

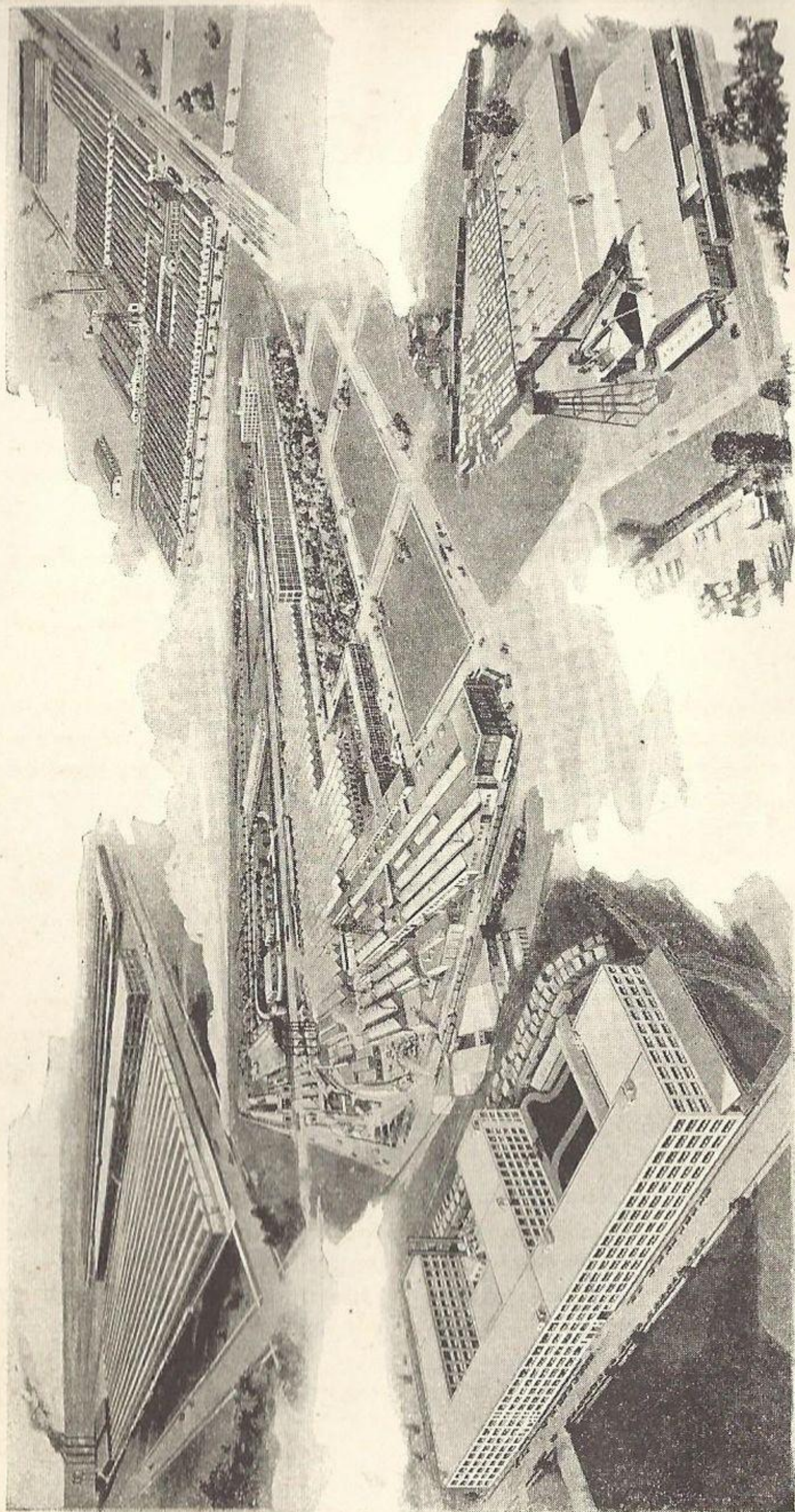
NASH TWIN-IGNITION EIGHT

Information for the Owner



"400" SERIES
BOOK 90-A

The Nash Motors Company
Kenosha, Wis., U. S. A.



PLANTS MANUFACTURING NASH CARS

INTRODUCTION

ENDURING and enjoyable friendships are not creations of a moment but are the result of conscientious culture. Becoming acquainted is the first step and is naturally followed by increasing respect and high regard as the acquaintance becomes more intimate. We want you to have a friendly feeling for your car.

Become acquainted with how it is built and the way it should be cared for so it will give you the pleasure in using it of which it is capable.

In *preparing* this book for you we have made a conscientious effort to handle the subject in a manner that will enable you to understand thoroughly the construction of your car and how to get the best results from it.

We wish this book to be taken by you as a personal message from us. Your selection of our product is pleasing to us and we appreciate that it places us under obligation to assist you in every possible way in obtaining the results you expect.

A careful reading of this book will be the first step in what we know will prove to be a high regard on your part for the car and the makers. Do not hesitate to consult the dealer regarding any point on which you may wish additional information.

You will find the car to be very substantially constructed, simple in operation, and designed for your convenience in the methods provided for adjustments and lubrication.

We cannot urge you too strongly, *In Your Own Interest*, to follow out with exactness the simple directions given in this book on the care of the car.

The Nash Motors Company covets for each Nash owner the justifiable pride which is possible after having carefully trained the car and refrained from those excesses of speed and inattention which are deleterious to the efficiency of its future service.

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LICENSE INFORMATION AND SPECIFICATIONS

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Number of Cylinders.....	8
Cylinder Bore Diameter.....	3 $\frac{1}{4}$ "
Stroke of Piston.....	4 $\frac{1}{2}$ "
Horsepower Rating (S.A.E.).....	33.8
Weight of 5 Pass. Sedan (Model 490).....	4150 lbs.
Wheelbase (Model 490).....	124"
Road Clearance.....	8 $\frac{1}{4}$ "
Gasoline Tank Capacity.....	19 gals.
Radiator Capacity.....	22 qts.
Engine Crankcase Oil Capacity.....	10 qts.
Tire Size.....	31x6.50
Transmission Oil Capacity.....	3 lbs.
Rear Axle Oil Capacity.....	7 lbs.
Tire Pressure.....	Front 30 lbs. Rear 35 lbs.

Serial Number of car is located on a small plate attached to the frame adjacent to the starting motor. (See Fig. 1.)

Motor Number is located on a small plate attached to the right side of engine next to the starting motor. (See Fig. 1.)

Body Number is located on a plate attached to the corner of the dash under the hood on the right side. (See Fig. 1.)

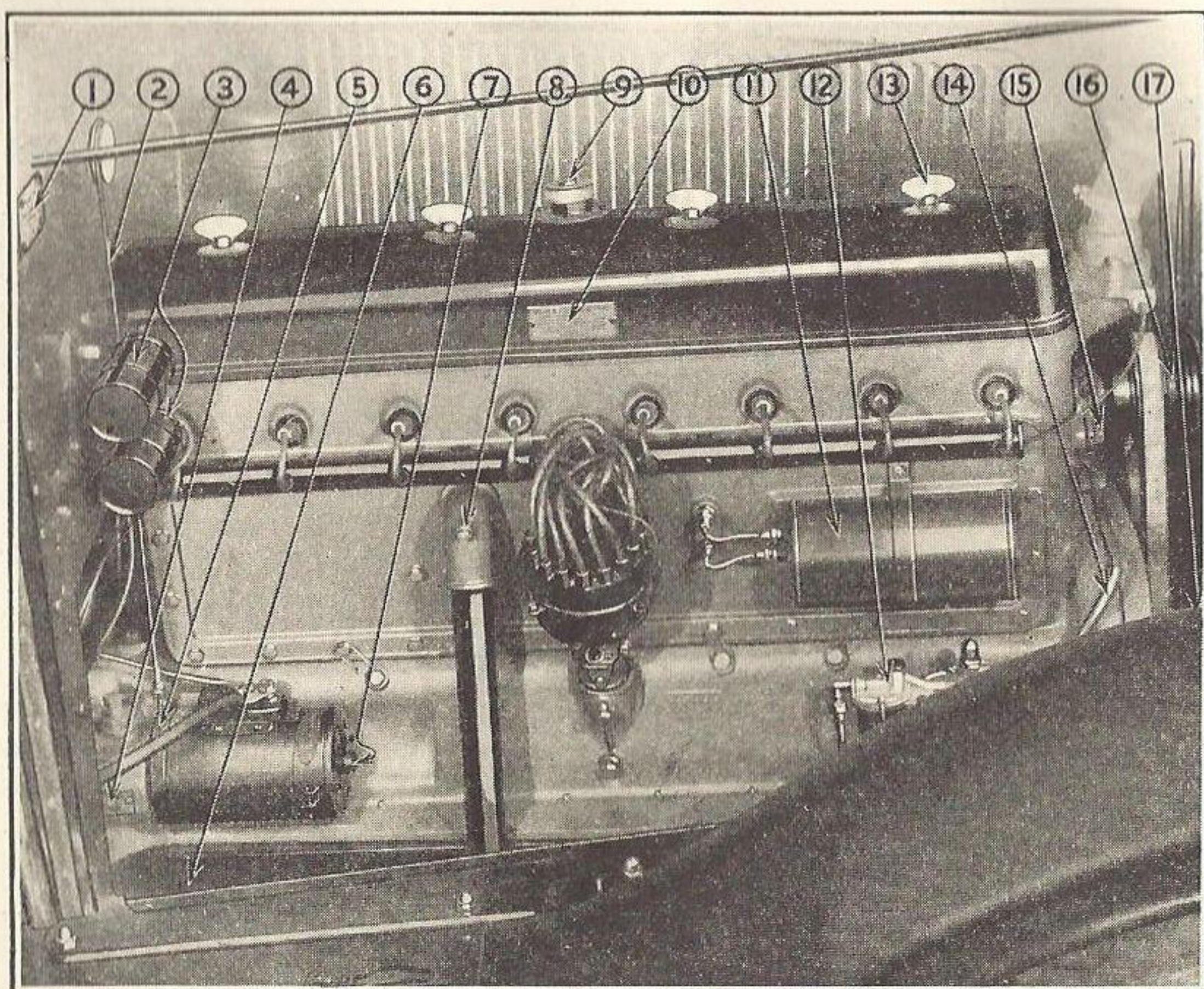


Fig. 1

Engine Compartment—Right Side

1. Body Number Plate
2. Starter Switch Cable
3. Ignition Coils
4. Engine Number Plate
5. Starting Motor Oiler
6. Serial Number Plate
7. Starting Motor Oiler
8. Crankcase Ventilator
9. Oil Filler Cap
10. Valve and Ignition Instruction Plate
11. A. C. Oil Filter
12. A. C. Fuel Pump
13. One of the Valve Cover Thumb Nuts
14. Fuel Pipe to Carbureter
15. Fan Bracket Cap Screws
16. Fan Oil Hole
17. Radiator Drain Cock

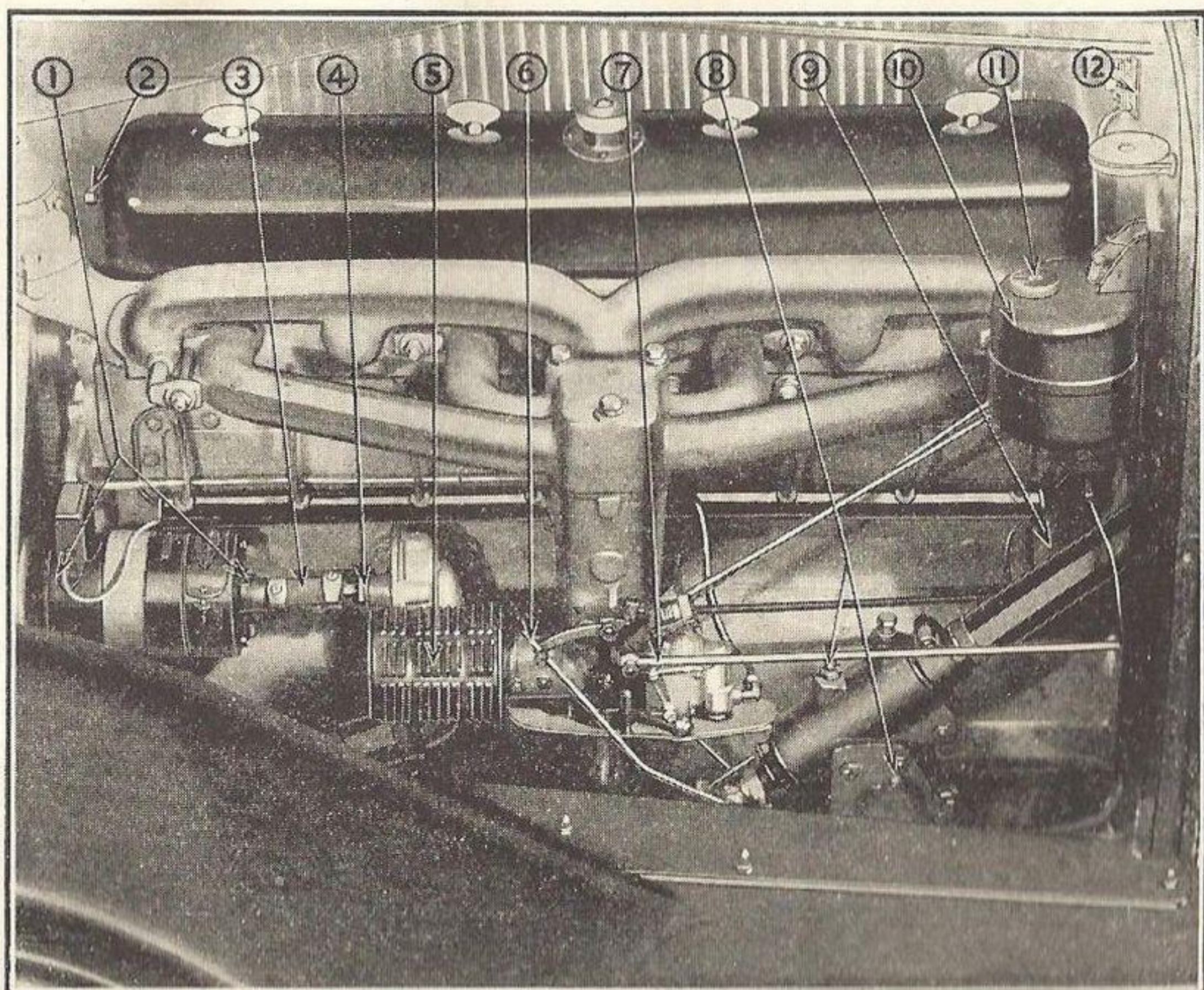


Fig. 2

Engine Compartment—Left Side

1. Generator Oilers
2. Valve Cover Ventilator
3. Generator and Water Pump Coupling
4. Water Pump Packing Nut
5. Air Cleaner
6. Carburetor Hand Throttle Rod
7. Carburetor Foot Throttle Rod
8. Steering Gear Oil Fittings
9. Cylinder Block Drain
10. Bijur Oil Tank
11. Bijur Oil Filler Cap
12. Light Circuit Fuse

The Ignition Switch

The ignition switch is operated by inserting the correct key and turning it to the right as far as it will turn. This is almost a full revolution. When this is done, the ignition is turned on and the transmission is unlocked. Turning the ignition key to the left as far as it will turn, and removing the key, will lock the ignition in the "OFF" position and will also lock the transmission in neutral. The transmission lever may, however, be placed in reverse when the key is removed. This feature is of particular value when parking on an incline. Leaving the car locked in reverse will prevent its coasting down the incline should the hand brake be improperly set when leaving the car.

The Door Locks

In addition to the protection against theft offered by the use of the ignition and the transmission lock, the bodies of enclosed cars can be protected against entry by thieves by locking all of the doors.

To do this all windows and the windshield must be closed.

All doors excepting the right front one are locked shut from the inside of the car by lifting up on the inside door handle. The outside door handles cannot then be turned to open the doors until the inside handles are again moved downward to the unlocked position. After the doors have been locked by moving the inside door handles to the upward position, the right front door can be locked from the outside by inserting the proper key in the lock barrel which is a part of the right front door handle. The key should be turned to the right about one-half of a revolution and then removed. This operation locks the body of the car against entry by unknown persons.

Spare Tire Locks

Substantial locks are also provided to lock to the car the spare tire and rim, or in case of disc and wire or demountable wood wheels, to lock the entire wheel and tire to the car.

The lock is quite simple to operate. Insertion of the key and turning it will permit the entire lock to be removed from the spare tire or wheel. After this is done the wheel or tire and rim can be removed in the usual way by using the wrench provided in the tool carton for this purpose. The nut which is exposed when the lock is removed must also be removed. If the whole lock turns when unlocking the spare tire on wood wheel cars it can be held stationary by pressing inward on it with the fingers.

The tire or wheel is locked in place by simply pushing the spare tire lock into position. This causes a spring operated pin to engage with a groove or hole in part of the tire carrier secured to the car and holds the lock in position thus, preventing removal of the tire as long as the lock is in place.

Spaces are also provided in which you can record the last date on which the battery was inspected by the battery service station and water was added, and also can record the mileage and the last date on which the car was lubricated. It is well to keep these items posted on the Caution Plate, for one is apt to forget just when the car has been serviced, and these notations will be of value to you.

The suggestions concerning the inspection of the oil and oil changing, as well as tire pressure and battery registration and chassis lubrication, are essential to the successful operation of the car, and we suggest that they be followed as closely as possible. The Caution Plate is placed on the left corner post for your convenience and economy, and we recommend that you acquire the habit of using it.

OPERATING INSTRUCTIONS

IN PREPARING this section of the book we are going to assume that you are a successful driver of automobiles and will not need detailed instructions concerning the many things which have probably become a habit with you in driving a car. In case you are a new driver we believe that much better information can be given you by the dealer from whom you purchased your car. It has been our experience that it is much easier for someone familiar with the car to teach a new driver than for a novice to attempt to get all of his instructions from a book. If you are a new driver, your dealer will be very anxious to give you as many detailed lessons in operating the car as you require to become proficient in the art.

There are some things, however, about each individual make of automobile which may not be familiar to the average driver and which we will wish to call to your attention as being peculiar to the Nash car.

Starting the Engine

Before the car can be driven, the engine, of course, must be started. You will find that it starts quite easily, and only one or two trials are necessary in order for you to be confident of easy starting at all times.

The ignition switch must be turned to the right as far as it will turn. This will automatically unlock the transmission and at the same time turn on the ignition switch. Place gear shift lever in neutral.

It is advisable to open the hand throttle about one inch, or, as practice will indicate, open it to a point which will give a reasonable speed to the engine after it has been started.

In cold weather the choke should be pulled out to its limit and the starter engaged. After the starter has turned the engine over for two or three seconds with the choke pulled clear out, the choke should be returned about one-quarter of an inch and the engine should start. As the engine warms up the choke can gradually be returned to the dash.

You will find after starting the car a few times in cold weather that the engine starts just as the choke is being returned the first quarter of an inch. It is essential to easy starting in the winter time that the exact results obtained by this practice be carefully noted and the operation of the choke governed accordingly.

You can realize that it is not possible for us to tell you exactly how long the choke must be held out in starting the engine in cold weather. This depends on the temperature of the weather and also upon the results you have obtained from previous trials in starting the car.

After the engine has been warmed up, or during warm weather, and you wish to start the engine, you will find that the choke must be handled with some precision. We would recommend that you first attempt to start the engine by not manipulating the choke. If it does not start after several revolutions, the choke can then be pulled out and quickly returned to the dash.

Should the failure of the engine to start indicate that you have choked it too much, the engine should be turned over for some few seconds with the throttle closed and the choke pushed in to the dash. After this has been done the engine can be started in the usual way.

Placing the Car in Motion

After the engine has been started, the car can be placed in motion in the usual way. The gear shift is standard, and the operation of the clutch is quite simple and does not need detailed explanation.

You may experience some slight difficulty in shifting the gears quietly when the car is new, but this will in all probability correct itself as you become more familiar with the best manner in which to shift the gears and also as the gears and transmission and clutch bearings are finally worn into their permanent bearing surfaces.

If you are at all bothered with inability to satisfactorily shift the transmission gears, or have any difficulty in starting the engine, or are in any way dissatisfied with the manner in which you can operate the car, we would suggest that you get in touch with the dealer from whom you purchased the car. You will find them most anxious to be of assistance to you.

DRIVING SUGGESTIONS

Applying Parking Brake

The parking, or hand brake lever is inter-connected with the foot brake pedal and operates the four wheel brakes. You will find it easier to get a very secure application of the parking brake by first applying the brakes by depressing the brake pedal and holding it while the hand brake lever is pulled back.

Similarly, the parking brake can be released easily by first bringing pressure on the foot pedal at the same time releasing the hand brake.

Hand Signals

In stopping, the hand signal should not be neglected for the stop light may not work, and plenty of time should be allowed to give notice to the car behind of your intention to stop or turn, as that car may not have brakes as efficient as those on your car.

Watch Instruments

Form the habit of watching the instruments. They are in plain view and glancing at them occasionally will not interfere with your driving. If any one fails to function, stop and determine the cause.

"Riding" Clutch Pedal

The driver's foot should not be allowed to rest on the clutch pedal, except when actually operating the clutch, otherwise slipping may result. "Riding" the clutch pedal can easily prove an expensive habit due to necessity for replacement of burned facings.

Coasting

When coasting, leave the clutch engaged and the ignition on. One will then be in complete control of the car. If the ignition is turned off in coasting with the clutch engaged, the unburned fuel will interfere with the lubrication of the engine and the accumulation of gas in the muffler may explode when the engine starts firing, thus ruining the muffler.

Striking Curbs

Do not allow the tires or wheels to strike curbs or similar obstructions. This will damage tires, cause incorrect wheel alignment resulting in excessive tire wear and bent axles and wheels, giving the tires the wobbling appearance in operation noticeable on so many cars.

Night Driving

Use and adjust lights in accordance with local traffic laws. Refer to Page 53. If bright lights on cars coming toward you affect your vision you may obtain relief by watching your edge of the road rather than looking directly at the lights of the oncoming car.

Steering

Turning the front wheels with the steering wheel when the car is not in motion places considerable strain on all steering parts. It is easier and better results will be obtained by moving the wheels only when the car is in motion. This can be accomplished in parking by anticipating the next move immediately before stopping the car.

Use All Speeds

Three forward speeds are provided and all speeds should be used in placing the car in motion. This will give the car longer life.

Unusual Noises

After driving a short time the driver will quickly sense anything unusual in the operation of the car, or any unusual sounds. Such conditions should be investigated promptly, as the old adage, "A stitch in time saves nine," is particularly applicable to the care of a motor car.

Common Causes of Accident

The driver should become thoroughly familiar with local traffic regulations, and follow them carefully.

Study the rules of the road, particularly on right of way.

Common causes of accidents are:

Carelessness at railroad crossings and street and road intersections. If a train has passed be certain there is none coming from the other direction before crossing.

Excessive speed.

Passing cars on curves and hills where driver is not able to see if another is coming.

Trying to pass cars where there is not sufficient room.

Sudden application of brakes without giving signal to cars in rear.

Making turns without giving proper signal.

Passing street cars on the left.

Remember

It is better to be safe than sorry. Courtesy and respecting the rights of others are the marks of a good sportsman and a good driver.

When Leaving the Car

Pull back hand brake lever.

Do not leave the engine running. To stop the engine turn key in coincidental lock to left and remove. This locks the transmission at the same time. Lock car doors.

If parked at night, turn switch lever to the position where the cowl lamps and the tail lamp will burn.

If on a down grade, turn front wheels into curb.

OPERATION OF LIGHT EQUIPMENT

YOUR car is equipped with two head lights, two side lights, a combination stop and tail lamp, and concealed light for the instrument panel.

In the case of five passenger enclosed Nash cars a dome light is also provided.

Driving Light Switch

The driving lights, which are the head lights, side lights and tail light, are controlled by a conveniently located switch on top of the steering column. The lower lever on the steering column operates the light switch; moving it to the left turns on the two side lights and the tail light. It is recommended that the switch be placed in this position when parking the car at night.

The first movement to the right of the "OFF" position lights the tail light, and the lower beam in the headlights. This is the location that is used when meeting cars on the road at night and also for city driving.

Moving the light switch on to the next position to the right keeps the tail light burning and lights the high or driving beam in the head lights. This is the position in which the switch is placed when you wish to throw a beam of light several hundred feet in front of the car to thoroughly light up the road.

Instrument Panel Light

The instrument board lights are operated by a small lever switch placed above the instrument panel. The use of this light affords an opportunity for the operator of the car to inspect at will the readings of the different gauges on the instrument panel.

Dome Light

The enclosed car dome light is controlled by a small lever switch placed on the right center door post just above the front seat back. Some enclosed models are also wired so that the dome light is lit when the right rear door is opened. This is convenient when rear seat passengers are entering or leaving the car at night.

Stop Light

The stop light is automatic in action. It lights every time the brake pedal is depressed in stopping the car.

CARBURETER HEAT CONTROL

THE carbureter and manifolds on the engine of your car are built so that certain amounts of the hot exhaust gases are deflected around the riser just above the carbureter. The amount of heat which is passed around the carbureter is automatically controlled by the operation of the foot throttle.

An additional control, which is operated by the driver, is provided and takes care of the different amounts of heat that are necessary to correctly heat the carbureter and manifold in different weather temperature conditions. The manual control is located just under the instrument panel.

An improvement in the performance of the car as well as in gasoline mileage is effected by correctly using the manual heat control.

In extremely cold weather the car should always be operated with the heat control lever in the "HOT START" position. As the weather moderates the car should be driven with the heat control lever set in the "RUN" position. In extremely hot weather, it may be advisable to operate the car with the heat control lever set in the "NO HEAT" position.

Your experience with the differences in operation effected by different locations of the heat control lever will guide you in the best place to use it.

Much quicker warm-up of the engine can always be obtained regardless of the weather if the car is operated the first 15 or 20 minutes after starting with the heat control lever in the "HOT START" location. After the car is warmed up, the lever can be moved to the location which seems to give you the best results consistent with the weather.

GASOLINE TANK AND GAUGE

THE gasoline tank is at the rear of the car and holds nineteen gallons of gasoline. Because the filler neck is in one end of the tank it is not possible to put nineteen gallons of gas in it unless the car is setting level. If at the time of filling it is leaning to the right it will be impossible for the gas to reach the upper left hand corner of the tank. The gasoline filler cap is held in place by turning it to the right after it is placed over the filler neck. A gasket is provided to prevent leakage when passing over rough roads.

When replacing the tank cap always be sure it is turned to the right far enough to properly hold it in position.

Gasoline Gauge

The gasoline gauge which is located on the instrument panel of your car records in fractions, the amount of gasoline in the tank. You will find in practice that the gauge shows differently when the car is on the level, driving down hill or up hill. This difference is slight but it is sometimes confusing when one is attempting to judge the amount of gasoline being used.

The gasoline gauge is so adjusted that when it shows "Empty" there is really slightly in excess of one gallon of gas remaining in the tank. This may be called

the reserve supply and may enable one to reach a filling station even though the gauge shows empty. It may also be noted in filling the gasoline tank that the gauge does not immediately reach a height which corresponds to the amount of gasoline placed in the tank. This will, however, correct itself after the car has been operated a very short distance.

GASOLINE GAUGE SERVICE

WHAT little difficulty is encountered with the Gasoline Gauge will probably be restricted to leaks and liquid in the Air Line. If the gauge reads accurately proceed as follows: Disconnect Air Line at the instrument board.

Adjust the instrument so that the Red Liquid sets exactly at the zero mark. If the setting is too high a small quantity of liquid may be removed by absorbing with a toothpick inserted in the brass tube. If the setting is too low, special Telegage Liquid must be obtained from the Nash dealer and a few drops added to bring the reading exactly to zero.

Remove gas tank filler cap. Blow out gauge Air Line with a **TIRE PUMP**. Attach pump hose to front end of air line. It is essential that a good tight connection be obtained. This can only be done by removing the metal connection from the tire pump hose and then slipping the hose securely over the front of the air line. Give 25 to 30 full strokes of the pump. Do not use compressed air, it usually contains moisture which will collect in the air line and render the gas gauge again inoperative.

Reconnect Air Line at dash and check for tight connections between Air Line and Tank Unit. Connections must be tight.

After driving the car not more than five miles the gasoline will be expelled from the pressure chamber and the gauge will record properly.

If the gauge does not operate satisfactorily after carrying out the above instructions there is probably a leak in the air system. The matter should be referred to an authorized Nash Service Station.

CAUTION: Never use any liquid other than that provided by the King-Seeley Corporation and obtainable through a Nash dealer. No other liquid will do.

USING THE HAND CRANK

IT IS rarely necessary to use the hand crank in actually starting the engine of the car, but it is sometimes used in checking the ignition timing. A knowledge of how the crank cover is removed and the crank engaged with the crankshaft of the engine may prove helpful. The starting crank hole cover is held to the radiator in the same manner in which the gasoline tank cap is held on. The

starting crank hole cover is removed by turning it to the left about one-third of a revolution. It can then be pulled forward and off of the radiator.

Fastened to the frame front cross member is a starting crank support which has two machined slots in it through which the driving pin in the end of the starting crank must pass before the pin can engage with the starting crank clutch on the end of the engine crankshaft. Be careful to have the starting crank in the correct position so that the driving pin can pass through these slots, otherwise difficulty will be experienced in entering the crank.

It is best not to attempt to spin the engine with the hand crank. Equally good starting results can be obtained by lifting up on the crank through one-quarter of a revolution. In order to prevent any possibility of back-firing and injury to the operator, it is also advisable to retard the spark when the hand crank is being used.

In replacing the starting crank hole cover be sure that it is turned to the right far enough to securely lock it in position.

ENGINE OIL GAUGE AND OIL CAPACITY

THE useful life of the engine, particularly as it applies to quietness as well as the economy with which the entire car may be operated, depends largely upon the amount of correct attention given to engine lubrication. Failure to observe the few cardinal rules governing correct engine lubrication will surely result in premature wear, excessive noise, and the costly replacement of parts.

So that you may easily check the quantity of oil in the engine and the amount and condition of the oil which is being circulated through the bearings, two gauges are provided.

Oil Pressure Gauge

One gauge is on the instrument panel and records continually the pressure in pounds per square inch of the oil being circulated through the bearings by the oil pump. Inasmuch as the pressure recorded on this gauge is determined by the efficiency of the oil pump and by the viscosity or thickness of the oil, the failure of the gauge to read correctly will indicate one of two conditions.

When driving at speeds in the neighborhood of thirty-five miles per hour, the oil pressure gauge on the instrument panel should show in the neighborhood of thirty pounds pressure. A pressure reading materially less than this at the thirty-five mile an hour car speed indicates that the oil has been reduced in viscosity by dilution or by having been used too long or that some part of the oil circulating system is not functioning correctly. If this should occur, the car should be driven immediately to an Authorized Nash Service Station so that a competent inspection of the various causes of oil pressure failure may be investigated.

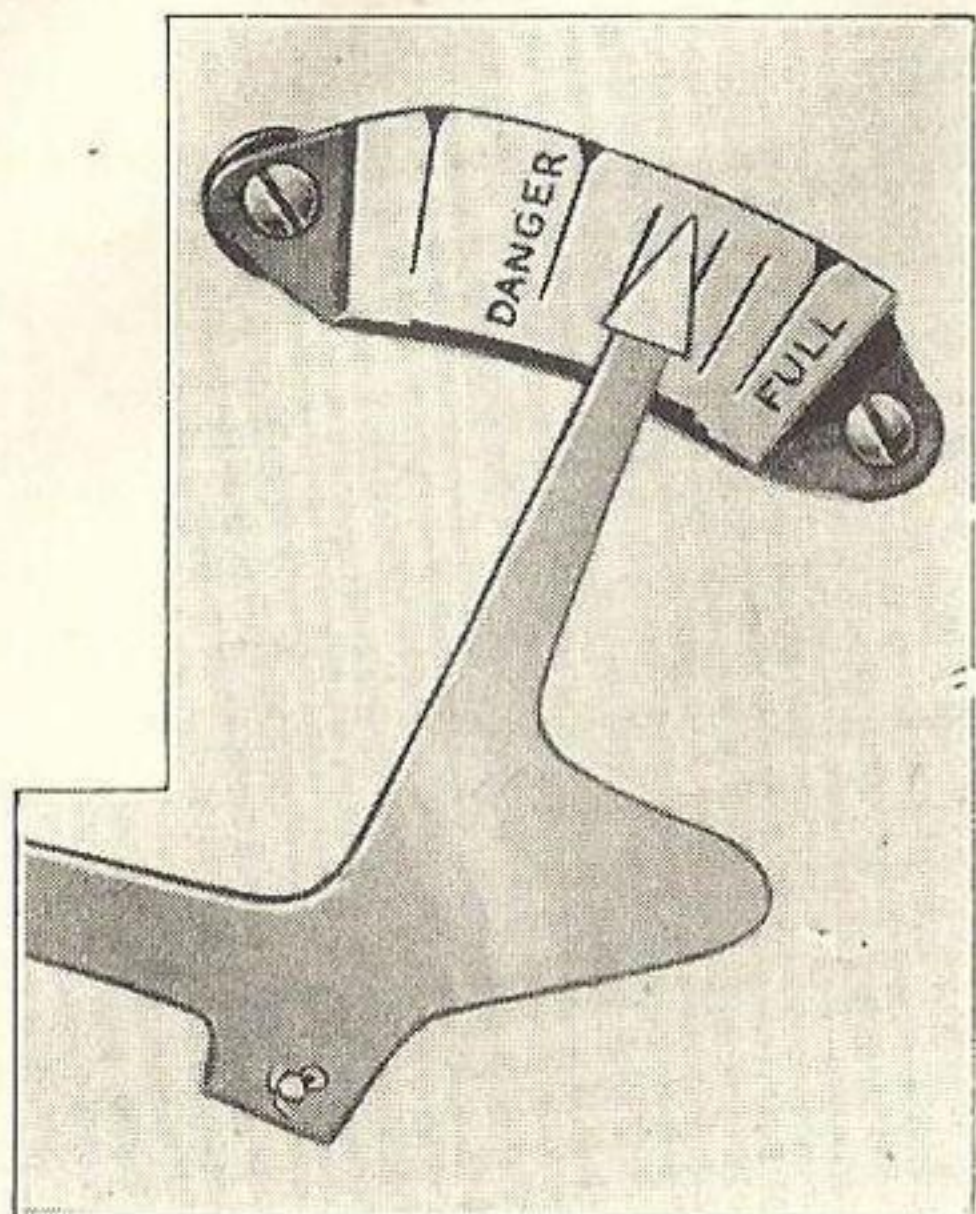


Fig. 3
Oil Level Gauge

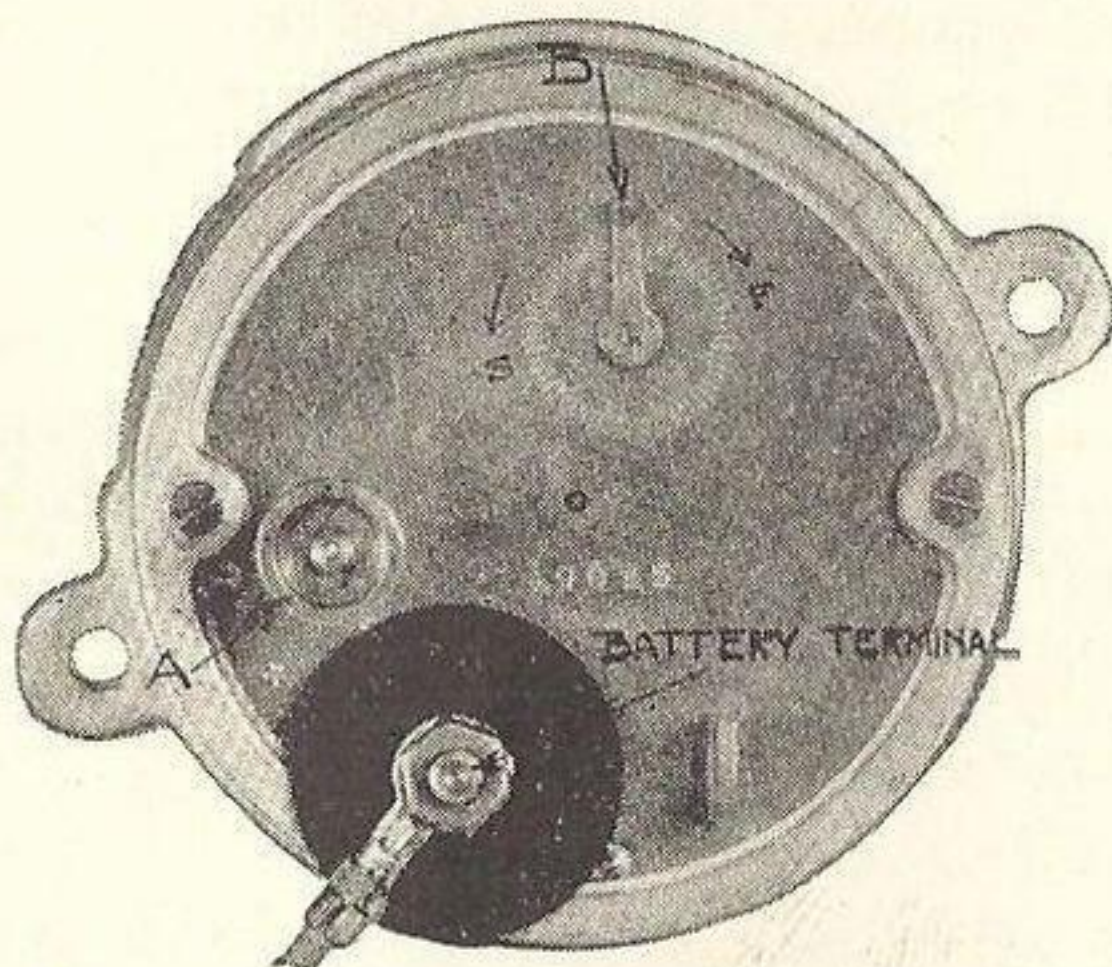


Fig. 4
Electric Clock Adjustments

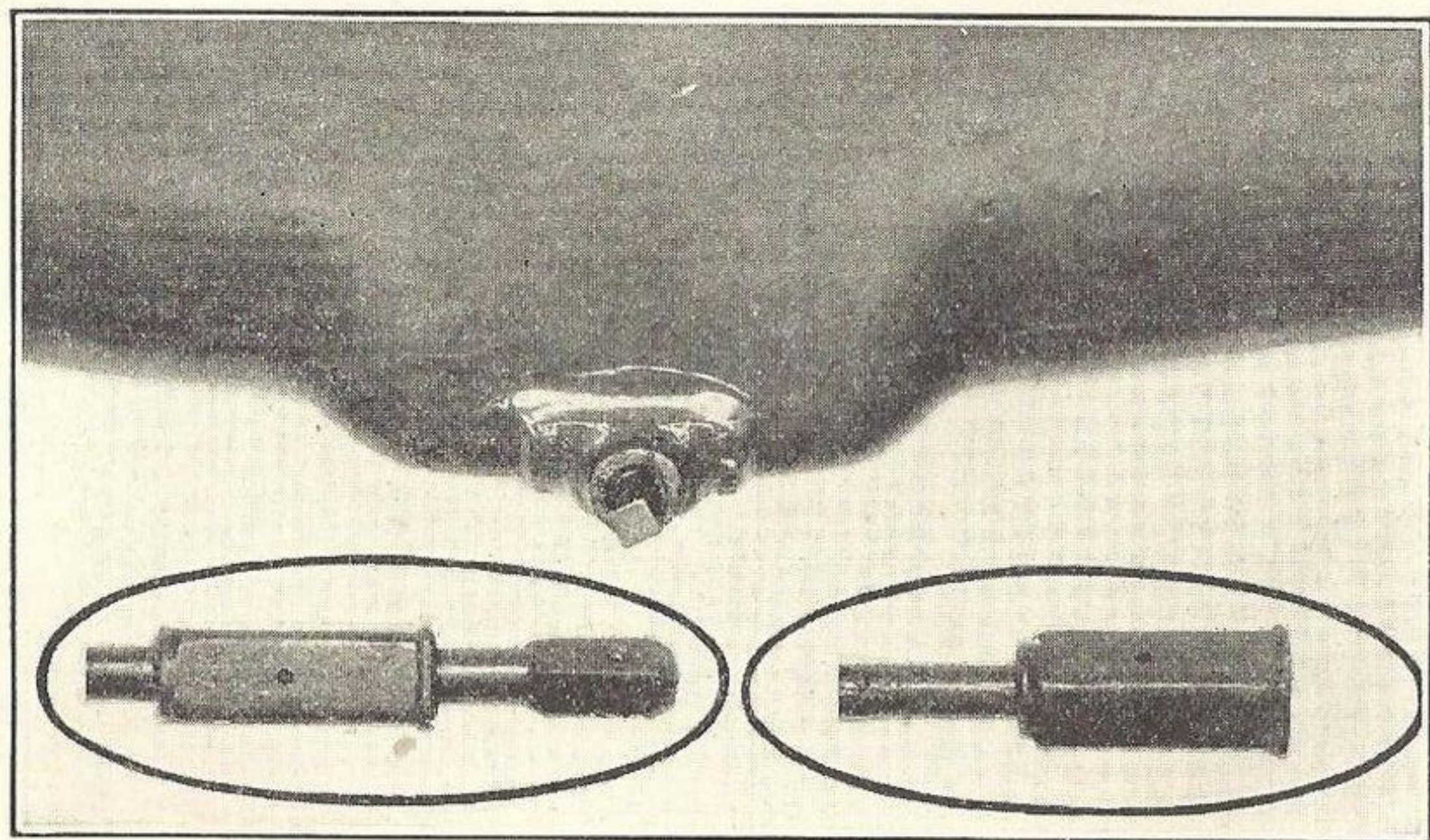


Fig. 5
Oil Pan Drain Plug

The insert on the left illustrates jack handle in normal position.
Illustration on the right shows sleeve on jack handle pulled down over end to enable one to use it to remove the oil pan drain plug.

Failure of the oil pressure gauge to read at all indicates that the engine is entirely out of oil or that something quite seriously has gone wrong and it should be given immediate attention. No attempt to operate the car should be made unless some oil pressure is shown.

Oil Quantity Gauge

In addition to the pressure gauge, which is continually before the eyes of the operator when driving the car and gives a constant check of the condition of the engine oil circulating system, there is provided an oil gauge which is located back of the carbureter under the hood of the car on the left side and which is used to measure the quantity of oil in the crankcase. Refer to Fig. 3. When the oil has been changed or a quantity of oil has been added, the gauge should show at the "FULL" Mark with the engine running.

Each graduation below the "FULL" Mark with which the pointer on the end of the lever registers indicates the use of about one quart of oil. The car should never be operated when the float falls *to* or *below* the danger point. We recommend that the amount of oil in the crankcase be checked by a visual inspection of the oil gauge at least every two hundred miles. A good practice would be to have the quantity of oil checked at every other filling of gasoline. Make this a habit.

Changing Oil

In the interest of providing correct lubrication for the engine we recommend that you have the oil changed twice during the first one thousand miles in operation and every thousand miles thereafter. In protracted periods of extremely cold weather it is also advisable to change the oil every five hundred miles. The reason for this is that the constant use of the choke in starting the car in cold weather may cause an undue amount of gasoline to reach the engine oil and dilute it to a point which renders its further use in the engine inadvisable.

The oil capacity of the crankcase in the engine of your car is ten quarts, and this quantity should always be used when the oil is changed.

A suitable drain plug is provided on the bottom of the oil pan for draining off the old oil in the engine. Refer to Fig. 5. After allowing a minute or two for the entire amount of oil in the engine to drain off, the drain plug should be screwed tightly back into position. The fresh oil is added through the oil filler cap on top of the valve cover.

Oil Recommendations

The Nash Motors Company does not make specific recommendations concerning the brands of motor oils which are satisfactory to use in Nash cars. We believe that motor oils manufactured by a company having a national reputation to sustain will be entirely satisfactory to use in our cars.

After having selected the particular makes of oil which you wish to use in your

car, we recommend that you use a grade having SAE viscosity No. 20 in extremely cold weather, and that you use an oil having SAE viscosity No. 30 in normal or hot weather. The SAE viscosity numbers are used to designate the different grades of oil which were formerly called Medium, Medium Heavy, Heavy, Extra Heavy, etc. The numbering system has been adopted by the Society of Automobile Engineers, and we believe all oil refineries are designating the viscosity of their oils accordingly in addition to carrying the usual grade names. In extremely cold weather it is advisable, in addition to using an oil having SAE viscosity No. 20, to select one which has an unusually low cold pour test. The dealer from whom you purchased your car will be able to advise you very definitely concerning the oil which he has found best to use in your particular part of the country.

THE OIL FILTER

THE oil filter is placed on your car for the purpose of removing from the lubricating oil any dust and other solid and abrasive material which may enter the crankcase of the engine.

The oil filter is entirely automatic in action and needs no attention on the part of the operator of the car.

In time, however, the filtering material becomes clogged with the sediment removed from the lubricating oil, and a replacement of the oil filter is advisable. This generally occurs after ten thousand miles of operation, and we therefore recommend that every ten thousand miles you have the oil filter on your car exchanged for a new one. The cost of the exchange is very reasonable and your dealer will be glad to do this for you.

COOLING SYSTEM

THE cooling system capacity on your car is 22 quarts as noted in the general specifications on page 5. Provided there are no leaks in the cooling system, the only loss of water will be through evaporation, and you will find that it is not very great. It is advisable, however, to have the water in the radiator checked at every filling of gasoline, especially in hot weather. The evaporation of water from the radiator is, of course, greater during hot weather than in cool weather.

It is not necessary to fill the radiator to the top of the filler neck for a certain amount of water is immediately lost through expansion when the water becomes heated. This will usually amount to more than a cupful. The radiator should be filled until the water is even with the lower end of the filler neck.

The radiator cap is raised for filling the radiator with water by turning it to the left until the hooks on it release from the radiator filler neck.

The radiator may be drained for protection in cold weather or for flushing the

radiator by opening the drain cocks. Two places for draining are provided—one at the lower back part of the radiator on the right side and the other at the rear left side of the engine block. Refer to Figs. 1 and 2.

Be sure to open the engine block drains if the car is stored in freezing weather. This is important.

There is a certain amount of insoluble material in all hydrant water and in time this will accumulate on the interior of the water jacket and radiator rendering the cooling efficiency of the engine lower than it was originally. At the time anti-freeze solutions are added in the winter time and the time they are drained out in spring, the cooling system should be cleaned out by flushing with plenty of clean, cold water. You will note that for the first two or three minutes of flushing the water will come out very rusty after which it will clear up.

Anti-Freeze Solutions

For protection in cold weather, the following anti-freeze solutions and the proportions to use are suggested:

Radiator	For Protection Down To	For Protection Down To	For Protection Down To
Capacity—22 Qts.	0° F. Add	-10° F. Add	-20° F. Add
Alcohol	9 Quarts	10 Quarts	11 Quarts
Glycerine (G. P. A.)	9 Quarts	10 Quarts	11 Quarts
50% Alcohol } 50% Glycerine }	9 Quarts	10 Quarts	11 Quarts
Ethylene Glycol	7 Quarts	8 Quarts	9 Quarts

Temperatures given are approximately the freezing point of the solution. Precaution should be taken in the use of alcohol solutions that they are not splashed on the car finish as they will damage it.

Radiator Shutters

Your car is equipped with a radiator shutter for the purpose of maintaining the water in the cooling system at a temperature best suited to economical performance. It is automatic in action, opening or closing according to the temperature of the water in the radiator.

Keep mud and dirt from collecting around the shutter blades by washing with a gentle stream of water.

TIRES

THE tire pressure which is recommended to maintain in the tires on your car is noted in the Owner's Caution Plate attached to the body left front corner post.

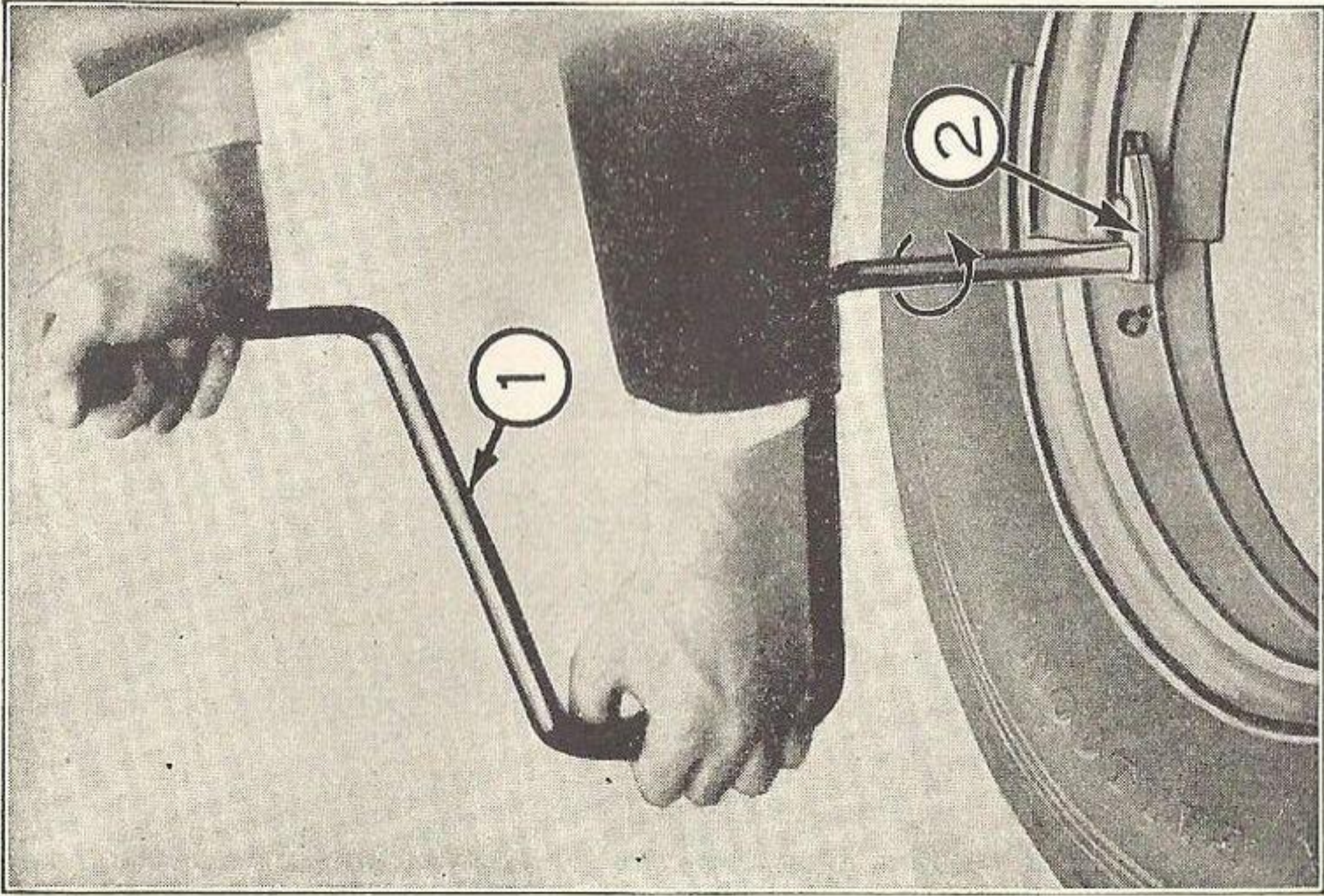


Fig. 7
Expanding Tire Rim

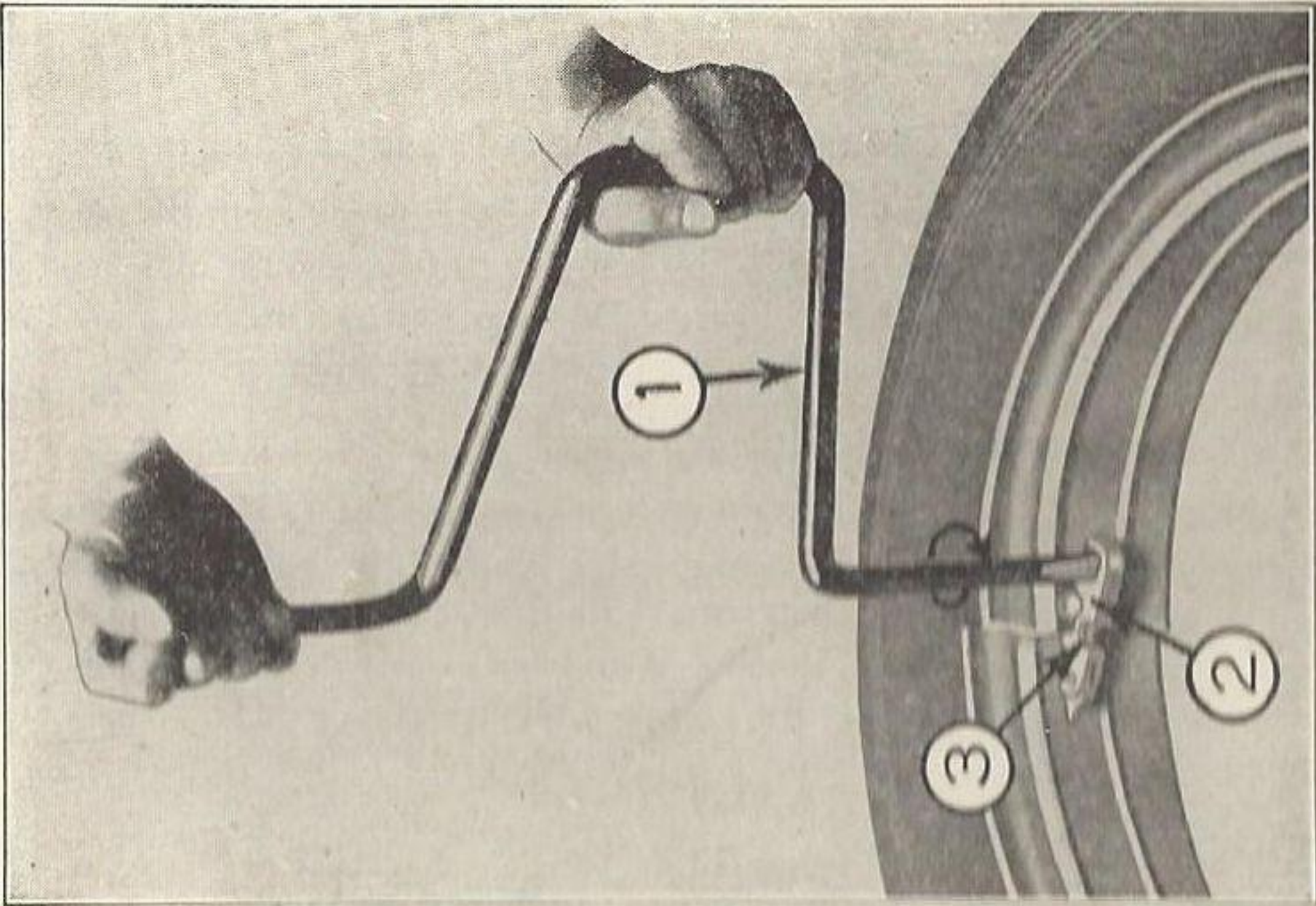


Fig. 6
Collapsing Tire Rim

It is necessary that the tire pressure be checked more often than was necessary on cars equipped with high pressure tires. A difference of two or three pounds in a balloon tire makes as much difference as eight or ten pounds in a high pressure tire and, therefore, the air pressure must be watched closer.

It is necessary also to maintain the same pressure in both front tires and in both rear tires. Pressures that are unequal may lead to inconvenience in steering the car as well as in applying the brakes.

We think you will find it convenient to carry four or five pounds excessive pressure in the spare tires on your car. Then, when you find it necessary to use one you will be sure that it is not under inflated.

Changing Tires—Wood Wheel Equipment

You will find the jack which comes with your car substantially constructed and very convenient to use. A few drops of oil placed on the operating mechanism will make it much easier to operate.

In case the front axle is too close to the ground to permit using the jack when a front tire is flat you can lay the spare tire on the road with a section of it in front of the flat tire and carefully drive the car up on the spare tire. This will raise the axle so that the jack may be easily placed in position.

Demounting Tire and Rim

Jack up wheel. Remove valve cap and valve check nut. Turn wheel so valve stem is near top and remove rim nuts and clamps. Then pull off rim, starting at the bottom.

Removing Tire from Rim—Wood Wheel

Insert spade end of rim wrench in hole of combination driving lug and rim collapsing lock. Pull hole away from rim and continue turning until it is completely collapsed. Refer to Fig. 6. Back valve stem out of rim and pull tire off evenly. Never permit collapsing of the rim in any other manner.

Mounting Tire on Rim—Wood Wheel

Clean rim thoroughly and give a light coat of graphite or tire talc if rusty. Rim should be collapsed (see preceding paragraph.) Inflate tire tube just enough to round out to avoid pinching the tube. Place tire over collapsed rim, being careful to insert valve stem through hole in rim. Work tire evenly down over rim. Then turn rim collapsing lock to expand rim completely. Refer to Fig. 7. Inflate tire to recommended pressure.

Mounting Tire and Rim

Turn wheel so valve hole is at top. Lift tire and rim so valve stem enters hole, being careful to have drive lug on rim in correct position to fit over rim bolt. In-

stall all rim clamps and start nuts. Start tightening a rim nut, then skip a nut and start tightening another until nuts are uniformly tight. Proceeding in this manner will prevent rim distortion with its accompanying rim squeak and out of balance condition. Install valve check nut and valve cap.

Changing Tires—Demountable Wheel Equipment

Wire and natural finished wood wheels are known as demountable wheels because a spare tire and wheel complete is carried on the car for use in emergency. Demountable wheels are held to the wheel hub by cap screws. These cap screws are all right hand thread. Some demounted wheel equipped cars have the wheel cap screws concealed by the hub cap. On this equipment it is necessary to remove the hub cap by forcing outward with a screw driver placed between the hub cap and the wheel. On other wheels the cap screws are concealed by a hub cap which is held to the wheel hub by a cap screw placed in the center of the hub cap. This must be removed by using the demountable wheel wrench, after which the hub cap can be pulled off.

Removing Wheel

To remove the wheel the hand brake should be applied to prevent the wheel turning. A suitable wrench with which to remove the wheel cap screws is supplied with the tool equipment in your car. After the cap screws are loosened the wheel should be raised clear of the ground and the cap screws entirely removed. Take care that the wheel does not fall and injure you when the last cap screw is removed.

Removing Tire

The tire is held to the demountable wheel by a steel ring which fits into a groove around the wheel rim. On one end of this steel ring you will find a deep notch. The ring is removed by placing a screw driver in this notch and prying outward. This will release the ring from the wheel at this point and the screw driver can be shifted further along the ring and more of it released from the tire. The ring can then be grasped with the hands and lifted entirely off of the wheel. The valve check nut can then be removed and the tire can be pulled off of the wheel. It is best to start pulling the tire from the wheel at a point opposite the valve stem.

Replacing the Tire

The tire is replaced on the demountable wheel by reversing the operations necessary to remove it.

It will be necessary for you to stand on the steel ring as it is being forced in place around the wheel. If it does not seem to snap into place correctly, it may be assisted by striking it with a hammer. After the ring is completely around the wheel, a very few pounds of air should be pumped into the tire and the wheel rim then tapped with a hammer to completely force it to its correct seat.

Do not forget to replace the valve check nut.

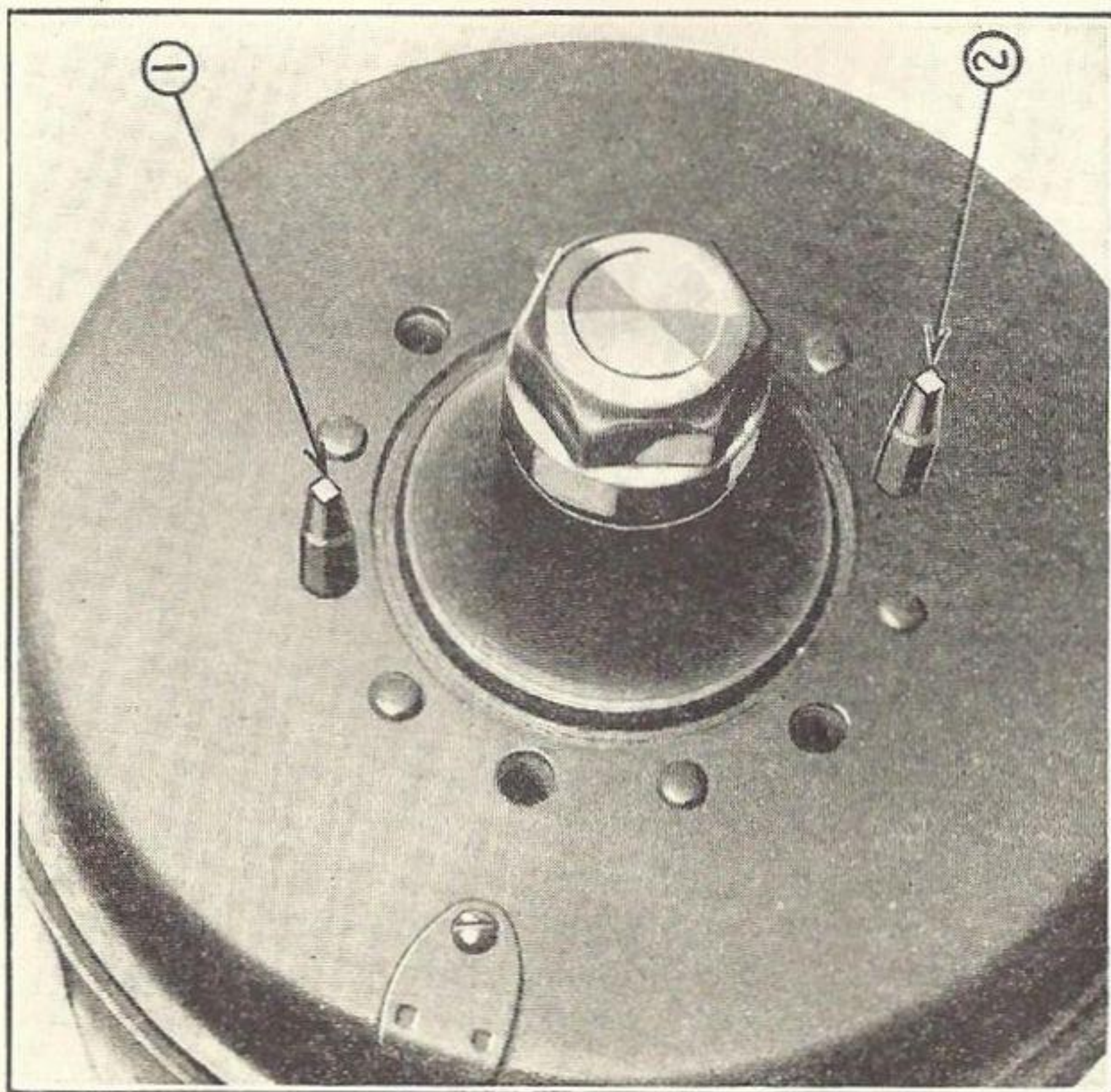


Fig. 8
 Wheel Mounting
 Studs Screwed in
 Place in Hub

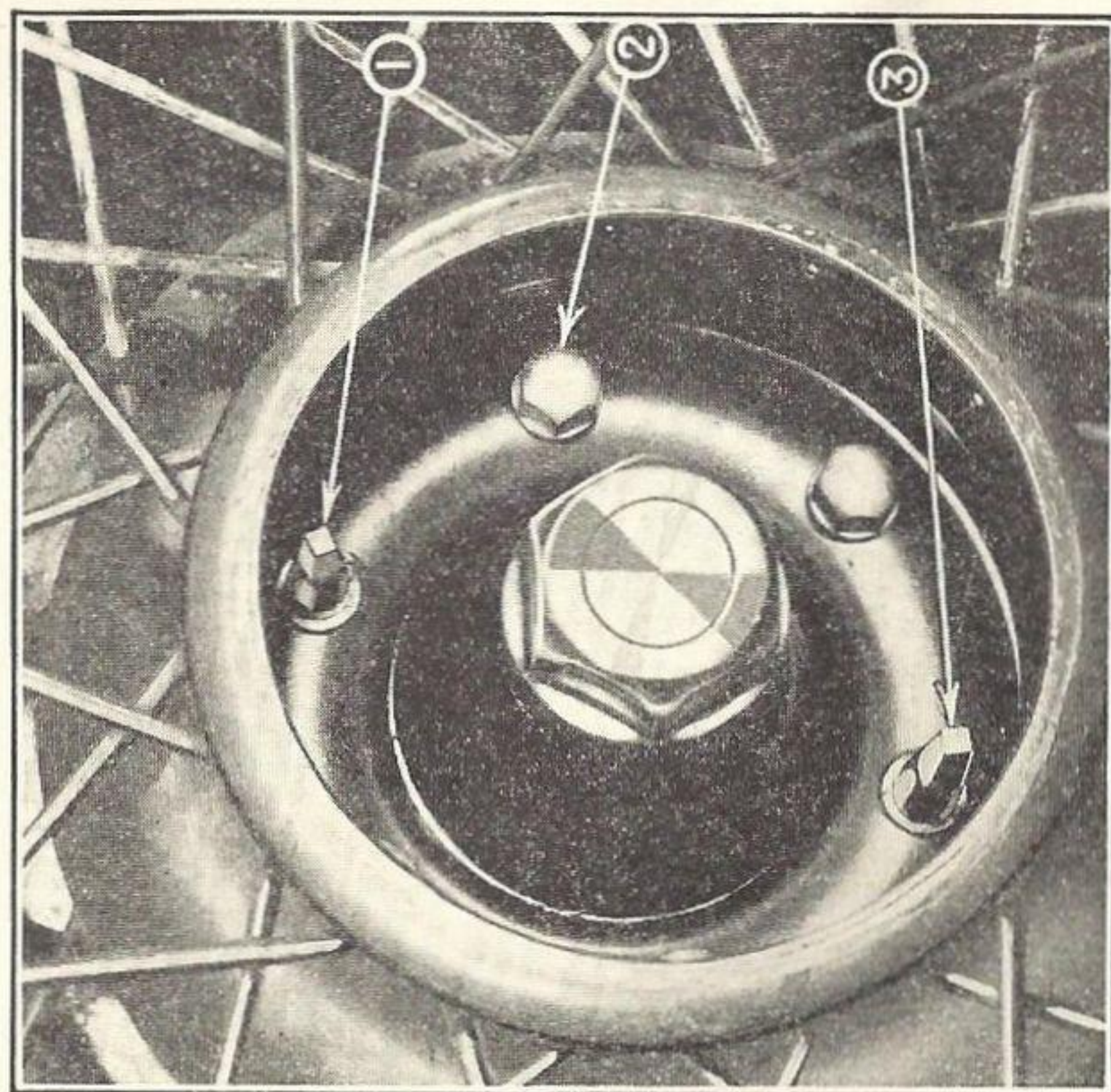


Fig. 9
 Wheel Lifted
 Over Mounting Studs
 Ready to Tighten
 Cap Screws

Mounting Demountable Wheel

Mounting the Wheel

Two wheel mounting studs are clipped to the wheel wrench. These studs are a little over 2" long, one end of which is threaded and the other end square. Using the wheel wrench, screw the studs into place in two of the holes into which the wheel cap screws ordinarily are placed. Have one of the wheel studs at the top and the other at the bottom of the hub. The wheel to be applied may then be slipped over the two mounting studs and the remaining number of wheel cap screws screwed in place and tightened. Refer to Figs. 8 and 9. In tightening the wheel cap screws it is advisable to tighten every other one a little at a time until the entire number are securely in place. The wheel mounting studs must, of course, be removed and the regular cap screws installed before the operation is completed.

The hub cap is replaced by pressing it inward with the hand until the spring operated balls have snapped into place.

Before leaving the tire changing scene, be sure you have gathered up and placed in the car all of the equipment used to make the change as it is very easy to drive away and forget part of it.

Caution

After your new car has been operated the first few hundred miles the nuts or cap screws which hold the tire rim or wheel in place should be tightened to take up any give or set of the metal or to take care of any paint which may have been chipped off under the nut. The same thing should be done when using a new spare wheel for the first time or when a new tire is mounted. After this no further attention is required.

NASH STANDARDIZED SERVICE

THE amount of satisfaction you will receive from using your Nash car will depend largely upon the amount of intelligent service it receives. Nash dealers, having in mind the future business to be obtained from you and your friends, providing you are pleased with the performance of your present car, are keenly interested in seeing that the proper sort of service is rendered. It is not possible for you to obtain from garages that are not authorized Nash Service Stations the same kind of careful attention to your service requirements that is necessary to keep your car operating in fine condition at all times.

Why an Authorized Nash Service Station Is the Logical Place to Do the Maintenance Work on Your Nash Car

1. Their vital interest in NASH cars.
(Their future business depends on owner satisfaction.)
2. The direct and authentic information they receive from the factory.
(Factory bulletins and service schools bring to them the up-to-date and approved methods of servicing NASH cars.)
3. The use of genuine NASH parts.
4. Their obligation to carry out the fair and just NASH Service Policies.
5. Fair prices for work conscientiously performed.
(Intensive study by The Nash Motors Company has established an eminently fair scale of prices.)
6. The adoption of factory procedure in performing maintenance operations.
(Charts, bulletins, etc., are furnished them regularly to assure that the latest and approved methods are followed.)
7. Close cooperation with the factory.
(Their men receive direct factory instruction from traveling factory representatives.)
8. The use of NASH special service tools and equipment.
(One department at the factory is maintained to design and produce tools and equipment to facilitate accurate work.)
9. Their conscientious desire to render satisfactory NASH Service.
10. Their belief that business is built upon customer good-will and their sincere desire to justify the customer's confidence by operating this business along legitimate business principles.

We believe you will agree with us that the many advantages offered by authorized Nash Service Stations overshadow completely any slight momentary advantages which might be offered by the independent repair shop and we, therefore, urge you again to have your car serviced whenever possible by an authorized Nash Service Station.

MAINTENANCE

NASH cars properly maintained require very little major repair work. It is the nature of correct maintenance work to anticipate and prevent the necessity for extensive repairs and replacement of parts. A systematic plan of maintaining your car should be followed, for in this way the parts on the car requiring lubrication and adjustment will be sure to receive them at the time they are needed.

The first and most important part of a systematic plan of maintenance is lubrication. Your car should be lubricated every 500 miles by following the instructions given in the lubrication instructions in this book. We feel that this work can best be done for you by an Authorized Nash Service Station for they have complete and authoritative knowledge of the procedure to use in lubricating the various parts of your car as well as knowledge of the correct lubricants to use. You should not have this very important maintenance service performed by persons not connected with the Nash organization if you wish to be assured of satisfactory operation of your car.

Under your plan of systematic maintenance should come regular chassis inspection and tightening operations, inspection and adjustment of the car body and its parts, and inspection and adjustment of the parts of the motor necessary to maintain correct and satisfactory performance.

The motor work comes under a service name "Motor Tuning" and includes inspection and adjustment of the valves, ignition system, ignition timing, carbureter screens, carbureter adjustment, fan belt adjustment, water pump packing nut inspection and adjustment and inspection and adjustment of other items of like importance.

Maintenance defines any service operation on an automobile performed for the expressed purpose of aiding in the continuance of satisfactory performance; and a maintenance plan is a system which provides for regular maintenance operations at regular intervals. Most Authorized Nash Service Stations have maintenance plans to offer Nash owners. They are very good and should be followed. Experience has shown that the total operating expense of a car serviced under one of the maintenance plans is much less than the expense incurred when such plans are not followed. Furthermore, you have the assurance of driving a car that is operating splendidly at all times. We recommend that you consult with your dealer about such a plan for we know that the results of following a systematic plan of maintenance will result in even greater pleasure from your car.

BIJUR CHASSIS LUBRICATION

TO ASSURE long life of the chassis bearings Nash cars are equipped with Bijur Central Chassis Lubricating System, which provides positive and accurate lubrication to these parts. A single push on the Bijur pedal, which is operated by the driver's foot is all that is necessary to completely oil the following chassis bearings:

- All front and rear spring front bolts.
- All front and rear spring shackle bolts.
- Both steering knuckle pins.
- Both steering knuckle thrust bearings.
- Clutch release bearing.
- Both front brake operating lever pins.
- Brake cable guides.

Daily, before starting the engine, and at least once every 100 miles of driving depress the Bijur pedal until it stops against the dash and release quickly. This starts the automatic operation of the lubricator and as the pedal slowly returns to its normal position oil is forced into the chassis bearings.

In wet weather it is important to keep water out of the bearings in order to prevent rust and wear; therefore when driving over wet or muddy roads, in the snow or under other adverse conditions use the lubricator more frequently.

Lubricator Tank Indications

Normally when there is oil in the lubricator tank, the pedal after being pushed and released will return to its original position slowly. At ordinary temperatures (70° Fahrenheit) with moderately heavy oil, this will take about four minutes. In cold weather because oil is more viscous at low temperatures, the pedal will require a much longer time to return to its normal position.

WHEN THE LUBRICATOR TANK IS EMPTY, the pedal when depressed and released, will spring back instantly to its normal position. When this occurs, fill the lubricator tank immediately with approved oil as **UNDER NO CIRCUMSTANCES SHOULD THE CHASSIS BEARINGS BE PERMITTED TO GO WITHOUT OIL.**

All oil passing from the lubricator tank into the oil line is filtered through a dense felt filter disc at the tank outlet. Refer to Fig. 10. If approved oils are used this filter should never require attention. However, if oils containing suspended wax, grease, graphite or other foreign substance are employed the filter will become clogged. This is indicated by an unusually slow return of the operating pedal and when this occurs it is necessary to remove and clean the filter. Never under any circumstances use "Black oil" or old crankcase oil. Either will clog the tank filter disc and the acid, water and kerosene in old crankcase oil will corrode and cause rapid wear of bearings.

Although the filter disc may be readily removed, cleaned and replaced, the use of approved oil will render this unnecessary.

Choice of Oil

Chassis bearings are exposed to water, snow and mud and subjected to heavy momentary loads. To provide for these and other working conditions a chassis lubricating oil should be free from suspended matter, have good penetrating and water excluding properties and be thick enough to remain in the bearings for considerable periods. It should be anti-corrosive, free from any tendency to gum and have a high lubricating value. For cars in unheated garages it should remain fluid in cold weather.

Bijur Oil

For the convenience of owners the Bijur Lubricating Corporation markets oil especially manufactured for chassis lubrication under the name of Bijur Oil. It is obtainable from Nash dealers and elsewhere in sealed quart and gallon cans. A gallon is ordinarily a year's supply.

For Nash cars in unheated garages, Bijur Oil Moderately Heavy may be used in all seasons as it has all the desired lubricating characteristics and will operate down to zero degrees Fahrenheit.

If for any reason you do not use Bijur oil, nothing but a straight mineral oil—not compounded in any way—should be used. Never use black oil. Only those having an amber or dark amber color are advisable. Such oil should have a viscosity as high as consistent with a low pour test. Viscosities of less than 1200 are usually too thin to prevent wear effectively. If the pour test is above plus 10° F., the oil is not likely to be sufficiently fluid for use at temperatures approximating this figure.

SAE viscosity numbers may also be used as a guide in purchasing oil for the Bijur system. In normal weather use an oil having SAE viscosity Number 60. In extremely cold weather use an oil having SAE viscosity Number 50.

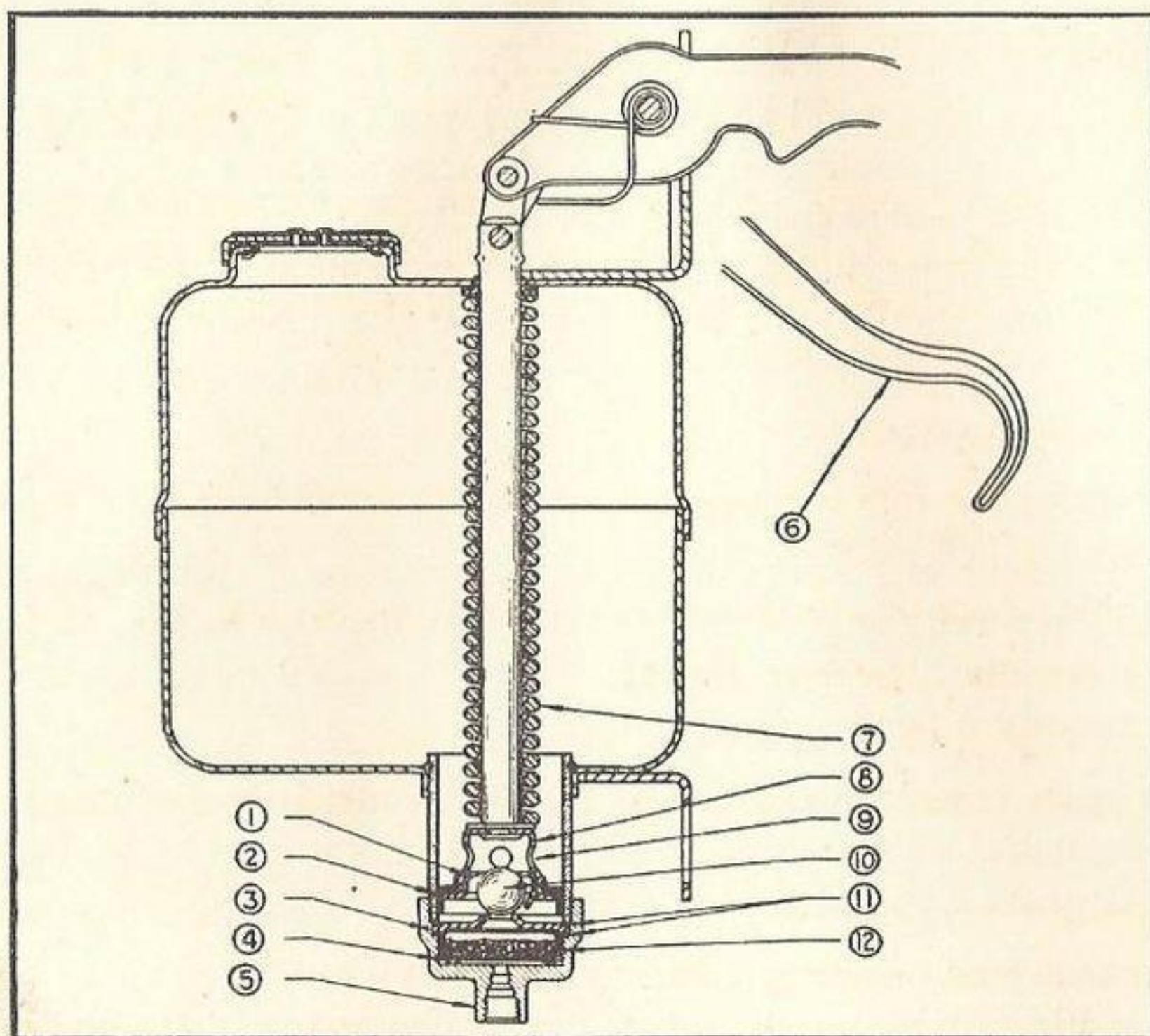


Fig. 10

Bijur Tank

- | | |
|------------------------|-------------------------------|
| 1. Ball Valve Seat | 7. Coil Spring |
| 2. Piston Cup | 8. Piston |
| 3. Piston Seat Plate | 9. Oil Ports |
| 4. Filter Disc Support | 10. Ball Valve |
| 5. Cylinder Cap | 11. Piston Seat Plate Gaskets |
| 6. Operating Lever | 12. Filter Disc |

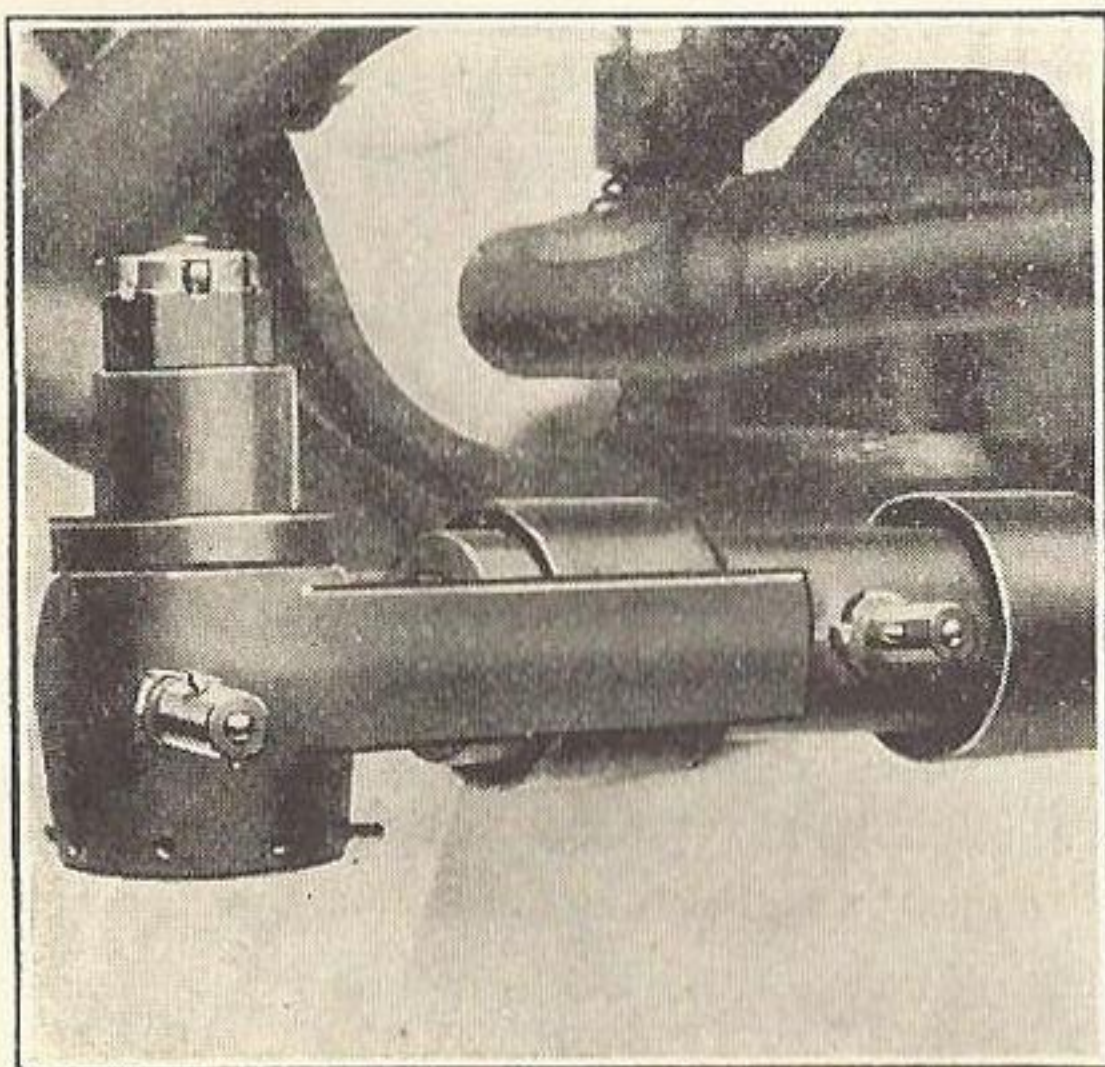


Fig. 11

Left End of Steering Tie Rod

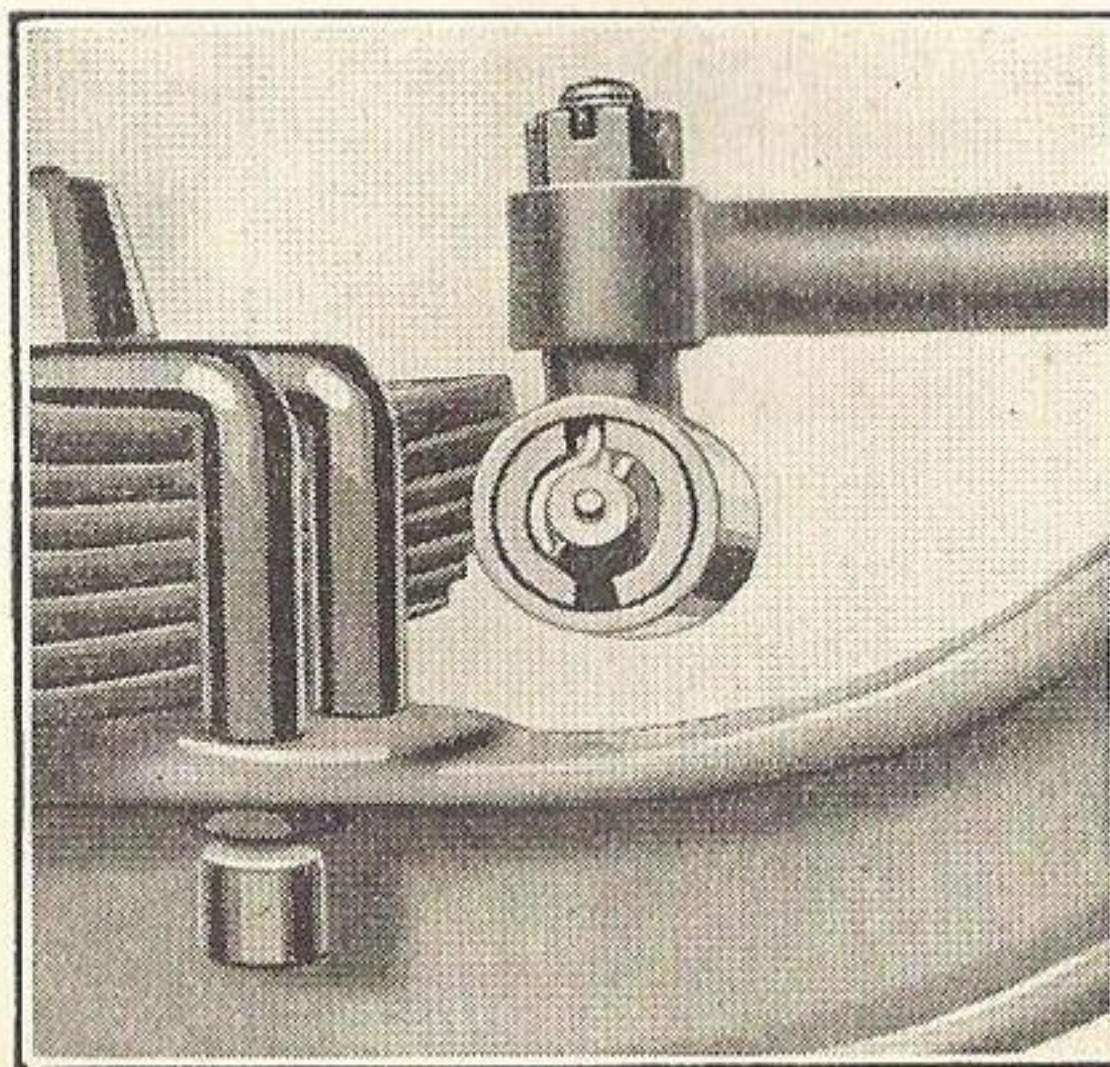


Fig. 12

End of Steering Drag Link

hook. One or two drops of oil should be placed in these holes to prevent annoying squeaks.

It is advisable to lubricate the hood lacing with soap. A cake of soap can be procured and rubbed heavily on the lacing. This prevents noise and does not accumulate dust.

2,000-Mile Lubrication

Remove front wheels, clean thoroughly and repack both inner and outer bearings with light cup grease. Do not place more grease in the wheel hub than is necessary to lubricate the bearing. An excessive amount of grease will cause trouble by getting on the brake lining. Never under any circumstances permit the front wheel bearings to be lubricated by forcing grease through the hubs with the hub cap. This will be sure to cause you trouble. The hub caps should not be filled with grease. The rear wheel bearings and the front universal joint should be lubricated with a special grease every 2,000 miles. We recommend that you get in touch with an authorized Nash Service Station in regard to the kind of grease adapted for this purpose.

Every 2,000 miles the steering gear should be filled with special oil. (Refer to Fig. 2.) An authorized Nash Service Station should also be consulted for advice in regard to this lubricant.

The transmission and differential lubricant should be inspected and, if necessary, replaced every 2,000 miles. Suitable drain plugs and oil level plugs are provided so that the amount and quality of the lubricant may be determined. Never fill either the transmission or differential above the level of the filler plug. Use medium heavy to light transmission oil. Do not use any non-fluid grease.

BODY LUBRICATION

IN ADDITION to the quietness which may be obtained by lubricating at regular intervals the chassis of your car, additional quietness is insured if you give the body and its parts some attention to their lubricating requirements. At the time you are giving the car its regular 500-mile lubrication, it is also advisable to place a few drops of oil on the following parts:

1. Door hinge pins. Refer to Fig. 13.
2. Door lock strikers. Refer to Fig. 14.
3. Door dovetails. Refer to Fig. 14.
4. Windshield pivot bearings (on each end of top windshield bar). Refer to Fig. 16.

If the windows in your car operate hard due to friction in the felt channels in which the glass slides, they can be made to operate easier by using soap or paraffin

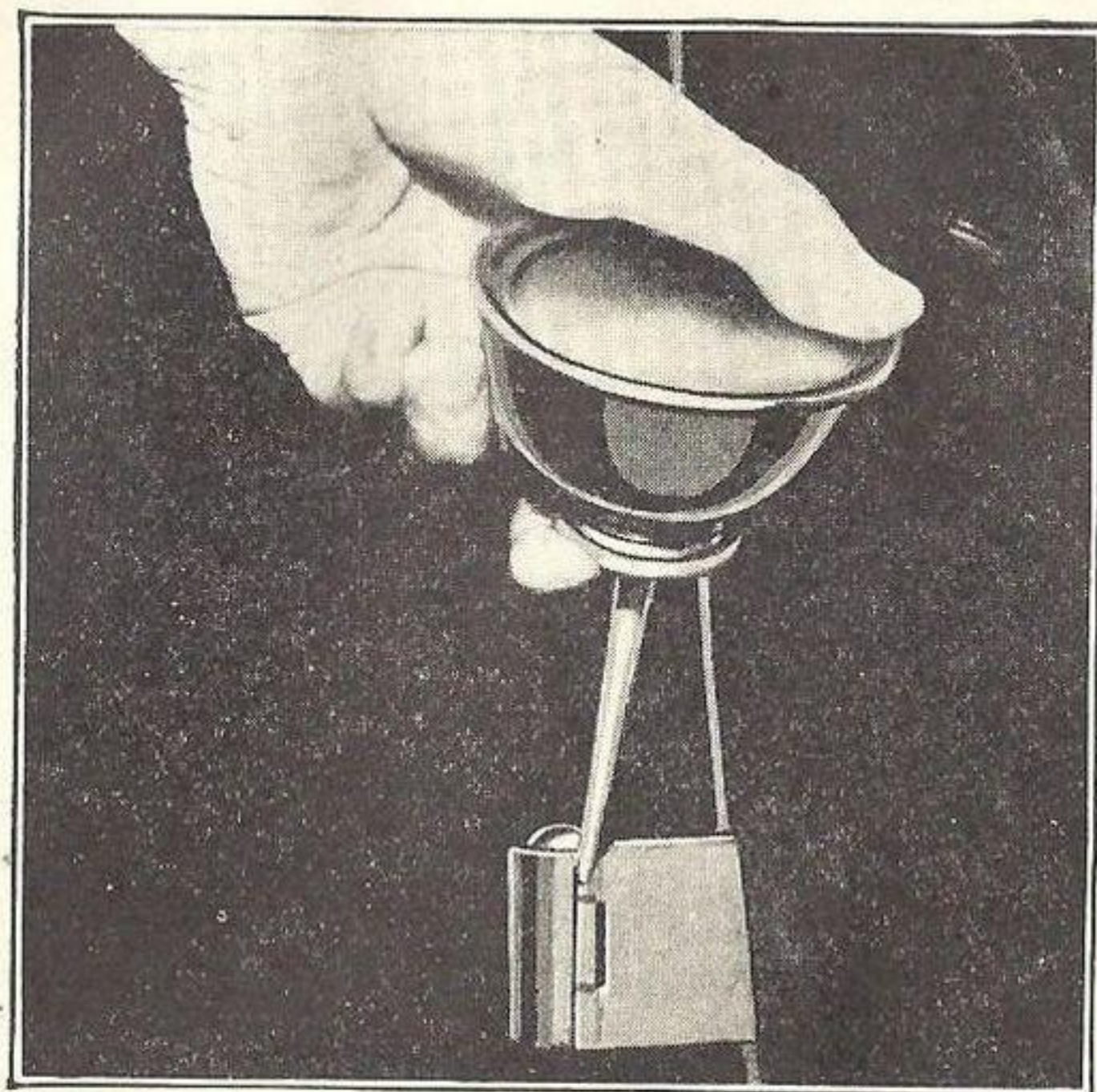


Fig. 13
 Lubricating Door Hinges

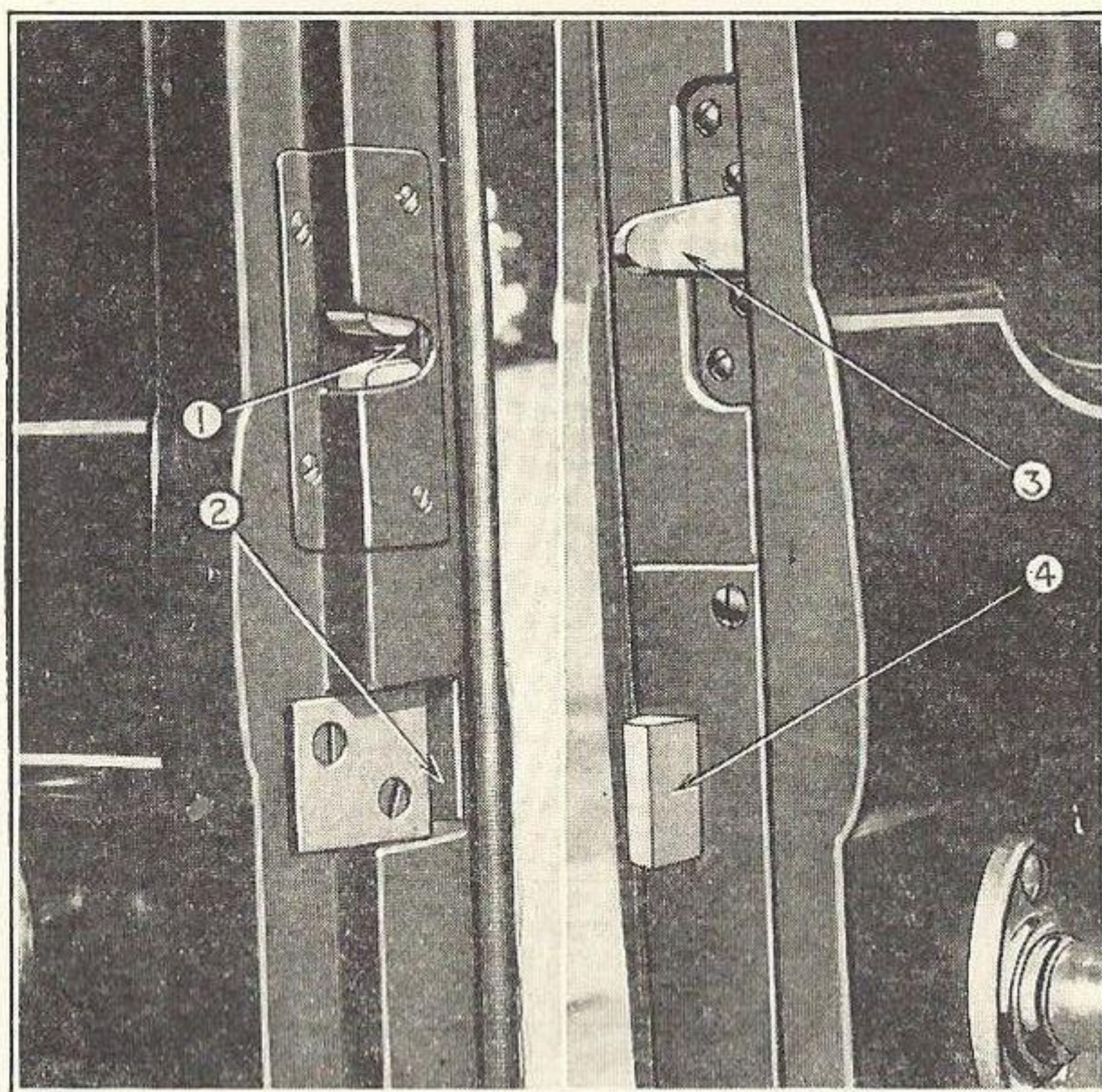


Fig. 14
 Door Lock and Dove Tail Construction

- 1. Pillar Member of Dove Tail
- 2. Door Lock Striker Plate

- 3. Door Member of Dove Tail
- 4. Door Lock Striker

in the felt channels. Black crayon, which is largely wax, also makes a good thing with which to lubricate the glass channels.

In addition to the points which should be lubricated on your car which have been covered in this book, there will probably arise at different times annoying little squeaks and noises which can easily be eliminated by the proper application of a little oil.

A little care in determining the origin of small noises will make their elimination considerably easier.

TIGHTENING THE CAR

THE chassis of an automobile is built up of many parts having certain functions to perform. Many of them are required to rotate or oscillate against other parts of the chassis. In time the moving parts will show slight evidence of wear. This wear is reduced to a minimum by proper and regular lubrication, but even with the correct lubrication it is natural to expect some wear. Nash cars are designed to permit adjusting the parts of the car that are subject to wear so that no objectionable noise or other unsatisfactory conditions will prevail.

The frequency with which the chassis parts should be adjusted and tightened depends largely on the kinds of roads over which the car is operated as well as chassis lubrication. Under ordinary conditions the car should be tightened every 3,000 to 5,000 miles. Necessary attention paid to chassis adjustments at these intervals of mileage will result in added quietness and ease of operation.

The ordinary tightening operation includes adjusting and tightening the following points:

Spring Shackles

There are four spring shackles. One is located at the rear end of each rear spring and one at the front end of each front spring. Refer to Fig. 15. The spring bolt in each shackle assembly should be adjusted by removing the cotter pin which holds the nut and tightening the nut until all clearance between the spring and the shackle is removed. They must not be drawn tight enough to bind the spring and prevent its free action.

The nuts may be drawn up fairly tight and then backed off $\frac{1}{4}$ turn to assure freedom. Adjust the upper or spring bracket bolt in each assembly the same way.

Spring Clips

The spring clips which hold the springs to the axles should be tightened securely, using a wrench long enough to exert a considerable pressure. Nash Service Stations have a factory designed wrench for this purpose.

Steering Drag Link

The ball joint in each end of the drag link is subject to wear and an adjustment is easily made to overcome it. Refer to Fig. 12.

In the ends of the drag link is a large threaded adjusting plug. Remove the cotter pin and tighten this plug firmly using a screw driver with an extra wide blade or a similar tool. Back off until the cotter pin may be replaced. This should not be more than one-eighth of a turn.

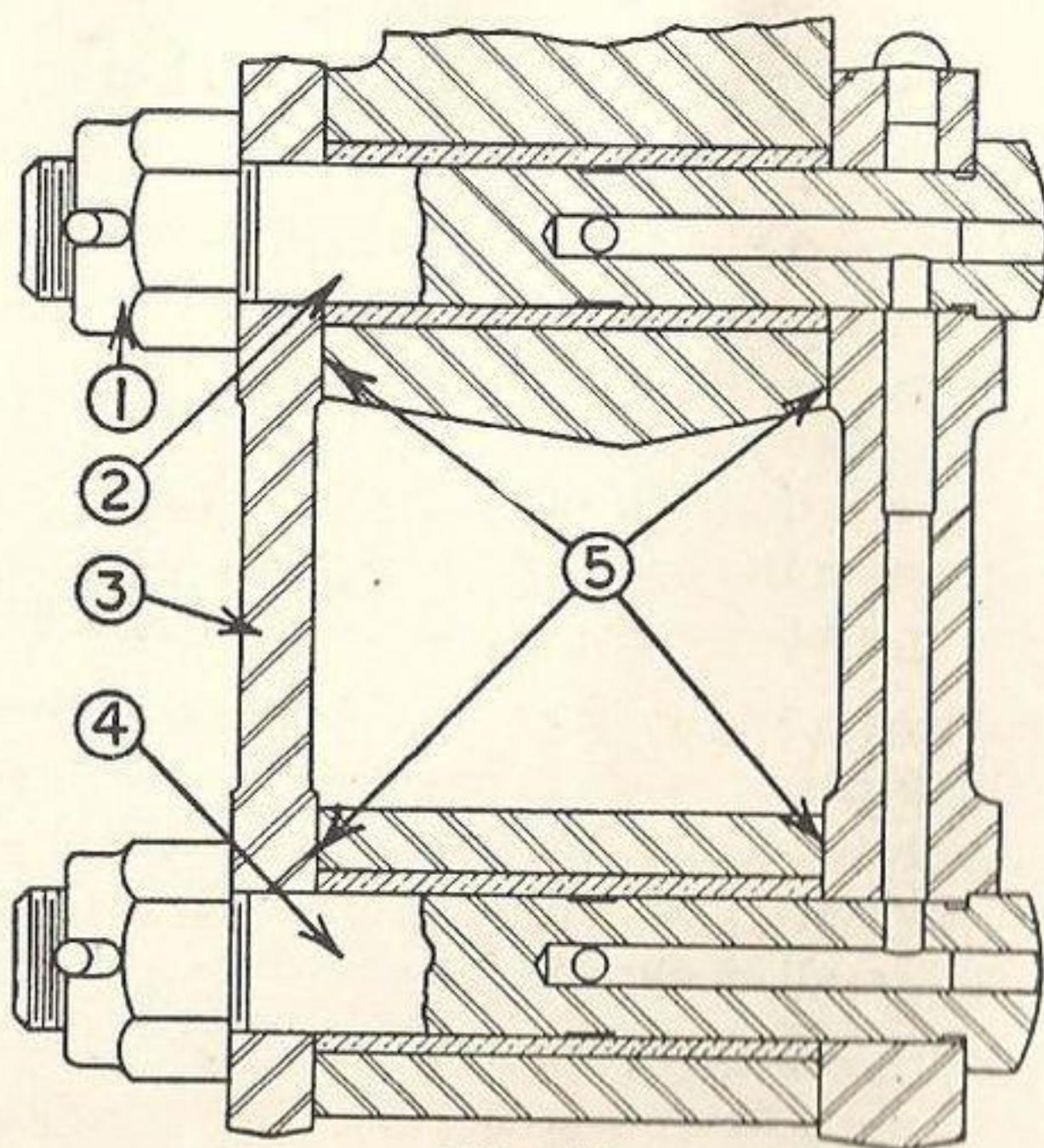


Fig. 15

Spring Shackle Bolt Adjustment

1. Shackle Bolt Nut
2. Shackle Bolt
3. Shackle
4. Lower Shackle Bolt
5. Points at which clearance must be removed by tightening nuts

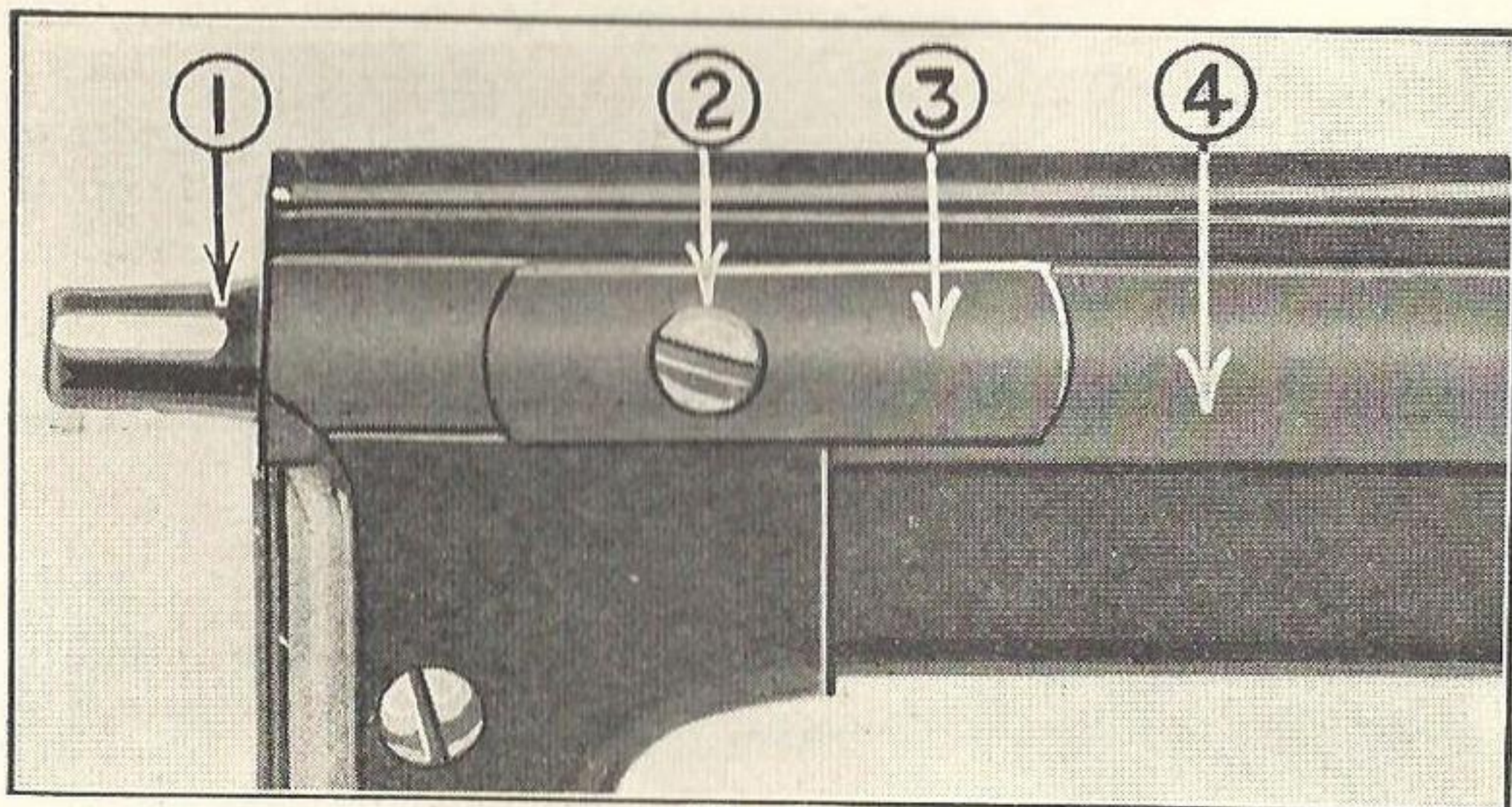


Fig. 16

Windshield Pivot Bearing Adjustment

- | | |
|---------------------------|-------------------------|
| 1. Windshield Pivot | 3. Adjusting Slot Cover |
| 2. Pivot Adjustment Screw | 4. Windshield Top Bar |

Tie Rod Ends

The ball joint in the ends of the tie rod is adjustable by removing the cotter pin holding the adjusting plug and screwing the plug in until all looseness is removed. Use the same tool used to adjust the drag link.

Fenders, Etc.

All bolts, nuts and screws holding the fenders, running boards and running board aprons to the car should be tightened. The location of the bolts, etc., can be easily determined by inspection of the car.

Radiator and Hood

Tighten the two large nuts which hold the radiator to the frame. Tighten nuts on each end of the brace rod running from top of radiator to dash.

Body Bolts

Adjust the bolts holding the body to the frame. Refer to Fig. 17. They must not be drawn down very tight but no looseness should exist. Two persons will be required for this operation. One to hold the nuts from under the car and one to tighten the bolts working from inside the car.

Door Hinges

The screws holding the door hinges to the doors and door body posts should be tightened.

Windshield Pivot Bearings

The pivot bearings on each end of the windshield top bar may be adjusted by loosening the screw on either end of the top bar and pressing outward on the small metal plate at the same time lifting upward on the windshield. Tighten screw before moving windshield. Refer to Fig. 16.

Front Wheel Bearings

The front wheel bearing adjustment should be inspected during the tightening operation. If the bearings are loose as indicated by attempting to shake the wheel when held at the top of the tire they are adjusted by tightening the nut on the end of the front wheel spindle. The nut is exposed when the front wheel hub cap is removed and the nut is held from turning by a large cotter pin which must be replaced by a new one after the front wheel adjustment is completed. The nut should be drawn up tightly while the wheel is being rotated by hand and then backed off about one-eighth to one-quarter of a turn until freedom in the wheel exists. It is better to have a wheel slightly loose than to have it too tight. Be sure to replace the cotter pin.

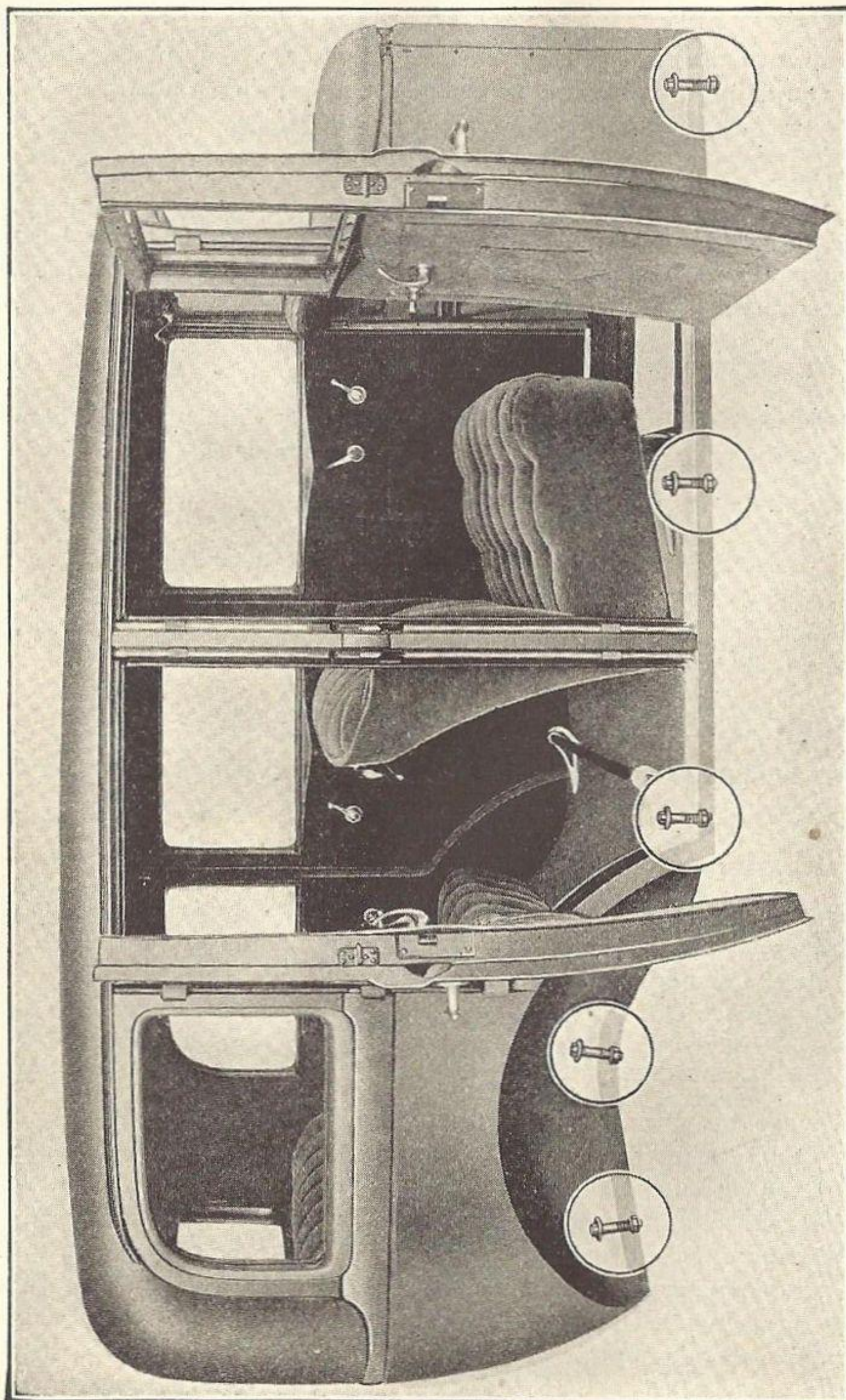


Fig. 17
Location of Body Bolts

Miscellaneous

During the tightening of the chassis parts various other bolts, screws, etc., should be inspected for looseness and adjusted if necessary. We list some of them below:

Rim and wheel nuts.

Floor boards—front and rear.

Throttle and spark control rod connections.

Gasoline tank straps. (Do not tighten excessively.)

Hood hook screws.

Hood sill screws.

Front splash guard screws.

There may be other parts which will need tightening or adjusting as indicated by your examination of the car. You can obtain information concerning any item which may not be clear to you from the Nash Service Station, or they will be glad to perform the whole tightening operation for you at a cost reasonable for the care exercised in seeing that the operation is correctly performed.

FRONT WHEEL ALIGNMENT

ALIGNMENT of the front wheels, to prevent excessive tire wear and hard steering, is effected by shortening or lengthening the steering tie rod. Refer to Fig. 28. The length of the tie rod is altered by loosening the clamp bolt on the right tie rod ball joint assembly and turning the tie rod in or out with a pipe wrench.

The front wheels should be aligned so that the distance between the tires at the front is $\frac{1}{8}$ " less than at the rear of the tires. This measurement should be made with a Wheel Aligning Gauge, Nash No. SE-255.

Front wheel alignment should be checked periodically, for the front wheels striking the curb severely when parking, or other blows which may be unknown to you, may change the alignment.

MOTOR TUNING

A COMPLETE tuning of the motor places in correct adjustment those parts of the motor assembly which affect general performance when not correctly adjusted. It includes inspection and adjustment of all the items which, with the correct procedure for making the inspection and adjustment, are described in the next few pages.

Performed periodically, motor tuning, by preventing any pronounced departure from the correct adjustment of the different parts, assures you of splendid economical performance at all times. It will also provide an opportunity for noticing conditions of operation which might be costly to remedy, if allowed to continue. Ample warning of serious impending trouble is thus had and the trouble can usually be corrected with less cost than if no warning was received.

While all items included in motor tuning may not need adjustment at one time, we recommend that you have the motor in your car properly inspected at regular intervals. This work should be performed by Nash Service Stations, for they have the special tools required and are very familiar with the necessary procedure.

The operations included in Motor Tuning follows:

Valve Adjustment Compression Test

Valve clearance adjustments must be made with the motor warmed to normal operation temperature, preferably after driving the car for 15 or 20 minutes or at the conclusion of a longer drive. For this reason it is better to proceed with valve adjustments before making other motor tuning adjustments.

Remove cylinder head valve cover by unscrewing the four nickel plated thumb nuts until the cover is released.

On one end of the valve rocker arms you will find an adjusting screw held in place by a lock nut. The adjustment is effected by loosening the lock nut and turning the screw either up and out to give greater clearance or down and in to decrease the clearance. The clearance is measured by placing a .012" steel thickness gauge between the other end of the valve rocker and the end of the valve. The adjustment should be made so that a slight pull is necessary to remove the thickness gauge after the adjusting screw lock nut is tightened.

It is advisable to make all valve adjustments with the engine running slowly. It may seem very difficult at first to adjust valves with the engine running, but a few trials will simplify it.

Proceed similarly on all sixteen valves making each adjustment exactly alike.

Nash Service Stations include with this operation a compression test for proving the condition of each valve and valve seat. Should any of them show leakage enough to vary the compression between different cylinders, 10 lbs. or more, you

will be notified so that you may authorize a valve reconditioning operation. It is not wise to continue with motor tuning work if the compression varies as indicated above for the results will not be satisfactory. Missing and uneven running at low speeds are the most pronounced effect when the compression is not even.

Ignition Timing

The twin ignition distributor with which your car is equipped provides two separate and distinct sparks simultaneously and at the proper time in the combustion chamber of the engine. In order to receive the full advantages of twin ignition the distributor must not only be correctly timed in relation to piston travel but the two sets of ignition points must operate in a carefully synchronized condition.

To simplify the procedure followed in timing the ignition and synchronizing the two sets of points, we have separated it into four distinct operations:

A—Adjust control mechanism.

Place spark hand control lever within $\frac{1}{2}$ of full advanced position.

Loosen clamp bolt on left end of control cross shaft (refer to No. 1, Fig. 19).

Move distributor body to the left to the full advanced position.

Tighten clamp bolt. This adjustment provides for any wear which might develop in the spark control connection and assures maximum spark advanced at all times desired.

B—Ignition point lubrication and adjustment. (Refer to Fig. 18.)

Remove distributor cap, taking care to lift it high enough so it will not break the rotor contact carton.

Lubricate contact arm pivots and felt in top of distributor shaft with light oil. One drop on pivots and three drops on felt are sufficient.

Place a small piece of grease or vaseline on the contact arm fibre.

Turn motor by hand crank until points are opened to their widest gap.

Adjust contact point screws until both point gaps are exactly .020" wide.

Use a Thickness Gauge for this.

(If inspection of point contact surfaces show excessive wearing away or deep pits, the points should be removed and either replaced or resurfaced on a fine oil stone.)

C—Time fixed or left points to engine.

Turn motor by hand crank until the notch in the front flywheel marked IGN registers under the pointer on the timing gear case cover.

Place spark control lever in fully advanced position.

Turn on ignition switch.

Connect one ignition timing light, Nash No. SE-401, to the primary terminal of the points and to a part of the engine which will afford a good ground connection.

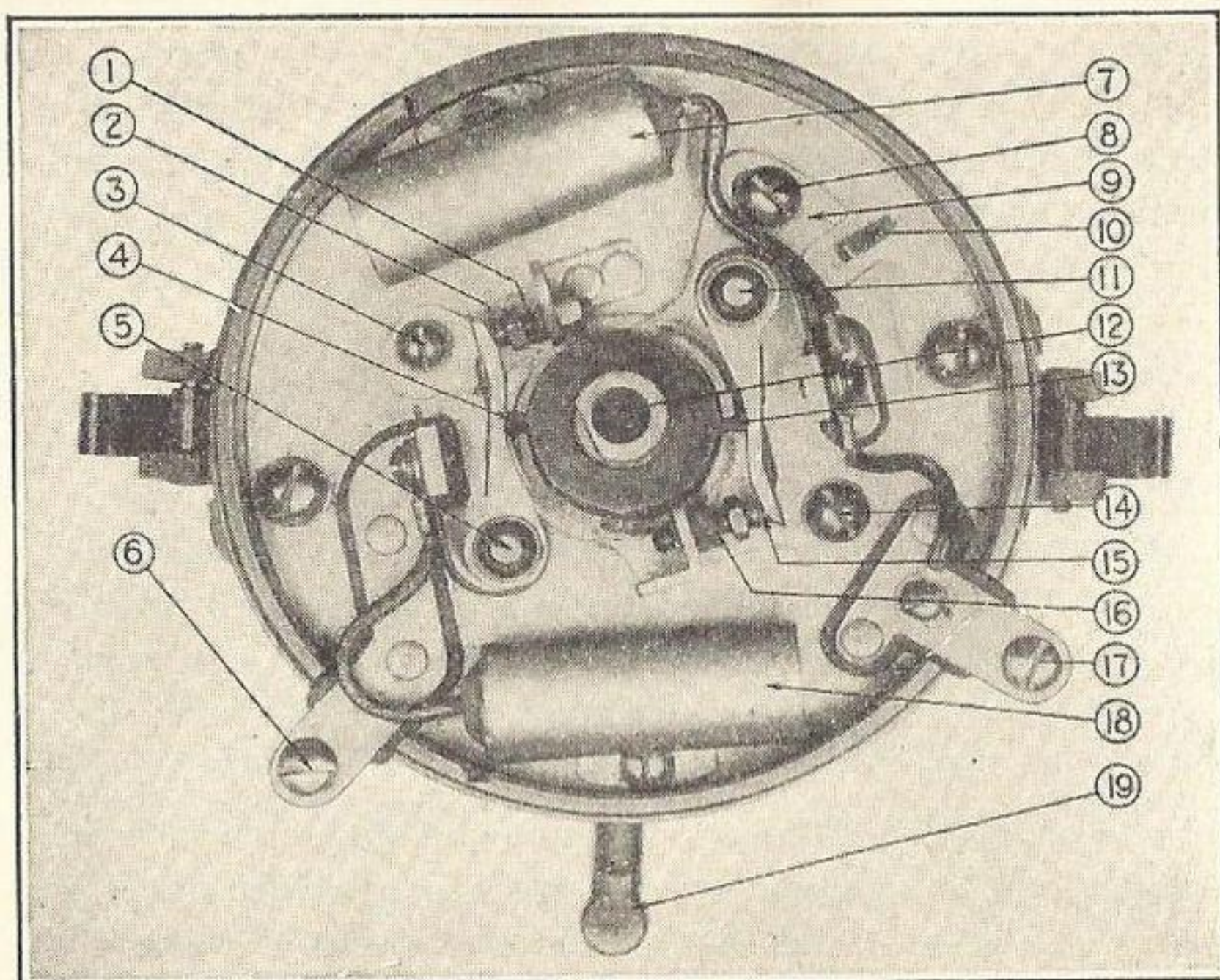


Fig. 18 Ignition Distributor

- | | |
|---|---|
| 1. Left Contact Screw | 11. Right Contact Arm Pivot |
| 2. Contact Point Gap (.020") | 12. Distributor Shaft Felt |
| 3. Distributor Sub-Plate Holding Screw | 13. Right Contact Arm Fibre |
| 4. Left Contact Arm Fibre | 14. Contact Point Gap (.020") |
| 5. Left Contact Arm Pivot | 15. Sub-Plate Holding Screw |
| 6. Left Ignition Points Primary Wire Terminal | 16. Right Contact Screw |
| 7. Right Ignition Points Condenser | 17. Right Ignition Points Primary Wire Terminal |
| 8. Sub-Plate Holding Screw | 18. Left Ignition Points Condenser |
| 9. Right Hand Point Sub-Plate | 19. Distributor Oil Cup |
| 10. Nib against which Sub-Plate is adjusted | |

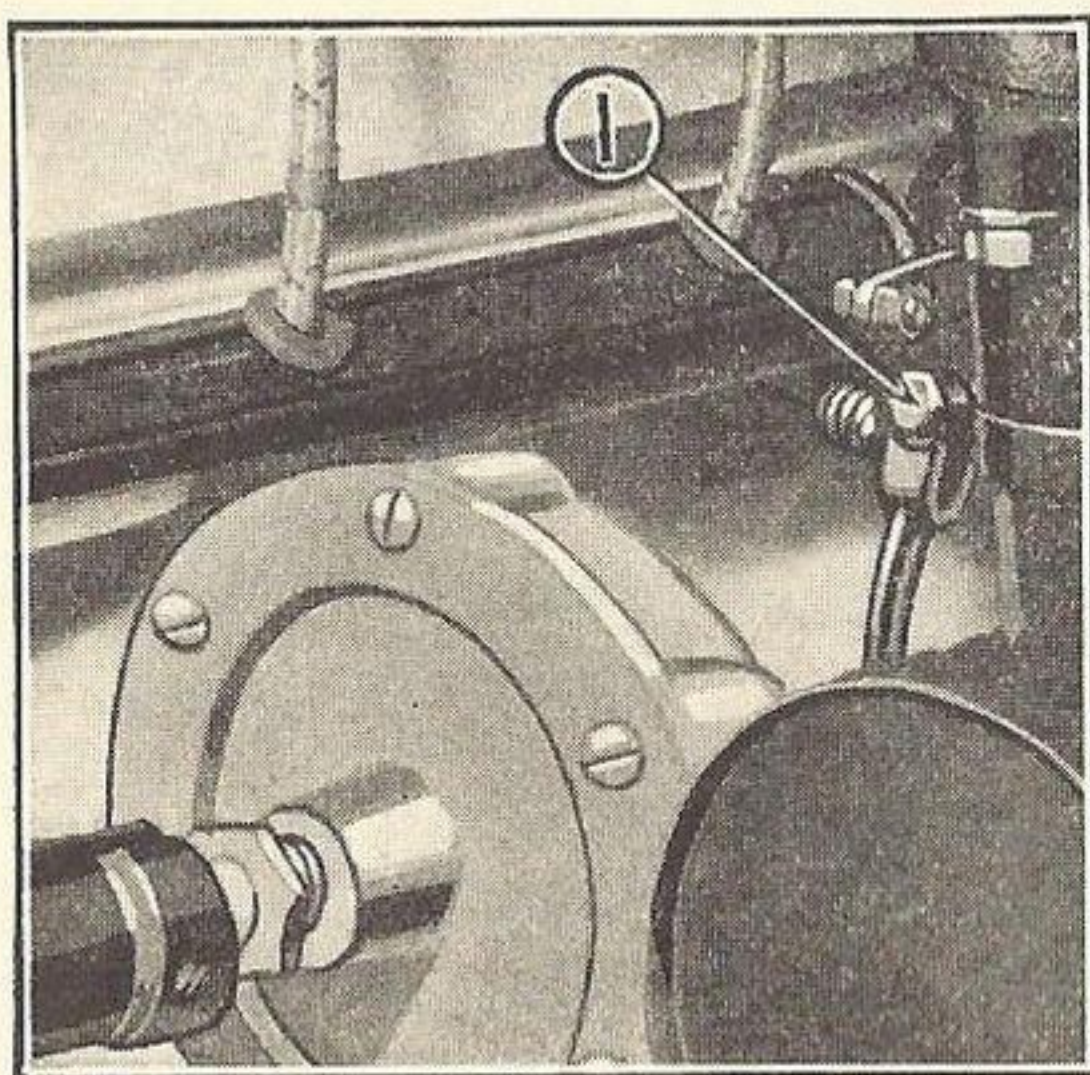


Fig. 19 Spark Control Adjustment

1. Control Lever Clamp Screw

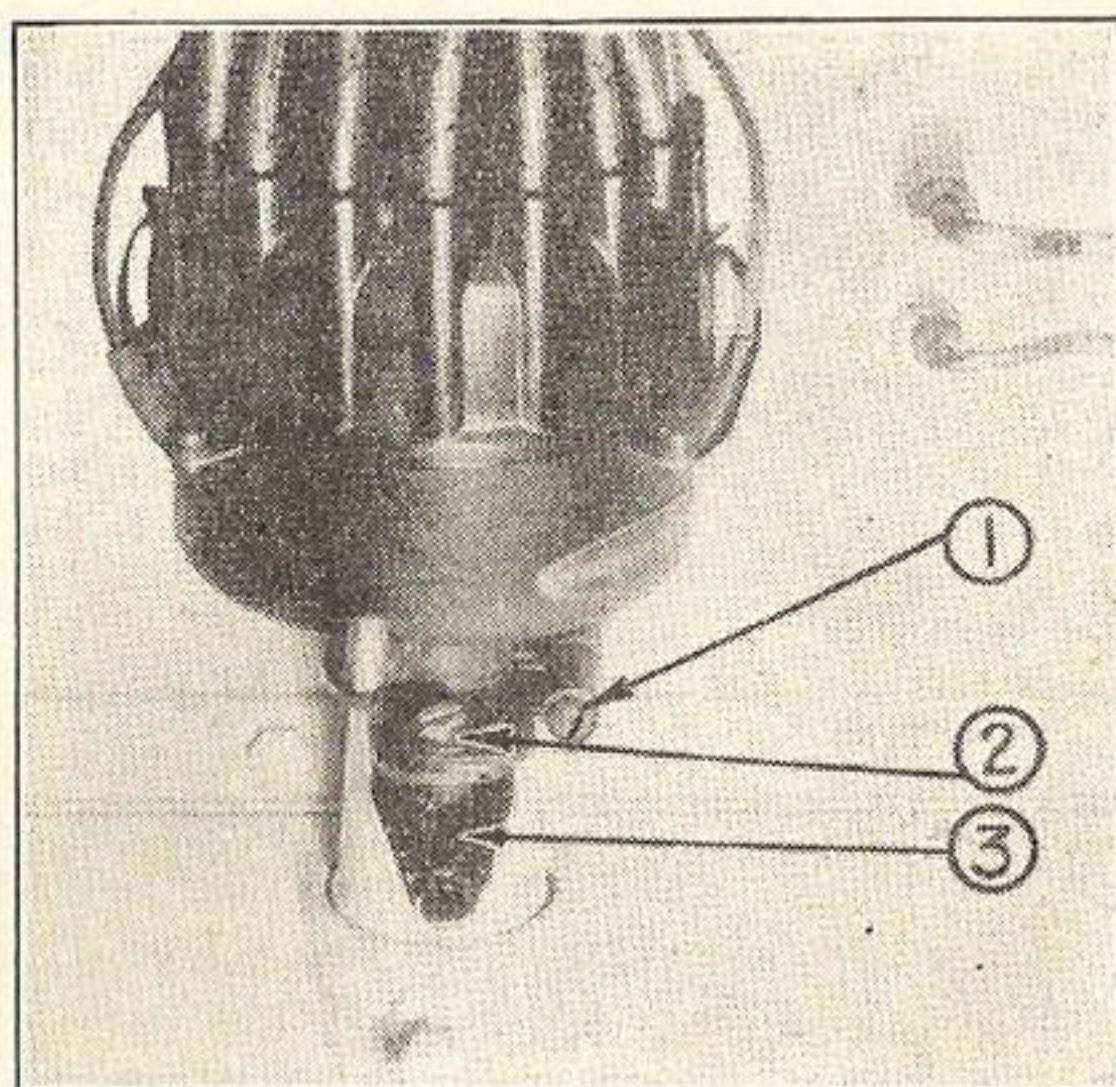


Fig. 20 Distributor Timing Adjustment

1. Distributor Clamp Screw
2. Distributor Advance Guide
3. Distributor Advance Guide Bracket

The spark plug gaps are adjusted by bending, with a pair of pliers, the wire attached to the steel shell either closer or farther from the center wire. Never bend the center wire. The correct gap is .020" measured with a .020" Thickness Gauge placed between the two wires. Have all sixteen spark plugs adjusted exactly alike.

If the gaskets placed between the spark plugs and the engine are damaged they should be renewed.

Fan Belt Adjustment

The fan and generator belt is in need of adjustment when the belt can be depressed more than one or one and one-half inches by pressing easily on it with one's thumb between the pulleys. The belt must not be adjusted so it is stretched tight between the pulleys. Adjust it so some slack is evident.

The adjustment is made by loosening the two capscrews which hold the fan bracket to the engine and moving the fan upward. Securely tighten the capscrews after the adjustment has been made.

Water Pump

The water pump needs no attention except to see that the water pump packing nut is tightened to a point which prevents water leaks past the pump shaft and bushing. Refer to Fig. 2. If no leaks are evident do not tighten it. If necessary to tighten it, do so only to a point which stops the leak. If drawn up tight the heat generated because of excessive friction will destroy the packing and the pump shaft.

The brass nut just in front of the water pump is the packing nut. No special tool is required as it is easily turned with an ordinary wrench.

Turn in the direction the pump shaft revolves to tighten the packing nut. As mentioned above, the packing nut must not be tightened very much. About $\frac{1}{4}$ to $\frac{1}{2}$ turn is usually enough to stop the ordinary water leak.

It will not be necessary to repack the water pump until numerous adjustments have worn out the packing, which will be indicated by not being able to further tighten the packing nut.

Gasoline Cleaner, Gasoline Feed Pipe

The gasoline for the carbureter is pumped from the main supply tank by an AC fuel pump, which requires very little attention.

The two capscrews holding the fuel pump to the engine should be kept tight.

Tighten the screws holding the upper and lower part of the fuel pump together. Tighten the two hexagon valve caps that are on top of the fuel pump.

Occasionally remove and clean the gasoline strainer bowl and screen. The bowl and strainer are removed by unscrewing the thumb nut at the bottom of the bowl until the bail can be moved to one side and the glass bowl and screen dropped from the fuel pump.

When replacing the bowl and screen be sure the cork gasket between the bowl and the fuel pump is in the correct position and is not broken. Replace it if in doubt about its condition.

Tighten all gasoline feed pipe connections.

Carbureter Heat Control (Refer to Fig. 21)

The heat control should be adjusted so that when the heat control lever is in the "RUN" Position the roller (4) is on the hump of the slot in the cam (3) as shown.

Loosen setscrew on heat control lever under instrument board and shift rod to get this result.

Carbureter Adjustment (Refer to Fig. 21A)

Do not attempt to adjust the carbureter until you are sure all other parts of the motor are functioning correctly—such as valves, distributor, ignition timing and spark plugs—or until the motor is warmed to operating temperature as described under Valve Adjustment.

The actual adjustment of the carbureter is quite simple, requiring only very careful attention to results. Only one adjustment is provided and when it is correctly made, the carbureter is adjusted for all driving conditions.

The adjustment is made by manipulating the air valve screw (3) and, as its action is most noticeable at idling speed, the adjustment should always be made to obtain the best idle with the throttle in the closed position.

The adjustment is approximately correct when the end of the air valve screw is even with the end of the ratchet spring (4) which keeps it from turning after the adjustment is completed.

With the motor idling unscrew the air valve screw one notch at a time, pausing for 15 or 20 seconds after each movement, until the motor starts to slow down. This indicates that the mixture is too lean. Now screw in the air valve screw one notch at a time, again pausing after each movement, until the engine is running evenly, which completes the adjustment.

If the motor stops or hesitates after suddenly closing the throttle, one or two notches richer may be required.

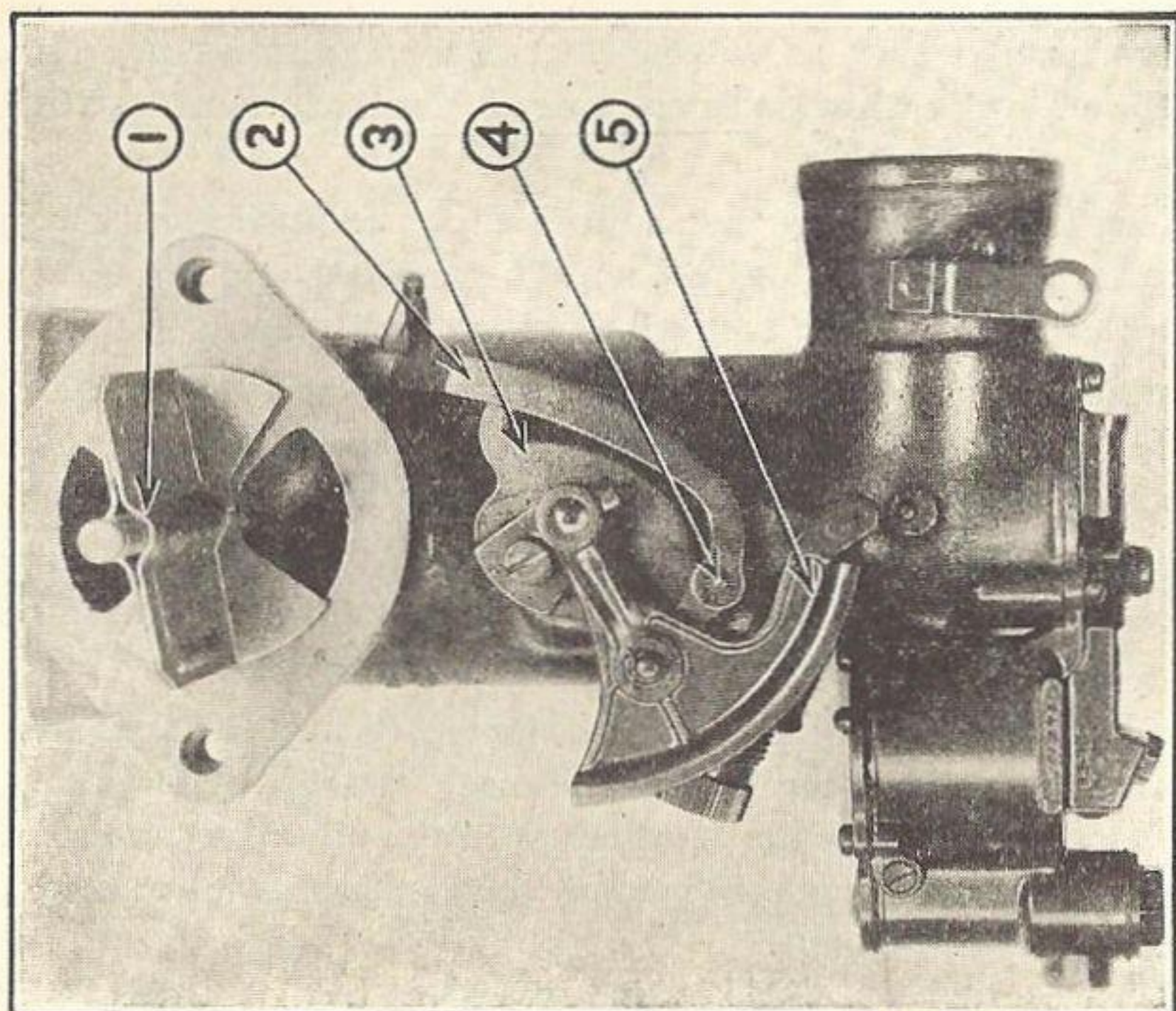


Fig. 21

1. Heat Control Valve
2. Heat Control Valve Connecting Link
3. Heat Control Operating Cam
4. Heat Control Lever Roller
5. Throttle Spring Lever

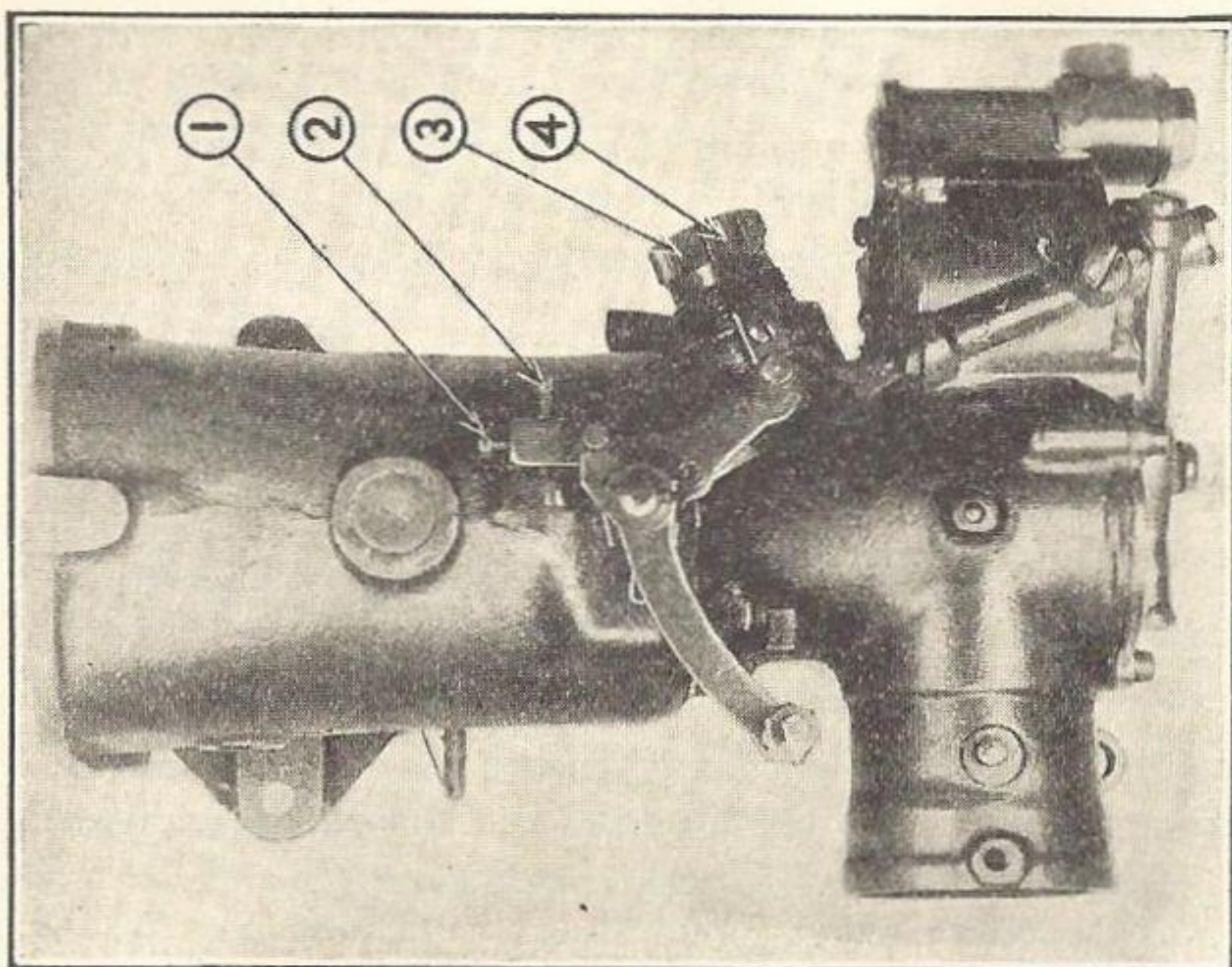


Fig. 21A

Carbureter Adjustments

1. Throttle Lever Stop Screw Lock Screw
2. Throttle Lever Stop Screw
3. Air Valve Adjusting Screw
4. Air Valve Adjusting Screw Ratchet

The actual speed of the motor when idling is controlled by screwing in or out on the throttle lever stop screw (2). Screwing it in will speed up the motor and screwing it out will slow the motor down. Do not idle the engine slower than it takes to drive the car 5 miles per hour in high gear.

We have tried to present in the preceding paragraphs a step by step description of the procedure recommended to completely and correctly adjust the parts of the motor, requiring a definite inspection or adjustment at certain intervals. It is not, however, necessary to follow this procedure every time, for parts of it may be omitted if you are sure the omitted parts are functioning correctly. This we must leave to your judgment or to the judgment of the Nash Service Station to whom you entrust the care of your car.

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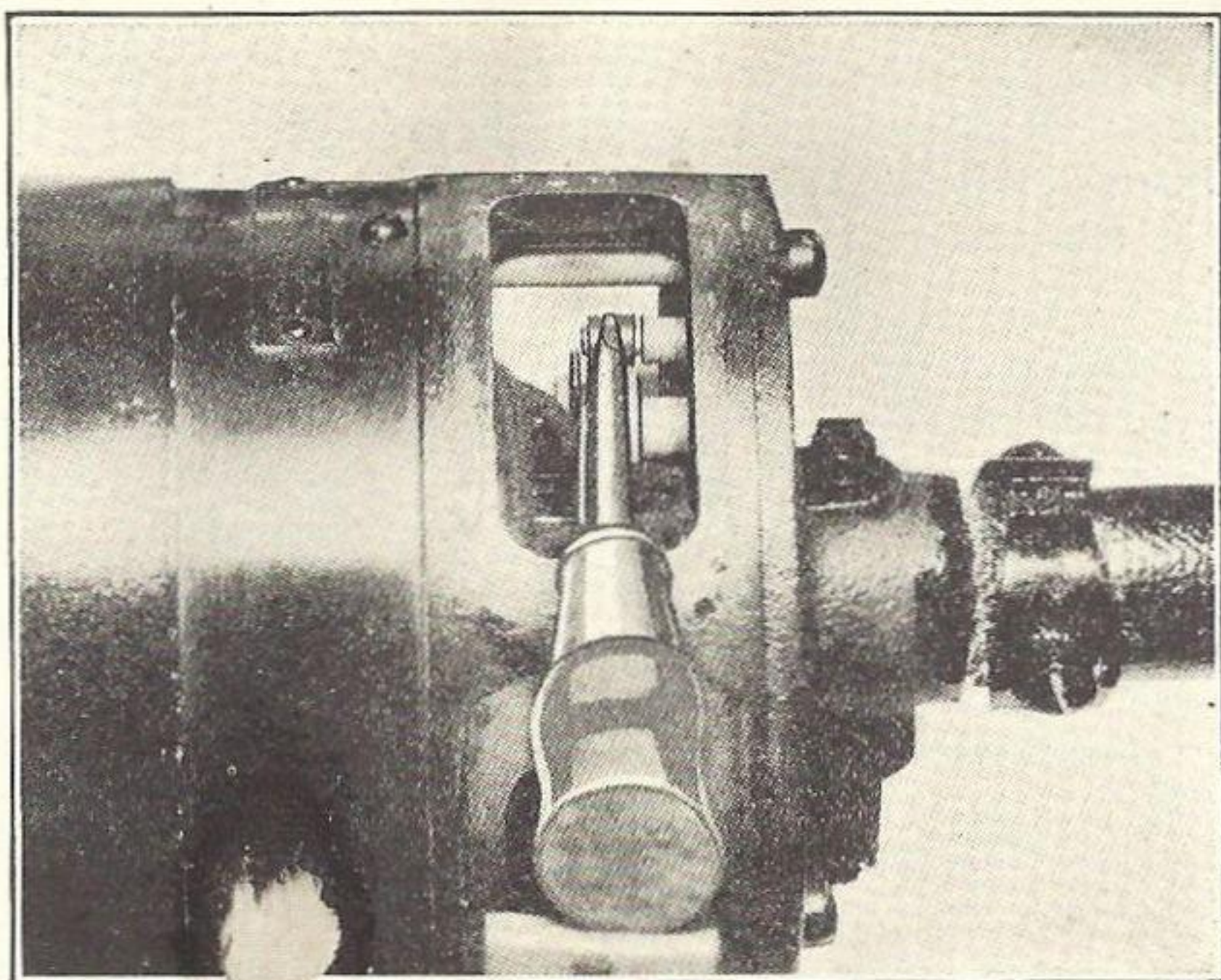


Fig. 22

Generator Brush Adjustment
(Increasing charging rate)

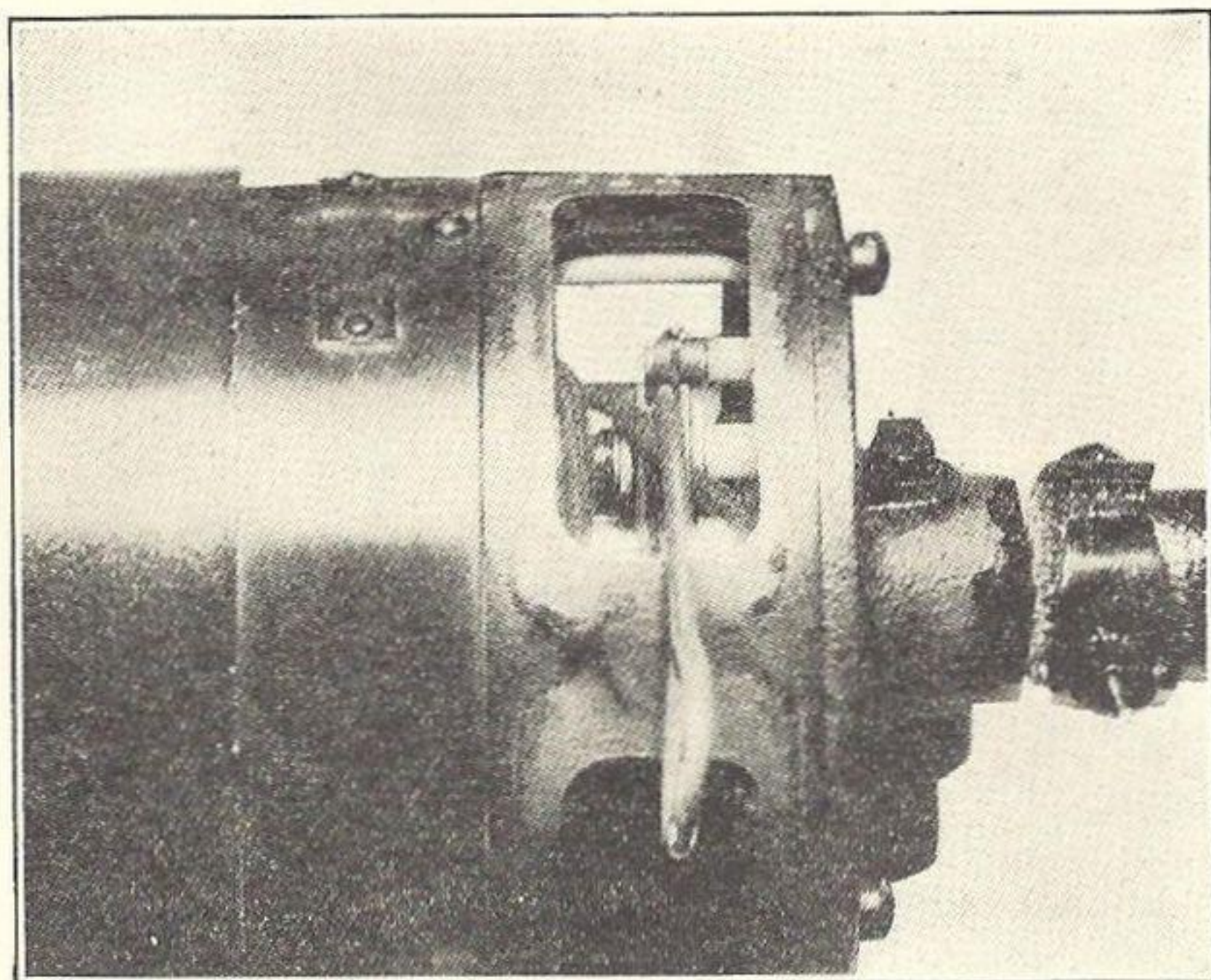


Fig. 23

Generator Brush Adjustment
(Reducing charging rate)

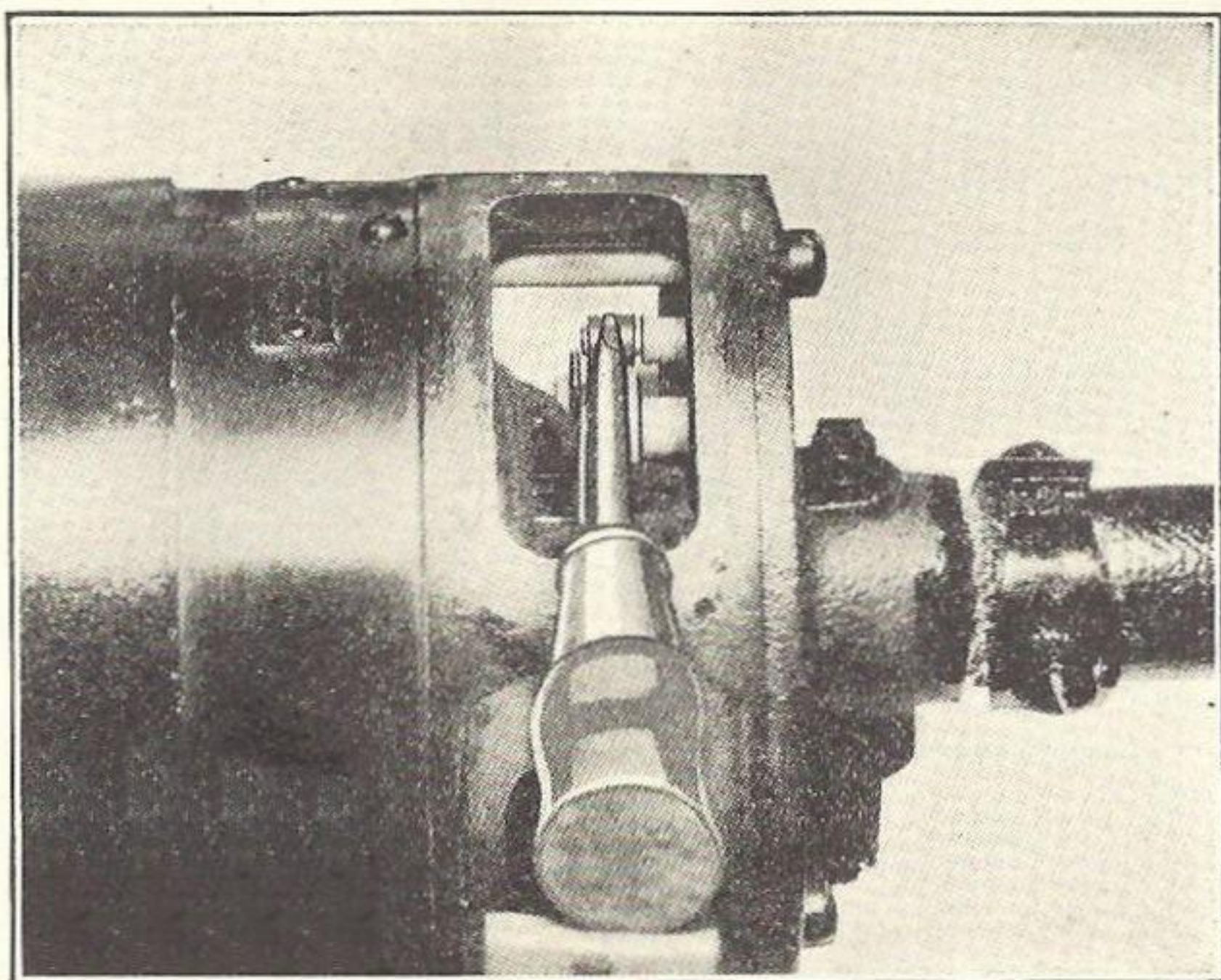


Fig. 22

Generator Brush Adjustment
(Increasing charging rate)

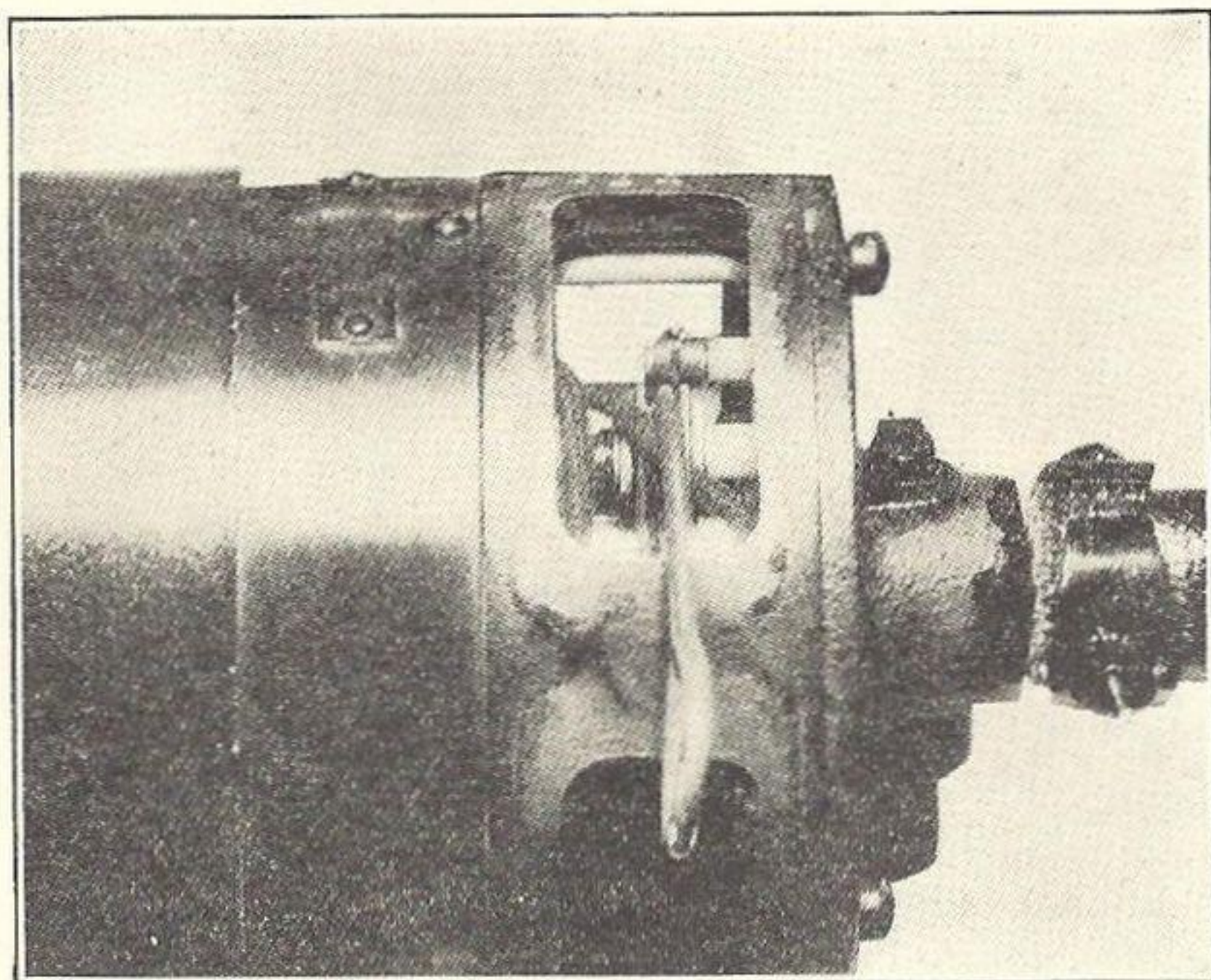


Fig. 23

Generator Brush Adjustment
(Reducing charging rate)

ELECTRICAL SYSTEM

THE Auto-Lite Electrical System with which your car is equipped is quite simple in design and needs very little maintenance service. Correct lubrication, which is covered in the 500-mile lubrication schedule, is the most important maintenance requirement.

One should also occasionally inspect and tighten the capscrews holding the generator to the motor and the large setscrew holding the starting motor in place.

Generator Charging Rate

The generator charging rate is controlled by the location, of one of the generator brushes, called the third brush in relation to the other two brushes. The third brush is held in a movable bracket and can be easily moved to change the charging rate. Moving it in the direction of generator armature rotation, or toward the engine with a blunt pointed tool will increase the charging rate, as shown in Fig. 22. Pulling it toward the fender with a small hook will decrease the charging rate. Do not adjust the third brush to give an output greater than 12 or 14 amperes with the generator and engine at normal temperature, unless many short trips of only a few miles length are made in very cold weather.

Generator Cutout

The generator cutout is mounted in a metal box on top of the generator. Refer to Fig. 2. No attention is required except to keep the wires attached to it tight.

Field Fuse

The generator is protected by a 5 ampere fuse placed in the field circuit. It is located in the generator close to the third brush.

Bendix Starter

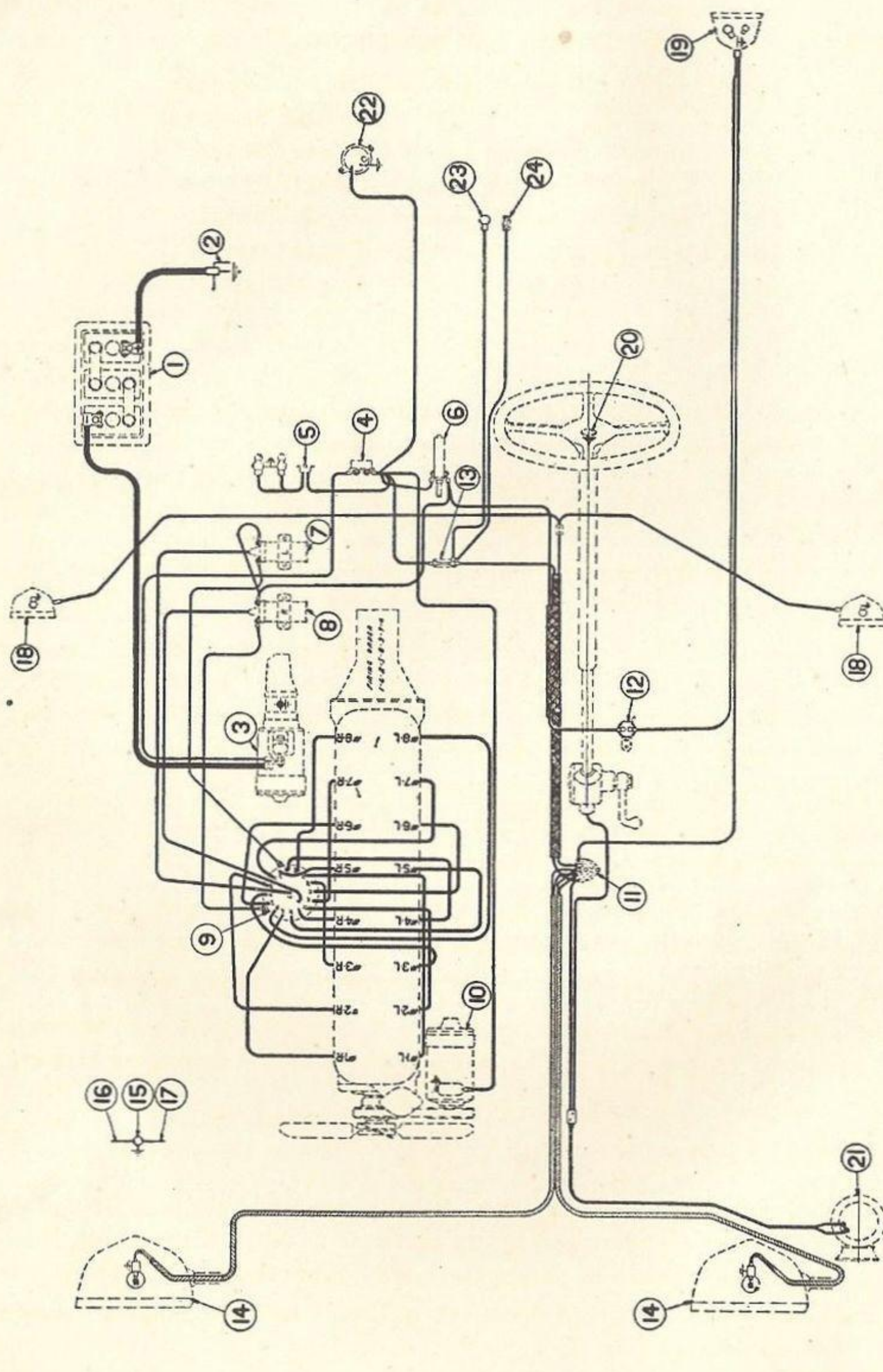
The Bendix Starter Mechanism requires no lubrication. If some one does lubricate it, the small gear may not screw into mesh with the flywheel and the starter will not turn the motor. It will only make a buzzing sound when the starter button is pulled out.

If this occurs the starting motor should be removed and the oil on the mechanism washed off with gasoline or kerosene. Dry thoroughly before replacing.

The starter switch button on the instrument board operates the starter switch, through a fine steel cable. An adjustment is provided on this cable and if excess slackness of the cable exists it should be shortened until just a little looseness is apparent.

Ignition Distributor

The ignition distributor requires no other attention than that covered in the ignition timing procedure on pages 43 and 45.



Wiring Diagram

Fig. 24

- 19. Stop and Rear Lamp
- 20. Horn Button
- 21. Horn
- 22. Dome Lamp
- 23. Tonneau Lamp
- 24. Cigar Lighter

- 13. Fuse Block
- 14. Head Lamps
- 15. Head Lamp Bulb
- 16. High Beam Wire
- 17. Low Beam Wire
- 18. Cowl Lamps

- 7. Coil
- 8. Coil
- 9. Distributor
- 10. Generator
- 11. Light Switch
- 12. Stop Light Switch

- 1. Storage Battery
- 2. Battery Ground Cables
- 3. Starting Motor
- 4. Ammeter
- 5. Instrument Light Switch
- 6. Ignition Switch

LIGHT EQUIPMENT

FOR your convenience in buying new bulbs to replace any that may fail, we list below the correct type for each light on your car:

Head Lights	21 candle power—Double Contact Double Filament
Side Lights	3 candle power—Single Contact
Dome Lights	4 candle power—Double Contact
Dash Lights	3 candle power—Single Contact
Rear Light	3 candle power—Single Contact
Stop Light	15 candle power—Single Contact

Replacing Bulbs

In order to replace a bulb in any of the lights it is necessary to remove the light lens and rim. This is accomplished in the following ways:

Head Lights—Remove the screw at the lower part of light rim. The lens and rim can then be lifted away from the light and the bulb exposed.

Side Lights—The rim and lens is removed by turning to the left the rim of the light until the prongs on the rim are released from the notches in the light.

Dash Lights—Two dash lights are used. Reaching up back of the instrument panel grasp the socket of the dash light you wish to remove and twist it to the left. On account of the reversed position of the light this movement will be to your right. This will release the complete light from the instrument panel and it can be lowered for inspection or bulb replacement.

Dome Light—The dome light bulb is exposed by shifting the cover to the rear until the hooks on it which hold it to the base are released.

Rear Light—Stop Light—Remove the two screws holding the rim and glass in place. The top bulb is the stop light and the other the rear light bulb.

Replace all of the light rims and lenses by reversing the above operations.

The bulbs are held in their sockets by what is known as a bayonet fastening. Bulbs are removed by twisting to left a short distance and then pulling straight out on them.

Focusing Head Lights

The head lights are correctly focused and directed when the car is built and do not need this service unless damaged by an accident or when a new bulb is installed. If necessary to re-focus or direct the head lights proceed as follows:

Place car twenty-five feet from a smooth wall on which the diagram shown in Fig. 25 is laid out.

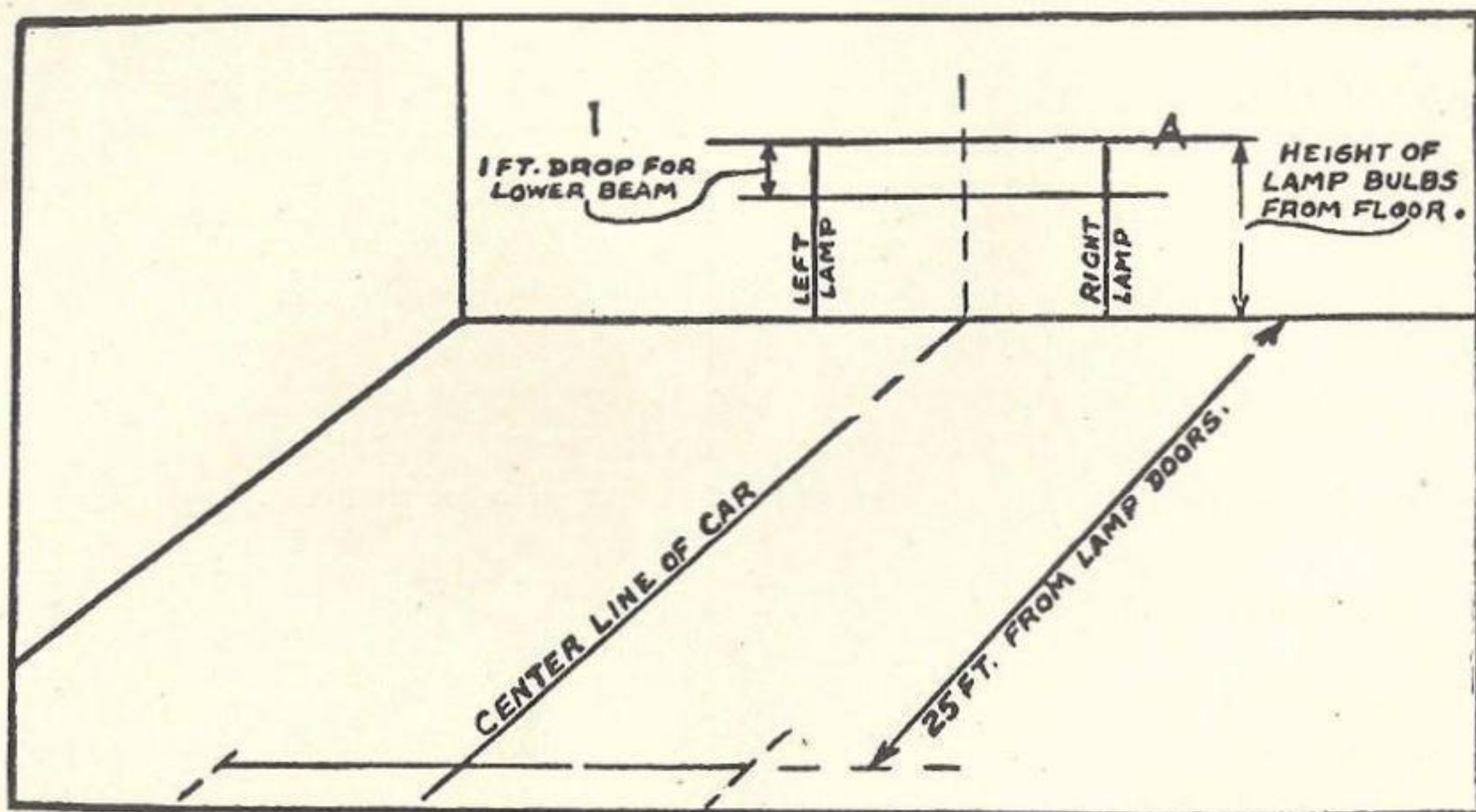


Fig. 25

Headlight Focusing Diagram

(Use black lines on a white wall)

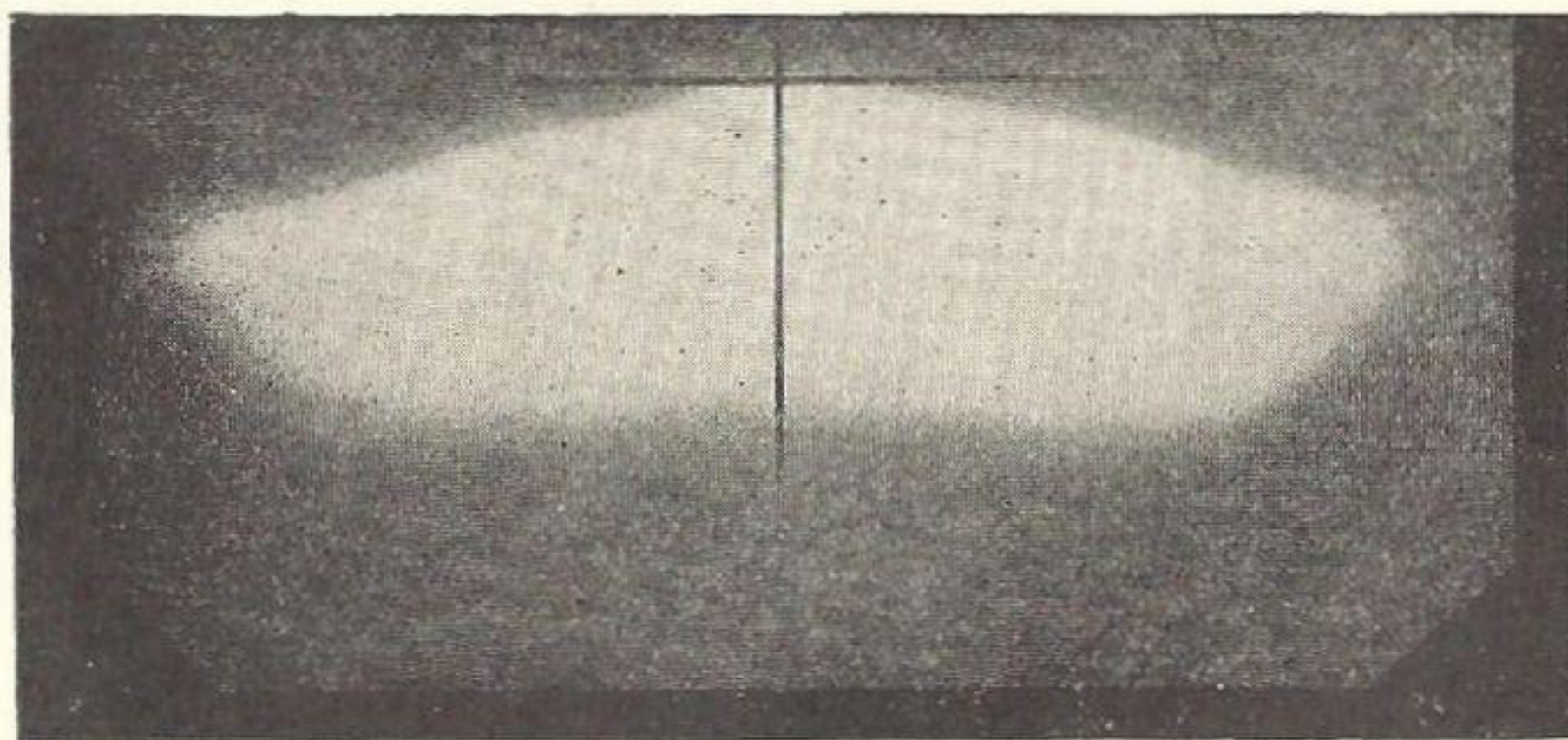


Fig. 26

Single Upper Beam

(When correctly focused and aimed and lens in place)

Headlight Adjustment

1. Headlight Cover Gasket
2. Headlight Lens
3. Headlight Reflector
4. Double Filament Bulb
5. Focusing Screw
6. Headlight Bulb Socket
7. Headlight Wires
8. Headlight Rim
9. Headlight Rim Attaching Screw

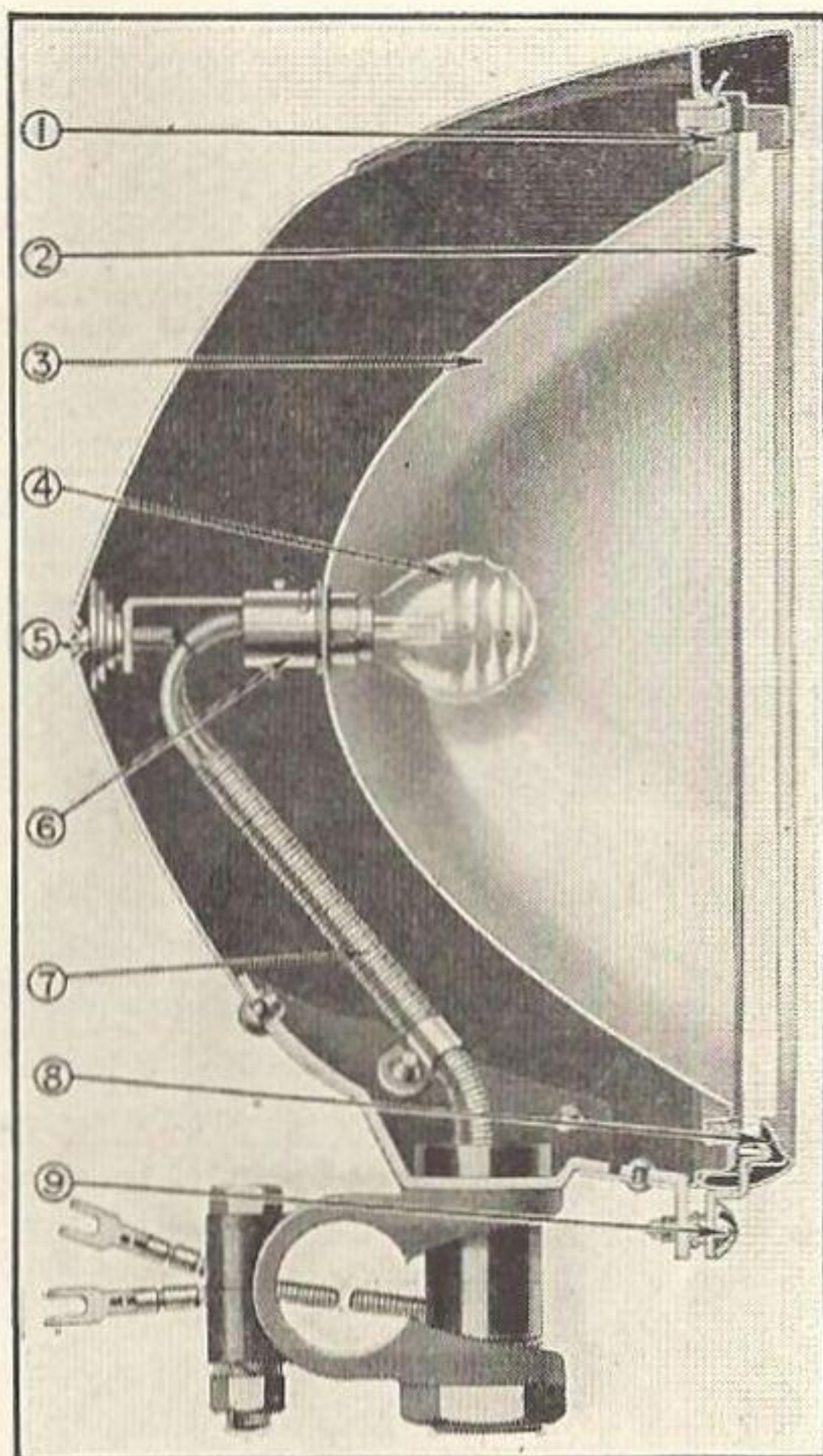


Fig. 27

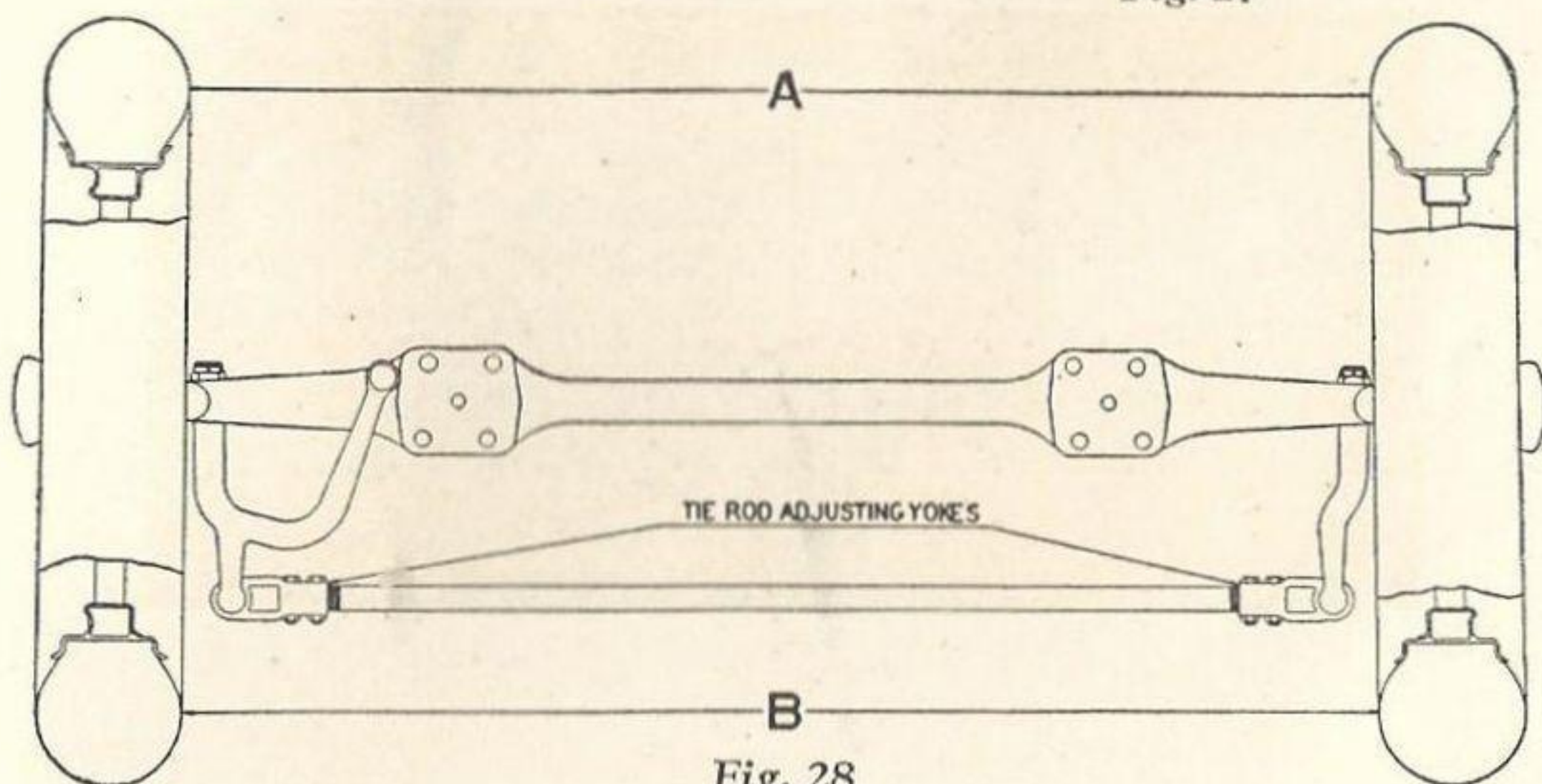


Fig. 28

Front Wheel Alignment

(When correctly aligned with Nash Wheel Aligning Gauge distance A is $\frac{1}{8}$ " less than distance B.)

Turn light switch on high or driving beam position. Cover one head light with a heavy cloth until the adjustment on the other is completed.

Screw in or out on the focusing screw No. 5, Fig. 27 until the area lighted by the lamp most nearly approaches a shape such as in Fig. 26.

Loosen the large nut holding the light to the cross bar and aim or direct the lamp by shifting it on its base so the vertical mark on the wall directly in front of the light is in the center of the lighted area.

Proceed similarly on the other light.

No focusing or directing are necessary on the rest of the light equipment.

Storage Battery

The advantage of registering your battery with the USL Service Station has been covered in the forepart of this book. In addition, the distilled water in the battery must be inspected and added to at least every two weeks. The loss of the water through evaporation is sometimes greater than expected and unless it is checked every two weeks, damage to the battery may result. Use nothing but distilled water and fill to within $\frac{1}{2}$ " above the top of the battery plates. They are visible through the filler holes. Keep all metal from coming in contact with the water used. Keep the battery cable connections clean and tight. If corrosion of the cable terminals is evident, clean thoroughly and cover them with soft cup grease or vaseline.

BRAKE ADJUSTMENT

BRAKES are in need of adjustment when the brake pedal can be pressed almost to the floor of the car or when the car is inclined to swerve to the right or left when the brakes are applied.

In order to insure proper efficiency and equalization, the brakes in all four wheels should be adjusted whenever an adjustment is made and not confined to one or two wheels. Jack up each wheel and perform the following operations on each of them taking care to adjust them exactly alike. Check wheel bearings for looseness and adjust, if necessary. We have separated this service operation into three parts to simplify the adjustment. Refer to Figs. 29 and 30.

A—Centralize brake shoes.

Loosen lock nut and turn eccentric screw (1) in direction wheel rotates until a slight drag can be felt when turning the wheel by hand. Tighten lock nut to hold eccentric screw temporarily in this position.

B—Remove notched adjusting wheel cover plate (3) with screw driver. Turn notched adjusting wheel down toward brake drum by using screw driver as shown in Fig. 30, until brake drag is materially increased. Then turn notched adjusting wheel in opposite direction one notch or click at a time until only the slight drag obtained in paragraph A remains. Replace cover plate.

C—Turn eccentric screw (1) in direction opposite to wheel rotation until the wheel is free and no brake drag is felt. Tighten lock nut.

The procedure, performed on each brake, adjusts them for normal wear. If they do not hold equally when placed in operation the brake that is holding the most should be loosened by turning *up* toward the center of the wheel one or two notches on the notched adjusting wheel.

Another, the secondary adjustment, is only needed when the brakes are relined or when the lining is worn so much that the normal adjustment does not give satisfactory results.

Nash Service Stations have full information on brake adjusting procedures. Your brake requirements will receive excellent attention at their hands.

Steering Gear

The Steering Gear is properly adjusted before delivery of the car to you and will not need further adjustments for many thousands of miles. When it does need adjusting, we recommend that you permit an Authorized Nash Service Station to do the work.

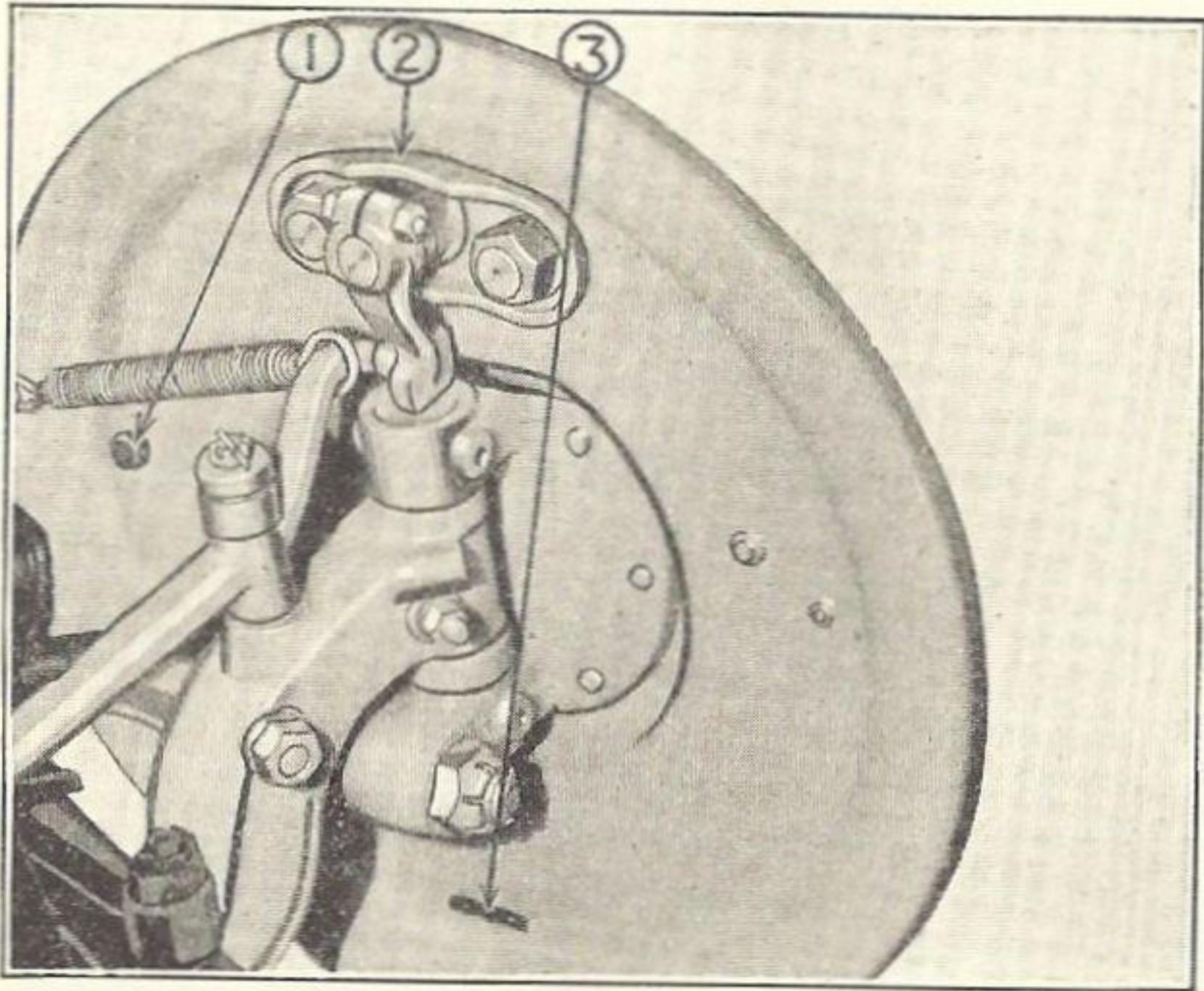


Fig. 29

Brake Adjustment

1. Eccentric Screw and Lock Nut
2. Brake Anchor
3. Adjusting Wheel Cover Plate

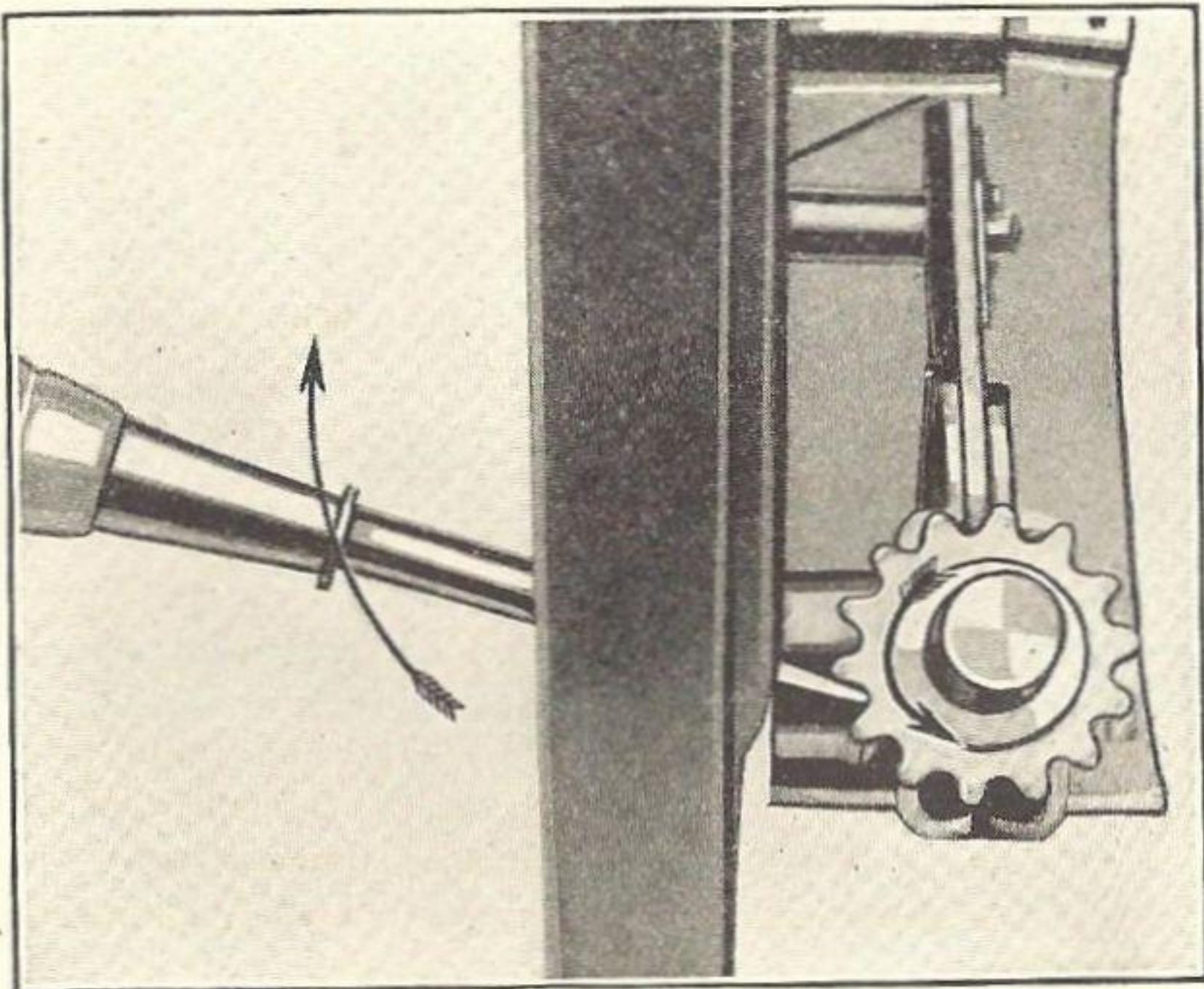


Fig. 30

Brake Adjustment

(Move screw driver in direction shown to tighten brakes.)

CLUTCH ADJUSTMENT

THE clutch on your car is in need of adjustment when the amount of free movement of the pedal is less than $\frac{1}{2}$ inch. Under no circumstances should the car be operated when the pedal is held forcibly against the floor board and no free movement can be felt. The amount of free movement can be determined by pressing in on the clutch pedal with one finger until a definite resistance is reached.

The adjustment is made by removing the flywheel mud pan and working from under the car in the following manner:

1. Loosen all of the clutch cover screws No. 5, Fig. 31. The motor should be turned by the hand crank to bring all of them in reach.
2. Have some one depress the clutch pedal about 2 inches. With a hammer handle against one of the holes in the clutch cover jar the clutch cover about $\frac{1}{2}$ inch to the right.
3. Release clutch pedal and tighten the clamp screws.
4. Measure the distance between the front edge of the release bearing and the clutch cover. Refer to Fig. 32. This distance should be $\frac{9}{16}$ ". If less than this, turn clutch cover still further to the right by following procedure in paragraph 2. If more than $\frac{9}{16}$ ", turn clutch cover slightly to the left.
5. Loosen pedal hub adjusting bolt No. 3, Fig. 33 and drop clutch pedal down to the limit of the slot through which the adjusting bolt passes.
6. Screw in or out on the throwout lever adjusting screw No. 3, Fig. 34 until the distance between front edge of the throwout lever pins and the clutch cover is $\frac{1}{16}$ ". Refer to Fig. 32. The throwout lever adjusting screw is on the right end of the throwout shaft as shown in Fig. 34.
7. Pull pedal back until the pedal pad just touches the floor board and then tighten the pedal hub adjusting bolt.

If the adjustments have been correctly made from 1 to 2 inches of free pedal movement should be evident.

Replace flywheel mud pan.

SHOCK ABSORBERS

THE shock absorbers are of the Lovejoy Hydraulic type and are not adjustable. One should occasionally inspect for tightness the attaching bolts and the connecting links. It is also advisable about once or twice a season to have the fluid in the shock absorbers and their action checked at an Authorized Nash Service Station. Never permit anything excepting genuine Lovejoy Shock Absorber Fluid to be put in the shock absorbers.

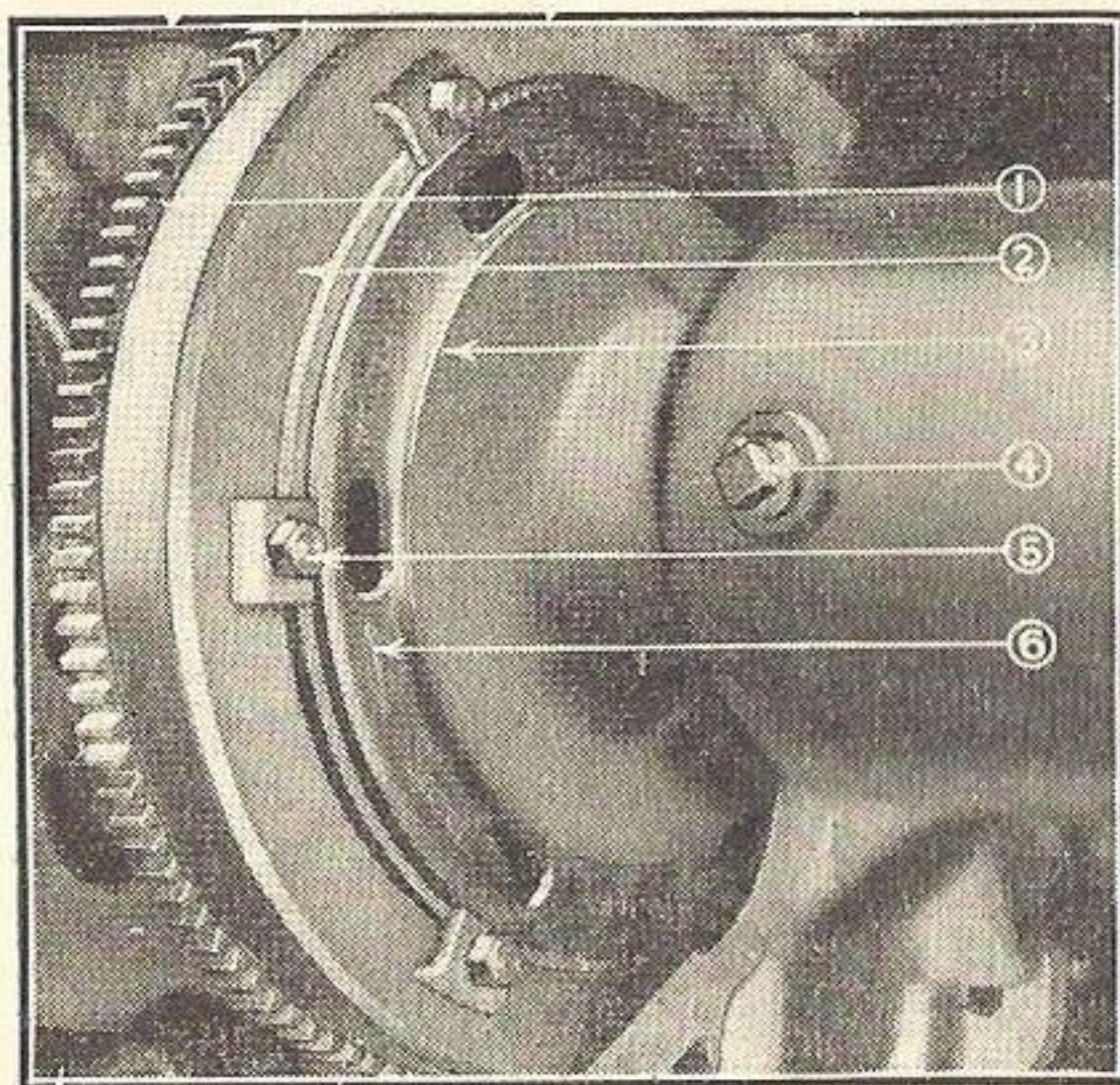


Fig. 31

Clutch Cover Adjustment

1. Flywheel Ring Gear
2. Flywheel
3. Clutch Cover
4. Transmission Drain Plug
5. Clutch Cover Clamp Screw
6. Direction Arrow on Clutch Cover

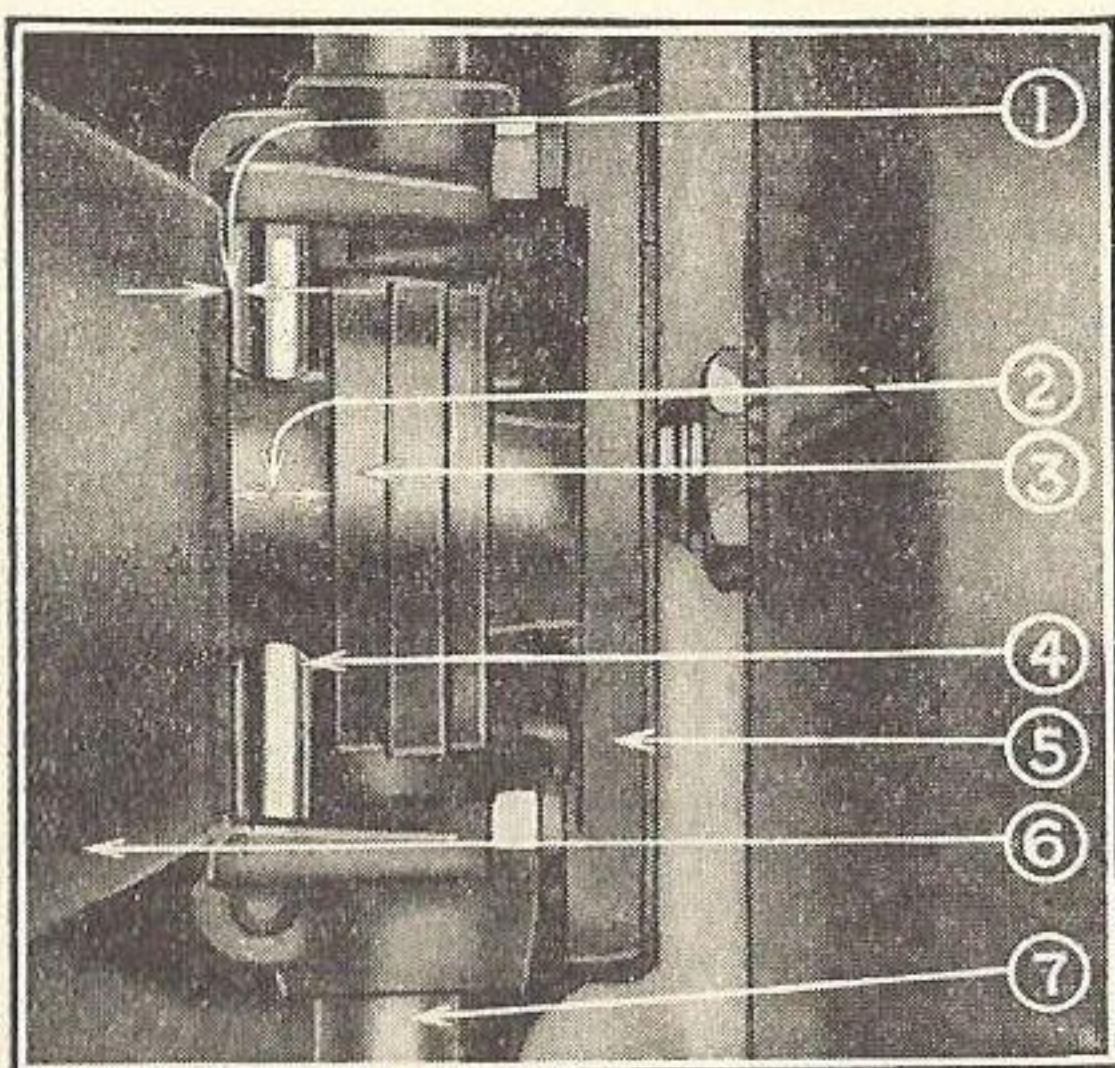


Fig. 32

1. Clearance between Throwout Lever Pins and Clutch Cover
2. Clearance between Clutch Release Bearing and Clutch Cover
3. Throwout Bearing Assembly
4. Throwout Lever Pin
5. Transmission Throwout Bearing Cap
6. Clutch Cover
7. Throwout Lever Shaft

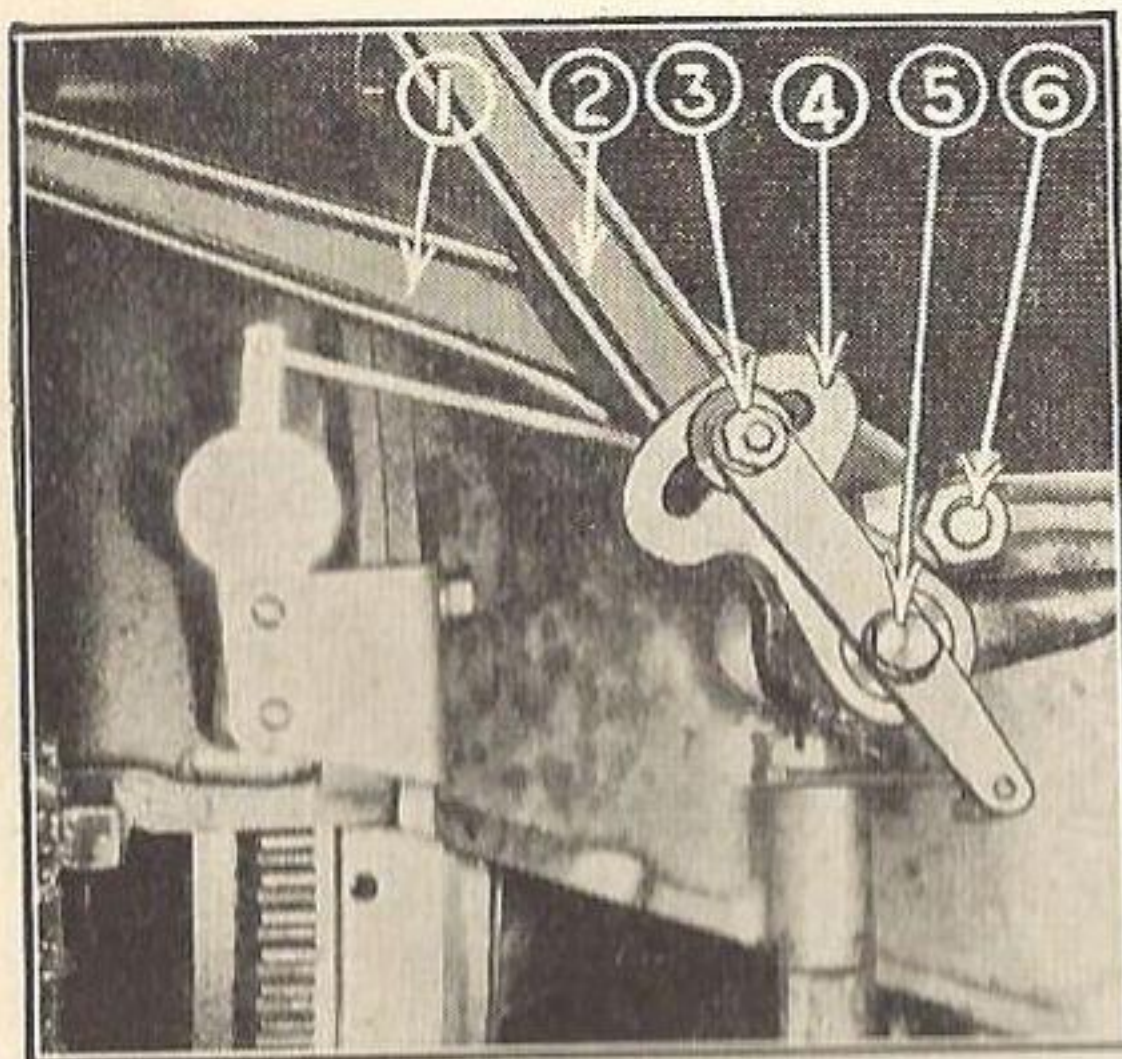


Fig. 33

Clutch Pedal Adjustment

1. Brake Pedal
2. Clutch Pedal
3. Clutch Pedal Hub Clamp Bolt
4. Clutch Pedal Hub
5. Clutch Pedal Hub Retaining Screw
6. Transmission Second and High Shifter Adjustment

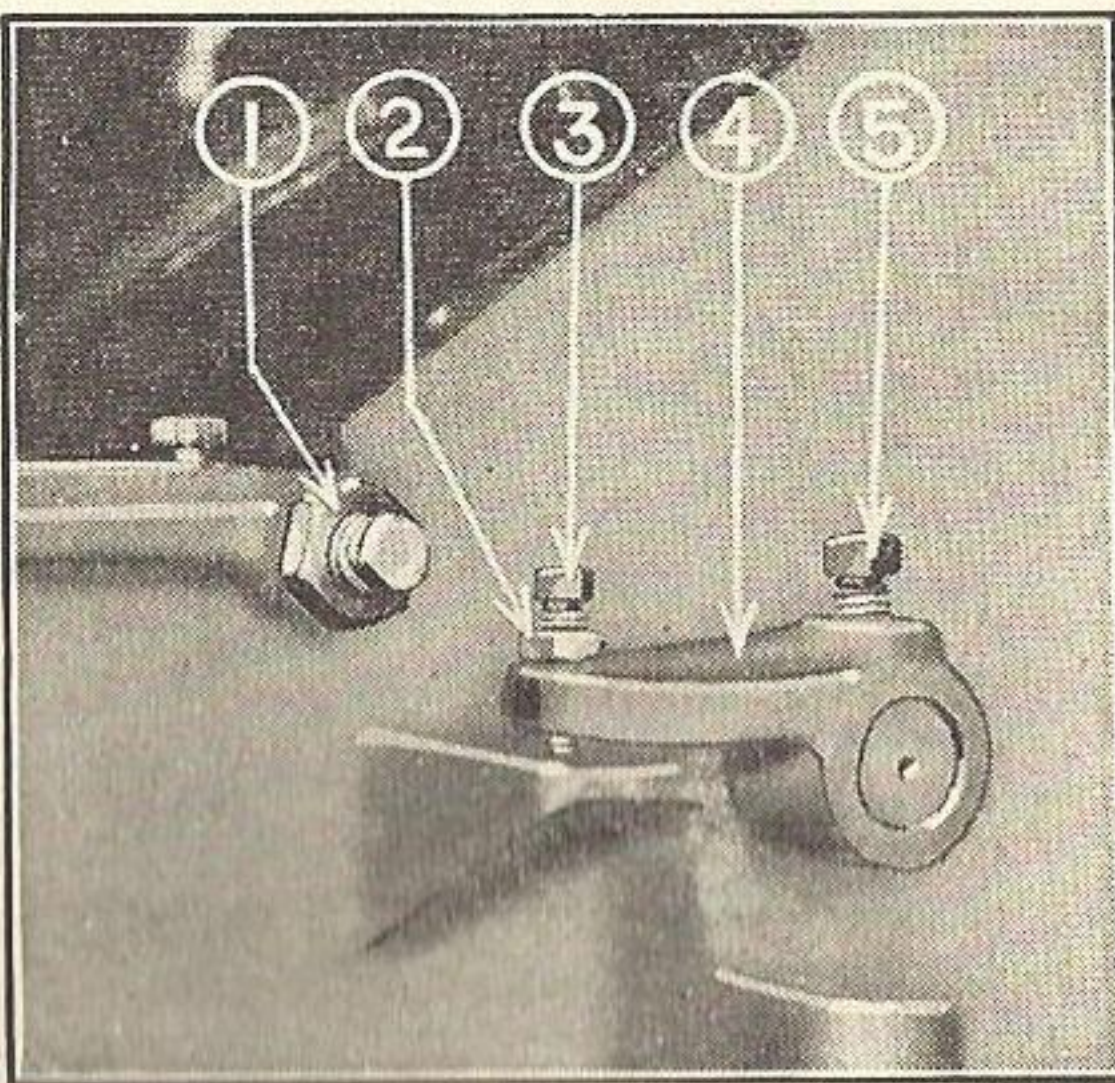


Fig. 34

Clutch Throwout Lever Adjustment

1. Transmission Low and Reverse Shifter Adjustment
2. Throwout Lever Adjusting Setscrew Lock Nut
3. Throwout Lever Adjusting Screw
4. Throwout Lever Adjusting Bracket
5. Throwout Lever Adjusting Bracket Set-screw

BODY

Finish

This car is finished with lacquer, a type of finish introduced a few years ago, and its introduction marks a tremendous improvement in motor car finishes. It possesses wearing and preserving qualities which results in the beautiful finish on your car lasting far beyond what you have learned to expect.

But—nothing lasts forever. Steel will rust away; the hardest stone disintegrates under the attack of weather, and Lacquer wears, but there is this difference: It does not crack, check or peel, destroying the finish down to the metal. The wearing is gradual and the surface disintegrates, causing a fine, powdery chalk-like dust to appear. This is easily removable and immediately below, the Lacquer surface comes back to life, as beautiful as before.

Do not be alarmed if the water used in washing becomes slightly tinted with the color of the Lacquer, and the gloss becomes dimmed. This is a natural condition and the original appearance of the car is easily restored by following the directions given below for maintaining a Lacquer finish:

1. Remove dust by rubbing vigorously with cheesecloth. This will, at the same time, have a polishing tendency and remove the powdered film.
2. Remove heavy mud by washing with clear, cold water, using a clean sponge and chamois, finally rubbing with cheesecloth.
3. Remove road tar and oil with gasoline.
4. Rub frequently with cheesecloth. Each stroke improves the gloss, and the dust acts as a slight abrasive, improving the appearance of the car.
5. Polish the car every six weeks to two months.
6. The midsummer months are the hardest on any type of finish and Lacquer, therefore, requires more attention during that period.
7. Direct sunlight or continuous outdoor exposure hastens this chalking condition. Give a car as much protection as possible at all times.

Caution

Alcohol non-freezing solutions will injure the Lacquer finish on the hood of the car. Use considerable care when filling radiator and caution others to do so when alcohol solutions are used.

Windshield Cleaner

Cleaner will give better results if operated a few moments every few days in order to circulate the oil lubrication and keep the rubber cleaner blade flexible. The proper tension on the blade can be obtained by bending the little wire arm. The tension should not be too heavy because that breaks down the rubber. If it is desired to move the arm back and forth in making adjustments or washing the windshield, it can be done without injury to the cleaner if the control valve of the cleaner is opened.

Care of Upholstery

After the car has been thoroughly washed, the upholstery should be cleaned (whether cloth or leather) with a rag moistened in water and Ivory Soap. Then brush with a whisk broom when dry. **PREVENT BATTERY ELECTROLYTE FROM TOUCHING UPHOLSTERY.**

Care of Top

Tops as well as other parts of the car require maintenance. They should be treated with top dressing at least once a year to preserve appearance, life, and resistance to weather. Nash Service Stations working on fixed prices, can do this according to approved methods, using tested material.

Care of Tool Equipment

You will very likely carry the tool equipment under the seat in your car. May we suggest that you provide a pad of heavy cardboard or cloth on which to lay the tools, and also wrap each of the separate pieces in cloth before placing them. A little care in storing the equipment in this way will prevent the tools from rattling under the seat.

It is also advisable to oil the various tools, such as pliers, jack, adjustable wrench, etc., to that they will be in a condition easy to use when they are needed.

GLOSSARY OF TERMS

IN preparing this book of information on the care of Nash cars for you, we have, of necessity, used some terms the meaning of which may not be entirely clear. We hope their meaning will be made understandable by the definitions given here:

Backlash	the free oscillating movement of a rotating or oscillating part necessitated by the clearances in its driving mechanism.
Back-Off	(as an adjustment) to loosen by unscrewing.
Bolt	a screw with a hexagon head which is used with a nut to hold two or more parts together.
Capscrew	a screw with a hexagon head which is screwed into a threaded hole in one of the parts it holds in place.
Castellation	one of the grooves in certain nuts through which a cotter pin is placed, also used to turn certain adjustments.
Clearance	the space allowed between two parts for lubricants or expansion (usually adjustable).
Clockwise	the direction in which the hands on a clock move.
Drag Link	the bent, tubular rod which attaches the steering gear to the front wheel.
End Play	the free movement of a rotating or oscillating shaft, back and forth in the direction of its greatest length, which is necessary for lubricating or expansion of the parts (usually adjustable).
Gap	an air space between two electrical contacts (always adjustable).
Lean	referring to carburetor adjustments—when not enough gasoline is being permitted to pass through carburetor.
Left Hand Thread	a screw bolt, etc., which must be turned in a counter-clockwise direction to tighten it, has a left-hand thread.
Nut	a small metal part having a threaded hole in it used in connection with a stud or bolt to hold two or more parts together.

Packing	as in a water pump—a heavy cord made of asbestos and graphite which is wrapped around the water pump shaft to prevent water leaking past it.
Primary Wire	a small wire which carries electrical current from the ignition coil to the distributor—(it is fastened at the distributor end by a small screw).
Rich	(the opposite of lean)—too much gasoline for the amount of air being used.
Riser	that portion of the intake manifold which is just above the carbureter. It is separable from the intake manifold and the carbureter.
Right Hand Thread	a screw, bolt, etc., which must be turned in a clockwise direction to tighten it—has a right hand thread.
Rotor	the non-metallic part placed on top of the distributor shaft and which distributes the electrical current to the different spark plugs as it revolves.
Screw	a threaded part having a slot or groove in its head in which a screw driver is used to tighten or loosen it.
Screw-In	to tighten by turning—usually in a clockwise direction.
Screw-Out	to loosen by turning—usually in a counter-clockwise direction.
Secondary Wire	a large wire which carries electrical current from the ignition coil to the distributor or from the distributor to the spark plug—(much larger than the primary wires).
Tie Rod	the straight tubular rod which connects one front wheel to the other.
Thickness Gauge	a fine steel strip usually $\frac{1}{2}$ " wide and 3 to 4 inches long, accurately ground to a definite thickness and having its thickness in thousandths of an inch stamped on it—(usually sold in a sheath containing several blades of different thicknesses hinged at one end).
Thumb Nut or Screw	a nut or screw having protrusions or rough places on it which enables one to turn it by hand.

NASH DISTRIBUTORS

Touring with a Nash Car is an unusual pleasure. Nash Distributors and dealers with convenient and adequate service stations are keenly interested in tourists and a cordial reception will be given any Nash owner who visits their stations.

Any of the following list of Distributors will be pleased to give you information regarding Roads, Routes, and other items of interest in their respective territories:

Atlanta, Georgia
Baltimore, Maryland
Birmingham, Alabama
Boston, Massachusetts
Buffalo, New York
Charlotte, N. C.
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Dallas, Texas
Denver, Colorado
Detroit, Michigan
Easton, Maryland
El Paso, Texas
Grand Rapids, Mich.
Hutchinson, Kansas
Indianapolis, Indiana
Jacksonville, Florida
Kansas City, Mo.
Kenosha, Wisconsin
Little Rock, Arkansas
Los Angeles, Calif.
Louisville, Kentucky
Memphis, Tennessee
Milwaukee, Wisconsin
Minneapolis, Minn.
Montgomery, Alabama
Newburgh, New York
New Orleans, La.
New York, N. Y.
Oklahoma City, Okla.
Omaha, Nebraska

Philadelphia, Pa.
Phoenix, Arizona
Pittsburgh, Pa.
Portland, Oregon
Racine, Wisconsin
Salisbury, Maryland
Salt Lake City, Utah
San Antonio, Texas
San Francisco, Calif.

Seattle, Washington
Spokane, Washington
St. Joseph, Missouri
St. Louis, Missouri
Toledo, Ohio
Topeka, Kansas
Washington, D. C.
Wichita, Kansas
Calgary, Alberta
Halifax, Nova Scotia
Montreal, Quebec
St. John, N. B.
Toronto, Ontario
Vancouver, B. C.
Winnipeg, Manitoba

Knowles-Nash Company
The Wilson-Nash Motors Co.
McCormack-Nash Co., Inc.
Nash New England Co.
Nash Buffalo Corp.
Burwell-Harris Company
Chicago Nash Company
The Nash-Cincinnati Motors Co.
The Reeke Nash Motors Co.
Nash Texas Company
Larson Nash Motors Company
Miller-Judd Company
The Shannahan Nash Motors Co.
Cain-Nash Motor Co.
Hart Nash Motor, Inc.
Gano Nash Company
E. L. Shaver Company
Pyle Nash Motor Company
Nash Midwest Motors
The Greiner Nash Company
Bush-Nash Company
Nash-Breyer Motor Company
Prince Wells Co.
Erwin-Hicks Motor Car Co.
Nash Sales, Inc.
Northwest Nash Motors Inc.
Covington Bros. Motor Co.
John A. Staples
Nash Miss. Valley Mtr. Car Co. Inc.
Warren-Nash Motor Corp.
Tom Cooper Motor Co.
Nash-Vriesema Auto Co.

Roberts Nash Motor Company
Miller Bros. Motors
The Nash Pittsburgh Mtrs. Co.
Wentworth & Irwin, Inc.
Century Motor Co. Inc.
Gunby Nash Motors Co.
Ballard-Jackson Nash Co.
Jack Neal Nash Co.
Pacific Nash Motor Co.

Nash Washington Company
Nash Washington Company
Trachsel Motor Car Co.
Southwest Nash Co.
The Reeke Nash Motors Co.
Chas. Wierenga
Wallace Motor Company
The Stretch & Strain Mtr. Co.
Alberta Nash, Limited
Nash Motor Sales Co., Ltd.
Legare-Nash Motors
Stewart-Nash Motors Ltd.
Breay Nash Motors, Ltd.
Begg Motor Co., Ltd.
Leonard & McLaughlins Mtrs. Ltd.

619 Peachtree St., N. E.
230-250 W. 29th St.
Cor. Ave. F and 21st St.
640 Commonwealth Ave.
45 E. Jewett St.
210-12 N. Church St.
2360 Prairie Ave.
Reading Rd. at Morgan
6611 Euclid Ave.
Live Oak at Pearl St.
950 Broadway
5454 Cass Ave.

812-16 Montana St.
State & Waverly, S. E.
107 West First St.
400 N. Capitol Ave.
726 Hogan Street
27th & McGee Trafficway
5825 Eighth Ave.
309 Center St.
1058 S. Figueroa St.
737 S. Third Ave.
939-945 Union Ave.
Broadway & E. Wells
1201 Hennepin Ave.
101 Moulton St.
Balmville Road
901-11 St. Charles St.
Broadway & 133rd St.
Broadway & 6th
423 S. Tenth St.
Burlington Post Sta.
1237 N. Broad St.
533-535 Washington St.
430 N. Craig St.
21st & Washington St.
Sixth Street at Villa

5th South at Main
320-326 S. Flores St.
Van Ness Ave. at
Washington St.
500 East Pike Street
Second Ave. at Cedar St.
305 S. Eighth Street
3000 Locust Street
1948 Spielbusch Ave.
1013-7 Kansas Avenue
1709 "L" Street, N. W.
1325-31 E. Douglas Ave.
4th St. W. & 7th Ave.
3416 Park Ave.
P. O. Box 38—Station "T"
54-56 Union St.
1152 Bay Street
1062-82 Georgia St., West
Portage Ave. at Young St.

STANDARD SERVICE POLICY

THE Nash Motors Company, through its distributors and dealers, aims to give all purchasers of Nash Cars uniformly fair, courteous and businesslike treatment and to assist them in every reasonable way to keep their cars in good running condition.

The principles of this policy are:

First—To fulfill the obligations assumed under the manufacturer's warranty.

Second—To furnish repair parts as promptly as possible at current prices.

Third—To maintain facilities for making repairs, adjustments, and do general overhauling in a prompt and competent manner at reasonable charges.

Fourth—To make inspections and adjustments, not necessitated by neglect or abuse, free of charge for one month following delivery of a new car to purchaser, provided mileage is not in excess of one thousand (1,000) miles, and car is delivered to dealer from whom it was purchased.

Fifth—To furnish printed instructions on the operation and care of Nash Cars.

Sixth—Service to be rendered does not include furnishing repair parts or labor without charge except as provided in the warranty and in the following specific clauses of this Service Policy:

Replacement of Defective Parts

(a) Within ninety (90) days after delivery of a new car to purchaser The Nash Motors Company will furnish, free of charge at the factory, duplicate parts to replace any parts as covered by our warranty that are returned to the factory with shipping charges prepaid and which are determined by the company to have been defective in material or workmanship, or it will put such parts in condition as good as new without charge.

(b) Within ninety (90) days after delivery of a new car to the purchaser the distributor or dealer who sold the car will install, free of labor charges, any parts that the factory furnishes free of cost to replace any parts determined by the factory to be defective, the purchaser to assume cost of parts and installation of same pending factory decision.

(c) The party returning the parts will be notified promptly of the decision of the factory regarding allowance of a claim for replacement or repair of parts returned.

Inspection and Adjustment

(d) Cars brought to service stations maintained by distributor or dealer who sold the car will be inspected and all necessary adjustments will be made, as in paragraphs (e) and (f), without charge during the first month after delivery of a new car to purchaser, provided the car has not been tampered with or injured by accident or neglect or has not been driven in excess of one thousand (1,000) miles. After the first month adjustments will be made at the regular charges of the service station.

(e) Inspection includes examination and report of the condition of the car.

(f) Adjustment includes only such adjustments as inspection has found necessary to put the car in good operating condition.

Repairs, Replacement, Etc.

(h) All work not included in inspection and necessary adjustment during the first month, or installation of replacements under the warranty, will be charged for at regular rates.

(i) When any charge work is to be done and the cost can be estimated in advance, the owner upon request, will be advised of the amount of the charges before the work is begun.

(j) When it is necessary, for the convenience of the owner, to render service at a distance from the service station, the time spent by employees going to and from the job will be charged for at the regular rates of the station, together with all proper expenses of making the trip, cost of shipping parts, if any, and other necessary incidental expense.

Overtime Work

(k) Any overtime, holiday or Sunday work done upon the request of the owner will be charged for at the regular overtime rate.

Instructions in Care and Operation

(l) Instructions in printed form regarding the care and operation of the car and its accessories, and proper method of ordering and returning parts, will be given to the purchaser upon the delivery of the car.

(m) Personal instruction will be given in accordance with the agreement between distributor or dealer and customer at the time of purchase.

General

(n) For service and replacements on engine starters, batteries, magnetos, generators, lamps, carbureters, tires, rims or other trade accessories that are not made by the manufacturer of the car, application may be made direct to the nearest service station maintained by the maker of such accessory. Distributors and dealers will be provided with a list giving names and addresses of the manufacturers of said accessories.

(o) No promise of service, free repair work, inspection or adjustment, except as herein specified, given or made by the distributor or dealer shall be binding on the manufacturer of the car.

(p) To help the distributor or dealer carry out the intent of this Service Policy, the owner is requested to furnish all information necessary to the prompt and proper filling of orders and issuing of credits, and to observe the requirements regarding return of parts with claims for replacement.

(Signed) THE NASH MOTORS COMPANY

(Address) Kenosha, Wisconsin, U. S. A.

The Nash Warranty

THE passenger cars furnished by The Nash Motors Company are warranted to be free from any defects in material and workmanship under normal use and service; the manufacturer's obligation under the guarantee being limited to replacing or repairing at the factory of The Nash Motors Company, Kenosha, Wisconsin, or Racine, Wisconsin, any part or parts thereof, which shall within ninety days after delivery of the automobile to the original purchaser, be returned to The Nash Motors Company, Kenosha, Wisconsin, with transportation charges prepaid, and which The Nash Motors Company's examination shall disclose to its satisfaction to be not up to specifications. This guarantee being expressly in lieu of all guarantees, express or implied, and of all other obligations or liabilities on the part of the manufacturer, and the manufacturer neither assumes nor authorizes any person to assume for it any liability in connection with Nash automobiles, or the sale thereof, or any other matter.

This guarantee shall not apply to any automobile which shall have been repaired or altered outside of the factory of The Nash Motors Company, Kenosha, Wisconsin, or Racine, Wisconsin, in any way that, in the judgment of The Nash Motors Company, acting as referee, would affect its stability or reliability, or which has been subject to misuse, neglect or accident.

The manufacturer makes no guarantee whatever in respect to Tires, Rims, Ignition Apparatus, Horns, or other Signaling Devices, Starting Devices, Batteries, Speedometers or other trade accessories.

The Nash Motors Company reserves the right to make changes in design or add any improvements on Nash cars at any time without incurring any obligations to install same on cars previously purchased.

THE NASH MOTORS COMPANY

KENOSHA, WIS.

MILWAUKEE, WIS.

RACINE, WIS.

IN CONCLUSION

Every effort has been made to build into your Nash motor car the qualities necessary to give you a high degree of satisfaction. We have told you in this book how to care for the car. We will not feel we have been entirely successful in building the car if you are not satisfied. The results you obtain, however, depend almost entirely on your treatment and care of the car.

Our request of you is to give the car the attention to which it is entitled as a finely built piece of machinery.

We appreciate that your good will is a valuable asset to us and you are assured of full co-operation on our part through our dealers in connection with the maintenance of your car so you will obtain intelligent service at fair prices.

We can do no more than this. It is now up to you.

