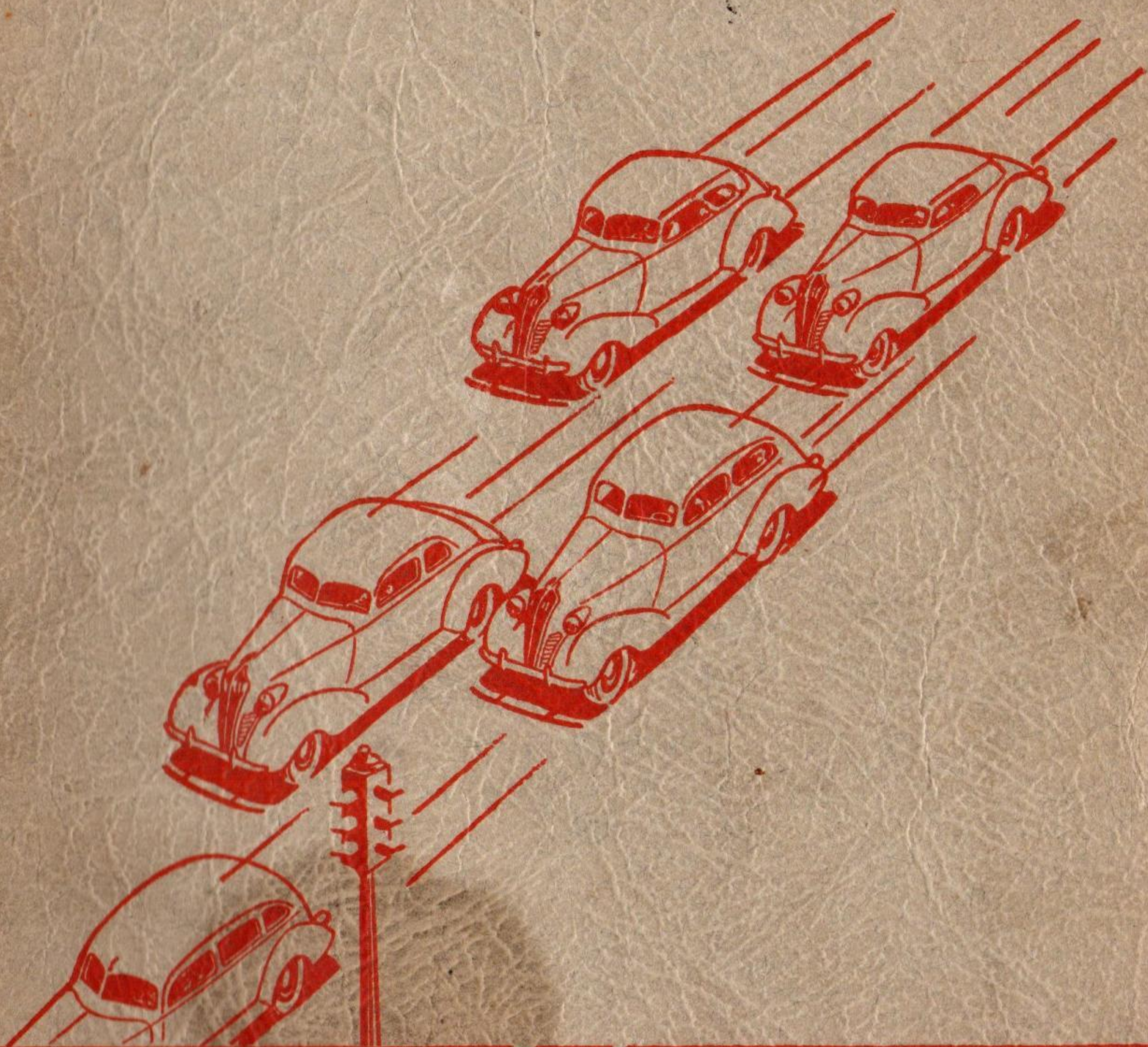


1937
Terraplane



OWNER'S

Manual

TO THE OWNER *of this* TERRAPLANE MOTOR CAR

A great deal of money, time and care has been devoted to the proper designing, manufacturing and preparation of this car for delivery into your hands.

We share your pride in its character and appearance, and our sincere hope is that you derive from its operation the full enjoyment and utility to which you looked forward when purchasing it.

For these reasons, may we take the liberty of suggesting that a fine mechanism such as this new car of yours will always respond with its best to considerate treatment and care?

It will repay you well for the slight outlay in attention and cost required to give it regular and proper lubrication, inspection at stated intervals, and such adjustments as may be indicated from time to time.

Hudson and Terraplane Distributors and Dealers in your community, and practically everywhere you may drive, are prepared with equipment facilities and experienced personnel to give your car uniform, proper and complete attention in these respects at moderate prices for the materials supplied and services rendered. We recommend to you their expert and friendly interest in your car.

As to this manual itself, its chief purpose is to acquaint you with the means of taking the best care of your car, so that you may derive from it the full measure of operating quality and long, economical life built into it at the factory. Will you cooperate to the extent of reading this manual and keeping it in the locker box of your car for ready reference as needed?

HUDSON MOTOR CAR COMPANY
Detroit, Michigan

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Your Hudson-Terraplane Dealer

The majority of Hudson and Terraplane car owners when in need of service make it a point to consult with the authorized car dealer from whom they purchased their car. They have learned to appreciate the fact that only the authorized dealer can render the type of service that will provide for them the maximum of performance and satisfaction that can be obtained from their investment in the motor car which they are operating.



To further protect your investment it is essential that only Genuine Hudson and Terraplane service parts be installed in your car when replacements become necessary. Avail yourself of the services of the Authorized Hudson and Terraplane Dealer who has full knowledge of the product he is servicing by looking for the Hudson-Terraplane Authorized Service Sign illustrated on this page, which prominently identifies his place of business.

When traveling through unfamiliar communities, this sign serves as a symbol of friendship to Hudson and Terraplane owners.

Warranty

"We warrant each new passenger automobile manufactured by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory any part or parts thereof, including all equipment or trade accessories (except tires) supplied by the Car Manufacturer, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our vehicles.

"This warranty shall not apply to any vehicle which shall have been repaired or altered by other than an Authorized Hudson and Terraplane Distributor or Dealer in any way so as, in the judgment of the Manufacturer, to affect its stability or reliability nor which has been subject to misuse, negligence or accident."

HUDSON MOTOR CAR COMPANY
Detroit, Michigan, U. S. A.

Keys

Since it is necessary to omit the numbers on the locks for theft protection, the key numbers should be noted on your Identification Card or in some other accessible place. Keys can be supplied *only* by number. For your own protection in case of loss of keys, *record the numbers.*

Inspection Service

Upon delivery of the new car the Dealer will furnish the owner with an Owner's Service Policy and Identification Card, which entitles the owner to replacement of any defective parts in accordance with the Standard Warranty.

The car will be inspected and lubricated by the Dealer who sold the car at the expiration of 500 miles of driving at no charge other than the list price of engine oil, lubricants or supplies used. If the car is taken to a Hudson and Terraplane Dealer other than the one who sold it, the inspections will be made at a nominal cost.

70 Series—Standard 117" W.B.

Utility Coupe	2855
Utility Coach	2685
Sedan	
Cab	2445
Cab Pickup	2980
Panel Delivery	3150
Station Wagon	3060

78 Series—Big Boy 124" W. B.

Sedan	2940
Cab	2540
Cab Pickup	3080
Panel Delivery	3210

Technical Information**Engine**

Type.....	6 Cylinders en bloc
Compression Ratio.....	Standard—6.25 to 1 Optional—7 to 1
Actual Horsepower Developed— Series 70, 71 and 78	
6.25 to 1 Compression—Standard Head.....	96 @ 3900
7 — to 1 Compression—Super Power Dome Head...	102 @ 3900
Series 72	
6.25 to 1 Compression—Standard Head.....	101 @ 4000
7 — to 1 Compression—Super Power Dome Head...	107 @ 4000
Firing Order.....	1-5-3-6-2-4
Number Main Bearings.....	3
Main Bearing Clearance.....	.001"
Main Bearing End Play.....	.006"—.012"
Valve Material.....	Silicon Chrome Alloy Steel
Valve Head Diameter.....	Intake, 1 $\frac{3}{8}$ "; Exhaust, 1 $\frac{3}{8}$ "
Valve Tappet Clearance (Hot).....	Intake, .006"; Exhaust, .008"
Camshaft Drive.....	Gears
Connecting Rod Lower Bearing Clearance.....	.001"; End Play, .006"—.010"
Piston Material.....	Lo Ex Aluminum Alloy
Piston Type	T Slot Cam Ground
Piston Weight, Ounces.....	10.75
Skirt Clearance	.002"
Number Piston Rings.....	Compression, 2; Oil Control, 2
Width of Piston Rings.....	Compression, 3/32"; Oil Control, 3/16"
Piston Ring Gap.....	.009"—.011"
Lubrication System.....	Hudson Duo-flo Automatic
Oil Pump Type.....	Oscillating Plunger
Oil Reservoir Capacity.....	5 Quarts
Capacity of Lubrication System.....	6 Quarts

Cooling System

Type.....	Pressure Pump Circulation
Radiator Type.....	Ribbon Cellular
Cooling System Capacity.....	3 $\frac{1}{4}$ Gallons
Fan Belt.....	"V" Type

Clutch

	Series 71	Series 72	Series 70	Series 78
Clutch Pedal Clearance at Floor Board.....	1½"	1½"	1½"	1½"
Lubrication.....	Hudsonite	Hudsonite	Hudsonite	Hudsonite
Capacity.....	⅓ Pt.	⅓ Pt.	⅓ Pt.	⅓ Pt.

Transmission

	Series 71	Series 72	Series 70	Series 78
Gear Ratio—Low.....	2.42	2.42	2.42	2.42
—Second.....	1.6	1.6	1.6	1.6
—High.....	1	1	1	1
—Reverse.....	2.99	2.99	2.99	2.99
Lubrication—Summer.....	S.A.E. 90 E.P.	S.A.E. 90 E.P.	S.A.E. 90 E.P.	S.A.E. 90 E.P.
—Winter.....	S.A.E. 80 E.P.	S.A.E. 80 E.P.	S.A.E. 80 E.P.	S.A.E. 80 E.P.
Capacity.....	3 Lbs. or Pts.	3 Lbs. or Pts.	3 Lbs. or Pts.	3 Lbs. or Pts.

Rear Axle

	Series 71	Series 72	Series 70	Series 78
Gear Ratio—Standard—Coupe, Coach, Sedan.....	4 1/9	4 1/9	4 1/9	4 1/9
Standard—Cab, Cab Pickup, Panel Delivery, Station Wagon.....			4 5/9	
Standard—Cab, Cab Pickup, Panel Delivery.....				5 1/8
Optional—Coupe, Coach, Sedan.....	4 5/9	4 5/9	4 5/9	4 5/9
Optional—Cab, Cab Pickup, Panel Delivery, Station Wagon.....			4 1/9—5 1/8	
Optional—Cab, Cab Pickup, Panel Delivery.....				4 5/9
Lubrication—Summer.....	S.A.E. 160 E.P.	S.A.E. 160 E.P.	S.A.E. 160 E.P.	S.A.E. 160 E.P.
—Winter.....	S.A.E. 90 E.P.	S.A.E. 90 E.P.	S.A.E. 90 E.P.	S.A.E. 90 E.P.
Capacity.....	3 Lbs. or Pts.	3 Lbs. or Pts.	3 Lbs. or Pts.	3 Lbs. or Pts.

Front Axle

	Series 71	Series 72	Series 70	Series 78
Radial Arms.....	Yes (Except Business Cpe.)	Yes	No	No
Toe-in.....	0 to ⅛"	0 to ⅛"	0 to ⅛"	0 to ⅛"
Caster.....	1° to 2°	1° to 2°	1° to 2°	1° to 2°
Camber.....	1° to 1½°	1° to 1½°	1° to 1½°	1° to 1½°

Brakes

	Series 71	Series 72	Series 70	Series 78
Size.....	10⅛" x 1¾"	10⅛" x 1¾"	10⅛" x 1¾"	10⅛" x 1¾"
Lining to Drum Clearance.....	.010"	.010"	.010"	.010"

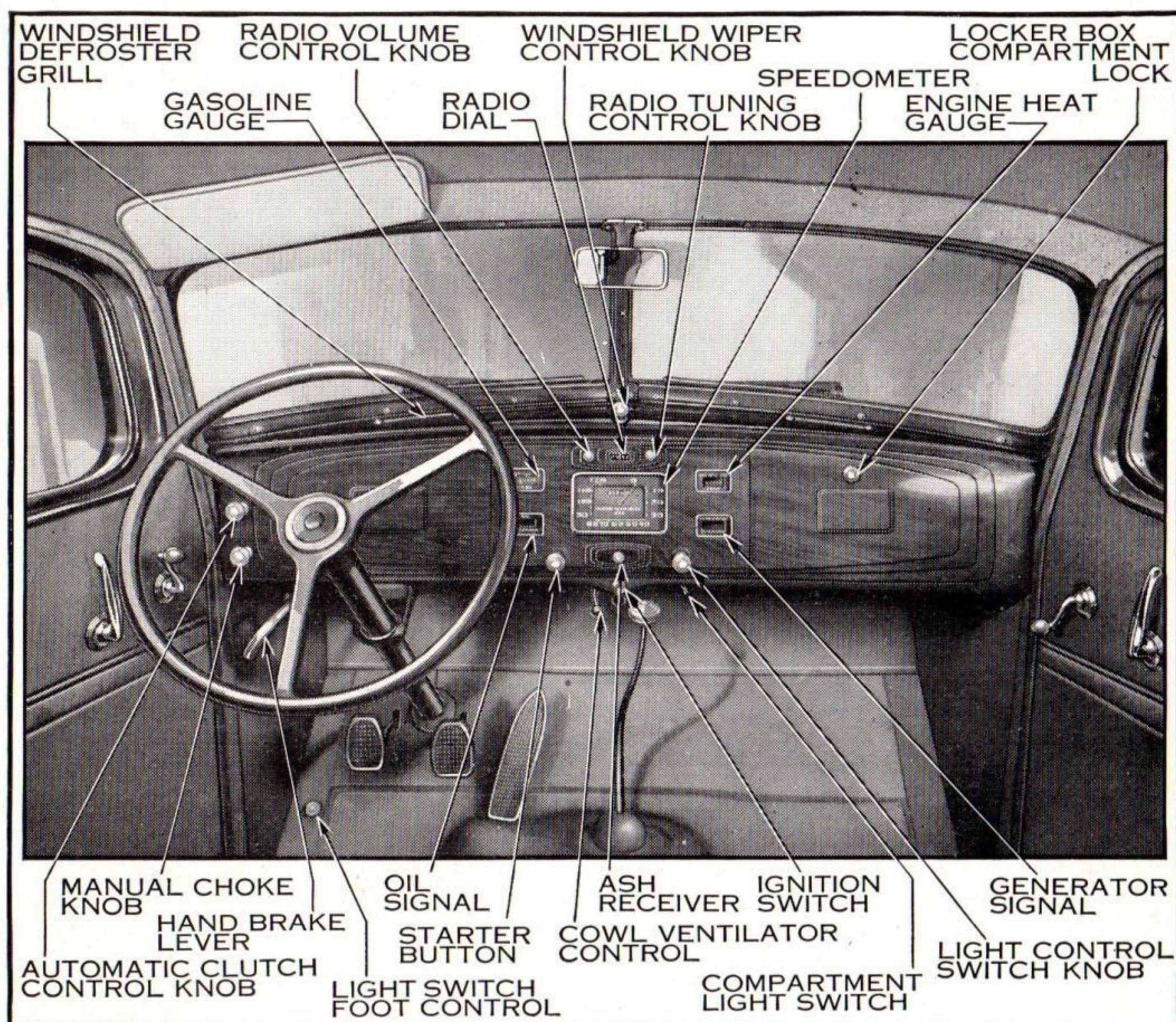


Figure 1

OPERATION

Although the method of operating your Terraplane follows standard practice in many respects, there are, however, a number of distinctive features incorporated in its design. In order that you may become acquainted with their relation to the operation of the car, we suggest that you read carefully the following paragraphs:

Front Seat Adjustment

The matter of driving comfort is foremost in the minds of all car owners. Realizing that much of this feature is determined by the front seat position, an adjustment control, Figure 32, has been provided at the left-hand front corner of the front seat. We suggest you adjust the seat to your requirements by pulling upward on the control knob before starting to drive the car.

Clutch

The clutch is disengaged in the conventional manner by depressing the left foot pedal, Figure 1, to release the engine drive from the transmission.

Automatic Vacuum Clutch Control is available as an option on all models.

Operation of this unit is controlled by a switch, the knob of which is located at the left side of the instrument panel, Figure 1. When the clutch control knob is pushed in the clutch is operated automatically. The clutch is then disengaged merely by raising the foot from the accelerator pedal and re-engaged by depressing the accelerator pedal.

The Automatic Vacuum Clutch Control is rendered inoperative at speeds above 18 miles per hour in high gear by means of a governor switch attached to the rear of the transmission and is driven by the speedometer gears. This arrangement prevents the car from coasting at high speeds when the foot is removed from the accelerator.

Hydraulic Hill-Hold

When the car is equipped with Hydraulic Hill-Hold in addition to the Automatic Vacuum Clutch Control, the clutch pedal must be depressed manually in order for the Hill-Hold to function with the car at rest on a grade. This is necessary in view of the fact that the Hill-Hold is actuated by movement of the clutch pedal which remains in the engaged position when the Automatic Vacuum Clutch Control is in operation.

Selective Automatic Shift

When the Automatic Clutch Control is combined with the Electric Hand it provides a Selective Automatic Shift by means of which the clutch is operated and gears are shifted without physical effort other than that required to flick the finger tip control lever into the desired gear position.

Transmission Control

The transmission operation conforms to the standard shift. The clutch must be disengaged (either by depressing the clutch pedal or by removing the foot from the accelerator pedal) before shifting gears.

Electric Hand

The Electric Hand transmission control, which is a factory option, is a means of simplifying the method of shifting gears, and appeals particularly to owners because of its ease of handling.

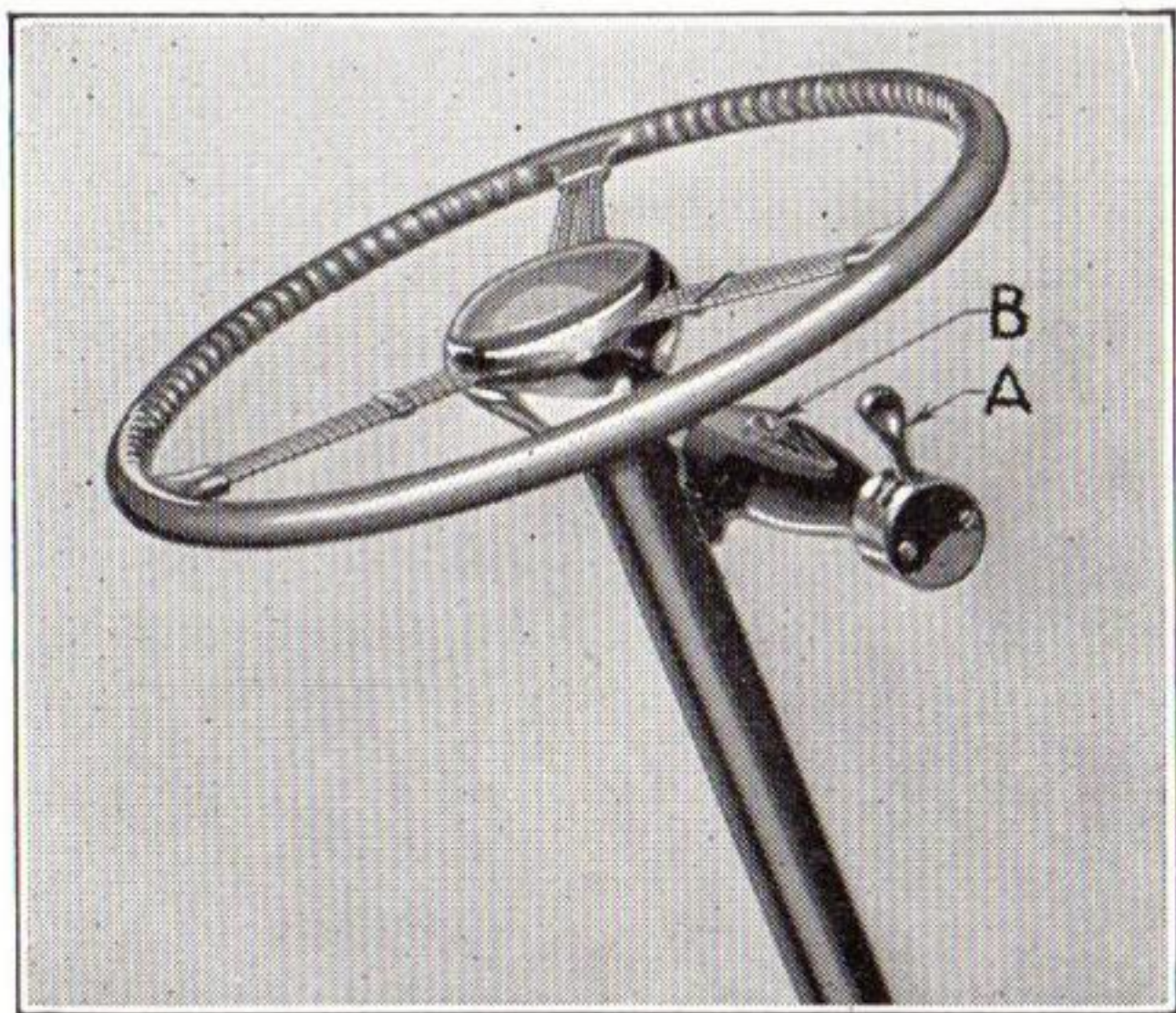


Figure 2

The operation of the Electric Hand is controlled by a small lever attached to a mounting on the steering column, just below the steering wheel. The gear is selected merely by moving the small lever (A), Figure 2, with a finger of the right hand. Then, by depressing the clutch pedal fully to the floor board, the actual shifting of gears is accomplished.

The method of selecting gears, that is, the positions to which the selector lever is moved, is in the same rotation as that used in the conventional manual shift. The neutral position of the selector lever is to the extreme

right end of the horizontal bar of the "H" plate.

A small "off and on" switch (B), Figure 2, is provided on the selector switch to prevent tampering with the shifting mechanism, and is also used to make the "Electric Hand" inoperative when the car is being serviced.

We suggest the following procedure in operating the "Electric Hand" equipped car:

- (a) Be certain the "off and on" switch is in "on" position.
- (b) Depress clutch pedal fully to floor board.
- (c) Turn ignition switch "on."
- (d) Press starter button.

Now with the engine running and the clutch disengaged (if vacuum clutch control is being used it is not necessary to hold the clutch disengaged with the foot after the engine is started; simply take the foot off the accelerator pedal), move the selector lever to the gear position desired and the shift into that gear will be accomplished immediately. Allow the clutch to engage while depressing the accelerator pedal and the car will move normally in the gear selected. When it is desired to make another shift, simply depress the clutch pedal and move the lever into the gear position desired and allow the clutch to re-engage.

It should be remembered that when changing from one gear to another it is always necessary to depress the clutch pedal fully to the floor board when the actual shift of gears is desired (not necessary to depress clutch pedal, but merely raise the foot from the accelerator pedal when automatic clutch control is used).

The need of a *gear shift lever* is eliminated on cars equipped with "Electric Hand"; however, a lever is provided in a pocket mounted on the inside of the right hand front door hinge pillar, should it be necessary to shift the car when the engine is not running. It should be remembered that, inasmuch as the operating force of the "Electric Hand" is vacuum and this is not available unless the engine is running, it is impossible to shift gears unless the hand gear shifting lever which is provided is used. This lever may be used by removing the cap in the floor mat, which exposes the top of the transmission control. Any desired shift can be made with this lever by simply depressing the clutch pedal to disengage the clutch. The "off and on" switch on the selector mounting should be turned "off" while shifting lever is in place.

Brakes

The brakes are operated on all four wheels by hydraulic pressure by depressing the right foot pedal, Figure 1, while the parking brake operating on the two rear wheels is set by pulling backward on the hand lever, located under the dash to the left of the steering wheel as shown on Figure 1.

The braking system incorporates a mechanical follow-up arrangement which only comes into play in the event of an accident to the hydraulic system. By this means the rear wheel brakes are automatically applied by additional travel of the foot pedal.

Accelerator

The foot accelerator controls the engine speed. The engine idling speed is automatically increased when the engine is cold to prevent stalling.

Lights

The lights on the car are operated by a main lighting switch, the knob of which is located on the instrument panel, to the right of the ash receiver, Figure 1; the front compartment light on the lower ledge of the instrument panel, just below the main lighting switch knob, Figure 1, on Series 72 and Series 78 Sedan only; the driving light control switch on the toe board to the left of the clutch pedal, Figure 1; the dome lamp switch located on the dome lamp, except on Series 78 Sedans, on which the switch is located on the right hand door lock pillar and the stop lamp switch located on the brake pedal bracket.

The main lighting switch has three positions: The "off" position being to the extreme left, clockwise movement of the knob to the next position gives parking lights, while a further clockwise movement to the extreme right position gives city and country driving lights.

When the main lighting switch is in the driving position, the light control (foot) switch becomes effective. By depressing this control button and releasing it, the headlight beams may be deflected to the city driving position, immediately in front of the car, or to the country driving position, in which the light will be projected a considerable distance ahead of the car.

The front compartment and dome lamp switches are of the conventional toggle type.

The stop lamp switch is located on the pedal mounting bracket forward of the brake pedal so that the stop light is illuminated when the brakes are applied.

Terminals

Two extra terminals are provided at the bottom of the main light switch for connecting electric accessories.

Fuses

Two fuses are provided in the main light switch: The vertical fuse for light terminals and the horizontal fuse for the two extra terminals.

Starter

The starter is controlled by a push button located on the instrument panel to the left of the ash receiver, Figure 1. The ignition switch must be turned on, and on Electric Hand equipped cars the clutch pedal must also be depressed when the starter button is depressed.

Carburetor

The carburetor on Series 72 Models is equipped with Climatic Control (self-controlled choke) which gives correct fuel mixture for all starting and running conditions without any manual control on the part of the operator.

The carburetors on Series 70, 71 and 78 Models are equipped with manual choke and the control knob is located at the left side of the instrument panel, Figure 1.

Do not accelerate fast during the break-in period, as this throws extreme loads on the working parts. When increasing the speed of the car depress the accelerator pedal gradually. Use second gear under adverse driving conditions.

Do not apply the brakes harshly, as braking surfaces require the same care during the break-in period as do engine parts. Hard application of the brakes during the first few hundred miles may score the brake drums or linings.

The following recommendations should be followed as to speed during the first one thousand miles of driving. These recommendations are maximum safe speeds under favorable operating conditions. The speed of the car should be decreased under unfavorable conditions, such as rough or rutted roads, or in climbing steep or continuous grades:

0-250 MILES

Do not exceed 40 miles per hour in high gear or 20 miles per hour in second.

Do not accelerate rapidly. Use second gear on steep grades.

250-500 MILES

Do not exceed 50 miles per hour in high gear or 25 miles per hour in second.

500-1,000 MILES

During this period the speed should not exceed 60 miles per hour.

Important

Your car is equipped with a governor installed and sealed at the factory to insure its reaching you in good condition.

While the governor is in place the top speed and acceleration are restricted and the air intake noise slightly increased.

Your dealer will remove the governor and tune the engine for you when making the 500-mile inspection.

Maintain oil level in crankcase within "oil level range" on oil level gauge, Figure 3, at all times.

Do not drive at a high rate of speed until the engine is thoroughly warmed up. Cold oil cannot flow freely into the small clearances between the working surfaces so that damage may occur if this is not observed.

Special Lubricants

THERE IS NO NECESSITY OF USING SPECIAL LUBRICANTS CONTAINING GRAPHITE OR OIL CONCENTRATES EITHER IN THE ENGINE OIL RESERVOIR OR BY ADDING TO THE GASOLINE DURING THE BREAK-IN PERIOD. If such practices are followed by the owner, he should be guided as to quantities by the recommendations of the manufacturer of the special lubricant. Only light, finely refined oils should be added to the gasoline and not to exceed one quart to a full tank of gasoline.

Even where these special practices are followed, the recommendations of the foregoing paragraphs as to speeds and operation should be adhered to strictly.

Driving Hints for Gasoline, Oil and Tire Economy

Gasoline Mileage

Your Terraplane is capable of very good gasoline mileage under normal driving conditions. The mileage you obtain depends largely upon your driving characteristics. Sudden acceleration, long periods of idling the engine, accelerating the engine while the car is standing still and high-speed driving all tend to reduce gasoline economy.

We quote figures indicating how the normal economy of a car operating at 20 miles per hour will vary under various driving conditions. At 40 miles per hour 29% more gasoline is required than at 20 miles per hour, while 39% more gasoline is required at 50 miles per hour than at 20 miles per hour, 54% more is required at 60 miles per hour than at 20 miles per hour, and 82% more gasoline is required at 70 miles per hour than at 20 miles per hour.

The above figures are representative of actual tests made with a number of makes of cars. (For further information see "Fuel Compensation" on page 24.)

Oil Economy

Oil economy likewise is dependent on the speeds at which the car is driven. At consistently high speeds due to higher operating engine temperature engine oil is naturally thinned down and usage becomes greater. Statistics based on actual tests of a number of makes of cars indicate oil consumption at 50 miles per hour to be nearly seven times greater than at 30 miles per hour.

Tire Wear

Fast acceleration, sudden braking from high speeds, under-inflation, continued fast driving, all tend to decrease tire mileage. Tire wear at 50 miles per hour is said to be twice as great as at 40 miles per hour.

Generally speaking, normal driving and handling of your car will result in satisfactory gasoline, oil and tire mileage; while on the other hand, high-speed driving is costlier, as it increases gasoline and oil consumption, reduces tire mileage and places greater strain on the entire car.

In cases where high-speed driving is necessary owners can minimize gasoline consumption by avoiding sudden bursts of speed and depressing the accelerator pedal evenly. Tire wear can be minimized by using good judgment in handling of the brakes when approaching curves or turns. Even pressure on the brake pedal will be as effective, if not more so, as jamming on the brakes.

ENGINE

The unusual power, efficiency and economy of the Terraplane engine are due to a combination of such advanced designs as the chrome alloy cylinder block, giving great strength and wearing qualities so as to almost eliminate wear on cylinder walls and valve seats; silicon aluminum alloy pistons, cam ground and fitted with a clearance of .002"; silicon chromium steel valves; patented radial flow intake manifold with down draft carburetor on Series

70, 71 and 78 Models and down draft Duplex Carburetion on Series 72 Models—all built around a fully compensated crankshaft and lubricated by the Hudson Duo-flo Automatic Lubricating System.

Crankshaft, Connecting Rods and Pistons

The crankshaft is a heavy forging with integral compensating weights. Full compensation, together with three main bearings and a torsional dampener mounted on the front, insures free running of the crankshaft under all operating conditions. The main bearings are removable bronze-backed, virgin babbitt and are fitted to .001" clearance and provided with shims for adjustment. The working member of the dampener is rubber, fully enclosed, requiring no adjustment.

The connecting rods are steel forgings carrying spun virgin babbitt bearings in the lower end fitted with a clearance of .001" and having shims provided for adjustment. The upper end is fitted with a bronze bushing, to which the piston pin is fitted with .0003" clearance.

The pistons are of silicon aluminum alloy of new design. This alloy is hard, lighter than aluminum and dissipates heat rapidly. The piston is "T" slotted to compensate for expansion; cam ground to give full bearing on the cylinder wall; and is fitted with two compression rings and one oil control ring above the piston pin and one oil control ring below. With this arrangement all of the rings are located somewhat lower down on the piston, with the result that cooler operating conditions and better oil control are obtained. The piston is attached to the connecting rod by a full-floating pin, which is honed to give a perfect bearing in the diamond-bored piston bosses. The piston pin is a snug fit in the piston bosses when the piston is heated to 200° F.

This piston design permits fitting to the cylinder with a clearance of .002". The pistons are removable from the top of the cylinder bore.

The camshaft is Electric Furnace Alloy, with hardened bearing and cam surfaces. End play is prevented by a spring and plunger pressing against the front end of the shaft.

Valve Tappet Adjustment

The valves, which are silicon chromium steel, are operated by the cams through adjustable tappets. The tappets should be adjusted while the engine is at normal operating temperature. To check or adjust tappets, remove the engine side cover plates (right side of engine below intake manifold) and insert a feeler gauge between the top of the tappet screw and bottom of the valve stem while the engine is running. The intake valve tappets (Nos. 2-4-5-8-9-11, counting from the front of the engine) should be adjusted to a feeler gauge clearance of .006" and the exhaust valve tappets (Nos. 1-3-6-7-10-12, counting from the front of the engine) should be adjusted to a feeler gauge clearance of .008". The tappet screw locking nut should be tightened securely after adjustment. The tappet clearance is important and should be set accurately to the recommended dimensions.

Valve tappet adjustment can be facilitated by removing the right front wheel and fender dust shield.

is running above idle speed, it indicates an interruption of the oil supply and the engine should be stopped until the cause is corrected.

Lubricants

The viscosity of a lubricant is simply a measure of its body or fluidity. The S.A.E. viscosity numbers constitute a classification of lubricants in terms of viscosity, or fluidity, but without reference to any other characteristics or properties.

THE REFINER OR MARKETER SUPPLYING THE OIL IS RESPONSIBLE FOR THE QUALITY OF HIS PRODUCT. HIS REPUTATION IS THE CAR OWNER'S BEST INDICATION OF QUALITY.

The S. A. E. viscosity numbers have been adopted by practically all oil companies and no difficulty should be experienced in obtaining the proper grade of lubricant to meet seasonal requirements.

The grade of oil best suited for each range in temperature is shown by the accompanying table, Figure 4. The car owner should always select an oil having the recommended temperature range agreeing with the lowest atmospheric temperature likely to be encountered before the next oil change.

During the winter months the owner's selection of crankcase oil should be based primarily on easy starting characteristics. The viscosity of 10W and 20W oils is such as to permit easy starting down to the minimum temperature for which they are recommended.

Oils carrying the S.A.E. specification and not a "W" (winter) specification are selected only on their viscosity at higher temperatures and the starting characteristics of such oils will vary depending upon the type of crude oil and the refining process.

Although there are oils carrying the S.A.E. specification which also meet the "W" specification for starting qualities, the "W" specification on the container is the car owner's only definite assurance as to the starting qualities of the oil.

Minimum Atmospheric Temperature Expected	Oil Specification
50° above zero Fahrenheit.....	S. A. E. 30
10° above zero Fahrenheit.....	20W
10° below zero Fahrenheit.....	10W
30° below zero Fahrenheit.....	10W Plus 10% Kerosene

The oil level should be maintained within the "oil level range" on the oil level gauge at all times. Drain oil after first 500 miles of operation and at 2,000-mile intervals thereafter. Refill with five quarts of oil of proper specification.

Ignition System

The distributor is mounted on the right side of the crankcase and driven by gears from the camshaft. A single breaker arm is operated by a six-lobe cam. Automatic advance is incorporated so that the correct timing is given at all speeds.

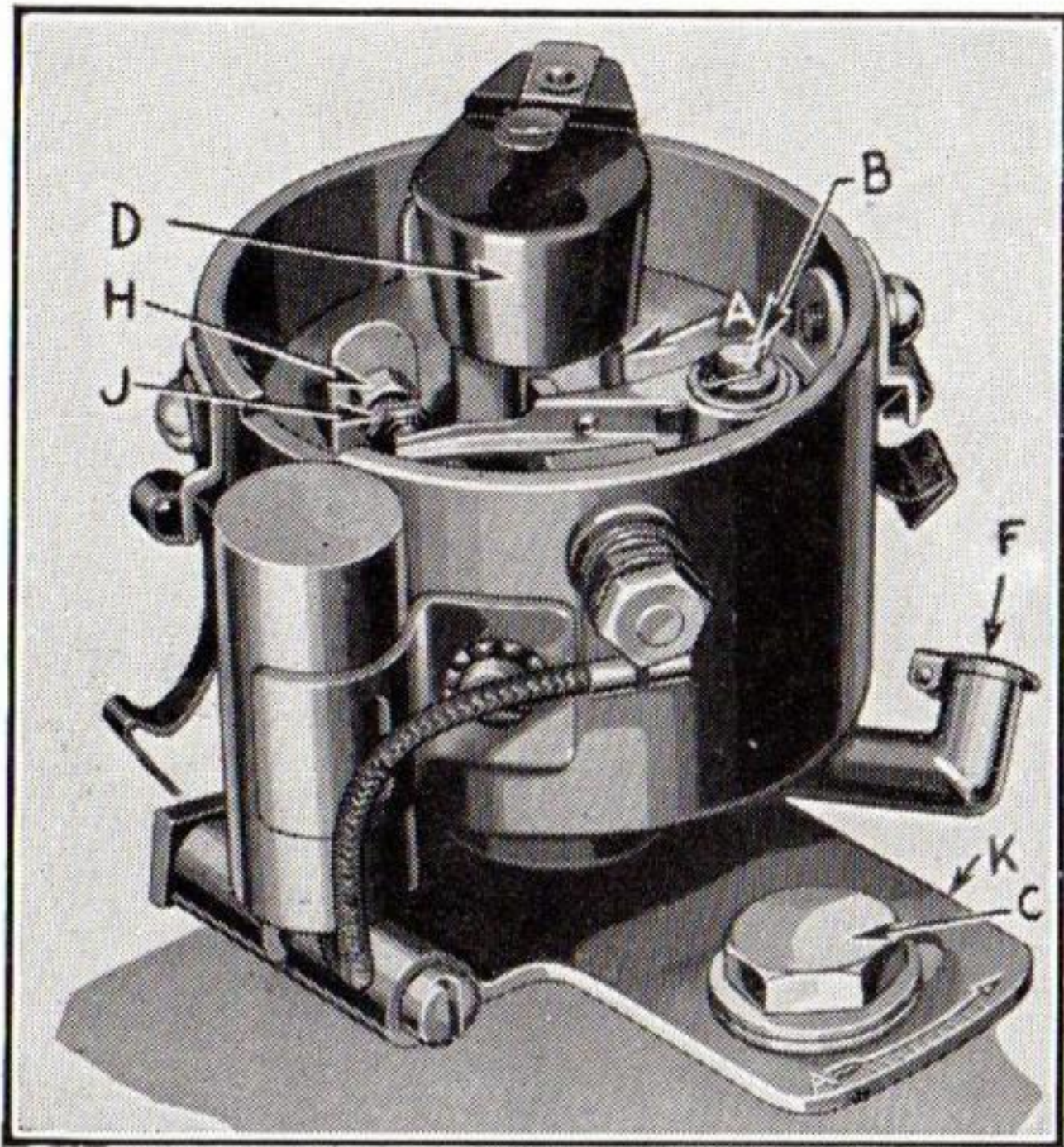


Figure 5

move them and grind smooth or replace with new ones. The grinding should be done in a special machine to insure proper seating. This operation should be done by an Authorized Hudson and Terraplane Service Station.

Filing or honing of the points will remove oxidization from the points but, due to the hardness of the tungsten alloy used, this method is not practical for removing deep pits.

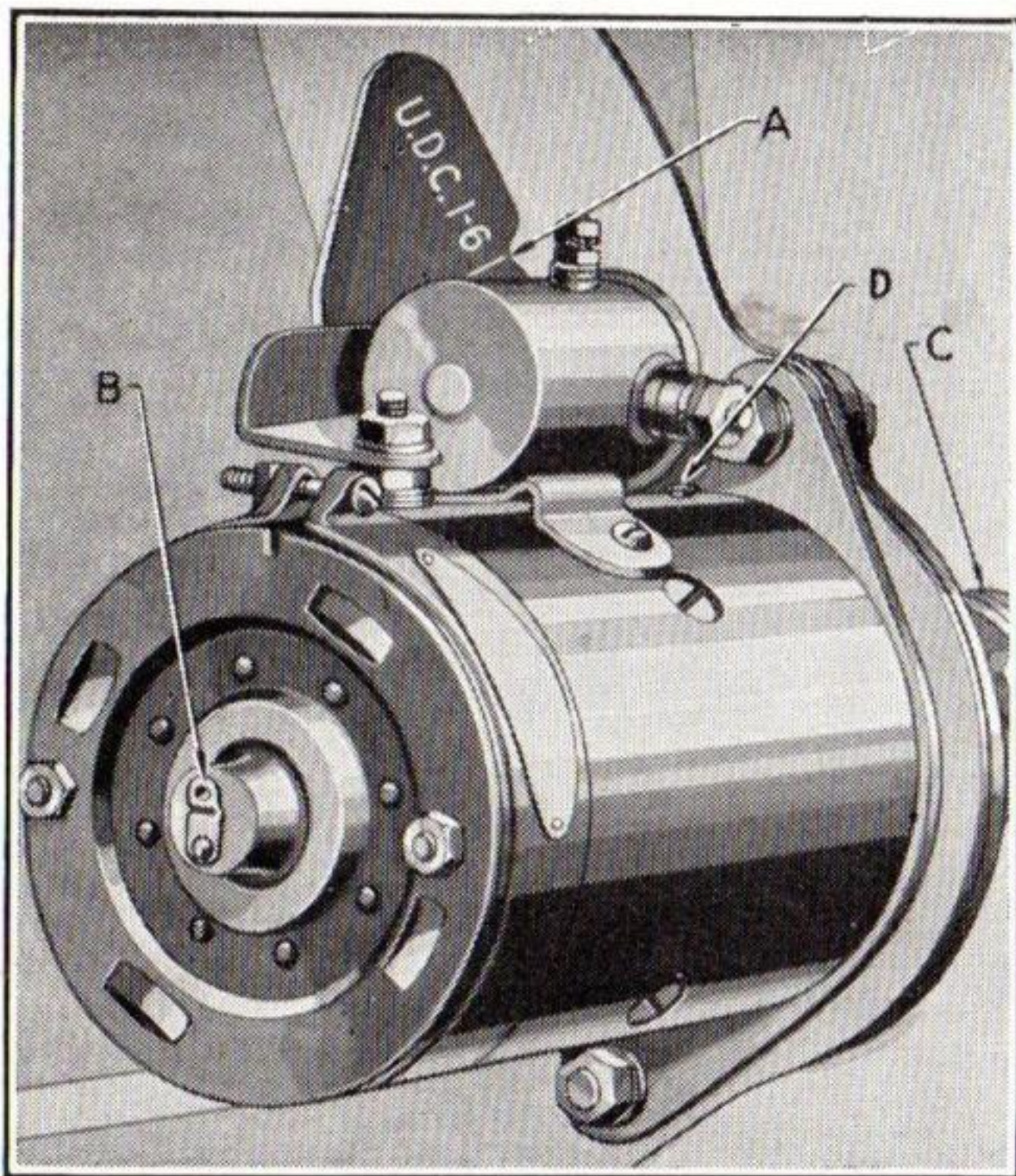


Figure 6

its highest position in the cylinder. This position of the piston is referred to as upper dead center and is indicated by U. D. C. Marks are placed on the flywheel to indicate when this position of the piston has been reached.

Lubrication

The oil cup (F), Figure 5, should be filled with oil every 2,000 miles. At the same time remove the distributor cap (not shown) and rotor arm (D), placing a few drops of oil on the top of the shaft, one drop of oil on the breaker arm pivot (B), and apply a light coating of vaseline on the cam block (A).

Breaker Points

The breaker points should be adjusted to .020" maximum opening. The points should be clean and set squarely on each other. If the points become pitted it is necessary to re-

Breaker Point Adjustment

Crank engine by hand until the fiber block (A) of the breaker arm is on the highest point of the cam. Measure the gap between the breaker points with a feeler gauge. This gap should be exactly .020". If adjustment of the gap is required, loosen lock nut (H) and turn adjusting screw (J) until the proper gap is obtained. Tighten lock nut (H) and re-check the gap.

Ignition Timing

The ignition timing is determined by the position of the piston when the distributor breaker points begin to open. In general, the points should begin to open when the piston reaches

Since the piston in a four-stroke cycle engine may be completing the exhaust stroke or completing the compression stroke and ready for the power stroke when it is at U. D. C., it is necessary to determine the stroke as well as the piston position.

To determine this, remove the spark plug from number one (front) cylinder. Place the finger over the spark plug hole and crank the engine slowly, using the hand crank. Air pressure against the finger indicates that the piston is coming up on the compression stroke. After this is felt, continue cranking the engine slowly until the mark U. D. C. 1 and 6 is directly in line with the pointer on timing inspection hole in the rear support plate of the motor as indicated at (A), Figure 6. The piston is then at U. D. C. and ready to move downward on the power stroke.

Setting Ignition Timing

Loosen the distributor clamp bolt (C), Figure 5, and turn the distributor housing clockwise to the limit of the slot in the clamping plate (K), Figure 5. Remove the central cable from the distributor cap and place the bare end about $\frac{1}{8}$ " from the intake manifold. With the ignition turned on and the U. D. C. 1-6 mark on the flywheel in line with the pointer on the inspection hole (Figure 6), turn the distributor body counter-clockwise slowly just until a spark jumps from the high tension wire to the intake manifold. Tighten clamp screw (C), Figure 5, replace central cable in distributor cap and clamp cap on distributor.

With the engine in this position and the distributor cap in place, the metal strip on the rotor arm should be directly under the terminal to which number one spark plug wire is attached. The other cables should be in the cap terminals in the order 1-5-3-6-2-4, following in a clockwise direction. The cable in the center terminal of the distributor cap should go to the central (high tension) terminal of the ignition coil.

Fuel Compensation

The foregoing operations give dead center timing. This, however, due to variations in fuel characteristics (octane rating), is only approximately correct. To get the correct setting the car should be driven until the engine has reached its normal operating temperature. Allow the car to slow down to 8 miles per hour in high gear on a level, hard-surfaced road, then depress the accelerator rapidly to its limit of travel. As the car accelerates from 10 to 15 miles per hour a slight spark knock should develop. If a knock is not heard, loosen distributor clamp screw (C), Figure 5, and turn the distributor counter-clockwise one graduation of the clamping plate (K), Figure 5, and repeat the acceleration test. Repeat this operation until the knock is heard. The higher the octane rating of the gasoline being used the greater the advance required to get maximum performance and fuel economy. However, the timing should not be set more than $\frac{3}{4}$ " ahead of the U. D. C. mark on the flywheel.

Carburetor and Fuel System

Series 70, 71 and 78

The carburetor is of the single down draft manual controlled choke type, with adjustable manifold heat control.

Carburetor Choke

The choke is controlled by a knob located at the lower left hand corner of the instrument panel. During warm weather it is rarely necessary to use the choke except for starting the car after standing overnight.

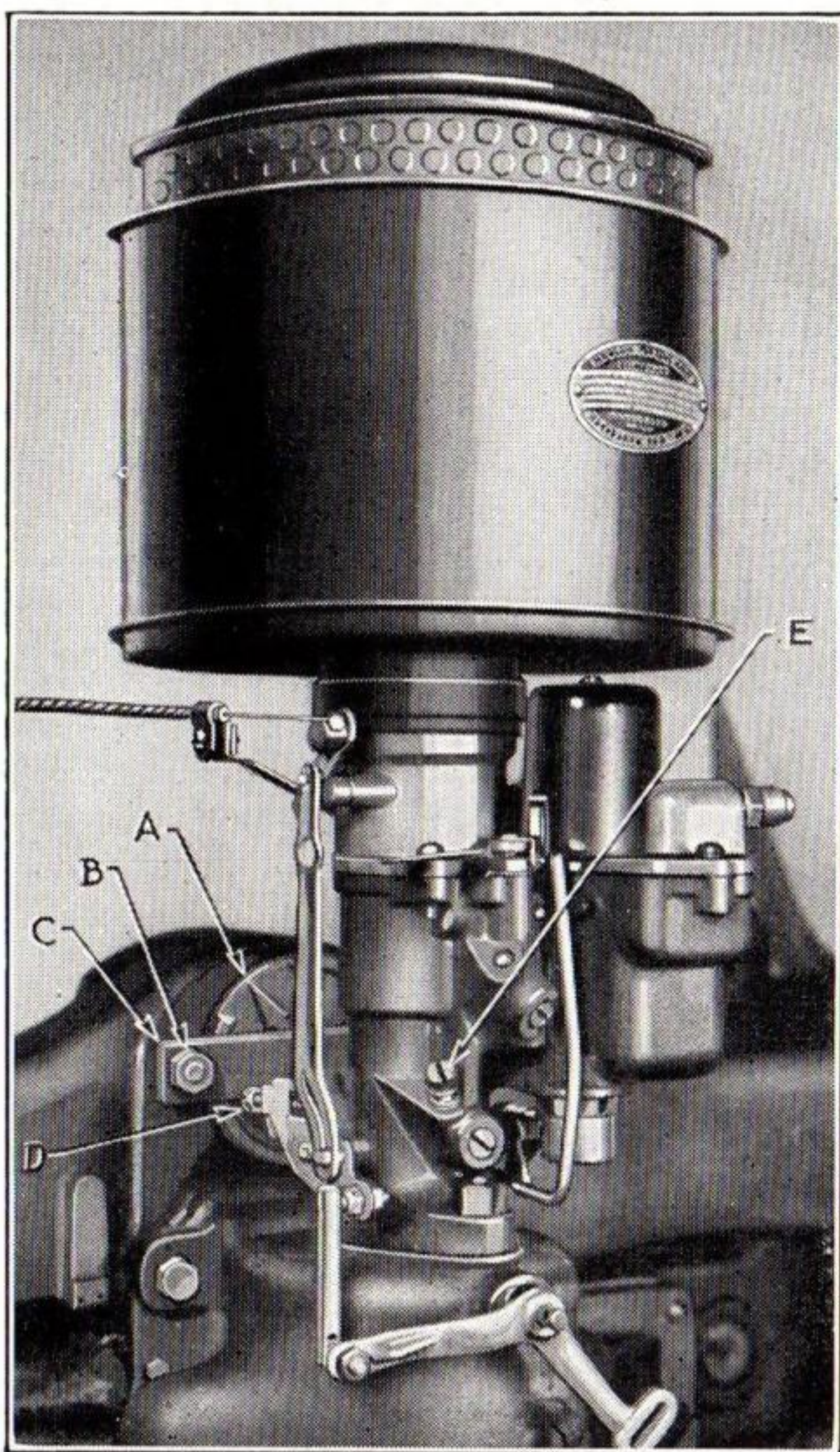


Figure 7

Manifold Heat Control

The manifold heat control valve (A), Figure 7, is adjustable for winter and summer driving. For winter driving, the pointer on the valve should be directed to the letter "W" or to the rear of the manifold. For summer driving, except in extremely hot territories, the pointer should be directed straight upward. For extremely hot territories, the pointer should be directed to the letter "S" or to the front of the manifold.

To adjust heat control valve, loosen two nuts (B), Figure 7, sufficiently to relieve pressure of bar (C) against valve (A). Turn valve to desired position. Tighten two nuts (B), checking carefully to prevent exhaust leak at valve gasket.

Series 72

The carburetor is of the down draft Duplex type, incorporating Climatic Control (self-controlled

choke) and automatic heat control. The only manual control for the operator is the accelerator pedal controlling the speed of the engine.

Carburetor Choke

The automatic choke valve, the mechanism of which is contained in the insulated housing (A), Figure 8, is fully closed when the engine is cold at average temperature (75° Fahrenheit). Hot air drawn off exhaust manifold through the stove (B) and tube (C) enters the control housing, giving accurate positioning of the choke for all starting and operating conditions.

Dust Storm Precautions

In view of the dust storms which have been prevalent during the past few years, we feel the necessity of acquainting car owners with certain procedures to follow in an endeavor to minimize the damage which these dust storms are apt to cause.

When dust mixes with engine oil or chassis lubricant it becomes a highly abrasive substance which may cause untold damage to all working parts, such as pistons, piston rings, cylinder blocks, valves, valve guides, bearings, carburetors, spring shackles and bushings.

In some localities it may be necessary to render more frequent attention to chassis lubrication, engine oil change, air cleaner service and fuel system cleaning than the periods outlined in this instruction book and lubrication chart.

The use of a special Oil Bath Carburetor Air Cleaner, Figure 10, which is available as a factory option or may be purchased from any Hudson-Terraplane Dealer, will help considerably in protecting the carburetor and engine from premature wear. The frequency with which the air cleaner should be cleaned and re-oiled depends, of course, upon local dust conditions. The protection which this type of air cleaner affords will be appreciated by noting the accumulation of dust and dirt found in the air cleaner oil reservoir, just below the filter unit.

Listed below are points which should be checked and handled in accordance with local conditions:

1. Fuel System:

- (a) Clean and service air cleaner as outlined on page 26.
- (b) Clean fuel lines.
- (c) Clean carburetor.
- (d) Clean fuel pump.

2. Crankcase:

(a) Clean ventilators and insert wads of fine metal gauze or fine mesh screen in lower end.

(b) Drain oil, remove oil pan, clean thoroughly, reinstall and refill with fresh new oil.

3. Chassis:

(a) Thoroughly lubricate all chassis fittings, being certain to force out old lubricant to which dust or abrasive may adhere.

Starting Motor

The starting motor is controlled by a push button on the instrument panel through a solenoid switch mounted on top of the starting motor. It is neces-

sary to disengage the clutch on Electric Hand equipped cars in addition to pressing the button to engage the starter. The switch can be operated manually by unscrewing the cap on the rear of the switch and pushing the plunger in. The drive to the gear on the engine flywheel is through a Bendix drive which is brought into engagement by the rotation of the starting motor.

The front and rear bearings of the starting motor should be lubricated at (B and D), Figure 6, with a few drops of light oil every 1,000 miles. The threads of the Bendix screw shaft (C), Figure 6, should be cleaned occasionally with a brush and kerosene to remove gum and dirt.

Generator

The generator is of the ventilated type, Figure 11, allowing a greater output than is practical with the non-ventilated type. It will be noted from the illustration that air is drawn through the generator from the rear by a suction fan at the front end and is deflected back over the generator by the engine fan.

The maximum output on all Series 72 Models, Series 78 Sedans and all other Terraplane Models equipped with radio is controlled by the third brush and an external Voltage Regulator which is mounted on the left side of the dash under the hood.

The maximum generator charging rate with hot generator, that is, after the engine has been run for 15 or 20 minutes indoors, should be 23 amperes, while the minimum should not be lower than 21 amperes. This high charging rate can be used safely as the Voltage Regulator automatically reduces the

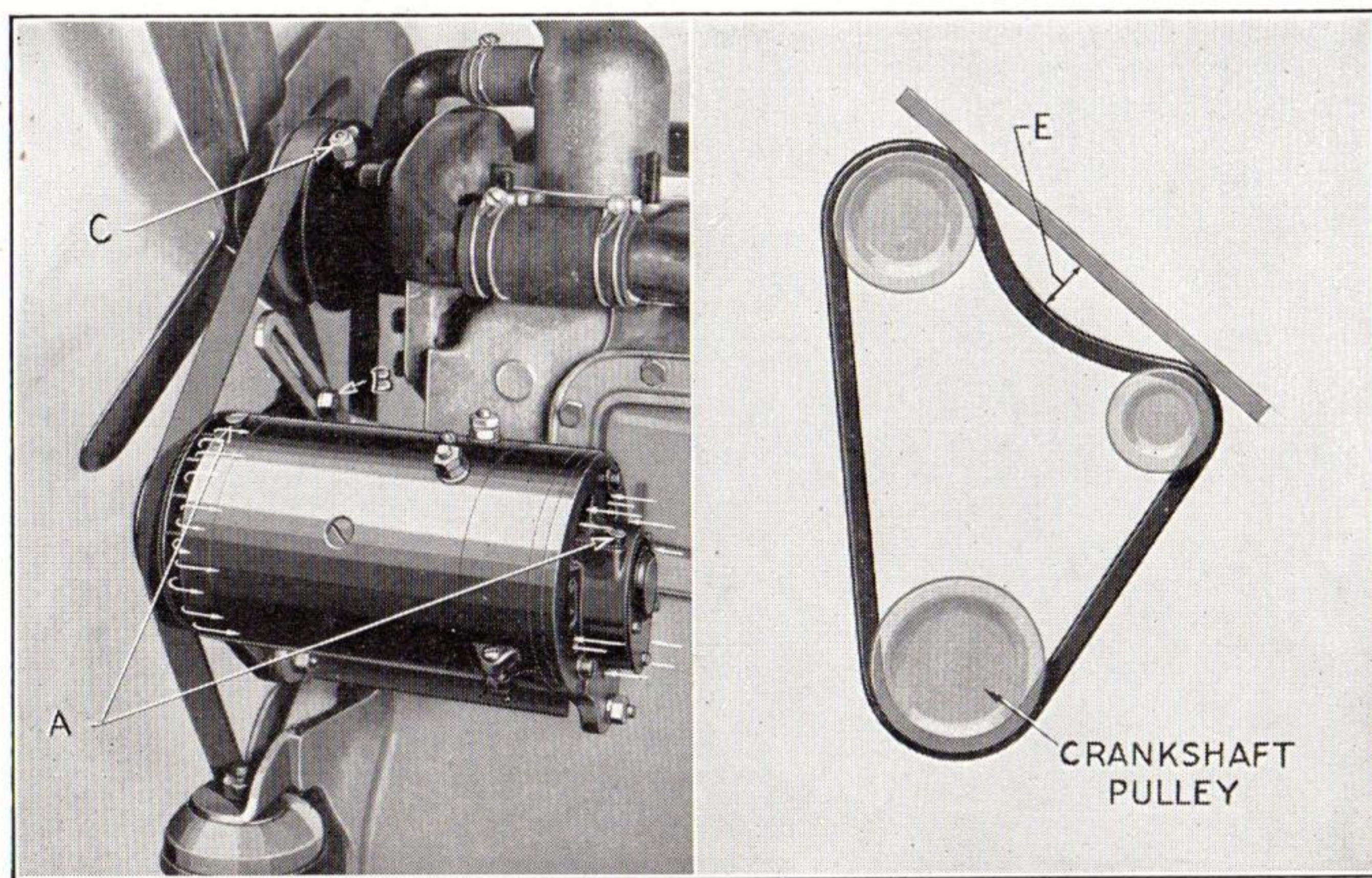


Figure 11

charging rate when battery is fully charged. When the battery voltage is low, the maximum possible generator output is available to charge the battery. As the battery voltage increases, the charging current gradually tapers off and only a small amount flows when the battery is fully charged. In this manner it is possible to recharge the battery to its charged state in the shortest possible time without the dangers of overheating which would be present without a controlled high output generator.

On Series 70, 71 and 78 Models without Voltage Regulator the maximum output is controlled by the third brush. On these models the maximum charging rate with hot generator should be 16 amperes, while the minimum should not be lower than 14 amperes. A higher charging rate will cause the generator to overheat and will also shorten the battery life.

A few drops of light oil should be supplied to cups (A), Figure 11, every 1,000 miles. Do not over-lubricate.

Fan Belt

The generator is driven by the "V" type belt, which also drives the fan and water pump. This belt must be kept sufficiently tight to prevent slippage on the pulleys. When properly adjusted the belt will have $\frac{3}{4}$ " of slack at a point midway between the fan pulley and generator pulley, as shown at (E), Figure 11. This adjustment provides sufficient tightness to prevent slippage without causing undue wear of the fan and generator bearings.

To tighten belt tension, loosen nut (B) and swing generator away from the engine until the correct position is obtained. Tighten nut (B), also the two lower mounting cap screw nuts.

Cooling System

Water Pump

The water pump is of the vane type, located on the front of the cylinder block and driven by the "V" belt, which also drives the generator. The adjustment of the belt is covered in the preceding paragraph.

The packing gland is of the permanent type, built entirely inside of the pump and requires no adjustment.

The pump should be lubricated every 1,000 miles through the pressure fitting (C), Figure 11, with a high-grade aluminum soap grease.

Cooling System Operation

The cooling system is of the pressure circulating type. The pump draws the water from the bottom of the radiator and forces it through the cylinder block and head and returns it to the top of the radiator.

The Terraplane Series 72 Models are fitted with a thermostat located at the outlet of the cylinder head. When the cooling water is below 150° Fahren-

heit, the thermostat closes the return to the radiator and opens a by-pass direct to the water pump inlet. This permits circulation of the water in cylinder block and head only, reducing the time of engine warm-up.

When the cooling water reaches 150° Fahrenheit the thermostat begins to open the passage to the radiator and close the by-pass. At approximately 185° the by-pass is completely closed and all water circulated by the pump flows through the radiator. The temperature of the cooling system is thus controlled for most efficient engine operation under all weather and driving conditions.

Draining Cooling System

To drain the cooling system completely, open the drain cock at the bottom of the radiator (left side under hood) and also remove the pipe plug from the cylinder block (left side to rear of side cover plate).

Care of the Cooling System

In order to get the maximum efficiency from the cooling system, it must be kept clean. There is a tendency toward corrosion of parts due to electrolytic action of water containing minerals and also deposits of minerals when the water is heated. Both the corrosive scale and the mineral deposits tend to coat the cooling surfaces, reducing radiation, and in time will clog the radiator passages.

Unless special steps are taken to prevent these deposits, the cooling system should be cleaned twice a year. This cleaning is most effective when reverse flushing is used to remove deposits after they have been loosened by the use of a good cleaning solution. Since reverse flushing requires special equipment operated by compressed air, you should have this done by an Authorized Hudson and Terraplane Dealer.

The cleaning solution recommended is Hudson Radiator Cleaner. Before using this solution, run the engine a few minutes to circulate the water and stir up loose sediment. Stop the engine and drain all water from the system.

Dissolve the contents of a container of Hudson Radiator Cleaner in a bucket of hot water (be sure the material is completely dissolved). Pour solution into radiator, then fill the radiator almost full of water.

With the radiator covered and filler cap tight, run the engine for about twenty minutes, but avoid boiling. Stop the engine and completely drain system.

Reverse flushing will remove all of the sediment the solution has loosened.

It is important that all trace of the cleaning solution be removed as it will have a detrimental effect if left in the system.

After thoroughly flushing the cooling system, the addition of Hudson Rust and Corrosion Inhibitor to the water will neutralize the action of any cleaning compound which may not have drained out. It will also prevent corrosion of the cast iron, aluminum and other metals in the cooling system. The practice of using the Inhibitor in the cooling water is particularly advantageous for engines equipped with aluminum cylinder heads.

Hudson Radiator Cleaner and Inhibitor can be obtained from any Authorized Hudson and Terraplane Dealer.

Anti-Freeze

Before putting any anti-freeze in the cooling system, it should be thoroughly cleaned and all hose connections and gaskets checked for leaks.

The types of anti-freeze recommended are: Alcohol, Glycerine and solutions of Ethylene Glycol marketed under various trade names.

Solutions containing calcium salts or other ingredients which promote electrolytic action should be avoided. They will cause serious corrosion of aluminum alloy as well as the solder joints of the radiator. Also avoid the use of solutions containing glucose or honey, as they will tend to clog the system; and of kerosene or fuel oil which, when hot, liberate inflammable vapors.

The following table gives the quantities of the recommended solutions required for protection against freezing at various temperatures:

Temperature Fahrenheit	Alcohol Quarts	Radiator Glycerine (G.P.A. or Equivalent) Quarts	Ethylene Glycol (Prestone or Equivalent) Quarts
+20°	2½	5¾	2½
+10°	3¾	7¼	3½
0°	5	9	4½
-10°	5¾	10½	5
-20°	6½	12	5¾
-30°	8	13 Full Strength	6½

CLUTCH

The clutch is of the single plate type and is driven by friction from the rear face of the steel flywheel and the forward face of the drop-forged steel pressure plate. The frictional facing in Terraplane clutches is pliable formed cork and is lubricated to give a maximum degree of smoothness in engagement.

Due to the film of lubricant on the frictional surfaces, burning is prevented and wear is negligible. The frictional surface is always protected and maintained in proper condition by the bath of Hudsonite Clutch Compound, so that even after thousands of miles of usage there will be no material change in the characteristics.

Lubrication

The throwout bearing is a heavy duty ball bearing provided with positive lubrication through a pressure fitting located on the right side of the clutch bell housing. This should be lubricated with one ounce of viscous chassis lubricant every one thousand miles.

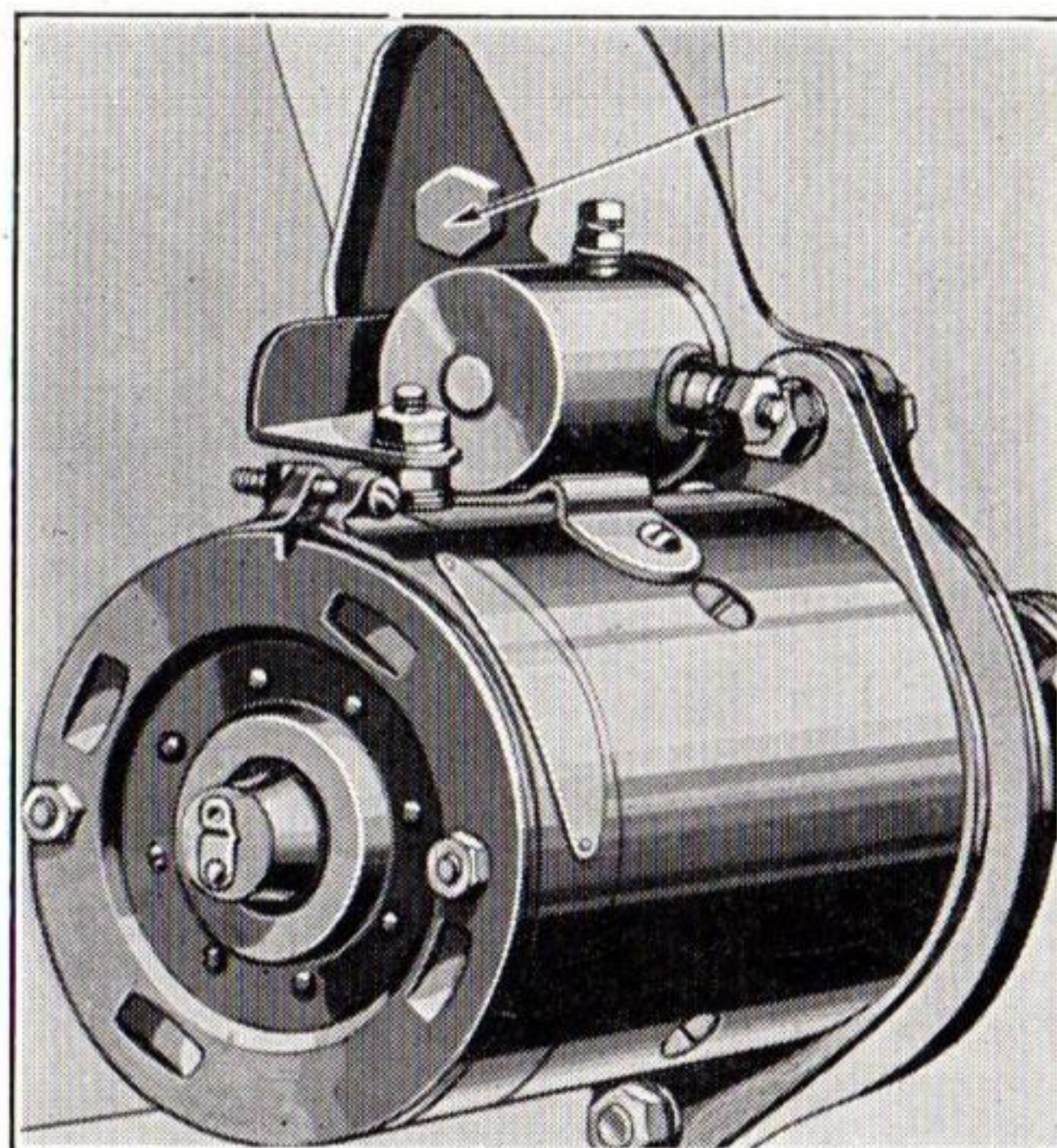


Figure 12

The Hudsonite Clutch Compound is permanently sealed into the clutch housing to prevent loss. Drain and replace every five to fifteen thousand miles.

To insert the Hudsonite, turn the engine until the drain plug (arrow), Figure 12, in the front face of the flywheel is visible through the timing inspection hole in the left side of the rear engine plate. Remove the plug and turn the engine slowly until the star stamped in the front of the flywheel is visible through the inspection hole. Allow a minute in this position to permit the clutch housing to drain, then turn the engine until the filler hole again appears in the timing hole and insert one-third pint of Hudsonite. Replace the plug and tighten securely. Hudsonite is available through all Hudson and Terraplane Distributors and Dealers.

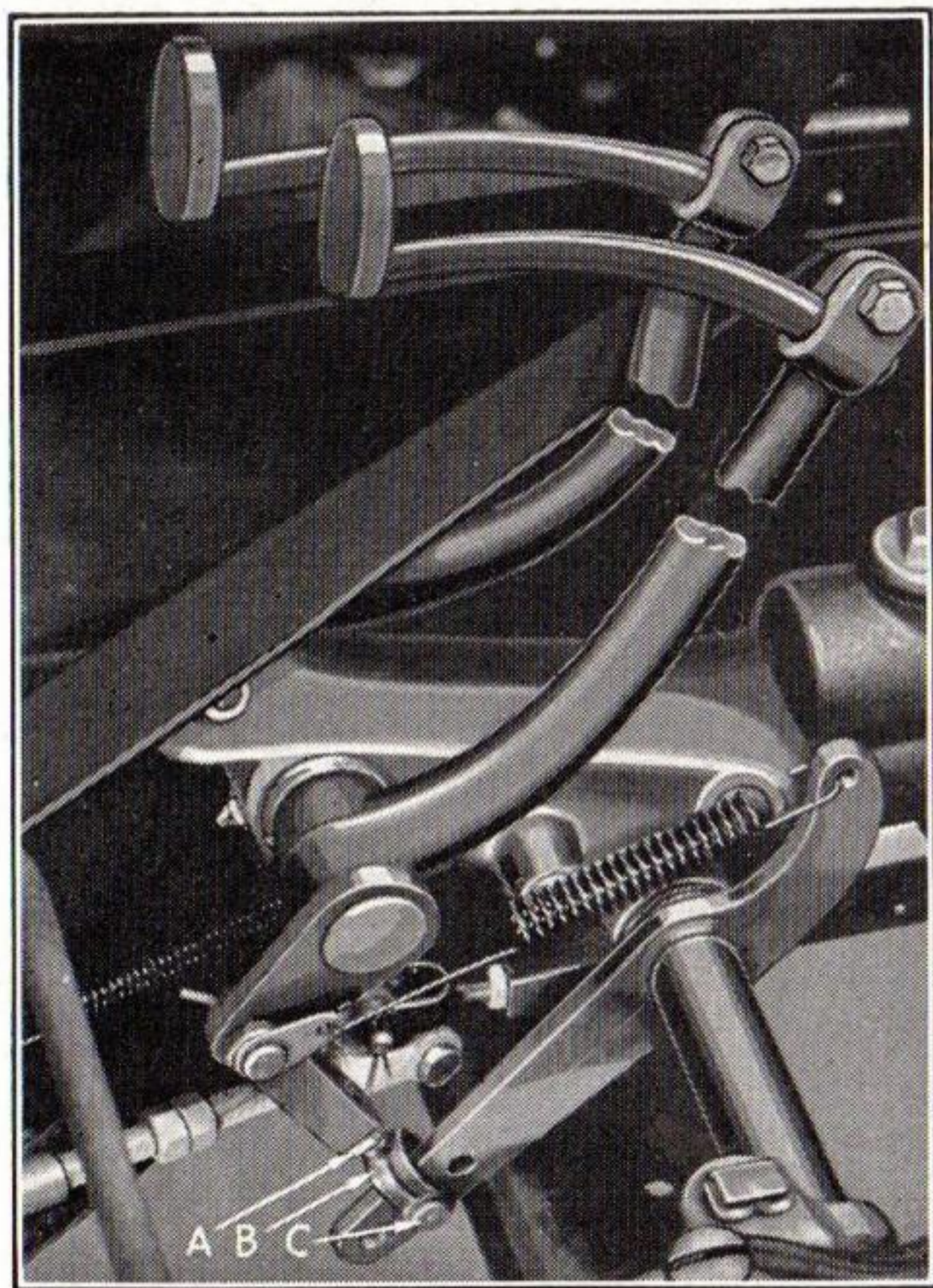


Figure 13

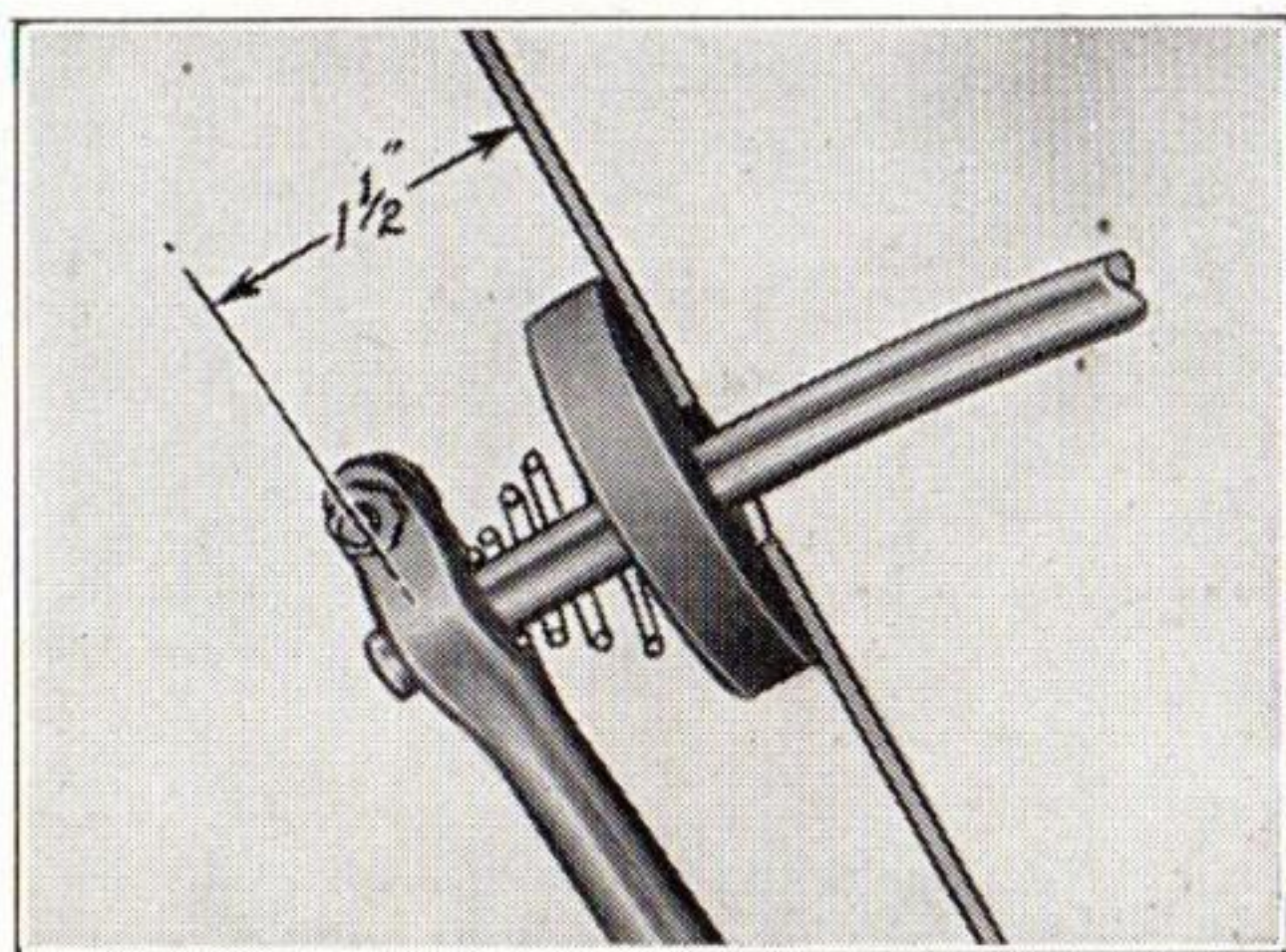


Figure 14

CLUTCH CONTROL

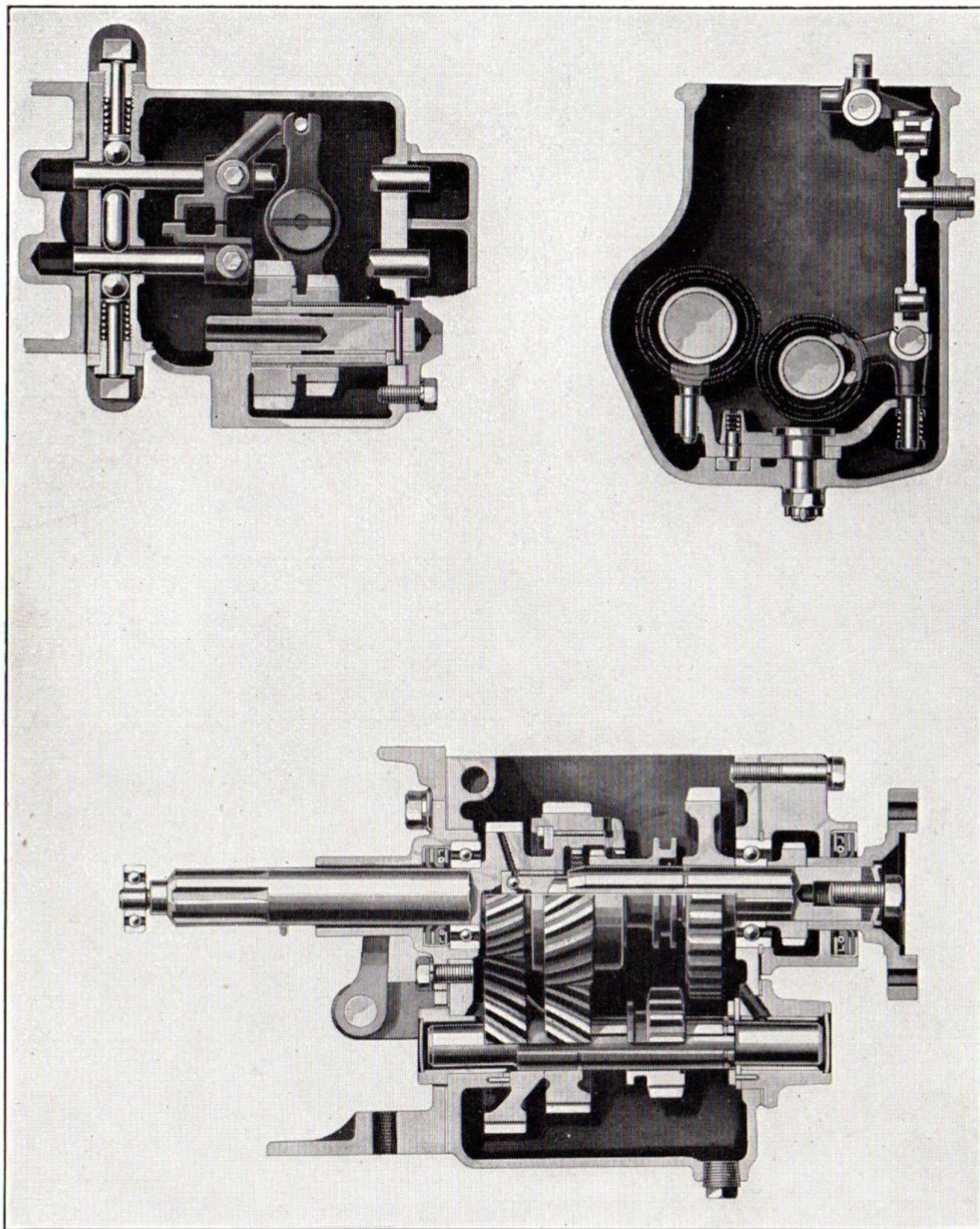
Clutch Pedal Adjustment

The clutch is self-adjusting; however, it is necessary to adjust the clutch pedal rod to prevent the pedal from "riding" the floor board. To adjust, loosen lock nut (A), Figure 13, remove clevis pin (C), and turn yoke (B) to shorten or lengthen the rod, as necessary, so that the pedal shank can be held in a position one and one-half inches from the floor board when the clutch is engaged, Figure 14. Replace clevis pin (C) and cotter pin. Tighten lock nut (A). The pedal clearance should be checked frequently, as a lack of clearance will cause clutch slippage.

On cars equipped with Automatic Clutch Control, pull backward on the power unit piston rod—on the left side of the engine—while the accelerator pedal is depressed. When the rod is in the extreme rearward position, there should be approximately $\frac{7}{8}$ " clearance between the back of the slot in the rod yoke and the clevis pin which attaches it to the operating lever.

Lubrication

A grease fitting is provided for lubrication of the pedal shaft bushings, Figure 13. This point should be lubricated every 1,000 miles with a viscous chassis lubricant.



Transmission

Lubrication—Automatic Vacuum Clutch Control

On cars equipped with Automatic Vacuum Clutch Control, the vacuum cylinder should be lubricated every 15,000 miles with one ounce of Hudson Shock Absorber Fluid. This fluid may be inserted by removing the piston rod rubber boot and squirting the fluid into the slot in the piston rod with an oil can while the clutch is being disengaged by vacuum.

A metered lubrication fitting is provided on the vacuum clutch governor adapter, mounted on the rear of the transmission and should be lubricated every 1,000 miles with viscous chassis lubricant.

TRANSMISSION

The transmission is of the quick synchronizing type, incorporating helical gears to give a silent second speed. Quiet operation is obtained in all forward speeds by throwing the reverse idlers out of mesh so that they do not revolve except when in actual use. Through the use of steel alloyed with nickel, chrome and molybdenum in gears which are heat-treated for strength and case-hardened to resist wear, long life is assured. The use of these special alloys also makes extremely heavy parts unnecessary, contributing greatly to ease and rapidity of shifting.

The main drive gear and main shaft are supported by two heavy duty, annular thrust ball bearings, one annular ball bearing and thirty needle bearing rollers. The end thrust between these parts is taken by seven ball bearings running in races machined in the ends of the shafts.

The countershaft is carried on steel-backed, babbitt bearings.

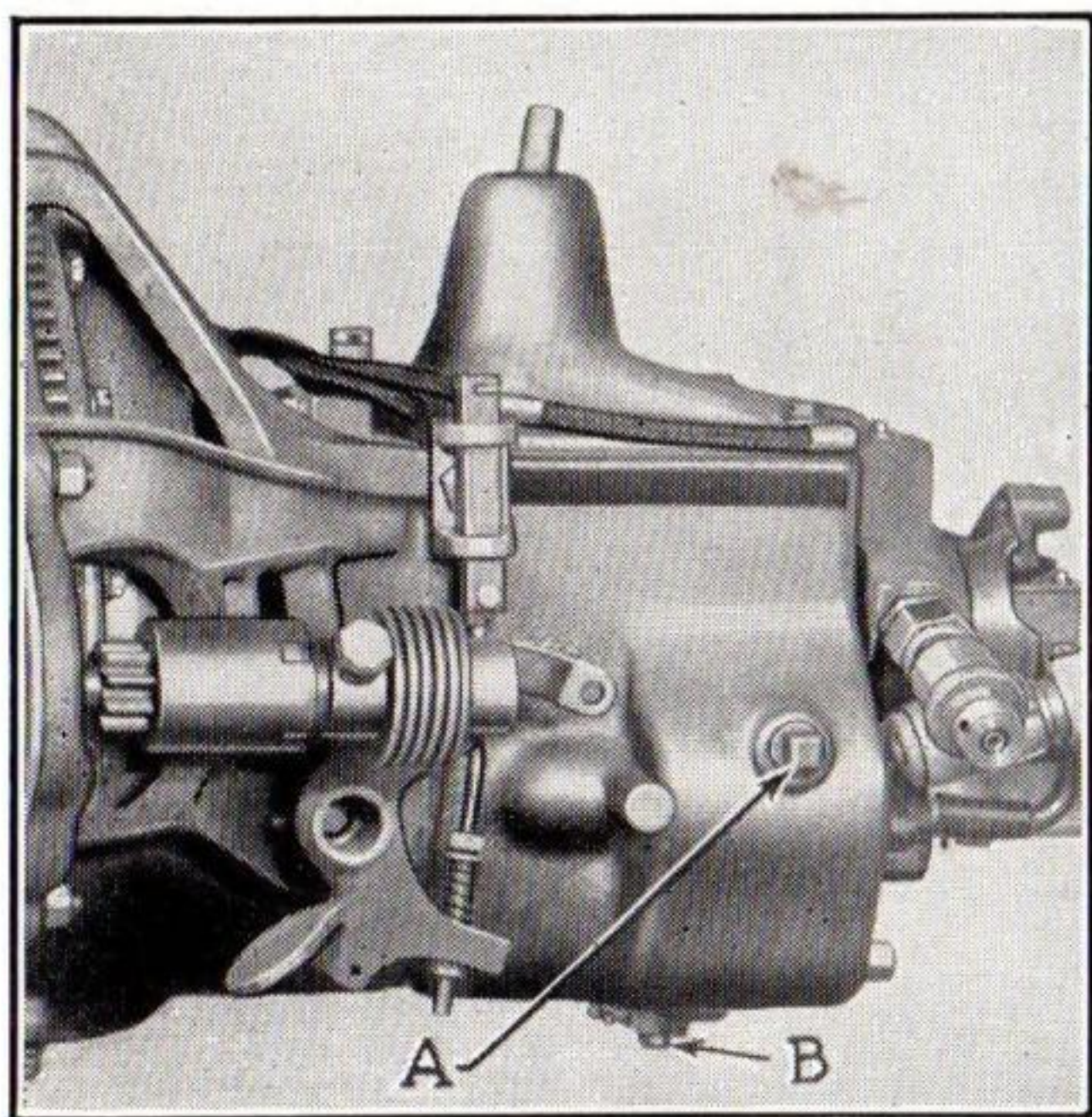


Figure 15

season by removing plug (B) and replacing with three pounds (or pints) of fresh oil of the proper specifications.

Lubrication

The lubricant used must be able to withstand the pressure developed between the gear teeth and also flow freely into the small clearances of the bearings. These qualities can be obtained in S.A.E. 90 E.P. transmission gear oil for summer and S.A.E. 80 E.P. (zero pour test) transmission gear oil in winter. When hard shifting is encountered during cold weather, three ounces of kerosene should be added to the lubricant.

The transmission should be filled with lubricant to the level of the filler plug (A), Figure 15, at all times. Drain the lubricant with

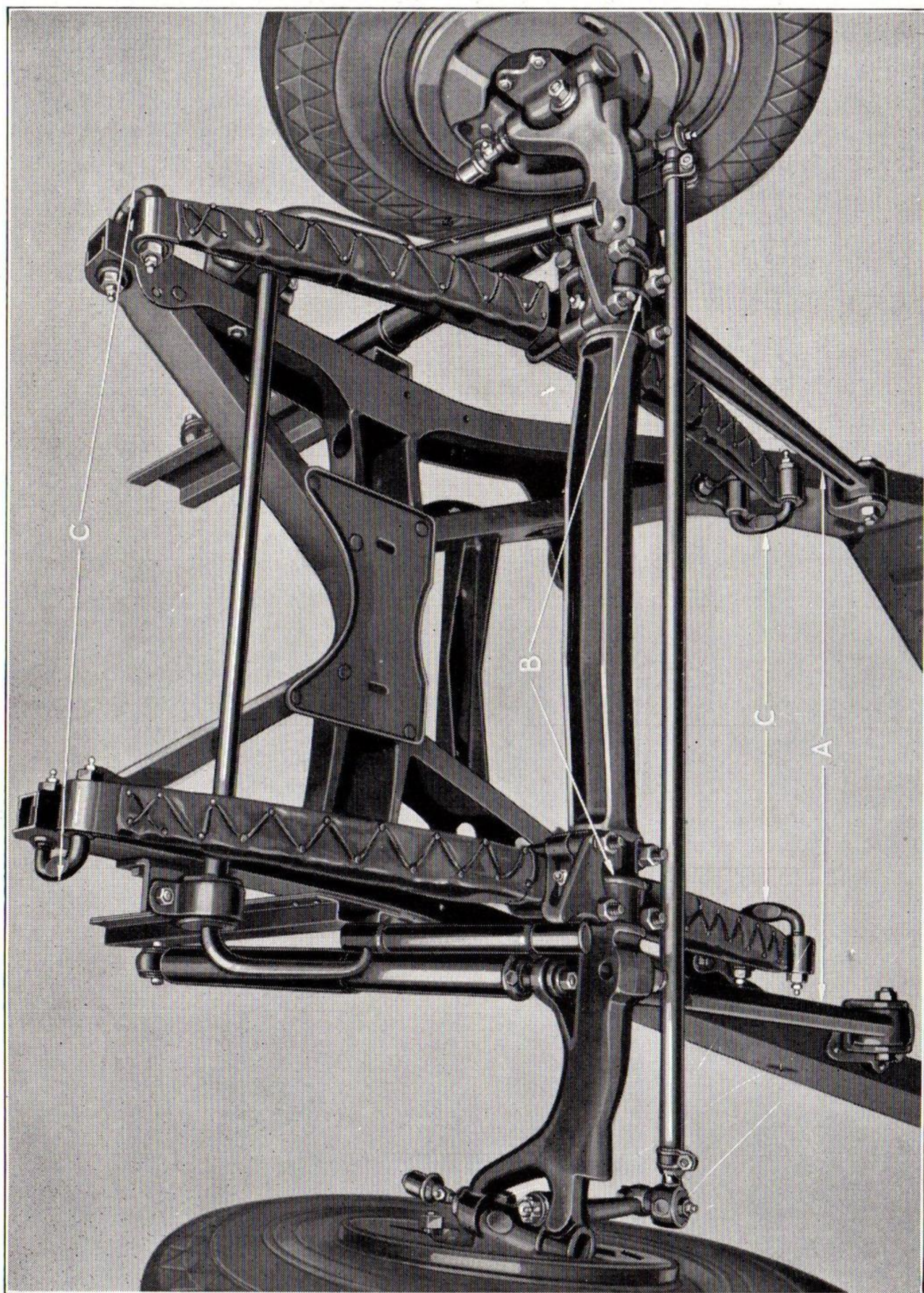


Figure 18

the same, so when adjusting remove a thin shim from each side and repeat, if necessary, until only a slight amount of play is evident. Be sure the axle shafts turn freely before building up.

Caution

Under no condition should a knockout type puller be used to remove a wheel hub or the end of the axle shaft struck a heavy blow.

Lubrication

An oil must be used that will withstand the pressure developed between the gear teeth and also flow freely to enter the smaller clearances and circulate through the passages to the pinion bearings. These qualities can be obtained in a heavy bodied gear oil of S.A.E. 160 E.P. viscosity for summer and S.A.E. 90 E.P. for winter.

The oil should always be kept to the level of the filler plug (A), Figure 17. Drain the oil and replace with three pounds (or pints) of fresh oil with season.

The wheel bearings are lubricated with milled sodium soap base grease. The bearings should each be packed with one and one-half ounces of grease every 5,000 miles. In order to insert this grease the wheels and wheel bearing caps must be removed, as described under "Wheel Bearing Adjustment."

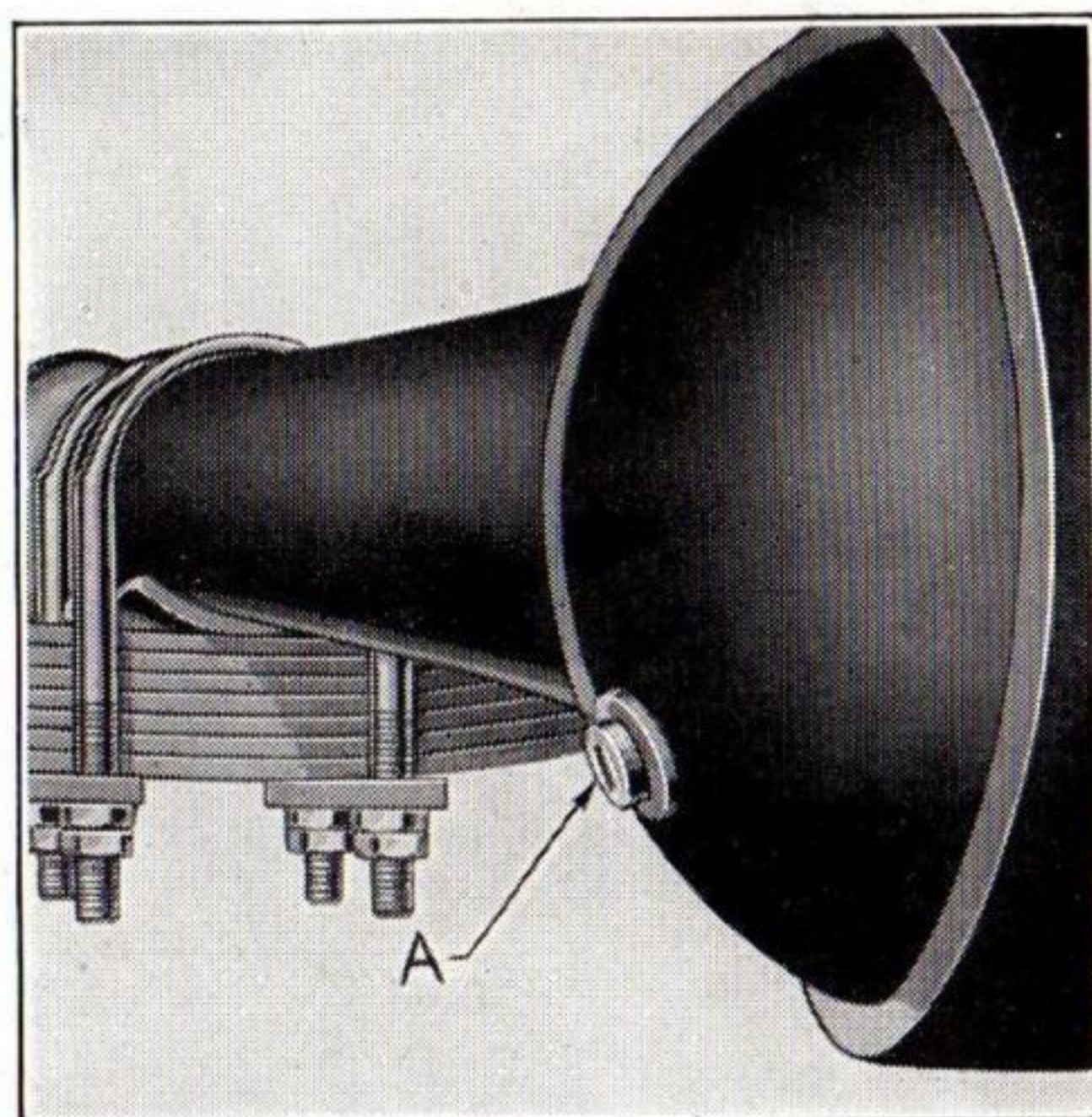


Figure 17

FRONT AXLE AND SPRING SUSPENSION

The front axle is of the Elliott type (see Figure 18—for all models except Series 71 Business Coupe and Series 70 and 78), made of a heavy drop forging of high quality carbon steel. The steering spindles which are drop-forged molybdenum alloy steel are attached to the axle center with alloy steel pivot pins mounted in hardened steel bushings with ball bearings to carry the thrust on the end of the pin.

The spindle pivot pins are drilled centrally, full length, and are equipped with a single 90° pressure grease fitting located above each pivot pin. The pressure grease fittings are of a special design which feed lubricant to the pivot pins under pressure from a reservoir which requires filling every 1,000 miles. (See lubrication chart at back of this book.)

Each wheel is mounted on two taper roller bearings.

The tie rod ends are of the plain bearing type, equipped with lubrication fittings.

The front axle on all Terraplane Models except Series 71 Business Coupe and Series 70 and 78 is attached to the chassis frame by two drop-forged

Caster on all models except Series 71 Business Coupe and Series 70 and 78 may be decreased by bending back locks and removing cap screws (1 and 2), Figure 20, and installing shims between the torque arm and upper torque arm boss on each side of the axle (3). By installing shims between the torque arm and lower torque arm boss on each side of the axle (4), caster is increased. In the event that shims are in place and a revision of caster is necessary, the removal of an upper shim (3) on each side of the axle increases caster, while the removal of a lower shim (4) at each side of the axle decreases caster.

Caster shims are .020" thick and are equal to approximately $1\frac{1}{2}^{\circ}$.

Caster in Series 71 Business Coupe and Series 70 and 78 Models is increased by loosening the "U" bolt nuts at the axle and inserting caster wedges between the axle spring perches and springs with the thick edge to the rear. To reduce caster, the wedges are inserted in the reverse order; that is, with the thick edge to the front.

After adjusting caster, the steering gear should be checked to determine that it is on the high point. If adjustment is necessary, adjust the drag link as described under "Drag Link," page 46.

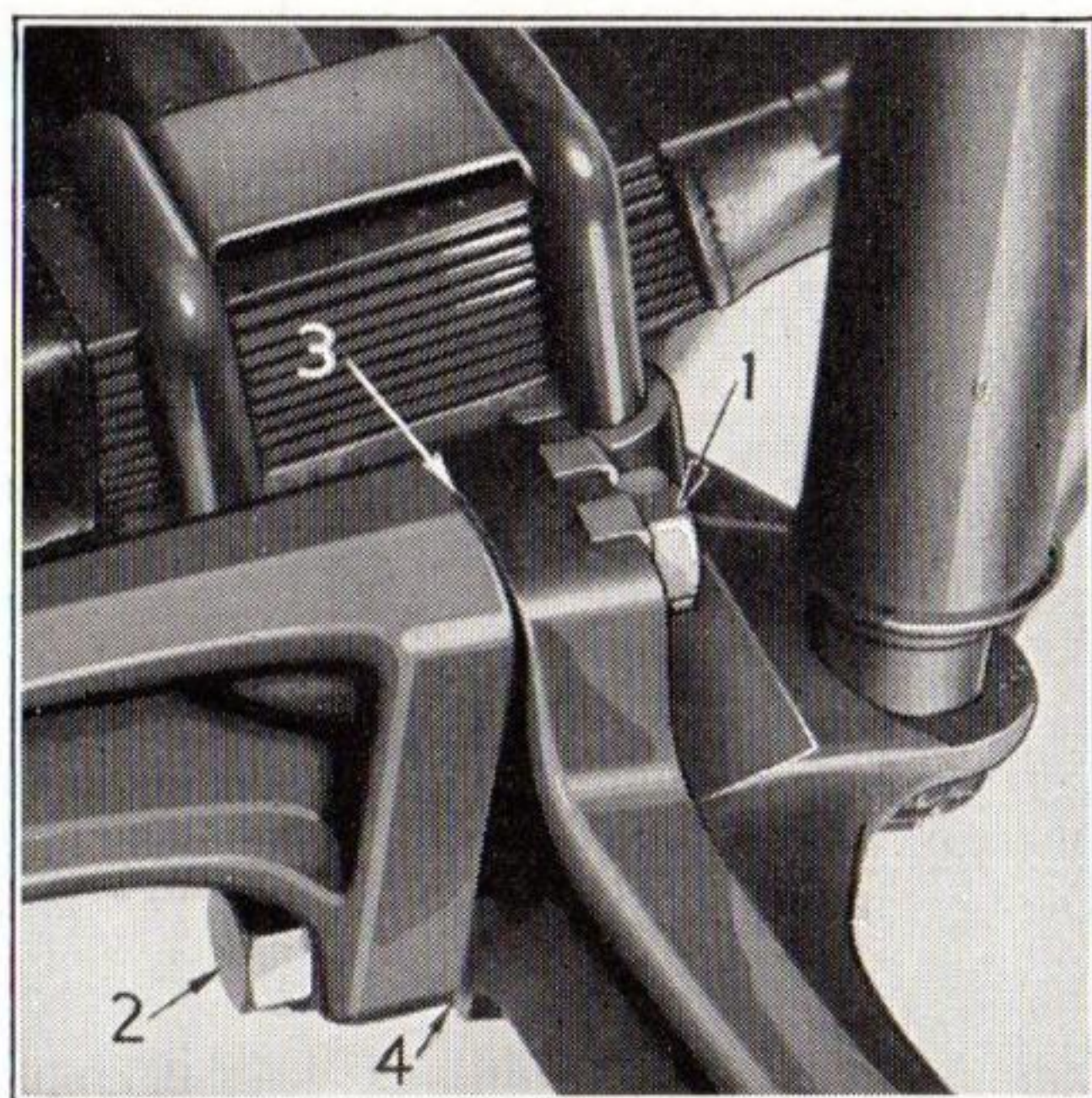


Figure 20

base lubricant. Remove hub and wash bearings and inside of hub with kerosene and pack each bearing and hub with 3 ounces of milled sodium soap base lubricant (see page 42 for adjusting wheel bearings).

Spindle pivot pin lubrication fittings require filling with a viscous chassis lubricant every 1,000 miles.

The tie rod ends are equipped with pressure fittings and should be lubricated with a viscous chassis lubricant every 1,000 miles.

All other parts equipped with pressure fittings should be lubricated in accordance with the lubrication chart, inside of back cover.

Camber

The camber (outward tilt of front wheels) should be from 1° to $1\frac{1}{2}^{\circ}$.

Should any front axle parts become bent, through accident, to such extent that they cannot be straightened without heating, they should be replaced with new ones. Heating will destroy the original heat treatment of the parts and may result in sagging or even breakage.

Lubrication

The front wheel bearings should be lubricated every 5,000 miles with a good grade of milled sodium soap

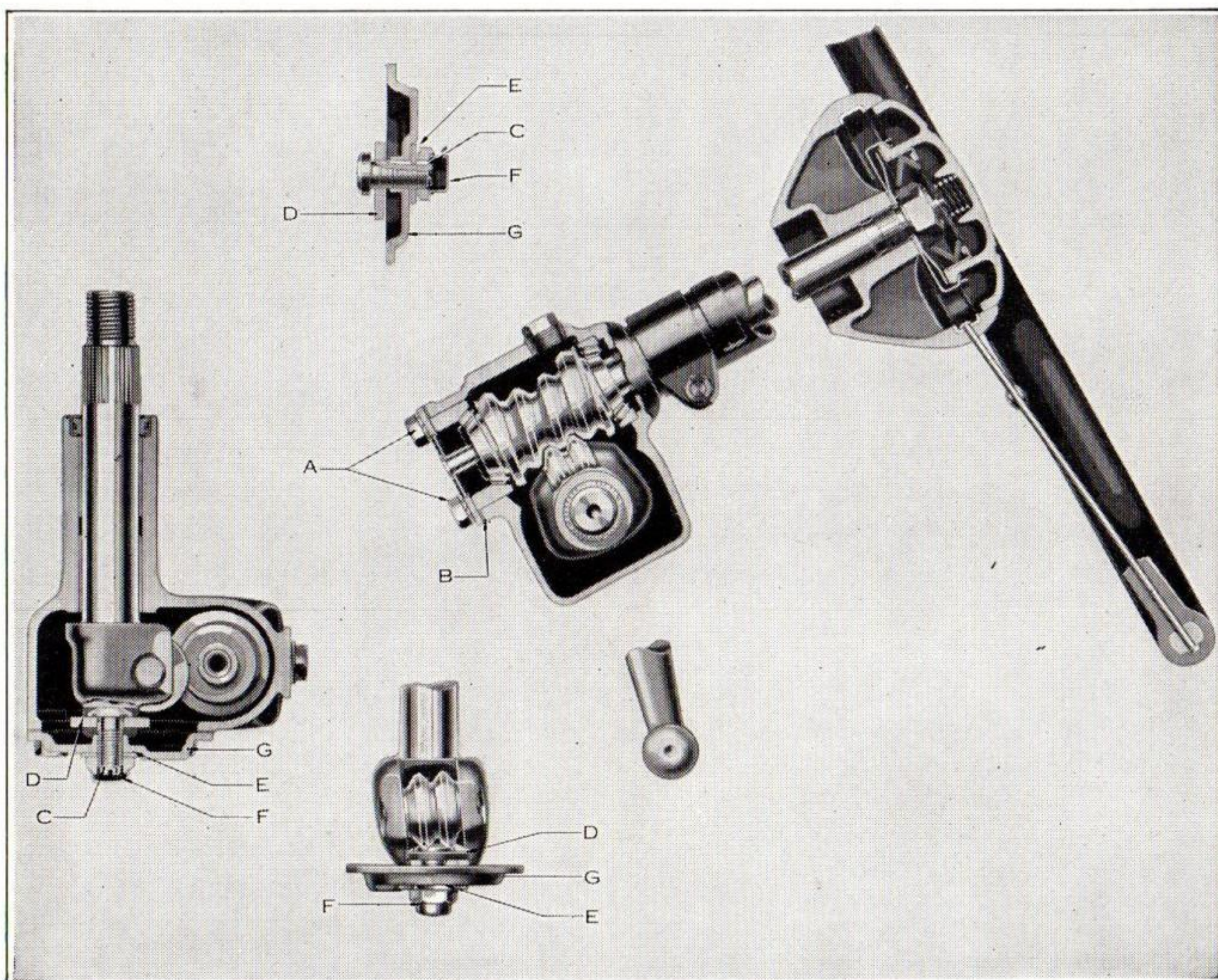


Figure 21

STEERING GEAR

The steering gear is of the variable pitch worm and roller tooth type with a maximum ratio of 18.2 to 1 in the straight ahead position to give maximum ease of steering. The ratio is reduced as the gear is turned to the right or left to give quick action for sharp turns.

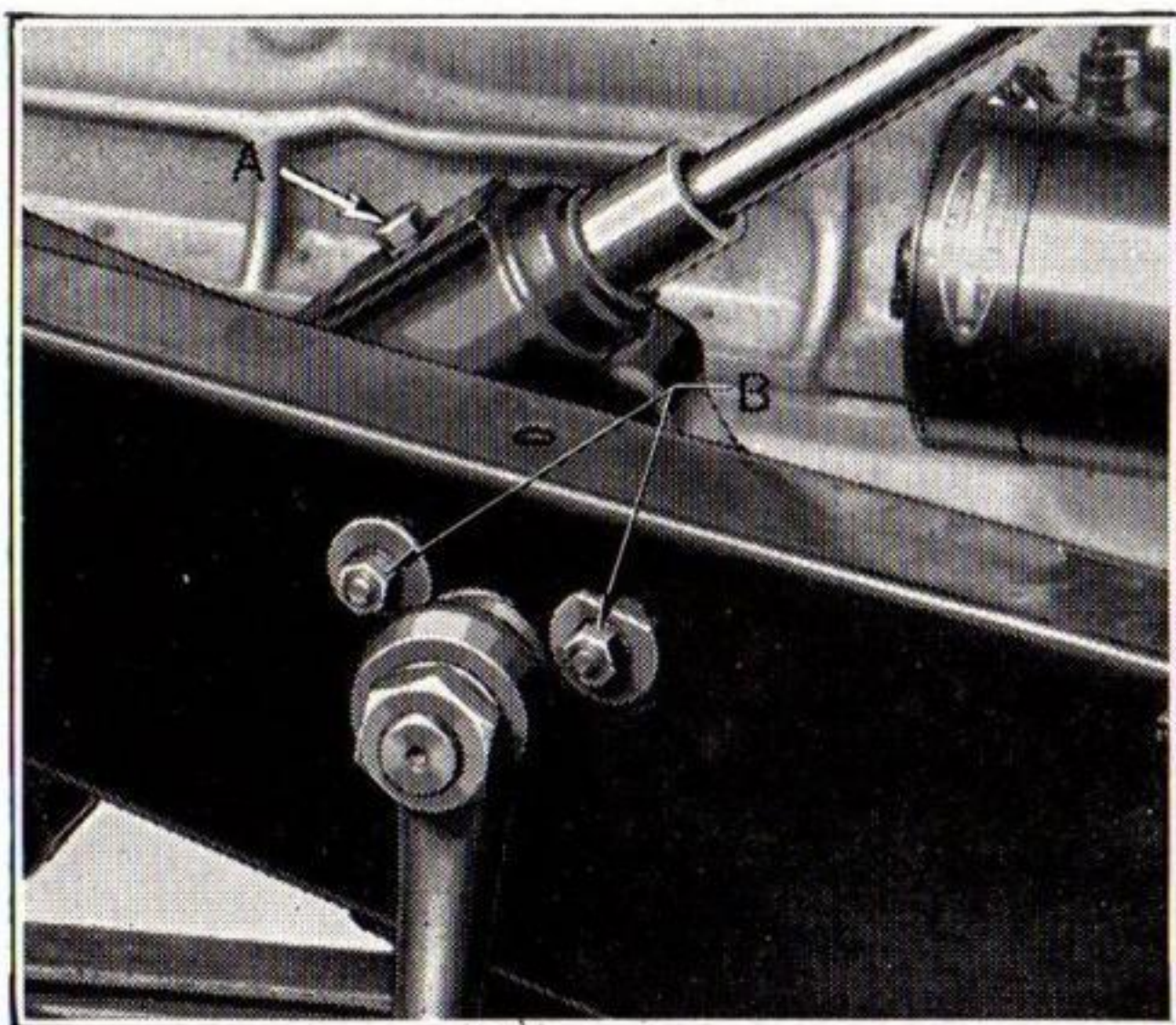


Figure 22

The worm is cut in a manner which gives a minimum clearance with the roller tooth in the straight ahead position and increased clearance on turns. This gives maximum control and assures freedom from binding even after extensive use which, on conventional gears, makes it impossible to get proper clearance without binding on extreme turns due to maximum wear coming in the straight ahead position.

It is important that the drag link be removed from the steering gear ball

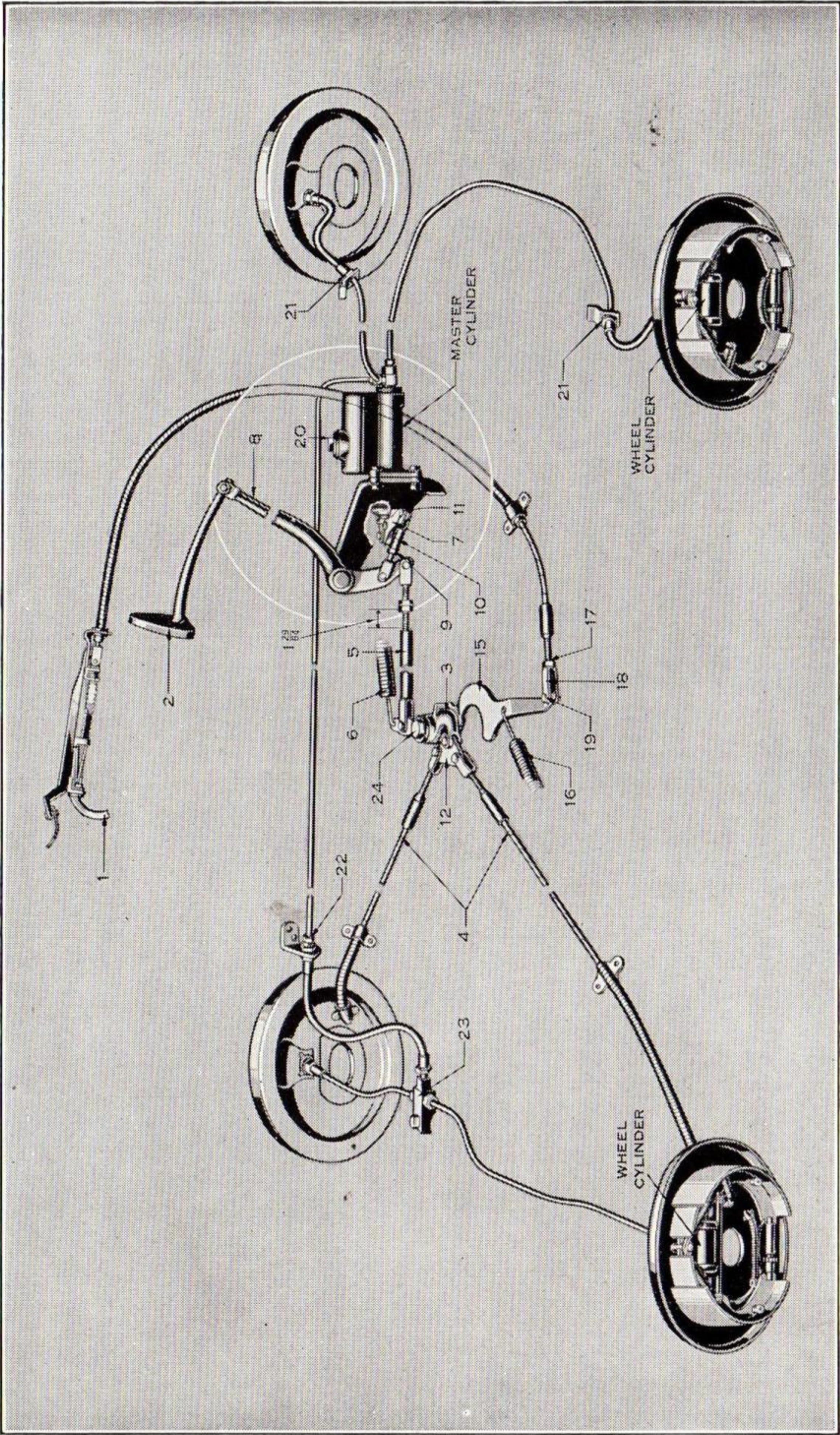


Figure 24

SPRINGS AND SHOCK ABSORBERS

The spring leaves are lubricated with a viscous chassis lubricant and covered on the Series 72 Models to prevent entrance of road dirt or water and preserve lubricant.

Front and rear spring "U" bolt nuts should be checked periodically and tightened if necessary to maintain proper alignment of springs in relation to their position on the axles.

Pressure lubrication fittings are provided on front and rear spring shackles and pivot bolts, and should be lubricated every 1,000 miles with viscous chassis lubricant.

Spring control on all Terraplane Models, except Series 70 and 78 Cab, Cab Pickup, Panel Delivery and Station Wagon, is obtained through the use of four direct-acting, self-compensating shock absorbers; which use a large quantity of oil working under low pressure. By this means accurate control is obtained and there is no variation due to changes in temperature.

All Series 70 and 78 Cab, Cab Pickup, Panel Delivery and Station Wagon Models are equipped with two front shock absorbers only, although rear shock absorbers may be obtained through Authorized Hudson and Terraplane Dealers, should the nature of the operation of the vehicle require their use.

The two front shock absorbers are mounted at the top on two large taper rubber grommets, assembled over a stud projecting from the front fender support bracket.

The stud at the lower end of the shock absorber passes through an eye in the front axle center. The shock absorber is mounted at this location on two large rubber cushions.

The rear shock absorbers are attached at the top to a bracket riveted to the rear axle cross member by means of a bolt which passes through two large taper rubber grommets. The lower ends of the shock absorbers are mounted on drop-forged studs supported by the rear spring clips and are mounted on two large taper rubber grommets.

The use of rubber grommets and cushions at the upper and lower ends of the shock absorbers serves to eliminate a metal-to-metal contact and also to cushion or absorb road shock.

The large reservoir of fluid, the low operating pressure and the double seal practically eliminate the loss of fluid. The fluid, however, should be maintained at the proper level to obtain proper control and it is, therefore, recommended that they be checked by an Authorized Hudson and Terraplane Dealer at least twice a year.

BRAKES

The Terraplane brakes are hydraulically operated with supplementary mechanical actuation of the rear brake shoes from both the foot pedal and

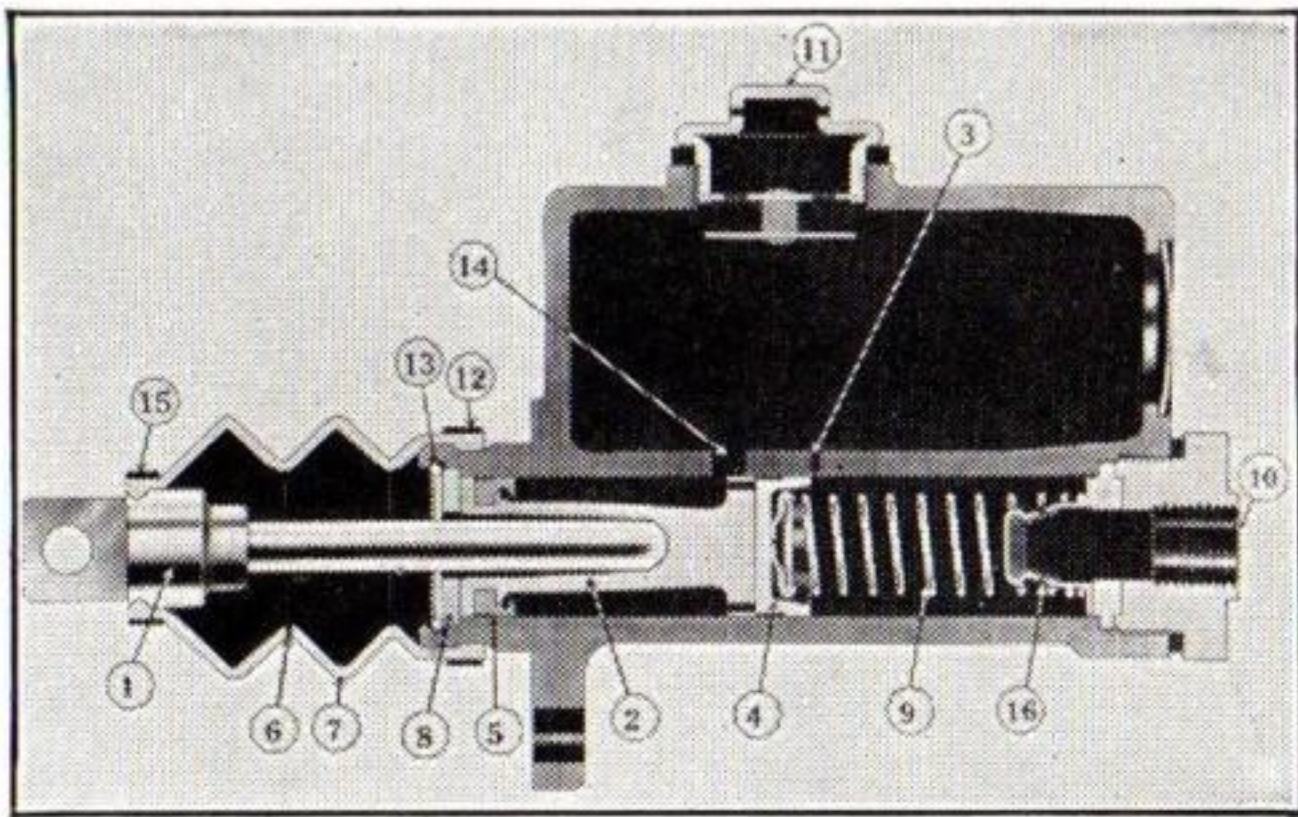


Figure 25

removing the filler plug (20), Figure 24, wipe all parts free of dirt and take extreme care to prevent dirt getting into the cylinder.

The reservoir should be filled with Genuine Hudson Hydraulic Brake Fluid. The use of other than Genuine Hudson Fluid or the introduction of oil with a mineral base into the system will cause the rubber parts to swell and become inoperative.

The piston in the master cylinder is operated through the lever (7) and connecting link (10) from the brake pedal (8), Figure 24. In order to insure full return of the piston when the brake is released there must be $\frac{1}{4}$ " clearance between the pedal (8) and the floor board. This clearance is obtained by loosening lock nut (9), removing clevis pin (11), and turning connecting link (10) to increase length until clevis pin (11) just enters the rod with the pedal shank (8) $\frac{1}{4}$ " from the toe board and the bell crank against its stop. Reinsert clevis pin (11) in bottom of bell crank, insert cotter key and tighten lock nut (9). This adjustment is important, as failure of the piston to return to the end of the cylinder will cause the brakes to drag.

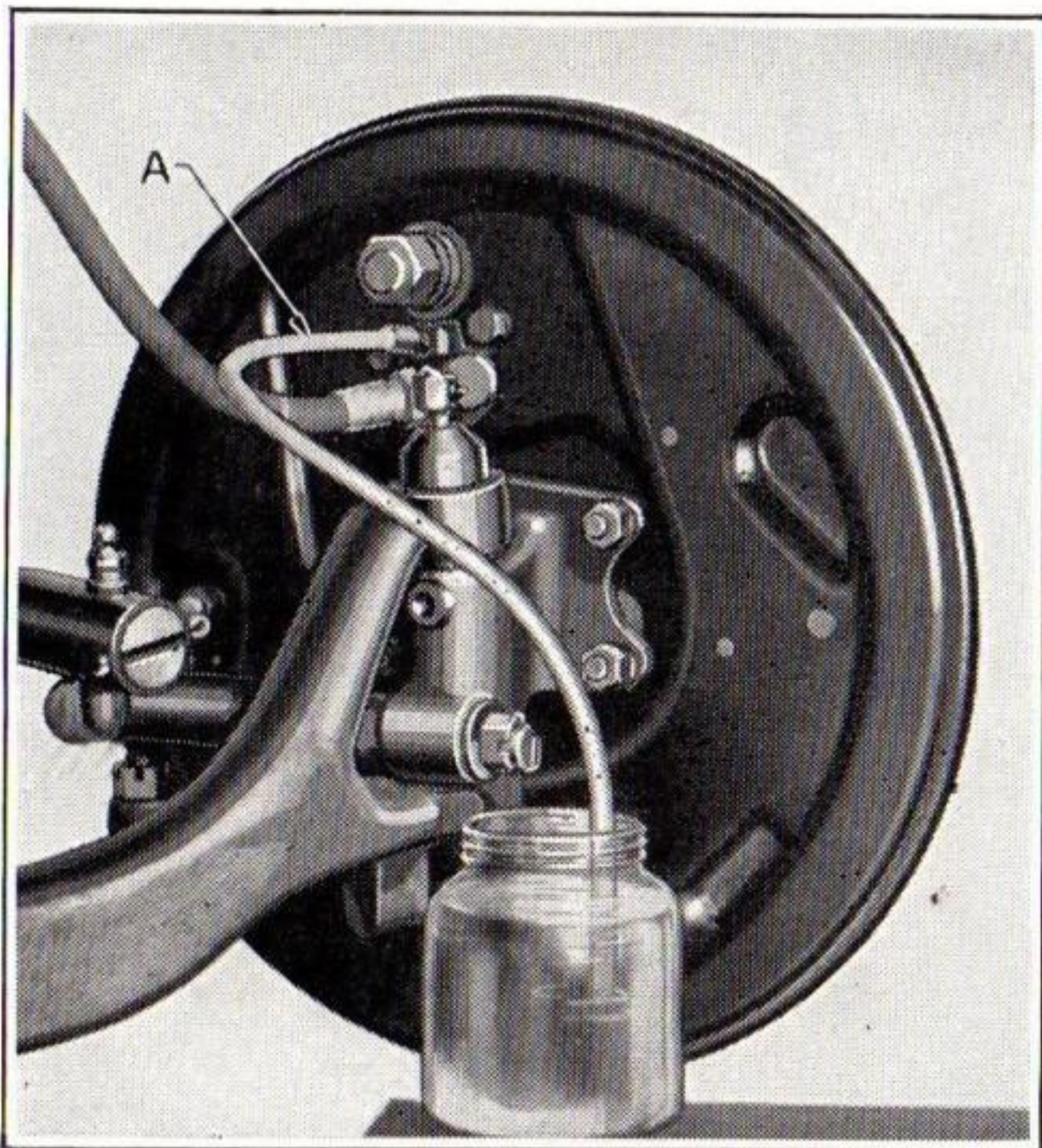


Figure 26

the hand brake control. (Figure 24.)

The heart of the hydraulic system is the master cylinder (Figure 25) which has an integral reservoir from which additional fluid is supplied to the system as necessary.

The master cylinder is mounted to the front of the pedal mounting bracket and is accessible by lifting the left side of the hood.

The reservoir should be kept at least half full at all times. Before removing the filler plug (20), Figure 24, wipe all parts free of dirt and take extreme care to prevent dirt getting into the cylinder.

The reservoir should be filled with Genuine Hudson Hydraulic Brake Fluid. The use of other than Genuine Hudson Fluid or the introduction of oil with a mineral base into the system will cause the rubber parts to swell and become inoperative.

The piston in the master cylinder is operated through the lever (7) and connecting link (10) from the brake pedal (8), Figure 24. In order to insure full return of the piston when the brake is released there must be $\frac{1}{4}$ " clearance between the pedal (8) and the floor board. This clearance is obtained by loosening lock nut (9), removing clevis pin (11), and turning connecting link (10) to increase length until clevis pin (11) just enters the rod with the pedal shank (8) $\frac{1}{4}$ " from the toe board and the bell crank against its stop. Reinsert clevis pin (11) in bottom of bell crank, insert cotter key and tighten lock nut (9). This adjustment is important, as failure of the piston to return to the end of the cylinder will cause the brakes to drag.

An occasional filling of the master cylinder reservoir should be the only attention required to the hydraulic system unless the reservoir is permitted to run dry, a main line is disconnected or a wheel cylinder is disconnected for service operations. If the cylinder runs dry or a main pipe is disconnected, it is necessary to bleed

the air out of the lines at all wheel cylinders. If a wheel cylinder is disconnected it is necessary to bleed only at that particular cylinder.

The bleeding operation is performed as follows:

- (1) Remove screw (D), Figure 27, and screw the end of the bleeder tube (A), Figure 26, in its place and allow end of tube to hang in a jar partially filled with liquid.
- (2) Unscrew bleeder valve (E), Figure 27, three-quarters of a turn.
- (3) Depress foot pedal by hand, allowing pedal to return to released position slowly. Continue this operation until air bubbles cease to be emitted from the bleeder tube.
- (4) Close bleeder valve (E), remove bleeder hose, and replace screw (D), Figure 27.
- (5) Refill master cylinder reservoir.

CAUTION: *Do not use a substitute for Genuine Hudson Hydraulic Brake Fluid. Substitutes are not suitable for this system.*

Do not use fluid that has been drained out of the system. Always replace with new fluid.

Use Genuine Hudson Hydraulic Brake Fluid Number 5, except where continuous sub-zero temperatures are encountered. Hudson Fluid Number 1 is recommended for use at extremely low temperatures.

Adjustment of Pedal Push Rod

With equalizer bar cable plate against stop, loosen brake pedal push rod lock nut, Figure 24, and turn adjusting nut until rear face is $1\frac{29}{64}$ inches from front end of push rod (5). Tighten lock nut. This adjustment is important to obtain proper mechanical follow-up to the hydraulic operation of the rear brakes.

Brake Shoe Adjustment

There are only two points of adjustment in the braking system to compensate for brake lining wear. The *Eccentric Adjustment (B)*, Figure 27, centralizes the brake shoes in the drum. The *Adjusting Screw* (accessible by removing cover (C), Figure 27) takes up the clearances between the lining surfaces and the brake drums.

Adjustment for Wear Only

- (1) Jack up all wheels clear of the floor.
- (2) Disconnect rear wheel cables from equalizer bar cable plate.
- (3) After removing adjusting hole cover (C), Figure 27, and gauge hole covers in brake drums, **AT EACH WHEEL**, loosen eccentric lock nut (A), Figure 27, and insert .010" feeler gauge between the lining of secondary (eccentrically controlled) shoe and brake drum. Turn the eccentric adjust-

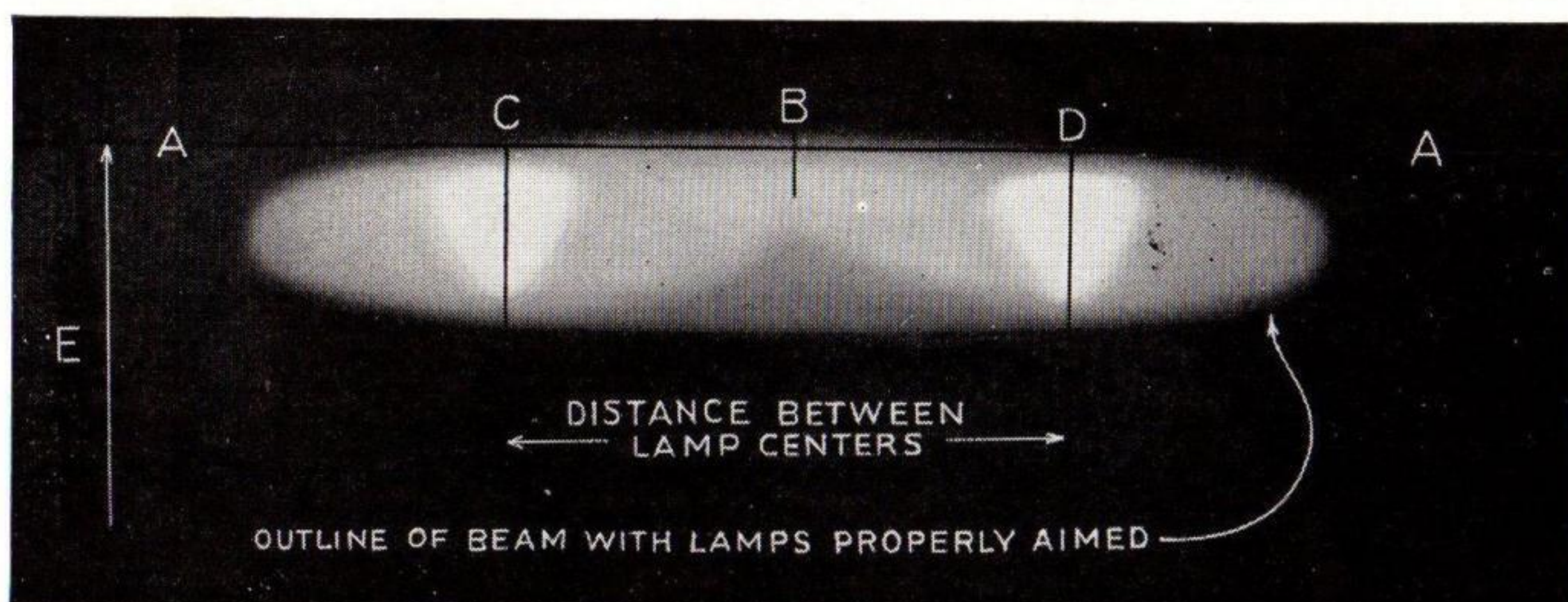


Figure 28

Adjustment

In order to get the proper lighting effect, the headlamps must be aimed accurately as follows:

Place the car on a level floor or driveway, squarely in front of a white wall or screen at a distance of twenty-five feet. Draw a horizontal line (AA), Figure 28, on the wall six feet long and at a height of thirty-nine inches above the floor (E). This line represents the top of the beam. Next draw two vertical lines (C and D) twenty-four inches long, a distance of thirty and one-eighth inches apart. Measure one-half the distance between (C and D) and draw line (B) ten inches long. These vertical lines represent the distance between lamp centers.

Without passengers in the car, cover the left headlamp to obscure its beam and place lighting switch in the high or country driving position. Loosen the headlamp mounting stud hex nut of the right lamp, which is reached through the opening in the lower part of the headlamp mounting bracket, with an open end wrench, and aim the lamp so that the top of the light beam is just level with the horizontal line (AA) and equally divided on each side of the vertical line (D).

Tighten the mounting stud nut. Cover the right lamp and follow the same procedure with the left lamp, centering its beam on vertical line (C). When this has been done the lamps will be correctly aimed for both the city and country driving positions.

Lamp Lens and Bulb Replacements

To replace headlamp bulb, loosen the screw at the bottom of the lamp body. Push the bottom of the lens backward and downward until the top of the lens is clear of the top of the lamp body and lift out. Unlock bulb by turning counter-clockwise and remove. Replace bulb (see specifications on page 8) and turn in clockwise rotation to lock in reflector. Replace lens by reversing removing instructions.

To replace headlamp parking bulb, press inward and turn to release it from the socket. Replace with new bulb (see specifications on page 8).



Figure 29

(A), Figure 29, counter-clockwise and remove. Remove bulb and replace (see specifications on page 8). Replace lamp body and lens assembly and turn in clockwise rotation to lock in place.

To replace stop lamp bulb, push bottom of lens (B), Figure 29, in and downward until upper part protrudes out of body and remove. Remove bulb and replace. Reinstall lens from top and push inward until lens springs into place.

To replace the tail and stop lamp bulb on Series 70 and 78 Cab, Cab Pickup, Panel Delivery and Station Wagon and Series 70 Utility Coupe, remove two screws in lamp door, remove door and bulb. Replace bulb (see specifications on page 8); reinstall door and screws.

To replace dome lamp bulb, remove lock ring around lens with small screwdriver. Remove lens and bulb. Replace bulb (see specifications on page 8). Install lens and replace lock ring.

To replace fender lamp bulb, turn lamp lens to left to unlock. Remove lens and replace bulb. Replace lens and turn to right to lock in place.

The oil, generator and instrument light bulbs are held in sockets assembled in the rear face of the instrument cluster base by spring tension behind the instrument panel.

To replace bulb, pull socket out of cluster base and remove bulb. Replace bulb and press socket into socket hole (see specifications on page 8).

BATTERY

Registration

A 17-plate, 105-ampere hour National battery is used. This battery is covered by a Guarantee and Adjustment Policy by its manufacturer. To be entitled to the benefits of this Policy the battery must be registered with a National Dealer within thirty (30) days after delivery of the car. Do not neglect to make this registration.

Care

The battery requires little attention; however, this attention is absolutely essential. Negligence will shorten the battery life and cause premature failure.

Therefore, for convenience of inspection and servicing the battery is located under the left front fender and is easily accessible from the engine compartment. The battery is set in a tray which is provided with a drain. The battery cover can be removed by removing two wing bolts along the top flange and one wing bolt at the rear flange.

Owners will appreciate that with this arrangement it is not necessary to disturb the driver or other passengers to check the battery for water. All danger of soiling upholstery cloth is also eliminated by this arrangement.

Distilled water should be added to the battery at such intervals as will insure the plates being covered at all times. Usually water should be added twice a month in warm weather and monthly in winter. During freezing weather, water should be added just before the car is to be used.

To prevent corrosion of battery terminals and connections apply a coating of vaseline over the battery posts and strap terminals, making sure the terminals are properly tightened. If corrosion occurs, clean posts and terminals with a soda solution before applying the vaseline. When using the soda solution be sure the cell caps are in place and be careful to prevent the soda from entering the cells. Flush off well with water and dry top of battery.

Inspect the battery ground strap occasionally, as looseness at the battery or fender support bracket or breakage will reduce the output for starting and a complete break will cause the lamp bulbs to burn out.

Periodic hydrometer readings should be made by your Dealer. If the battery gravity is low and the battery in good condition, the generator charging rate should be checked. This requires accurate Voltmeters and Ammeters and should be handled by your Hudson and Terraplane Dealer.

It is not necessary to add acid to a battery except where leakage has occurred. This must be done in conjunction with charging and should not be attempted except by an experienced battery service man.

TIRES AND WHEELS

All wheels are demountable at the hub by prying off the outside hub cap and removing the cap screws (B), Figure 19, in the wheel mounting plate. When replacing the cap screws, the final tightening locks them to prevent loosening in operation. Be sure the cap screws are drawn down tight.

Steel wheels are of the drop base type, permitting installation and removal of tires without separate locking rings or the use of any special tools.

Four ply 16 x 5.50 tires are used as standard equipment on the Series 71 Business Coupe, with four ply or six ply 16 x 6.00 and 15 x 7.00 tires as optional equipment. Four ply 16 x 6.00 tires are standard equipment on all other models with four or six ply 15 x 7.00 tires optional equipment on passenger car models only. Six ply 16 x 6.25 tires are optional on Series 78 Models only.

the road surface. Lower than recommended pressures will often affect the proper handling of the car.

Hard steering on turns is ordinarily due to low front tire pressure. Wandering on the road or weaving, tire screeching and the car leaning to one side or rolling on turns at high speed are traceable to low rear tire pressure.

However, on the other hand, higher than recommended pressures reduce the shock-absorbing qualities of the tires, but increase stability at high speeds.

For all-around average load and driving it is recommended that in the 16 x 5.50 and 16 x 6.00 size tires the following pressures be maintained: Front, 24 pounds; rear, 32 pounds. In the case of the 15 x 7.00 size tires, which are optional equipment, 22 pounds pressure is recommended for front tires and 28 pounds in the rear tires.

Inflation pressures are particularly important on cars used for commercial purposes and the tires should, therefore, be checked more frequently to obtain maximum life and freedom from trouble.

For commercial cars equipped with six ply tires, 24 pounds inflation pressure should be maintained in front tires and 40 pounds in rear tires.

Tire Wear

Due to increased thickness in tire treads, together with higher driving speeds, faster acceleration and more effective braking, the tread will show uneven wear and a cupping effect and is particularly noticeable on the front tires, which are subjected to braking action only, while in the case of the rear tires the tread wear is equalized due to both driving and braking action.

This is natural wear but can be controlled by reversing the direction of rotation of the tire. It is recommended that the right and left wheel and tire assemblies be interchanged when this wear becomes noticeable. Since the height of the tread block has been reduced by wear, the flexing will be lessened and this change of position of tires will not only even up the wear but will in most cases prevent reappearance.

Wheel and tire balance is carefully checked during the process of assembling; however, this balance may be changed by removal and reinstallation of tires or by tire tread wear. In order to maintain original stability at high driving speeds, have wheels and tires rebalanced whenever it is necessary to remove and reinstall a tire on a wheel, or, if the tire changes are not necessary, balance at intervals of 5,000 miles. This operation can be readily and accurately done by attaching sliding type balancing weights to the inside rim flange. The proper position of these weights can, however, be determined only by use of a wheel balancing machine.

Spare Tires

The spare tire on Brougham, Convertible Brougham and Sedan Models is located on the floor of the rear compartment. In the Business, 3-Passenger, 4-Passenger and Convertible Coupe Models the spare tire is located on the floor of the rear deck. The spare tire on Utility Coupe Models is mounted on a carrier fastened to the partition board behind the driver's seat.

Spare tires on all Series 70 and 78 Cab, Cab Pickup, Panel Delivery, Station Wagon and Series 70 Utility Coach Models are mounted in the right front fender.

Removal of Spare Tire

To remove the spare tire and wheel from the rear compartment of the body, open the door and remove the mounting screw from the wheel clamp. The wheel and tire can then be pulled out of its compartment.

To remove the spare tire and wheel from the compartment in the Utility Coupe, unscrew the large clamp bolt, remove the plate and the tire can then be rolled out of the body.

To remove the spare tire and wheel when mounted in the front fender, pry off the hub cap, unlock and remove tire lock, remove lock cage and bolt. Loosen carrier bolt behind the tire with the wheel bolt wrench.

When the tire is equipped with a metal tire cover, first remove the ring, followed by the hub cap and side plate.

BODIES

Hudson-built bodies, because of all-steel construction, the method of welding and riveting outside panels to the floor section, and the Hudson unit-construction principle of building the chassis and body as a unit, will remain free of squeaks and rattles throughout the life of the car.

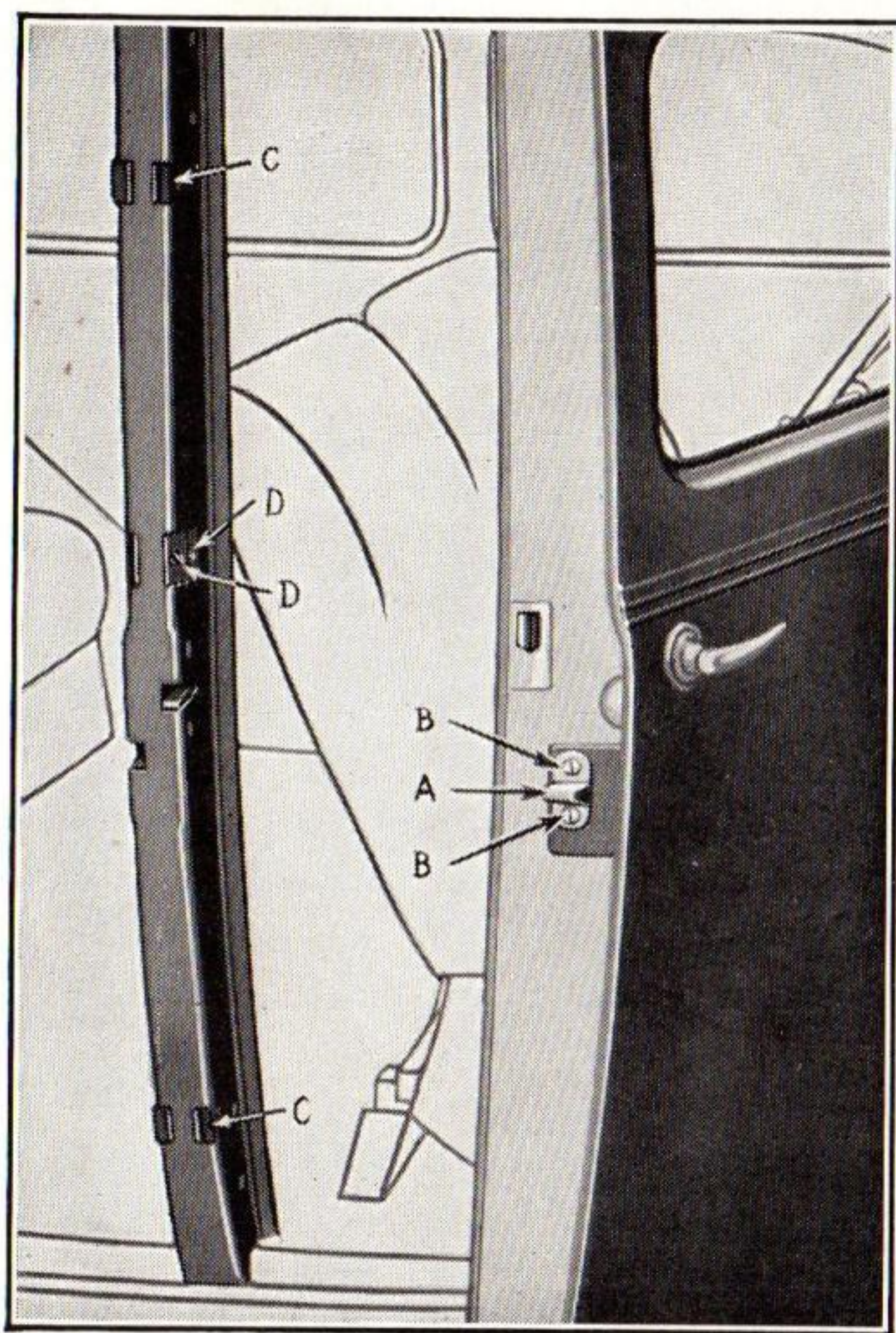


Figure 30

Heavy gauge steel panels; strong, rigid pillars; steel top construction—as a matter of fact, steel all around—assure Hudson owners of complete safety.

Doors

Large, wide front doors hinged at the front afford ample room to enter and leave the car. Because of heavy box type construction and large oversize hinges, the doors will stay in position and will not rattle or sag.

Windows are large and afford clear vision in all directions.

Door Adjustments

Door striker plates are adjustable to permit proper in and out regulation of the door position. The dovetail (male) (A), Figure 30, is adjustable to center the door up and down. The hinge pins are cadmium plated to prevent rusting and squeaking of hinges.

Cushions are deep, have an unusually comfortable coil spring arrangement and padding effect to hold the cushion form in pleasing appearance after long service.

The front seats in all models are adjustable to suit the individual driver's needs and comfort. While on long drives it is often desirable to shift the seat location slightly to change the body position for a short time to relieve driving strains. This arrangement is also designed to accommodate the driver's leg length.

The Brougham and Convertible Brougham front seat cushions are the same full-length type used in Sedan Models; however, the cushion back is built in two sections, each section of which may be tilted forward independently of the other. The entire seat is pivoted at the left front corner and can be moved on an arc, forward and to the left side to provide ample room for entrance and exit to and from the rear compartment.

In the 4-Passenger Coupe Model, in which a seat has been provided directly behind the driver's position for the extra passenger, the front seat is also of the full-length Sedan type, with the cushion back built in two sections, each section of which may be tilted forward independently, and is pivoted at the left front corner to afford ample room for entrance and exit to and from the rear compartment.

In the 3-Passenger Coupe, Business Coupe and Convertible Coupe the seat is of the full bench type and adjustable forward and backward.

Seat Adjustments—Forward and Backward

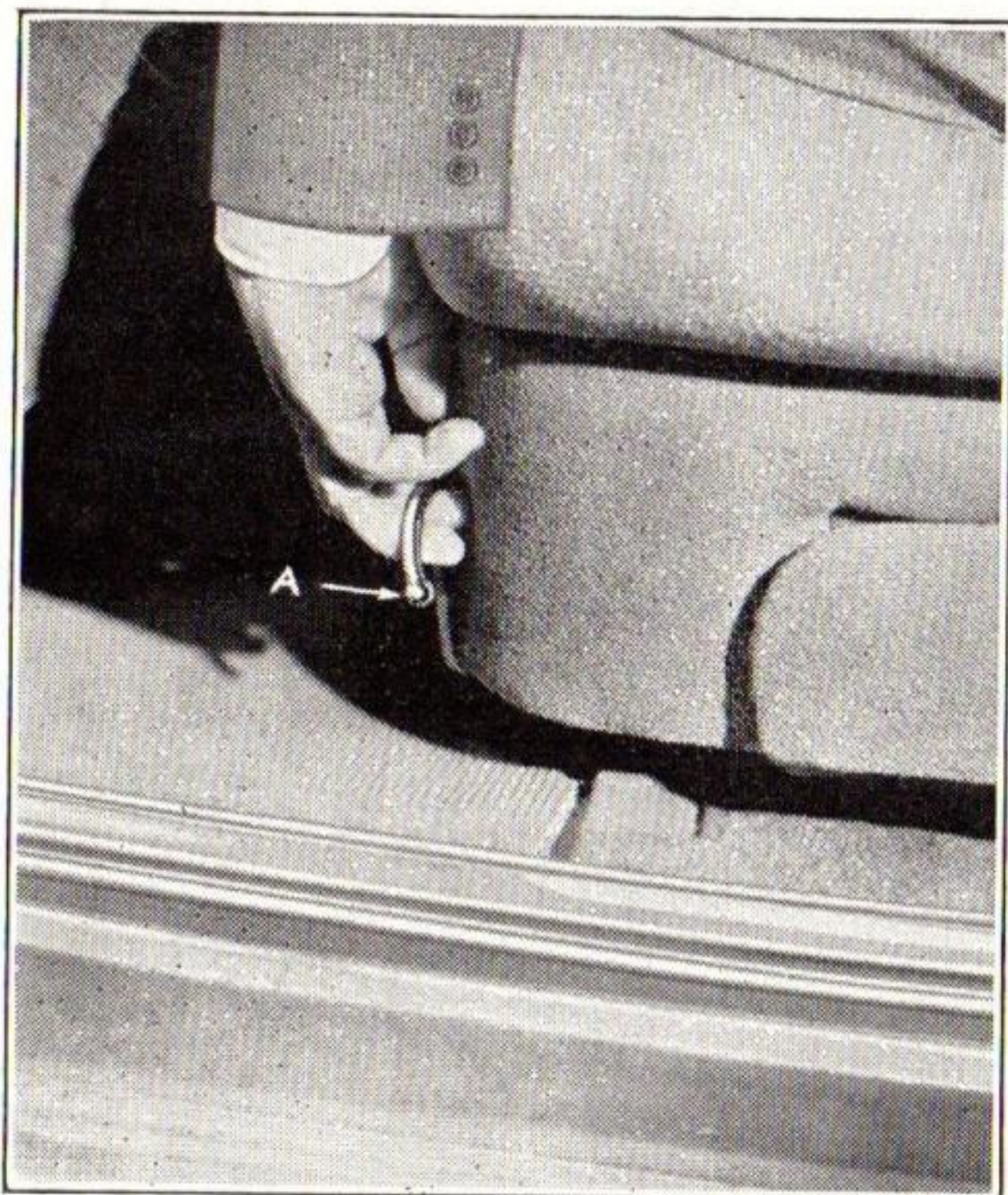


Figure 32

In all passenger models the entire front seat may be moved forward and backward by merely lifting handle (A), Figure 32, to unlock the mechanism, and by stretching or folding the legs the seat is shifted to the desired position. By releasing the handle the seat is again locked in position. This movement is independent of moving the seat on an arc.

Seat Adjustment on Arc

The front seats in the Brougham, Convertible Brougham and 4-Passenger Coupe Models can be moved on an arc by merely tilting the passengers' section of the seat back slightly forward to unlock the mechanism and pulling the seat forward by gripping the instrument panel. By moving the seat back to its normal position the seat is again locked.

Inasmuch as the two seat adjustments mentioned above operate independently of each other, it is possible to move the seat forward by lifting the

will spot and rust if neglected for long periods. Bumper bars particularly should be watched, as frequent contact with the bumpers of other cars while being parked or in pushing will tend to scuff and scratch the plated surface and make them more susceptible to rust.

Cleaning with gasoline or washing with soap and water will remove the salt or calcium chloride. Follow up by polishing or applying a coat of Hudson Wax Base Polish for protection. If the bars are badly pitted, a coat of clear lacquer applied immediately after drying the bar will give it a protecting coat.

We believe it advisable to mention a few "don'ts" in regard to finish, which may be beneficial to the car owner:

Don't allow alcohol or anti-freeze solutions to lay on lacquered or enameled surfaces. Rinse these spots immediately with large quantities of water.

Don't wash or polish the car in the hot sun or immediately after engine has been stopped; let it cool naturally.

Don't use so-called "speed" cleaners or polishes—they contain abrasive ingredients which soon wear off the lacquer.

Care of the Car Interior

The care of the interior of your car determines to a large measure the resale value when you contemplate trading-in or selling. It is not a difficult job to perform and the small amount of time thus expended will be well repaid by the pride you will derive from its neat appearance.

All body joints are thoroughly sealed against the possibilities of dust entering while driving on dusty roads. However, a certain amount of dust and dirt will find its way into the car by various means and this, if allowed to remain, has an abrasive action on the cloth and will in time cause the upholstery cloth to show wear. It is therefore our suggestion that at least once each month, or oftener if conditions warrant, the seat cushions be removed and they and the seat backs and upholstered panels be thoroughly brushed with a whisk-broom and then vacuum-cleaned.

The nap on mohair upholstery can be easily restored to its normal position if it should become matted down by covering the area with a damp cloth and then steaming it with a hot iron.

Most spots which are apt to soil the car upholstery can be quickly and neatly removed by the use of Hudson Upholstery Dry Cleaner or Hudson Foam Solution Cleaner which is available from your Hudson-Terraplane Dealer.

It is advisable when cleaning soiled sections or spots to work in a circular manner outside the area, working gradually toward the center. By this method you will be certain not to leave an unsightly ring.

Care of the Convertible Coupe and Convertible Brougham Folding Top

Convertible Coupe and Convertible Brougham tops frequently become spotted through the lowering and raising operation. These spots or soiled areas are often permitted to remain for fear of discoloring the top material.

By the use of Hudson Dry Cleaner soiled areas can very easily be cleaned. The proper method is to select an area slightly larger than the area to be cleaned and rub lightly in a circular manner, gradually working toward the center.

EQUIPMENT

With the exception of the Electric Hand which is available only as a factory-installed option, all of the following items of equipment can be installed on any models. This equipment is expressly designed for Terraplane cars and is in harmony with interior or exterior appointments. In many cases mountings are provided and no drilling or cutting is required to install the equipment; however, any of these items can be easily installed by an Authorized Hudson and Terraplane Dealer:

High Compression Cylinder Head

The aluminum alloy cylinder head, giving 7 to 1 compression, is available for use on the 1937 Terraplane engine. Although this requires the use of high octane fuel, it increases the engine output of Series 70, 71 and 78 Models to 102 horsepower and the Series 72 Models to 107 horsepower and, under comparative driving, increases gasoline mileage, partially offsetting the extra fuel cost. Acceleration and hill-climbing ability are greatly increased by the added power obtained.

Automatic Clutch Control

Automatic clutch control is available as an option or can be installed by an Authorized Hudson and Terraplane Dealer. The clutch mechanism has been designed so that automatic clutch control can be installed without any replacement of standard parts or any drilling. The automatic control is designed especially for Terraplane cars and is of the latest design, incorporating pendulum control and a lockout device to prevent it from becoming operative in "high" gear at speeds above 18 miles per hour. This, together with the natural smooth action of the Terraplane-lubricated clutch and the controlled throttle return, gives a smoothness of operation both on engagement and disengagement that has never before been attained.

Inasmuch as the lockout is effective only when the car is being operated in "high" gear, it will in no manner affect the operation of the automatic clutch control when changing through the gears to reach high gear.

This arrangement is a safety device which eliminates the coasting effect at high speeds and makes automatic clutch control safe to use on wet or slippery streets and when the car is operated in mountainous country.

Electric Hand

The Electric Hand may be had on all models as a factory-installed option. This device simplifies gear shifting over the conventional method of manually operating the gear shift lever by selecting the desired gear with a small lever located immediately under the steering wheel. The actual work of engaging

and disengaging the gears is accomplished by the engine intake manifold vacuum which is electrically controlled when the clutch pedal is depressed.

When Electric Hand is combined with Automatic Vacuum Clutch Control it produces a Selective Automatic Shift of an exceptionally appealing nature. With this combination it is merely necessary to select the desired gear with the finger tip lever mounted on the steering column and by releasing the accelerator pedal the actual movement of gears is accomplished. With Selective Automatic Shift, the shift is accomplished faster, with less effort on the part of the driver and the elimination of gear clashing by synchronizing the actual movement of gears with the clutch fully disengaged.

Hydraulic Hill-Hold

The Hydraulic Hill-Hold is a device mounted on the brake master cylinder, the function of which is to hold the brakes in the applied position to prevent the car from backing when stopped on a grade. Actuation of the Hill-Hold is accomplished by holding the clutch pedal in a fully depressed position after the brakes have been applied. The clutch pedal being connected to the Hill-Hold serves to lock the brake fluid in the brake tubes under pressure.

This action permits freedom of the right foot to operate the accelerator pedal without speeding up the motor excessively when ready to drive ahead. By re-engaging the clutch pedal when starting, the action of the Hydraulic Hill-Hold is released. Your Authorized Hudson-Terraplane Dealer only should be permitted to make adjustments on this unit.

Cigar Lighter

The standard lighter supplied as equipment on some models can be installed on any body type.

Inside Visor

An inside visor of identical design with the left-hand visor can be readily installed, as proper mountings have been provided in the right side of the windshield header.

HUDSON APPROVED ACCESSORIES

Your Hudson-Terraplane Dealer offers a complete line of Factory-Approved Accessories for your car. Each Accessory has been chosen for its superiority over competitive items. Each has been inspected and tested and carries the approval of Hudson Engineers.

There are certain extra items of a strictly Accessory nature which tend to enhance appearance, increase comfort and add satisfaction to the ownership of either a Hudson or Terraplane car.

Whenever radio or other electrical accessories requiring considerable current are installed on Terraplane De Luxe series cars the GENERATOR CHARGE CONTROL or VOLTAGE REGULATOR should be fitted. This device, which may be procured from your Hudson-Terraplane Dealer, permits an increase in the generator charging rate to compensate for the additional current required.

An ELECTRIC CLOCK is available for mounting in the locker box door.

and is the finest automobile clock on the market. Its illuminated dial is visible day or night. No drilling or cutting is necessary, as a hole has been provided for its installation. It is only necessary to remove the hole cover by removing the two stud nuts in back of the instrument panel. Enjoy the freedom from winding, only possible with an electric movement.

Two HUDSON RADIOS are available, which utilize to the fullest extent the many advances which have taken place in radio engineering. They are real musical instruments of exceptional quality, designed expressly for Hudson-Terraplane cars, bringing you the same enjoyment in automobile radio that you enjoy in your radio at home. The STANDARD RADIO with built-in speaker is equipped with five tubes, one being a metal tube. The DE LUXE RADIO with separate speaker and six tubes, one of metal, faithfully reproduces all reception, and the tone is controlled to your individual wish by the tone control on the set itself. The Hudson radio is really a built-in part of the car, the dial in the instrument panel harmonizing beautifully with the other instruments. Wherever you go you are in touch with the happenings of the world. Sports, music, news bulletins, and entertainment of all kinds are brought to you with clear, powerful volume, faithfully and accurately reproduced.

HUDSON HOT WATER HEATERS are available in three models. The Standard Heater which delivers an ample supply of healthful warmth for normal weather conditions. The De Luxe Model provides and delivers an adequate supply of heat for the majority of cars. It is equipped with a deep core and has an exceptionally quick heat-up period and delivers a steady stream of uniform heat. It is equipped with added features in heater design—provision for supplying warm air to the windshield for defrosting and a side opening port for furnishing a flow of warm air to the driver's feet. These features are controlled by a knob on the heater. By pushing the knob backward a steady stream of warm air is directed to the foot pedal area, assuring the driver a new and complete winter comfort. The Custom Model, with a larger core, is truly a remarkable development in heater performance. This model is also equipped with the defrosting and driver's foot-warming features. All models are finished to harmonize with the interior body scheme. Knobs of illuminated tenite to harmonize with the instrument control knobs regulate a rheostat switch to control the heater motor speed.

WINDSHIELD DEFROSTER grilles are provided as standard equipment on all models and facilitate installation of the windshield defroster which is used in conjunction with the De Luxe and Custom Heaters.

THE COMBINATION FUEL PUMP AND VACUUM PUMP is particularly adapted to mountainous territories where heavy rain or snow is experienced and which taxes to a limit the operation of the windshield wiper. The combination fuel pump and vacuum pump provides extra vacuum power for the windshield wiper, making it possible to operate very favorably under the most adverse conditions. Its installation also eliminates the slight lag in windshield wiper operation during acceleration.

FENDER LAMPS of unusually pleasing design, heavily chromium plated,

accentuate the fleeting appearance of the car. Their use as parking lamps effects a saving on the car battery due to the use of smaller bulbs.

TWIN OUTSIDE AIR ELECTRIC HORNS of high quality tone, heavily chromium plated, add to the pleasing front end appointments of Terraplane cars.

REAR WHEEL SHIELDS, finished in the same color as the rear fender, accentuate the sweeping lines of the rear fenders and contribute to the impression of speed and grace.

HUDSON SEAT COVERS are tailored to fit Hudson-built cars. They are smart in appearance, the material harmonizing with the upholstery in all models. San-Toy covers somewhat resemble fiber matting, but are far superior in wearing qualities and eye appeal. These covers are not damaged by moisture and are easily cleaned by sponging with Hudson Upholstery Cleaner, foam solution. The smooth finish of this type of material has less tendency to wrinkle clothing and, especially in hot weather, adds greatly to the comfort of riding. Seat covers of this type are usually considered a summer need, but you will be delighted with their all-year comfort and convenience. Quickly and easily installed, they preserve the original upholstery in the car.

A VANITY MIRROR mounted on the Sun Visor has a decided appeal to feminine motorists. No need of moving the Rear View Mirror out of driving position when this beauty aid is installed.

The stylish OVAL REAR VIEW MIRROR is not only attractive in design but its special shape enables the driver to command a full view of the road behind.

The TELL-TURN SIGNAL LIGHT is a practical necessity on a motor car with today's high speed and rapid deceleration. Indicates to those following or approaching the driver's intention to turn. Operates with a touch of the hand from inside the car, obviating the need of lowering window in cold or stormy weather to signal with the arm. The signal is given by a brilliant amber arrow, which arrests attention by its rapid intermittent flashing.

The SAFETY SWINGING STOP LIGHT flashes a stop warning to cars behind, which cannot be overlooked. At a pressure on the brake pedal, the lantern is lighted and starts to swing, calling attention to the driver's intention to stop. The Safety Stop Light is installed singly or in pairs on the rear bumper to frame brackets.

LICENSE PLATE FRAMES transform the ordinary appearing license plates into a really attractive accessory. Protect the license plates from bending and prevent rattles.

FENDER GUIDES are helpful in driving through narrow traffic lanes and in parking. They save your fenders and, being exact duplicates of the Radiator Ornaments, add an extra touch of distinction.

The above items are only a partial list of Hudson-Approved Accessories obtainable from your dealer. Upholstery Cleaner, Car Polish and Wax are also available.

Make your accessory selection from an Authorized Hudson and Terraplane Dealer, with full assurance that such accessories will harmonize with the car design and provide, to the fullest extent, the service for which they are intended.

YOUR HUDSON-TERRAPLANE DEALER
WILL GLADLY SHOW YOU THE FULL LINE OF
HUDSON-APPROVED ACCESSORIES

PREPARING CAR FOR STORAGE

If the car is to be laid up for any length of time, and especially in the winter, the following suggestions should be observed: Drain the water from the cooling system, then run the motor not over one minute to dry out the cylinder water jackets.

Drain the crankcase. Flush out the old oil, then refill with fresh oil. It is also well to pour a little oil into each cylinder through the spark plug holes to prevent the interior from rusting. Clean the spark plugs and dip the ends into oil to prevent rusting and replace them.

Crank the engine for about twenty seconds with the ignition switch off and the throttle closed. This insures a distribution of the oil over cylinder walls and valve mechanism.

Disconnect the wires from the storage battery and remove battery to some dry place. It is best to take the battery to a battery service station, where it may receive a freshening charge at least once a month. It is well worth while to take care of the battery.

Go over the chrome or nickel-plated parts with a light coating of vaseline jelly or grease to prevent tarnishing. This should be removed with gasoline before putting the car back into service.

Jack up the car and remove the tires.

If the tires are to be out of service for any length of time, they should be removed from the wheels. The inner tubes should be put in the casing with a small amount of air pressure and the tires stored in some cool, dark place, preferably where there is a slight amount of moisture, since if they become too dry the rubber will harden and lose its elasticity. It is a good idea to wrap tires with cloth to protect them from heat.

Remove all dust from top and upholstery, wash body clean, put the windows or top up and cover the car with heavy sheetings or a paper cover especially made for the purpose.

When putting the engine back into service again, remove the spark plugs, inject a small quantity of oil into each cylinder, crank the engine by hand for a few seconds, replace the plugs, turn the ignition "on" and, after the engine has been started on its own power, run slowly for a few minutes.



WITH SEASON DIFFERENTIAL
USE GEAR OIL
SUMMER S.A.E. 100 E.P.
WINTER S.A.E. 85 E.P.
CHECK LEVEL FREQUENTLY
CAPACITY—3 POUNDS



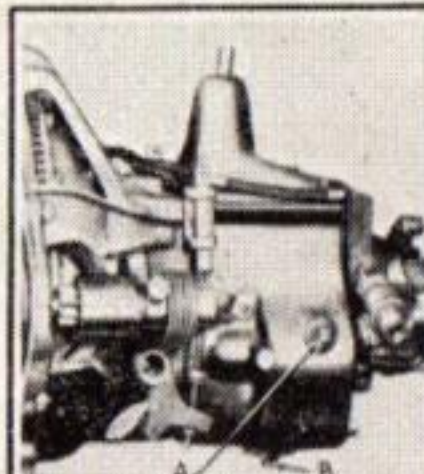
1000 MILES SPRING SHACKLE
USE VISCOUS GREASE



1000 MILES SPRING HANGER
USE VISCOUS GREASE



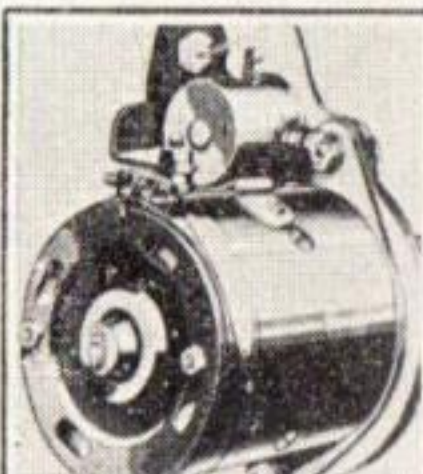
5000 MILES REAR WHEEL BEARING
USE MILLED SODIUM SOAP BASE LUBRICANT
CAPACITY—1 1/2 OUNCES



WITH SEASON TRANSMISSION
USE GEAR OIL
SUMMER S.A.E. 40 E.P.
WINTER S.A.E. 30 E.P.
CAPACITY—3 POUNDS
CHECK LEVEL FREQUENTLY

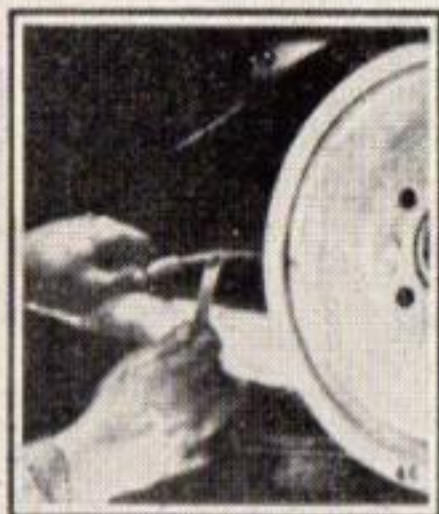


1000 MILES BRAKE AND CLUTCH PEDAL BEARINGS, RODS AND BRAKE CROSS SHAFT PIVOTS
USE ENGINE OIL

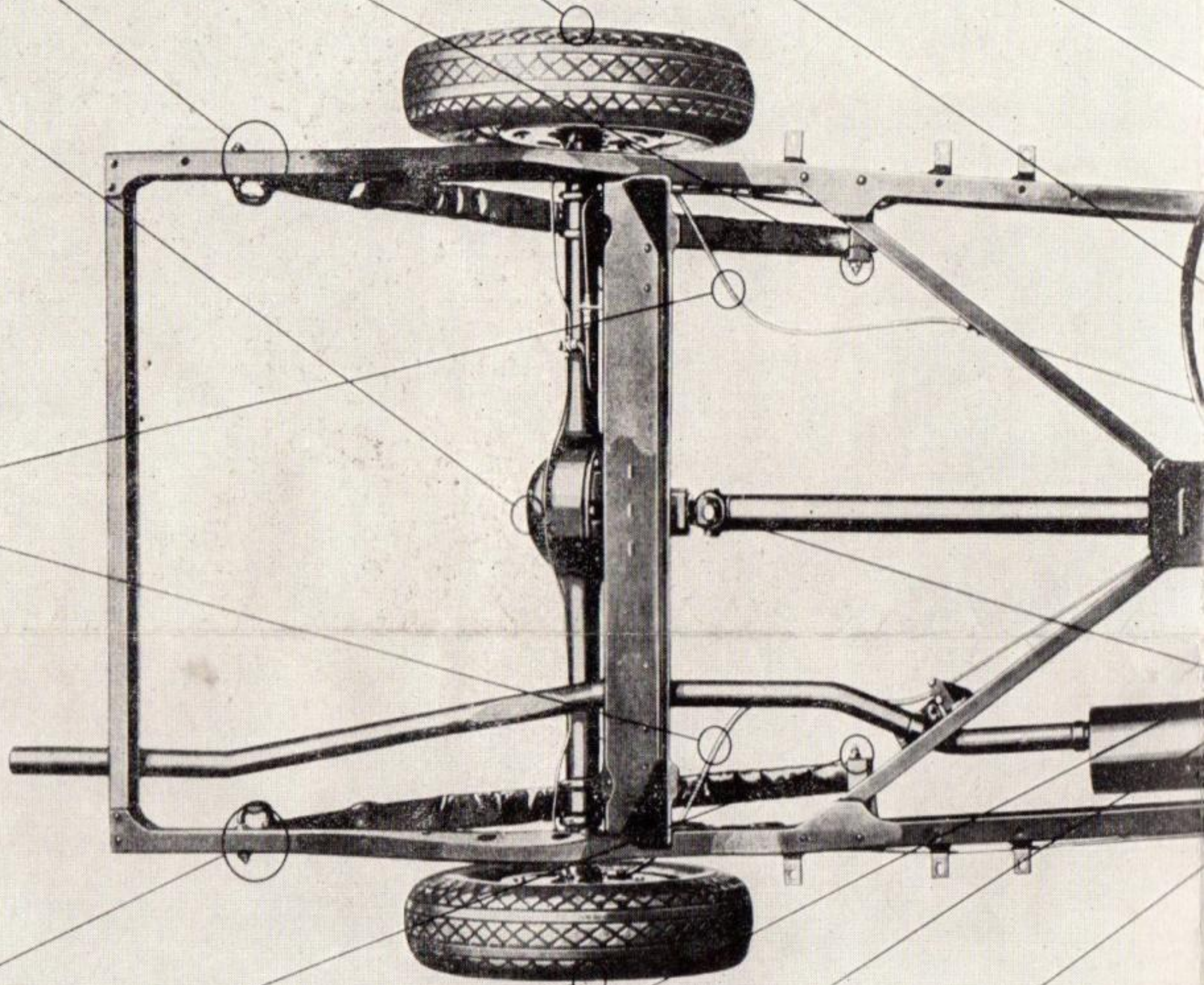


5000 MILES CLUTCH
USE HUDSONITE CLUTCH LUBRICANT
CAPACITY—1/2 PINT

5000 MILES BRAKE CONDUITS AND CABLES
GRAPHITE GREASE



CLEAN EXPOSED PORTION OF CABLE WITH GASOLINE. REMOVE CAP SCREWS AT FRONT CONDUIT ABUTMENT CAP, SPRING CLIP AND REAR CABLE ABUTMENT CAP. REMOVE ABUTMENT CAPS. SLIDE CONDUIT FORWARD ON CABLE TO EXPOSE THE ENTIRE COVERED PORTION OF CABLE.



1000 MILES SPRING SHACKLE
USE VISCOUS GREASE



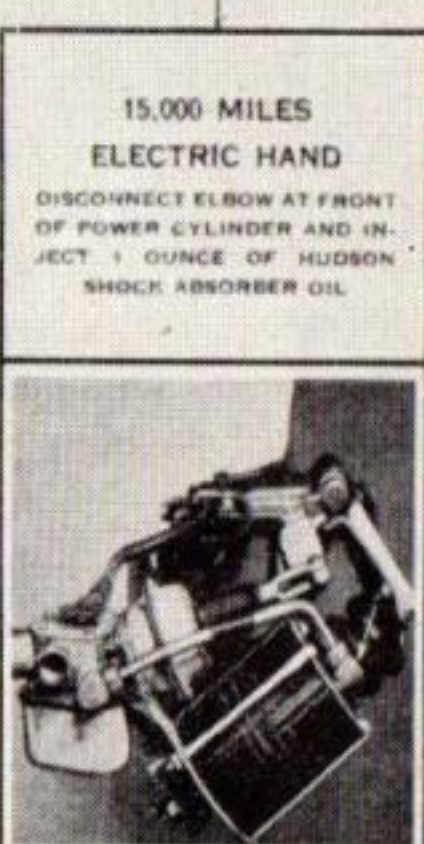
1000 MILES SPRING HANGER
USE VISCOUS GREASE



5000 MILES REAR WHEEL BEARING
USE MILLED SODIUM SOAP BASE LUBRICANT
CAPACITY—1 1/2 OUNCES



1000 MILES UNIVERSAL JOINT SPLINE
USE VISCOUS GREASE
10,000 MILES
DISASSEMBLE, CLEAN AND REPACK NEEDLE ROLLER BEARINGS
USE VISCOUS GREASE



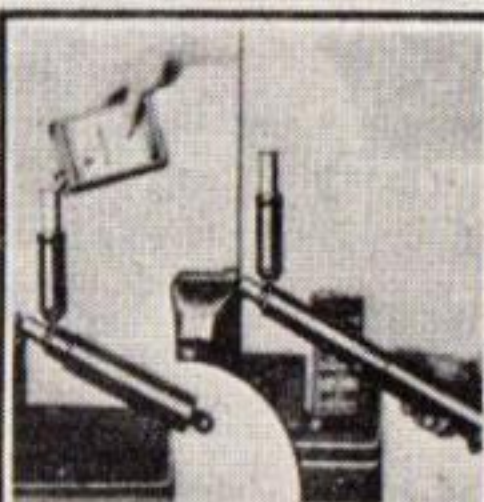
15,000 MILES ELECTRIC HAND
DISCONNECT ELBOW AT FRONT OF POWER CYLINDER AND INJECT 1 OUNCE OF HUDSON SHOCK ABSORBER OIL



1000 MILES CLUTCH RELEASE BEARING
USE VISCOUS GREASE



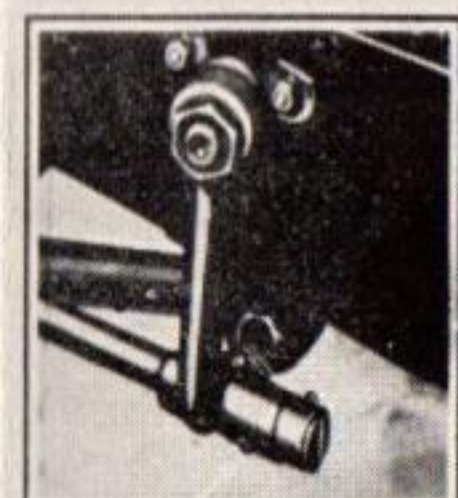
2000 MILES DISTRIBUTOR
ADVANCE CAM—HARD GREASE
CONTACT ARM PIVOT—ENGINE OIL
SHAFT OIL CUP—ENGINE OIL
TOP OF SHAFT—ENGINE OIL



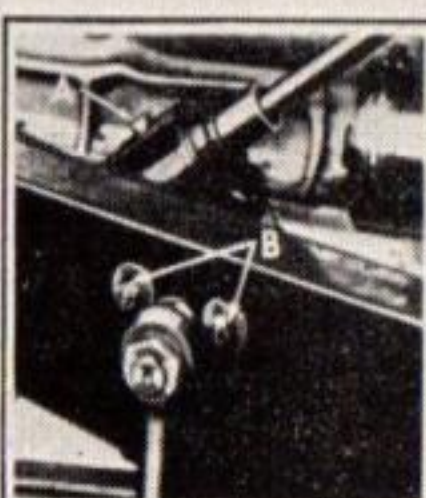
SHOCK ABSORBERS—EVERY 5000 MILES
SHOCK ABSORBERS SHOULD BE DRAINED AND REFILLED, ADDING THE PROPER QUANTITY OF HUDSON SHOCK ABSORBER OIL
USE 5 OUNCES OF OIL IN TERRAPLANE FRONT AND REAR
USE 6 1/4 OUNCES OF OIL IN HUDSON SIX FRONT AND REAR
THE QUALITY OF THE FLUID IS IMPORTANT
USE ONLY HUDSON SHOCK ABSORBER OIL

SPRING COVERS—EVERY 10,000 MILES
REMOVE COVERS, REPACK WITH VISCOUS CHASSIS LUBRICANT AND REPLACE
TIRE PRESSURE
KEEP TIRES PROPERLY INFLATED AT ALL TIMES
16 X 6.00 FRONT 24 POUNDS REAR 32 POUNDS
15 X 7.00 FRONT 22 POUNDS REAR 28 POUNDS
RADIATOR
ADD WATER IF NECESSARY. DURING FREEZING TEMPERATURES, USE ANTI-FREEZE SOLUTION.

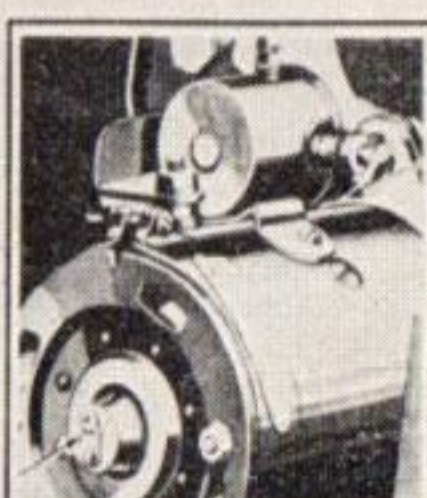
LUBRICATION
1937 TERRAPLANE



1000 MILES
DRAG LINK
USE VISCOUS GREASE



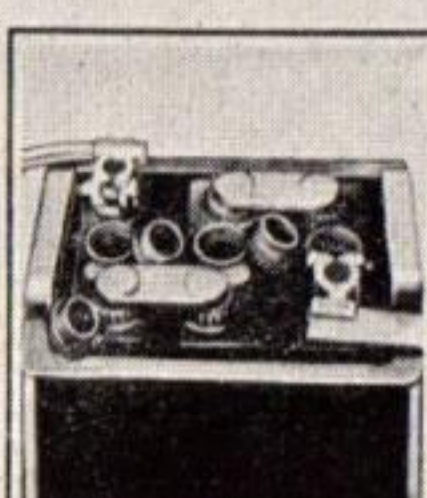
WITH SEASON
STEERING GEAR
USE GEAR OIL
SUMMER S.A.E. 150 E.P.
WINTER S.A.E. 90 E.P.



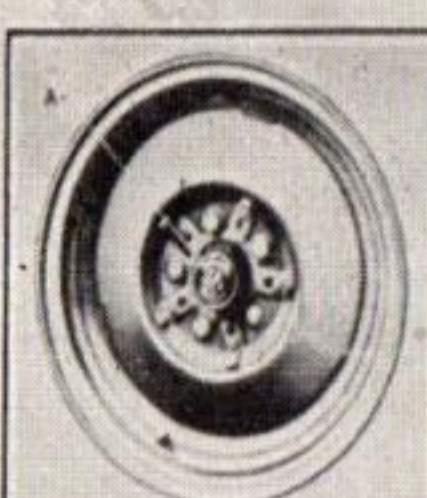
1000 MILES
STARTING MOTOR
FRONT AND REAR
BEARINGS
USE ENGINE OIL



2000 MILES
CRANKCASE
DRAIN AND REFILL
ENGINE OIL
CHECK LEVEL FREQUENTLY



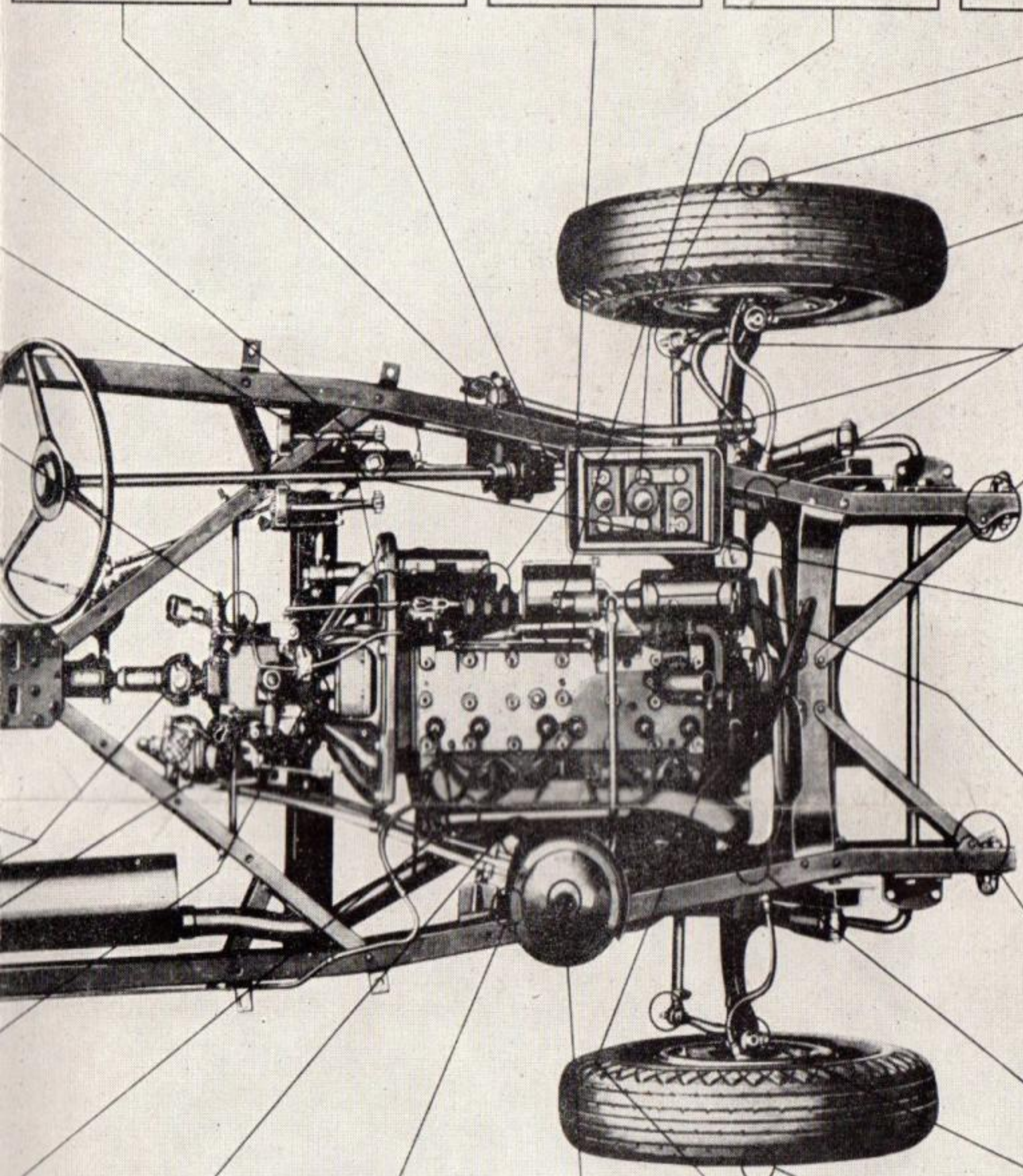
1000 MILES
BATTERY
ADD DISTILLED WATER
TO KEEP PLATES COVERED



5000 MILES
FRONT WHEEL BEARING
USE MILLED SODIUM SOAP
BASE LUBRICANT
CAPACITY 3 OUNCES



1000 MILES
STEERING SPINDLE PIN—1 FITTING
DRAG LINK—1 FITTING
SPRING SHACKLES—4 FITTINGS
SPRING SEAT—1 FITTING
TIE ROD END—1 FITTING
USE VISCOUS GREASE



1000 MILES
BRAKE MASTER CYLINDER
USE ONLY GENUINE
HUDSON BRAKE FLUID
NO. 5—FOR ALL EXCEPT EXTREME LOW
TEMPERATURES
NO. 1—FOR CONTINUOUS EXTREME LOW
TEMPERATURES ONLY



WIPE FILLER CAP CLEAN BEFORE REMOV-
ING. KEEP SUPPLY TANK AT LEAST HALF
FULL AT ALL TIMES



1000 MILES
ACCELERATOR AND
THROTTLE RODS
AND SHAFT
USE ENGINE OIL



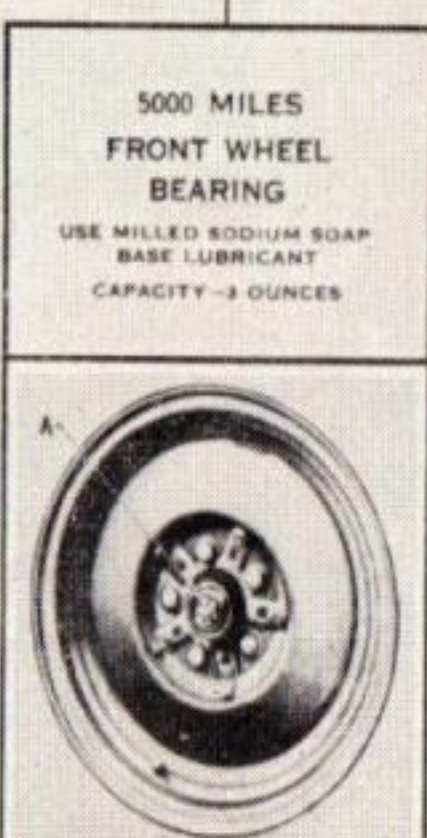
1000 MILES
SPRING SHACKLE
USE VISCOUS GREASE



2000 MILES
AIR CLEANER—STANDARD
WASH IN GASOLINE, LUBRICATE
WITH ENGINE OIL—S.A.E. 90
AIR CLEANER—OIL BATH
WITHDRAW FILTER AND WASH
PARTS IN GASOLINE
POUR 1 PINT S.A.E. 90 (S.A.E. 30 IN
WINTER) OIL IN CLEANER BODY AND
REASSEMBLE



1000 MILES
WATER PUMP SHAFT
USE ALUMINUM SOAP GREASE



5000 MILES
FRONT WHEEL
BEARING
USE MILLED SODIUM SOAP
BASE LUBRICANT
CAPACITY—3 OUNCES



1000 MILES
STEERING SPINDLE PIN—1 FITTING
SPRING SHACKLE—2 FITTINGS
SPRING SEAT—1 FITTING
TIE ROD END—1 FITTING
USE VISCOUS GREASE



1000 MILES
GENERATOR
BEARINGS
USE ENGINE OIL

ON CHART RAPLANE

ENGINE LUBRICATION
CAPACITY TOTAL - - - - - 6 QTS.
REFILL—USE - - - - - 5 QTS.
OIL SPECIFICATIONS
MINIMUM ATMOSPHERIC
TEMPERATURE EXPECTED VISCOSITY
+50° FAHRENHEIT - - - - - S.A.E. 30
+10° FAHRENHEIT - - - - - 20W
BELOW -10° FAHRENHEIT - - - - - 10W
BELOW -30° FAHRENHEIT - - 10W + 10% KEROSENE



BODY LUBRICATION—USE ENGINE OIL
SATURATE WICKS AT THE FOLLOWING POINTS
DOOR DOVETAILS (MALE)
DOOR LATCH STRIKER PLATES
HINGE PINS—OIL AT TOP OF BODY HALF OF
HINGE (ACCESSIBLE WITH DOOR OPEN)

