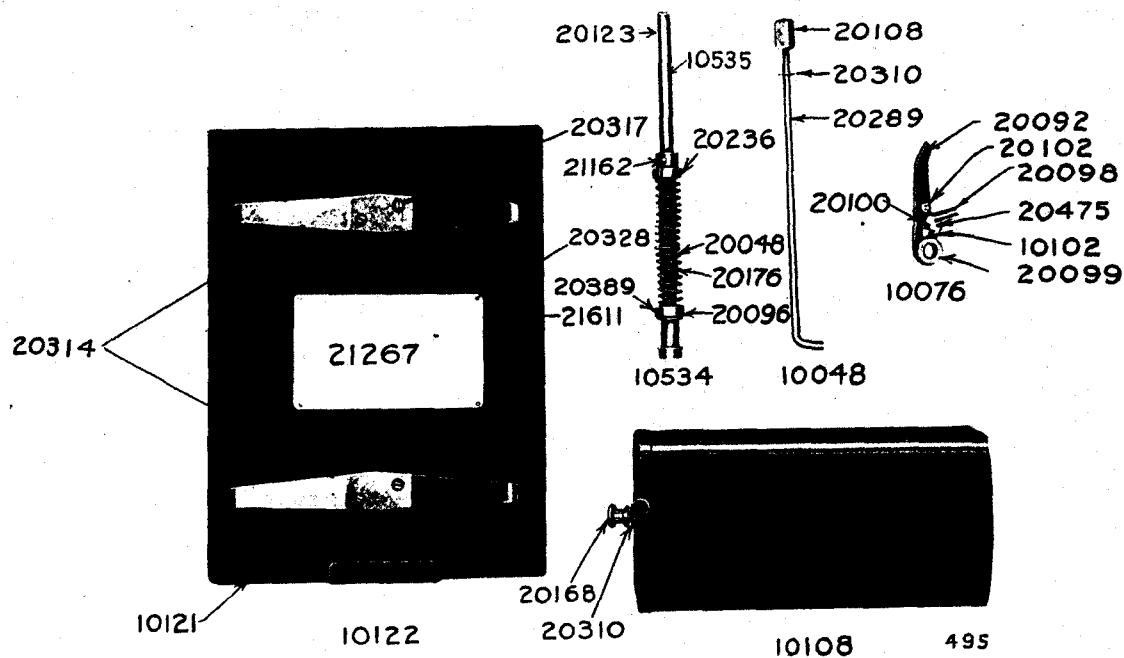
No. 1062 COMBINATION SWITCH



11536



322

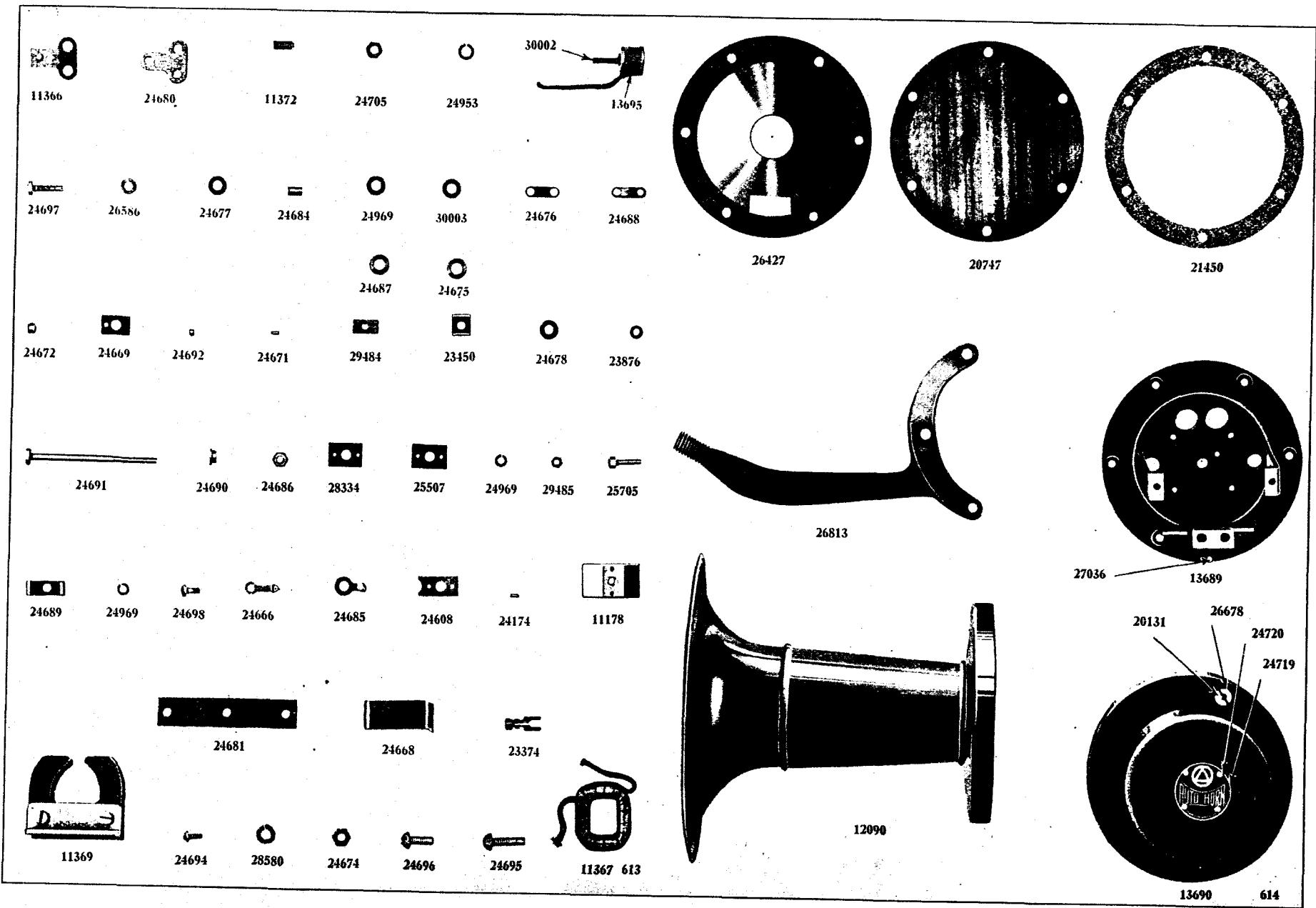


No. 5401 BATTERY BOX

## No. 5312 AUTO HORN

Piece Number	NAME OF PART	Quantity Required
5312	<b>AUTO HORN ASSEMBLY.....</b>	1
13690	<b>Shell Assembly Complete.....</b> (Includes the next 5 Items)	1
24719	Name Plate for Shell Assembly 13690.....	1
26838	Rivet for attaching Name Plate 24719.....	4
26678	Thumb Nut for retaining Shell Assembly 13690.....	1
20131	Lock Washer for Thumb Nut 26678.....	1
24389	Plain Washer for retaining Thumb Nut 26678 (Not shown in Illustration).....	1
12090	<b>Horn Assembly Complete (Front).....</b>	1
28613	Bracket for connecting Auto Horn.....	1
26427	Protector for Diaphragm.....	1
11367	<b>Coil Assembly for Horn.....</b>	1
13689	<b>Housing Assembly for Horn.....</b> (Includes the next Item)	1
27036	Stud for retaining Shell Assembly 13690.....	1
12140	<b>Contact Spring Assembly (Lower Contact).....</b>	1
11369	<b>Core Assembly for Coil Assembly 11367.....</b>	1
11372	<b>Contact Screw Assembly.....</b>	1
24705	Nut for Contact Screw Assembly 11372.....	1
24953	Lock Washer for Nut 24705.....	1
11178	<b>Armature Assembly Complete.....</b> (Includes the next Item)	1
24174	Pin for Armature 24158.....	2
13695	<b>Resistance Coil Assembly for Horn.....</b>	1
29777	Screw for Resistance Coil Assembly 13695.....	1
24969	Lock Washer for Screw 29777.....	1
30003	Plain Washer for Screw 29777.....	1
26586	Lock Washer for Nuts 24686 and Screw 24697.....	3
24666	Clip connecting Coil Assembly 11367 to Screw 25705 and Resistance Coil Assembly 13695.....	4
24668	Retainer for Coil Assembly 11367.....	1
24669	Insulator for Terminal Base 29484 and Clip 24666.....	4
29484	Terminal Base for retaining Terminal Clip 23374.....	2
24671	Pin for Terminal Base 29484.....	2
24672	Bushing for Screw 25705.....	1
25705	Screw for retaining Terminal Clamp 24281 and Clip 24666.....	1
23450	Terminal Clamp for retaining Terminal Clip 23374.....	2
29485	Nut for retaining Screw 25705 and Resistance Coil 13695.....	2
24969	Lock Washer for Nut 29485 and Screws 25705 and 24698.....	6
28580	Lock Washer for Nut 24674.....	6
24674	Nut for Screws 24695 and 24696.....	6
24695	Screw for retaining Horn Assembly 12090 (Short).....	3
24696	Screw for retaining Horn Assembly 12090 (Long).....	3
24675	Plain Washer for Contact Spring Assembly 11366 (Thin).....	2
24687	Spacing Washer for Contact Spring Assembly 11365 (Thick).....	2
24678	Plain Washer for Contact Spring Assembly 11366 (Thick).....	2
24677	Insulating Washer for Contact Spring Assembly 11366 .....	2
24680	Terminal Plate for retaining Contact.....	1
24697	Screw for retaining Plate 24680 and Contact Spring Assembly 11366 .....	2
24688	Block for retaining Screw 24697.....	1
24676	Insulating Plate for Block 24688.....	2
24681	Spring Plate for operating Armature Assembly 11178 .....	6
28334	Insulator for Stop Plate 24608 (Lower) .....	1
25507	Insulator for Stop Plate 24608 (Upper) .....	1
24608	Stop Plate for operating Contact Spring Assembly 11366 .....	1
24684	Insulator Bushing for Screw 24697 .....	2
24685	Clip for connecting Coil Assembly 11367 and Contact Spring Assembly 11366 .....	1
24686	Nut for Tapper 24691 .....	1
24691	Tapper for operating Diaphragm 20747 .....	1
20747	Diaphragm for Horn Assembly 12090 .....	1
21450	Insulating Ring for Diaphragm 20747 (Narrow) .....	1
24264	Insulating Ring for Diaphragm 20747 (Wide) (Not shown in Illustration) .....	1
24689	Clip for retaining Spring Plate 24681 .....	2
24690	Bushing for Tapper 24691 .....	1
24692	Bushing for Terminal Base 24670 .....	1
23876	Plain Washer for Screw 25705 .....	1
24694	Screw for retaining Core Assembly 11369 .....	4
24698	Screw for retaining Spring Plate 24681 .....	2
23374	Terminal Clip for connecting Auto Horn 5312 .....	1

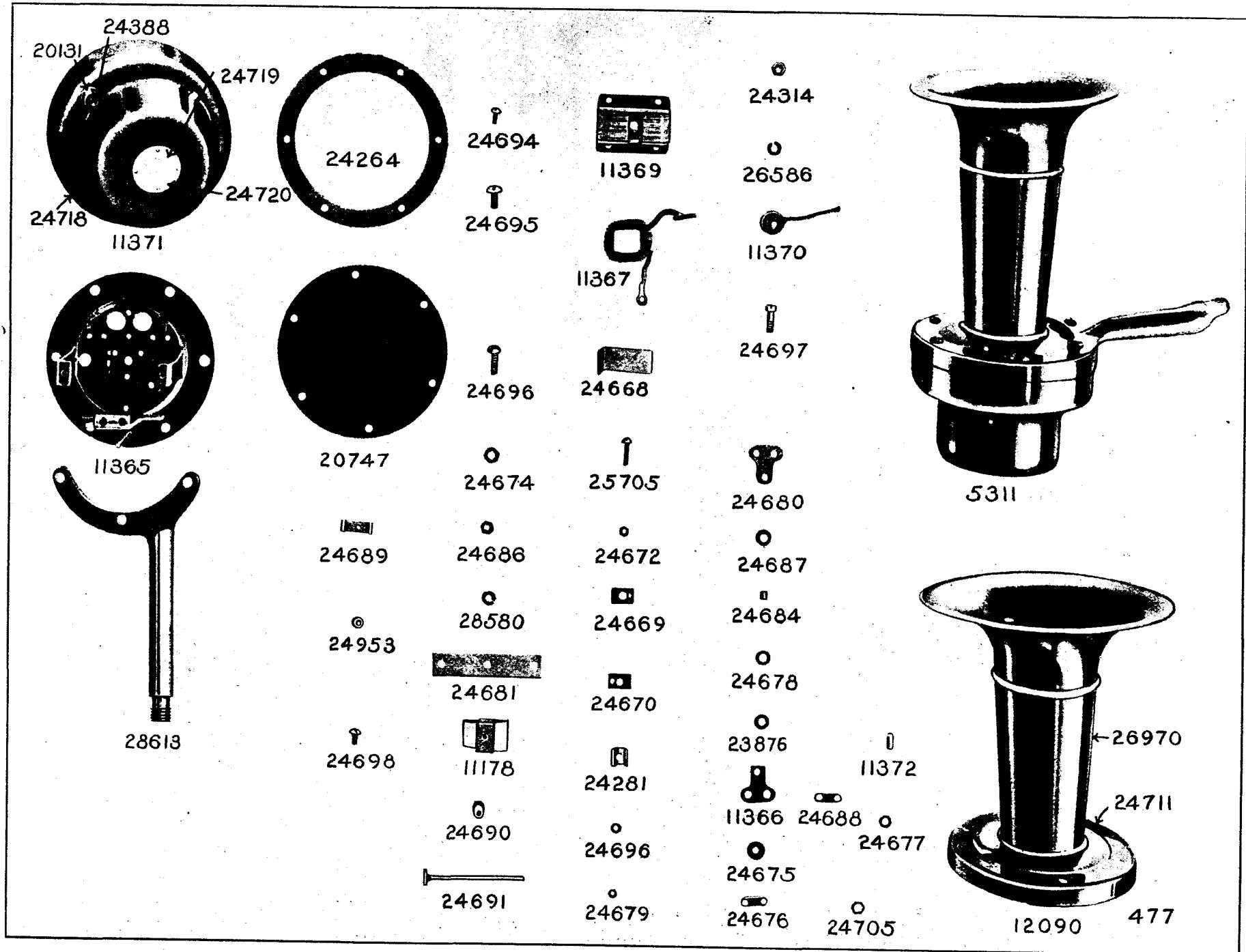
## No. 5312 AUTO HORN



## No. 5311 AUTO HORN

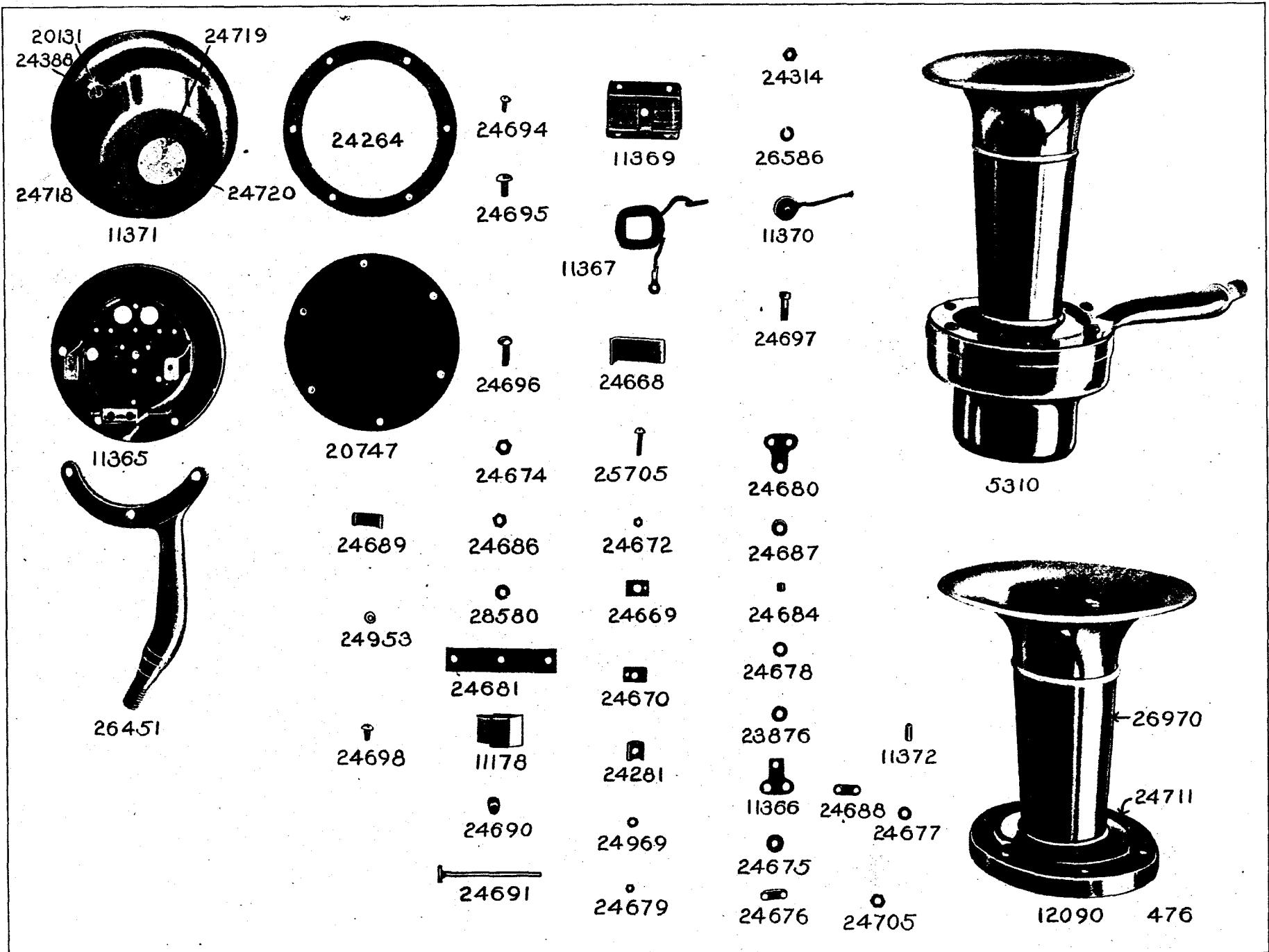
Piece Number	NAME OF PART	Quantity Required
5311	<b>AUTO HORN COMPLETE.....</b>	1
11371	<b>Shell Assembly Complete.....</b> (Includes the next 5 Items)	1
24719	Name Plate for Shell Assembly 11371.....	1
26838	Rivet for Name Plate 24719 (Not shown in Illustration).....	4
26678	Thumb Nut for Shell Assembly 11371 (Not shown in Illustration).....	1
20131	Lock Washer for Thumb Nut 26678 (Not shown in Illustration).....	1
24389	Plain Washer for retaining Thumb Nut 26678 .....	1
12090	<b>Horn Assembly Complete (Front).....</b>	1
28613	Bracket for connecting Horn Assembly.....	1
26427	Protector for Diaphragm 20747 (Not shown in Illustration).....	1
11367	<b>Coil Assembly.....</b>	1
24668	Retainer for Coil Assembly 11367.....	1
13689	<b>Housing Assembly .....</b> (Includes the next Item)	1
27036	Stud for retaining Shell Assembly 11371 (Not shown in Illustration).....	1
11366	<b>Contact Spring Assembly (Lower Contact).....</b>	1
12140	<b>Core Assembly for Coil Assembly 11367.....</b>	1
24694	Screw for retaining Core Assembly 12140.....	4
11372	<b>Contact Screw Assembly (Upper Contact).....</b>	1
24705	Nut for Contact Screw Assembly 11372.....	1
24953	Lock Washer for Nut 24705.....	1
11178	<b>Armature Assembly Complete.....</b> (Includes the next Item)	1
24174	Pin for Armature Assembly 11178 (Not shown in Illustration).....	1
11370	<b>Resistance Coil Assembly.....</b>	1
24314	Nut for retaining Resistance Coil Assembly 11370.....	1
26586	Lock Washer for Nuts 24314, 24686 and Screw 24697 .....	4
24666	Clip for connecting Coil Assembly 11367 and Screw 25705 (Not shown in Illustration) .....	1
24669	Insulator for Terminal Base 24670 and Clip 24666 .....	2
29484	Terminal Base for retaining Terminal Clip 23374 (Not shown in Illustration).....	1
24671	Pin for Terminal Base 29484 (Not shown in Illustration).....	1
24672	Bushing for Screw 25705.....	1
25705	Screw for retaining Terminal Clamp 24281 and Clip 24666 .....	1
23450	Terminal Clamp for retaining Terminal Clip 23374 (Not shown in Illustration).....	1
29485	Nut for Screw 25705 (Not shown in Illustration) .....	1
24969	Lock Washer for Nut 29485 and Screws 25705 and 24698 (Not shown in Illustration) .....	4
28580	Lock Washer for Nut 24674.....	6
24674	Nut for Screws 24695 and 24696.....	6
24695	Screw for retaining Horn Assembly 12090 (Short) .....	3
24696	Screw for retaining Horn Assembly 12090 (Long) .....	3
24675	Plain Washer for Contact Spring Assembly 11366 (Thin) .....	1
24687	Spacing Washer for Contact Spring Assembly 11366 (Thick) .....	2
24678	Plain Washer for Contact Spring Assembly 11366 (Thick) .....	2
24677	Insulating Washer for Contact Spring Assembly 11366 .....	2
24680	Terminal Plate for retaining Contact and Nut Assembly 13494.....	1
24697	Screw for retaining Terminal Plate 24698 and Contact Spring Assembly 11366.....	2
24688	Plate for retaining Screw 24697.....	1
24676	Insulating Plate for Plate 24688.....	2
27036	Stud for retaining Shell Assembly 11371 (Not shown in Illustration).....	1
24681	Spring Plate for operating Armature Assembly 11178 .....	6
28334	Insulator for Stop Plate 24608 (Lower) (Not shown in Illustration).....	1
25507	Insulator for Stop Plate 24608 (Upper) (Not shown in Illustration).....	1
24608	Stop Plate for operating Contact Spring Assembly 11366 (Not shown in Illustration) .....	1
24684	Insulating Bushing for Screw 24697.....	2
24685	Clip for connecting Coil Assembly 11367 and Spring Terminal Assembly 11366 (Not shown in Illustration) .....	1
24686	Nut for Tapper 24691.....	1
24691	Tapper for operating Diaphragm 20747.....	1
20747	Diaphragm for Horn Assembly 12090 next to Housing Assembly 13689 .....	1
21450	Insulating Ring for Diaphragm 20747 (Narrow) (Not shown in Illustration) .....	1
24264	Insulating Ring for Diaphragm 20747 (Wide) .....	1
24689	Clip for retaining Spring Plate 24681.....	2
24690	Bushing for Tapper 24691.....	1
24692	Bushing for Terminal Base 24670 (Not shown in Illustration) .....	1
23876	Plain Washer for Screw 25705.....	1
24698	Screw for retaining Spring Terminal 24681.....	2
23374	Terminal Clip for connecting Auto Horn 5311 (Not shown in Illustration) .....	1

## No. 5311 AUTO HORN



## No. 5310 AUTO HORN

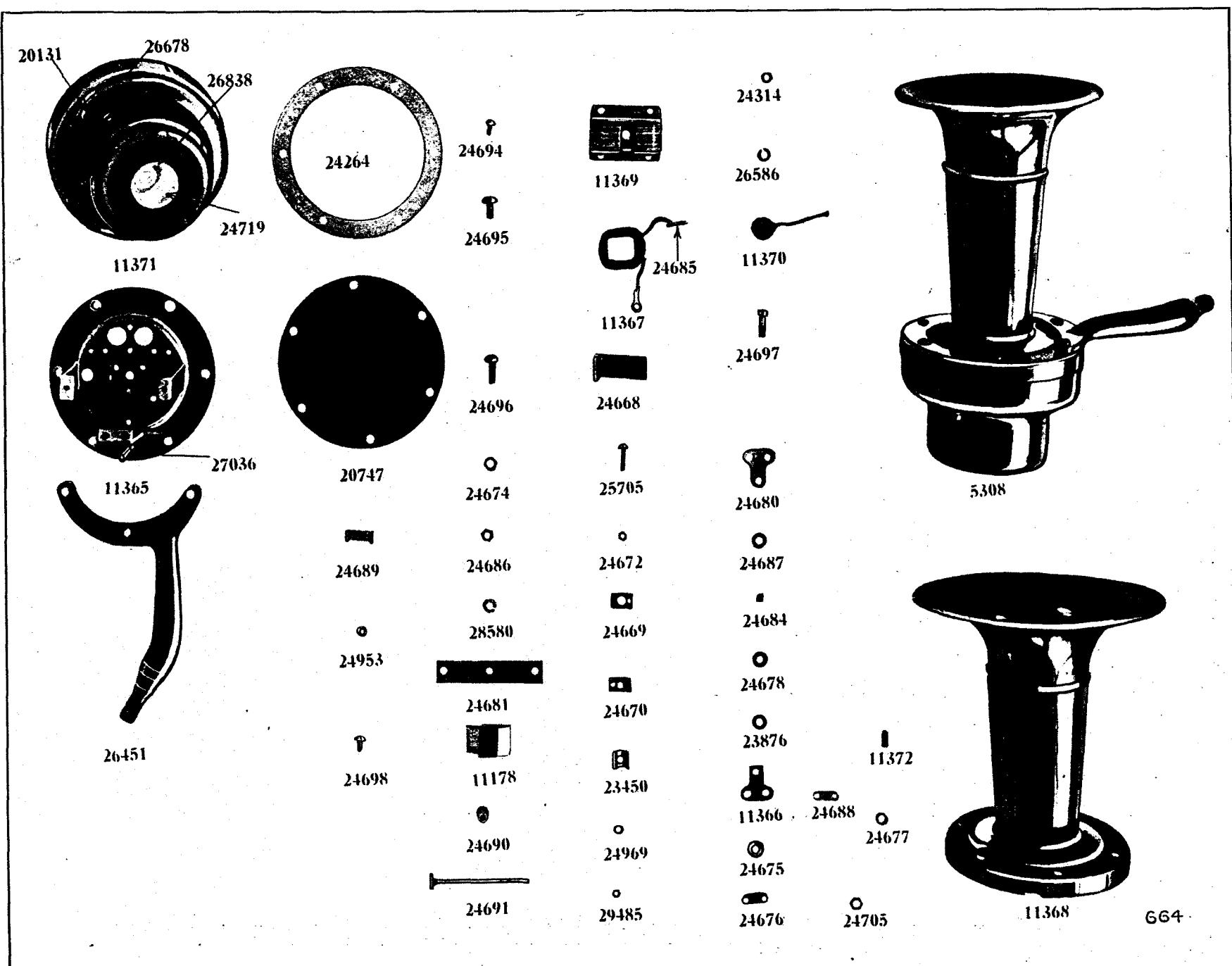
Piece Number	NAME OF PART	Quantity Required
5310	AUTO HORN COMPLETE.....	1
11371	Shell Assembly Complete..... (Includes the next 5 Items)	1
24719	Name Plate for Shell Assembly 11371.....	1
26838	Rivet for Name Plate 24719 (Not shown in Illustration).....	1
26678	Thumb Nut for Shell Assembly 11371.....	4
20131	Lock Washer for Thumb Nut 26678.....	1
24389	Plain Washer for retaining Thumb Nut 26678 (Not shown in Illustration).....	1
12090	Horn Assembly Complete (Front).....	1
26451	Bracket for connecting Auto Horn.....	1
26427	Projector for Diaphragm 20747 (Not shown in Illustration).....	1
11367	Coil Assembly .....	1
13689	Housing Assembly..... (Includes the next Item)	1
27036	Stud for retaining Shell Assembly 11371 (Not shown in Illustration).....	1
11366	Contact Spring Assembly (Lower Contact) .....	1
12140	Core Assembly for Coil Assembly 11367.....	1
11372	Contact Screw Assembly (Upper Contact).....	1
24705	Nut for Contact Screw Assembly 11372.....	1
24953	Lock Washer for Nut 24705.....	1
11178	Armature Assembly Complete..... (Includes the next Item)	1
24174	Pin for Armature Assembly 11178 (Not shown in Illustration).....	2
11370	Resistance Coil Assembly.....	1
24314	Nut for retaining Resistance Assembly 11370.....	1
26586	Lock Washer for Nuts 24314, 24686 and Screw 24697.....	4
24666	Clip for connecting Coil Assembly 11367 and Screw 25705 (Not shown in Illustration).....	1
24668	Retainer for Coil Assembly 11367.....	1
24669	Insulator for Terminal Base 24670 and Clip 24666 .....	2
29484	Terminal Base for retaining Terminal Clip 23374 (Not shown in Illustration).....	1
24671	Pin for Terminal Base 29484 (Not shown in Illustration) .....	1
24672	Bushing for Screw 25705.....	1
25705	Screw for retaining Clamp 24281 and Clip 24666 .....	1
23450	Terminal Clamp for retaining Terminal Clip 23374 (Not shown in Illustration).....	1
29485	Nut for Screw 25705 (Not shown in Illustration) .....	1
20393	Lock Washer for Nut 29485 and Screws 25705 and 24698 .....	4
28580	Lock Washer for Nut 24674.....	6
24674	Nut for Screws 24695 and 24696 .....	6
24695	Screw for retaining Horn Assembly 12090 (Short) .....	3
24696	Screw for retaining Horn Assembly 12090 (Long) .....	3
24675	Plain Washer for Contact Spring Assembly (Thin) .....	1
24687	Spacing Washer for Contact Spring Assembly 11366 (Thick) .....	2
24678	Plain Washer for Contact Spring Assembly 11366 (Thick) .....	2
24677	Insulating Washer for Contact Spring Assembly 11366 .....	2
24680	Terminal Plate for retaining Contact Nut Assembly 13494 .....	1
24697	Screw for retaining Terminal Plate 24680 and Contact Spring Assembly 11366 .....	2
24688	Block for retaining Screw 24697.....	1
24676	Insulating Plate for Block 24688 .....	2
27036	Stud for retaining Shell Assembly 11371 (Not shown in Illustration) .....	1
24681	Spring Plate for operating Armature Assembly 11178 .....	6
28334	Insulator for Stop Plate 24608 (Lower) (Not shown in Illustration) .....	1
25507	Insulator for Stop Plate 24608 (Upper) (Not shown in Illustration) .....	1
24608	Stop Plate for operating Contact Spring Assembly 11366 (Not shown in Illustration) .....	1
24684	Insulating Bushing for Screw 24697 .....	2
24685	Clip for connecting Coil Assembly 11367 and Contact Spring Assembly 11366 (Not shown in Illustration) .....	1
24686	Nut for Tapper 24691 .....	1
24691	Tapper for operating Diaphragm 20747 .....	1
20747	Diaphragm for Horn Assembly 12090 between Horn Assembly 12090 and Housing Assembly 11365 .....	1
21450	Insulating Ring for Diaphragm 20747 (Narrow) (Not shown in Illustration) .....	1
24264	Insulating Ring for Diaphragm 20747 (Wide) .....	1
24689	Clip for retaining Spring Plate 24681 .....	2
24690	Bushing for Tapper 24691 .....	1
24692	Bushing for Terminal Base 24670 (Not shown in Illustration) .....	1
23876	Plain Washer for Screw 25705 .....	1
24694	Screw for retaining Core Assembly 11369 .....	4
24698	Screw for retaining Spring Plate 24681 .....	2
23374	Terminal Clip for connecting Horn 5310 (Not shown in Illustration) .....	1



## No. 5308 AUTO HORN

Piece Number	NAME OF PART	Quantity Required
5308	AUTO HORN COMPLETE.....	1
11371	Shell Assembly Complete..... (Includes the next 5 Items)	1
24719	Name Plate for Shell Assembly 11371.....	1
26838	Rivet for Name Plate 24719.....	4
26678	Thumb Nut for Shell Assembly 11371.....	1
20131	Lock Nut for Thumb Nut 26678.....	1
24389	Plain Washer for retaining Thumb Nut 26678 (Not shown in Illustration).....	1
11368	Horn Assembly Complete (Front).....	1
26451	Bracket for connecting Auto Horn Assembly .....	1
11367	Coil Assembly .....	1
13689	Housing Assembly..... (Includes the next Item)	1
27036	Stud for retaining Shell Assembly 11371.....	1
11366	Contact Spring Assembly (Lower Contact).....	1
12140	Core Assembly for Coil Assembly 11367.....	1
11372	Contact Screw Assembly (Upper Contact).....	1
24705	Nut for Contact Screw Assembly 11372.....	1
24953	Lock Washer for Nut 24705.....	1
11178	Armature Assembly Complete..... (Includes the next Item)	1
24174	Pin for Armature Assembly 11178 (Not shown in Illustration).....	1
11370	Resistance Coil Assembly.....	1
24314	Nut for retaining Resistance Coil Assembly 11370 .....	1
26586	Lock Washer for Nuts 24314 and 24686 and Screw 24697.....	4
24666	Clip for connecting Coil Assembly 11367 and Screw 25705 (Not shown in Illustration).....	1
24668	Retainer for Coil Assembly 11367.....	1
24669	Insulator for Terminal Base 24670 and Clip 24666.....	2
29484	Terminal Base for retaining Terminal Clip 23374 (Not shown in Illustration).....	1
24671	Pin for Terminal Base 29484 (Not shown in Illustration).....	1
24672	Bushing for Screw 25705.....	1
25705	Screw for retaining Terminal Clamp 23450 and Clip 24666 .....	1
23450	Terminal Clamp for retaining Terminal Clip 23374 .....	1
29485	Nut for Screw 25705.....	1
20393	Lock Washer for Nut 29485 and Screws 25705 and 24698.....	4
28580	Lock Washer for Nut 24674.....	7
24674	Nut for Screws 24695 and 24696.....	6
24695	Screw for retaining Horn Assembly 11368 (Short) .....	3
24696	Screw for retaining Horn Assembly 11368 (Long) .....	3
24675	Plain Washer for Contact Spring Assembly 11366 (Thin) .....	1
24687	Spacing Washer for Contact Spring Assembly 11366 (Thick) .....	2
24678	Plain Washer for Contact Spring Assembly 11366 (Thick) .....	2
24677	Insulating Washer for Contact Spring Assembly 11366 .....	2
24680	Terminal Plate for retaining Contact and Nut Assembly 13494.....	1
24697	Screw for retaining Terminal Plate 24680 and Contact Spring Assembly 11366 .....	2
24688	Block for retaining Screw 24697.....	1
24676	Insulating Plate for Block 24688.....	2
27036	Stud for retaining Shell Assembly 11371.....	1
24681	Spring Plate for Operating Armature Assembly 11178 .....	6
28334	Insulator for Stop Plate 24608 (Lower).....	1
25507	Insulator for Stop Plate 24608 (Upper) (Not shown in Illustration).....	1
24608	Stop Plate for Operating Contact Spring Assembly 11366 (Not shown in Illustration) .....	1
24684	Insulating Bushing for Screw 24697.....	2
24685	Clip for connecting Coil Assembly 11367 and Spring Terminal Assembly 11366 .....	1
24686	Nut for Tapper 24691.....	1
24691	Tapper for Operating Diaphragm 20747.....	1
20747	Diaphragm for Horn Assembly 11368 between Horn Assembly 11368 and Housing Assembly 11365 .....	1
21450	Insulating Ring for Diaphragm 20747 (Narrow) (Not shown in Illustration) .....	1
24264	Insulating Ring for Diaphragm 20747 (Wide) .....	1
24689	Clip for retaining Spring Plate 24681.....	2
24690	Bushing for Tapper 24691.....	1
24692	Bushing for Terminal Base 24670 (Not shown in Illustration) .....	1
23876	Plain Washer for Screw 25705.....	1
24694	Screw for retaining Core Assembly 12140.....	4
24698	Screw for retaining Spring Plate 24681.....	2
23374	Terminal Clip for connecting Auto Horn 5308 (Not shown in Illustration) .....	1

PIECE PARTS CATALOG



No. 5308 AUTO HORN

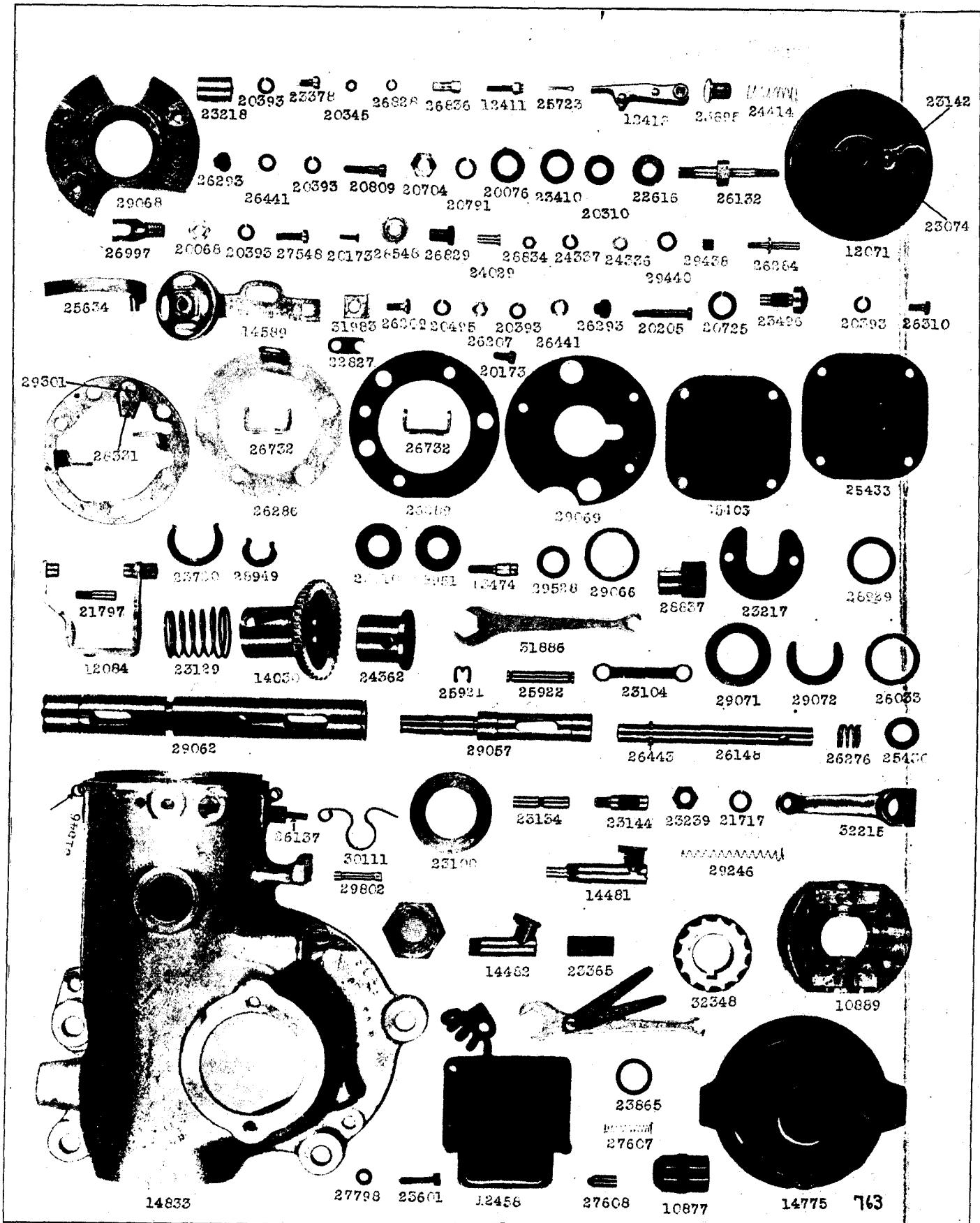
No. 5206 DISTRIBUTOR (Continued)

Piece Number	NAME OF PART	Quantity Required
26209	Screw for retaining Clip 31983.	1
20393	Lock Washer for Nut 26207.	1
31983	Clip for retaining Terminal Clip 26997.	1
26207	Nut for Screw 26209.	1
12458	<b>Condenser Assembly Complete.</b> (Includes the next 2 Items)	1
23601	Screw for attaching Condenser Assembly 12458	4
27798	Bushing for Screw 23601.	4
12084	<b>Advance Yoke Assembly for Distributor.</b>	1
26148	Shaft for Advance.	1
32215	Advance Lever for Shaft 26148.	1
26443	Clip for retaining Spring 26276.	1
23144	Screw for Advance Lever 32215.	1
23239	Nut for Screw 23144.	1
21717	Lock Washer for Nut 23239.	1
20205	Screw for attaching Plate Assembly 13514 (Long)	1
20393	Lock Washer for Screw 20205.	2
26293	Insulating Bushing for Screw 20205.	2
26441	Plain Washer for Screw 20205.	2
29072	Clip for retaining Bearing (Lower).	2
26033	Plain Washer above Clip 29072.	1
12413	<b>Contact Arm Assembly for Distributor.</b>	1
25723	Cotter Pin for retaining Contact Arm Assembly	2
25634	Spring for Contact Arm Assembly 12413.	2
28548	Plain Washer for Nut 26208.	2
26132	Stud for mounting Resistance Unit.	1
22616	Plain Washer for Stud 26132 (Outer).	1
20068	Nut for retaining Resistance Unit.	1
20495	Lock Washer for Nut 26208.	1
20076	Insulating Washer for Stud 26132 (Outer)	1
22738	Insulating Bushing for Stud 26132 (Not shown in Illustration)	1
23410	Insulating Washer for Nut 20704.	1
20310	Plain Washer for Nut 20704.	1
20791	Lock Washer for Nut 20704.	1
20704	Nut for Stud 26132 (Inner).	1
28837	Cam for operating Contact Arm Assembly	1
13474	<b>Screw Assembly for retaining Cam 28837.</b>	1
21797	Screw for Advance Yoke Assembly 12084.	1
25430	Felt Washer for Advance Shaft 26148.	1
26276	Spring for Advance Shaft 26148.	1
26829	Insulating Bushing for Resistance Unit.	1
14482	<b>Oiler Assembly for Distributor (Upper).</b>	1
14481	<b>Oiler Assembly for Distributor (Lower).</b>	1
29074	Wick for Oiler Assembly 14481 (Not shown in Illustration)	1
29246	Spring for Wick 29074.	1
12071	<b>Distributor Rotor Assembly Complete.</b> (Includes the next 4 Items)	1
23074	Connector for Distributor Rotor Assembly 12071 (Old Style)	1
26803	Screw for retaining Connector 23074 (Old Style)	1
23895	Brush for Rotor Assembly 12071.	1
24414	Spring for Brush 23895.	1
25405	Cover Plate for Housing Assembly (Lower)	1
25433	Gasket for Cover Plate 25405.	1
26310	Screw for attaching Cover Plate 25405.	1
20393	Lock Washer for Screw 26310.	4
26997	Terminal Clip for connecting Distributor.	4
23365	Fibre Ferrule for Terminal Clip.	1
10877	High Tension Terminal Assembly No. Blank	1
10878	High Tension Terminal Assembly No. 1.	1
10879	High Tension Terminal Assembly No. 2.	1
10880	High Tension Terminal Assembly No. 3.	1
10881	High Tension Terminal Assembly No. 4.	1
10882	High Tension Terminal Assembly No. 5.	1
10883	High Tension Terminal Assembly No. 6.	1
10884	High Tension Terminal Assembly No. 7.	1
10885	High Tension Terminal Assembly No. 8.	1
23865	Rubber Washer for High Tension Terminal Assemblies	9
14775	<b>Distributor Head Assembly Complete.</b> (Includes the next 2 Items)	1
27608	Plunger for Distributor Head Assembly 14775.	1
27607	Spring for Plunger 27608.	1
12741	<b>Distributor Wrench Assembly (With Gauge).</b>	1
31886	Distributor Wrench (Plain).	1
32348	Spiral Gear for Driving Spiral Gear 26151	1

## No. 5206 DISTRIBUTOR

Piece Number	NAME OF PART	Quantity Required
5206	DISTRIBUTOR .....	1
14833	Distributor Housing Assembly..... (Includes the next 9 Items)	1
31546	Clip for retaining Clamp 30111.....	1
30111	Clamp for retaining Distributor Head.....	1
29802	Pin for retaining Clamp 30111.....	1
25049	Rivet for retaining Clip 31546 (Not shown in Illustration).....	3
26137	Stud for resistance Unit Guide.....	1
32532	Name Plate for Distributor (Not shown in Illustration).....	1
32821	Pin for retaining Name Plate 32532 (Not shown in Illustration).....	2
12075	Breather Nut Assembly Complete.....	1
32957	Bearing for Distributor Housing.....	1
26732	Stop for Advance Yoke Assembly.....	1
20173	Screw for retaining Stop 26732.....	2
22827	Lock Plate for Screw 20173.....	1
13511	Inner Shaft and Bearing Assembly Complete..... (Includes the next 3 Items)	1
13342	Ball Bearing Assembly for Distributor (Upper) (Not shown in Illustration).....	1
29057	Inner Shaft for Distributor.....	1
29066	Plain Washer for Ball Bearing Assembly 13342 .....	1
30298	Plain Washer for Ball Bearing Assembly 13342 (Used when necessary instead of 29066) .....	1
28929	Washer (Felt) for Ball Bearing Assembly 13342 (Upper) .....	1
29528	Spacing Washer under Cam 28837 (When necessary) .....	1
28951	Collar retaining Washer 29066.....	1
28949	Clip retaining Collar 28951.....	1
29069	Retainer for Ball Bearing Assembly 13342 (Upper) .....	1
29068	Plate under Retainer 29069 .....	1
26289	Insulator for Plate 26286.....	1
26286	Connector Plate for Contact Plate Assembly 13514 .....	1
13514	Distributor Contact Plate and Oil SpoutAssembly Complete..... (Includes the next 2 Items)	1
28331	Oil Spout for Contact Plate Assembly 13514.....	1
29301	Rivet for Oil Spout 28331.....	1
26284	Stud for Mounting Contact Arm Assemblies .....	2
29438	Insulating Bushing for Stud 26284.....	2
29440	Insulating Washer for Stud 26284 (Upper) .....	2
24336	Plain Washer for Stud 26284.....	2
24337	Lock Washer for Nut 28834 .....	2
28834	Nut for attaching Stud 26284.....	2
12411	Contact Screw Assembly.....	2
26828	Nut for Contact Screw Assembly (Small) .....	2
20345	Lock Washer for Nut 26836 .....	2
26836	Nut for Contact Screw Assembly (Large) .....	2
20809	Screw for attaching Plate Assembly 13514 (Short) .....	1
20393	Lock Washer for Screw 20809 .....	1
26441	Plain Washer for Screw 20809 .....	1
26293	Insulating Bushing for Screw 20809 .....	1
29062	Outer Shaft for Distributor.....	1
33466	Washer for end of Distributor Shaft (When necessary) .....	1
29072	Clip for retaining Washer 29066 .....	1
26033	Plain Washer for Spring 23129 (Upper) .....	1
23129	Spring for Outer Shaft 29062 .....	1
24362	Advance Collar for Outer Shaft 29062 .....	1
25922	Pin for Advance Collar 24362 and Governor Ring Assembly 10889 .....	2
25921	Clip for retaining Pin 25922 .....	2
23104	Advance Arm for Advance Collar 24362 .....	1
10889	Governor Ring Assembly for Distributor .....	1
23496	Screw for attaching Governor Ring Assembly 10889 .....	2
24493	Lock Washer for Screw 23496 .....	1
14030	Distributor Shaft Pinion and Hub Assembly..... (Includes the next 3 Items)	1
27548	Screw for attaching Plate 23217 .....	2
20393	Lock Washer for Screw 27548 .....	2
24029	Dowel Pin for Distributor Shaft Pinion and Hub Assembly 14030 .....	1
23217	Plate for Distributor Shaft Pinion and Hub Assembly 14030 .....	1
23100	Advance Ring for Outer Shaft 29062 .....	1
23134	Pin for retaining Advance Ring 23100 .....	1
23218	Clamp for Pin 23134 .....	1
23378	Screw for Clamp 23218 .....	1
20393	Lock Washer for Screw 23378 .....	1
23720	Clip for retaining Washer 29071 .....	1
29071	Plain Washer above Lower Distributor Shaft Bearing .....	1
14589	Resistance Unit Assembly for Distributor .....	1

PIECE PARTS CATALOG



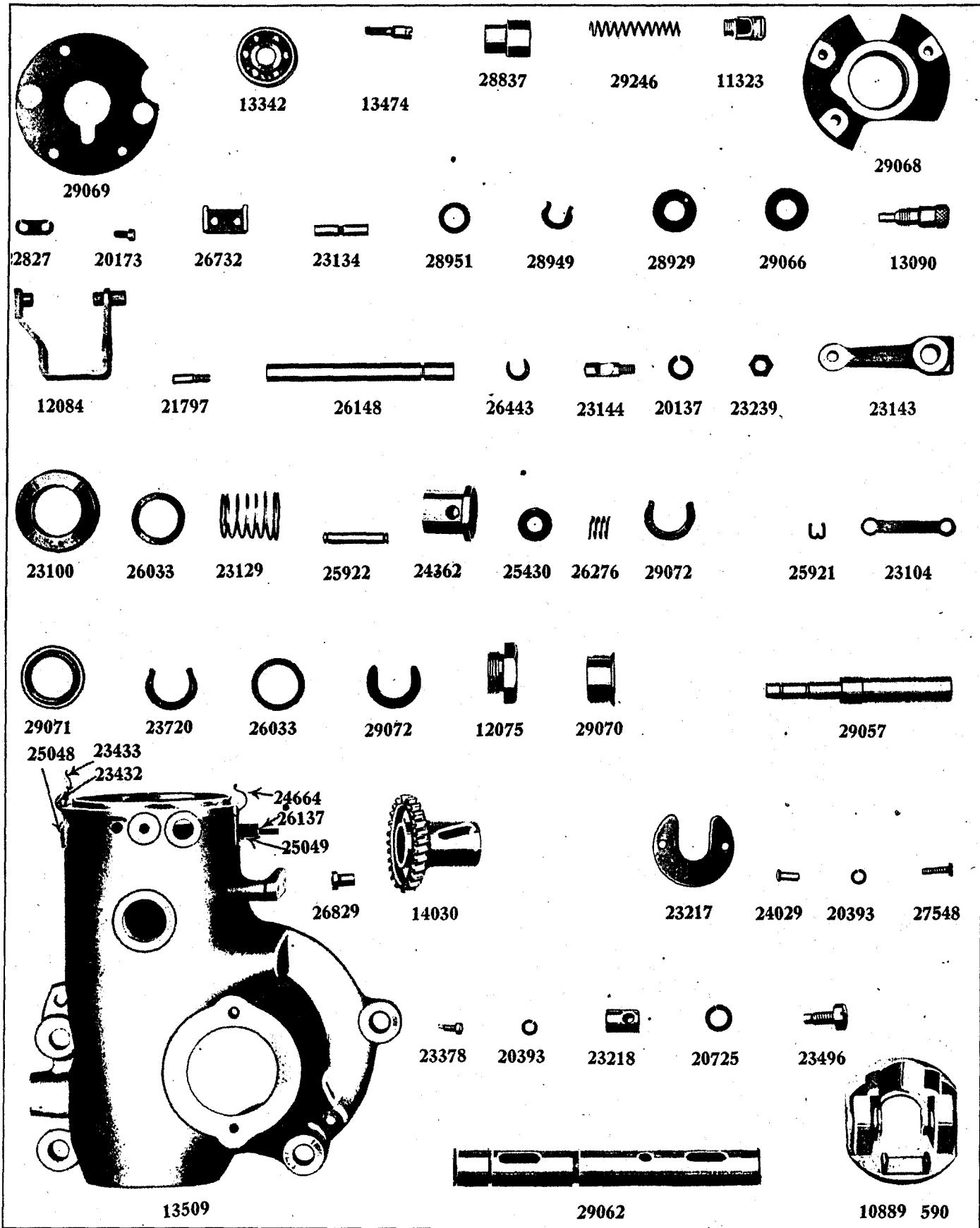
No. 5206 DISTRIBUTOR

## No. 5166 DISTRIBUTOR (Continued)

Piece Number	NAME OF PART	Quantity Required
26207	Nut for Screw 26209.....	1
12458	<b>Condenser Assembly Complete.</b> (Includes the next 2 Items)	1
23601	Screw for attaching Condenser Assembly 12458 .....	4
27798	Bushing for Screw 23601.....	4
12084	<b>Advance Yoke Assembly for Distributor.</b> .....	1
26148	Shaft for Advance.....	1
23143	Advance Lever for Shaft 26148.....	1
26443	Clip for retaining Spring 26276.....	1
23144	Screw for Advance Lever 23143.....	1
23239	Nut for Screw 23144.....	1
21717	Lock Washer for Nut 23239.....	1
20205	Screw for attaching Plate Assembly (Long) .....	2
20393	Lock Washer for Screw 20205.....	2
26293	Insulating Bushing for Screw 20205.....	2
26441	Plain Washer for Screw 20205.....	2
29072	Clip for retaining Bearing 29070 (Lower).....	1
26033	Plain Washer above Clip 29072.....	1
12413	<b>Contact Arm Assembly for Distributor.</b> .....	2
25723	Cotter Pin for retaining Contact Arm Assembly.....	2
25634	Spring for Contact Arm Assembly 12413.....	2
28548	Plain Washer for Nut 26208.....	1
26132	Stud for Mounting Resistance Unit.....	1
22616	Plain Washer for Stud 26132 (Outer).....	1
20068	Nut for retaining Resistance Unit.....	1
20495	Lock Washer for Nut 26208.....	1
20076	Insulating Washer for Stud 26132 (Outer).....	1
22738	Insulating Bushing for Stud 26132.....	1
23410	Insulating Washer for Nut 20704.....	1
20310	Plain Washer for Nut 20704.....	1
20791	Lock Washer for Nut 20704.....	1
20704	Nut for Stud 26132 (Inner).....	1
28837	Cam for operating Contact Arm Assembly.....	1
13474	<b>Screw Assembly for retaining Cam 28837.</b> .....	1
21797	Screw for Advance Yoke Assembly 12084.....	1
25430	Felt Washer for Advance Shaft 26148.....	1
26276	Spring for Advance Shaft 28148.....	1
26829	Insulating Bushing for Resistance Unit.....	1
13090	<b>Oiler Assembly for Distributor (Upper).</b> .....	1
11323	<b>Oiler Assembly for Distributor (Lower).</b> .....	1
29074	Wick for Oiler Assembly 11323 (Not shown in Illustration).....	1
29246	Spring for Wick 29074.....	1
12071	<b>Distributor Rotor Assembly Complete.</b> (Includes the next 4 Items)	1
23074	Connector for Distributor Rotor Assembly 12071 (Old Style) .....	1
26803	Screw for retaining Connector 23074 (Old Style) .....	1
23895	Brush for Rotor Assembly 12071.....	1
24414	Spring for Brush 23895.....	1
25405	Cover Plate for Housing Assembly 14219 (Lower).....	1
25433	Gasket for Cover Plate 25405.....	1
26310	Screw for attaching Cover Plate 25405.....	4
20393	Lock Washer for Screw 26310.....	4
23374	Terminal Clip for connecting Distributor (Not shown in Illustration).....	1
10877	<b>High Tension Terminal Assembly No. Blank</b> .....	1
10878	High Tension Terminal Assembly No. 1.....	1
10879	High Tension Terminal Assembly No. 2.....	1
10880	High Tension Terminal Assembly No. 3.....	1
10881	High Tension Terminal Assembly No. 4.....	1
10882	High Tension Terminal Assembly No. 5.....	1
10883	High Tension Terminal Assembly No. 6.....	1
10884	High Tension Terminal Assembly No. 7.....	1
10885	High Tension Terminal Assembly No. 8.....	1
23865	Rubber Washer for High Tension Terminal Assemblies .....	9
12568	<b>Distributor Head Assembly Complete.</b> (Includes the next 2 Items)	1
27608	Plunger for Distributor Head Assembly 12568.....	1
27607	Spring for Plunger 27608.....	1
12741	<b>Distributor Wrench Assembly (With Gauge) (Not shown in Illustration)</b> .....	1
31886	Distributor Wrench (Plain) (Not shown in Illustration).....	1
26795	Spiral Gear for Driving Spiral Gear 26151 (Not shown in Illustration).....	1

No. 5166 DISTRIBUTOR

Piece Number	NAME OF PART	Quantity Required
5166	DISTRIBUTOR . . . . .	1
14219	Distributor Housing Assembly . . . . . (Includes the next 9 Items)	1
23433	Clip for retaining Distributor Head (Long Tongue) . . . . .	1
23432	Clip for retaining Distributor Head (Used with Clip 23433) . . . . .	1
24664	Clip for retaining Distributor Head (Single) . . . . .	1
25048	Rivet for retaining Clips 23432 and 23433 . . . . .	2
25049	Rivet for retaining Clip 24664 . . . . .	2
26137	Stud for retaining Clip 24664 . . . . .	1
32232	Name Plate for Housing 29149 (Not shown in Illustration) . . . . .	1
32821	Pin for retaining Name Plate 32232 (Not shown in Illustration) . . . . .	2
32957	Bearing for Distributor Housing . . . . .	1
12075	Breather Nut Assembly Complete . . . . .	1
26732	Stop for Advance Yoke Assembly 12084 . . . . .	1
20173	Screw for retaining Stop 26732 . . . . .	2
22827	Lock Plate for Screw 20173 . . . . .	1
13511	Inner Shaft and Bearing Assembly Complete . . . . . (Includes the next 3 Items)	1
13342	Ball Bearing Assembly for Distributor (Upper) . . . . .	1
29057	Inner Shaft for Distributor . . . . .	1
29066	Plain Washer for Ball Bearing Assembly 13342 . . . . .	1
30298	Plain Washer for Ball Bearing Assembly 13342 (Used when necessary instead of 29066) (Not shown in Illustration) . . . . .	1
28929	Washer (Felt) for Ball Bearing Assembly 13342 (Upper) . . . . .	1
29528	Spacing Washer under Cam 28837 (Not shown in Illustration) (When necessary) . . . . .	1
28951	Collar retaining Washer 29006 . . . . .	1
28949	Clip retaining Collar 28951 . . . . .	1
29069	Retainer for Ball Bearing Assembly 13342 (Upper) . . . . .	1
29068	Plate under Retainer 29069 . . . . .	1
26289	Insulator for Plate 26286 . . . . .	1
26286	Connector Plate for Contact Plate Assembly 13514 . . . . .	1
13514	Distributor Contact Plate and Oil Spout Assembly Complete . . . . . (Includes the next 2 Items)	1
28331	Oil Spout for Contact Plate Assembly 13514 . . . . .	1
29301	Rivet for Oil Spout 28331 . . . . .	1
26284	Stud for mounting Contact Arm Assemblies . . . . .	2
29438	Insulating Bushing for Stud 26284 . . . . .	2
29440	Insulating Washer for Stud 26284 (Upper) . . . . .	2
24336	Plain Washer for Stud 26284 . . . . .	2
24337	Lock Washer for Nut 28834 . . . . .	2
28834	Nut for attaching Stud 26284 . . . . .	2
12411	Contact Screw Assembly . . . . .	2
26828	Nut for Contact Screw Assembly (Small) . . . . .	2
20345	Lock Washer for Nut 26836 . . . . .	2
26836	Nut for Contact Screw Assembly (Large) . . . . .	2
20809	Screw for attaching Plate Assembly 13514 (Short) . . . . .	1
20393	Lock Washer for Screw 20809 . . . . .	1
26441	Plain Washer for Screw 20809 . . . . .	1
26293	Insulating Bushing for Screw 20809 . . . . .	1
29062	Outer Shaft for Distributor . . . . .	1
29072	Clip for retaining Washer 29066 . . . . .	1
26033	Plain Washer for Spring 23129 (Upper) . . . . .	1
23129	Spring for Outer Shaft 29062 . . . . .	1
24362	Advance Collar for Outer Shaft 29062 . . . . .	1
25922	Pin for Advance Collar 24362 and Governor Ring Assembly 10889 . . . . .	2
25921	Clip for retaining Pin 25922 . . . . .	4
23104	Advance Arm for Advance Collar 24362 . . . . .	2
10889	Governor Ring Assembly for Distributor . . . . .	1
23496	Screw for attaching Governor Ring Assembly 10889 . . . . .	2
20725	Lock Washer for Screw 23496 . . . . .	2
14030	Distributor Shaft Pinion and Hub Assembly . . . . . (Includes the next 3 Items)	1
27548	Screw for attaching Plate 23217 . . . . .	2
20393	Lock Washer for Screw 27548 . . . . .	2
24029	Dowel Pin for Distributor Shaft Pinion and Hub Assembly 14030 . . . . .	1
23217	Plate for Distributor Shaft Pinion and Hub Assembly 14030 . . . . .	1
23100	Advance Ring for Outer Shaft 29062 . . . . .	1
23134	Pin for retaining Advance Ring 23100 . . . . .	1
23218	Clamp for Pin 23134 . . . . .	1
23378	Screw for Clamp 23218 . . . . .	1
20393	Lock Washer for Screw 23378 . . . . .	1
23720	Clip for retaining Washer 29071 . . . . .	1
29071	Plain Washer above Bearing 29070 . . . . .	1
12013	Resistance Unit Assembly for Distributor . . . . .	1
26209	Screw for retaining Clip 26153 . . . . .	1
20393	Lock Washer for Nut 26207 . . . . .	1
26153	Clip for retaining Terminal Clip 23374 . . . . .	1



## No. 5150 DISTRIBUTOR (Continued)

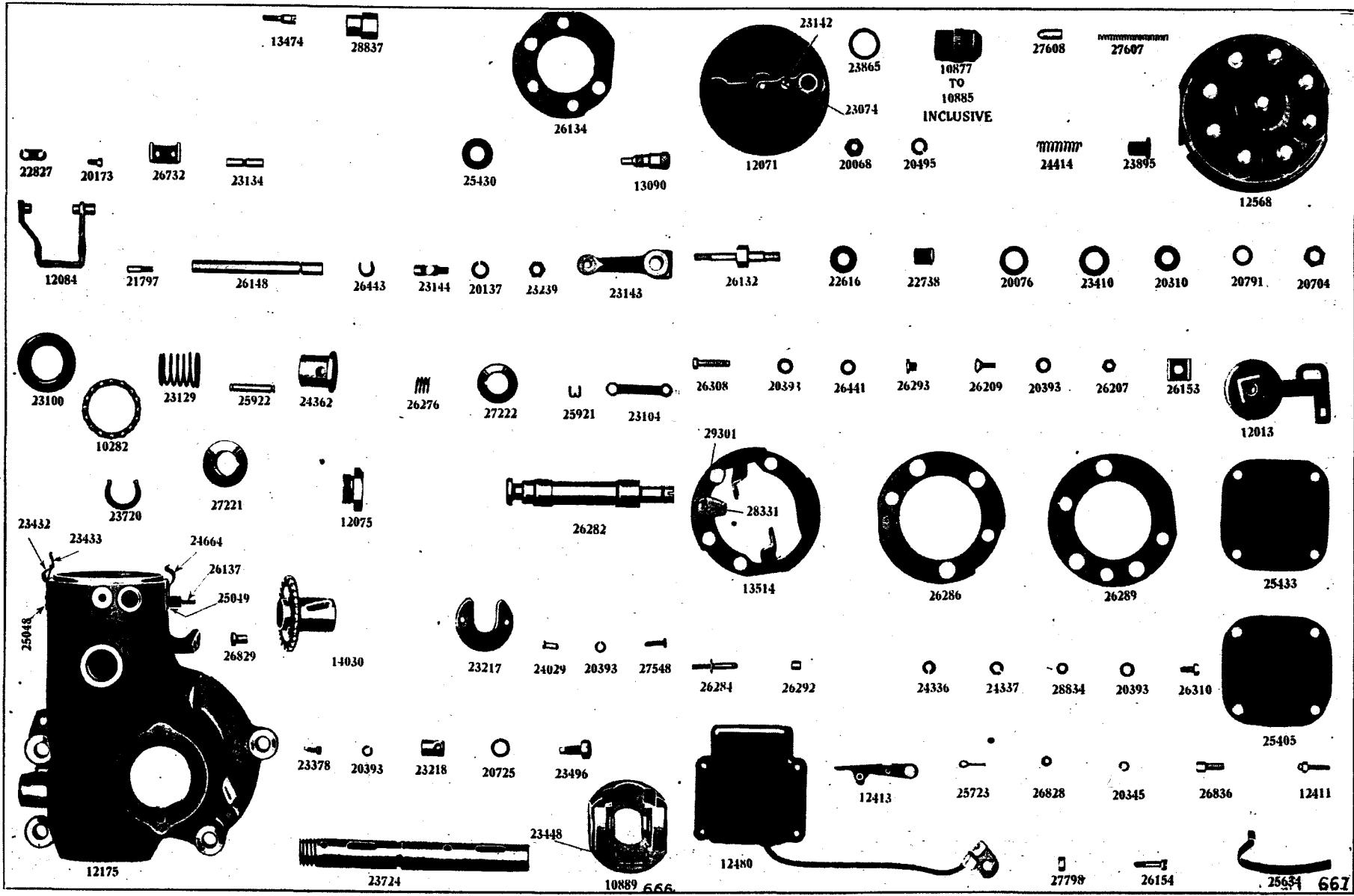
Piece Number	NAME OF PART	Quantity Required
12458	Condenser Assembly (Service) . . . . . (Includes the next 2 Items)	1
23601	Screw for attaching Condenser Assembly 12458 . . . . .	4
27798	Bushing for Screw 23601 . . . . .	4
12084	Advance Yoke Assembly . . . . .	1
26148	Shaft for Advance Shaft Assembly . . . . .	1
23143	Advance Lever for Shaft 26148 . . . . .	1
26443	Clip for retaining Spring 26276 . . . . .	1
23144	Screw for Advance Lever 23143 . . . . .	1
23239	Nut for Screw 23144 . . . . .	1
21717	Lock Washer for Nut 23239 . . . . .	1
26308	Screw for retaining Mounting Plate 26134 . . . . .	1
20393	Lock Washer for Screw 26308 . . . . .	1
26293	Insulating Bushing for Screw 26308 . . . . .	2
25634	Spring for Contact Arm Assembly 12413 . . . . .	2
26132	Stud for Resistance Unit Assembly . . . . .	1
22616	Plain Washer for Stud 26132 (Outer) . . . . .	1
20068	Nut for retaining Resistance Unit Assembly (Outer) . . . . .	1
20495	Lock Washer for Nut 20068 . . . . .	1
28548	Plain Washer for Nut 20068 . . . . .	1
20076	Insulating Washer for Stud 26132 (Outer) . . . . .	1
22738	Insulating Bushing for Stud 26132 . . . . .	1
23410	Insulating Washer for Nut 20704 (Inner) . . . . .	1
20791	Lock Washer for Nut 20704 . . . . .	1
20310	Plain Washer for Nut 20704 . . . . .	1
20704	Nut for Stud 26132 (Inner) . . . . .	1
28837	Cam for Operating Contact Arm Assembly 12413 . . . . .	1
13474	Distributor Cam Adjustment Screw Assembly for retaining Cam 28837 . . . . .	1
21797	Screw for Advance Yoke Assembly 12084 . . . . .	1
25430	Felt Washer for Shaft 26148 . . . . .	1
26276	Spring for Shaft 26148 . . . . .	1
26829	Insulating Bushing for Resistance Unit Assembly . . . . .	1
13090	Oiler Assembly . . . . .	1
12071	Distributor Rotor Assembly Complete . . . . . (Includes the next 4 Items. Do not count Service Part)	1
23074	Connector for Distributor Rotor Assembly 12071 (Old Style) . . . . .	1
26803	Screw for retaining Connector 23074 (Service) (Old Style) . . . . .	1
23895	Brush for Distributor Rotor Assembly 12071 . . . . .	1
24414	Spring for Brush 23895 . . . . .	1
25405	Cover Plate for Bottom of Housing 26150 . . . . .	1
25433	Gasket for Cover Plate 25405 . . . . .	1
26310	Screw for attaching Cover Plate 25405 . . . . .	4
20393	Lock Washer for Screw 26310 . . . . .	4
12568	Distributor Head Assembly Complete . . . . .	1
27608	Plunger for Distributor Head Assembly 12568 . . . . .	1
21424	Spring (Old Style) for Plunger 21425 . . . . .	1
21425	Plunger (Old Style) for Distributor Head Assembly 12568 . . . . .	1
27607	Spring for Plunger 27608 . . . . .	1
10877	High Tension Terminal Assembly (Blank) . . . . .	1
10878	High Tension Terminal Assembly (1) . . . . .	1
10879	High Tension Terminal Assembly (2) . . . . .	1
10880	High Tension Terminal Assembly (3) . . . . .	1
10881	High Tension Terminal Assembly (4) . . . . .	1
10882	High Tension Terminal Assembly (5) . . . . .	1
10883	High Tension Terminal Assembly (6) . . . . .	1
10884	High Tension Terminal Assembly (7) . . . . .	1
10885	High Tension Terminal Assembly (8) . . . . .	1
23865	Rubber Washer for High Tension Terminal Assemblies . . . . .	9
12741	Wrench Assembly (With Gauge) (Not shown in Illustration) . . . . .	1
31886	Wrench (Plain) (Not shown in Illustration) . . . . .	1
23374	Terminal Clip for connecting Distributor (Not shown in Illustration) . . . . .	1

## No. 5150 DISTRIBUTOR

Note: No. 5150 Distributor superseded by No. 5166 Distributor. When ordering a complete new unit, order No. 5166.

Piece Number	NAME OF PART	Quantity Required
5150	DISTRIBUTOR COMPLETE . . . . .	1
12175	Distributor House Assembly . . . . . (Includes the next 8 Items)	1
23432	Clip for retaining Distributor Head Assembly 12568 (With Clip 23433) . . . . .	1
23433	Clip for retaining Distributor Head Assembly 12568 (Long Tongue Clip) . . . . .	1
24664	Clip for retaining Distributor Head Assembly 12568 (Single) . . . . .	1
25048	Rivet for retaining Clips 23432 and 23433 . . . . .	2
25049	Rivet for retaining Clip 24664 . . . . .	1
26137	Stud for retaining Clip 24664 . . . . .	1
32232	Name Plate for Housing 26150 (Not shown in Illustration) . . . . .	1
32821	Pin for retaining Name Plate 32232 (Not shown in Illustration) . . . . .	2
20775	Cup for Retainer and Balls Assembly 10282 . . . . .	1
12075	Breather Nut Assembly . . . . .	1
26732	Stop for Advance Yoke Assembly 12084 . . . . .	1
20173	Screw for retaining Stop 26372 . . . . .	2
22827	Lock Plate for Screw 20173 . . . . .	2
10889	Governor Ring Assembly . . . . . (Includes the next 2 Items)	1
23448	Clip for Governor Ring Assembly 10889 . . . . .	1
24198	Screw for attaching Clip 23448 (Not shown in Illustration) . . . . .	2
10282	Retainer and Balls Assembly . . . . .	2
23724	Shaft for Distributor (Outer) . . . . .	1
26282	Shaft for Distributor (Inner) . . . . .	1
12413	Contact Arm Assembly for Distributor . . . . .	2
12411	Contact Screw Assembly for Contact Arm Assembly 12413 . . . . .	2
26828	Nut for Contact Screw Assembly 12411 (Short) . . . . .	1
26836	Nut for Contact Screw Assembly 12411 (Long) . . . . .	2
25723	Cotter Pin for retaining Contact Arm Assembly 12413 . . . . .	2
20345	Lock Washer for Nut 26836 . . . . .	2
13514	Plate Assembly for Contact Arm Assembly . . . . .	1
28331	Oiler Spout for Plate Assembly 13514 . . . . .	1
29301	Rivet for retaining Oiler Spout 28331 . . . . .	1
26289	Insulator for Plate 26295 . . . . .	1
26286	Connector for Plate 26295 . . . . .	1
26284	Stud for Contact Arm Assembly 12413 . . . . .	1
29438	Insulating Bushing for Stud 26284 . . . . .	2
29440	Insulating Washer for Stud 26284 . . . . .	2
28834	Nut for Stud 26284 . . . . .	2
24336	Plain Washer for 28834 . . . . .	2
24337	Lock Washer for Nut 28834 . . . . .	2
27221	Cone for Shaft 23724 (Upper) . . . . .	1
23720	Clip for retaining Cone 27221 . . . . .	1
27216	Stud for Cones 27221 and 27219 (Not shown in Illustration) . . . . .	2
26134	Mounting Plate for Distributor Shaft Assembly 12004 . . . . .	1
20775	Cup for Retainer and Balls 10282 (Upper) . . . . .	1
23129	Spring for Shaft 23724 . . . . .	1
24362	Advance Collar for Governor Ring Assembly 10889 . . . . .	1
25922	Pin for retaining Arm 23104 . . . . .	2
25921	Clip for retaining Pin 25922 . . . . .	4
23104	Arm for connecting Advance Collar 24362 and Governor Ring Assembly 10889 . . . . .	2
23496	Screw for retaining Governor Ring Assembly 10889 . . . . .	2
24493	Lock Washer for Screw 23496 . . . . .	2
14030	Distributor Shaft Pinion and Hub Assembly (Service) . . . . . (Includes the next 2 Items)	1
27548	Screw for Spiral Gear 25151 . . . . .	2
20393	Lock Washer for Screws 27548, 23378 and 23879 . . . . .	11
23217	Plate for Spiral Gear 26151 . . . . .	1
24029	Pin for Hub 23977 . . . . .	1
26795	Spiral Gear for Driving Pinion and Hub Assembly 14030 (Not shown in Illustration) . . . . .	1
26210	Spiral Gear (Old Style) (Used before Motor Generator Serial No. 352610) . . . . .	1
23100	Advance Ring for Shaft 23724 . . . . .	1
23134	Pin for Advance Shaft 23100 . . . . .	1
23218	Clamp for Pin 23134 . . . . .	1
23378	Screw for Clamp 23218 . . . . .	1
27222	Cone for Shaft 23724 (Lower) . . . . .	1
21443	Nut for Shaft 23724 (Round) (Not shown in Illustration) . . . . .	1
21444	Nut for Shaft 23724 (Hexagon) (Not shown in Illustration) . . . . .	1
23879	Screw for retaining Plate 26296 (Not shown in Illustration) . . . . .	2
26293	Insulating Bushing for Screw 23879 . . . . .	2
23876	Plain Washer for Screw 23879 (Not shown in Illustration) . . . . .	2
12013	Resistance Unit Assembly . . . . .	1
26209	Screw for retaining Clip 25153 . . . . .	1
26153	Clip for retaining Terminal Clip 23374 . . . . .	1
26207	Nut for Screw 26209 . . . . .	1
20393	Lock Washer for Nut 26207 . . . . .	1

No. 5150 DISTRIBUTOR

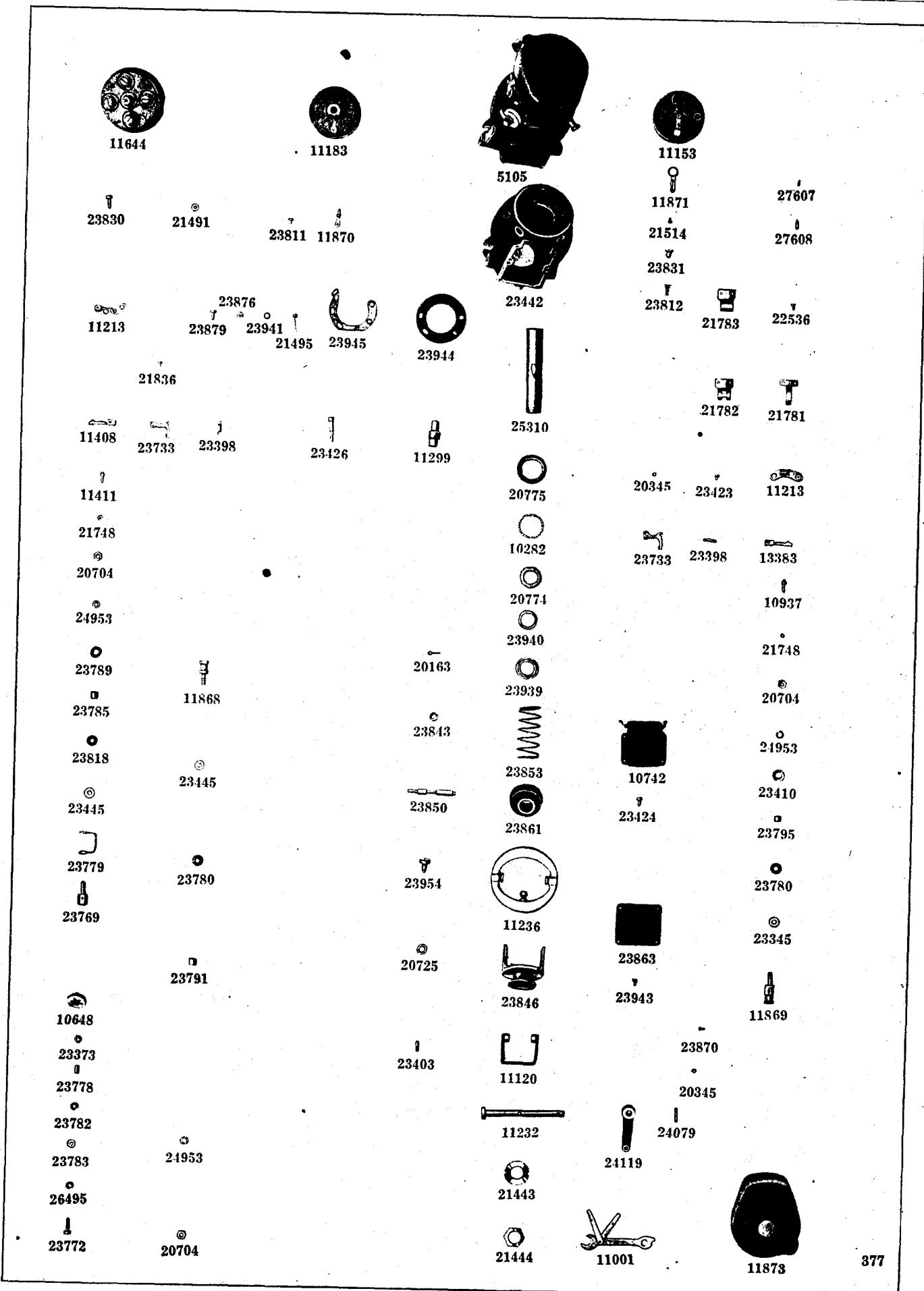


No. 5105 DISTRIBUTOR (Continued)

Piece Number	NAME OF PART	Quantity Required
23783	Plain Washer for Screw 23772.....	1
23782	Insulating Washer for Screw 23772.....	1
23778	Insulating Bushing for Screw 23772.....	1
23773	Washer for Resistance Unit Assembly 10648 (Shoulder).....	1
23770	Protector for Resistance Unit Assembly 10648 (Not shown in Illustration).....	1
23779	Connector for Resistance Unit Assembly 10648 and Housing 23442.....	1
11213	<b>Segment Assembly for retaining Contact Assemblies 14383 and 11408.....</b>	2
	(Includes the next 2 Items)	
21493	Stud for mounting Stop 23733 (Not shown in Illustration).....	1
21494	Stud for mounting Contact Arm Assemblies 11408 and 14383 (Not shown in Illustration).....	1
23879	Screw for retaining Segment Assembly 11213.....	4
23876	Plain Washer for Screw 23879.....	4
23941	Insulating Washer for Screw 23879.....	4
21495	Insulating Bushing for Screw 23879.....	4
23945	Connector for Segment Assembly 11213.....	1
23944	Insulator for Segment Assembly 11213.....	1
14383	<b>Contact Arm Assembly (Battery) (Not shown in Illustration).....</b>	1
	(Includes the next 2 Items)	
24069	Hub for Contact Arm Assembly 14383 (Not shown in Illustration).....	1
24947	Screw for attaching Hub 24069 (Not shown in Illustration).....	2
11408	<b>Contact Arm Assembly (Magneto).....</b>	1
	(Includes the next 3 Items. Do not count Old Style Parts)	
11379	<b>Connector Assembly for Contact Arm Assembly 11408 (Not shown in Illustration).....</b>	1
21801	Terminal Wire (Old Style).....	1
24069	Hub for Contact Arm Assembly 11408 (Not shown in Illustration).....	1
24947	Screw for attaching Hub 24069 (Not shown in Illustration).....	2
12411	<b>Contact Screw Assembly (Battery).....</b>	1
12411	<b>Contact Screw Assembly (Magneto) (Not shown in Illustration).....</b>	1
21748	Nut for Contact Screw Assembly 12411.....	2
23733	Stop for Contact Arm Assemblies 14383 and 11408.....	2
23398	Spring for Contact Arm Assemblies 14383 and 11408.....	2
21836	Screw for retaining Stop 23733.....	2
11407	<b>Wrench for Distributor.....</b>	1
23835	Terminal Clip for Distributor Head Assembly 11644 (Not shown in Illustration).....	5
20953	Terminal Clip for Spring Terminal Assemblies 11868 and 11869 (Not shown in Illustration).....	2
11644	<b>Distributor Head Assembly Complete.....</b>	1
	(Includes the next 4 Items. Do not count Old Style Parts)	
21425	Plunger (Old Style) for Distributor Head Assembly 11644 (Approximately $\frac{1}{8}$ " Diameter).....	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter).....	1
27608	Plunger for Distributor Head Assembly 11644 (Approximately $\frac{1}{4}$ " Diameter).....	1
27607	Spring for Plunger 27608 (Approximately $\frac{1}{4}$ " Diameter).....	1
23830	Screw for Distributor Head Assembly 11644.....	4
21491	Nut for Distributor Head Assembly 11644.....	1

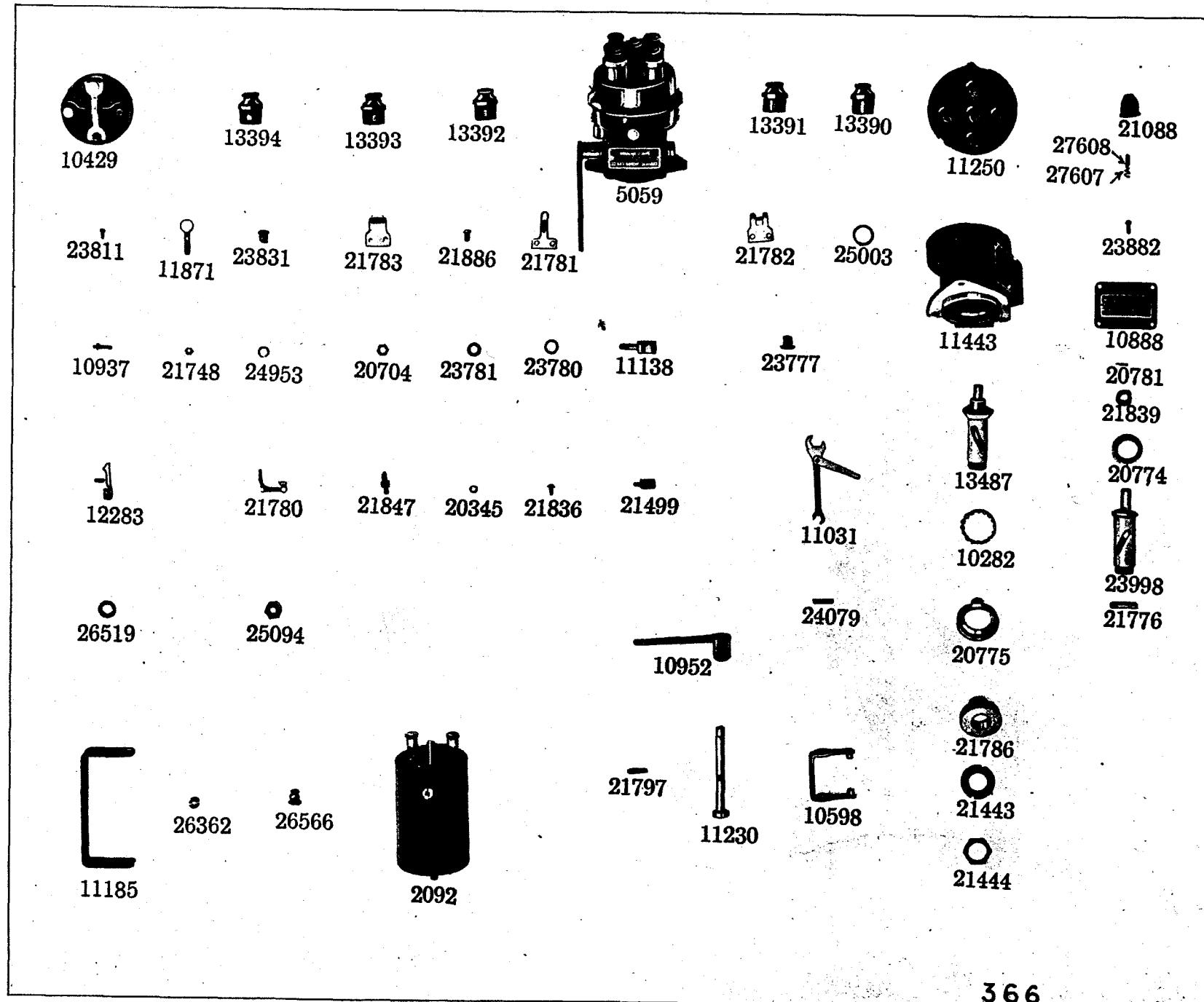
## No. 5105 DISTRIBUTOR

Piece Number	NAME OF PART	Quantity Required
5105	DISTRIBUTOR COMPLETE	1
23442	Housing for Distributor Assembly 5105	1
14123	Shaft Assembly (Service) (Including Shaft 25310 and Upper Cone) (Not shown in Illustration)	1
25310	Shaft for Distributor	1
27222	Cone for Shaft 25310 (Not shown in Illustration)	2
21443	Clamp Nut for Shaft 25310 (Round)	1
21444	Lock Nut for Clamp Nut 21443 (Hexagon)	1
11299	Cam Adjustment Assembly (Includes the next 3 Items)	1
23458	Cam for Cam Adjustment Assembly 11299 (Not shown in Illustration)	1
23736	Pin for Cam 23458	1
23426	Screw for Cam Adjustment Assembly 11299	1
11153	Distributor Rotor Assembly Complete (Includes the next 6 Items)	1
11871	Connector Assembly (Contact)	1
21514	Screw for retaining Connector Assembly 11871	1
11870	Clip Assembly for locating Distributor Rotor Assembly 11153	1
23811	Screw for retaining Clip Assembly 11870	1
23831	Brush for Distributor Rotor Assembly 11153	1
23812	Spring for Brush 23831	1
11232	Advance Shaft Assembly	1
24119	Advance Lever for Advance Shaft Assembly 11232	1
24079	Dowel Pin for retaining Advance Lever 24119	1
11120	Advance Yoke Assembly	1
23403	Screw for Advance Yoke Assembly 11120	1
11236	Governor Ring Assembly	1
23954	Screw for retaining Governor Ring Assembly 11236	2
20725	Lock Washer for Screw 23954	2
23940	Spacing Washer for Shaft 25310 between Cone 27222 and Advance Ring 23861	1
23861	Advance Ring (for Manual Advance)	1
23846	Sleeve on Shaft 25310 for Governor Ring Assembly 11236 (Not shown in Illustration)	1
23939	Sleeve Collar on Shaft 25310 next to Upper Cone 27222 for Spring 23853	1
23853	Spring for Shaft 25310	1
20775	Cup for Retainer and Balls Assembly 10282	2
10282	Retainer and Balls Assembly	2
10745	Condenser Assembly (Includes the next Item)	1
32141	Screw for retaining Condenser Assembly 10745	4
23863	Cover Plate for Housing 23442	1
23943	Screw for retaining Cover Plate 23863	4
21782	Clip for retaining Distributor Head Assembly 11644 (With Clip 21781)	1
21781	Clip for retaining Distributor Head Assembly 11644 (Long Tongue Clip)	1
21783	Clip for retaining Distributor Head Assembly 11644 (Single)	1
22556	Screw for retaining Clips 21781 and 21782 (Not shown in Illustration)	2
23423	Screw for retaining Clip 21783	2
23850	Pin for connecting Shaft 25310 and Sleeve 23846	1
23843	Washer for retaining Pin 23850	2
20163	Cotter Pin for retaining Washer 23843	2
23870	Screw for connecting Condenser Assembly 10745 to Spring Terminal Assembly 11869 and Stud 23769	2
20345	Lock Washer on Screws 23870 and 21836	4
11873	Protector Assembly for Distributor Head Assembly 11644	1
11869	Spring Terminal Assembly (Common)	1
11868	Spring Terminal Assembly (Battery)	1
23769	Stud for Resistance Unit Assembly 10648	1
20704	Nut for Spring Terminal Assemblies 11868 and 11869 and Stud 23769	3
24953	Lock Washer for Nut 20704	3
23445	Plain Washer for Nut 20704 and Spring Terminal Assemblies 11868 and 11869 and Stud 23769	6
23785	Insulating Bushing for Stud 23769	1
23795	Insulating Bushing for Spring Terminal Assembly 11869	1
23791	Insulating Bushing for Spring Terminal Assembly 11868	1
23818	Insulating Washer for Stud 23769 (Outer)	1
23789	Insulating Washer for Stud 23769 and Spring Terminal 11888 (Inner)	2
23780	Insulating Washer for Spring Terminal Assemblies 11868 and 11869 (Outer)	2
23410	Insulating Washer for Spring Terminal Assembly 11869 (Inner)	1
10648	Resistance Unit Assembly	1
23772	Screw for retaining Resistance Unit Assembly 10648	1
20495	Lock Washer for Screw 23772	1



## No. 5059 DISTRIBUTOR

Piece Number	NAME OF PART	Quantity Required
<b>5059</b>	<b>DISTRIBUTOR ASSEMBLY COMPLETE</b>	
24399	Housing for Distributor (Not shown in Illustration)	1
20775	Cup for Housing 24399	2
21443	Clamp Nut for Shaft Assembly 13487 (Round)	1
21444	Lock Nut for Clamp Nut 21443 (Hexagon)	1
27222	Cone for Shaft Assembly 13487 (Not shown in Illustration)	2
13487	<b>Shaft Assembly (Service) (Includes Shaft, Cam and Pin)</b>	1
10429	<b>Distributor Rotor Assembly Complete</b>	1
	(Includes the next 6 Items)	
11871	<b>Connector Assembly (Contact)</b>	1
23811	Screw for retaining Connector Assembly 11871	1
11870	<b>Clip Assembly for locating Distributor Rotor Assembly (Not shown in Illustration)</b>	1
21514	Screw for retaining Clip Assembly 11870 (Not shown in Illustration)	1
23831	Brush for Distributor Rotor Assembly	1
23812	Spring for Brush 23831 (Not shown in Illustration)	1
10952	<b>Advance Lever Assembly</b>	1
11230	<b>Advance Shaft Assembly</b>	1
24079	Dowel Pin for retaining Advance Lever Assembly 10952	1
10888	<b>Cover Assembly for Housing 24399</b>	1
	(Includes the next 2 Items)	
23849	Name Plate Cover Assembly 10888 (Not shown in Illustration)	1
23839	Rivet for Name Plate 23849 (Not shown in Illustration)	2
10598	<b>Advance Yoke Assembly</b>	1
11868	<b>Spring Terminal Assembly</b>	1
14383	<b>Contact Arm Assembly</b>	1
	(Includes the next 2 Items)	
24069	Hub for Contact Arm Assembly 14383 (Not shown in Illustration)	1
24947	Screw for attaching Hub 24069 (Not shown in Illustration)	1
12411	<b>Contact Screw Assembly</b>	1
21748	Clamp Nut for Contact Screw Assembly 12411	1
23398	Spring for Contact Arm Assembly 14383 (Not shown in Illustration)	1
21780	Stop for Contact Arm Assembly 14383	1
21836	Screw for retaining Stop 21780	1
20345	Lock Washer for Screw 21836	1
10282	<b>Retainer and Balls Assembly</b>	2
21786	Advance Ring for Advance Yoke Assembly 10598	1
21776	Pin for Advance Ring	1
23777	Insulating Bushing for Spring Terminal Assembly 11868	1
23780	Insulating Washer for Spring Terminal Assembly 11868 (Inner)	1
23781	Insulating Washer for Spring Terminal Assembly 11868 (Outer)	1
23784	Plain Washer for Spring Terminal Assembly 11868 (Not shown in Illustration)	1
20704	Nut for Spring Terminal Assembly 11868	1
24953	Lock Washer for Nut 20704	1
23445	Plain Washer for Spring Terminal Assembly 11868 (Not shown in Illustration)	1
21782	Clip for Distributor Head Assembly 11250 (With Clip 21781)	1
21781	Clip for Distributor Head Assembly 11250 (Long Tongue Clip)	1
21783	Clip for Distributor Head Assembly 11250 (Single)	1
21847	Stud for retaining Contact Arm Assembly 14383	1
21499	Stud for retaining Stop 21780	1
21886	Screw for retaining Clip 21783	2
21887	Screw for retaining Clips 21781 and 21782 (Not shown in Illustration)	2
21797	Screw for Advance Yoke Assembly 10598	1
23882	Screw for retaining Cover Assembly 10888	4
12969	<b>High Tension Terminal Assembly for Distributor Head Assembly 11250 (Blank)</b> (Not shown in Illustration)	1
12970	<b>High Tension Terminal Assembly for Distributor Head Assembly 11250 (1) (Not</b> shown in Illustration)	1
12971	<b>High Tension Terminal Assembly for Distributor Head Assembly 11250 (2) (Not</b> shown in Illustration)	1
12972	<b>High Tension Terminal Assembly for Distributor Head Assembly 11250 (3) (Not</b> shown in Illustration)	1
12973	<b>High Tension Terminal Assembly for Distributor Head Assembly 11250 (4) (Not</b> shown in Illustration)	1
20953	Terminal Clip for connecting Distributor (Not shown in Illustration)	1
11250	<b>Distributor Head Assembly Complete</b>	1
	(Includes the next 2 Items. Do not count Old Style Parts)	
21425	Plunger (Old Style) for Distributor Head Assembly 11250 (Approximately $\frac{1}{8}$ " Diameter)	1
29764	Plunger for Distributor Head Assembly 11250 (Not shown in Illustration) (Approx- imately $\frac{1}{4}$ " Diameter)	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter)	1
27607	Spring for Plunger 29764 (Approximately $\frac{1}{4}$ " Diameter)	1
11407	<b>Wrench for Distributor</b>	1
25003	Rubber Washer for High Tension Terminal Assemblies	5



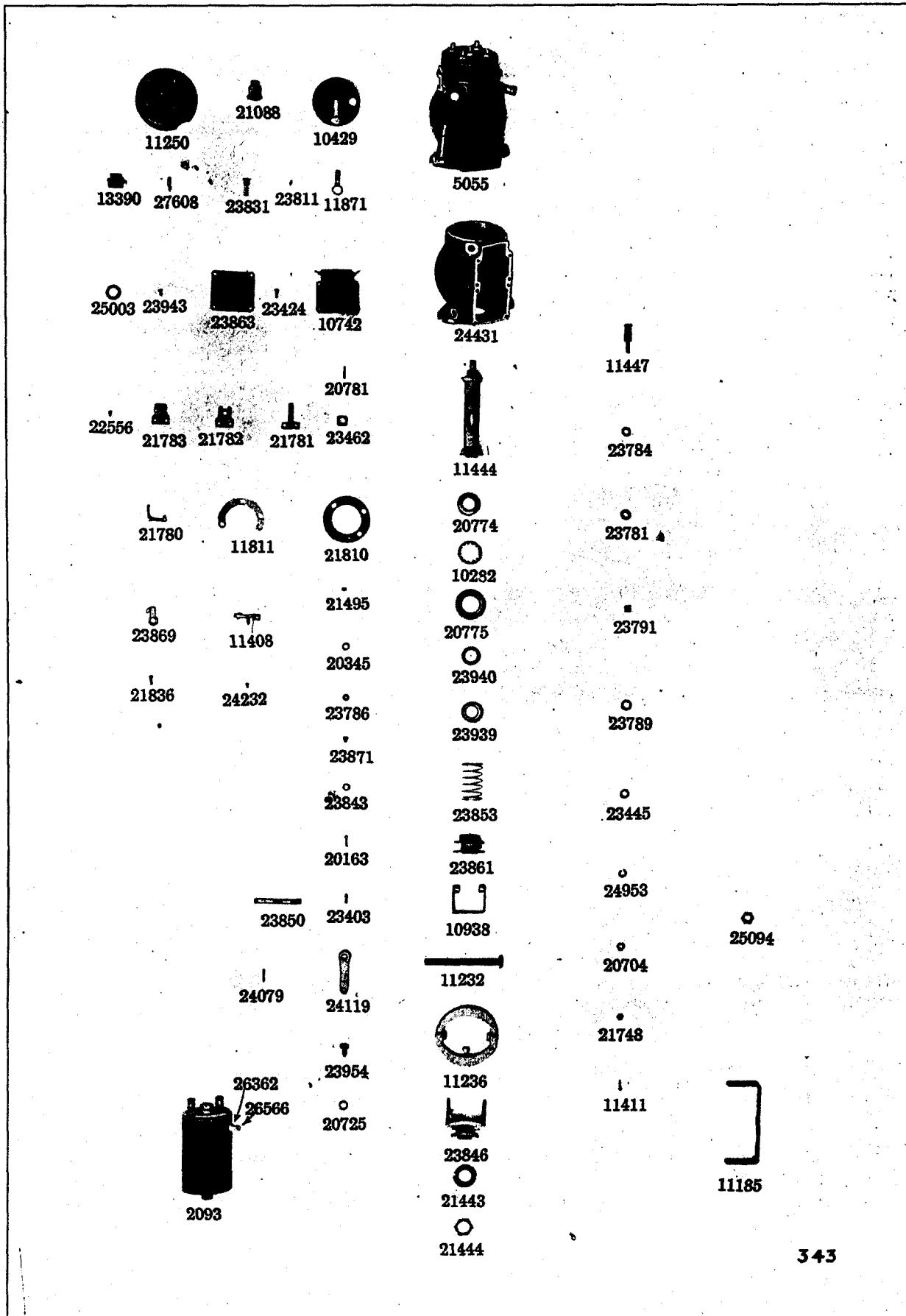
No. 5055 DISTRIBUTOR (Continued)

Piece Number	NAME OF PART	Quantity Required
10282	Retainer and Balls Assembly	2
23940	Spacing Washer on Shaft 24973 between Cone 20774 and Advance Ring 23861	1
23861	Advance Ring (for Manual Advance)	1
23846	Sleeve on Shaft 24973 for Governor Ring Assembly 11236	1
11236	Governor Ring Assembly	1
23939	Sleeve Collar on Shaft 24973 next to Upper Cone 27222 for Spring 23853	1
23853	Spring for Shaft 24973	1
23954	Screw for retaining Governor Ring Assembly 11236	1
20725	Lock Washer for Screw 23954	2
23850	Pin for connecting Shaft 24973 and Sleeve 23846	1
23843	Washer for retaining Pin 23850	1
20163	Cotter Pin for retaining Washer 23843	2
11250	Distributor Head Assembly Complete (Includes the next 2 Items. Do not count Old Style Parts)	2
21425	Plunger (Old Style) for Distributor Head Assembly 11250 (Approximately $\frac{1}{8}$ " Diameter)	1
29764	Plunger for Distributor Assembly 11250 (Approximately $\frac{1}{4}$ " Diameter) (Not shown in Illustration)	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter)	1
27607	Spring for Plunger 29764 (Approximately $\frac{1}{4}$ " Diameter) (Not shown in Illustration)	1
20953	Terminal Clip for connecting Distributor (Not shown in Illustration)	2
12741	Wrench for Distributor (Not shown in Illustration)	1
12969	High Tension Terminal Assembly for Distributor Head Assembly 11250 (Blank) (Not shown in Illustration)	1
12970	High Tension Terminal Assembly for Distributor Head Assembly 11250 (1) (Not shown in Illustration)	1
12971	High Tension Terminal Assembly for Distributor Head Assembly 11250 (2) (Not shown in Illustration)	1
12972	High Tension Terminal Assembly for Distributor Head Assembly 11250 (3) (Not shown in Illustration)	1
12973	High Tension Terminal Assembly for Distributor Head Assembly 11250 (4) (Not shown in Illustration)	1
25003	Rubber Washer for High Tension Terminal Assemblies	5

## No. 5055 DISTRIBUTOR

Piece Number	NAME OF PART	Quantity Required
5055	DISTRIBUTOR COMPLETE.....	1
24431	Housing for Distributor 5055.....	1
20775	Cup for Retainer and Balls Assembly 10282.....	2
14005	Shaft Assembly (Service) (Includes Shaft, Cam and Pin).....	1
14116	Shaft and Cone Assembly (Service) (Includes Shaft Assembly 14005 and Upper Cone) (Not shown in Illustration).....	1
27222	Cone for Shaft Assembly 14005 (Not shown in Illustration).....	1
21443	Clamp Nut for Shaft Assembly 14005 (Round) .....	1
21444	Lock Nut for Clamp Nut 21443.....	1
10745	Condenser Assembly .....	1
	(Includes the next Item)	
32141	Screw for attaching Condenser Assembly 10745 .....	4
23863	Cover Plate for Housing 24431.....	1
23943	Screw for retaining Cover Plate 23863.....	4
11869	Spring Terminal Assembly (Common).....	2
20704	Nut for Spring Terminal Assembly 11869.....	2
24953	Lock Washer for Nut 20704.....	2
23445	Plain Washer for Nut 20704.....	2
23784	Plain Washer for Spring Terminal Assembly 11869 .....	2
23781	Insulating Washer for Spring Terminal Assembly 11869 .....	2
23789	Insulating Washer for Nut 20704 on Spring Terminal Assembly 11869 .....	2
23791	Insulating Bushing for Spring Terminal Assemblies 11869 .....	1
11408	Contact Arm Assembly .....	1
	(Includes the next 3 Items. Do not count Old Style Parts)	
11379	Connector Assembly for Contact Arm Assembly 11408 (Not shown in Illustration).....	1
21801	Terminal Wire (Old Style).....	1
24069	Hub for Contact Arm Assembly 11408 (Not shown in Illustration).....	1
24947	Screw for attaching Hub 24069 (Not shown in Illustration).....	2
23398	Spring for Contact Arm Assembly 11408 (Not shown in Illustration).....	1
21780	Stop for Contact Arm Assembly 11408.....	1
21836	Screw for retaining Stop 21780.....	1
20345	Lock Washer for Screws 21836 and 23871 .....	3
23871	Screw for connecting Condenser Assembly 10745 to Spring Terminal Assembly 11869 .....	2
12411	Contact Screw Assembly (Not shown in Illustration) .....	1
21748	Nut for Contact Screw Assembly 12411.....	1
21782	Clip for Distributor Head Assembly 11250 (With Clip 21781).....	1
21781	Clip for Distributor Head Assembly 11250 (With Long Tongue Clip) .....	1
21783	Clip for Distributor Head Assembly (Single) .....	1
22556	Screw for retaining Clips 21781 and 21782.....	2
23423	Screw for retaining Clip 21783 (Not shown in Illustration) .....	2
11232	Advance Shaft Assembly .....	1
24119	Advance Lever for Advance Shaft Assembly 11232 .....	1
24079	Pin for retaining Advance Lever 24119 .....	1
10938	Advance Yoke Assembly .....	1
23403	Screw for Advance Yoke Assembly 10938 .....	1
10429	Distributor Rotor Assembly Complete .....	1
	(Includes the next 6 Items)	
11871	Connector Assembly (Contact) .....	1
23811	Screw for retaining Connector Assembly 11871 (Not shown in Illustration) .....	1
11870	Clip Assembly for locating Distributor Rotor Assembly 10429 (Not shown in Illustration) .....	1
21514	Screw for retaining Clip Assembly 11870 (Not shown in Illustration) .....	1
23831	Brush for Distributor Rotor Assembly 10429.....	1
23812	Spring for Brush 23831 (Not shown in Illustration) .....	1
11811	Plate Assembly for retaining Contact Arm Assembly 11408 .....	1
	(Includes the next 2 Items)	
21493	Stud for mounting Stop 21780 (Not shown in Illustration) .....	1
21494	Stud for mounting Contact Arm Assembly 11408 (Not shown in Illustration) .....	1
23879	Screw for retaining Plate Assembly 11811 (Not shown in Illustration) .....	3
23876	Plain Washer for Screw 23879 (Not shown in Illustration) .....	3
23941	Insulating Washer for Screw 23879 (Not shown in Illustration) .....	3
21945	Insulating Bushing for Screw 23879.....	3
21810	Insulator for Plate Assembly 11811.....	1
23869	Terminal for connecting Plate Assembly 11811 and Spring Terminal Assembly 11869 .....	1
24232	Screw for retaining Terminal 23869 .....	1

## PIECE PARTS CATALOG



No. 5055 DISTRIBUTOR

**No. 5049 DISTRIBUTOR**

(Not Illustrated)

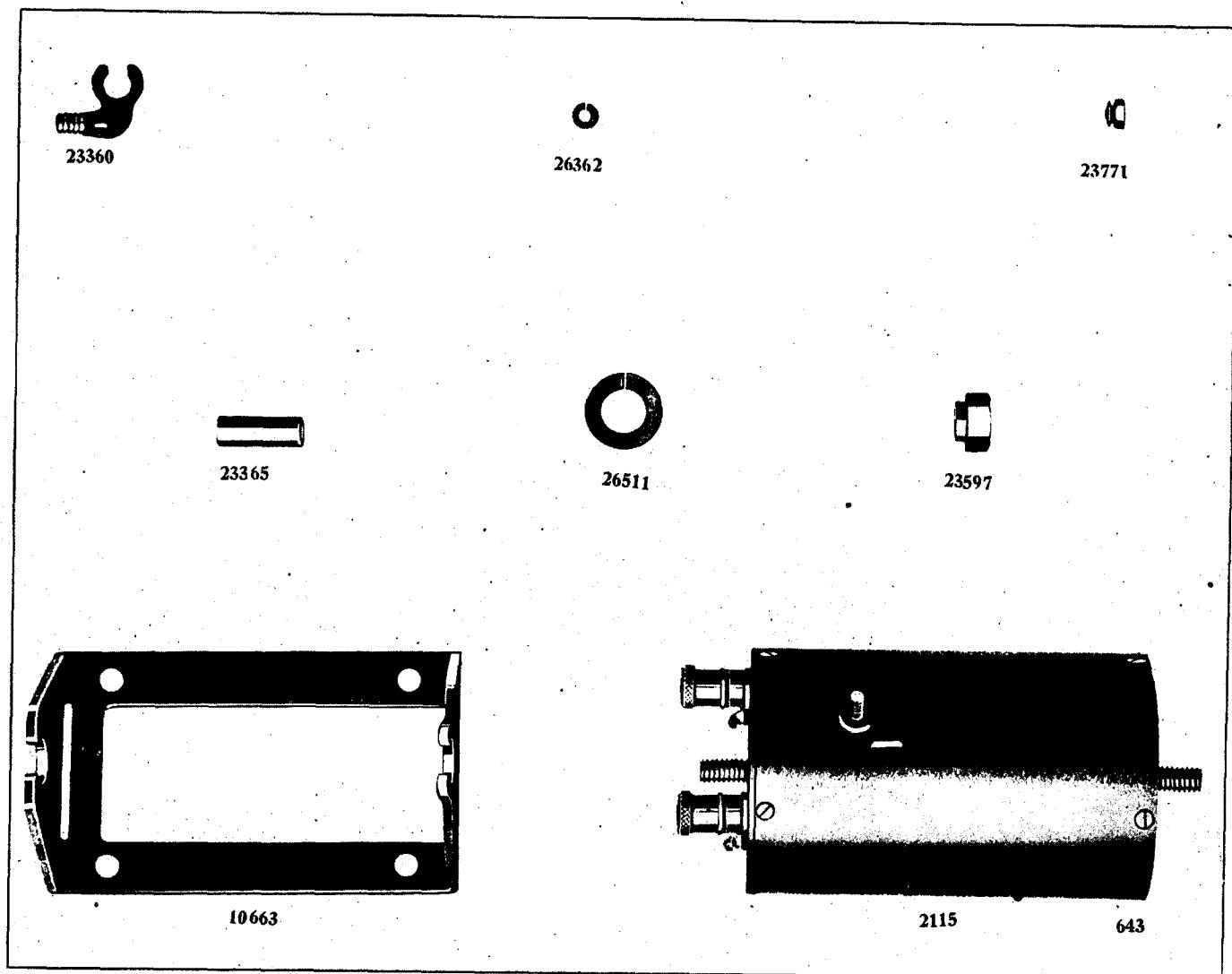
Piece Number	NAME OF PART	Quantity Required
5049	<b>DISTRIBUTOR ASSEMBLY COMPLETE</b>	1
11442	Housing Assembly Complete..... (Includes the next 2 Items)	1
24406	Housing for Housing Assembly 11442.....	1
20775	Cup for Retainer and Balls Assembly 10282.....	1
21443	Clamp Nut for Shaft Assembly 11440 (Round)	1
21444	Lock Nut for Clamp Nut 21443.....	1
27222	Cone for Shaft Assembly 11440.....	1
11440	Shaft Assembly (Includes Shaft, Cam, and Pin).....	2
14115	Shaft and Cone Assembly Includes Shaft Assembly 11440) (Service) (and Upper Cone) (Service) .....	1
10282	Retainer and Balls Assembly.....	1
10598	Advance Yoke Assembly.....	2
21797	Screw for Advance Yoke Assembly 10598.....	1
21786	Advance Ring for Advance Yoke Assembly 10598.....	1
21776	Pin for Advance Ring 21786.....	1
11869	Spring Terminal Assembly (Magneto).....	1
10745	Condenser Assembly..... (Includes the next Item)	2
32141	Screw for attaching Condenser Assembly 10740 .....	4
23875	Separator for Condenser Assembly 10745.....	1
11408	Contact Arm Assembly for Distributor..... (Includes the next 3 Items. Do not count Old Style Parts)	1
11379	Connector Assembly for Contact Arm Assembly 11408.....	1
21801	Terminal Wire (Old Style).....	1
24069	Hub for Contact Arm Assembly 11408.....	1
24947	Screw for attaching Hub 24069.....	2
12411	Contact Screw Assembly for Contact Arm Assembly 11408.....	1
21748	Nut for Contact Screw Assembly 11411.....	1
23398	Spring for Contact Arm Assembly 11408.....	1
21780	Stop for Contact Arm Assembly 11408.....	1
21836	Screw for retaining Stop 21780.....	1
20345	Lock Washer for Screws 21836 and 23870.....	3
23870	Screw for connecting Condenser Assembly 10745 to Spring Terminal Assembly 11869.....	2
11111	Advance Shaft Assembly.....	1
23841	Collar for Shaft Assembly 11111.....	1
24079	Pin for retaining Collar 23841.....	1
11643	Distributor Head Assembly Complete..... (Includes the next 2 Items. Do not count Old Style Parts)	1
21425	Plunger (Old Style) for Distributor Head Assembly 11643 (Approximately $\frac{1}{8}$ " Diameter) .....	1
27608	Plunger for Distributor Head Assembly 11643 (Approximately $\frac{1}{4}$ " Diameter) .....	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter) .....	1
27607	Spring for Plunger 27608 (Approximately $\frac{1}{4}$ " Diameter) .....	1
10429	Distributor Rotor Assembly Complete..... (Includes the next 6 Items)	1
11871	Connector Assembly Contact.....	1
23811	Screw for retaining Connector Assembly 11871 .....	1
11870	Clip Assembly for locating Distributor Rotor Assembly 10429.....	1
21514	Screw for retaining Clip Assembly 11870.....	1
23831	Brush for Distributor Rotor Assembly 10429.....	1
23812	Spring for Brush 23831.....	1
21782	Clip for Distributor Head Assembly 11643 (With Clip 21781) .....	1
21781	Clip for Distributor Head Assembly 11643 (Long Tongue Clip) .....	1
21783	Clip for Distributor Head Assembly 11643 (Single) .....	1
21886	Screw for retaining Clip 21783.....	2
21887	Screw for retaining Clips 21781 and 21782.....	2
11811	Plate Assembly for retaining Contact Arm Assembly 11408..... (Includes the next 2 Items)	1
21493	Stud for mounting Stop 21780.....	1
21494	Stud for mounting Contact Arm Assembly 11408 .....	1
21747	Screw for retaining Plate Assembly 11811.....	3
23876	Plain Washer for Screw 21747.....	3
21495	Insulating Bushing for Screw 21747.....	3
23941	Insulating Washer for Screw 21747.....	3
23810	Insulator under Plate 11811.....	3
23869	Terminal for connecting Plate Assembly 11811.....	1
24232	Screw for retaining Terminal 23869.....	1
23777	Insulating Bushing for Spring Terminal Assembly 11869 .....	2
23780	Insulating Washer for Spring Terminal Assembly 11869 .....	2
20704	Nut for Spring Terminal Assembly 11869.....	4
24953	Lock Washer for Nut 20704.....	2
23445	Plain Washer for Spring Terminal Assembly 11869 .....	4
12741	Wrench for Distributor.....	1
11863	High Tension Terminal Assembly for Distributor Head Assembly 11643 (Blank) .....	5
25003	Rubber Washer for High Tension Terminal Assemblies .....	5

## No. 5001 DISTRIBUTOR

(Not Illustrated)

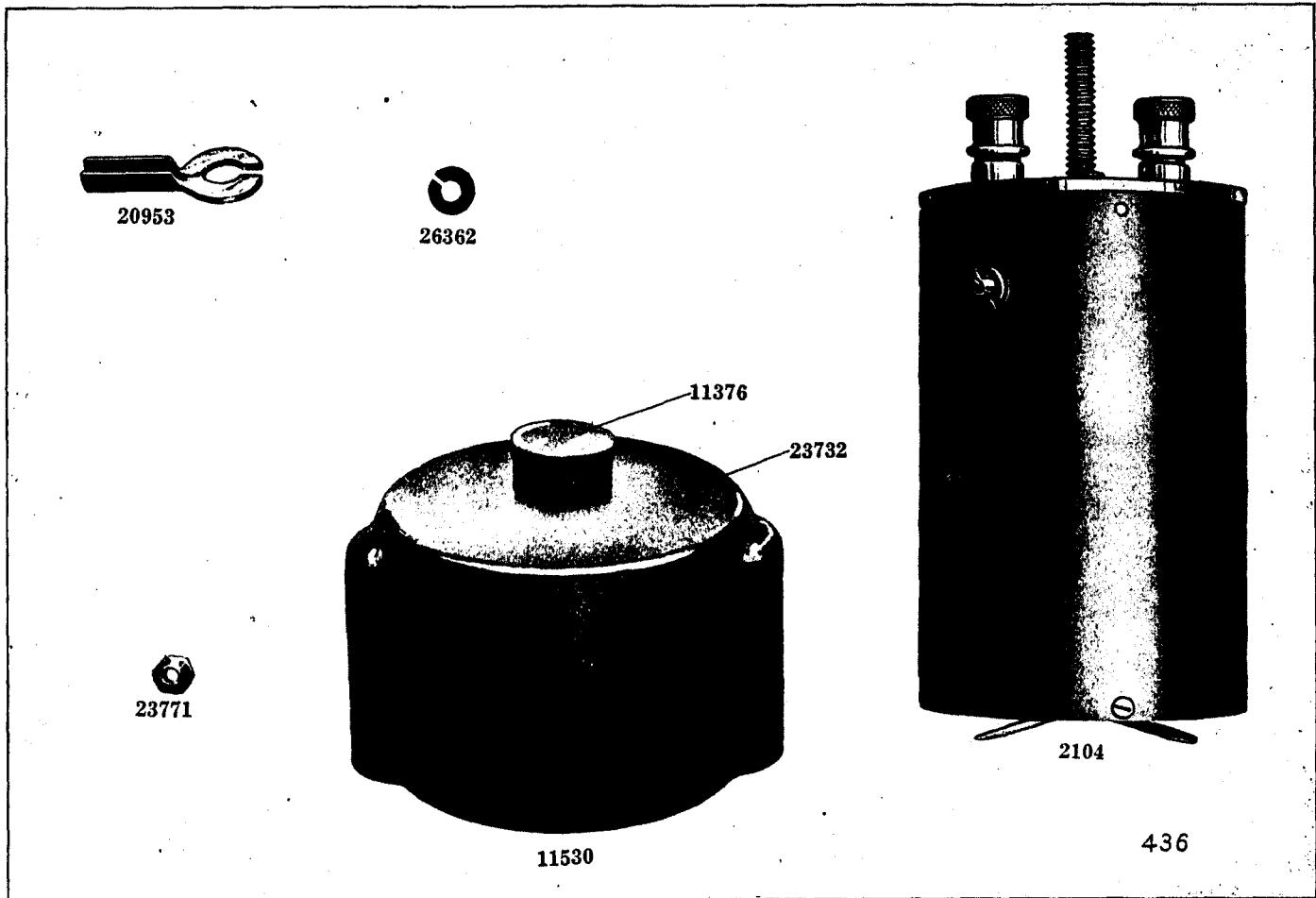
Piece Number	NAME OF PART	Quantity Required
5001	DRY CELL DISTRIBUTOR COMPLETE.....	1
11991	Housing Assembly Complete.....  (Includes the next 2 Items)	1
24367	Housing for Housing Assembly 11991.....	1
20775	Cup for retainer and Balls Assembly 10282.....	1
14114	Shaft Assembly (Service) Including Shaft 11435 and Upper Cone.....	1
21443	Clamp Nut for Shaft Assembly 11435 (Round)	1
21444	Lock Nut for Clamp Nut 21443 (Hexagon)	1
27222	Cone for Shaft Assembly 11435.....	2
11435	Shaft Assembly (Includes the Shaft, Cam and Pin)	1
11667	Shaft and Cone Assembly.....	1
11226	Advance Lever Assembly.....	1
11230	Advance Shaft Assembly.....	1
24079	Dowel Pin for retaining Advance Lever Assembly 11226.....	1
10888	Cover Assembly for Housing 24367.....  (Includes the next 2 Items)	1
23849	Name Plate for Cover Assembly 10888.....	1
23839	Rivet for Name Plate 23849.....	2
10282	Retainer and Balls Assembly.....	2
12411	Contact Screw Assembly.....	1
11868	Spring Terminal Assembly.....	1
14383	Contact Arm Assembly.....  (Includes the next 2 Items)	1
24069	Hub for Contact Arm Assembly 14383.....	1
24947	Screw for attaching Hub 24069.....	2
10598	Advance Yoke Assembly.....	1
21797	Screw for Advance Yoke Assembly 10598.....	1
10429	Distributor Rotor Assembly Complete.....  (Includes the next 6 Items)	1
11871	Distributor Rotor Connector Assembly (Contact)	1
23811	Screw for retaining Connector Assembly 11871 .....	1
11870	Clip Assembly for locating Distributor Rotor Assembly 10429 .....	1
21514	Screw for retaining Clip Assembly 11870.....	1
23831	Brush for Distributor Rotor Assembly 10429 .....	1
23812	Spring for Brush 23831.....	1
11643	Distributor Head Assembly Complete.....  (Includes the next 2 Items. Do not Count Old Style Parts)	1
21425	Plunger (Old Style) for Distributor Head Assembly 11643 (Approximately $\frac{1}{8}$ " Diameter) .....	1
27608	Plunger for Distributor Head Assembly 11643 (Approximately $\frac{1}{4}$ " Diameter) .....	1
21424	Spring (Old Style) for Plunger 21425 (Approximately $\frac{1}{8}$ " Diameter) .....	1
27607	Spring for Plunger 27608 (Approximately $\frac{1}{4}$ " Diameter) .....	1
21782	Clip for Distributor Head Assembly 11643 (With Clip 21781) .....	1
21781	Clip for Distributor Head Assembly 11643 (Long Tongue Clip) .....	1
21783	Clip for Distributor Head Assembly 11643 (Single) .....	1
21887	Screw for retaining Clips 21781 and 21782.....	2
21886	Screw for retaining Clip 21783.....	2
23777	Insulating Bushing for Spring Terminal Assembly 11868 .....	1
23780	Insulating Washer for Spring Terminal Assembly 11868 .....	2
23445	Plain Washer for Spring Terminal Assembly 11868 .....	2
20704	Nut for Spring Terminal Assembly 11868.....	1
24953	Lock Washer for Nut 20704.....	1
21748	Lock Nut for Contact Screw Assembly 12411.....	1
21847	Stud for retaining Contact Arm Assembly 14383 .....	1
21499	Stud for retaining Stop 21780.....	1
21780	Stop for Contact Arm Assembly 14383 .....	1
21836	Screw for retaining Stop 21780.....	1
20345	Lock Washer for Screw 21836.....	1
23398	Spring for operating Contact Arm Assembly 14383 .....	1
23882	Screw for attaching Cover Assembly 10888 .....	4
21776	Pin for Advance Ring 21786 .....	1
21786	Advance Ring for Advance Yoke Assembly 10598 .....	1
13502	Lead Assembly for connecting Distributor 5001 .....	1
	(Includes the next Item)	
20953	Terminal Clip for Lead Assembly 13502 .....	2
12741	Wrench for Distributor .....	1
11863	High Tension Terminal Assembly for Distributor Head Assembly 11643 (Blank) .....	5
25003	Rubber Washer for High Tension Terminal Assemblies .....	5

PIECE PARTS CATALOG



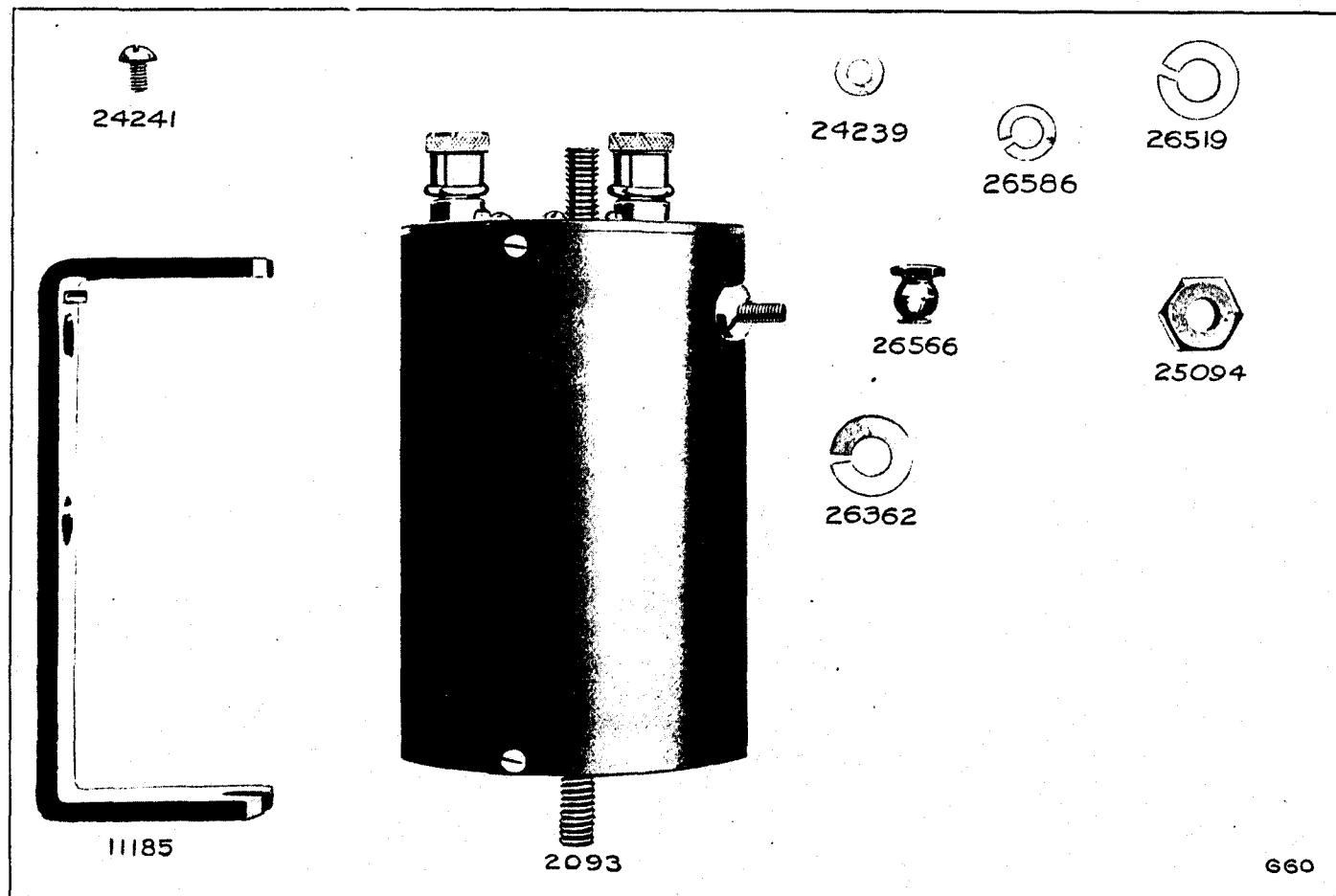
No. 2115 IGNITION COIL

Piece Number	Name of Part	Quantity Required
2115	IGNITION COIL COMPLETE..... (Includes the next 4 Items)	1
32115	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 23771.....	1
23597	Nut for retaining Bracket Assembly 10663 .....	2
26511	Lock Washer for Nut 23597.....	2
23360	Terminal Clip for connecting Ignition Coil 21115 .....	1
23365	Fibre Ferrule for Terminal Clip 23360 .....	1
10663	Bracket Assembly for mounting Ignition Coil 2115 .....	1



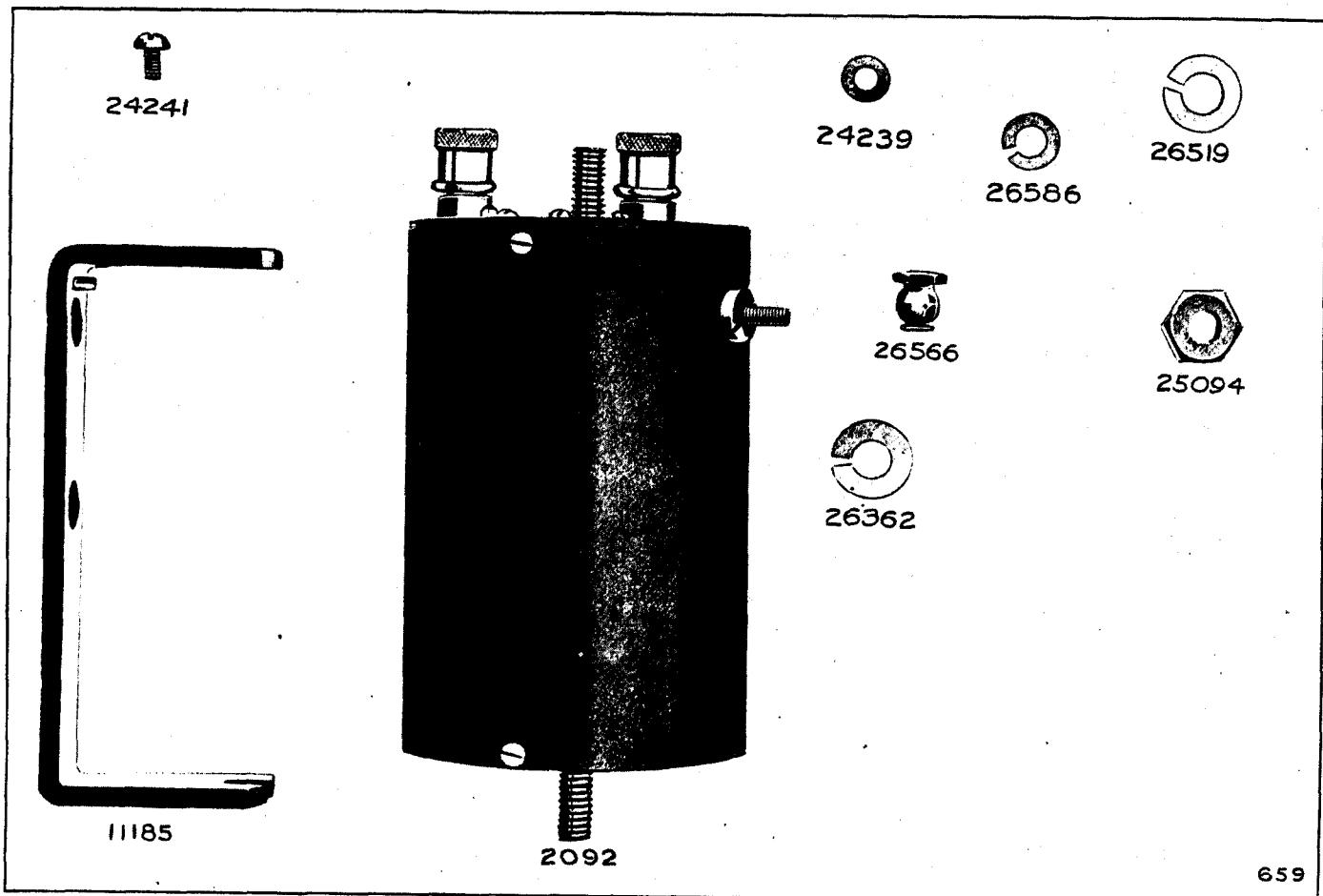
### No. 2104 IGNITION COIL

Piece Number	NAME OF PART	Quantity Required
2104	IGNITION COIL COMPLETE.....	1
23771	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 23771.....	1
11530	Protector Assembly Complete..... (Includes the next 3 Items)	1
23732	Protector for Protector Assembly 11530.....	1
11376	Nut Assembly .....	1
23447	Plain Washer for Nut Assembly 11376 (Not shown in Illustration).....	1
20953	Terminal Clip for connecting Ignition Coil 2104 .....	2
23835	Terminal Clip for High Tension Terminal (Not shown in Illustration).....	1



### No. 2093 IGNITION COIL

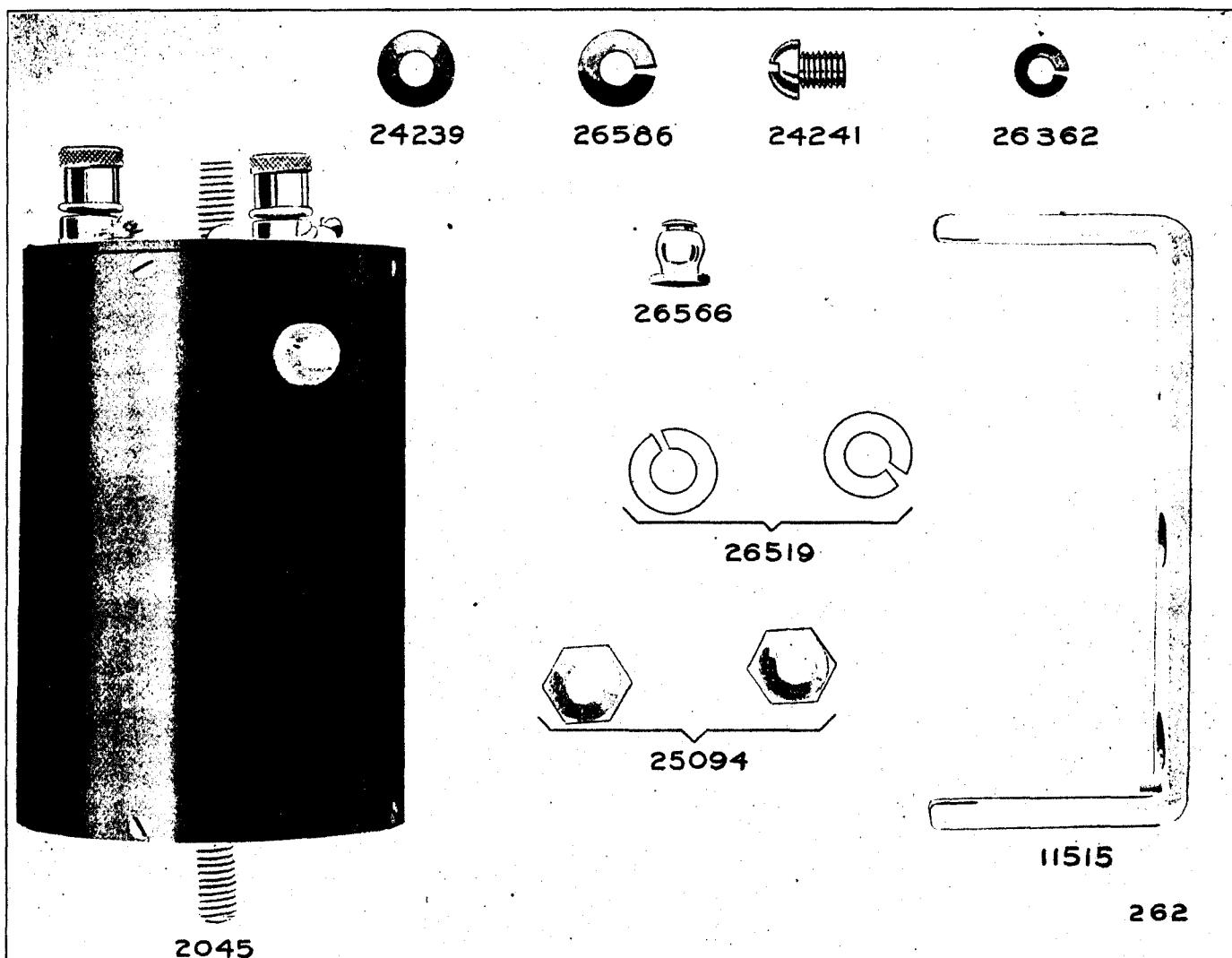
Piece Number	NAME OF PART	Quantity Required
2093	IGNITION COIL COMPLETE.....	1
26566	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 26566.....	1
25094	Nut for attaching Bracket Assembly 11185.....	2
26519	Lock Washer for Nut 25094.....	2
11185	Bracket Assembly for mounting Ignition Coil 2093 .....	1
24241	Screw for Bracket Assembly 11185.....	1
26586	Lock Washer for Screw 24241.....	1
24239	Plain Washer for Screw 24241.....	1
20953	Terminal Clip for connecting Ignition Coil 2093 (Not shown in Illustration).....	2



659

### No. 2092 IGNITION COIL

Piece Number	NAME OF PART	Quantity Required
2092	IGNITION COIL COMPLETE.....	1
26566	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 26566.....	1
11185	Bracket Assembly for attaching Ignition Coil 2092.....	1
25094	Nut for retaining Bracket Assembly 11185.....	2
26519	Lock Washer for Nut 25094.....	2
24241	Screw for Bracket Assembly 11185.....	1
26586	Lock Washer for Screw 24241.....	1
24239	Plain Washer for Screw 24241.....	1
20953	Terminal Clip for connecting Ignition Coil 2092 (Not shown in Illustration).....	1



## No. 2045 IGNITION COIL

Piece Number	NAME OF PART	Quantity Required
2045	IGNITION COIL COMPLETE.....	1
11515	Bracket Assembly for mounting Coil.....	1
25094	Nut for mounting Coil.....	2
26519	Lock Washer for Nut 25094.....	2
26566	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 26566.....	1
24241	Screw for Bracket Assembly 11515.....	1
26586	Lock Washer for Screw 24241.....	1
24239	Plain Washer for Screw 24241.....	1

## PIECE PARTS CATALOG

## No. 2022 IGNITION COIL

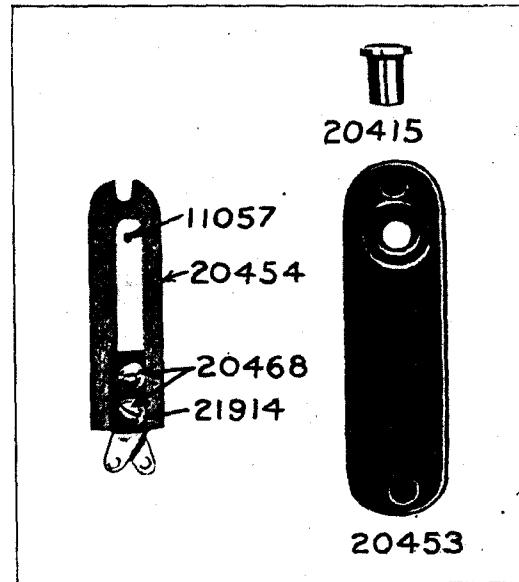
(Not Illustrated)

Piece Number	NAME OF PART	Quantity Required
2022	IGNITION COIL COMPLETE.....	1
26566	Nut for High Tension Terminal.....	1
26362	Lock Washer for Nut 26566.....	1
25094	Nut for retaining Bracket 21497.....	2
26519	Lock Washer for Nut 25094.....	2
21497	Bracket for attaching Coil 2022.....	1
24241	Screw for Bracket 21497.....	1
26586	Lock Washer for Screw 24241.....	1
24239	Plain Washer for Screw 24241.....	1
23573	Number Plate for Coil 2022.....	1
24747	Screw for attaching Number Plate 23573.....	2

## No. 2004 COIL BOX

(Not Illustrated)

Piece Number	NAME OF PART	Quantity Required
2004	COIL BOX COMPLETE.....	1
10707	Spring Terminal Assembly.....	5
12882	Coil Assembly .....	1
12994	Box Assembly .....	1
	(Includes the next 2 Items)	
23568	Name Plate for Box Assembly 13013.....	2
24963	Rivet for Name Plate 23568.....	1
24960	Screw for retaining Box Assembly 12994.....	5
24694	Screw for retaining Spring Terminal Assembly 10707.....	5
28335	Plain Washer for Screw 24694.....	5
28333	Box for retaining Coil Assembly 12882.....	1
25374	Separator for Coil Assembly 12882.....	3
24487	Nut for High Tension Terminal.....	4
24744	Nut for retaining Coil Assembly 12882.....	4
25207	Plain Washer for Nut 24744.....	4
25373	Insulator for High Tension Terminal.....	4
25119	Plain Washer for Insulator 25373 (Large) .....	4
25189	Insulator for Separator 25374.....	1
25188	Bracket for mounting Coil Box 2004.....	1
28326	Screw for attaching Bracket 25188.....	4
28337	Strip for mounting Spring Terminal Assembly 10707 .....	1
28336	Strip for retaining Coil Assembly 12882.....	1

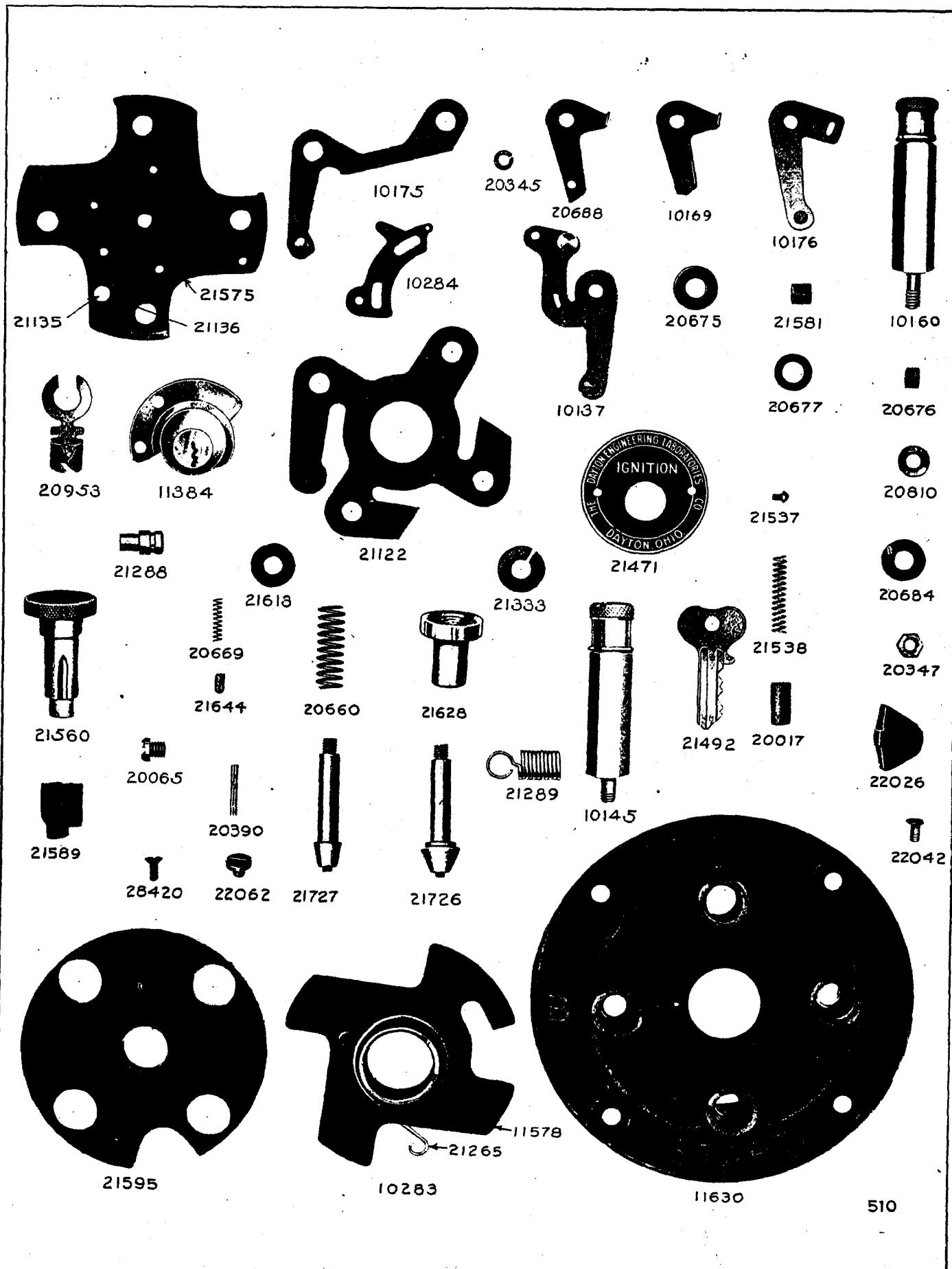


### No. 1991 STARTING SWITCH

Piece Number	NAME OF PART	Quantity Required
1991	STARTING SWITCH COMPLETE.....	1
20453	Cover for Switch.....	1
20415	Plunger for operating Contact Spring Assembly 11057 .....	1
20454	Plate for mounting Contact Spring Assembly 11057 .....	1
11057	Contact Spring Assembly for Switch.....	2
20468	Screw for mounting Contact Spring Assembly 11057 .....	2
20418	Insulating Bushing for Screw 20468 (Not shown in Illustration) .....	2
21914	Lock Washer for Screw 20468.....	2
20201	Insulator between Contact Spring Assembly 11057 (Not shown in Illustration) .....	3
20467	Insulator (Long) for Contact Spring Assembly 11057 (Not shown in Illustration) ..	1
20200	Insulator for Contact Spring Assembly 11057 under Screw 20468 (Not shown in Illustration) .....	1

## No. 1979 IGNITION SWITCH

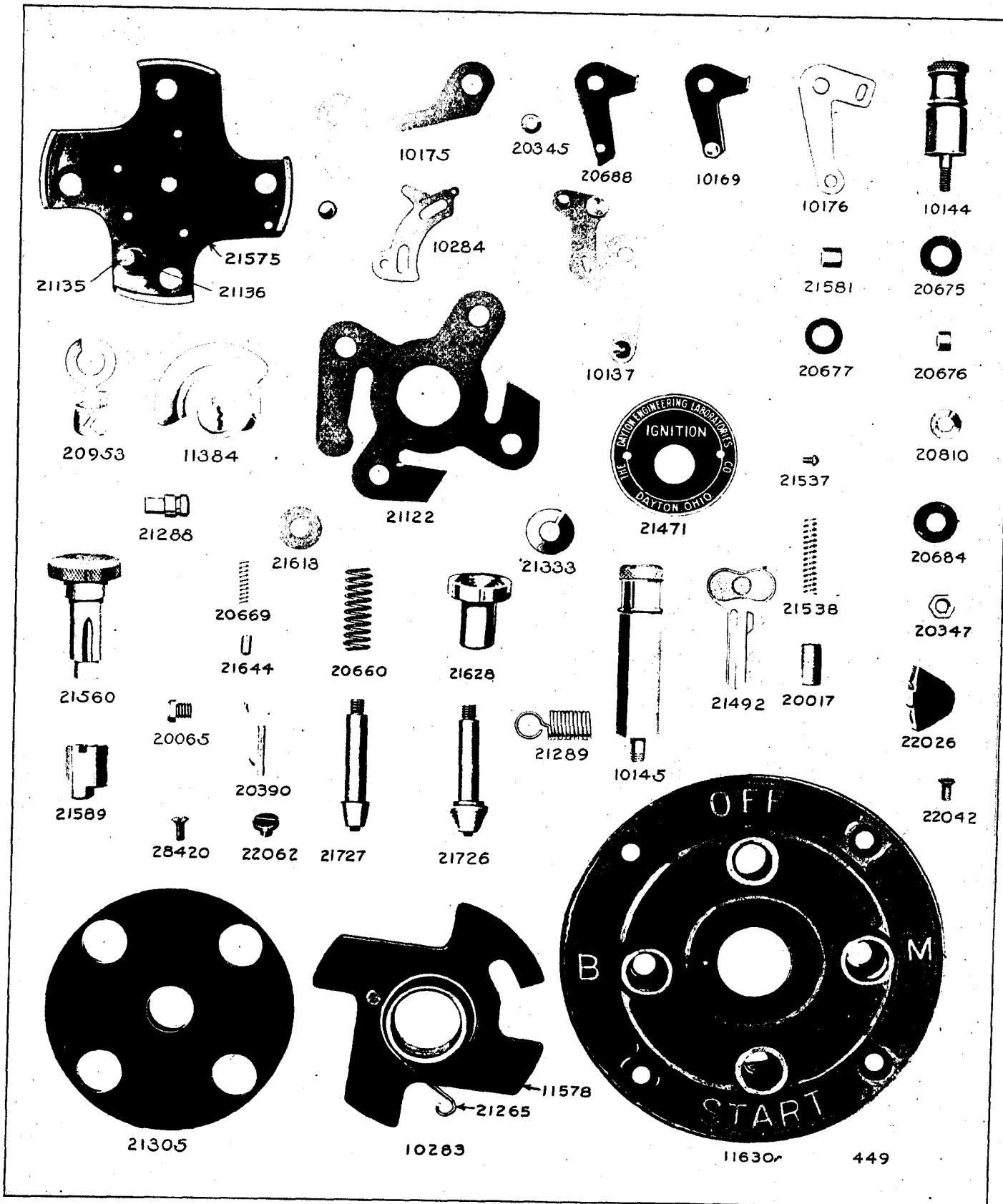
Piece Number	NAME OF PART	Quantity Required
1979	IGNITION SWITCH COMPLETE.....	1
10289	Shell Assembly Complete..... (Includes the next 16 Items)	1
10287	Shell Assembly..... (Includes the next 6 Items)	1
13836	Shell Assembly.....	1
21628	Button for Studs 21726 and 21727.....	3
21726	Stud for operating Contacts (Battery and Magneto).....	2
21727	Stud for operating Contacts (Start).....	1
20660	Spring for Push Button 21628.....	3
29284	Lock Washer for Button 21628 (Not shown in Illustration).....	3
21560	Button for locking Switch.....	1
21644	Plunger for Button 21560.....	1
20669	Spring for Plunger 21644.....	1
20017	Plunger for Spring 21538.....	1
21538	Spring for Button 21560.....	1
22026	Bracket for retaining Spring 21538 and Plunger 20017.....	2
22042	Screw for retaining Bracket 22026.....	1
21589	Locking Cam for Button 21560.....	1
20390	Pin for Locking Cam 21589.....	1
10288	Switch Mechanism Assembly Complete..... (Includes the next 28 Items)	1
10285	Support Plate Assembly..... (Includes the next 6 Items)	1
10284	Locking Cam Assembly.....	1
21289	Spring for Locking Cam Assembly 10284.....	1
21288	Stud for Spring 21289.....	1
21137	Stud for Locking Cam Assembly 10284 (Not shown in Illustration).....	1
21136	Plain Washer for Stud 21135.....	1
21135	Stud for retaining Spring 21265.....	1
10169	Contact Arm Assembly (Short).....	1
10176	Contact Arm Assembly (Single).....	1
10137	Contact Arm Assembly (Double).....	1
10175	Contact Arm Assembly (Common).....	1
10160	Spring Terminal Assembly (Outer).....	1
10145	Spring Terminal Assembly (Center).....	1
21122	Insulator for Contact Arm Assembly 10175.....	1
20677	Insulating Washing for Contact Arm Assemblies 10169 and 10176.....	2
20675	Insulating Washer for Nut 20347.....	4
20810	Plain Washer for Nut 20347.....	4
20684	Plain Washer for (Common) Spring Terminal Assembly (Thick).....	1
21613	Plain Washer for Spring Terminal Assembly 10160 (Thin).....	1
20347	Nut for Spring Terminal Assemblies 10145 and 10160.....	5
24240	Lock Washer for Spring Terminal Assembly 10145 (Not shown in Illustration).....	1
20676	Insulating Bushing for Spring Terminal Assembly 10160 (Long).....	3
21581	Insulating Bushing for Spring Terminal Assembly 10160 (Short).....	1
20688	Support Plate for Contact Arm Assembly 10176 .....	2
20345	Lock Washer for Screw 20065.....	3
20065	Screw for retaining Lock Assembly 11384.....	3
11384	Lock Assembly Complete..... (Includes the next Items)	1
29958	Key for Lock Assembly 11384 (Give Series No. of Lock).....	2
10283	Detent Assembly Complete..... (Includes the next 2 Items)	1
21262	Stud for Spring 21265 (Not shown in Illustration).....	1
21265	Spring for Detent Assembly 10283.....	1
21595	Cover Plate for Switch.....	1
21471	Name Plate for Switch.....	1
21537	Screw for retaining Name Plate 21471.....	2
28420	Screw for retaining Cover Plate 21595.....	4
22062	Screw for retaining Switch Mechanism Assembly 10268.....	4
20953	Terminal Clip for connecting Switch 1979.....	4



No. 1979 IGNITION SWITCH

No. 1978 IGNITION SWITCH

Piece Number	NAME OF PART	Quantity Required
1978	IGNITION SWITCH COMPLETE.....	1
10289	Shell Assembly Complete..... (Includes the next 16 Items)	1
10287	Shell Assembly..... (Includes the next 6 Items)	1
13836	Shell Assembly.....	1
21628	Button for Studs 21726 and 21727.....	3
21726	Stud (Battery and Magneto) for operating Contacts.....	2
21727	Stud for operating Contacts (Start).....	1
20660	Spring for Push Button 21628.....	3
29284	Lock Washer for Button 21628 (Not shown in Illustration).....	3
21560	Button for locking Switch.....	1
21644	Plunger for Button 21560.....	1
20669	Spring for Plunger 21644.....	1
20017	Plunger for Spring 21538.....	1
21538	Spring for Plunger 21560.....	1
22026	Bracket for retaining Spring 21538 and Plunger 20017.....	2
22042	Screw for retaining Bracket 22026.....	1
21589	Locking Cam for Button 21560.....	1
20390	Pin for Locking Cam 21589.....	1
10286	Switch Mechanism Assembly Complete..... (Includes the next 28 Items)	1
10285	Support Plate Assembly..... (Includes the next 6 Items)	1
10284	Locking Cam Assembly.....	1
21289	Spring for Locking Cam Assembly 10284.....	1
21288	Stud for Spring 21289.....	1
21137	Stud for Locking Cam Assembly 10284 (Not shown in Illustration).....	1
21136	Plain Washer for Locking Cam Assembly 10284.....	1
21135	Stud for retaining 21265.....	1
10169	Contact Arm Assembly (Short).....	1
10176	Contact Arm Assembly (Single).....	1
10137	Contact Arm Assembly (Double).....	1
10175	Contact Arm Assembly (Common).....	4
10144	Spring Terminal Assembly (Short).....	1
10145	Spring Terminal Assembly (Long).....	1
21122	Insulator for Contact Arm Assembly 10175.....	2
26677	Insulating Washer for Contact Arm Assemblies 10169 and 10176.....	4
20675	Insulating Washer for Nut 20347.....	4
20810	Plain Washer for Nut 20347.....	1
20684	Plain Washer for (Common) Spring Terminal Assembly 10144 (Thick).....	1
21613	Plain Washer for Spring Terminal Assembly 10144 (Thin).....	1
20347	Nut for Spring Terminal Assemblies 10144 and 10145.....	5
24240	Lock Washer for Spring Terminal Assembly 10145 (Not shown in Illustration).....	1
20676	Insulating Bushing for Spring Terminal Assembly 10144 (Long).....	3
21581	Insulating Bushing for Spring Terminal Assembly 10144 (Short).....	1
20688	Support Plate for Contact Arm Assembly 10176 .....	2
20345	Lock Washer for Screw 20065.....	3
20065	Screw for retaining Lock Assembly 11384.....	3
11384	Lock Assembly .....	1
	(Includes the next Item)	2
29958	Key for Lock Assembly 11384 (Give Series No. of Lock).....	1
10283	Detent Assembly Complete..... (Includes the next 2 Items)	1
21262	Stud for Spring 21265 (Not shown in Illustration) .....	1
21265	Spring for Detent Assembly 10283.....	1
21305	Cover Plate for Switch.....	1
21471	Name Plate for Switch.....	2
21537	Screw for retaining Name Plate 21471.....	4
28420	Screw for retaining Cover Plate 21305.....	4
22062	Screw for retaining Switch Mechanism Assembly 10286.....	4
20953	Terminal Clip for connecting Ignition Switch 1978.....	5



## **No. 1978 IGNITION SWITCH**

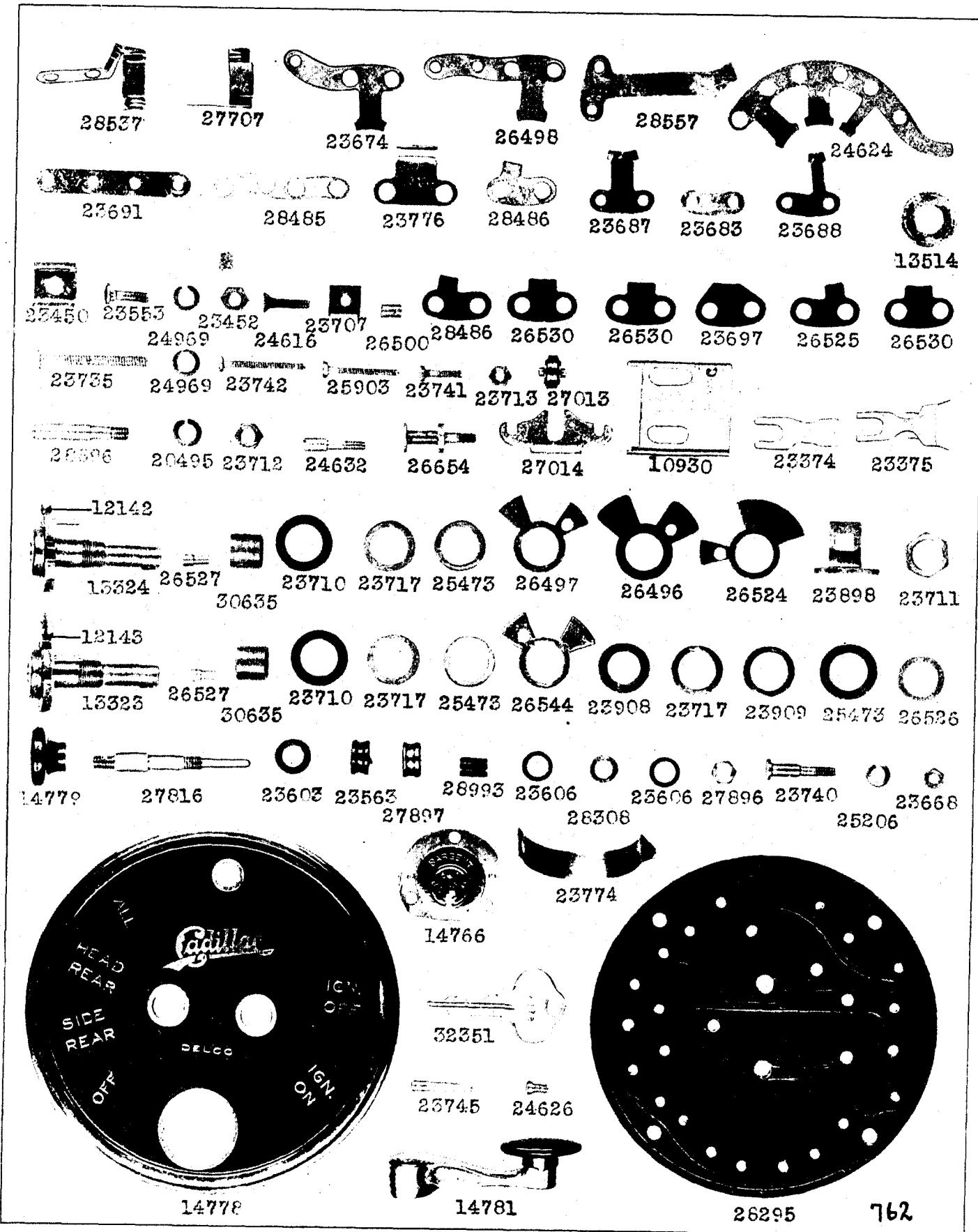
**PIECE PARTS CATALOG**

**No. 1150 COMBINATION SWITCH (Continued)**

Piece Number	NAME OF PART	Quantity Required
26525	Insulating Plate for Terminals No. 1 and 8 .....	5
26530	Insulating Plate for Terminals No. 2, 3, 5 and 6 .....	11
28483	Insulating Bushing for Terminal No. 3 (Not shown in Illustration) .....	2
28486	Separator Plate for Terminal No. 8 .....	2
28537	Contact Spring for connecting Terminal No. 8 and Plunger Assembly 13086 .....	1
27705	Contact Spring for connecting Plunger Assembly 13086 and Terminal No. 9 .....	1
23741	Screw for retaining Contact Spring 27707 and Terminal No. 4 .....	4
23740	Screw for retaining Tumbler Assembly 10930 .....	2
23683	Plate for retaining Screws 23741 on Terminal No. 4 .....	1
23697	Insulating Plate for Terminal No. 6 under Brush 26498 (Large) .....	1
28485	Plate connecting Terminal No. 3 and Contact Spring 28537 .....	1
23713	Nut for Screws 23740, 24632 and Stud 26654 .....	5
23668	Nut for retaining Screw 23742 .....	2
26654	Stud for retaining Roller Bracket 27014 .....	1
25206	Lock Washer for Nut 23713 .....	5
20495	Lock Washer for Nut 23712 .....	2
20393	Lock Washer for Screw 23735 .....	4
23735	Screw for retaining Housing Assembly .....	4
23707	Nut for Screw 24616 .....	1
24616	Screw for retaining Spring 23774 .....	1
23742	Screw for retaining Brushes 23674 and 24624 (Short) .....	2
24632	Stop Screw for Blade Assemblies .....	2
26523	Screw for retaining Terminal No. 7 (Not shown in Illustration) .....	2
31009	Spacing Washer for Blade Assemblies .....	2
28896	Stud for retaining Blade Assemblies .....	2
23712	Nut for retaining Stud 28896 .....	2
23691	Terminal Plate under Terminal Plate No.4 .....	1
23374	Terminal Clip for connecting Switch (Small) .....	7
23375	Terminal Clip for connecting Switch (Large) .....	2

## No. 1150 COMBINATION SWITCH

Piece Number	NAME OF PART	Quantity Required
1150	COMBINATION SWITCH	1
14777	Housing Assembly Complete..... (Includes the next 12 Items)	1
32291	Escutcheon Plate for Switch.....	1
28612	Ferrule for retaining Plate 32291.....	2
14779	Button Assembly for Plunger Assembly 15307.....	1
28308	Insulating Washer for Plunger Assembly 15307.....	1
15307	Plunger Assembly Complete..... (Includes the next 7 Items)	1
27816	Plunger for Plunger Assembly 15307.....	1
23563	Insulating Collar for Plunger 27816.....	1
28993	Insulating Bushing for Plunger 27816.....	1
27897	Contact Collar for Plunger 27816.....	1
23606	Plain Washer for Nut 27896.....	1
23603	Insulating Washer for Contact Collar 27897.....	1
27896	Nut for Clamping Plunger Assembly 15307.....	1
23898	Terminal Post for connecting Switch.....	1
23553	Screw for retaining Terminal Clip 23450.....	1
23452	Nut for Screw 23553.....	1
20393	Lock Washer for Nut 23452.....	1
23450	Clip for Terminal Clip 23374.....	1
13290	Blade Assembly Complete (Ignition)..... (Includes the next 15 Items)	1
13323	Stud Assembly .....	1
12143	Stop Wheel Assembly.....	1
26527	Insulating Bushing for Stop Wheel Assembly 12143.....	1
30635	Insulating Bushing for Stud Assembly 13323.....	1
26497	Blade for Blade Assembly 13290 (Lower).....	1
26524	Blade for Blade Assembly 13290 (Upper).....	1
26496	Insulator between Blade 26497 and 26524).....	1
23710	Insulating Washer for Blade 26497 and 26524.....	2
23717	Plain Washer for Stop Wheel Assembly 12143 (Thick).....	2
25473	Plain Washer for Stop Wheel Assembly 12143 (Thin).....	1
23908	Plain Washer for Blade 26524 (Thick).....	1
23711	Nut for Clamping Blade Assembly 13290.....	1
26526	Lock Washer for Nut 23711.....	1
23909	Plain Washer for Nut 23711.....	1
25473	Plain Washer for Blades 26524 (Thin).....	1
13291	Blade Assembly Complete (For Lighting)..... (Includes the next 13 Items)	1
13324	Stud Assembly .....	1
12142	Stop Wheel Assembly.....	1
26527	Insulating Bushing for Stop Wheel Assembly 12142.....	1
30635	Insulating Bushing for Stud Assembly 13324.....	1
26544	Blade for Blade Assembly 13291.....	1
23717	Plain Washer for Stop Wheel Assembly 12142 (Thick).....	1
25473	Plain Washer for Stop Wheel Assembly 12142 (Thin).....	1
23710	Insulating Washer for Blade 26544.....	2
25473	Plain Washer for Blade 26544 (Thin).....	1
23908	Plain Washer for Blade 26544 (Thick).....	1
23909	Plain Washer for Nut 23711.....	1
26526	Lock Washer for Nut 23711.....	1
23711	Nut for Clamping Blade Assembly 13291.....	1
14766	Lock Assembly for Switch..... (Includes the next Item)	1
32351	Key for Lock Assembly 14766 (Give Series No. of Lock).....	2
24626	Screw for retaining Lock Assembly 14766 .....	3
10930	Tumbler Assembly for Locking Blade Assemblies 13290 and 13291.....	1
14781	Lever Assembly for operating Blade Assemblies.....	2
23745	Screw for retaining Lever.....	2
27014	Roller Bracket for retaining Roller 27013.....	1
27013	Roller for Blade Assemblies 13290 and 13291.....	2
23774	Spring for Roller Bracket 27014.....	2
23776	Spring for Tumbler Assembly 10930.....	1
28295	Mounting Plate for Switch.....	1
23674	Brush for Terminal No. 5 (Lower).....	1
23687	Brush for Terminals No. 2, 3, 5, 6 (Upper).....	4
23688	Brush for Terminal No. 1 (Upper).....	1
28557	Brush for connecting Terminal No. 8 and Blade Assembly.....	1
24624	Brush for Terminals No. 1, 2 and 3 (Lower).....	1
26498	Brush for Terminals No. 6 and 7 (Lower).....	1
25903	Screw for retaining Terminals No. 1, 2, 3, 5, 6 and 8.....	12
26500	Insulating Bushing for Screw 25903.....	10



No. 1150 COMBINATION SWITCH

**PIECE PARTS CATALOG**

**No. 1099 COMBINATION SWITCH (Continued)**

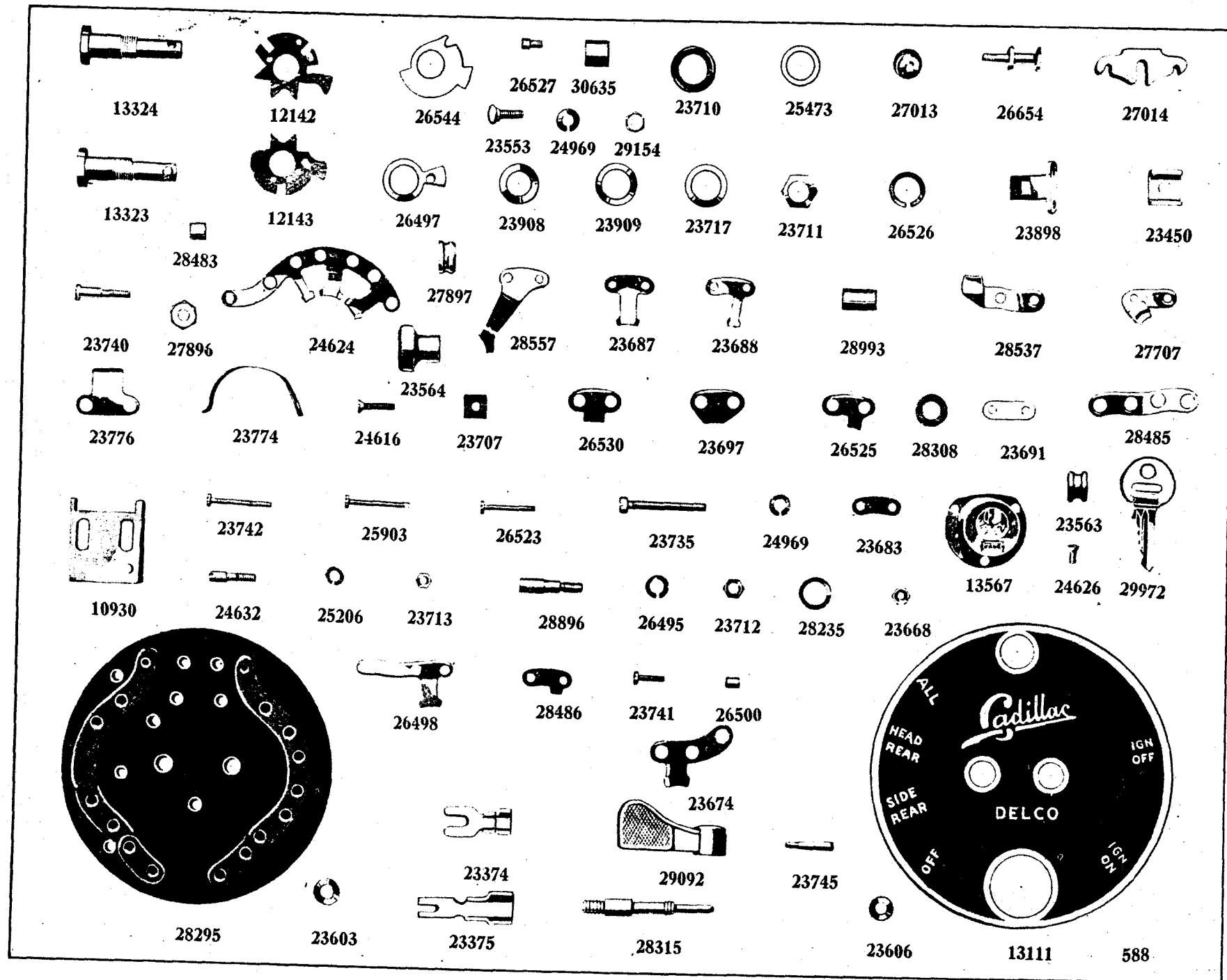
Piece Number	NAME OF PART	Quantity Required
26498	Brush for Terminals No. 6 and 7 (Lower) . . . . .	1
25903	Screw for retaining Terminals No. 1, 2, 3, 5, 6 and 8. . . . .	12
26500	Insulating Bushing for Screw 25903 . . . . .	10
26525	Insulating Plate for Terminals No. 1 and No. 8 . . . . .	5
26530	Insulating Plate for Terminals No. 2, 3, 5 and 6 . . . . .	11
28483	Insulating Bushing for Terminal No. 8 . . . . .	2
28486	Separator Plate for Terminal No. 8 . . . . .	2
28537	Contact Spring for connecting Terminal No. 3 and Plunger Assembly 13110 . . . . .	1
27707	Contact Spring for connecting Plunger Assembly 13110 and Terminal No. 9 . . . . .	1
23741	Screw for retaining Contact Spring 27707 and Terminal No. 4 . . . . .	1
23740	Screw for retaining Tumbler Assembly 10930 . . . . .	2
23683	Plate for retaining Screws 23741 on Terminal No. 4 . . . . .	1
23697	Insulating Plate for Terminal No. 6 under Brush 26498 (Large) . . . . .	1
28485	Plate connecting Terminal No. 3 and Contact Spring 28537 . . . . .	1
23713	Nut for Screws 23740, 24632 and Stud 26654 . . . . .	5
23668	Nut for retaining Screw 23742 . . . . .	2
26654	Stud for retaining Roller Bracket 27014 . . . . .	1
25206	Lock Washer for Nut 23713 . . . . .	5
20495	Lock Washer for Nut 23712 . . . . .	2
20393	Lock Washer for Screw 23735 . . . . .	4
23735	Screw for retaining Housing Assembly 13112 . . . . .	4
23707	Nut for Screw 24616 . . . . .	1
24616	Screw for retaining Spring 23774 . . . . .	1
23742	Screw for retaining Brushes 23674 and 24624 (Short) . . . . .	2
24632	Stop Screw for Blade Assemblies 13290 and 13291 . . . . .	2
26523	Screw for retaining Terminal No. 7 . . . . .	2
31009	Spacing Washer for Blade Assemblies 13290 and 13291 . . . . .	2
28896	Stud for retaining Blade Assemblies 13290 and 13291 . . . . .	2
23712	Nut for retaining Stud 28896 . . . . .	2
23691	Terminal Plate under Terminal Plate No. 4 . . . . .	1
23374	Terminal Clip for connecting Switch (Small) . . . . .	7
23375	Terminal Clip for connecting Switch (Large) . . . . .	2

## No. 1099 COMBINATION SWITCH

Note: No. 1099 Combination Switch superseded by No. 1150 Combination Switch. When ordering a complete new unit, order No. 1150.

Piece Number	NAME OF PART	Quantity Required
1099	COMBINATION SWITCH.....	1
13112	Housing Assembly Complete..... (Includes the next 12 Items)	1
28627	Escutcheon Plate for Switch.....	1
28612	Ferrule for Retaining Plate.....	2
23564	Button for Plunger Assembly 13110.....	1
28308	Insulating Washer for Plunger Assembly 13110.....	1
13110	Plunger Assembly Complete..... (Includes the next 7 Items)	1
28315	Plunger for Plunger Assembly 13110.....	1
23563	Insulating Collar for Plunger 28315.....	1
28993	Insulating Bushing for Plunger 28315.....	1
27897	Contact Collar for Plunger 28315.....	1
23606	Plain Washer for Nut 27896.....	1
23603	Insulating Washer for Contact Collar 27897.....	1
27896	Nut for Clamping Plunger Assembly 13110.....	1
23898	Terminal Post for connecting Switch.....	1
23553	Screw for retaining Terminal Clip 23450.....	1
23452	Nut for Screw 23553.....	1
20393	Lock Washer for Nut 23452.....	1
23450	Clip for Terminal Clip 23374.....	1
13290	Blade Assembly Complete (For Ignition)..... (Includes the next 15 Items)	1
13323	Stud Assembly .....	1
12143	Stop Wheel Assembly.....	1
26527	Insulating Bushing for Stop Wheel Assembly 12143 .....	1
30635	Insulating Bushing for Stud Assembly 13323.....	1
26497	Blade for Blade Assembly 13290 (Lower).....	1
26524	Blade for Blade Assembly 13290 (Upper) (Not shown in Illustration).....	1
26496	Insulator between Blades 26497 and 26524 (Not shown in Illustration).....	1
23710	Insulating Washer for Blades 26497 and 26524.....	2
23717	Plain Washer for Stop Wheel Assembly 12143 (Thick) .....	2
25473	Plain Washer for Stop Wheel Assembly 12143 (Thin) .....	1
23908	Plain Washer for Blade 26524 (Thick).....	1
23711	Nut for Clamping Blade Assembly 13290.....	1
26526	Lock Washer for Nut 23711.....	1
23909	Plain Washer for Nut 23711.....	1
25473	Plain Washer for Blades 26524 (Thin).....	1
13291	Blade Assembly Complete (For Lighting)..... (Includes the next 13 Items)	1
13324	Stud Assembly .....	1
12142	Stop Wheel Assembly.....	1
26527	Insulating Bushing for Stop Wheel Assembly 12142 .....	1
30635	Insulating Bushing for Stud Assembly 13324.....	1
26544	Blade for Blade Assembly 13291.....	1
23717	Plain Washer for Stop Wheel Assembly 12142 (Thick) .....	1
25473	Plain Washer for Stop Wheel Assembly 12142 (Thin) .....	1
23710	Insulating Washer for Blade 26544.....	2
25473	Plain Washer for Blade 26544 (Thin).....	1
23908	Plain Washer for Blade 26544 (Thick).....	1
23909	Plain Washer for Nut 23711.....	1
26526	Plain Washer for Nut 23711.....	1
23711	Nut for Clamping Blade Assembly 13291.....	1
13567	Lock Assembly for Locking Switch (Used on Model No. 57 Cadillac 1918)..... (Includes the next Item)	1
29972	Key for Lock Assembly 13567 (Give Series No. of Lock).....	2
14308	Lock Assembly for Switch (Used on Model No. 59 Cadillac 1919)..... (Includes the next Item)	1
31533	Key for Lock Assembly 14308 (Give Serial No. of Lock).....	2
24626	Screw for retaining Lock Assembly 13567.....	3
10930	Tumbler Assembly for Locking Blade Assemblies 13290 and 13291.....	1
29092	Lever for operating Blade Assemblies 13290 and 13291 .....	2
23745	Screw for retaining Lever 29092.....	2
27014	Roller Bracket for retaining Roller 27013.....	1
27013	Roller for Blade Assemblies 13290 and 13291.....	2
23774	Spring for Roller Bracket 27014.....	2
23776	Spring for Tumbler Assembly 10930.....	1
28295	Mounting Plate for Switch.....	1
23674	Brush for Terminal No. 5 (Lower) .....	1
23687	Brush for Terminals No. 2, 3, 5, 6 (Upper) .....	4
23688	Brush for Terminal No. 1 (Upper) .....	1
28557	Brush for connecting Terminal No. 8 and Blade Assembly 12176 .....	1
24624	Brush for Terminals No. 1, 2 and 3 (Lower) .....	1

No. 1099 COMBINATION SWITCH



**PIECE PARTS CATALOG**

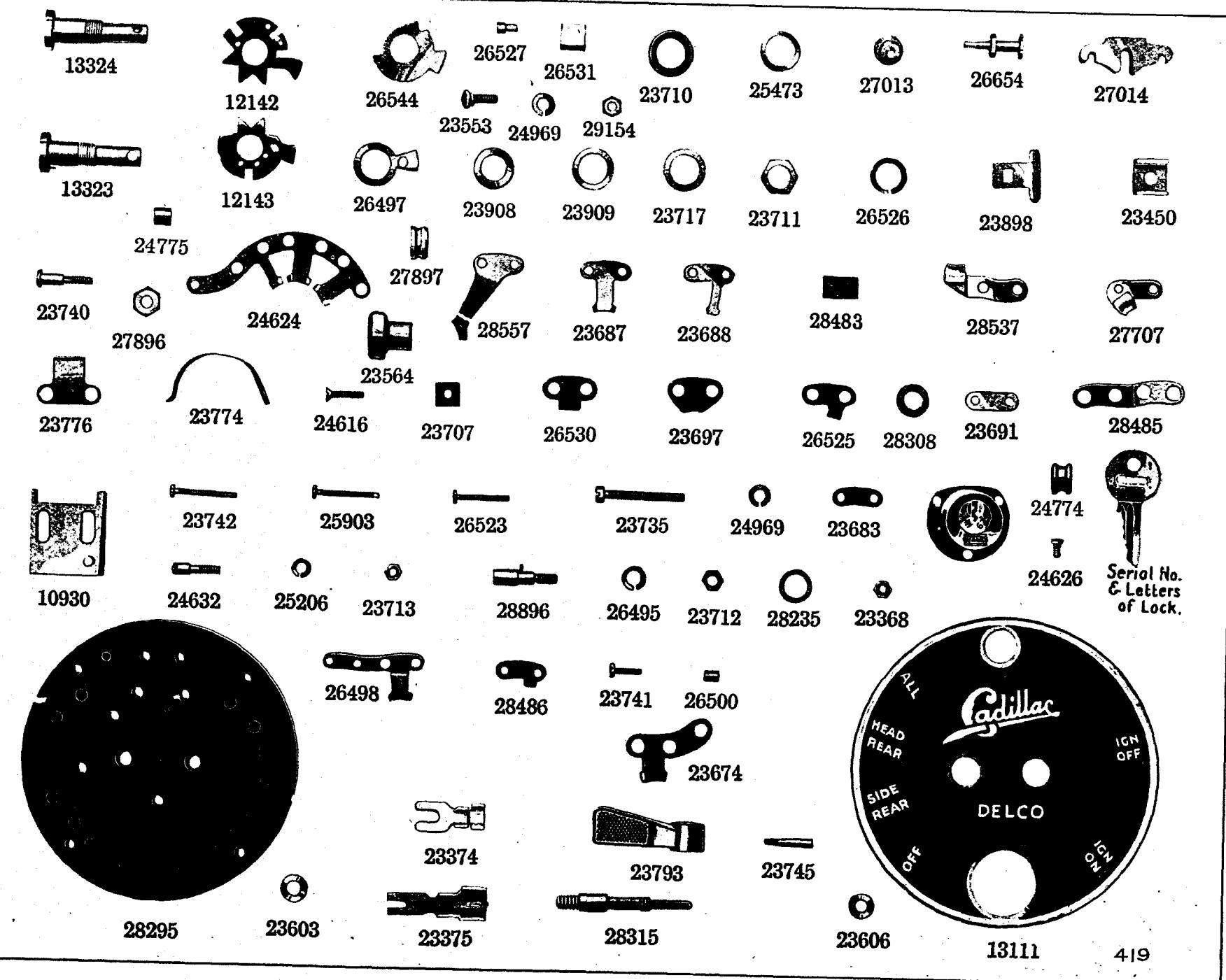
**No. 1077 COMBINATION SWITCH (Continued)**

Piece Number	NAME OF PART	Quantity Required
23688	Brush for Terminal No. 1 (Upper) . . . . .	1
28557	Brush for connecting Terminal No. 8 and Blade Assembly 13290 . . . . .	1
24624	Brush for Terminals No. 1, 2 and 3 (Lower) . . . . .	1
26498	Brush for Terminals No. 6 and 7 (Lower) . . . . .	1
25903	Screw for retaining Terminals No. 1, 2, 3, 5, 6 and 8 . . . . .	1
26500	Insulating Bushing for Screw 25903 . . . . .	12
26525	Insulating Plate for Terminals No. 1 and 8 . . . . .	10
23696	Insulating Plate for Terminals No. 2, 3, 5 and 6 . . . . .	5
28483	Insulating Bushing for Terminal No. 8 . . . . .	11
28486	Separator Plate for Terminal No. 8 . . . . .	2
28537	Contact Spring for connecting Terminal No. 3 and Plunger Assembly 13110 . . . . .	2
27707	Contact Spring for connecting Plunger Assembly 13110 and Terminal No. 9 . . . . .	1
23741	Screw for retaining Contact Spring 27707 and Terminal No. 4 . . . . .	1
23740	Screw for retaining Tumbler Assembly 10930 . . . . .	4
23683	Plate for retaining Screws 23741 and Terminal No. 4 . . . . .	2
23697	Insulating Plate for Terminal No. 6 under Brush 26498 (Large) . . . . .	1
28485	Plate connecting Terminal No. 3 and Contact Spring 28537 . . . . .	1
23713	Nut for Screws 23740 and 24632 and Stud 26654 . . . . .	1
23668	Nut for retaining Screw 23742 (Not shown in Illustration) . . . . .	5
26654	Stud for retaining Roller Bracket 27014 . . . . .	2
25206	Lock Washer for Nut 23713 . . . . .	1
20495	Lock Washer for Nut 23712 . . . . .	5
20393	Lock Washer for Screw 23735 . . . . .	2
23735	Screw for retaining Housing Assembly 13112 . . . . .	4
23707	Nut for Screw 24616 . . . . .	4
24616	Screw for retaining Spring 23774 . . . . .	1
23742	Screw for retaining Brushes 23674 and 24624 (Short) . . . . .	1
24626	Screw for retaining Lock Assembly 13039 . . . . .	2
24632	Stop Screw for Blade Assembly 13290 . . . . .	3
26523	Screw for retaining Terminal No. 7 . . . . .	2
31009	Spacing Washer for Blade Assemblies 13290 and 13291 (Not shown in Illustration) . . . . .	2
28896	Stud for retaining Blade Assemblies 13290 and 13291 . . . . .	2
23712	Nut for retaining Stud 28896 . . . . .	2
23691	Terminal Plate under Terminal No. 4 . . . . .	2
23374	Terminal Clip for connecting Switch (Small) . . . . .	1
23375	Terminal Clip for connecting Switch (Large) . . . . .	7
		2

## No. 1077 COMBINATION SWITCH

Piece Number	NAME OF PART	Quantity Required
1077	<b>COMBINATION SWITCH COMPLETE</b>	1
13112	<b>Housing Assembly Complete.</b> (Includes the next 12 Items)	1
28627	Escutcheon Plate for Switch.	2
28612	Ferrule for retaining Plate 28627.	1
23564	Button for Plunger Assembly 13110.	1
28308	Insulating Washer for Plunger Assembly 13110	1
13110	<b>Plunger Assembly</b> (Includes the next 7 Items)	1
28315	Plunger for Plunger Assembly 13110.	1
23563	Insulating Collar for Plunger 28315 (Not shown in Illustration).	1
28993	Insulating Bushing for Plunger 28315 (Not shown in Illustration)	1
27897	Contact Collar for Plunger 28315.	1
23606	Plain Washer for Nut 27897.	1
23603	Insulating Washer for Contact Collar 27897.	1
27896	Nut for clamping Plunger Assembly 13110	9
23898	Terminal Post.	9
23553	Screw for retaining Clip 23450.	9
23452	Nut for Screw 23553 (Not shown in Illustration)	9
20393	Lock Washer for Nut 23452.	1
23450	Clip for retaining Terminal Clip 23374.	1
13290	<b>Blade Assembly Complete (For Ignition)</b> (Includes the next 16 Items)	1
13323	<b>Stud Assembly</b> (Includes the next Item)	1
23747	Pin for Stud Assembly 13323 (Not shown in Illustration)	1
12143	<b>Stop Wheel Assembly</b> (Includes the next Item)	1
23946	Stud for Stop Wheel Assembly 12143 (Not shown in Illustration)	1
26527	Insulating Bushing for Stop Wheel Assembly 12143	1
30635	Insulating Bushing for Stud Assembly 13323 (Not shown in Illustration)	1
26497	Blade for Blade Assembly 13290 (Lower)	1
26524	Blade for Blade Assembly 13290 (Upper) Not shown in Illustration	1
26496	Insulator between Blades 26497 and 26524 (Not shown in Illustration)	2
23710	Insulating Washer for Blades 26497 and 26524.	2
23717	Plain Washer for Stop Wheel Assembly 12143 (Thick)	1
25473	Plain Washer for Stop Wheel Assembly 12143 (Thin)	1
23908	Plain Washer for Blade 26524 (Thick)	1
23711	Nut for clamping Blade Assembly 13290.	1
26526	Lock Washer for Nut 23711.	1
23909	Plain Washer for Nut 23711.	1
13291	<b>Blade Assembly Complete (For Lighting)</b> (Includes the next 14 Items)	1
13324	<b>Stud Assembly</b> (Includes the next Item)	1
23747	Pin for Stud Assembly 13324 (Not shown in Illustration)	1
12142	<b>Stop Wheel Assembly</b> (Includes the next Item)	1
23946	Stud for Stop Wheel Assembly 12142 (Not shown in Illustration)	1
26527	Insulating Bushing for Stop Wheel Assembly 12142	1
30635	Insulating Bushing for Stud Assembly 13324 (Not shown in Illustration)	1
26544	Blade for Blade Assembly 13291.	2
23717	Plain Washer for Stop Wheel Assembly 12142 (Thick)	1
25473	Plain Washer for Stop Wheel Assembly 12142 (Thin)	2
23710	Insulating Washer for Blade 26544.	1
23908	Plain Washer for Blade 26544 (Thick)	1
23909	Plain Washer for Nut 23711.	1
26526	Lock Washer for Nut 23711.	1
23711	Nut for clamping Blade Assembly 13291.	1
13039	<b>Lock Assembly for Locking Switch</b> (Includes the next Item)	2
29962	Key for Lock Assembly 13039 (Give Series No. of Lock)	1
10930	<b>Tumbler Assembly for locking Switch</b> (Includes the next Item)	1
23738	Stud for Tumbler Assembly 10930 (Not shown in Illustration)	2
23793	Lever for operating Blade Assemblies 13290 and 13291.	2
23745	Screw for retaining Lever 23793.	1
27014	Roller Bracket for retaining Roller 27013.	2
27013	Roller for Blade Assemblies 13290 and 13291.	2
23774	Spring for Roller Bracket 27014.	1
23776	Spring for Tumbler Assembly 10930.	1
28295	Mounting Plate (Back of Switch)	1
23674	Brush for Terminal No. 5 (Lower)	1
23687	Brush for Terminals No. 2, 3, 5 and 6 (Upper)	4

No. 1077 COMBINATION SWITCH

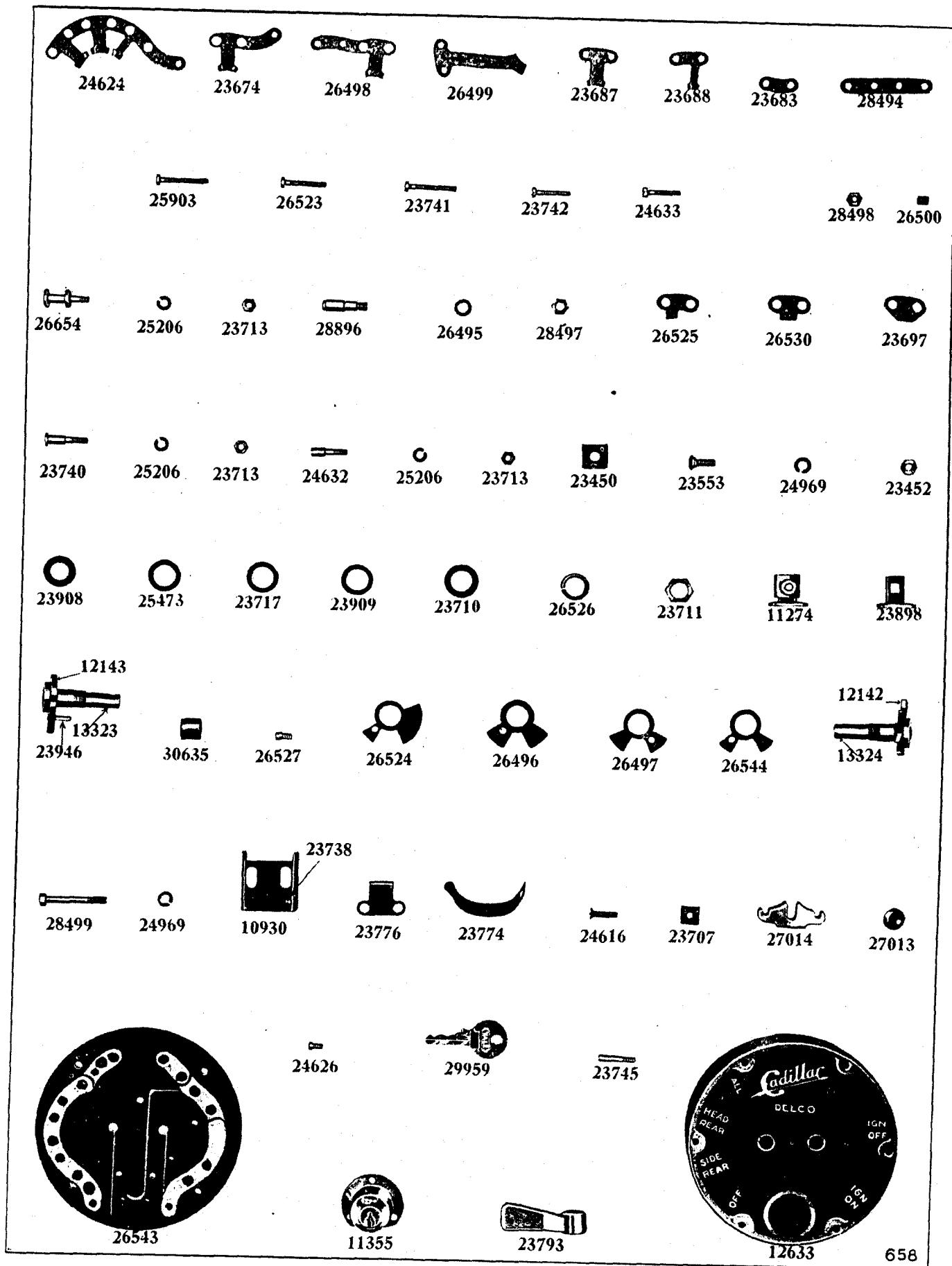


## No. 1069 COMBINATION SWITCH (Continued)

Piece Number	NAME OF PART	Quantity Required
26496	Insulator between Blades 26497 and 26524.....	1
23710	Insulating Washer for Blades 26497 and 26524.....	2
23717	Plain Washer for Stop Wheel Assembly 12143 (Thick) .....	2
25473	Plain Washer for Stop Wheel Assembly 12143 (Thin) .....	1
23908	Plain Washer for Blade 26524 (Thick).....	1
23711	Nut for clamping Blade Assembly 13290.....	1
26526	Lock Washer for Nut 23711.....	1
23909	Plain Washer for Nut 23711.....	1
13291	Blade Assembly Complete (For Lighting)..... (Includes the next 13 Items)	1
13324	Stud Assembly .....	1
	(Includes the next Item)	
23747	Pin for Stud Assembly 13324 (Not shown in Illustration).....	1
12142	Stop Wheel Assembly..... (Includes the next Item)	1
23946	Stud for Stop Wheel Assembly 12142 (Not shown in Illustration).....	1
26527	Insulating Bushing for Stop Wheel Assembly 12142 .....	1
30635	Insulating Bushing for Stud Assembly 13324.....	1
26544	Blade for Blade Assembly 13291.....	1
23717	Plain Washer for Stop Wheel Assembly 12142 (Thick) .....	2
25473	Plain Washer for Stop Wheel Assembly 12142 (Thin) .....	1
23710	Insulating Washer for Blade 26544.....	2
23908	Plain Washer for Blade 26544 (Thick).....	1
23909	Plain Washer for Nut 23711.....	1
26526	Lock Washer for Nut 23711.....	1
23711	Nut for clamping Blade Assembly 13291.....	1
31009	Plain Washer for Blade Assemblies 13290 and 13291 (Not shown in Illustration) .....	2
23375	Terminal Clip for connecting Switch (Large) (Not shown in Illustration).....	2
23374	Terminal Clip for connecting Switch (Small) (Not shown in Illustration).....	6

## No. 1069 COMBINATION SWITCH

Piece Number	NAME OF PART	Quantity Required
1069	COMBINATION SWITCH COMPLETE.....	1
12633	Housing Assembly .....	1
	(Includes next 2 Items)	
27586	Escutcheon Plate for Switch.....	1
27229	Rivet for retaining Plate 27586.....	6
11355	Lock Assembly Complete.....	1
	(Includes the next Item)	
29959	Key for Lock Assembly 11355 (Give Series No. of Lock).....	2
10930	Tumbler Assembly for locking Switch.....	1
	(Includes the next Item)	
23738	Stud for Tumbler Assembly 10930.....	1
26543	Mounting Plate for Terminal Post.....	1
23898	Terminal Plate .....	8
23553	Screw for retaining Clip 23450.....	8
23452	Nut for Screw 23553.....	8
20393	Lock Washer for Nut 23452.....	8
23450	Clip for retaining Terminal Clip.....	2
27013	Roller for Blade Assemblies 13290 and 13291.....	1
27014	Roller Bracket for Roller 27013.....	1
23674	Brush for Terminal No. 5 (Lower).....	4
23687	Brush for Terminals No. 2, 3, 5 and 6 Upper) .....	1
23688	Brush for Terminal No. 1 (Upper).....	1
26499	Brush for connecting Terminal No. 8 and Blade Assembly 13290.....	1
24624	Brush for Terminals Nos. 1, 2 and 3 (Lower) .....	1
26498	Brush for Terminals Nos. 7 and 6 (Lower) .....	1
26654	Stud for retaining Roller Bracket 27014.....	5
23713	Nut for Stud 26654 and Screws 23740 and 24632.....	5
25206	Lock Washer for Nut 23713.....	2
23740	Screw for retaining Tumbler Assembly 10930.....	2
24632	Stop Screw for Blade Assemblies 13290 and 13291.....	1
23776	Spring for Tumbler Assembly 10930.....	2
28896	Stud for retaining Blade Assemblies 13290 and 13291.....	2
23712	Nut for retaining Stud 28896.....	2
20495	Lock Washer for Nut 23712.....	4
23735	Screw for retaining Housing Assembly 12633.....	4
20393	Lock Washer for Screw 23735.....	2
26523	Screw for retaining Terminal No. 7.....	10
25903	Screw for retaining Terminals Nos. 1, 2, 3, 5 and 6.....	2
23793	Lever for operating Blade Assemblies 13290 and 13291.....	2
23745	Screw for retaining Lever 23793.....	2
24633	Screw for retaining Terminal No. 8.....	1
24616	Screw for retaining Spring 23774.....	2
23774	Spring for Roller Bracket 27014.....	2
23668	Nut for retaining Terminal Plate 23691.....	1
23691	Terminal Plate under Terminal No. 4.....	1
23683	Plate for retaining Screw 23741.....	1
23741	Screw for retaining Terminal No. 4.....	2
23742	Screw for retaining Brushes 23674 and 24624 (Short Screws).....	1
23707	Nut for Screw 24616.....	3
24626	Screw for retaining Lock Assembly 11355.....	10
26500	Insulating Bushing for Screw 25903.....	1
23697	Insulating Plate for Terminal No. 6 (Lower) .....	12
26530	Insulating Plate for Terminals No. 2, 3 and 5 .....	3
26525	Insulating Plate for Terminal No. 1.....	1
23696	Insulating Plate for Terminal No. 6.....	1
13290	Blade Assembly Complete (For Ignition).....	1
13323	Stud Assembly .....	1
	(Includes the next Item)	
23747	Pin for Stud Assembly 13323 (Not shown in Illustration) .....	1
12143	Stop Wheel Assembly .....	1
	(Includes the next Item)	
23946	Stud for Stop Wheel Assembly 12143.....	1
26527	Insulating Bushing for Stop Wheel Assembly 12143 .....	1
30635	Insulating Bushing for Stud Assembly 13323.....	1
26497	Blade for Blade Assembly 13290 (Lower) .....	1
26524	Blade for Blade Assembly 13290 (Upper) .....	1



No. 1069 COMBINATION SWITCH

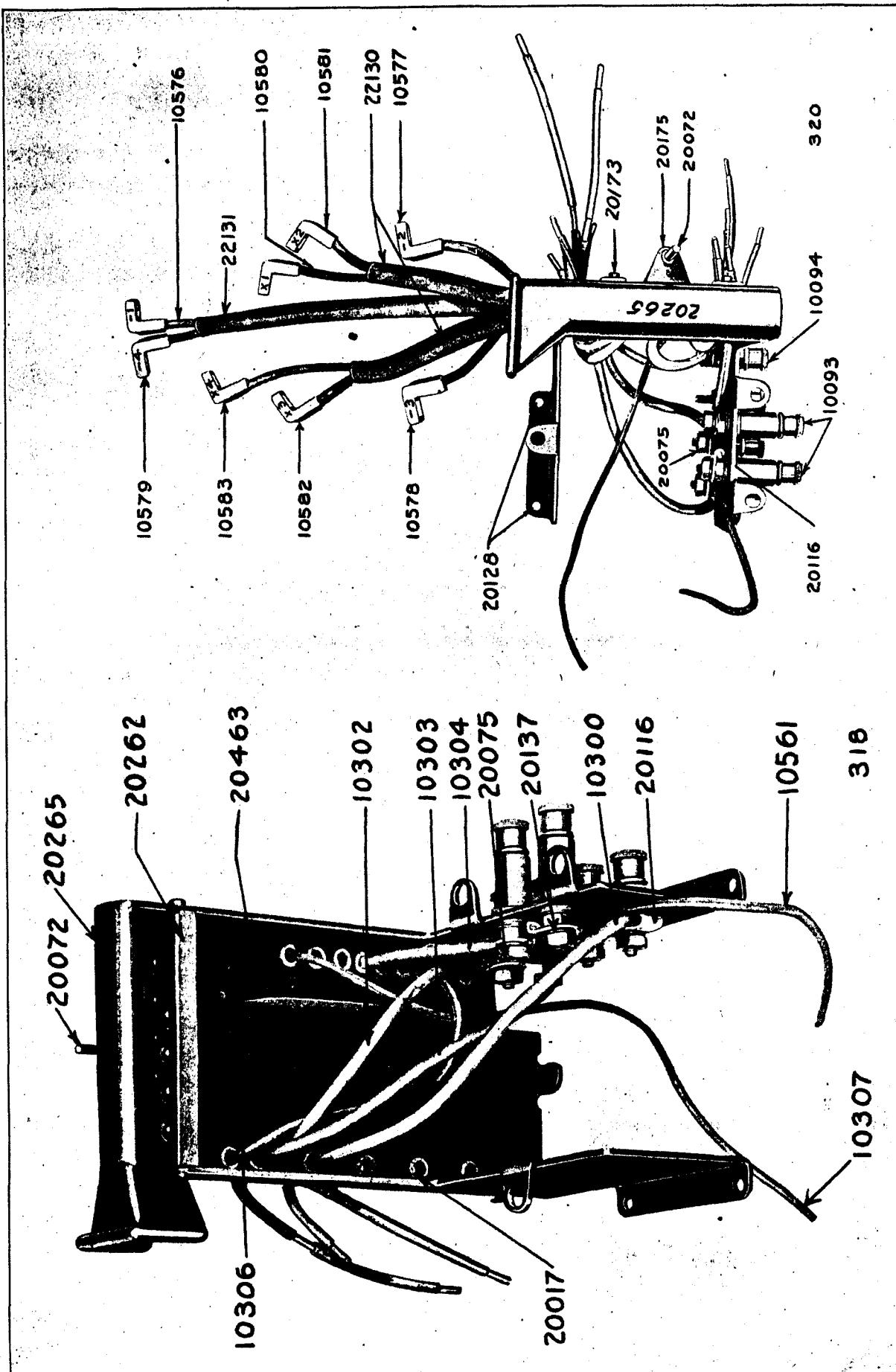
## No. 1062 COMBINATION SWITCH (Continued)

Piece Number	NAME OF PART	Quantity Required
23908	Plain Washer for Blade 26524 (Thick) . . . . .	1
23711	Nut for Clamping Blade Assembly 13290 . . . . .	1
26526	Lock Washer for Nut 23711 . . . . .	1
23909	Plain Washer for Nut 23711 . . . . .	1
25473	Plain Washer for Blade 26524 (Thin) . . . . .	1
13291	Blade Assembly Complete (For Lighting) . . . . .	1
13324	(Includes the next 13 Items) Stud Assembly . . . . .	1
23747	(Includes the next Item) Pin for Stud Assembly 13324 (Not shown in Illustration) . . . . .	1
12142	Stop Wheel Assembly . . . . .	1
23946	(Includes the next Item) Stud for Stop Wheel Assembly 12142 (Not shown in Illustration) . . . . .	1
26527	Insulating Bushing for Stop Wheel Assembly 12142 . . . . .	1
30635	Insulating Bushing for Stud Assembly 13324 . . . . .	1
26544	Blade for Blade Assembly 13291 . . . . .	1
23717	Plain Washer for Stop Wheel Assembly 12142 (Thick) . . . . .	1
25473	Plain Washer for Stop Wheel Assembly 12142 (Thin) . . . . .	2
23710	Insulating Washer for Blade 26544 . . . . .	1
23908	Plain Washer for Blade 26544 (Thick) . . . . .	2
23909	Plain Washer for Nut 23711 . . . . .	1
26526	Lock Washer for Nut 23711 . . . . .	1
23711	Nut for clamping Blade Assembly 13291 . . . . .	1
23375	Terminal Clip for connecting Switch (Large) (Not shown in Illustration) . . . . .	1
23374	Terminal Clip for connecting Switch (Small) (Not shown in Illustration) . . . . .	2
		6

## No. 1062 COMBINATION SWITCH

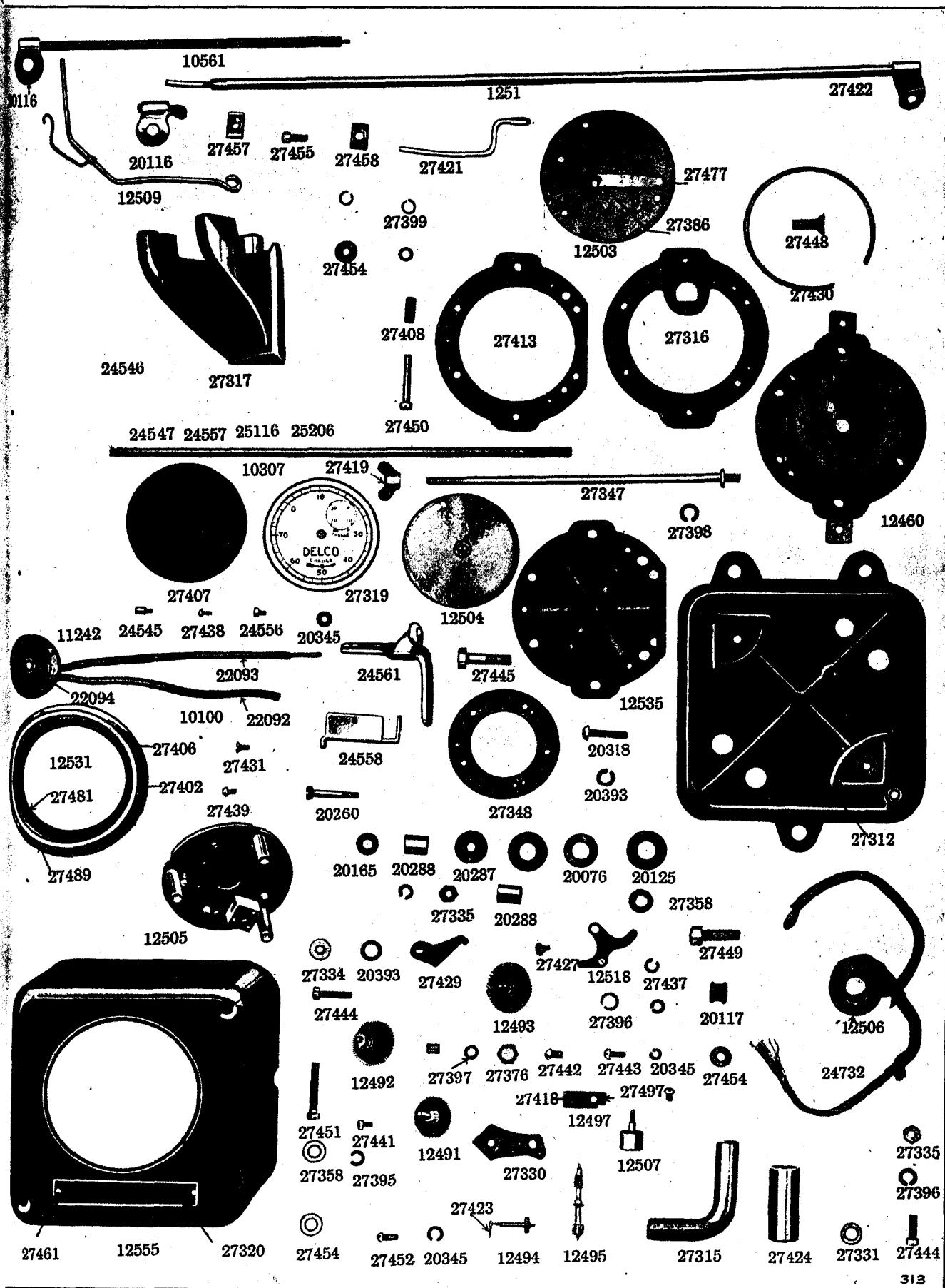
Note: No. 1062 Combination Switch superseded by No. 1069 Combination Switch. When ordering a complete new unit, order No. 1069.

Piece Number	NAME OF PART	Quantity Required
1062	COMBINATION SWITCH COMPLETE.....	1
14631	Housing Assembly .....	1
11355	Lock Assembly Complete..... (Includes the next Item)	1
29959	Key for Lock Assembly 11355 (Give Series No. of Lock).....	2
10930	Tumbler Assembly for Locking Blade Assemblies 13290 and 13291..... (Includes the next Item)	1
23738	Stud for Tumbler Assembly 10930 (Not shown in Illustration).....	1
26543	Mounting Plate for Terminal Post 23898.....	1
23898	Terminal Post.....	8
23553	Screw for retaining Clip 23450.....	8
23452	Nut for Screw 23553.....	8
20393	Lock Washer for Nut 23452.....	8
23450	Clip for retaining Terminal Clip.....	8
27013	Roller for Blade Assemblies 13290 and 13291.....	2
27014	Roller Bracket for Roller 27013.....	1
23674	Brush for Terminal No. 5 (Lower).....	1
23687	Brush for Terminals Nos. 2, 3, 5 and 6 (Lower).....	4
23688	Brush for Terminal No. 1 (Upper).....	4
26499	Brush for connecting Terminal No. 8 and Blade Assembly 13290).....	1
24624	Brush for Terminals Nos. 1, 2 and 3 (Lower).....	1
26498	Brush for Terminals Nos. 7 and 6 (Lower).....	1
26654	Stud for retaining Roller Bracket 27014.....	1
23713	Nut for Stud 26654 and Screws 23740 and 24632.....	5
25206	Lock Washer for Nut 23713.....	5
23740	Screw for retaining Tumbler Assembly 10930.....	2
24632	Stop Screw for Blade Assemblies 13290 and 13291.....	2
23776	Spring for Tumbler Assembly 10930.....	1
28896	Stud for retaining Blade Assemblies 13290 and 13291.....	2
23712	Nut for retaining Stud 28896.....	2
20495	Lock Washer for Nut 23712.....	2
23735	Screw for retaining Housing Assembly 12144.....	4
20393	Lock Washer for Screw 23735.....	4
26523	Screw for retaining Terminal No. 7.....	2
25903	Screw for retaining Terminals Nos. 1, 2, 3, 5 and 6.....	10
23793	Lever for operating Blade Assemblies 13290 and 13291.....	2
23745	Screw for retaining Lever 23793.....	2
24633	Screw for retaining Terminal No. 8 (Not shown in Illustration).....	2
24616	Screw for retaining Spring 23774.....	1
23774	Spring for Roller Bracket 27014.....	2
23668	Nut for retaining Terminal Plate 23691 (Not shown in Illustration).....	2
23691	Terminal Plate under Terminal No. 4.....	1
23683	Plate for retaining Screw 23741.....	1
23741	Screw for retaining Terminal No. 4.....	2
23742	Screw for retaining Brushes 23674 and 24624 (Short Screw).....	2
23707	Nut for Screw 24616.....	1
24626	Screw for retaining Lock Assembly 11355.....	3
26500	Insulating Bushing for Screw 25903.....	10
23697	Insulating Plate for Terminal No. 6 (Lower).....	1
26530	Insulating Plate for Terminals Nos. 2, 3 and 5.....	12
23698	Insulating Plate for Terminal No. 1 (Not shown in Illustration).....	3
23696	Insulating Plate for Terminal No. 6 (Not shown in Illustration).....	1
13290	Blade Assembly Complete (For Ignition)..... (Includes the next 15 Items)	1
13323	Stud Assembly .....	1
	(Includes the next Item)	
23747	Pin for Stud Assembly 13323 (Not shown in Illustration).....	1
12143	Stop Wheel Assembly..... (Includes the next Item)	1
23946	Stud for Stop Wheel Assembly 12143 (Not shown in Illustration).....	1
26527	Insulating Bushing for Stop Wheel Assembly 12143 .....	1
30635	Insulating Bushing for Stud Assembly 13323.....	1
26497	Blade for Blade Assembly 13290 (Lower).....	1
26524	Blade for Blade Assembly 13290 (Upper).....	1
26496	Insulator between Blades 26497 and 26524.....	2
23710	Insulating Washer for Blades 26497 and 26524.....	1
23717	Plain Washer for Stop Wheel Assembly 12143 (Thick).....	2
25473	Plain Washer for Stop Wheel Assembly 12143 (Thin) .....	1

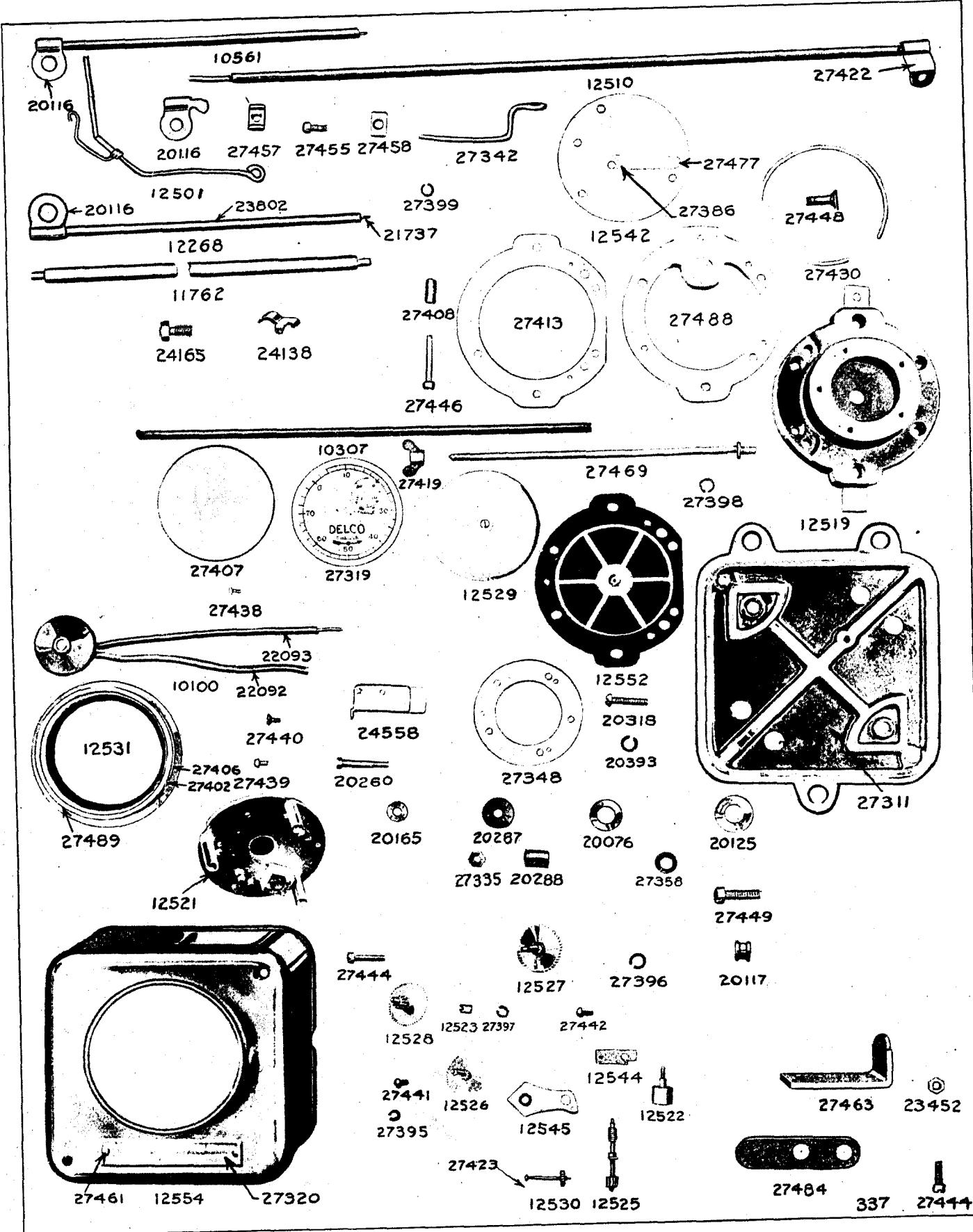


No. 5401 BATTERY BOX

PIECE PARTS CATALOG

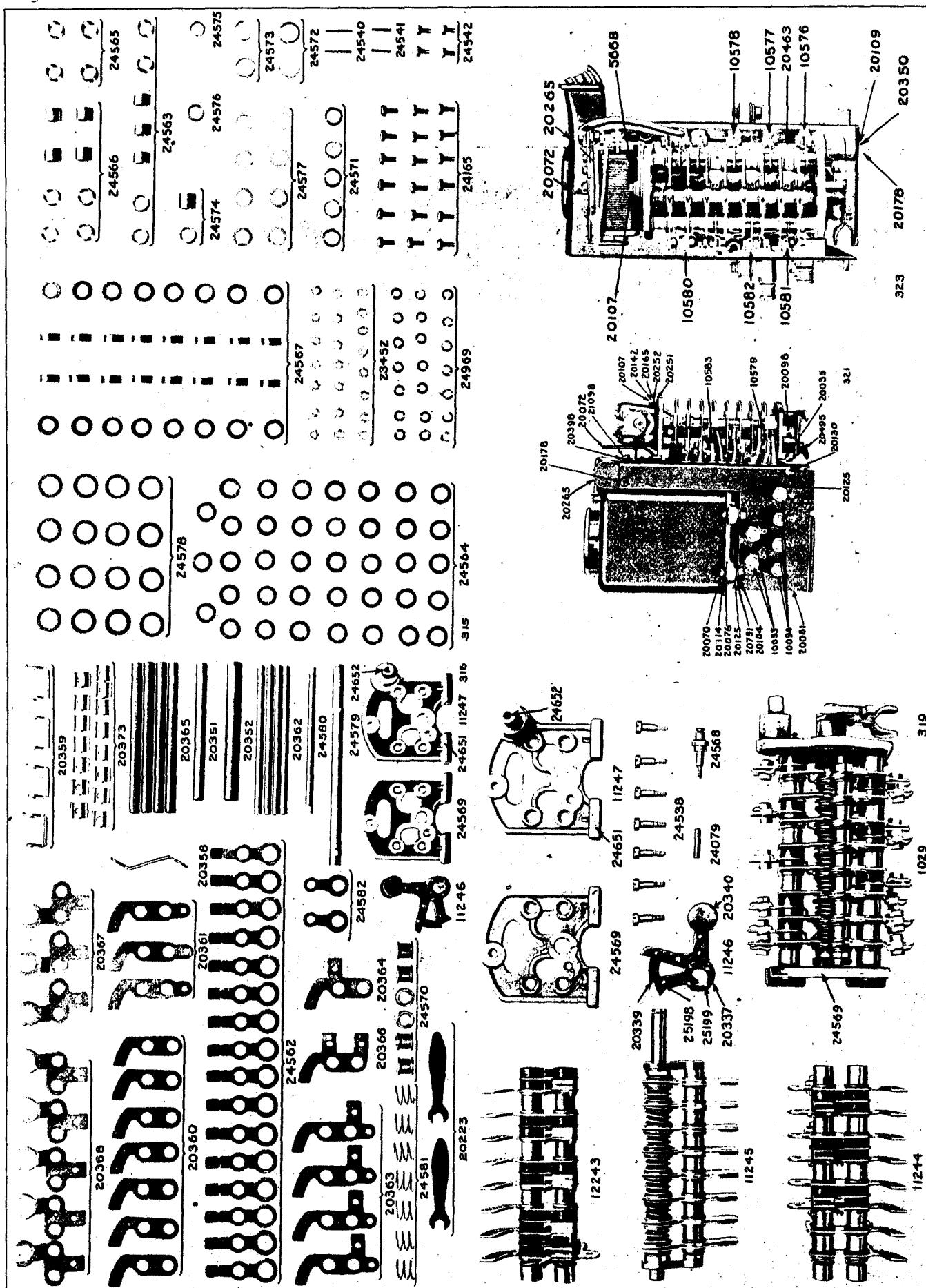


No. 5401 BATTERY BOX

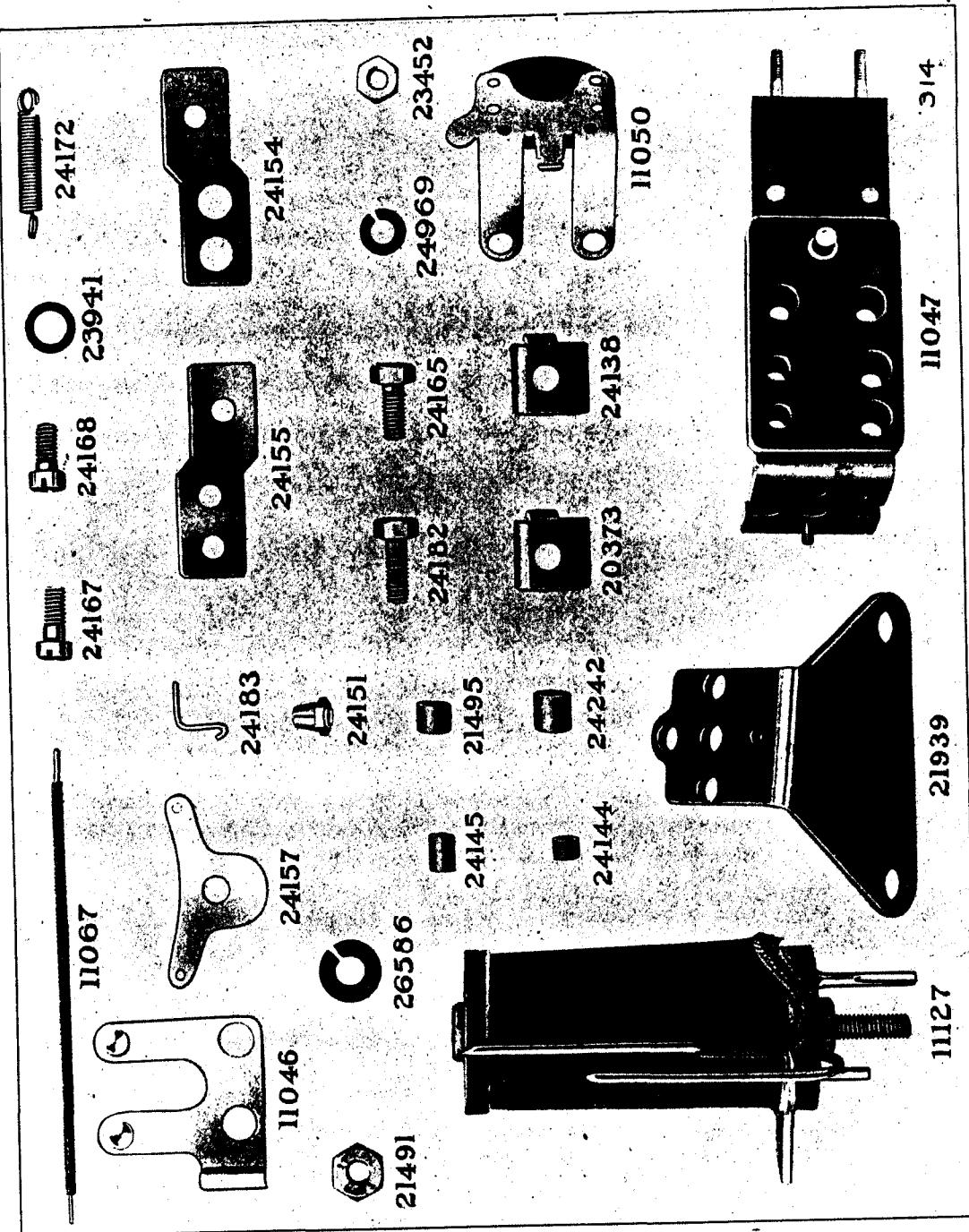


No. 5401 BATTERY BOX

## **PIECE PARTS CATALOG**



## No. 5401 BATTERY BOX



No. 5401 BATTERY BOX

**PIECE PARTS CATALOG**

**No. 5401 BATTERY BOX**

Piece Number	NAME OF PART	Quantity Required
5401	<b>BATTERY BOX COMPLETE.....</b>	1
10099	Controller Bracket Assembly Complete for Battery Box Base Assembly 10533. (Includes the next 305 Items)	1
10091	Controller Bracket Assembly (Not shown in Illustration).....	1
10090	Controller Cover Clamp Stud Assembly Complete (Not shown in Illustration) (Includes the next Item)	1
20072	Stud for Controller Cover Clamp Stud Assembly 10090 .....	1
20197	Rivet for Bracket (Not shown in Illustration) .....	3
20130	Guide Stud for Cover Assembly 10108.....	2
20262	Conduit for retaining Battery Leads (Fiber Block) .....	1
20178	Screw for Conduit 20262.....	2
20265	Condulet for covering Battery Leads (Metal) .....	1
21098	Screw for Condulet 20265.....	2
20393	Lock Washer for Screw 21098.....	2
10094	Spring Terminal for Bracket 20082 (Short) .....	6
10095	Controller Lead Assembly Complete for connecting Controller Switch. (Includes the next 14 Items)	1
10300	Lead Assembly from Terminal No. 1 on Controller Bracket to the Fourth Terminal from the Bottom, on the Right Side of Controller Switch..... (Includes the next 2 Items)	1
20116	Clip for Lead Assembly 10300.....	1
21737	Ferrule for Lead Assembly 10300 (Not shown in Illustration) .....	1
10561	Lead Assembly from Terminal No. 2 on Controller Bracket to B. on Meter Contact Assembly 10766 .....	1
	(Includes the next Item)	
20116	Clip for Lead Assembly 10561.....	1
10302	Lead Assembly from Terminal No. 4 on Controller Bracket to Third Terminal from the Top on the Right Side of Controller Switch .....	1
	(Includes the next 2 Items)	
21737	Ferrule for Lead Assembly 10302 (Not shown in Illustration) .....	1
20116	Clip for Lead Assembly 10302.....	1
10303	Lead Assembly from Terminal No. 5 on Controller Bracket to the Second Terminal from the Top on Right Side of Controller Switch .....	1
	(Includes the next 2 Items)	
20116	Clip for Lead Assembly 10303.....	1
21737	Ferrule for Lead Assembly 10303 (Not shown in Illustration) .....	1
10304	Lead Assembly from Terminal No. 6 on Controller Bracket to the First Terminal from the Bottom on Left Side of Controller Switch .....	1
	(Includes the next 2 Items)	
20116	Clip for Lead Assembly 10304.....	1
21737	Ferrule for Lead Assembly 10304 (Not shown in Illustration) .....	1
20115	Insulating Bushing for Spring Terminal Assembly 10094 (Not shown in Illustration)	6
20125	Insulating Washer for Spring Terminal Assembly 10094 (Not shown in Illustration)	6
20076	Insulating Washer for Spring Terminal Assembly 10094 (Not shown in Illustration)	6
20137	Lock Washer for Nut 20075.....	6
20114	Plain Washer for Nut 20075 (Not shown in Illustration).....	6
20075	Nut for Spring Terminal Assembly 10094 .....	12
20117	Insulating Bushing for Bracket 20082.....	16
20272	Wire (Relay Controller Lead Wire) (Not shown in Illustration) .....	1
10096	<b>Battery Lead Assembly Complete (Not shown in Illustration).....</b> (Includes the next 10 Items)	1
10580	Lead Assembly from Positive Terminal on Battery to the Second Terminal from the Top on the Left Side of Controller Switch .....	1
	(Includes the next Item)	
22237	Ferrule for Lead Assembly 10580 (Not shown in Illustration) .....	1
10581	Lead Assembly from Positive No. 2 Terminal on Battery to the Second Terminal from the Bottom on the Left Side of Controller Switch .....	1
	(Includes the next Item)	
22237	Ferrule for Lead Assembly 10581 (Not shown in Illustration) .....	1
10582	Lead Assembly from Positive No. 3 Terminal on Battery to the Fourth Terminal from the Bottom on the Left Side of Controller Switch..... (Includes the next Item)	1
22237	Ferrule for Lead Assembly 10582 (Not shown in Illustration) .....	1
10583	Lead Assembly from Positive No. 4 on Battery to the Third Terminal from the Top on the Left Side of Controller Switch..... (Includes the next Item)	1
22237	Ferrule for Lead Assembly 10583 (Not shown in Illustration) .....	1
10576	Lead Assembly from Negative No. 1 on Battery, to the First Terminal from the Bottom, on Right Side of Switch..... (Includes the next Item)	1
22237	Ferrule for Lead Assembly 10576 (Not shown in Illustration) .....	1

No. 5401 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
10577	Lead Assembly from Negative No. 2 on Battery to the Second Terminal from the Bottom on the Right Side of Controller Switch .....	1
	(Includes the next 2 Items)	
22237	Ferrule for Lead Assembly 10577 (Not shown in Illustration) .....	1
10578	Lead Assembly from Negative No. 3 on Battery to the Third Terminal from the Bottom on the Right Side of Controller Switch .....	1
	(Includes the next Item)	
22237	Ferrule for Lead Assembly 10578 (Not shown in Illustration) .....	1
10579	Lead Assembly from Negative No. 4 on Battery to the First Terminal from the Bottom on the Right Side of Controller Switch .....	1
	(Includes the next Item)	
22237	Ferrule for Lead Assembly 10579 (Not shown in Illustration) .....	1
22130	Tube for Lead Assemblies 10582, 10583, 10580 and 10581 .....	2
22131	Tube for Lead Assemblies 10576 and 10579 .....	1
13476	Ampere Hour Meter Assembly Complete.....  (Includes the next 120 Items)  (13476 Ampere Hour Meter Assembly has a single set of Magnets. 10101 Amper Hour Meter Assembly has two sets of Magnets. When ordering repair parts, order for the correct Meter. The two Ampere Hour Meters as a whole are interchangeable. When ordering a complete new Ampere Hour Meter always order 10101. The above Ampere Hour Meter must be returned to Delco when any extensive repairs are required or when it is necessary to disassemble the unit to make internal repairs or adjustments. Delco will furnish parts for minor repairs that can be easily taken care of in the field.)	1
10100	Resistance Button Assembly Complete.....  (Includes the next 2 Items)	1
22092	Lead for Simplex Resistance Button 22094 (Short) .....	1
22093	Lead for Simplex Resistance Button 22094 (Long) .....	1
20125	Insulating Washer for Resistance Button Assembly 10100 and Meter Base 28311 (Large) .....	4
20287	Insulating Washer for Resistance Button Assembly 10100 (Small) .....	1
20318	Screw for retaining Resistance Button Assembly 10100 .....	1
20165	Plain Washer for Screw 20318 .....	1
20288	Insulating Bushing for Meter Base 27311 .....	3
20076	Insulating Washer for Meter Base 27311 (Small) .....	3
10766	Contact Assembly .....	1
	(Includes the next 2 Items)	
24556	Screw for attaching Guard 24558 .....	2
24558	Guard for Contact Assembly 10766 .....	1
20260	Screw for retaining Contact Assembly 10766 .....	2
20393	Lock Washer for Screw 20260 and Nut 23452 .....	4
20117	Insulating Bushing for Meter Base 27311 .....	4
11762	Lead Assembly from Terminal No. 2 on Meter, attached to Lead Assembly 10579 at Terminal on Controller Switch .....	1
21737	Ferrule for Lead Assembly 11762 .....	1
12268	Lead Assembly from Terminal No. 3 on Controller Bracket to Terminal No. 1 on Meter .....	1
	(Includes the next 2 Items)	
20116	Clip for Lead Assembly 12268 .....	1
21737	Ferrule for Lead Assembly 12268 .....	1
10307	Lead Assembly from (C) on Meter Contact to the First Terminal from Top on Left Side of Controller Switch .....	1
	(Includes the next Item)	
21737	Ferrule for Lead Assembly 10307 .....	1
10561	Lead Assembly from Terminal No. 2 on Controller Bracket to (B) on Meter Contact .....	1
	(Includes the next Item)	
20116	Clip for Lead Assembly 10561 .....	1
24165	Screw for Meter Terminals .....	2
23452	Nut for Screw 24165 .....	2
24138	Clip for Meter Terminals .....	2
12554	Case Assembly Complete .....	1
	(Includes the next 2 Items)	
27320	Name Plate for Case 27313 .....	1
27461	Pin for retaining Name Plate 27320 .....	2
12520	Large Hand Assembly .....	1
12542	Train Plate Assembly .....	1
	(Includes the next 2 Items)	
27386	Spring for Train Plate Assembly 12542 .....	1
27477	Rivet for Spring 27386 .....	1
12530	Fifth Staff Assembly .....	1
12528	Fourth Staff Assembly .....	1
12527	Third Staff Assembly .....	1
12526	Second Staff Assembly .....	1
12525	Worm Staff Assembly .....	1
12544	Bracket Assembly for Worm Staff Assembly 12525 .....	1
	(Includes the next Item)	
27466	Pin for Bracket Assembly 12544 (Not shown in Illustration) .....	1

No. 5401 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
12521	Hopper Plate Assembly..... (Includes the next 6 Items)	1
12545	Bridge Assembly.....	1
27441	Screw for attaching Bridge Assembly 12545.....	1
27395	Lock Washer for Screw 27441.....	1
27475	Support for Worm Staff Assembly 12525 (Not shown in Illustration).....	1
27484	Bracket for Worm Staff Assembly 12525.....	1
27479	Rivet for retaining Bracket 27484 (Not shown in Illustration).....	2
12523	Bearing Assembly (Upper).....	1
12519	Armature Box Assembly.....	1
12522	Worm Spindle Assembly.....	1
12529	Armature Assembly.....	1
12552	Pole Plate Assembly.....	1
12531	Bezel Ring Assembly Complete..... (Includes the next 7 Items)	1
12551	Bezel Ring Assembly (Not shown in Illustration)..... (Includes the next 2 Items)	1
27489	Ring for Bezel Ring Assembly 12551.....	1
27402	Dowel Pin for Ring 27489.....	2
27406	Snap Ring for Bezel Ring Assembly 12531.....	1
27407	Glass for Bezel Ring Assembly 12531.....	1
27430	Bezel Ring for Bezel Ring Assembly 12531.....	1
27481	Gasket for Glass 27407 (Not shown in Illustration).....	1
27311	Base for Ampere Hour Meter Assembly 6077.....	1
27319	Dial for Ampere Hour Meter Assembly 6077.....	1
28471	Nut for Screw 27446.....	2
27348	Washer for Hopper Plate Assembly 12521 (Small Gasket).....	1
27358	Plain Washer for Screw 27446.....	2
13839	Magnet Assembly..... (Includes the next Item)	1
27448	Screw for Magnet Assembly 13839.....	4
27376	Nut for Bearing Assembly 12523.....	1
26088	Spacing Washer for damping Pole (Not shown in Illustration).....	4
27395	Lock Washer for Screws 27439, 27441, 27442 and 27465 .....	10
27396	Lock Washer for Screws 27446 and 27444.....	8
27397	Lock Washer for Nut 27376.....	1
27398	Lock Washer for Stud 27469.....	2
27399	Lock Washer for Screws 27449 and 27446.....	5
27408	Insulator for Screw 27446.....	2
27413	Washer for Armature Box Assembly 12519 (Large Gasket).....	1
27419	Nut for Stud 27469 (Wing Nut).....	2
20117	Insulating Bushing for Meter Base 27311.....	4
27423	Small Hand for Third Staff Assembly 12527.....	1
27438	Screw for mounting Dial 27319.....	3
27439	Screw for Bracket 27464 (Small).....	1
27440	Screw for mounting Train Plate Assembly 12542 (Flat Head).....	1
27442	Screw for mounting Hopper Plate Assembly 12521 .....	1
27444	Screw for Meter Terminals and for retaining Clamp Ring 27488.....	6
27446	Screw for mounting Armature Box Assembly 12519 .....	2
27449	Screw for retaining Meter Base 27311..... (Includes the next 3 Items)	2
14189	Clamp Assembly (Not shown in Illustration) .....	1
27455	Screw for connecting Friction Slider 27457 and Friction Clamp 27458.....	1
27457	Friction Slider for connecting Right Hand Shunt Lead Assembly 12501 and Left Hand Shunt Lead 27342.....	1
27458	Friction Clamp for connecting Right Hand Shunt Lead Assembly 12501 and Left Hand Shunt Lead 27342.....	1
27459	Insulating Tube for Case Stud 27469 (Not shown in Illustration).....	2
27463	Ear Clip for Metal Terminals.....	2
27464	Bracket for Armature Box Assembly 12519 (Not shown in Illustration).....	1
27465	Screw for Train Plate Assembly 12542 (Head Milled Down) (Not shown in Illustra- tion) .....	2
27469	Case Stud for mounting Case Assembly 12554.....	2
27482	Gasket on Meter Base 27311 for Case Assembly 12554 (Not shown in Illustration).....	1
27488	Clamp Ring under Pole Plate Assembly 12552.....	1
12501	Right Hand Shunt Lead Assembly.....	1
27342	Left Hand Shunt Lead, connecting Meter Terminal and Right Hand Shunt Lead Assembly 12501 .....	1
10101	Ampere Hour Meter Assembly Complete..... (Includes the next 134 Items)	1
	(No. 13476 Ampere Hour Meter Assembly has a single set of Magnets, the No. 10101 Ampere Hour Meter Assembly has two sets of Magnets. When ordering repair parts, order for the correct Meter. The two Ampere Hour Meters are interchangeable as a whole. When ordering a complete new Ampere Hour Meter, always order No. 10101. The above Ampere Hour Meter must be returned to Delco when any extensive repairs are required or when it is necessary to disassemble the unit to make internal repairs or adjustment. Delco will furnish parts for minor repairs that can be easily taken care of in the field.)	1

## No. 5401 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
20117	Insulating Bushing for Meter Base 23712.	4
10100	Resistance Button Assembly. (Includes the next 2 Items)	1
22092	Lead (Short) for Resistance Button.	1
22093	Lead for Simplex Resistance Button (Long).	1
20125	Insulating Washer for Resistance Button Assembly 10100 (Large).	1
20287	Insulating Washer for Resistance Button Assembly 10100 (Small).	1
20165	Plain Washer for Resistance Button 10100.	1
20318	Screw for mounting Resistance Button Assembly 10100.	1
20288	Insulating Bushing for Screw 20070.	3
20076	Insulating Washer for Screw 20070 (Large, for Top of Meter Base).	3
20125	Insulating Washer for Screw 20070 (Large, under Top of Meter Base).	3
10766	Contact Assembly Complete (Not shown in Illustration). (Includes the next 2 Items)	1
24556	Screw for mounting Guard 24558.	2
24558	Guard for Contact Spring Assemblies.	1
20260	Screw for retaining Contact Assembly 10766.	2
20393	Lock Washer for Screw 20260.	2
20345	Lock Washer for Nut 27334 on Meter Dial.	1
12555	Case Assembly Complete with Name Plate (Cover for Meter). (Includes the next 2 Items)	1
27320	Name Plate for Case 27495.	1
27461	Pin for retaining Name Plate 27320.	2
12503	Train Plate Assembly Complete. (Includes the next 2 Items)	1
27386	Lifting Spring for Train Plate 27393.	1
27477	Rivet for Lifting Spring 27386.	1
12493	Center Staff Assembly.	1
12492	Compound Staff for Driving Center Staff Assembly.	1
12491	Worm Wheel Staff for Driving Compound Staff 12492.	1
12494	Counting Staff for Small Indicator Hand 27423.	1
12495	Worm Staff for Driving Worm Wheel Staff 12491.	1
12497	Worm Wheel Bracket for Worm Staff Assembly 12495. (Includes the next Item)	1
27418	Pin for Worm Wheel Bracket 12497.	1
12505	Hopper Plate Assembly Complete (Lower Plate for mounting Compound Staff Assembly 12492 and Worm Wheel Staff 12491). (Includes the next 3 Items)	1
27330	Bridge for Center Staff Assembly 12493.	1
27441	Screw for retaining Bridge 27330.	1
27395	Lock Washer for Screw 27441.	1
12460	Armature Box Assembly for Meter.	1
12523	Upper Bearing Assembly (For Coupling Spindle Assembly 12507 (Not shown in Illustration)).	1
12507	Coupling Spindle Assembly for Driving Worm Staff Assembly 12495.	1
12504	Armature Assembly for Meter.	1
12535	Pole Plate Assembly (For retaining Armature Assembly 12504).	1
12506	Compensation Coil Assembly Complete for Meter.	1
12509	Right Hand Lead Assembly for connecting No. 1 and No. 2 Terminals on Meter.	1
27421	Left Hand Lead for connecting Right Hand Lead Assembly 12509 to Terminal No. 2 on Meter.	1
14189	Clamp Assembly (Not shown in Illustration). (Includes the next 3 Items)	1
27458	Clamp (Outside) for connecting Right Hand Lead Assembly 12509 and Left Hand Lead 27421.	1
27457	Slide (Inside) for connecting Right Hand Lead Assembly 12509 and Left Hand Lead 27421.	1
27455	Screw for Clamp 27458 and Slide 27457.	1
12518	Contact Lever Assembly Complete for Operating Contact Assembly 10766.	1
12531	Bezel Ring Assembly Complete. (Includes the next 7 Items)	1
12551	Bezel Ring Assembly (Not shown in Illustration). (Includes the next Item)	1
27402	Dowel Pin for Bezel Ring Assembly 12551.	2
27406	Snap Ring for Bezel Ring Assembly 12531.	1
27407	Glass for Bezel Ring Assembly 12531.	1
27430	Spring for Bezel Ring Assembly 12531.	1
27481	Gasket for Glass 27407 (Not shown in Illustration).	1
27312	Base for Ampere Hour Meter.	1
13840	Magnet Assembly. (Includes the next Item)	1
27448	Screw for Magnet Assembly 13840.	8
26088	Spacing Washer for Damping Pole (Not shown in Illustration).	4
27315	Compensating Pole (Mounted in Compensating Coil Assembly 12506).	1
27316	Clamp Ring (Mounted between Pole Plate Assembly 12535 and Pole Pieces).	1
27319	Dial for Meter.	1
27331	Washer between Compensating Pole 27315 and Driving Pole 27318.	1
27334	Nut for retaining Hand Lever 27429 on Center Shaft Assembly 12493.	1
28471	Hexagon Nut on Screw 27445.	2
27347	Case Stud for Meter Case Assembly 12555.	2

**No. 5401 BATTERY BOX (Continued)**

Piece Number	NAME OF PART	Quantity Required
27348	Washer for Hopper Plate Assembly 12505 (Small) . . . . .	1
27358	Plain Washer for Screws 27444 and 27445 . . . . .	3
27376	Nut for Upper Bearing Assembly 12523 . . . . .	1
27395	Lock Washer for Screws 27452, 27439, 27443 and 27442 . . . . .	8
27396	Lock Washer for Screws 27450, 27444 and 27445, 27451 . . . . .	11
25397	Lock Washer for Nut 27376 (For Upper Bearing) . . . . .	1
27398	Lock Washer for Case Stud 27347 . . . . .	2
27399	Lock Washer for Screw 27449 . . . . .	2
27431	Screw for mounting Upper Train Plate Assembly 12503 (Taper Head) . . . . .	1
27408	Insulating Tube for Screw 27450 . . . . .	1
27413	Washer for Armature Box (Large Paper Gasket) . . . . .	1
27419	Wing Nut for retaining Case Assembly 12555 (Wing Nut) . . . . .	2
20117	Insulating Bushing for Insulating Leads through Meter Base 27312 . . . . .	4
27423	Small Indicator Hand on Dial 27319 . . . . .	1
27427	Screw for Contact Lever 27429 . . . . .	1
27429	Contact Lever for Operating Contact Assembly 10766 . . . . .	1
20810	Plain Washer under Contact Lever 27429 (Not shown in Illustration) . . . . .	1
27438	Screw for mounting Dial 27319 . . . . .	3
27439	Screw for Train Plate Assembly 12503 (Round Head) . . . . .	3
27442	Screw for Hopper Plate Assembly 12505 (Short Round Head) . . . . .	3
27443	Screw for Hopper Plate Assembly 12505 (Long Round Head) . . . . .	3
27444	Screw for mounting Armature Box Assembly 12460 and for Meter Terminal No. 1 (Short Fillister Head) . . . . .	1
27445	Screw for Meter Terminal No. 2 . . . . .	3
27449	Screw for retaining Meter Base 27312 . . . . .	1
27450	Long Screw for Armature Box Assembly 12460 on Driving Pole 27318 . . . . .	1
27451	Screw for mounting Compensating Pole 27315 . . . . .	1
27452	Screw for mounting Hopper Plate Assembly 12505 (Round Head, milled down) . . . . .	1
27454	Plain Washer for Screws 27450 and 27444 . . . . .	6
27459	Insulating Tube for Case Stud 27347 (Not shown in Illustration) . . . . .	2
27482	Gasket around Meter Base 27312 for Case Assembly 12555 (Not shown in Illustration) . . . . .	1
10306	<b>Lead Assembly from Side Terminal on Cut-Out Relay to the Third Terminal from Bottom on Left Side of Controller Switch</b> . . . . .	1
	(Includes the next Item)	1
21737	Ferrule for Lead Assembly 10306 (Not shown in Illustration) . . . . .	1
10307	<b>Lead Assembly from (C) on Meter Contact Assembly 10766 to the First Terminal from the Top on Left Side of Controller Switch</b> . . . . .	1
	(Includes the next Item)	1
21737	Ferrule for Lead Assembly 10307 (Not shown in Illustration) . . . . .	1
27432	Lead from Terminal No. 3 on Controller Bracket to Compensating Coil Assembly 12506 (Not shown in Illustration) . . . . .	1
20116	Clip for Lead 27432 (Not shown in Illustration) . . . . .	1
12510	<b>Lead Assembly from Terminal No. 1 on Ampere Hour Meter to the First Terminal from Bottom on Left Side of Controller Switch</b> . . . . .	1
	(Includes the next Item)	1
27422	Clip for Lead Assembly 12510 . . . . .	1
10561	<b>Lead Assembly</b> . . . . .	1
	(Includes the next Item)	1
20116	Clip for Lead Assembly 10561 . . . . .	1
5668	<b>Cut-Out Relay Assembly Complete</b> . . . . .	1
	(Includes the next 27 Items)	1
11127	<b>Coil Assembly for Relay 5668</b> . . . . .	1
21939	Bracket for mounting Cut-Out Relay 5668 . . . . .	1
11047	<b>Bracket for mounting Contact Assembly 11046 and Armature Assembly 11050</b> . . . . .	1
	(Includes the next 3 Items)	1
24144	Bushing for Frame Assembly 11047 (Not shown in Illustration) . . . . .	1
24149	Insulator for Frame Assembly 11047 (Not shown in Illustration) . . . . .	1
24169	Stud for retaining Insulator 24149 (Not shown in Illustration) . . . . .	1
11050	<b>Armature Assembly for Cut-Out Relay 5668</b> . . . . .	1
11046	<b>Contact Assembly (Upper)</b> . . . . .	1
24151	Nut for Armature Assembly 11050 . . . . .	1
24154	Terminal Plate (Small Screw Holes for mounting Screws) . . . . .	2
24155	Terminal Plate (Large Screw Holes for mounting Screws) . . . . .	1
24168	Screw for mounting Terminal Plate 24154 . . . . .	2
24167	Screw for mounting Terminal Plate 24155 and Contact Assembly 11046 . . . . .	4
24969	Lock Washer for Screws 24167 and 24168 . . . . .	6
23941	Insulating Washer for Screw 24167 . . . . .	4
21495	Insulating Bushing for Screw 24167 for Contact Assembly 11046 . . . . .	2
11067	<b>Lead Assembly for connecting Armature Assembly 11050</b> . . . . .	1
24138	Terminal Clamp (on Top of Terminal Plates 24154 and 24155) . . . . .	2
20373	Terminal Clamp (under Terminal Plate 24155 and for Terminal on Side of Coil) . . . . .	2
21491	Nut for Coil Assembly 11127 . . . . .	2
26586	Lock Washer for Nut 21491 . . . . .	1
24242	Insulating Bushing for Screw 24167 for mounting Terminal Plate 24155 . . . . .	2
24145	Insulating Bushing for Coil Studs (Long) . . . . .	2

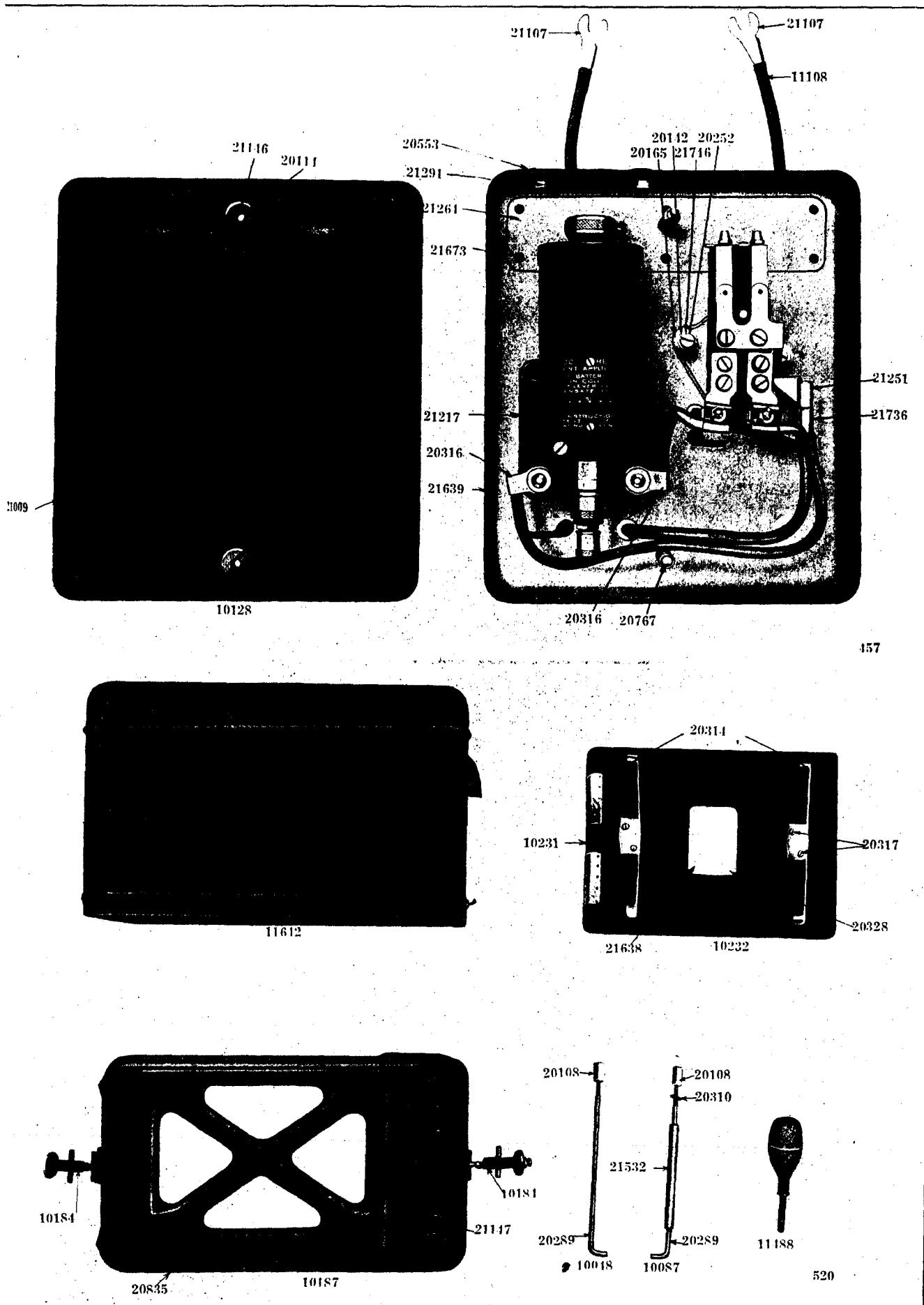
## No. 5401 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
24144	Insulating Bushing for Coil Studs (Short) . . . . .	1
24157	Plate for grounding Terminal Lead Assembly 11067 . . . . .	1
24182	Screw for retaining Terminal Clamps on Terminal Plate 24155. . . . .	1
24165	Screw for retaining Terminal Clamp on Terminal Plate 24154 and Terminal on Side of Coil Assembly 11127. . . . .	2
24969	Lock Washer for Nut 23452. . . . .	3
23452	Nut for Screws 24182 and 24165. . . . .	3
24172	Spring for operating Armature Assembly 11050 . . . . .	1
21937	Insulator for Cut-Out Relay 5668 (Not shown in Illustration) . . . . .	1
20107	Screw for retaining Cut-Out Relay Assembly 5668 . . . . .	2
20251	Insulating Bushing for Screw 20107. . . . .	2
20252	Insulating Washer for Screw 20107. . . . .	2
20165	Plain Washer for Screw 20107. . . . .	2
20142	Lock Washer for Screw 20107. . . . .	2
10532	<b>Controller Switch Assembly Complete.</b> . . . . . (Includes the next 78 Items)	1
10076	<b>Controller Latch Arm for Controller Switch Assembly 1029 (Not shown in Illustration)</b> . . . . .	1
10335	<b>Shunt Wire for Switch Assembly 1029 (To be used when charging rate is low) (Not shown in Illustration) (Double Shunt Service)</b> . . . . .	1
10118	<b>Shunt Wire Assembly (Single Shunt) (Not shown in Illustration)</b> . . . . .	1
20098	Spring for Latch Arm Assembly 10076. . . . .	1
20178	Screw for Latch Arm 10076. . . . .	1
20350	Lock Washer for Screw 20178. . . . .	1
20109	Plain Washer for Screw 20178. . . . .	1
1029	<b>Controller Switch Complete.</b> . . . . . (Includes the next 63 Items)	1
24569	Frame (Upper) for Controller Switch Assembly 1029 . . . . .	1
11247	<b>Frame Assembly Complete (Lower) for Controller Switch Assembly 1029.</b> . . . . .	1
20358	Connector across Back of Switch connecting Top Terminal on Right Side of Switch to Fourth Terminal from Top on Left Side of Switch. . . . .	1
20359	Connector for Blades on Left Side of Switch . . . . .	4
11244	<b>Controller Blade Assembly (Blades Assembled Complete for Left Side of Switch)</b> . . . . . (Includes the next 13 Items)	1
20361	Blade (Blades on Left Side of Switch with Extension for Connectors) . . . . .	3
20366	Blade on Left Side of Switch with Extension for Two Binding Posts. . . . .	1
20363	Blade on Left Side of Switch with Extension for Binding Posts and Connectors. . . . .	3
20364	Blade on Left Side of Switch with Extension for One Binding Post. . . . .	1
20367	Connector on Left Side of Switch Connecting with Brush . . . . .	3
20362	Rod for supporting Blades. . . . .	2
20365	Insulating Sleeve for Blades. . . . .	2
24574	Brass Collar between Blades and Lower End Frame (On Left Side of Switch) . . . . .	1
24564	Insulating Washer for Blade on Left Side of Switch . . . . .	9
24566	Brass Collar between Blades on Left Side of Switch . . . . .	4
24565	Brass Collar between Blades and Upper End Frame . . . . .	1
24567	Insulating Collar between Blades on Left Side of Switch (Hard Rubber) . . . . .	6
27963	Lock Washer between Blades and Upper End Frame . . . . .	1
11243	<b>Blade Assembly (Blades Assembled Complete for Right Side of Switch)</b> . . . . . (Includes the next 10 Items)	1
20363	Blade on Right Side of Switch with Extension for Connector and Bind Post. . . . .	1
20360	Blade on Right Side of Switch with Extensions . . . . .	7
20368	Connector on Right Side connecting with Brush . . . . .	5
20362	Rod for supporting Blades on Right Side of Switch . . . . .	2
20365	Insulating Sleeve for Blades on Right Side of Switch . . . . .	2
24564	Insulating Washer between Blades and End Frame on Right Side of Switch . . . . .	1
24570	Brass Collar with Shoulder between Blades on Right Side of Switch. . . . .	3
24567	Insulating Collar between Blades on Right Side of Switch (Hard Rubber) . . . . .	9
24565	Brass Collar between Blades and Upper End Frame . . . . .	1
27963	Lock Washer between Blades and Upper End Frame (Not shown in Illustration) . . . . .	1
11245	<b>Brush Assembly Complete (Blades Assembled Complete for Center of Switch)</b> . . . . . (Includes the next 18 Items)	1
24572	Lock Washer on Ends of Rod 24579 for Pivoting Brush Blades . . . . .	2
24582	Arm for Binding Brush Parts together. . . . .	2
24581	Compression Spring for Brush Blades. . . . .	7
24578	Insulating Washer on Pivoting Rod 24579 for Brush Blades. . . . .	16
24573	Brass Collar on Ends of Pivoting Rod 24579. . . . .	2
24580	Rod for locating Brush Blades on Brush Assembly 11245 . . . . .	1
20351	Insulating Sleeve for locating Rod 24580 (Hard Rubber) . . . . .	1
24579	Rod for locating Brush Blades on Brush Assembly 11245 (Not shown in Illustration) . . . . .	1
20352	Insulating Sleeve for Pivoting Rod 24579 (Hard Rubber) . . . . .	1
24576	Brass Collar on Lower End of locating Rod 24580 . . . . .	1
24562	Blades for Brush Assembly 11245. . . . .	16
24563	Brass Collar on locating Rod 24580 between Blades . . . . .	7
24540	Dowel Pin for Pivoting Rod 24579. . . . .	2
24541	Dowel Pin for locating Rod 24580. . . . .	2
24564	Insulating Washer on Rod 24580 for Brush Blades . . . . .	16

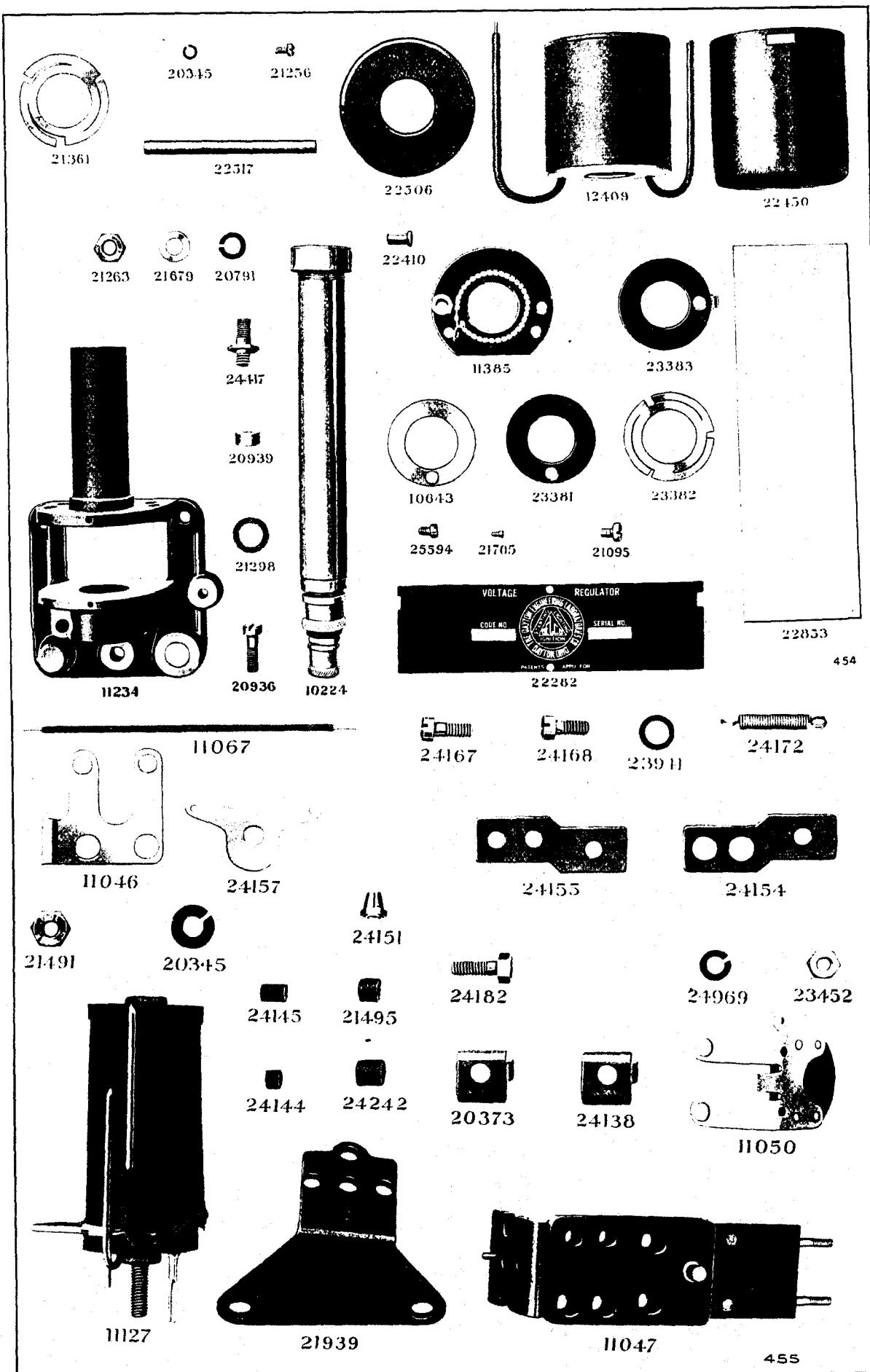
No. 5401 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
27963	Lock Washer on Upper End of Rod 24580 (Not shown in Illustration).....	1
24575	Brass Collar on Upper End of Rod 24580.....	1
24577	Spacing Washer between Blades 24562.....	8
23452	Nut for Screws 24165 and 24542.....	22
24969	Lock Washer for Nut 23452.....	22
20373	Terminal Clamp for Binding Posts.....	15
11246	<b>Arm Assembly for Operating Brush Assembly 11246</b> .....	1
24079	Dowel Pin for retaining Arm Assembly 11246.....	1
24538	Screw for End Frame 24569 and End Frame Assembly 11247 .....	7
24165	Screw for Terminal Clamps on Binding Posts, and Long Screws for Connectors on Back of Switch.....	18
24542	Screws (Short Screw for Connectors on Back of Switch).....	4
24568	Stud in End Frame Assembly 11247 for Spring 20098 .....	1
20463	Insulator (Back of Controller Switch).....	1
20035	Screw for mounting Controller Switch.....	4
20495	Lock Washer for Screw 20035.....	4
20104	Nut for mounting Ampere Hour Meter Assembly 10101 .....	3
20070	Screw for mounting Ampere Hour Meter Assembly 10101.....	3
20791	Lock Washer for Screw 20070.....	3
20114	Plain Washer for Screw 20070.....	3
20125	Insulating Washer for Screw 20070 (Large) .....	3
20075	Nut for Spring Terminal.....	1
20137	Lock Washer for Nut 20075.....	1
22237	Ferrule Placed over Ends of Lead Assemblies 10579 and 11262, and Leads 10304 and 10582 and soldered (Not shown in Illustration) .....	2
22238	Insulator Placed over Ferrule 22237 after soldering (Not shown in Illustration) .....	2
10108	<b>Cover Assembly Complete for Controller Switch</b> .....	1
	(Includes the next 4 Items)	
20168	Clamp Nut for Cover Assembly 10108.....	1
20310	Plain Washer for Clamp Nut 20168.....	1
21923	Name Plate for Cover Assembly 10108 (Not shown in Illustration).....	1
20687	Rivets for Name Plate 21923 (Not shown in Illustration).....	2
20128	Screw for attaching Controller Bracket Assembly 10099 (Not shown in Illustration) .....	5
20129	Nut for Screw 20128 (Not shown in Illustration) .....	5
20137	Lock Washer for Nut 20129 .....	5
12135	<b>Base Assembly for Battery Box Base Assembly 12135 (Not shown in Illustration)</b> .....	1
	(Includes the next 13 Items)	
10113	<b>Battery Box Latch Assembly for mounting Battery Box Cover Assembly</b> .....	1
	(Includes the next 5 Items)	
20584	Latch for Battery Box Latch Assembly 10113 (Not shown in Illustration) .....	1
20587	Bolt for Battery Box Latch Assembly 10113 (Not shown in Illustration) .....	1
20586	Nut for Battery Box Latch Assembly 10113 (Not shown in Illustration) .....	1
20588	Spring for Battery Box Latch Assembly 10113 (Not shown in Illustration) .....	1
20585	Nut for Battery Box Latch Assembly 10113 (Round) (Not shown in Illustration) .....	1
12002	<b>Base Assembly for Battery Box Base Assembly 12135</b> .....	1
	(Includes the next 4 Items)	
20091	Guide for Controller Rod Assembly 10107.....	1
21001	Rivet for Guide 20091 and Plate.....	9
20596	Plate for retaining Latch Assembly 10113.....	2
21001	Rivets for Plate 20596.....	6
10122	<b>Battery Cover Assembly Complete for Battery</b> .....	1
	(Includes the next 4 Items)	
20314	Spring for Battery Cover Assembly 10122.....	2
20317	Screw for Spring 20314.....	4
21267	Date Card for Battery Cover Assembly 10122 (Not shown in Illustration) .....	2
20328	Pin for Date Card 21267 on Battery Cover Assembly 10122.....	2
21565	Base Support for Battery Box (Not shown in Illustration) .....	4
20080	Terminal Clip for connecting Battery Box (Not shown in Illustration) .....	6
20289	Bolt for Battery .....	1
20108	Nut for Bolt 20289 .....	1
20310	Plain Washer for Nut 20108 .....	1
11536	<b>Battery Box Cover Assembly</b> .....	1
20223	Wrench for Controller Switch 1029 .....	2
10534	<b>Controller Operating Rod Assembly Complete</b> .....	1
	(Includes the next 6 Items)	
10535	<b>Controller Operating Rod Assembly</b> .....	1
	(Includes the next Item)	
21162	Dowel Pin for retaining Collar 20236 .....	2
20048	Spring for Controller Operating Rod Assembly 10534 .....	1
20389	Sleeve for Rod 20123 .....	1
20176	Guide for Sleeve 20389 .....	1
20096	Cup for Spring 20048 .....	2

PIECE PARTS CATALOG



No. 5404 BATTERY BOX



No. 5404 BATTERY BOX

## No. 5404 BATTERY BOX

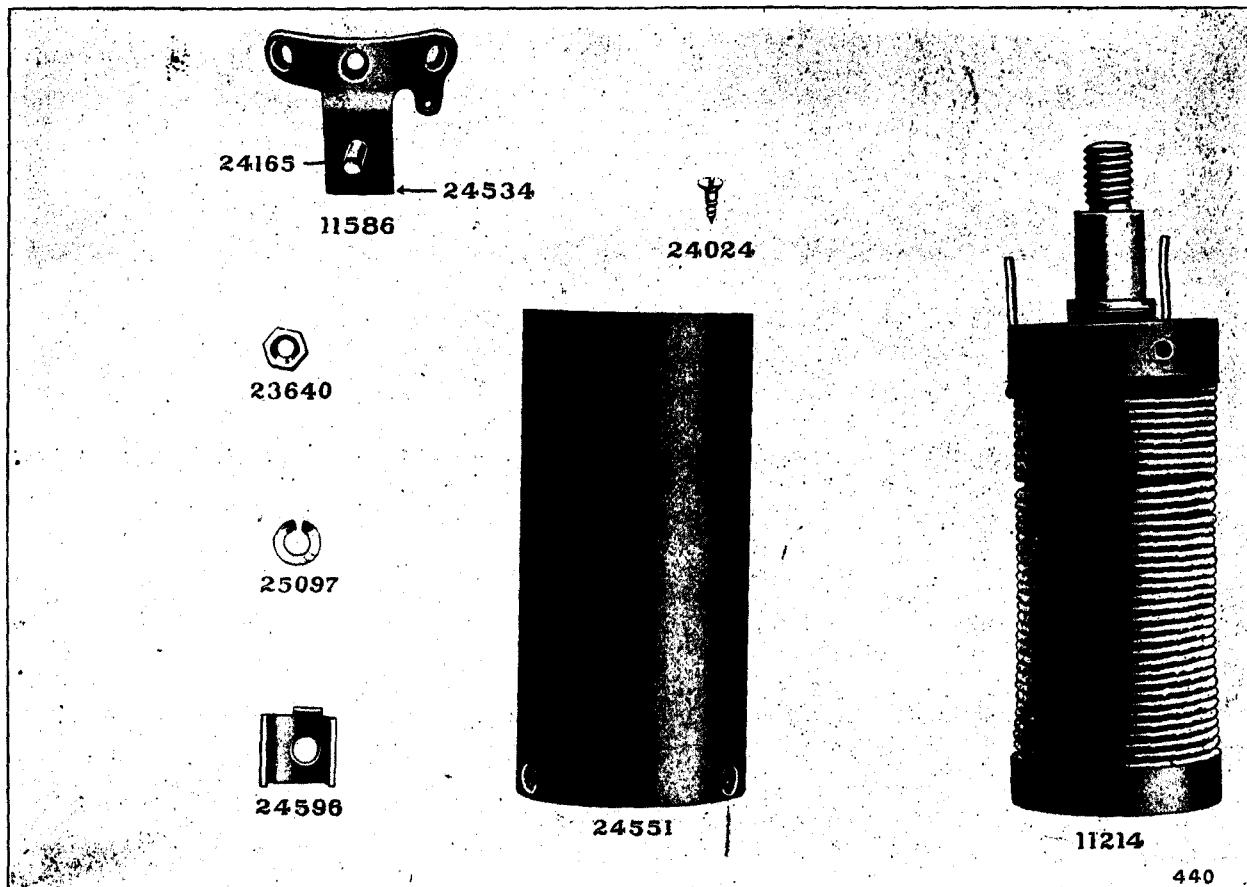
Piece Number	NAME OF PART	Quantity Required
5404	<b>BATTERY BOX COMPLETE</b> .....	1
11642	Cover Assembly .....	1
20316	Terminal Clip for Voltage Regulator 5602.....	1
11488	Syringe for Filling Storage Battery.....	1
10232	Cover Assembly Complete for Storage Battery (Wood) (Includes the next 4 Items)	1
20314	Spring for Cover Assembly 10231.....	2
20317	Screw for retaining Spring 20314.....	4
21638	Date Card for Cover Assembly 10232.....	1
20328	Pin for retaining Date Card.....	4
20289	Bolt for Battery Bolt Assembly.....	1
20108	Nut for Bolt 20289.....	1
20310	Plain Washer for Nut 20108.....	1
10087	<b>Battery Bolt Assembly Complete</b> (Includes the next 4 Items)	1
20289	Bolt for Battery Bolt Assembly 10087.....	1
20108	Nut for Bolt 20289.....	1
20310	Plain Washer for Nut 20108.....	1
21532	Sleeve for Bolt 20289.....	1
20835	Base for Battery Box.....	1
21600	Screw for retaining Clamp Plate 21597 (Not shown in Illustration).....	4
21601	Nut for Screw 21600 (Not shown in Illustration).....	4
20393	Lock Washer for Nut 21601 (Not shown in Illustration).....	4
10184	<b>Latch Assembly Complete</b> (Includes the next 8 Items)	2
20588	Spring for Latch Assembly 10184 (Not shown in Illustration).....	1
20585	Clamp Nut for Latch Assembly 10184 (Not shown in Illustration).....	1
20586	Cap Nut for Latch Assembly 10184 (Not shown in Illustration).....	1
20584	Latch for Latch Assembly 10184 (Not shown in Illustration).....	1
20310	Plain Washer for Spring 20588 (Not shown in Illustration).....	1
10183	<b>Latch Assembly (Not shown in Illustration)</b> .....	1
	(Includes the next 2 Items)	
20587	Bolt for Latch Assembly 10183 (Not shown in Illustration).....	1
21597	Clamp Plate for Bolt 20587 (Not shown in Illustration).....	1
20129	Nut for Screw 21147 (Not shown in Illustration).....	3
21147	Screw for retaining Apparatus Box 5502 (Not shown in Illustration).....	1
20137	Lock Washer for Nut 20129 (Not shown in Illustration).....	3
5502	<b>Apparatus Box Complete</b> (Includes the next 96 Items)	1
20939	Insulating Bushing for Screw 20128 (Long) (Not shown in Illustration).....	2
21078	Insulating Bushing for Screw 20128 (Short) (Not shown in Illustration).....	1
20117	Insulating Bushing for Box 21639 (Rubber) (Not shown in Illustration).....	3
21193	Cover Plate for Box 21639 (Not shown in Illustration).....	1
20553	Screw for attaching Cover Plate 21193 (Not shown in Illustration).....	2
20484	Lock Washer for Screw 20553 (Not shown in Illustration).....	2
21291	Nut for retaining Screw 20553 (Not shown in Illustration).....	2
21684	Clip for retaining Lead (Outside of Box) (Long Clip) (Not shown in Illustration).....	1
21208	Clip for retaining Lead (Outside of Box) (Short Clip) (Not shown in Illustration).....	1
21217	Insulator for Voltage Regulator 5502.....	1
20068	Nut for retaining Screws 21746 and 20107 (Not shown in Illustration).....	2
20347	Nut for retaining Screw 20349 (Not shown in Illustration).....	1
20393	Lock Washer for Nut 20347 (Not shown in Illustration).....	1
20128	Screw for retaining Voltage Regulator 5502 (Not shown in Illustration).....	3
20349	Screw for Side Terminal on Relay 5678 (Not shown in Illustration).....	1
20114	Plain Washer for Screw 20128 (Not shown in Illustration).....	3
20137	Lock Washer for Screw 20128 (Not shown in Illustration).....	3
20076	Insulating Washer for Screw 20128 (Not shown in Illustration).....	3
20107	Screw for attaching Relay 5678 (Inner) (Not shown in Illustration).....	1
20251	Insulating Bushing for Screw 21746 (Not shown in Illustration).....	1
20252	Insulating Washer for Screw 21746.....	1
20165	Plain Washer for Screw 21746.....	1
20142	Lock Washer for Screw 21746.....	1
21746	Screw for attaching Relay 5678 (Outer).....	1
10126	<b>Box Assembly Complete</b> (Includes the next 4 Items)	1
21264	Insulator for Box Assembly 10126.....	2
21673	Rivet for retaining Insulator 21264.....	6
21923	Number Plate for Box Assembly 10125 (Not shown in Illustration).....	1
22216	Rivet for retaining Number Plate 21923 (Not shown in Illustration).....	2
11108	<b>Lead Assembly (Long Single)</b> (Includes the next 2 Items)	1
21107	Clip for Lead Assembly 11108.....	1
21737	Ferrule for Clip 21107 (Not shown in Illustration) .....	1
11109	<b>Lead Assembly (Double) (Not shown in Illustration)</b> .....	1
	(Includes the next 5 Items)	
21736	Connector for Lead Assembly 11109.....	1
20316	Clip for Voltage Regulator End of Lead Assembly 11109 .....	1
21107	Clip for Lead Assembly 11109.....	1
21251	Clip for Cut-out Relay End of Lead Assembly 11109 .....	1
20117	Insulating Bushing for Lead Assembly 11109.....	1

No. 5404 BATTERY BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
11110	Lead Assembly (Short Single) (Not shown in Illustration). (Includes the next 2 Items)	1
20316	Clip for Lead Assembly 11110.	1
21737	Ferrule for Clip 20316.	1
5678	Cut-Out Relay Complete. (Includes the next 27 Items)	1
11127	Coil Assembly.	1
11067	Lead Assembly for connecting Contact Spring Assembly 11050.	1
11050	Contact Spring Assembly (Lower Contact).	1
11046	Contact Spring Assembly (Upper Contact).	1
24151	Nut for retaining Contact Spring Assembly 11050 (Split Nut).	2
24167	Screw for attaching Contact Spring Assembly 11046 and Terminal Plate 24155.	4
23941	Insulating Washer for Screws 24167, 24182 and 24168.	4
21495	Insulating Bushing on Screw 24167 for Contact Spring Assembly 11046.	2
24242	Insulating Bushing on Screw 24167 for Terminal Plate 24155.	1
24168	Screw for retaining Contact Plate 24154.	2
24154	Terminal Plate (Small Hole).	1
24155	Terminal Plate (Large Hole).	1
24138	Terminal Clip for Terminal Plates 24154 and 24155 (Upper).	2
20373	Terminal Clip for Terminal Plates 24154 and 24155 (Lower).	2
24182	Screw for retaining Terminal Clips 20373 and 24138.	2
23452	Nut for Screw 24182.	2
24969	Lock Washer for Nut 23452.	1
11047	Bracket Assembly for retaining Contact Spring Assemblies 11050 and 11046. (Includes the next 3 Items)	1
24169	Stud for Insulator (Not shown in Illustration).	1
24149	Insulator for Bracket Assembly 11047 (Not shown in Illustration).	1
24144	Bushing for Stud 24169.	1
21939	Bracket for attaching Relay 5678.	1
24172	Spring for operating Contact Spring Assembly 11050.	2
21491	Nut for retaining Coil Assembly 11127.	1
24345	Lock Washer for Nut 21491.	1
24145	Insulating Bushing for Coil Assembly 11127 (Long).	2
24144	Insulating Bushing for Coil Assembly 11127 (Short).	1
24157	Plate under Nut 21491 for Grounding Lead Assembly 11067.	1
21937	Insulator for Bracket 21939 (Not shown in Illustration).	8
24969	Lock Washer for Screws 24167, 24182 and 24168.	1
5602	Voltage Regulator Complete. (Includes the next 30 Items)	1
10884	Voltage Regulator Assembly (Service) (Complete 5602 Assembly less Mercury Tube 10224) (Not shown in Illustration).	1
11234	Bracket Assembly for Voltage Regulator 5602.	1
10224	Mercury Tube Assembly.	1
22450	Shell for Coil Assembly 15279.	1
15279	Coil Assembly.	1
22512	Terminal Clip for Coil Assembly 15279 (Not shown in Illustration).	1
22853	Insulator for Coil Assembly 15279.	1
22517	Insulator for Lead on Coil Assembly 15279.	1
11385	Rheostat Coil Assembly.	1
22506	Cover for Shell 22450.	2
22410	Insulating Bushing for Lead on Coil Assembly 15279.	2
21256	Screw for retaining Shell 22450.	2
20345	Washer for Screw 21256.	1
22282	Name Plate for Voltage Regulator 5602.	2
21705	Screw for retaining Name Plate 22282.	1
20936	Screw in Bracket Assembly 11234 for Clamping Mercury Assembly 10224.	1
21095	Screw for retaining Rheostat Coil Assembly 11385 (Large Head).	1
25594	Screw for Rheostat Coil Assembly 11385 (Small Head).	1
22417	Terminal Stud for retaining Terminal Stud Assembly 10591.	1
21263	Nut for Terminal Stud 22417.	1
21679	Plain Washer for Nut 21263.	1
20791	Lock Washer for Nut 21263.	1
20939	Insulating Bushing for Terminal Stud 22417.	2
21298	Insulating Washer for Terminal Stud 22417.	2
10643	Contact Plate Assembly for Rheostat Coil Assembly 11385.	1
23381	Insulating Plate for Contact Plate Assembly 10643.	1
23382	Tension Spring for Contact Plate Assembly 10643.	1
23383	Adjusting Plate for Contact Plate Assembly 10643.	1
21361	Tension Spring for Coil Assembly 15279.	1
22526	Screw for Voltage Regulator 5602 (Not shown in Illustration).	1
10591	Terminal Stud Assembly for connecting Voltage Regulator 5602 (Not shown in Illustration). (Includes the next 4 Items)	1
22894	Stud for Terminal Stud Assembly 10591 (Not shown in Illustration).	1
24281	Clamp for Terminal Stud Assembly 10591 (Not shown in Illustration).	1
20347	Nut for Stud 22894 (Not shown in Illustration).	1
20393	Lock Washer for Nut 20347 (Not shown in Illustration).	1
10128	Cover Assembly for Apparatus Box 5502. (Includes the next 4 Items)	2
21146	Nut for Cover 21009.	2
20114	Washer for Nut 21146.	2

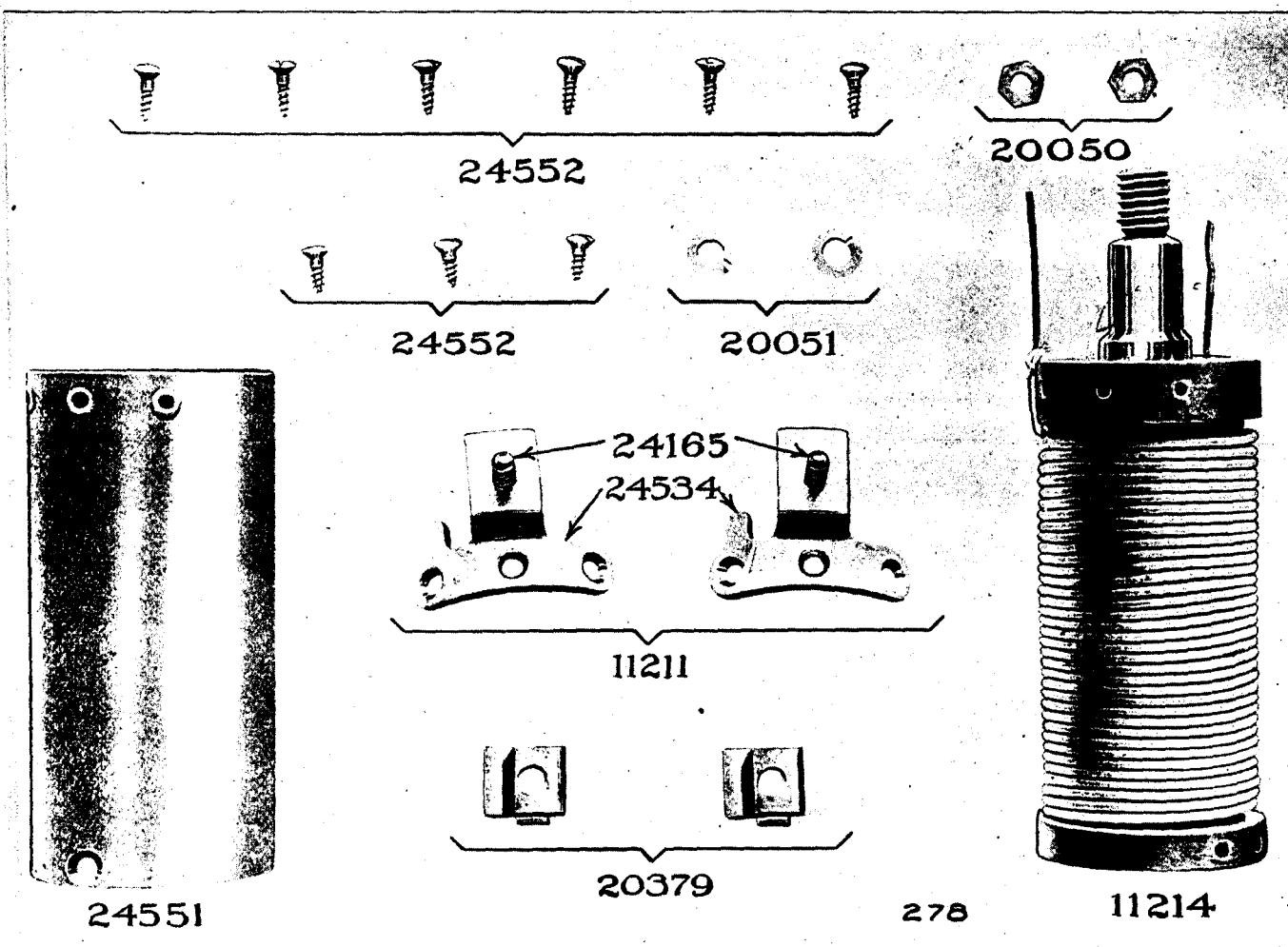
Parts not listed in this catalog will not be sold separately

Revised to January 1, 1922



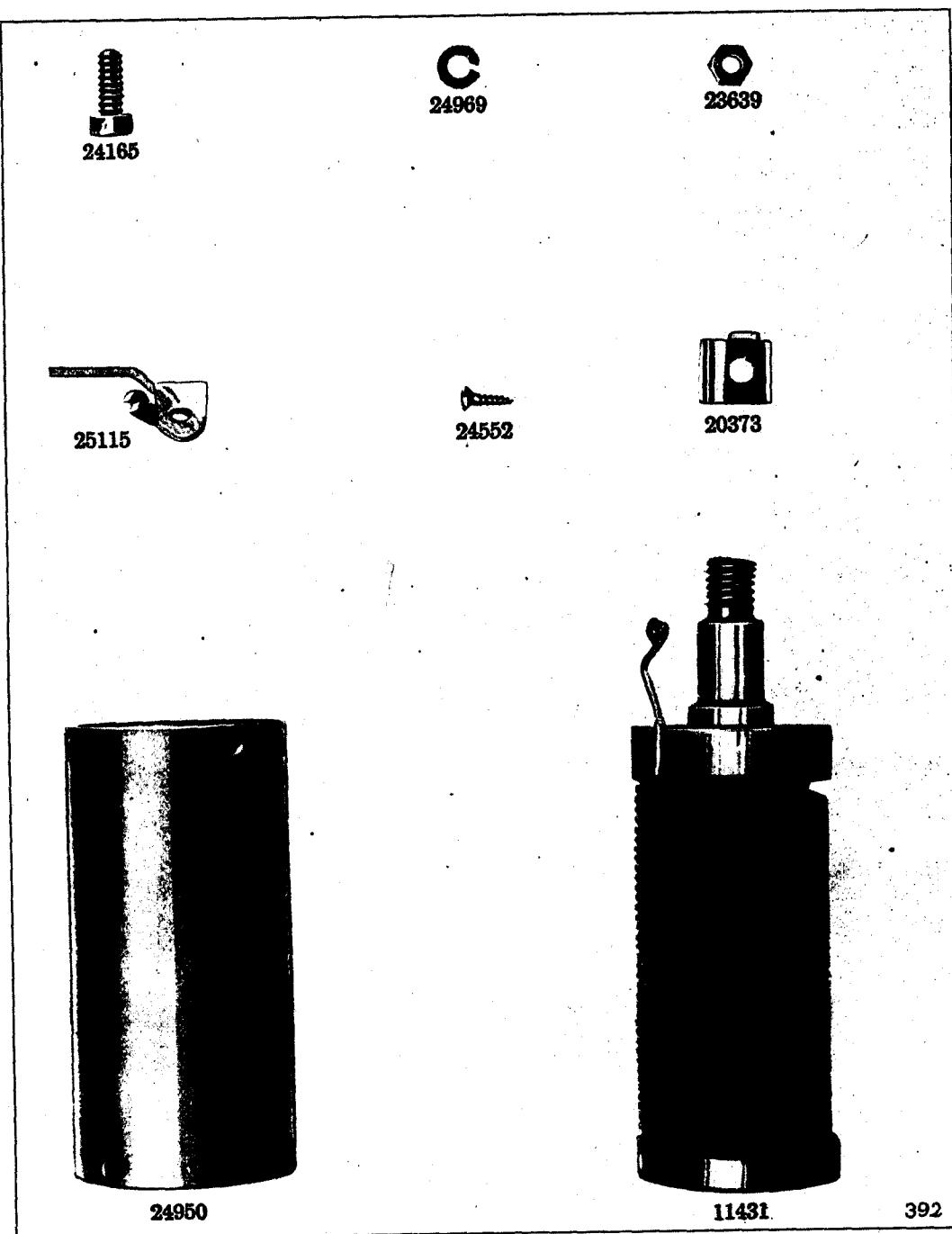
### No. 5440 CLUTCH MAGNET

Piece Number	NAME OF PART	Quantity Required
5440	CLUTCH MAGNET COMPLETE.....	1
11214	Latch Magnet Coil Assembly.....	1
24551	Shell for Clutch Magnet Coil Assembly 11214.....	1
24024	Screw for retaining Shell 24551 and Terminal Assembly 12126.....	9
12126	Terminal Assembly Complete (Not shown in Illustration)..... (Includes the next 5 Items)	2
11586	Terminal Assembly .....	1
24165	(Includes the next Item) Screw for connecting Clutch Magnet.....	1
24596	Clip for Screw 24165.....	1
23640	Nut for Screw 24165.....	1
25097	Lock Washer for Nut 23640.....	1



### No. 5442 CLUTCH MAGNET

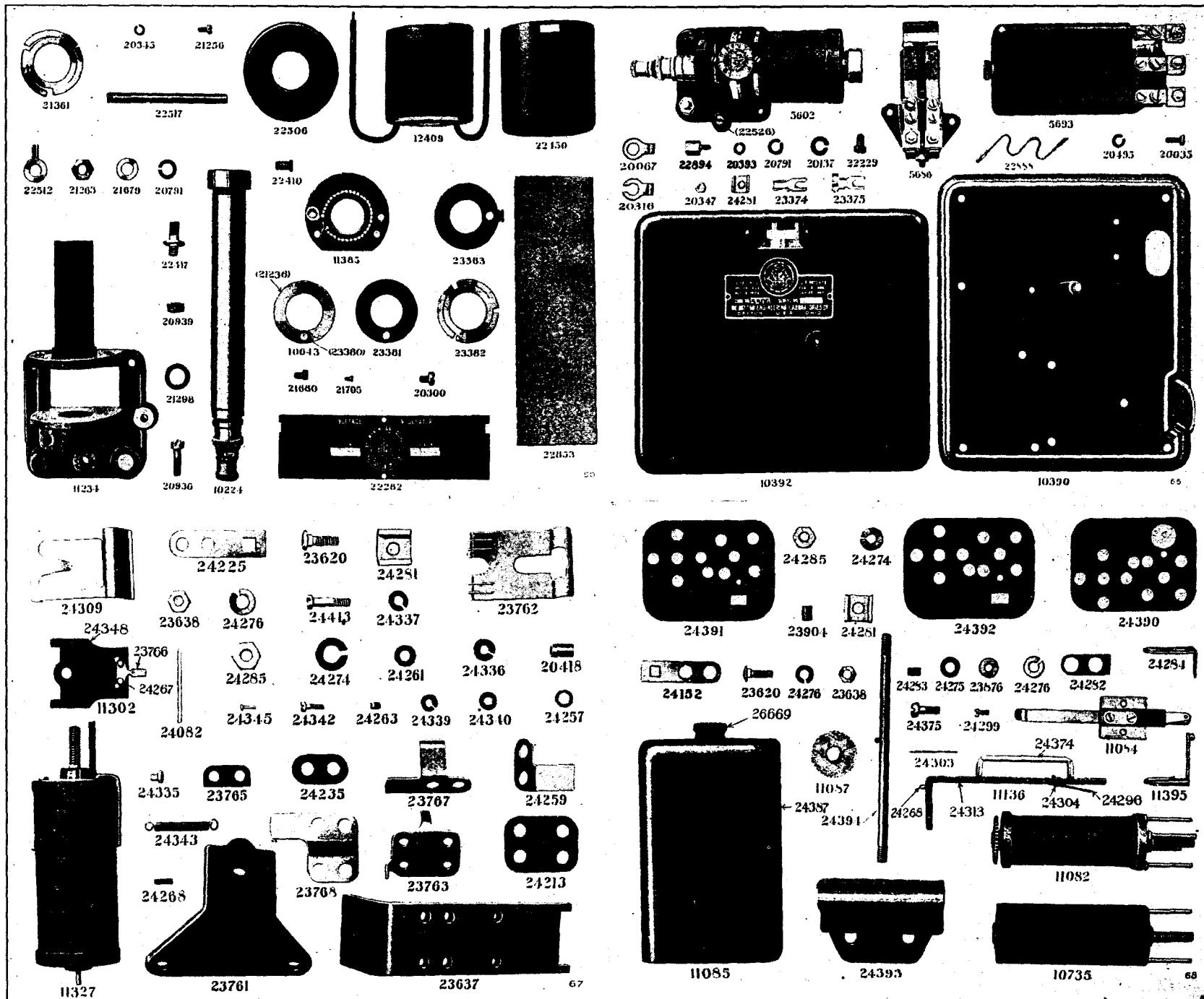
Piece Number	NAME OF PART	Quantity Required
5442	CLUTCH MAGNET COMPLETE.....	1
11214	Coil Assembly .....	1
24551	Shell for Coil Assembly 11214.....	1
24552	Screw for retaining Shell 24551 and Terminal Assembly 11508.....	9
11508	Terminal Assembly Complete (Not shown in Illustration)..... (Includes the next 5 Items)	2
11211	Terminal Assembly .....	1
24165	Terminal Assembly .....	1
20373	(Includes the next Item) Screw for connecting Clutch Magnet.....	1
23639	Clip for Screw 24165 (Not shown in Illustration) .....	1
24539	Nut for Screw 24165.....	1
	Lock Washer for Nut 23639.....	1



## No. 5447 CLUTCH MAGNET

Piece Number	Name of Part	Quantity Required
5447	CLUTCH MAGNET COMPLETE.....	1
11431	Coil Assembly .....	1
24950	Shell for Coil Assembly 11431.	1
24552	Screw for retaining Shell 24950 and Terminal Assembly 13492.....	8
13492	Terminal Assembly Complete..... (Includes the next 5 Items)	2
11432	Terminal Assembly .....	1
	(Includes the next Item)	
24165	Screw for connecting Clutch Magnet.....	1
20373	Clip for Screw 24165.....	1
23639	Nut for Screw 24165.....	1
20393	Lock Washer for Nut 23639.....	1

No. 5506 APPARATUS BOX



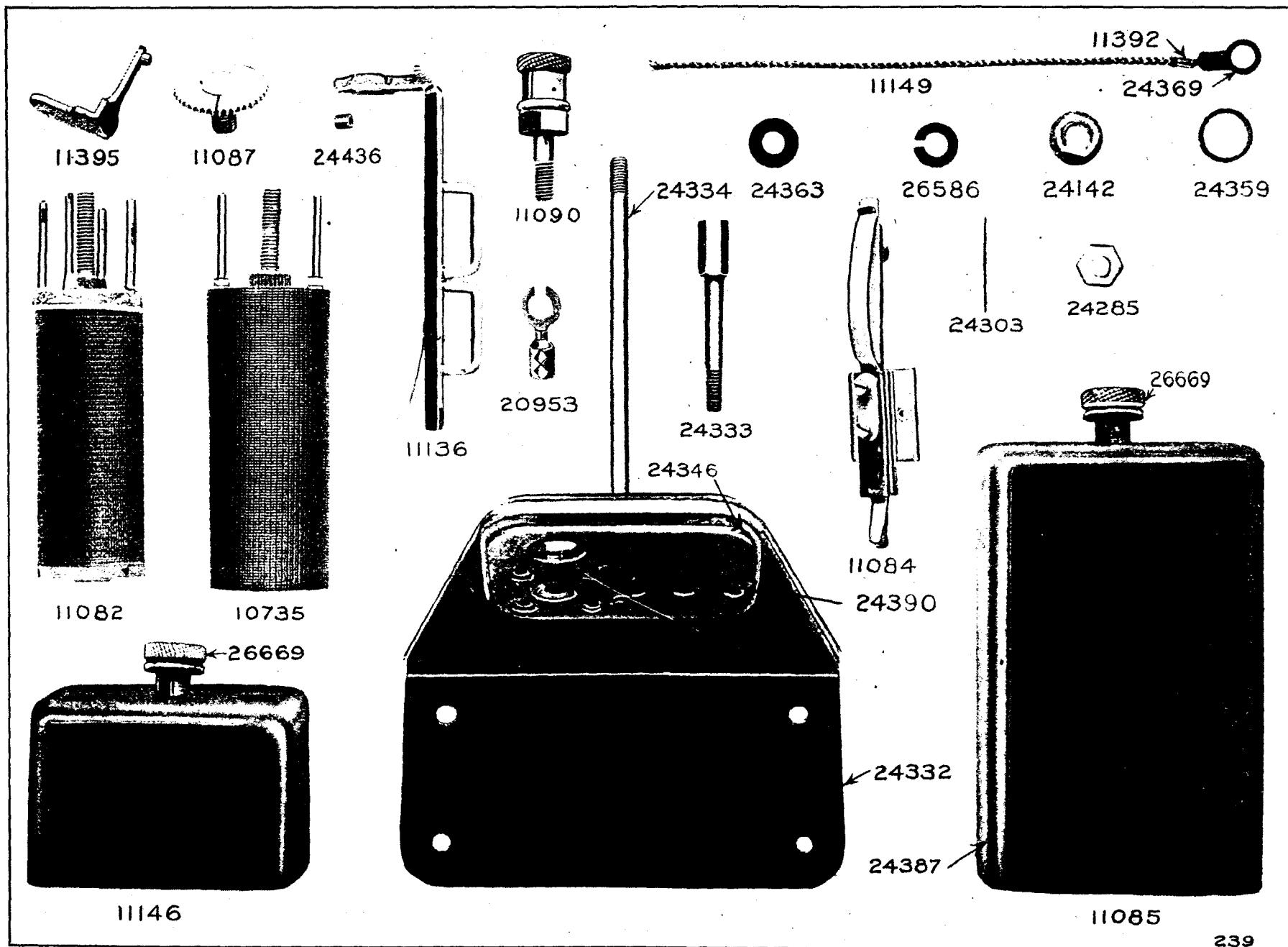
## No. 5506 APPARATUS BOX

(No. 5510 Apparatus Box is the same as No. 5506 Apparatus Box with the Voltage Regulator taken out. No. 5510 Apparatus Box is used with No. 28B Motor Generator. No. 5506 Apparatus Box is used with No. 28 Motor Generator.

Piece Number	NAME OF PART	Quantity Required
<b>5506 APPARATUS BOX COMPLETE.....</b>		1
<b>10392 Cover Assembly Complete.....</b>		1
(Includes the next 8 Items)		
22907 Clamp Nut for Cover Assembly 10392 (Not shown in Illustration).....	1	
20114 Plain Washer for Clamp Nut 22907 (Not shown in Illustration).....	1	
22439 Indicator Guard for Cover 22423 (Not shown in Illustration).....	1	
22440 Indicator Cover for Indicator Guard 22439 (Not shown in Illustration).....	1	
20810 Plain Washer for Rivet 22731 (Not shown in Illustration).....	2	
22731 Rivet for Indicator Guard 22439 (Not shown in Illustration).....	2	
22408 Name Plate for Cover 22423 (Not shown in Illustration).....	1	
22216 Rivet for Name Plate 22408 (Not shown in Illustration).....	2	
<b>10390 Base Assembly .....</b>		1
20035 Screw for Mounting Relays 5693 and 5686.....	4	
20495 Lock Washer for Screw 20035.....	4	
22229 Screw for mounting Regulator 5602.....	2	
20137 Lock Washer for Screw 22229.....	3	
22881 Protector Strip for Cover Assembly 10592 (Not shown in Illustration).....	1	
22962 Rubber Bushing for Leads.....	1	
22888 Battery Charging Resistance for connecting Regulator 5602 and Relay 5686.....	1	
<b>10591 Terminal Stud Assembly for Battery Charging Resistance 22888 (Service).....</b>		1
(Includes the next 4 Items)		
22894 Connector Stud for Terminal Stud Assembly 10591 .....	1	
24281 Clip for Connector Stud 22894.....	1	
20347 Nut for Connector Stud 22894.....	1	
20393 Lock Washer for Nut 20347.....	1	
22526 Ground Screw Regulator 5602.....	1	
20791 Lock Washer under Terminal Stud Assembly 10591 .....	1	
<b>5686 Cut-Out Relay Complete.....</b>		1
(Includes the next 37 Items)		
<b>11327 Coil Assembly for Relay.....</b>		1
23761 Mounting Bracket for Mounting Relay.....	1	
23637 Bracket for Mounting Contact.....	1	
<b>11302 Armature Assembly for operating Double Contact Arm 23762.</b>		1
24309 Indicator Mounted on Armature Assembly 11302 .....	1	
24343 Spring for operating Armature Assembly 11302 .....	1	
24345 Pin for mounting Indicator Shutter 24309.....	2	
24268 Pin for locating mounting Bracket 23761 and Bracket 23637 .....	1	
24335 Stud for Double Contact Arm 23762.....	2	
24082 Pin for mounting Armature Assembly 11302.....	1	
24285 Nut for mounting Coil Assembly 11327.....	1	
24274 Lock Washer for Nut 24285.....	1	
23763 Terminal Plate for Grounding Coil Assembly 11327 .....	1	
24259 Connector for connecting Coil and Terminal Plate 24225.....	1	
<b>23762 Double Contact Arm for Armature Assembly 11302 .....</b>		1
23767 Single Contact Arm for Cut-Out Relay (Two Holes) .....	1	
23768 Single Contact Arm for Cut-Out Relay (Four Holes) .....	1	
24266 Screw for mounting Double Contact Arm 23762 .....	2	
24263 Insulating Bushing for Screw 24266.....	2	
24339 Lock Washer for Screw 24266.....	2	
24340 Plain Washer for Screw 24266.....	2	
24257 Insulating Washer for Screw 24266.....	2	
23765 Insulator for Double Contact Arm 23762.....	1	
24225 Terminal Plate for Connecting Relay.....	2	
23620 Screw for Terminal Plate 24225.....	2	
24281 Clip for Terminal Plate 24225.....	2	
23638 Nut for Screw 23620.....	2	
24276 Lock Washer for Nut 23638.....	2	
24413 Screw for mounting Terminal Plate 24225.....	4	
20418 Insulating Bushing for Screw 24413.....	4	
24336 Plain Washer for Screw 24413.....	4	
24337 Lock Washer for Screw 24413.....	4	
24261 Insulating Washer for Screw 24413.....	1	
24235 Insulator for Contact Arms 23767 and 23768.....	2	
24213 Insulator under Contact Arms 23767 and 23768 .....	1	
<b>5602 Voltage Regulator Complete.....</b>		1
(Includes the next 28 Items)		
<b>10844 Voltage Regulator Assembly (Service) (Voltage Regulator complete less Mercury Tube Assembly) .....</b>		1
11234 Bracket Assembly for Regulator 5602 .....	1	
10224 Mercury Tube Assembly.....	1	
22450 Coil Shell for Coil Assembly 15279.....	1	
<b>15279 Coil Assembly for Regulator.....</b>		1

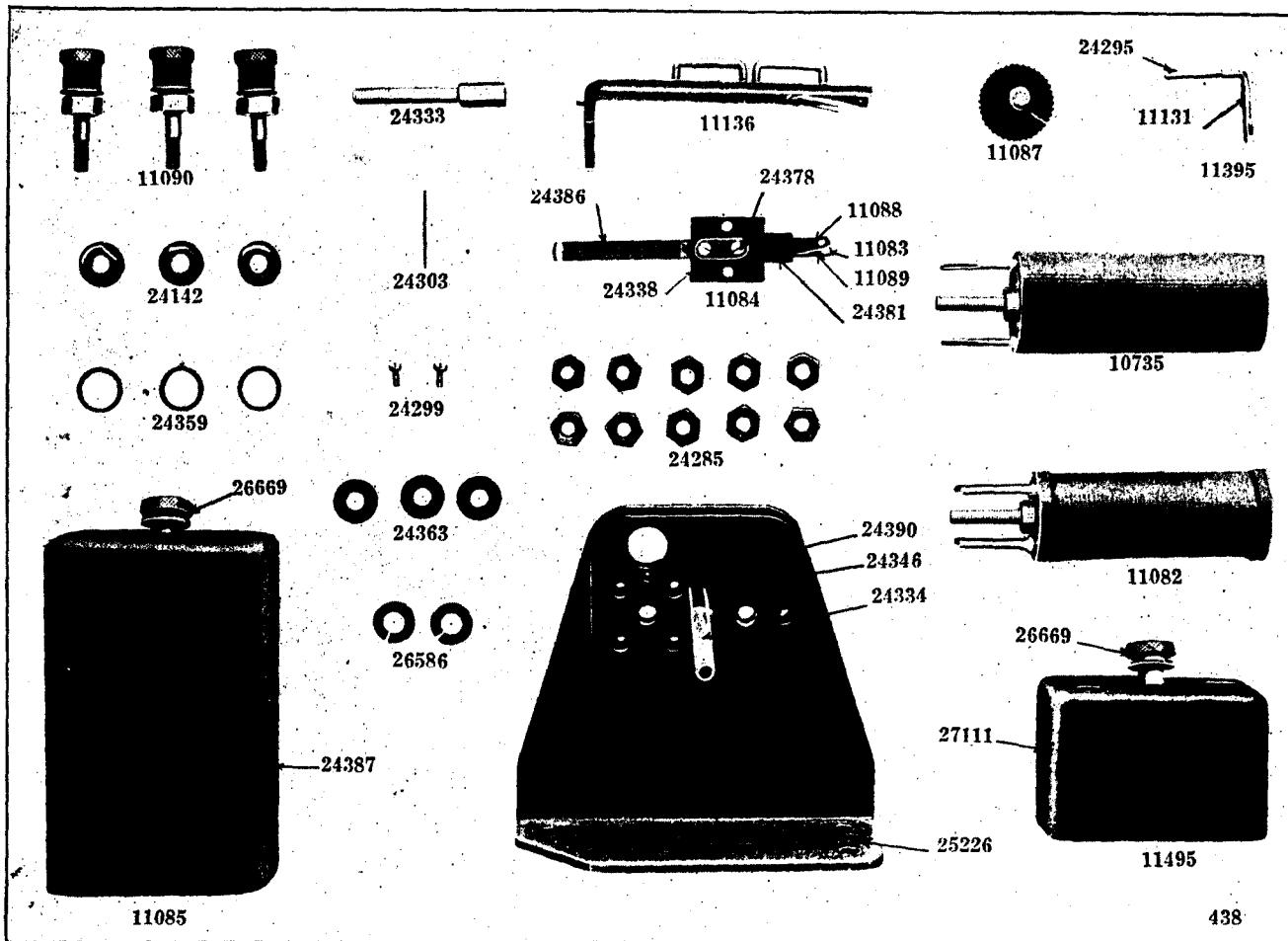
## No. 5506 APPARATUS BOX (Continued)

Piece Number	NAME OF PART	Quantity Required
22512	Terminal Clip for Coil Assembly	1
22853	Insulator for Coil Assembly 15279	1
22517	Insulator for Lead on Coil Assembly 15279	1
11385	Rheostat Coil Assembly	1
22506	Cover for Coil Shell 22450	1
22410	Insulating Bushing for Lead on Coil Assembly 12409	1
21256	Screw for retaining Coil Shell 22450	2
20345	Lock Washer for Screw 21256	2
22282	Name Plate for Regulator	2
21705	Screw for Name Plate 22282	1
20936	Screw in Bracket Assembly 11234 for Clamping Mercury Tube Assembly 10224	2
25594	Screw for mounting Rheostat Coil Assembly 11385 (Small) (Not shown in Illustration)	1
21095	Screw for mounting Rheostat Coil Assembly 11385 (Large) (Not shown in Illustration)	1
22417	Terminal Stud for mounting Terminal Stud Assembly 10591	1
21263	Nut for Terminal Stud 22417	1
21679	Plain Washer for Nut 21263	1
20791	Lock Washer for Nut 21263	1
20939	Insulating Bushing for Terminal Stud 22417	1
21298	Insulating Washer for Terminal Stud 22417	1
10643	Contact Plate Assembly Complete for Rheostat Coil Assembly 11385	2
23381	Insulator Plate for Contact Plate Assembly 10643	1
23382	Tension Spring for Contact Plate Assembly 10643	1
23383	Adjusting Plate for Contact Plate Assembly 10643	1
21361	Tension Spring for Coil Assembly 12409	1
5693	Ignition Relay Complete	1
	(Includes the next 45 Items)	
24393	Mounting Bracket for Mounting Relay	1
24394	Stud for mounting Shell Assembly 11085	1
10735	Condenser Assembly for Relay	1
11082	Coil Assembly for Relay	1
	(Includes the next Item)	
11087	Adjustment Screw for Coil Assembly 11082	1
11085	Shell Assembly Complete Relay	1
	(Includes the next Item)	
26669	Clamp Nut for Shell 24387	1
24389	Plain Washer for retaining Nut 26669	1
11136	Mounting Bracket Assembly Complete for mounting Contact Assembly 11084	1
	(Includes the next 2 Items)	
24296	Spring for Bracket Assembly 11136	1
24304	Rivet for attaching Spring 24296	1
11395	Armature Assembly for operating Contact Assembly 11084	2
24303	Pin for mounting Armature Assembly 11395	1
11084	Contact Assembly Complete for Relay	1
24285	Nut for mounting Coil Assembly 11082 and Condenser Assembly 10735	1
26586	Lock Washer for Nut 24285 (Not shown in Illustration)	4
24299	Screw for mounting Contact Assembly 11084	2
24391	Dust Pad for mounting Bracket 24393	2
24392	Mounting Plate (Outside) for mounting Coil Assembly 11082 and Condenser Assembly 10735	1
24390	Mounting Plate (Inside of Mounting Coil Assembly 11082 and Condenser Assembly 10735)	1
23904	Insulating Bushing for Coil Assembly 11082 and Condenser Assembly 10735	1
24152	Base Plate for mounting Relay	6
24375	Screw for mounting Base 24152	3
24283	Insulating Bushing for Screw 24375	6
24275	Insulating Washer for Screw 24375	6
23876	Plain Washer for Screw 24375	6
24276	Lock Washer for Screw 24375	6
24282	Insulator for Connector 24284	6
24284	Connector for connecting Coil Assembly 11082 and Condenser Assembly 10735 to Terminal Plate 24225	3
24281	Clip for retaining Terminal Clips	3
23620	Screw for retaining Clip 24281	3
23638	Nut for Screw 23620	3
24276	Lock Washer for Nut 23638	3
20316	Terminal Clip for Voltage Regulator	3
23375	Terminal Clip for Cut-Out Relay	1
23374	Terminal Clip for Ignition Relay	2
20067	Terminal Clip (Ground)	3
		1



## No. 5661 IGNITION RELAY

Piece Number	NAME OF PART	Quantity Required
5661	<b>IGNITION RELAY</b>	1
24332	Mounting Bracket for Mounting Ignition Relay 5661.....	1
24436	Insulating Bushing for Coil Assembly 11082 and Condenser Assembly 10735.....	6
24333	Stud for Mounting Shell Assembly 11146.....	1
24334	Rod for Mounting Shell Assembly 11085.....	1
11085	<b>Shell Assembly Complete for Governing Coil Assembly 11082 and Condenser Assembly 10735</b> .....	1
	(Includes the next Item)	
26669	Nut for Shell Assembly 11085.....	1
24285	Nut for Mounting Coil Assembly 11085 and Condenser Assembly 10735 and Spring Terminal Assembly 11090.....	10
26586	Lock Washer for Nut 24285.....	2
10735	<b>Condenser Assembly for Relay</b> .....	1
11149	<b>Lead Assembly Complete for connecting Terminal Assembly 11090 to Coil Assembly 11082</b> .....	3
	(Includes the next 3 Items)	
24369	Clip for connecting Lead Assembly 11149 to Terminal Assembly 11090.....	1
11392	<b>Copper Wire Assembly for Lead Assembly 11149</b> .....	1
24461	Sleeve for Lead Assembly 11149 (Not shown in Illustration) .....	1
11146	<b>Shell Assembly Complete for Mounting Spring Terminal Assembly 11090</b> .....	1
	(Includes the next Item)	
26669	Nut for Shell Assembly 11146.....	1
24346	Gasket for Mounting Plate 24390.....	2
24390	Mounting Plate for Shell Assemblies 11085 and 11146 .....	2
11090	<b>Spring Terminal Assembly for connecting Relay</b> .....	3
24142	Insulating Bushing for Spring Terminal Assembly 11090 .....	3
24359	Insulating Washer for Spring Terminal Assembly 11090 .....	3
24363	Plain Washer for Spring Terminal Assembly 11090 .....	3
24285	Nut for Spring Terminal Assembly 11090.....	6
11084	<b>Contact Spring Assembly for Relay</b> .....	1
11395	<b>Armature Assembly Complete for Operating Contact Spring Assembly 11084</b> .....	1
24303	Pin for Mounting Armature Assembly 11395.....	1
11136	<b>Bracket Assembly for Mounting Spring Assembly 11084</b> .....	1
11082	<b>Coil Assembly for Relay</b> .....	1
11087	<b>Adjusting Screw Assembly for Coil Assembly 11082</b> .....	1
20953	Terminal Clip for Ignition Relay 5661.....	1



No. 5677 IGNITION RELAY

## No. 5677 IGNITION RELAY

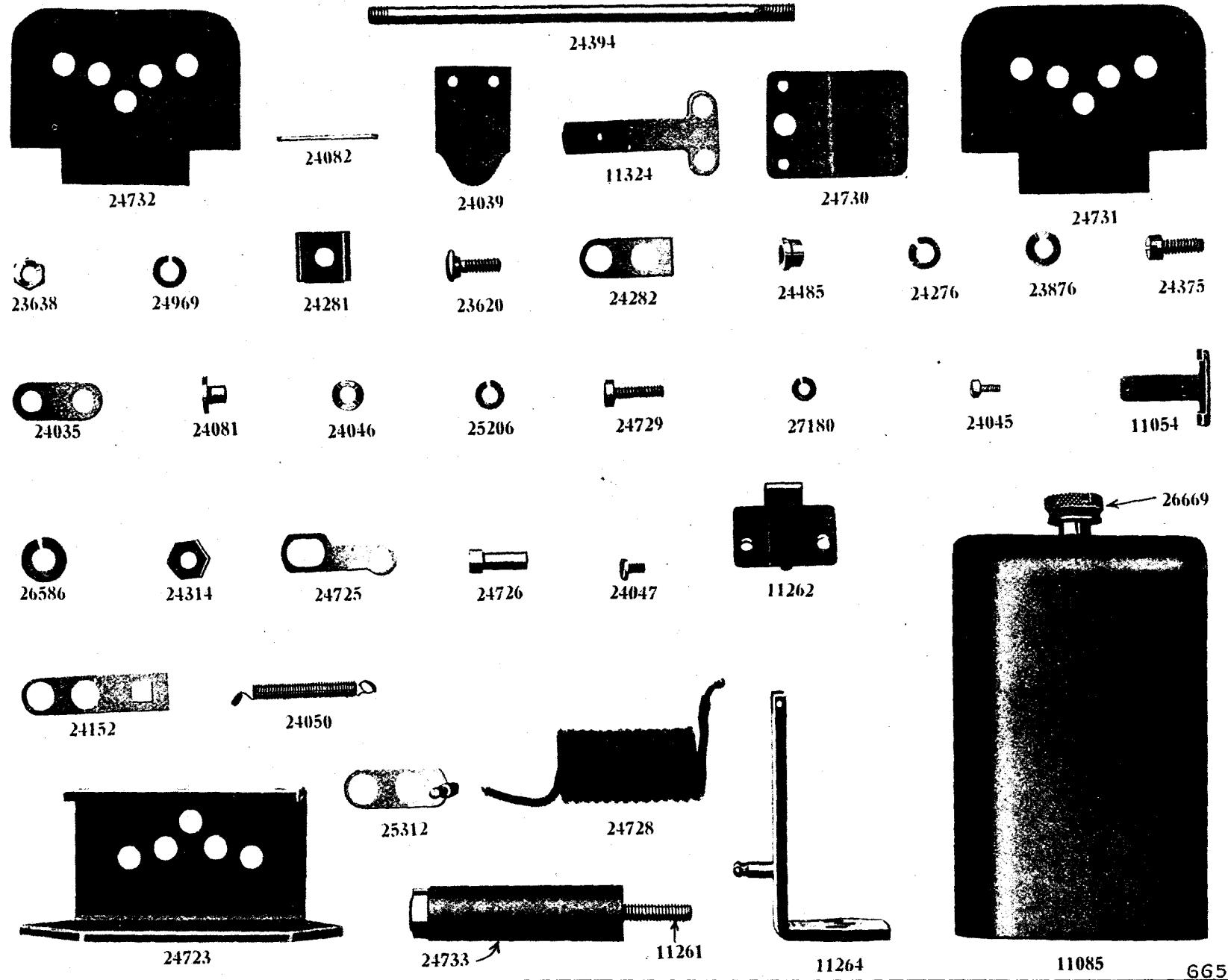
Piece Number	NAME OF PART	Quantity Required
5677	<b>IGNITION RELAY COMPLETE.....</b>	1
11084	Contact Spring Assembly.....	1
24299	Screw for attaching Contact Spring Assembly 11084 .....	2
11395	<b>Armature Assembly .....</b>	1
24303	Pin for attaching Armature Assembly 11395.....	1
11136	<b>Bracket Assembly for Contact Spring Assembly 11084 .....</b>	1
11082	<b>Coil Assembly .....</b> (Includes the next Item)	1
11087	<b>Adjusting Screw Assembly for Coil Assembly 11082 .....</b>	1
11085	<b>Shell Assembly Complete (Long).....</b> (Includes the next Item)	1
26669	Nut for Shell Assembly 11085.....	1
24389	Plain Washer for retaining Nut 26669.....	1
24285	Nut for retaining Spring Terminal Assembly 11090 .....	6
24363	Plain Washer for Nut 24285.....	3
11090	<b>Spring Terminal Assembly for Shell Assembly 11446 .....</b>	3
24142	Insulating Bushing for Spring Terminal Assembly 11090 .....	3
24359	Insulating Washer for Spring Terminal Assembly 11090 .....	3
11149	<b>Lead Assembly for Connecting Spring Terminal Assembly 11090 to Coil Assembly 11082 and Condenser Assembly 10735 (Not shown in Illustration).....</b>	3
11495	<b>Shell Assembly .....</b> (Includes the next Item)	1
26669	Nut for Shell Assembly 11495.....	1
24333	Stud for retaining Shell Assembly 11446.....	1
24334	Rod for retaining Shell Assembly 11085.....	1
24390	Mounting Disc for Shell Assemblies 11446 and 11085 .....	2
24346	Gasket for Mounting Disc 24390.....	2
24436	Insulating Bushing for Coil Assembly 11082 and Condenser Assembly 10735 (Not shown in Illustration).....	6
24285	Nut for retaining Coil Assembly 11082 and Condenser Assembly 10735.....	4
26586	Lock Washer for Nut 24285.....	2
25226	Bracket for attaching Relay Assembly 5677.....	1
10735	<b>Condenser Assembly .....</b>	1
24270	Wire for connecting Terminals on Coil Assembly 11082 and Terminals on Condenser Assembly 10735 (.19-.32" long) (Not shown in Illustration).....	1
24964	Wire for connecting Terminals on Coil Assembly 11082 and Terminals on Condenser Assembly 10735 (.759" long) (Not shown in Illustration).....	1
24962	Wire for connecting Terminals on Coil Assembly 11082 and Terminals on Condenser Assembly 10735 (2 1/16" long) (Not shown in Illustration).....	1
24271	Wire for connecting Terminals on Coil Assembly 11082 and Terminals on Condenser Assembly 10735 (1 1/16" long) (Not shown in Illustration).....	1
24278	Sleeving for Wire 24962 (Not shown in Illustration) .....	1

25206	27180	23699	26586	23374	(24261)	23452
T	24045	23553	24321	24324	24325	24322
O	24261	24213	24319	24082	23450	11078
O	24259	24235	11076	24286	24328	13001
O	24039	11301	23761	24268	24316	235

No. 5692 CIRCUIT BREAKER

Piece Number	NAME OF PART	Quantity Required
5692	CIRCUIT BREAKER COMPLETE.....	1
23761	Mounting Bracket for mounting Circuit Breaker.....	1
24316	Bracket for mounting Terminal Clip Assembly 11078 .....	1
11078	Terminal Clip Assembly for connecting Coil Assembly 13001.....	1
24319	Insulator for Terminal Clip Assembly 11078.....	1
24321	Screw for mounting Terminal Clip Assembly 11078 .....	2
13001	Coil Assembly for Circuit Breaker.....	1
24314	Nut for mounting Coil Assembly 13001.....	1
26586	Washer for Nut 24314.....	1
24039	Armature for operating Stop Assembly 11301.....	1
11301	Stop Assembly for operating Contact Arm Assembly 11076.....	1
24328	Stop for operating Contact with Fibre Bumper (Not shown in Illustration) .....	1
24330	Stud for Stop 24328 (Not shown in Illustration) .....	2
24050	Spring for operating Armature 24039 .....	2
24045	Screw for mounting Stop Assembly 11301.....	2
27180	Washer for Screw 24045.....	1
24082	Pin for mounting Armature 24039.....	1
11076	Contact Assembly.....	1
11438	Contact Assembly (Old Style) With Fibre Bumper (Not shown in Illustration) .....	2
24213	Insulator under Contact Assembly 11076.....	2
24325	Screw for mounting Contact Assembly 11076 (Long) .....	2
24324	Screw for mounting Contact Assembly 11076 (Short) .....	2
24322	Insulating Bushing for Screw 24324.....	2
24323	Insulating Bushing for Screw 24325.....	4
25206	Lock Washer for Screws 24324 and 24325.....	4
24046	Plain Washer for Screws 24324 and 24325 (Not shown in Illustration) .....	4
24261	Insulating Washer for Screws 24324 and 24325 .....	1
24259	Connector for connecting Oil Assembly 13001 to Terminal Plate 24286 .....	2
24286	Terminal Plate for connecting Circuit Breaker .....	2
23553	Screw for retaining Clip 23450.....	2
23450	Clip for retaining Terminal Clips.....	2
23452	Nut for Screw 23553.....	2
23699	Lock Washer for Nut 23452.....	2
24235	Insulator for Connector 24259.....	1
24268	Pin for locating Mounting Bracket 23761 and Bracket 24316.....	1
23374	Terminal Clip for Circuit Breaker 5692.....	2

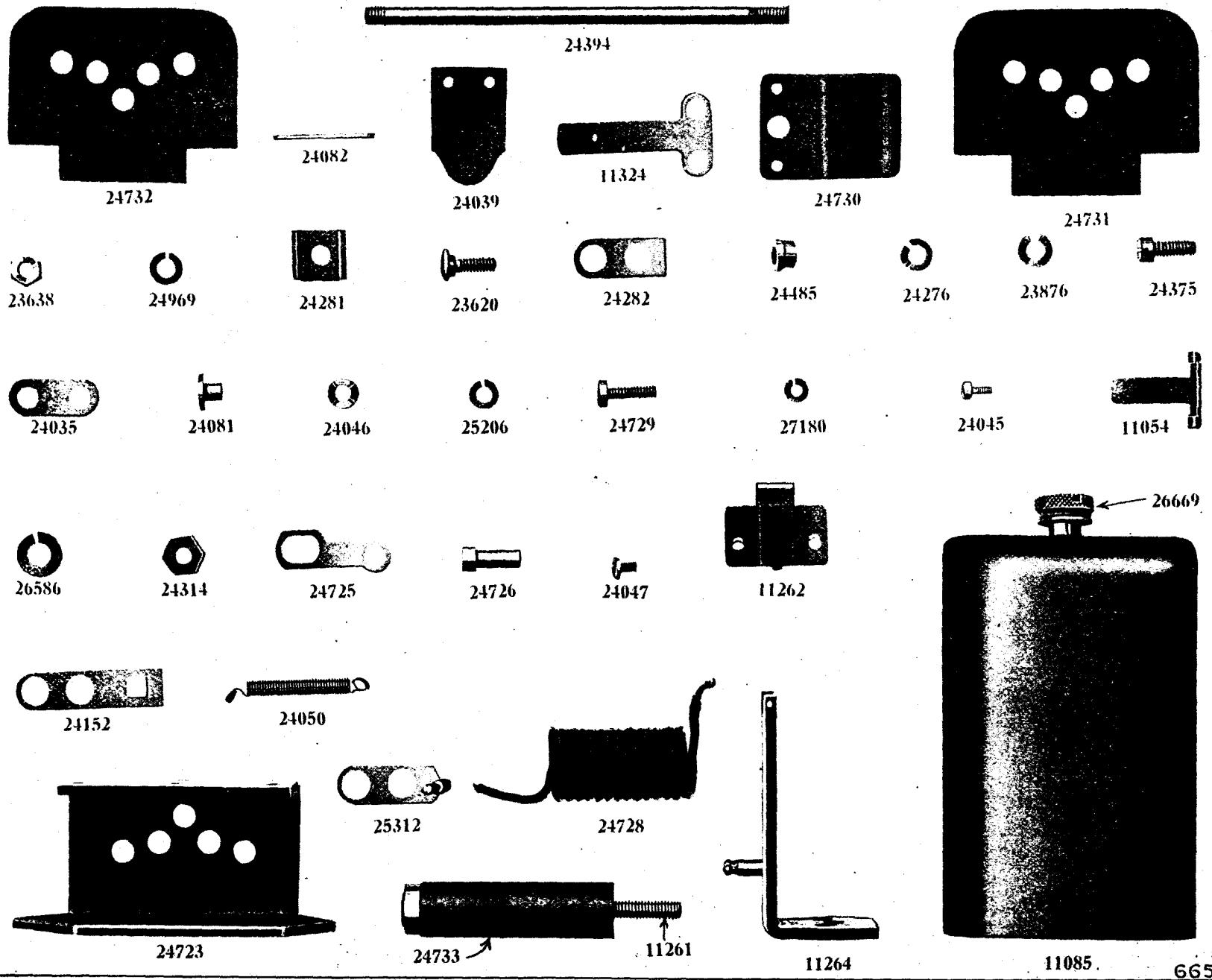
No. 5695 CIRCUIT BREAKER



## No. 5695 CIRCUIT BREAKER

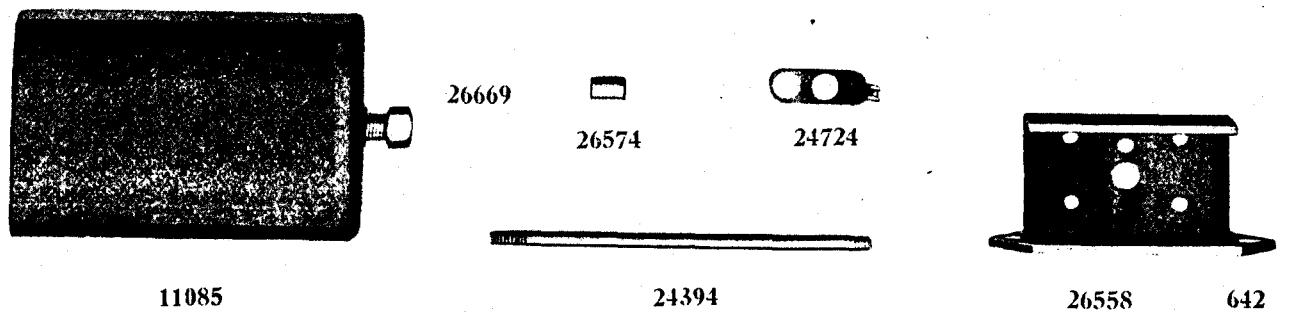
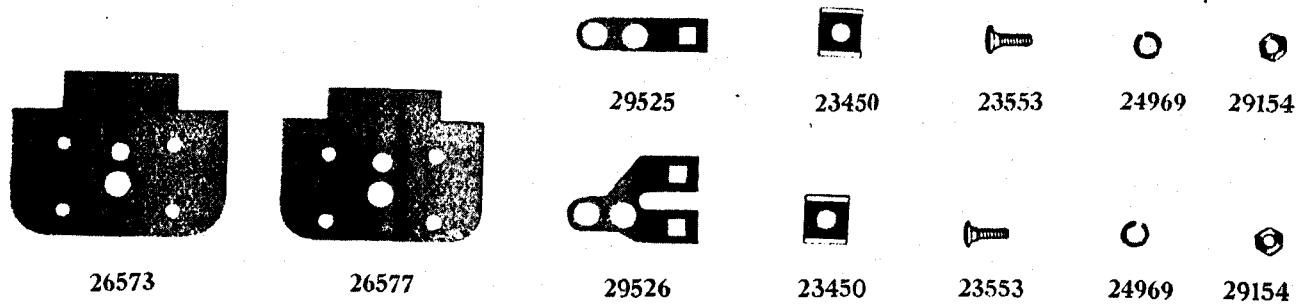
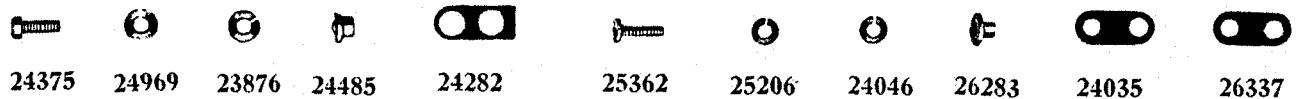
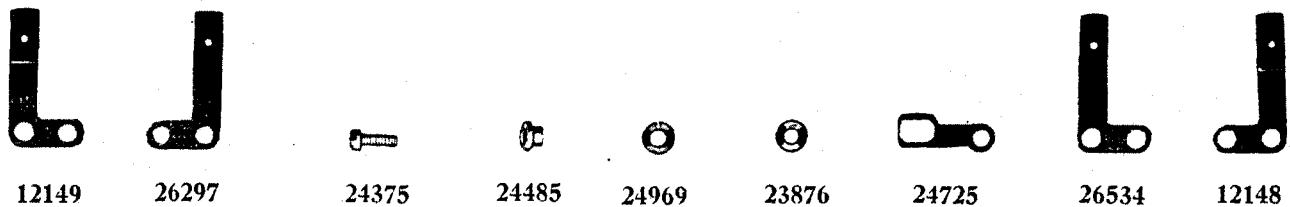
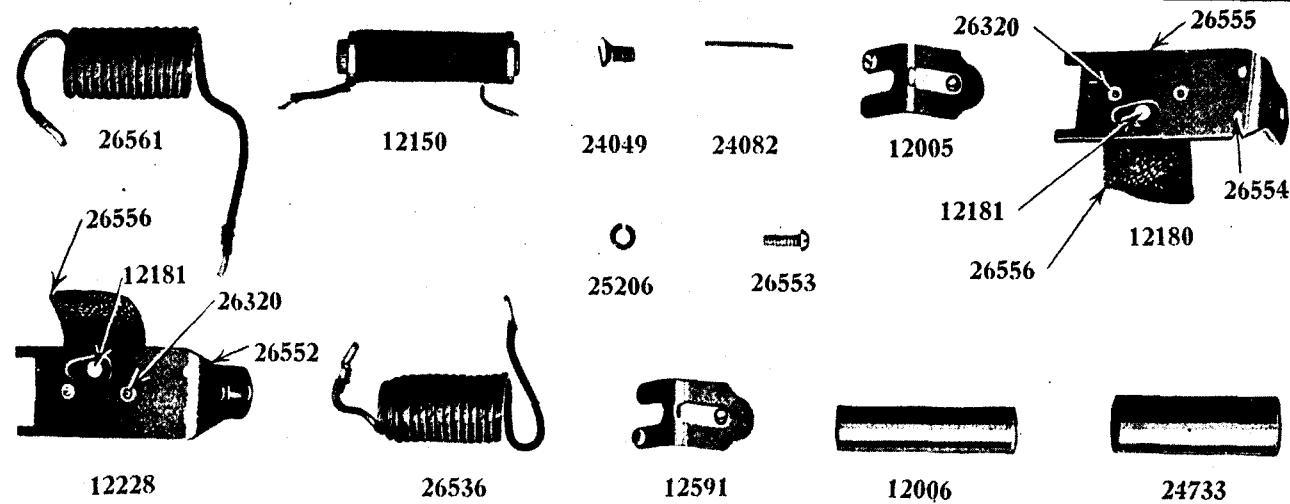
Piece Number	NAME OF PART	Quantity Required
5695	CIRCUIT BREAKER COMPLETE	1
11085	Shell Assembly Complete..... (Includes the next 2 Items)	1
26669	Nut for Shell Assembly 11085.....	1
24389	Plain Washer for Nut 26669 (Not shown in Illustration).....	1
11324	Contact Spring Assembly (Upper Contact).....	2
11054	Stop Assembly for Operating Contact Spring Assembly 11324.....	2
11262	Terminal Assembly (Lower Contact).....	1
24039	Armature for Operating Stop Assembly 11054.....	2
11261	Core Assembly for Coils 24728 and 25580.....	2
24733	Insulating Sleeve for Coils 24728 and 25580.....	2
11264	Bracket Assembly for Coil Assembly 11261 and Contact Spring Assembly 11324.....	2
24723	Bracket for Bracket Assembly 11264.....	1
25312	Terminal Clip under Center Terminal for connecting Coils 24728 and 25580.....	1
23876	Plain Washer for Screw 24375.....	6
20393	Lock Washer for Screw 24375.....	6
24485	Insulating Bushing for Screw 24375.....	6
24282	Insulator for Terminal Post Assembly 11135.....	3
24375	Screw for attaching Terminal Post Assembly 11135 .....	6
24276	Lock Washer for Screw 24375.....	6
24152	Base Plate for connecting Circuit Breaker .....	1
23620	Screw for retaining Terminal Clamp 24281 .....	1
23638	Nut for Screw 23620 .....	1
20393	Lock Washer for Nut 23638.....	1
24281	Terminal Clamp for retaining Terminal Clip 23375 .....	1
24314	Nut for retaining Core Assembly 11261.....	4
26586	Lock Washer for Nut 24314.....	2
24729	Screw for retaining Contact Spring Assembly 11324 .....	4
25206	Lock Washer for Screw 24729.....	4
24046	Plain Washer for Screw 24729.....	4
24081	Insulating Bushing for Screw 24729.....	4
24725	Terminal Plate for connecting Terminal Assembly 11135 and Contact Spring Assem- bly 11324 .....	2
24732	Mounting Plate for Shell Assembly 11085 (Large) .....	1
24731	Mounting Plate for Shell Assembly 11085 (Small) .....	1
24726	Insulating Bushing for Coils 24728 and 25580.....	2
24035	Insulating Plate for Contact Spring Assembly 11324 .....	4
24730	Insulator for Terminal Assembly 11262.....	2
25580	Coil for Right Hand Relay (Not shown in Illustration) .....	1
24728	Coil for Left Hand Relay.....	1
24050	Spring for Operating Armature 24039.....	4
24082	Pin for retaining Armature 24039.....	2
24394	Pin for retaining Shell Assembly 11085.....	1
24047	Screw for attaching Terminal Assembly 11262.....	1
24045	Screw for attaching Stop Assembly 11054.....	2
27180	Lock Washer for Screw 24045.....	4
23375	Terminal Clip for connecting Circuit Breaker (Not shown in Illustration) .....	3

No. 5696 CIRCUIT BREAKER



## No. 5696 CIRCUIT BREAKER

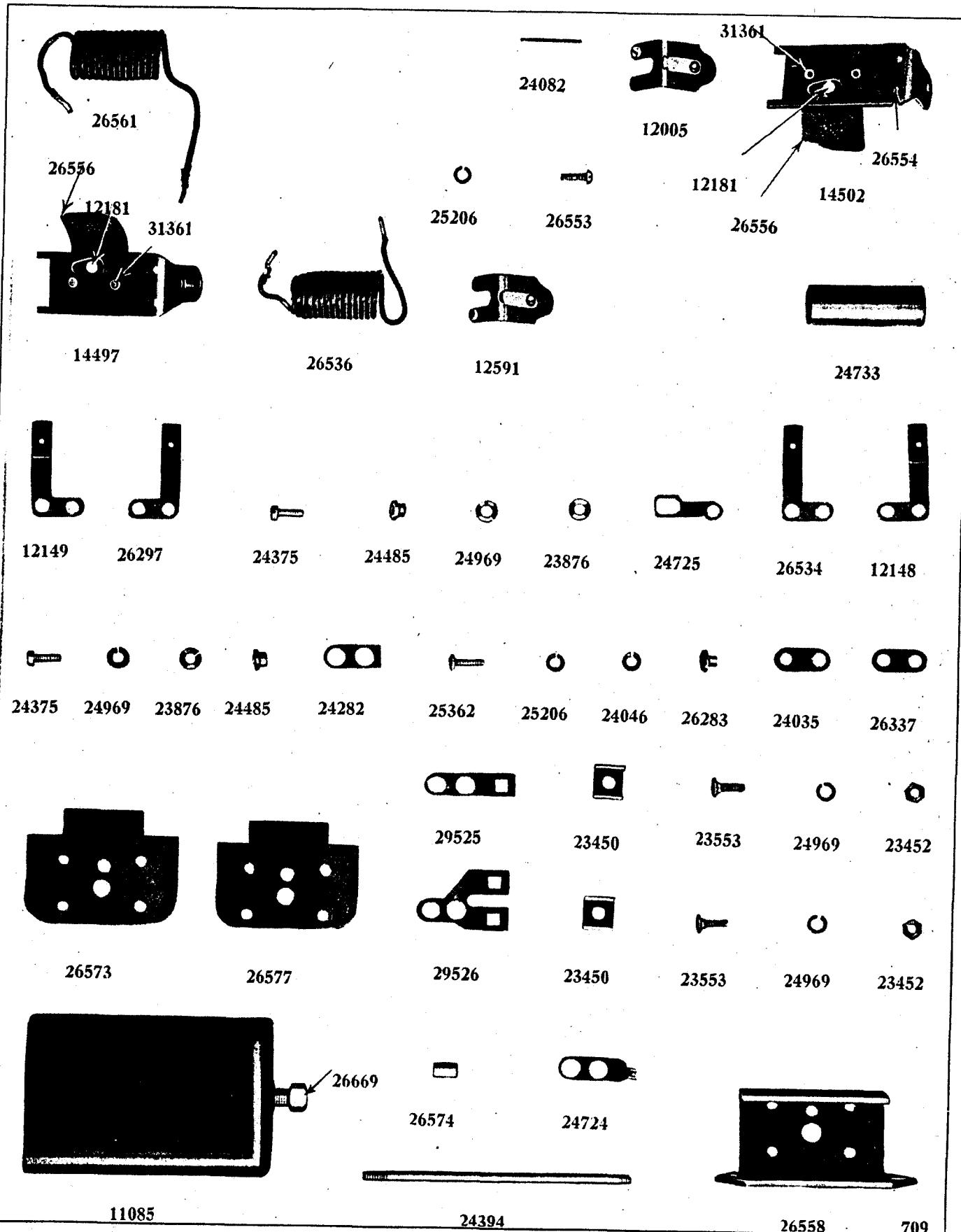
Piece Number	NAME OF PART	Quantity Required
5696	CIRCUIT BREAKER COMPLETE	1
11085	Shell Assembly Complete (Includes the next 2 Items)	1
26669	Nut for retaining Shell Assembly 11085	1
24389	Plain Washer for Nut 26669 (Not shown in Illustration)	1
11324	Contact Spring Assembly (Upper Contact)	1
11264	Bracket Assembly for Armature 24039 and Contact Spring Assembly 11324	1
11054	Stop Assembly Complete for Operating Contact Spring Assembly 11324	1
11262	Terminal Assembly (Lower Contact)	1
11261	Core Assembly for Coil 24728	1
24723	Bracket for Circuit Breaker	1
24724	Terminal for connecting Coil 24728 and Terminal Post Assembly 11135 (Not shown in Illustration)	1
24375	Screw for retaining Terminal Post Assembly 11135	3
20393	Lock Washer for Screw 24375	3
23876	Plain Washer for Screw 24375	3
24485	Insulating Bushing for Screw 24375	3
24282	Insulator for Terminal Post Assembly 11135	2
24152	Base Plate for connecting Circuit Breaker	1
23620	Screw for retaining Terminal Clip 24281	1
23638	Nut for Screw 23620	1
24276	Lock Washer for Nut 23638	1
24281	Terminal Clamp for retaining Terminal Clip 23375	1
24394	Pin for retaining Shell Assembly 11085	1
24728	Coil for Circuit Breaker 5696	1
24314	Nut for retaining Core Assembly 11261	2
26586	Lock Washer for Nut 24314	1
24050	Spring for Operating Contact Spring Assembly 11324	2
24039	Armature for Operating Stop Assembly 11324	1
24082	Pin for attaching Armature 24039	1
24045	Screw for retaining Stop Assembly 11054	2
27180	Lock Washer for Screw 24045	2
24729	Screw for retaining Contact Spring Assembly 11324	2
25206	Lock Washr for Screw 24729	2
24046	Plain Washer for Screw 24729	2
24081	Insulating Bushing for Screw 24729	2
24726	Insulating Bushing for Coil 24728	2
24732	Mounting Plate for Shell Assembly 11085 (Large)	1
24731	Mounting Plate for Shell Assembly 11085 (Small)	1
24733	Insulating Sleeve for Coil 24728	1
24035	Insulating Plate for Contact Spring Assembly 11324	2
24730	Insulator for Terminal Assembly 11262	1
24047	Screw for retaining Terminal Assembly 11262	2
24375	Screw for retaining Terminal Plate 24725	1
24725	Terminal Plate for connecting Contact Spring Assembly 11324 and Terminal Post Assembly 11135	1
20393	Plain Washer for Screw 24375	1
24485	Insulating Bushing for Screw 24375	1
23876	Plain Washer for Screw 24375	1
23375	Terminal Clip for connecting Circuit Breaker 5696 (Not shown in Illustration)	2



## 5705 CIRCUIT BREAKER

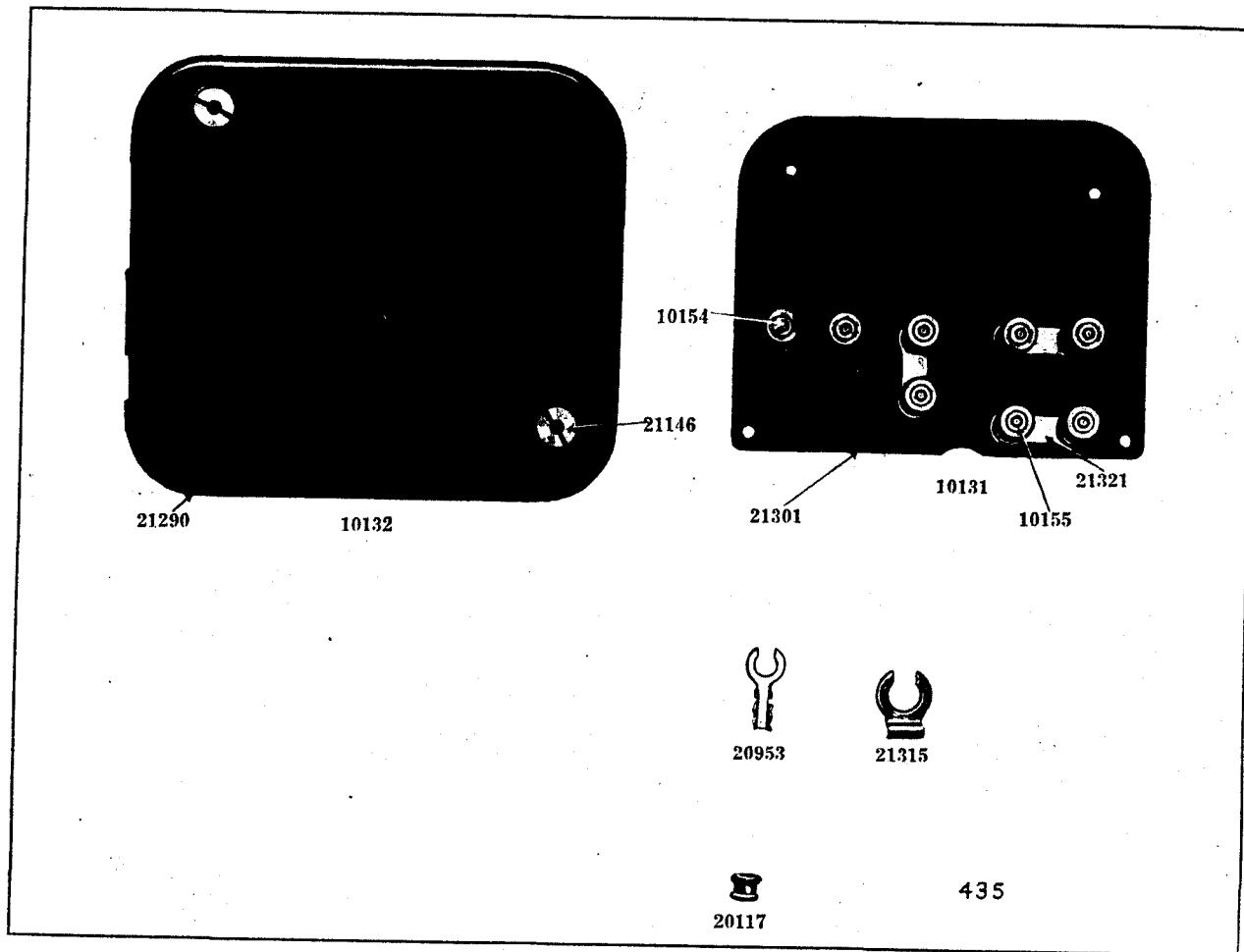
Note: No. 5705 Circuit Breaker superseded by No. 5742 Circuit Breaker. When ordering a complete new unit, order No. 5742.

Piece Number	NAME OF PART	Quantity Required
<b>5705</b>	<b>CIRCUIT BREAKER COMPLETE.....</b>	1
<b>26558</b>	Bracket for Mounting Assembly.....	1
<b>24394</b>	Pin for retaining Shell Assembly 11085.....	1
<b>29526</b>	Terminal Post for Switch (Double).....	1
<b>23553</b>	Screw for retaining Clamp 23450.....	3
<b>23452</b>	Nut for Screw 23553.....	3
<b>20393</b>	Lock Washer for Nut 23452.....	3
<b>23450</b>	Clip for retaining Terminal Clip.....	3
<b>29525</b>	Terminal Post for Switch (Single).....	2
<b>24375</b>	Screw for retaining Terminal Post Assemblies.....	4
<b>20393</b>	Lock Washer for Screw 24375.....	4
<b>23876</b>	Plain Washer for Screw 24375.....	4
<b>24485</b>	Insulating Bushing for Screw 24375.....	4
<b>26574</b>	Insulating Bushing in Bracket 26558 for Coils 26561 and 26536.....	1
<b>26573</b>	Mounting Plate for Shell Assembly 11085 (Large).....	1
<b>26577</b>	Mounting Plate for Shell Assembly 11085 (Small).....	1
<b>24724</b>	Terminal Plate for connecting Coils 26536 and 26561.....	1
<b>24282</b>	Insulator for Terminal Post Assemblies 12186 and 12187 .....	3
<b>11085</b>	<b>Shell Assembly Complete.....</b> (Includes the next 2 Items)	1
<b>26669</b>	Nut for Shell 24387.....	1
<b>24389</b>	Plain Washer for Nut 26669.....	1
<b>26536</b>	Coil for Vibrating Relay.....	1
<b>26561</b>	Coil for Lock Out Relay (Outer).....	1
<b>12150</b>	<b>Coil Assembly for Lock Out Relay (Inner).....</b>	1
<b>12006</b>	<b>Core Assembly for Vibrating Relay.....</b>	1
<b>24733</b>	Insulating Sleeve for Core Assembly 12006.....	1
<b>12591</b>	<b>Armature Assembly for Vibrating Relay.....</b>	1
<b>12005</b>	<b>Armature Assembly for Lock Out Relay.....</b>	1
<b>24082</b>	Pin for attaching Armature Assemblies 12005 and 12591.....	2
<b>24049</b>	Screw for retaining Core Assembly 12006 and Coil Assembly 12150.....	2
<b>26297</b>	Spring for operating Armature Assembly 12005 .....	1
<b>26534</b>	Spring for operating Armature Assembly 12591 .....	1
<b>12148</b>	<b>Contact Spring Assembly for Vibrating Relay (Upper Contact).....</b>	1
<b>12149</b>	<b>Contact Spring Assembly for Lock Out Relay (Upper Contact).....</b>	1
<b>24035</b>	Insulating Plate for Contact Spring Assemblies 12148 and 12149 (Thick).....	2
<b>26337</b>	Insulating Plate for Contact Spring Assemblies 12148 and 12149 (Thin).....	2
<b>24725</b>	Terminal Plate for connecting Terminal Post Assemblies 12186 and 12187 to Contact Spring Assemblies 12148 and 12149.....	2
<b>24375</b>	Screw for retaining Terminal Plate 24725.....	2
<b>20393</b>	Lock Washer for Screw 24375.....	2
<b>23876</b>	Plain Washer for Screw 24375.....	2
<b>24485</b>	Insulating Bushing for Screw 24375.....	2
<b>25362</b>	Screw for retaining Contact Spring Assemblies 12148 and 12149.....	4
<b>25206</b>	Lock Washer for Screws 26553 and 25362.....	8
<b>24046</b>	Plain Washer for Screw 25362.....	4
<b>24081</b>	Insulating Bushing for Screw 25362.....	1
<b>26553</b>	Screw for retaining Bracket Assemblies 12180 and 12228 .....	4
<b>12180</b>	<b>Bracket Assembly for Lock Out Relay.....</b> (Includes the next 5 Items)	1
<b>26555</b>	Bracket for Bracket Assembly 12180.....	1
<b>12181</b>	<b>Terminal Assembly (Lower Contact).....</b>	1
<b>26320</b>	Rivet for retaining Terminal Assembly 12181.....	2
<b>26556</b>	Insulator for Terminal Assembly 12181.....	1
<b>26554</b>	Bushing for Bracket 26555.....	1
<b>12228</b>	<b>Bracket Assembly for Vibrating Relay.....</b> (Includes the next 4 Items)	1
<b>26552</b>	Bracket for Bracket Assembly 12228.....	1
<b>12181</b>	<b>Terminal Assembly (Lower Contact).....</b>	1
<b>26556</b>	Insulator for Terminal Assembly 12181.....	1
<b>26320</b>	Rivet for retaining Terminal Assembly 12181.....	2
<b>23374</b>	Terminal Clip for connecting Circuit Breaker (Small) (Not shown in Illustration) .....	2
<b>23375</b>	Terminal Clip for connecting Circuit Breaker (Large) (Not shown in Illustration) .....	2



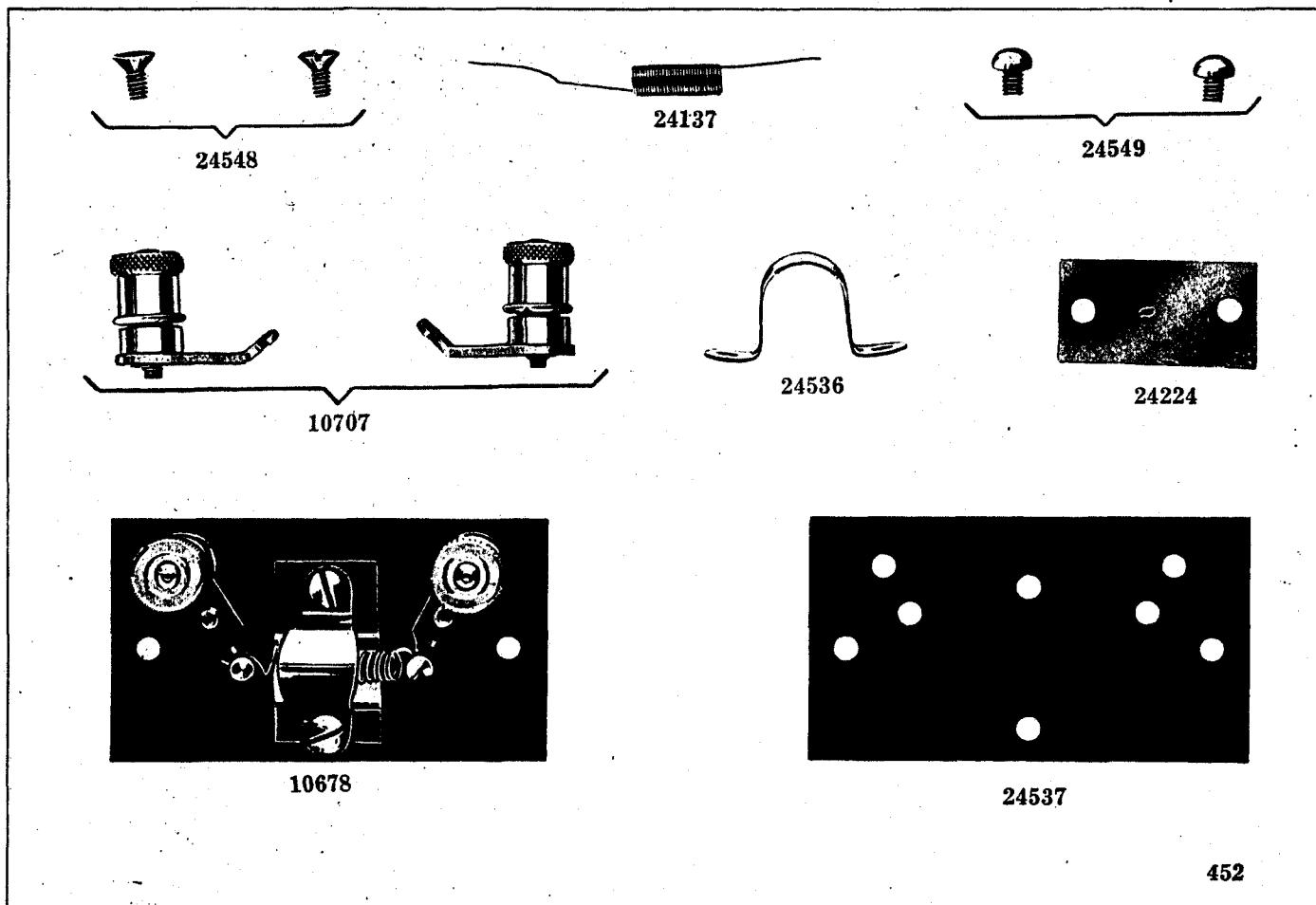
## No. 5742 CIRCUIT BREAKER

Piece Number	NAME OF PART	Quantity Required
5742	<b>CIRCUIT BREAKER CMPLTE.</b>	1
26558	Bracket for mounting Circuit Breaker.....	1
24294	Pin for retaining Shell Assembly 11085.....	1
29525	Terminal Post (Single).....	1
29526	Terminal Post (Double).....	1
23553	Screw for retaining Clamp 23450.....	4
23452	Nut for Screw 23553.....	4
20393	Lock Washer for Nut 23452.....	4
23450	Clamp for retaining Terminal Post.....	4
24375	Screw for retaining Terminal Posts 29525 and 29526.....	4
20393	Lock Washer for Screw 24375.....	4
23876	Plain Washer for Screw 24375.....	4
24485	Insulating Bushing for Screw 24375.....	4
26574	Insulating Bushing in Bracket 26558 for Coils 26561 and 26536.....	1
26573	Mounting Plate for Shell Assembly 11085 (Large) .....	1
26577	Mounting Plate for Shell Assembly 11085 (Small) .....	1
24724	Terminal Plate for connecting Coils 26536 and 26561.....	1
24282	Insulator for Terminal Posts 29525 and 29526 .....	3
11085	<b>Shell Assembly Complete.....</b> (Includes the next 2 Items)	1
26669	Nut for Shell.....	1
24389	Plain Washer for Nut 26669.....	1
26536	Coil for Vibrating Relay.....	1
26561	Coil for Lock Out Relay (Outer).....	1
24733	Insulating Sleeve for Coil 26536.....	1
12591	<b>Armature Assembly for Vibrating Relay.....</b>	1
12005	<b>Armature Assembly for Lock Out Relay.....</b>	1
24082	Pin for attaching Armature Assemblies 12005 and 12591.....	2
26297	Spring for operating Armature Assembly 12005 .....	1
26534	Spring for operating Armature Assembly 12591 .....	1
12148	<b>Contact Spring Assembly for Vibrating Relay (Upper Contact).....</b>	1
12149	<b>Contact Spring Assembly for Lock Out Relay (Upper Contact).....</b>	1
24035	Insulating Plate for Contact Spring Assemblies 12148 and 12149 (Thick).....	2
26337	Insulating Plate for Contact Spring Assemblies 12148 and 12149 (Thin).....	2
24725	Terminal Plate for connecting Terminal Posts 29525 and 29526 to Contact Spring Assemblies 12148 and 12149.....	2
24375	Screw for retaining Terminal Plate 24725.....	2
20393	Lock Washer for Screw 24375.....	2
23876	Plain Washer for Screw 24375.....	2
24485	Insulating Bushing for Screw 24375.....	2
25362	Screw for retaining Contact Spring Assemblies 12148 and 12149.....	4
25206	Lock Washer for Screws 26553 and 25362.....	8
24046	Plain Washer for Screw 25362.....	4
24081	Insulating Bushing for Screw 25362.....	1
26553	Screw for retaining Bracket Assemblies.....	4
14502	<b>Bracket Coil and Contact Assembly.....</b> (Includes the next 3 Items)	1
12181	<b>Terminal Assembly (Lower Contact).....</b>	1
26320	Rivet for retaining Terminal Assembly 12181.....	2
26556	Insulator for Terminal Assembly 12181.....	1
26554	Bushing for Bracket Assembly.....	1
14497	<b>Bracket Core and Contact Assembly.....</b> (Includes the next 3 Items)	1
12181	<b>Terminal Assembly (Lower Contact).....</b>	1
26556	Insulator for Terminal Assembly 12181.....	1
26320	Rivet for retaining Terminal Assembly 12181.....	2
23374	Terminal Clip for connecting Circuit Breaker (Small) (Not shown in illustration).....	2
23375	Terminal Clip for connecting Circuit Breaker (Large) (Not shown in illustration).....	2



### No. 10131 TERMINAL BOARD

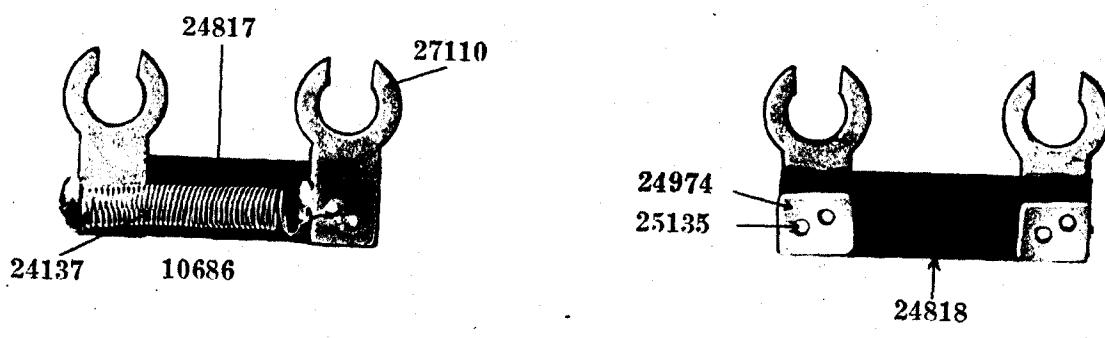
Piece Number	Name of Part	Quantity Required
10131	TERMINAL BOARD ASSEMBLY COMPLETE . . . . . (Includes the next 6 Items)	1
10154	Spring Terminal Assembly (Short) . . . . .	8
21301	Plate for Terminal Board Assembly 10131 . . . . .	1
21321	Connector for Spring Terminal Assembly 10154 . . . . .	3
21314	Screw for retaining Spring Terminal Assembly 10154 (Not shown in Illustration) . . . . .	8
21333	Lock Washer for Screw 21314 (Not shown in Illustration) . . . . .	8
10132	Terminal Board Cover Assembly Complete . . . . . (Includes the next 2 Items)	1
21146	Nut for Cover 21290 . . . . .	2
20114	Lock Washer for Nut 21146 (Not shown in Illustration) . . . . .	2
20953	Terminal Clip (Long) . . . . .	1
21315	Terminal Clip (Short) . . . . .	1
20117	Insulating Bushing for Plate 21301 . . . . .	2



**No. 10678 RESISTANCE UNIT**

Note: No. 10678 Resistance Unit superseded by No. 10680 Resistance Unit. When ordering a complete new unit, order No. 10680.

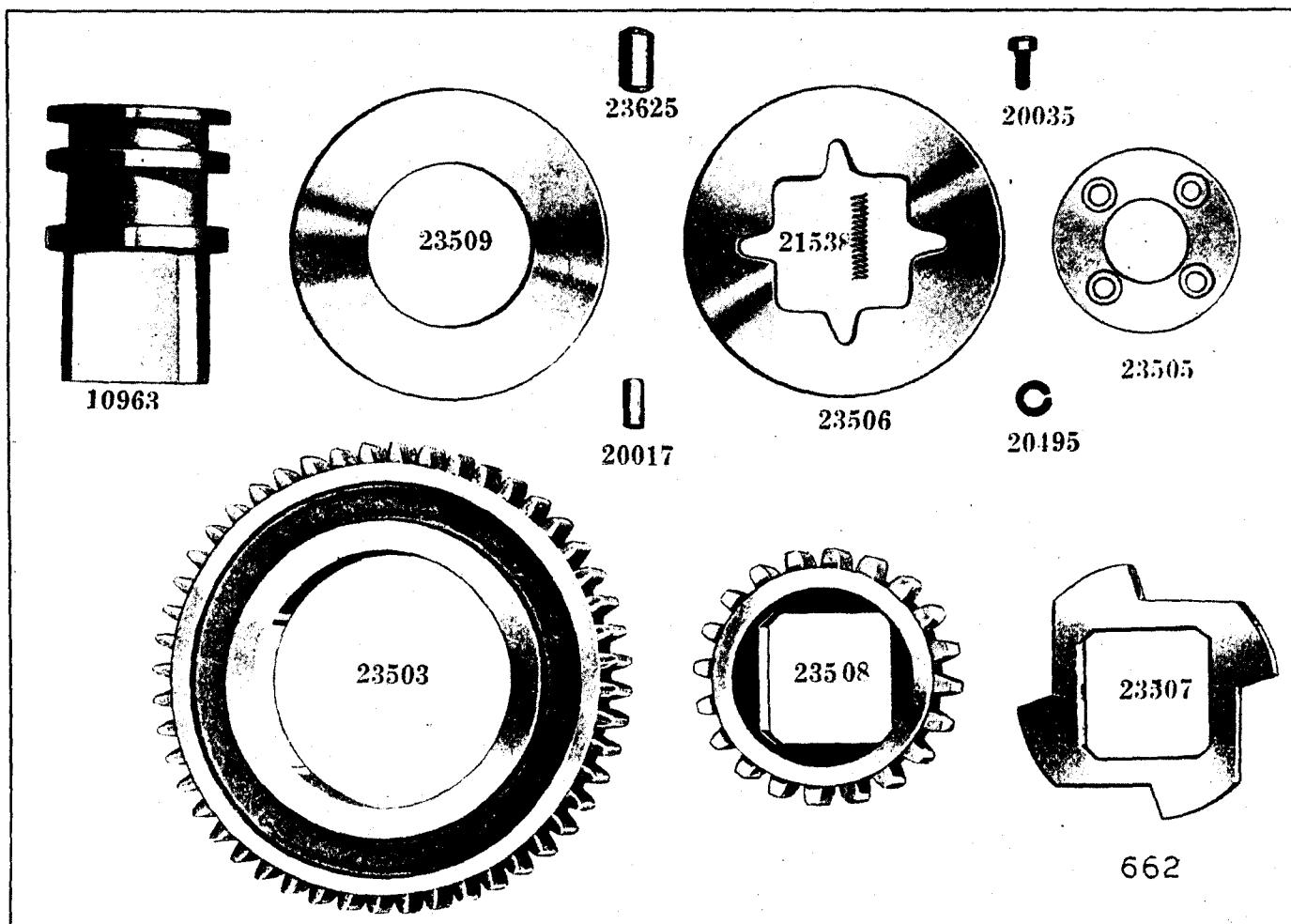
Piece Number	NAME OF PART	Quantity Required
<b>10678</b>	<b>RESISTANCE UNIT ASSEMBLY COMPLETE . . . . .</b>	<b>1</b>
	(Includes the next 7 Items)	
<b>24537</b>	Plate for holding Spring Terminal Assembly 10707 . . . . .	<b>1</b>
<b>10707</b>	<b>Spring Terminal Assembly . . . . .</b>	<b>2</b>
<b>24548</b>	Screw for attaching Spring Terminal Assembly 10707 . . . . .	<b>2</b>
<b>24536</b>	Protector for Coil 24137 . . . . .	<b>1</b>
<b>24549</b>	Screw for retaining Protector 24536 . . . . .	<b>2</b>
<b>24137</b>	Coil for Resistance Unit Assembly 10678 . . . . .	<b>1</b>
<b>24224</b>	Insulator for Coil 24137 . . . . .	<b>1</b>



437

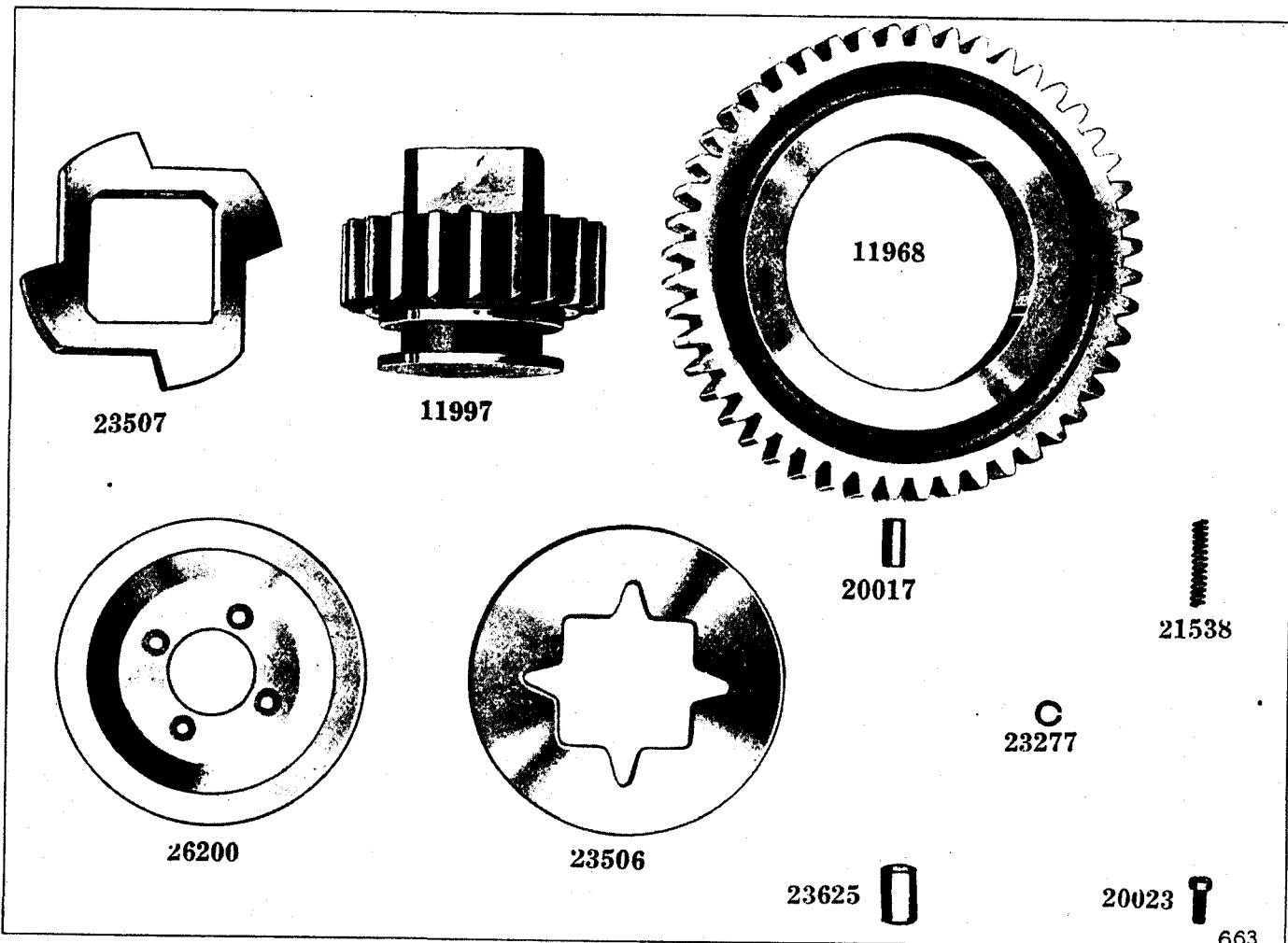
## No. 10686 RESISTANCE UNIT

Piece Number	Name of Part	Quantity Required
10686	RESISTANCE UNIT ASSEMBLY COMPLETE .....	1
(Includes the next 6 Items)		
24974	Plate for mounting Terminal 27110.....	1
27110	Terminal for Resistance Unit Assembly 10686.....	1
25135	Rivet for retaining Terminal 27110.....	2
24137	Coil for Resistance Unit Assembly 10686.....	4
24817	Insulator for Coil 24137 (Mica).....	1
24818	Insulator for Coil 24137 (Black Fibre).....	1



## No. 10726 MOTOR CLUTCH

Piece Number	Name of Part	Quantity Required
10726	MOTOR CLUTCH ASSEMBLY COMPLETE .....	1
(Includes the next 12 Items)		
10963	Sleeve Assembly .....	1
23508	Pinion for Motor Clutch Assembly 10726.....	1
23503	Gear for Motor Clutch Assembly 10726.....	1
23507	Cam for Gear 23503.....	1
23625	Roll for Cam 23507.....	4
23509	Retainer for Roll 23625 (Large Hole) (Inner) .....	1
23506	Retainer for Roll 23625 (Small Hole) (Outer) .....	1
20035	Screw for Retainers 23506 and 23509.....	4
20495	Lock Washer for Screw 20035.....	4
23505	Clamp Washer for Pinion 23508.....	1
20017	Plunger for Roll 23625.....	4
21538	Spring for Plunger 20017.....	4



### No. 11973 MOTOR CLUTCH

Piece Number	Name of Part	Quantity Required
11973	MOTOR CLUTCH ASSEMBLY COMPLETE . . . . . (Includes the next 10 Items)	1
11997	Pinion Assembly . . . . .	1
11968	Gear Assembly . . . . .	1
23506	Retainer for Roll 23625 (Inner) . . . . .	1
26200	Retainer for Roll 23625 (Outer) . . . . .	1
20023	Screw for Retainers 26200 and 23506 . . . . .	1
23277	Lock Washer for Screw 20023 . . . . .	4
23507	Cam for Gear Assembly 11968 . . . . .	4
23625	Roll for Cam 23507 . . . . .	4
20017	Plunger for Roll 23625 . . . . .	4
21538	Spring for Plunger 20017 . . . . .	4