HUDSON

Service MAGAZINE

INFORMATION ON PARTS • ACCESSORIES AND TECHNICAL MATTERS

HUDSON Terraplane HUDSON Six HUDSON Eight

Issue 1 October 1937 1938 Series

GET SET!

Why?—Because we have a strenuous profit-producing volume-getting Sales Year ahead of us, if we will do all that the above caption implies. The Service Division of the General Sales Department is giving you more tools this year than you ever have had before to carry on your job in a highly effective manner, if you will "get set."

The Hudson Motor Car Company is producing a group of cars second to none on the American, or any other market today. You had an excellent product last year and you have features in the 1938 automobiles which, naturally, are additional Sales Factors in securing your expected volume of these 1938 units.

This department is furnishing you with merchandising materials and a line of Accessories which leaves no excuse for not doing a grand job in Accessory Merchandising during 1938. It just won't happen—despite the tools, the product and the other merchandise—but it will happen in conjunction with these factors, if our Field Organization quickly gets into its customary hard-hitting swing and really does "get set."

We want to use the medium of this article to convey to you our deep appreciation for your past efforts and to wish you every success in the efforts of this present and new selling season.

T. H. STAMBAUGH
Director
National Service Operations

HUDSON MOTOR CAR CO. DETROIT, MICH., U. S. A.

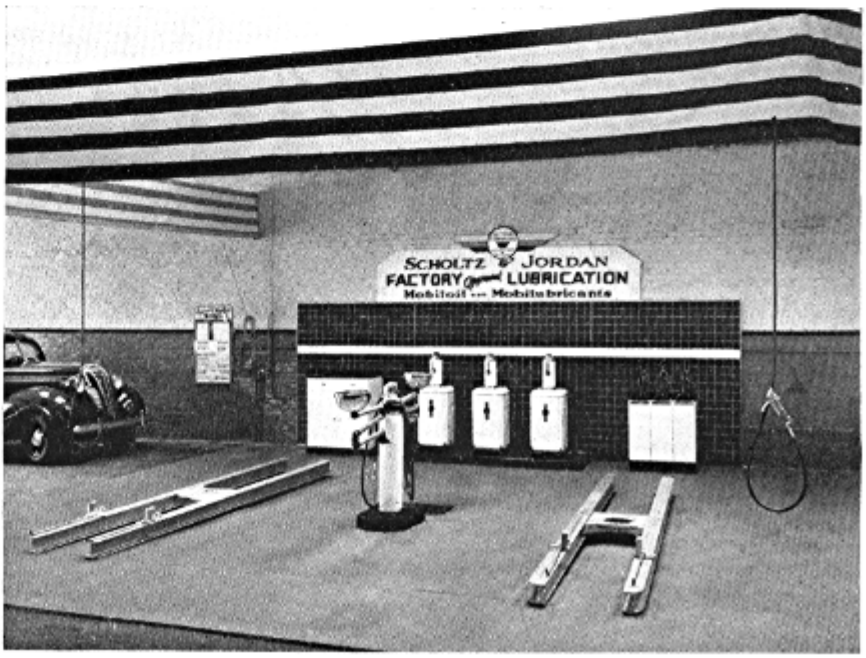
PRINTED IN U. S. A.

INDEX 1938 Series

Issue 1

For 1938 Mechanical Specifications—See Magazine Supplement

Another outstanding example of modernization in Dealer's Lubrication Departments is illustrated here. Scholtz & Jordan, Oakland, California Dealer recently completed the installation of this most attractive and up-to-date set-up, and we think you will all agree it is a mighty fine job.



Mechanical Highlights For 1938

ENGINE

Some important changes and departures from past practice have been incorporated in the engines of the 1938 Hudson Terraplane, Hudson Six and Hudson Eight models to improve the operation and to increase the durability of the valves, camshaft, tappets and connecting rod bearings. In addition, certain revisions have been made in the vibration dampener which contributes to still smoother operation of both the Six and Eight cylinder engines.

Valves and Camshaft

In order to provide an additional factor of safety and to better withstand the high operating temperatures, the material specifications for the silchrome exhaust valves have been changed to a higher chrome nickel content than formerly. The diameter of the stems of both the intake and exhaust valves for all 1938 models has been reduced 1/32 inch and the guides have been revised to accommodate this change. This reduction in size while seemingly insignificant, is far reaching in effect and is a factor in great importance when dealing with the inertia

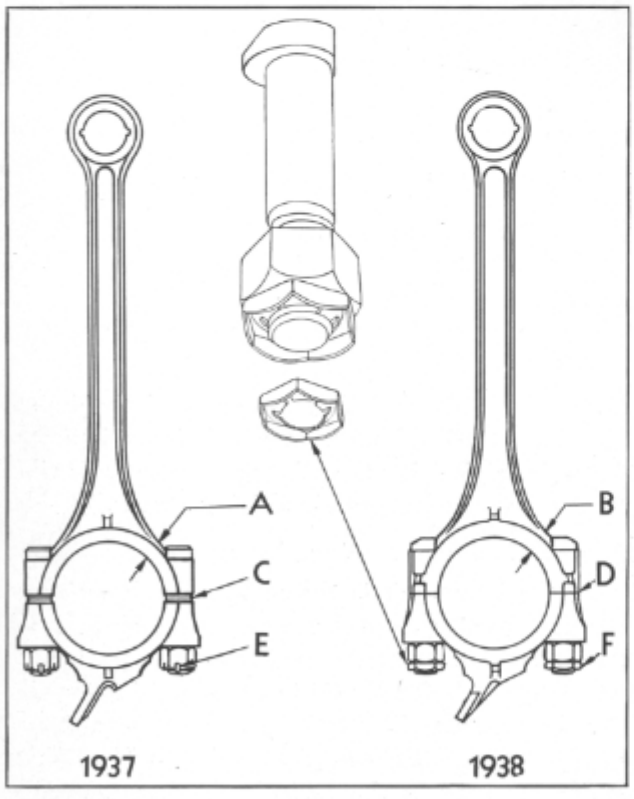


FIG. 1

forces encountered in high speed operation. This particularly relates itself to camshaft and tappet wear and by the lowering of these forces through the use of the smaller diameter valve stems, the load on the cams and tappets is lessened and their life increased.

Connecting Rods

Connecting rods for 1938 Hudson built engines have heavier and stronger sections at the big end as will be noted by a comparison of point 'A' of the 1937 connecting rod with 'B' of the 1938 rod shown in figure 1. A heavier section at this point tends to increase rigidity, prevent distortion and prolong the bearing life.

New Close Fitting Bolts

To assist in obtaining these results, the connecting rod and cap bolt holes are now reamed to closer limits and new close fitting, piloted, centerless ground bolts are used to prevent possible misalignment cap and rod.

Elimination of Shims

In order to further insure the maximum rigidity possible, the connecting rod shim pack formerly used

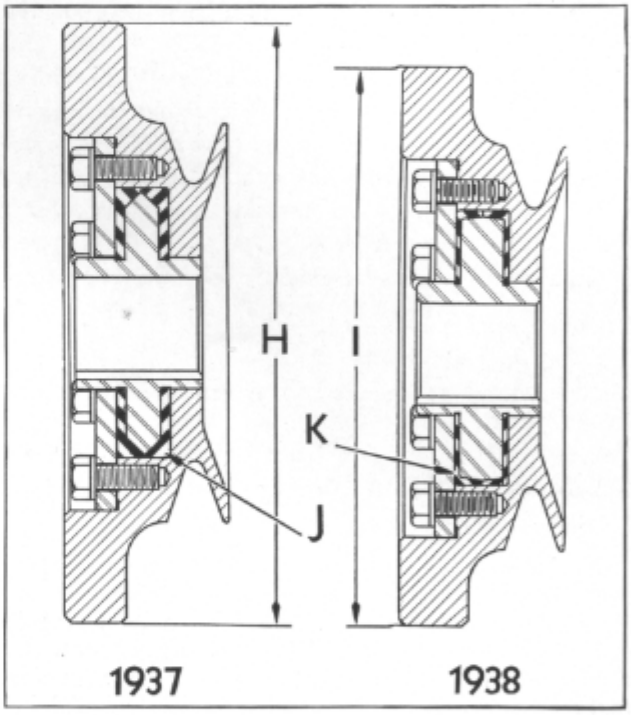


FIG. 2

at point 'C' between the rod and cap has been discontinued for 1938, bringing the rod and cap together as shown at "D." With the new construction more accurate machining is possible which, together with the elimination of shims, insures the rod and cap being held together so securely that no movement can take place between them. Due to the greater rigidity of the new big end design, much longer bearing life is obtained and the possiblity of lubrication difficulties is minimized.

New Connecting Rod Bolt Lock

For 1938 the time honored cotter pin shown at 'E' as a means for securing the connecting rod bolt nuts against turning, has been discontinued and in its stead a locking device known as the 'Palnut' is

used. This is shown in position at 'F' and in further detail in the enlarged view.

Operation of 'Palnut'

In operation this device is used in combination with a plain hex nut as shown, which is tightened to the required degree in the usual manner. The 'Palnut,' which is stamped from comparatively light steel and tempered, is then placed on the bolt with the open face away from the nut and tightened by bringing it in contact with the main nut. After this point is reached it is turned an additional ¼ to ⅓ turn with a wrench, which tends to flatten the segments of the single thread forcing them into the root of the bolt thread and at the same time exerting a heavy pressure against the main nut. Removal of the 'Palnut' is accomplished by backing it off with a wrench in the usual manner.

Vibration Dampener

Important changes and improvements have been incorporated in the vibration dampener for 1938 as shown in (Fig. 2, Page 3). The outside diameter of the 1937 dampener as represented by 'H' was 8 inches whereas for 1938 dimension 'I' has been decreased to 7⅜ inches thus reducing the weight of the metal mass, assisting in decreasing periodic vibration and materially smoothing the engine operation.

To further assist in securing these results, the periphery of the dampener hub and the shape of the rubber frictional surfaces have been redesigned. The details of the old and new construction are shown in illustrations 'J' and 'K' respectively. The width of the dampener and the fan pulley details remain the same as heretofore.

1938 CLUTCH

A number of improvements have been incorporated in the clutches used in various 1938 Hudson and Hudson Terraplane models with a view to providing adequate frictional surface to increase clutch life and ease of operation. These changes provide for the use of the larger 10 inch diameter clutch on certain Hudson Terraplane Business models as well as adding three inner engaging springs in the 1938 Hudson Eight clutch. Other details have also been changed.

Clutch Driving Plate

In dealing with the clutches used on the 1938 models, attention is called to a feature incorporated in the design of the driving plate which, although it has been in use for quite some time, is apparently not generally understood.

Design Features

In the practice followed in production the corks are trimmed at an angle with the driving plate as shown at 'C' (see illustration on opposite page) in order to obtain smooth starting engagement. By this method the corks in the inner row project further from the front face of the steel driving plate than from the rear face as indicated at 'A' and 'B.' The difference between these measurements is .014 inch. In the case of the outer row of corks, the opposite condition prevails, that is, the greater projection is to the rear of the steel plate and the lesser to the front.

Engagement Action

When the clutch is engaged, the forward travel of the pressure plate brings it into contact with the outer row of corks as shown at 'D,' which forces the inner row against the flywheel at 'E.' Continued forward movement of the pressure plate tends to slightly spring the driving plate, increasing the area of the cork surface contact and slowly squeezes out the oil film between the corks and metal surfaces. When the engagement is complete, the full area of the corks is in contact with the flywheel and pressure plate as shown at 'F,' with the steel plate at an angle with the flywheel as illustrated at 'G.'

Driving Plate Hub Springs

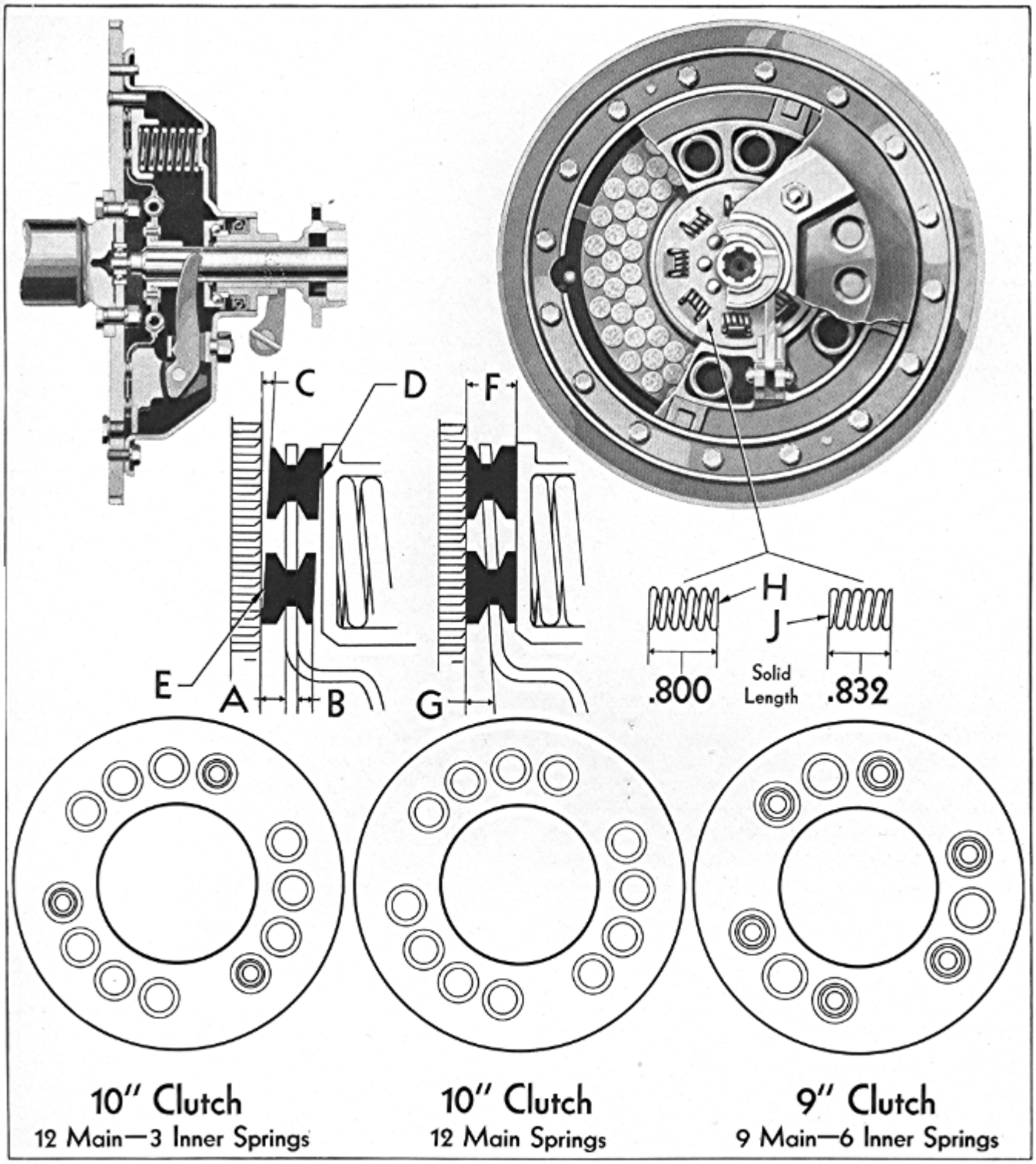
The clutch driving plate torsional springs have been given considerable attention and have been redesigned for 1938. Spring 'H' represents the type used in 1937 cars, which compresses to .800 inch as contrasted to the new spring 'J' used in 1938 models, which compresses to .832 inch. The new spring is wound closer which tends to reduce the stress and the posibility of breakage. The spring retaining discs have been cupped slightly to impart additional friction.

One of the features of the hub spring change has to do with the improved control of the movement between the driving plate proper and the hub in absorbing torsional reaction which is an important factor in minimizing the effects of the periodic vibration encountered at certain driving speeds.

Clutch Engaging Spring Arrangement

At the lower left is shown the clutch spring arrangement of twelve large engaging springs and three additional inner engaging springs used in the 10 inch clutch for the 1938 Hudson Eight models. The lower center illustration shows the arrangement of the twleve large engaging springs without inner springs as used in the 10 inch clutch employed on all Hudson Six, Hudson Terraplane Super and Business models excepting utility coaches and coupes. The use of the larger clutch in these models will provide longer clutch life and the assurance of ample capacity for all operating conditions.

The lower right illustration shows the clutch spring arrangement in which nine large engaging and



six inner springs are incorporated in the 9 inch clutch. This unit is continued in use on the 1938 Hudson Terraplane Deluxe and Hudson Terraplane Business sedan, utility coach and coupe models.

TRANSMISSION

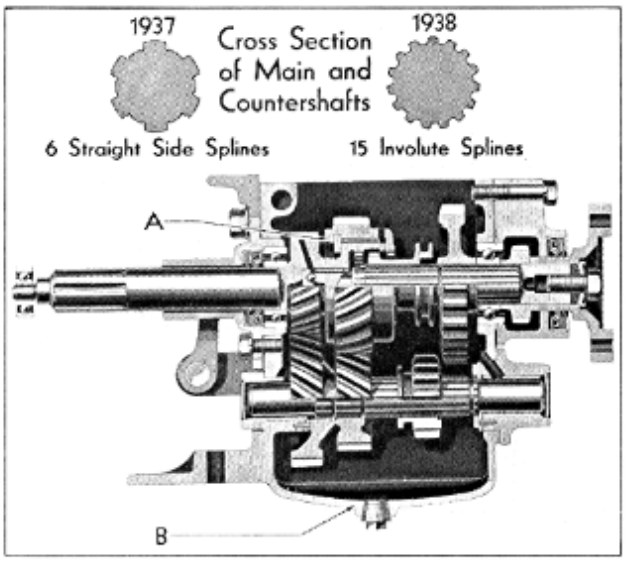
Improvements

The changes made in the transmissions used on the 1938 models, while in the nature of refinement are nevertheless important as related to longer life, quieter operation and greater reliability and ease of shifting. Included in the items which have come in for attention in gaining these objectives are the transmission case, mainshaft and countershaft and the mainshaft intermediate gear thrust washer retainer.

Heavier Case

The transmission case has been stiffened and made heavier affording better support and alignment for the main and countershafts and bearings, making for greater quietness. In addition, the lower part of the

case has been redesigned as shown at 'B' placing the drain plug at the center and providing a large settling chamber. With this construction, the possibility of metal particles being circulated with the lubricant and causing damage to the bearings or hard shifting is minimized. Lubrication of the transmission is facilitated by the adoption of a larger filler plug.



New Shaft Design

In redesigning the main and countershafts and the sleeve and gears which slide on them, an involute design for the splines has been adopted instead of the conventional type. The splines, which are now 15 in number for both the main and countershafts as contrasted to 6 used formerly, are machined with tapered sides and with rounded corners at top and bottom. Features of the old and new designs are clearly depicted in the illustration. By the elimination of straight sides and sharp corners on the splines, the shafts have been made virtually self-cleaning and there is now practically no tendency for chips and metal particles to lodge between the shafts and gears or other sliding members to cause hard shifting or 'hanging up.' Another feature of the new design is that the splines are shallower thus further contributing to greater shaft strength and rigidity.

Heavier Lock Ring

The mainshaft intermediate gear thrust washer retainer 'A' has been increased in thickness to provide a greater safety factor and the retainer groove in the gear has been made correspondingly wider.

FRAME

The frames used on the 1938 business models in addition to having the side and 'X' members made of heavier material than formerly, have been reinforced and strengthened at several points. In cab pickup models, two extra members have been added connecting the rear axle cross member with the rear cross member imparting greater strength and affording a support for the gasoline tank.

Weight Holes Eliminated

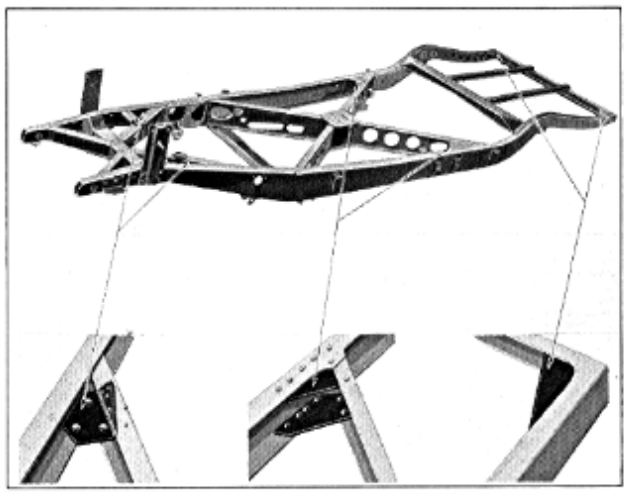
Two large 'weight' holes which were stamped in the inner vertical web of the side member on each side, immediately above the rear axle, have been eliminated for 1938. These are shown in dotted lines in the top illustration.

Front Spring Rear Bracket Reinforcement

In order to strengthen the frame at the front spring rear bracket, substantial angle steel reinforcements have been added as shown in the lower left in the illustration. These are riveted and welded to both the side and 'X' members tying them and the spring brackets rigidly together.

Additional Gusset Plates

At the juncture of the rear ends of the 'X' members and the side members, heavy gusset plates are now riveted and welded to both top and bottom flanges. The details are shown in the lower center.



Gusset plates have also been added at the right and left rear corners of the frame to tie the side and rear cross members together more securely. These are illustrated in the lower right view.

Passenger Car Frames

No changes have been made in the frames for the 1938 passenger car models with the exception of the removal of the two weight holes from the vertical iner side rail flanges, previously described.

REAR AXLE

The principal change in the 1938 rear axle has to do with the increase of 1½ inches in the rear tread which is now 59½ inches instead of 58 inches for all models. This increase will provide adequate clearance between the rear tires and frame side members and eliminate the possibility of interference when tire chains are used.

Housing and Shafts Lengthened

To accomplish this, the rear axle housing has been made 2 inches longer and the axle shafts increased in length 1 inch. The difference between the in-

crease in rear axle length and the tread increase is accounted for by a change made in the 1938 wheels whereby the bolting flange is brought ¼ inch nearer the tire center line in order to reduce overhang and the resulting axle shaft and bearing stresses.

Pinion Shaft Oil Seal

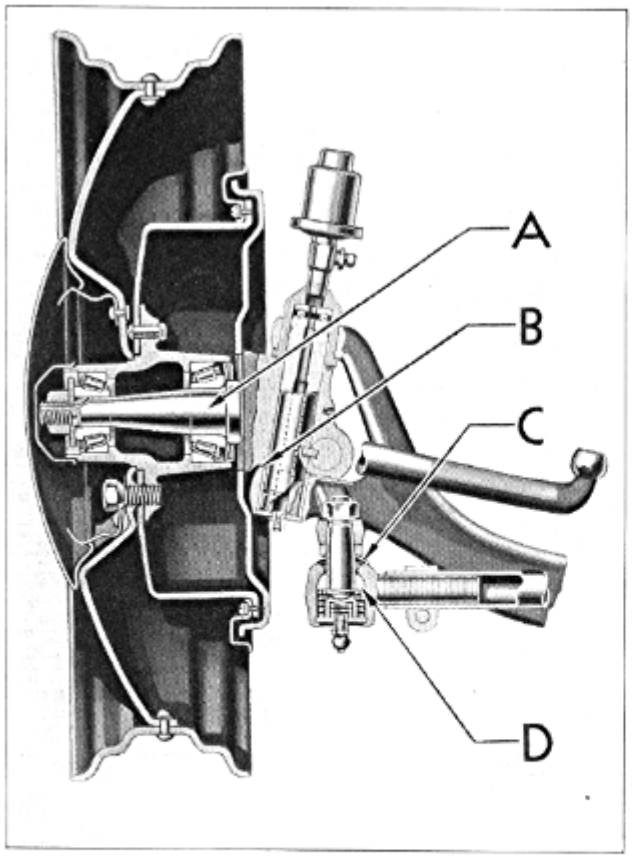
A further improvement has been made in the oil seal located at the front of the pinion shaft housing. The new seal remains of the same double lip hydraulic leather type as heretofore but the retaining spring is larger in section to provide better contact of the leather on the universal joint flange. The new seal is wider and to accommodate it, the counterbore in the housing is machined deeper. This prevents the use of the new assembly when servicing earlier model cars.

FRONT AXLE

The front axle and radial safety control design used during 1937 will be continued on the 1938 models with changes in a few details. These involve larger spindles, improved tie rod ends and a torque arm attachment change.

Spindle Changes

The large diameter of the spindle shown at 'A' has been increased in size together with the front wheel inner bearing to afford a greater factor of



safety. The spacer shims between the lower part of the spindle and the axle center have been iliminated in production. These are illustrated at 'B'.

New Tie Rod Ends

The tie rod end changes made during the 1937 production are incorporated in the 1938 design. They consist of the elimination of the bronze bushing formerly used at point 'D' which provides hardened steel wearing surfaces having much longer life, and the new oil seal shown at 'C', which gives better protection against dirt and water.

Torque Arm Attachment

To improve the torque arm attachment, the lower boss of the axle is now drilled instead of tapped and a longer lower bolt is used. This bolt passes through the axle and torque arm bosses and is fitted with a nut and lock washer. Shims fitted between the torque arm and axle at the lower bolt control the caster as heretofore. The caster, camber and toe-in specifications remain the same as does the procedure for servicing the front axle assembly.

MUFFLERS

The multiple expansion chamber type muffler used during 1937 is continued with slight changes for the 1938 eight cylinder models. The arrangement of these chambers and other constructional features are shown in figure 1.

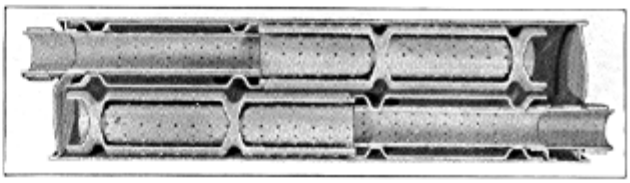


FIG. 1

New Six Cylinder Muffler

Figure 2, shows the design details of a new muffler of the 'straight through' type which has been adopted for all 1938 Hudson Six and Hudson Terraplane models. In this design the exhaust gasses pass directly through the perforated tube running entirely

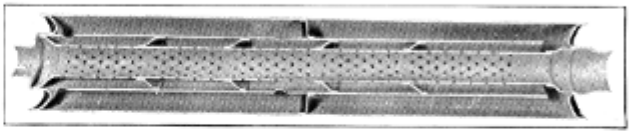


FIG. 2

through the center of the muffler. Surrounding this central tube are several toning chambers of various lengths, each of which is calibrated to dampen or cancel out certain vibrations and noises set up in the exhaust, which tend to produce drumming and vibration noises within the body.

Lower Operating Temperatures

In operation, these chambers and the balance of the muffler become filled with a blanket of exhaust gas which remains more or less stagnant. Because of this feature, the entire outside of the muffler stays many degrees cooler than with other types with the result that the heat transfer to the floorboards and

interior of the body is noticeably reduced. The muffler heat shield used heretofore is discontinued on the six cylinder models.

Smaller Tail Pipe

In order to obtain the maximum benefits of the 'straight through' action of the new muffler, a smaller diameter tail pipe is used. This now measures 1½ inches as contrasted to the 1¾ inch diameter pipe used on the 1937 models.

WHEELS AND TIRES

Wheels

Several changes have been made in the wheel and tire specifications for the 1938 models. These deal particularly with the use of larger tires and the adoption of a new fluted disc type wheel for the Hudson 8 models, in which the rim width has been increased from 4" to 4½". These wider rim wheels are also used as standard equipment on Hudson Terraplane Business models except Utility Coaches and Coupes, to accommodate the larger truck air wheel tires available on all business cars at extra cost. In addition, all wheels have the bolting flange located ¼" closer to the tire center line to reduce overhang and lower the stresses on the front axle spindles and rear axle shafts.

In the table are listed the wheels and tires applying to the various 1938 models, both as standard and optional equipment:

Tires

Particular attention is called to the complete range of tire types and sizes now available as factory options for the business models, which will provide proper tire capacity for practically all operating conditions. The increase in rear tire to frame clearance permits the use of these larger sizes without interference.

WHEELS

16 X 4.00	16 X 4.50	15 X 5.00
CONVEX DISC TYPE USED ON TERRAPLANE DELUXE TERRAPLANE SUPER TERRAPLANE BUSINESS UTILITY COACH AND COUPE	FLUTED DISC TYPE USED ON HUDSON EIGHT DELUXE HUDSON EIGHT CUSTOM TERRAPLANE BUSINESS (Except Utility Coach and Coupe)	CONVEX DISC TYPE OPTIONAL AT EXTRA COST ALL HUDSON AND TERRAPLANE MODELS
16 X 4.00 FLUTED DISC TYPE USED ON HUDSON SIX		

TIRES

16 X 6.00—4 PLY	16 X 6.50—4 PLY	15 X 7.00—4 PLY
USED ON TERRAPLANE DELUXE TERRAPLANE SUPER HUDSON SIX TERRAPLANE BUSINESS	USED ON HUDSON EIGHT DELUXE HUDSON EIGHT CUSTOM (6 Rib Tread—Front and Rear)	OPTIONAL AT EXTRA COST ALL HUDSON AND TERRAPLANE MODELS (Except Business Models)

HEAVY DUTY OPTIONAL AT EXTRA COST

16 X 6.00—6 PLY	16 X 6.50—6 PLY	15 X 7.00—6 PLY
TERRAPLANE DELUXE TERRAPLANE SUPER HUDSON SIX UTILITY COACH AND COUPE	HUDSON EIGHT DELUXE HUDSON EIGHT CUSTOM	ALL HUDSON AND TERRAPLANE MODELS (Except Business Models)

TRUCK AIR WHEEL TIRES—OPTIONAL AT EXTRA COST

16 X 6.00—6 PLY	16 X 6.50—6 PLY	15 X 7.00—6 PLY
ALL BUSINESS MODELS	ALL BUSINESS MODELS	ALL BUSINESS MODELS

1938 BRAKES

The highly efficient hydraulically operated Hudson duo-automatic brakes used in 1937, continue virtually unchanged for 1938 except for using a new '4' way tee to facilitate field installation of the hydraulic hill hold and a new brake master cylinder operating lever for revising brake pedal operating linkage.

'4' Way Tee

The new '4' way tee which is attached to the frame side rail is illustrated by 'A' in Figure 1. This part is provided with one connection for a new feed pipe

'B' and three additional connections for attaching the hydraulic tubes leading to the front wheels and to

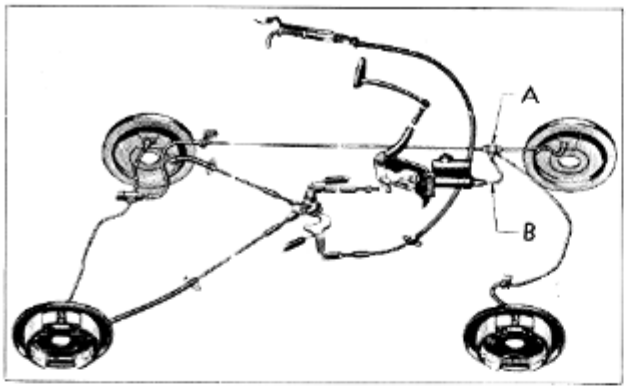


FIG. 1

the rear axle housing tee. This new feed pipe measures 5/16 inch diameter as contrasted to the ¼ inch diameter for the other hydraulic pipes.

Hill Hold Installation Simplified

When making a field installation of the hydraulic hill hold it is no longer necessary to replace the two front pipes and install an extension for the rear pipe but merely remove the original feed pipe 'B' illu-

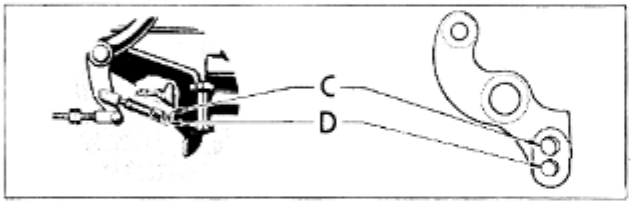


FIG. 2

strated in Figure 1 and install the special hill hold pipe 'E' to the '4' way tee 'F' shown in Figure 3. The

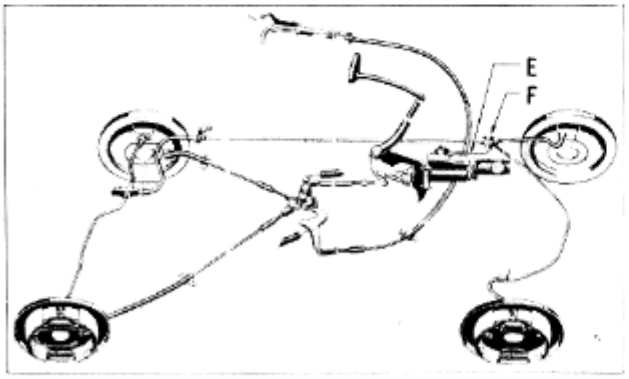


FIG. 3

other hydraulic pipes remain undisturbed.

By this arrangement the number of parts included in the installation kit has been reduced with a corresponding decrease in time required to complete the job.

Brake Master Cylinder Operating Lever

For the 1938 brake operating mechanism an additional hole has been added to the brake master cylinder operating lever 'C', Figure 2, to be used as an alternate location for the brake pedal operating link. The link is shown in the service location. This arrangement provides shorter travel with a consequent harder pedal affording less possibility of harsh action.

This lever is interchangeable with he one used on the 1937 models and can therefore be used to modify the brake action on these cars to secure less sensitive operation, especially at the lower speeds.

At point 'D' is illustrated the hole in which the link will be assembled in regular production.

HEADLAMPS

In designing the 1938 Hudson and Hudson Terraplane headlamps, particular attention was given to provide sufficient illumination ahead of the car for highway driving and at the same time provide good pavement and curb illumination with a minimum of visual interference to approaching vehicles.

Mounting

The lamps are securely mounted on the radiator shell with two studs in place of the ball & socket arrangement formerly used. This insures greater rigidity and less possibility of lamp movement.

Reflector

In addition to the new exterior appearance, a new principle of reflector design has been incorporated.

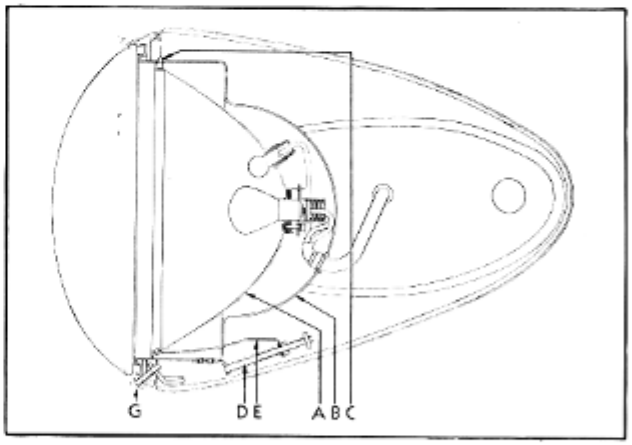


FIG. 4

The reflector 'A', Figure 1, is now attached to a large cup 'B' in which it is pivoted at 'C' to permit tilting and turning.

Two long adjusting screws 'D' operate reflector arms 'E' and turn the reflector as well as move the lower part forward and backward.

Beam Adjustment

The method of adjusting the 1938 headlamp is different from that previously used. The car is placed in front of the screen as formerly with the horizontal beam for Hudson Terraplane cars 37 13/16 inches above the floor and in the case of the Hudson Six and Eight models, 35¼ inches above the floor. The lamps may be adjusted individually by covering one lamp.

TO ADJUST BEAM VERTICALLY—Turn both adjusting screws 'D' and 'F', Figure 2, with a narrow screw-driver the same number of turns clockwise to raise the beam and counter-clockwise to lower the beam.

TO ADJUST BEAM HORIZONTALLY—To move beam toward right, turn the right adjusting screw 'D'—figure 2—counter-clockwise until beam has moved approximately half the desired distance to the right. Turn left adjusting screw 'F' clockwise until beam has reached the proper position on the horizontal axis. It may be necessary to readjust the beam

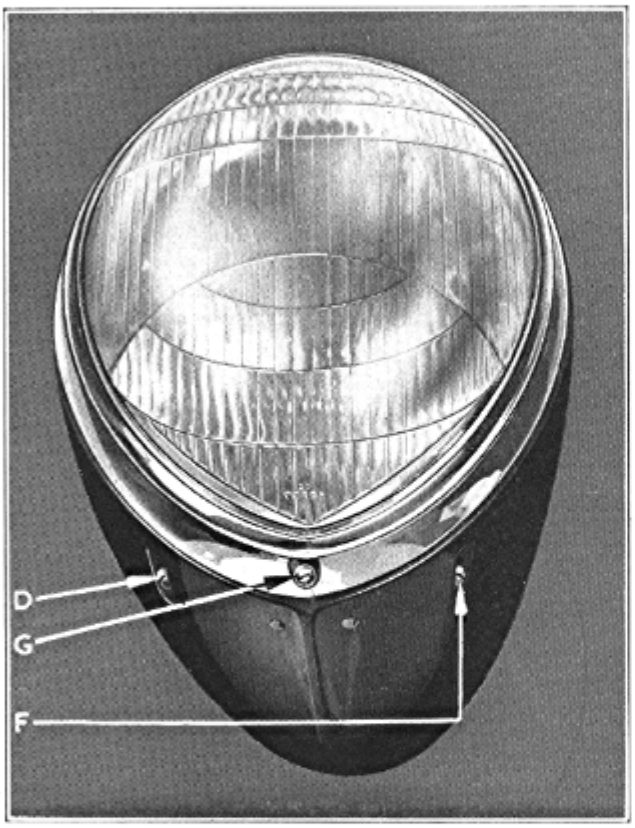


FIG. 2

on the vertical axis by turning both adjusting screws the same amount clockwise to raise the beam and counter-clockwise to lower the beam.

To move the beam to the left, turn the right adjusting screw 'D' clockwise and the left adjusting screw 'F' counter-clockwise proceeding as before.

Lens and Bulb Replacements

The lens and retainer design on Hudson Terraplane models remains the same as used in 1937.

The Hudson Six and Eight headlamp lens and retaining arrangement has been re-designed. The lens and door are an assembly, which is held in place at the top by hooking the door bead over a lip on the lamp body and at the bottom by retaining screw 'G.' The lens is held in place in the doors by means of retaining springs. The bulb complement for the 1938 headlamps remain the same as for 1937.

ELECTRICAL

Generator

An improved generator of the third brush type, modified to provide a virtually constant output at the higher car speeds, is employed on the 1938 models. The capacity of this new generator is more than sufficient to take care of the increased electrical demands occasioned by the installation of accessories and the various options such as selective automatic shift, etc.

Voltage Regulator

In order to obtain the maximum advantage of the improvements incorporated in the generator, a new regulator is used for 1938. Its characteristics are such that in the winter time when the battery back pressure is high, a high regulated voltage is available to permit the maximum amount of current to go into a cold discharged battery and yet maintain the voltage

at a value which will protect lights, ignition points and connected electrical accessories from being destroyed by excessive voltages. Under high temperature driving conditions the characteristics of the voltage regulator cause a reduction in the maximum voltage so that at all times the voltage available protects the battery from being destroyed by overcharging at the higher generator outputs.

The maximum cold output of the new generator is 32 amperes as contrasted to 26 amperes for the 1937 models and the hot output is 29 amperes instead of 23 as formerly. For the 1938 Hudson Terraplane Deluxe and Business models which do not carry the voltage regulator as standard equipment, the new generator will be used with the output reduced to insure battery safety. As heretofore, the voltage regulator is available at extra cost for these models in order to obtain a higher output and should be installed on all cars used for police or taxicab service

or whenever unusual driving or current requirement conditions are encountered.

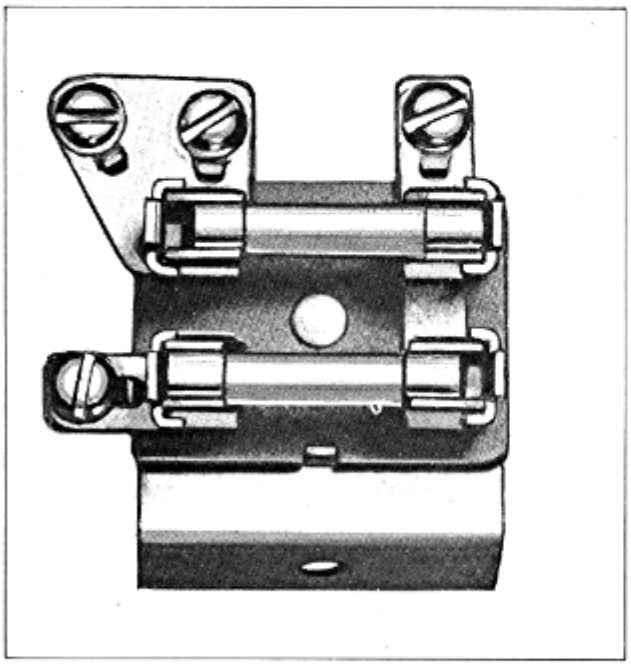
For the unregulated generator the maximum cold output is the same as for 1937, namely, 19 amperes. Due to improvements made in the generator, the hot output is now 18 amperes in contrast to the former 16 ampere rate.

Ignition Coil

An important change has been made in the ignition coil which permits consistent operation with wider initial spark plug gaps. With the new coil, the spark plugs are much less sensitive to gap adjustment, so that good ignition will be obtained even when the plug gaps have increased to .040". This increased coil performance is secured without any sacrifice in the safety factor against breakdown. Other benefits resulting from this change are better starting and idling, improved fuel economy, and a reduction in the tendency toward "hill and valley" build-ups on the contact arm and screw. As shown in the accompanying illustration, the proper spark plug gap for all 1938 Hudson and Hudson Terraplane models is .032" instead of .025" as previously recommended.

Fuse Block

Replacement of fuses will be very much easier on all models for 1938. The lighting switch mounting for the fuses previously used, has been discontinued and instead, a separate fuse block has been adopted. The new fuse block which is shown in the illustration, is attached to the lower flange of the instrument panel by screws and the fuses are easily accessible so that they can be changed from the driver's seat.

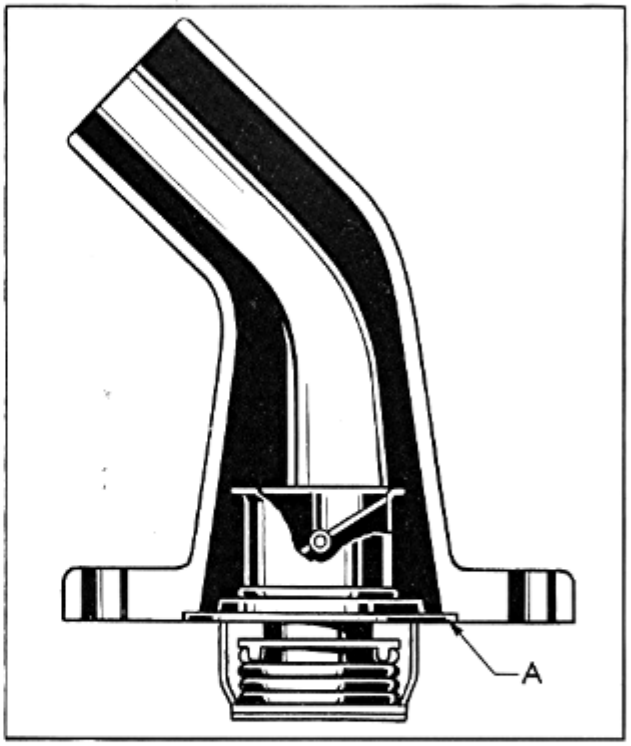


Battery Box Cover

The protected and ventilated under-the-hood location for the battery developed by Hudson and used in 1937 is continued for 1938. The efficiency of this design in protecting the battery against excessive temperatures in both winter and summer has been effectively demonstrated during the past year and for 1938 the accessibility of the battery in this location is further enhanced by a large hinged cover, which gives instant access to the cells for filling and inspection.

COOLING

In designing the 1938 Hudson and Hudson Terraplane models, a great deal of attention has been given to the matter of adequate engine cooling provision—a problem which has become increasingly difficult to solve because of the current trend in motor car styling. The newly designed radiator shells for all models and the new type radiator core for the Hudson Eight models are the principal units of the cooling system which have been changed. Other detail changes have also been made.



Larger Louvres In Shell

In the 1938 radiator shell design, the louvre openings have been both lengthened and widened to permit a much greater and more direct flow of air through the radiator shell to radiator core frontal area. Inasmuch as efficient cooling depends upon the amount of cool air directed to the front face of the radiator core, a lower operating temperature is possible than heretofore.

Increased Core Frontal Area

The width and height of the Hudson Eight core has been increased affording a considerable increase

in frontal area which, as previously mentioned, is the prime factor in cooling efficiency. In the new Hudson Eight radiator core the thickness has been decreased ½ inch and while the water capacity of the radiator has been slightly decreased because of this, its cooling ability has been materially improved. The new type core is of a much more efficient type and offers less resistance to the passage of air than the 1937 design. Notwithstanding the fact that it is thinner than the one formerly used, it actually weighs 3½ pounds more.

Water Pump Seal Improved

The water pump design for 1938 remains unchanged from that used previously except for a new composition cork and synthetic rubber seal called "corprene." Due to the resistance of synthetic rubber to deterioration when in contact with grease improved sealing is obtained.

Accessory Type Thermostat

To simplify installation and reduce the number of hose connections when making thermostat installations on those models which do not carry them as factory equipment, a new type accessory thermostat has been developed for the 1938 Hudson Terraplane DeLuxe and Business models when heaters are installed.

New Method of Mounting

A counterbore has been added to the new cylinder head water outlet casting to permit installation of the new thermostat in the outlet as shown at "A" in the illustration. Installation of the new thermostat is possible in 1937 Terraplane Deluxe and Business models by using the outlet casting with counterbore.

SINGLE CARBURETOR

A new single throat, manual choke control carburetor is used on the 1938 Hudson Terraplane Deluxe and Business models. Improvements in the new carburetor consist of a die cast top cover and a new method of controlling the metering rod by combined vacuum and mechanical actuation instead of solely by mechanical means as heretofore. In the new cover design the anti-percolating valve is completely covered and the top mechanism is better protected against dirt than with the pressed steel cover.

Vacuum Controlled Metering Rod

The increased rapidity of operation obtained by the vacuum control feature permits the use of a leaner metering rod and results in easier cold weather starting, improved performance, and an increase in fuel economy of approximately 2 miles per gallon at car speeds up to 60 miles per hour. Actuation of the metering rod "F"—Fig. 1, is now obtained by the intake manifold vacuum acting on the piston "I," to which the metering rod is attached by means of the link "G," through drilled passages "L." In starting, the intake manifold vacuum is lowered due to opening the throttle causing spring "J" to move link and metering rod upward increasing the size of jet opening "K" thus providing a richer starting mixture.

As the throttle is closed, the intake manifold vacuum is increased which moves the piston, link and metering rod downward compressing the spring and

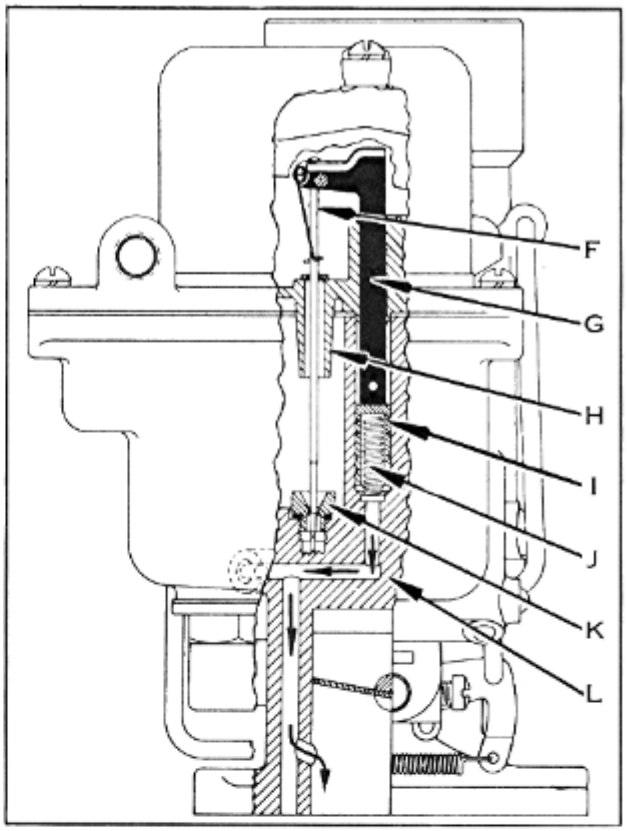


FIG. 1

bringing the larger steps of the rod into position in the metering rod jet.

The position of the metering rod in the jet is con-

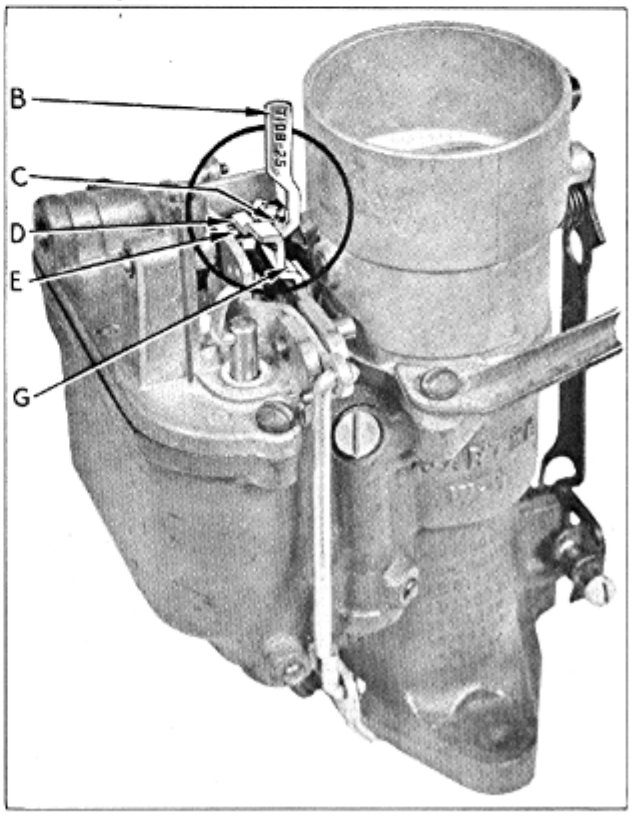


FIG. 2

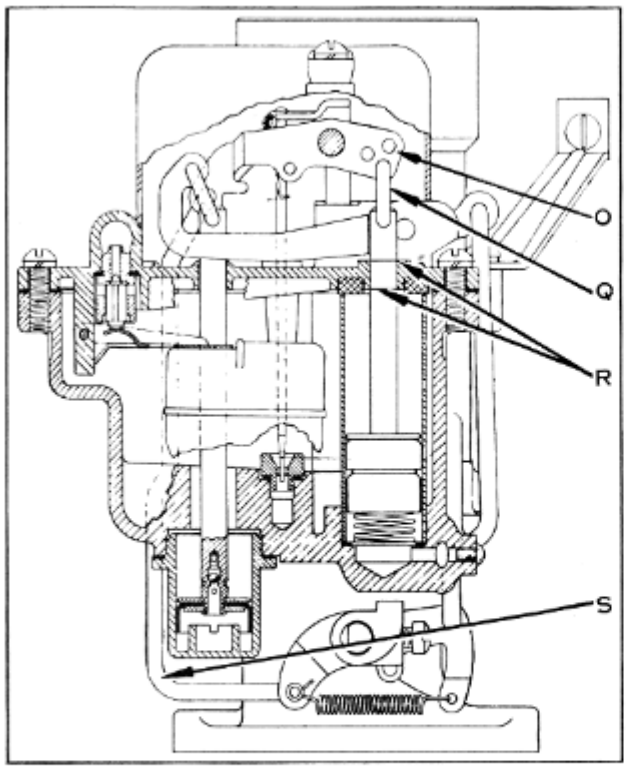


FIG. 3

tinuously changing with the change in manifold vacuum thereby providing much more accurate control of the fuel used than is possible with mechanical means alone. Attention is called to the increased length of the metering rod guide "H" which insures the rod entering the jet when making installation.

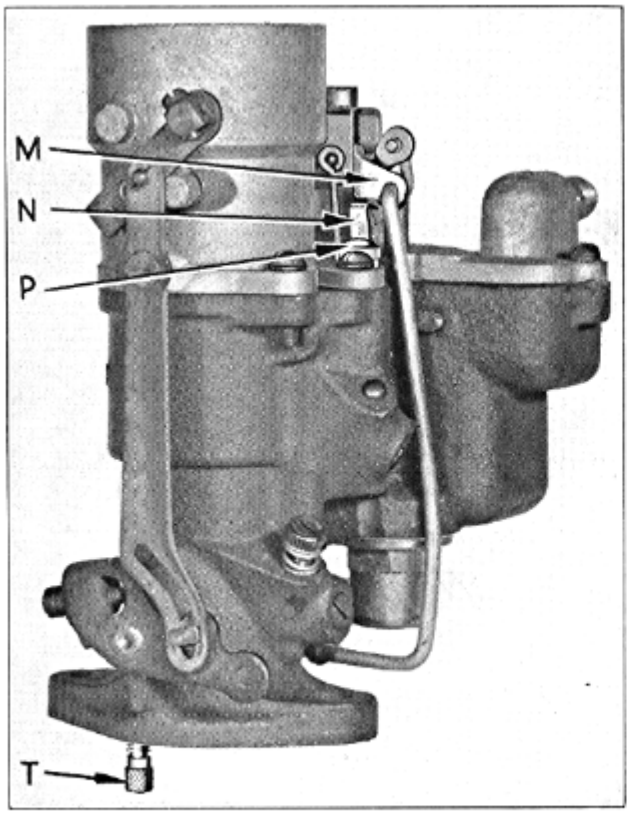


FIG. 4

Mechanical Follow-Up Provided

To prevent undue movement of the metering rod under open throttle conditions due to rapid flluctuations in vacuum, a mechanical follow-up is incorporated in the linkage. This device consists of a pin "E"—Fig. 2, projecting from and moving up and down with the pump arm, which rises as the throttle is opened wide and contacts the lip "D" on the metering rod link. This eliminates the possibility of any sudden change in manifold vacuum from moving the metering rod downward too far into the jet, thereby leaning out the mixture and causing "Flat spots."

Metering Rod Adjustment

Correct metering rod adjustment is important to obtain proper performance and economy. Metering rod adjustment should be checked when carburetors are serviced or leaner than standard rods are installed.

Correct procedure is as follows—

Remove metering rod and rod disk.

Insert gauge No. T 109-25 ("B"—Fig. 2) in place of metering rod, seating tapered end in metering rod jet.

Push down piston link "G" so that metering rod pin rests on shoulder "C" of gauge.

Adjust lip "D" of piston link so that there is less than .005 inch clearance between it and pump arm pin "E."

Remove gauge, install metering rod, disk and metering rod spring.

Replace rod if it shows wear.

It is important that the vacuum piston "I" moves freely and the spring "J" under piston be of proper length. It is best to change this spring whenever carburetor is repaired. Care must be taken that piston is clean and dry and shows no sign of wear. Never use oil to make piston work smoothly.

Accelerator Pump Adjustment

With pump connector link "Q"—Fig. 3, in lower hole—medium stroke—of pump arm "O" adjust throttle connector rod "S" by bending at lower angle to give $\frac{7}{32}$ inch pump stroke—plunger travel.

Full pump stroke is obtained by moving throttle from seated to wide open position. Travel can be checked by marking pump shaft "R" at wide open and closed throttle position and gauging distance between marks.

Anti-Percolator Adjustment

Crack throttle valve .025 inch between lower edge of throttle valve and bore of carburetor—opposite port. Insert gauge "T"—Fig. 4, or use .025 inch drill.

Adjust anti-percolator lip "N"—by bending—so that there is a clearance of .005 to .015 inch between it and pump arm "M" with anti-percolator cap "P" seated.

Attention is called to the new anti-percolator valve which is cast integral with the float chamber cover in place of a separate valve as formerly used.

In all other essential respects the 1938 single carburetor is the same as the 1937 unit and the servicing procedure applying to the 1937 models is identical for 1938.

DUPLEX CARBURETOR

Starting Position

In the 1938 Duplex carburetor illustrated in Fig. 1, a new fast idle cam design incorporating starting, fast idle and running steps is used.

When the accelerator pedal is depressed in starting, the cam swings into the starting position shown at "A" which increases the throttle opening and raises the engine speed to correspond to a car speed of from 19 to 22 miles per hour to minimize the possibility of stalling.

Intermediate Step

As the accelerator pedal is depressed after starting, the cam is turned slightly to the left which drops the fast idle adjustment screw into the intermediate or fast idle position as shown at "B" in Fig. 2. This provides an additional step which permits warming up the engine at a 12 to 15 mile rate instead of dropping off immediately to the running position.

Running Position

In Fig. 3, is shown the 1937 carburetor with fast idle cam adjusting screw and cam in third or running position "C" with choke open.

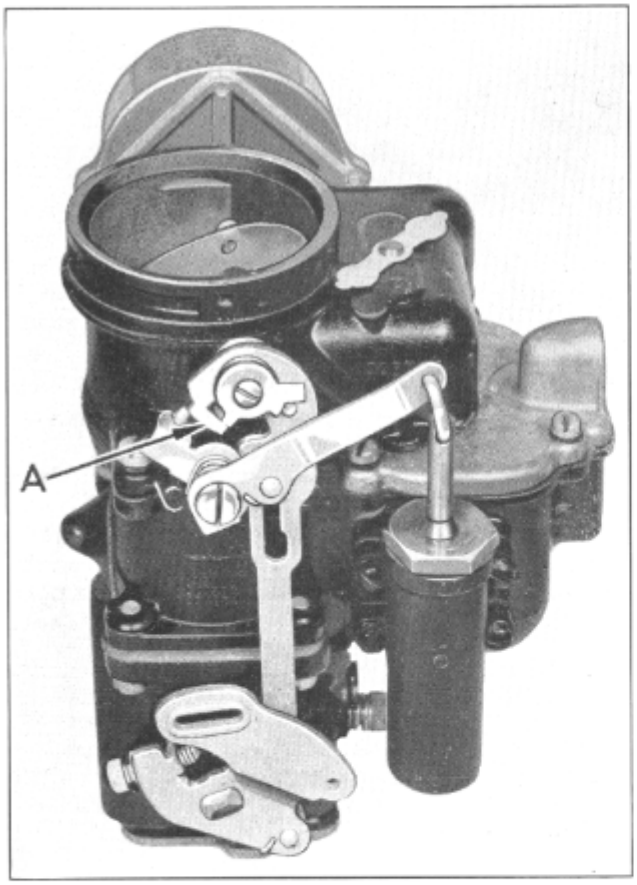


FIG. 1

This should provide a car speed of seven miles per hour in high gear.

Fast Idle Cam Spring

Illustration "D" in Fig. 4, shows the fast idle cam spring which is a new feature in the 1938 carburetor.

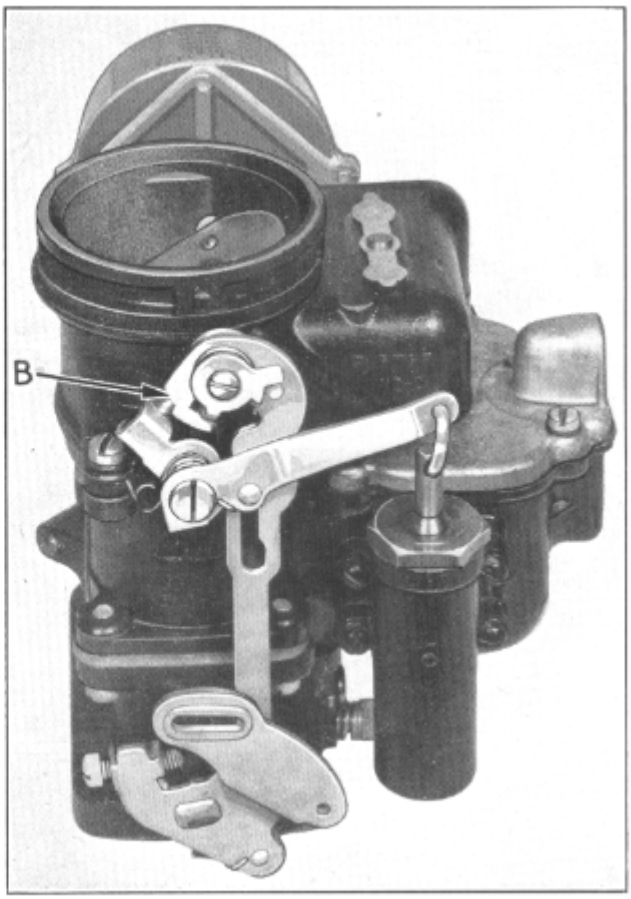


FIG. 2 (above)

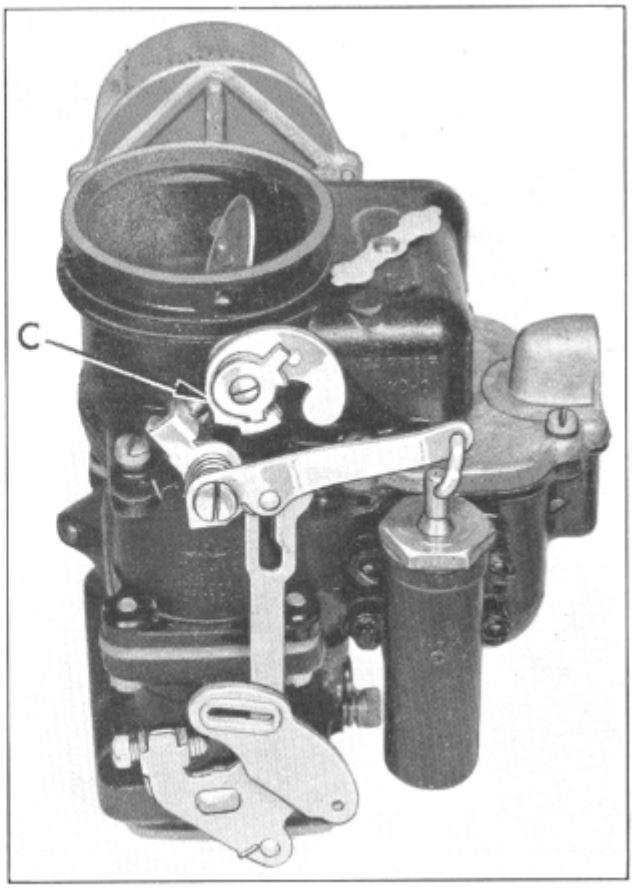


FIG. 3 (below)

The addition of this spring has permitted the use of a lighter thermostatic coil spring "E" to provide faster choke opening response through the larger warm air passage "F."

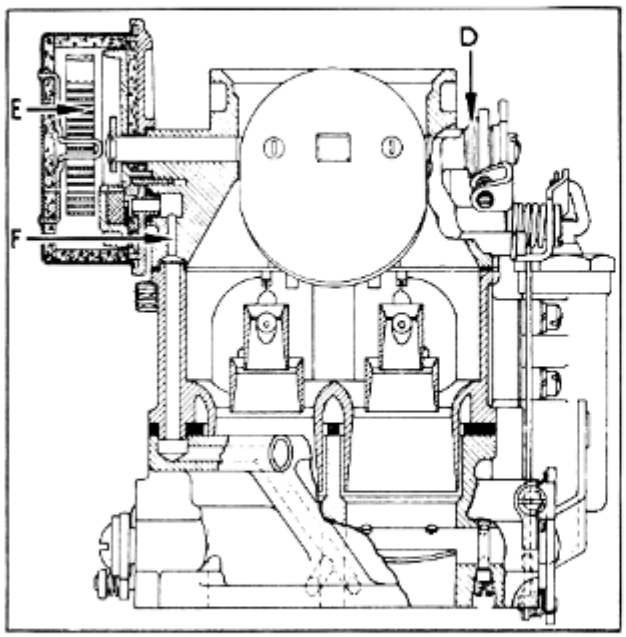


FIG. 4

Servicing Procedure

With the exception of the improvements to provide better starting and warming up the 1938 duplex carburetor is unchanged and the servicing instructions for the 1937 carburetor apply equally to the new model. This also applies to the balance of the fuel system for all models, the gasoline tank, gauge, lines and fuel pump assembly remaining unchanged for 1938.

Correction In 1938 Specifications

You will note that on page eleven of the Specifications supplement to this magazine that the standard rim size listed under wheels for the 1938 Hudson Terraplane Business Cars is 16 x 4.00". The 16 x 4.00" size is standard only on the Utility Coach, Coupe and Sedan. All other Hudson Terraplane Business Cars such as the Panel Delivery, Cab, Pick-up, Station Wagon and 88 models are equipped with 16 x 4.50" rims as standard equipment.

SELECTIVE AUTOMATIC SHIFT

In our continued effort to improve the selective automatic shift, we have made a careful study of the shortcomings of previous units and how they could be overcome.

The matter of adjustments was given extensive consideration and as a result many of these have been eliminated, while others have been simplified, making them less critical to adjust.

A need was found for an indicating device that would inform the operator whether or not a shift was completed before he engaged his clutch. A simple device of this nature has been added which gives the operator the impression of "feeling" the gears engaging or not engaging as the shift takes place.

The automatic clutch control used with the new selective automatic shift is entirely new in principle, control and construction.

These improvements can be divided into six general headings as follows:

TOOTH ABUTMENT INDICATOR
SELF CONTAINED INTERLOCK SWITCH
SELF ADJUSTING CIRCUIT BREAKER
BALANCED VACUUM POWER CYLINDER
CLUTCH COMPENSATOR
THROTTLE OPERATED ACCELERATOR SWITCH

Abutment Indicator

This is a simple and positive mechanism for the indication to the operator whether or not the transmission shift has been completed into low or reverse gear before the clutch is engaged.

Interlock Switch

A new interlock switch of the breaker contact type is mounted in the cross shift diaphragm housing and operates directly from the cross shift diaphragm rod. No adjustments are necessary for this switch.

Circuit Breaker

The new circuit breaker switch is mounted on the transmission case in such a manner as to make it self-adjusting to compensate for any clutch wear or linkage changes. No adjustments are required for this switch.

Power Cylinder

A new power cylinder and control valve unit for the automatic clutch is used. It is of a new design based on the balanced vacuum principle which is used in power brake cylinders.

Clutch Compensator

A clutch compensating mechanism is incorporated, which changes the cushion point to give a faster engagement for a cold oily clutch disc, and a slower engagement after the first engagement in high gear has taken place.

Accelerator Switch

An accelerator switch controls the new automatic clutch. It operates from the throttle linkage and con-

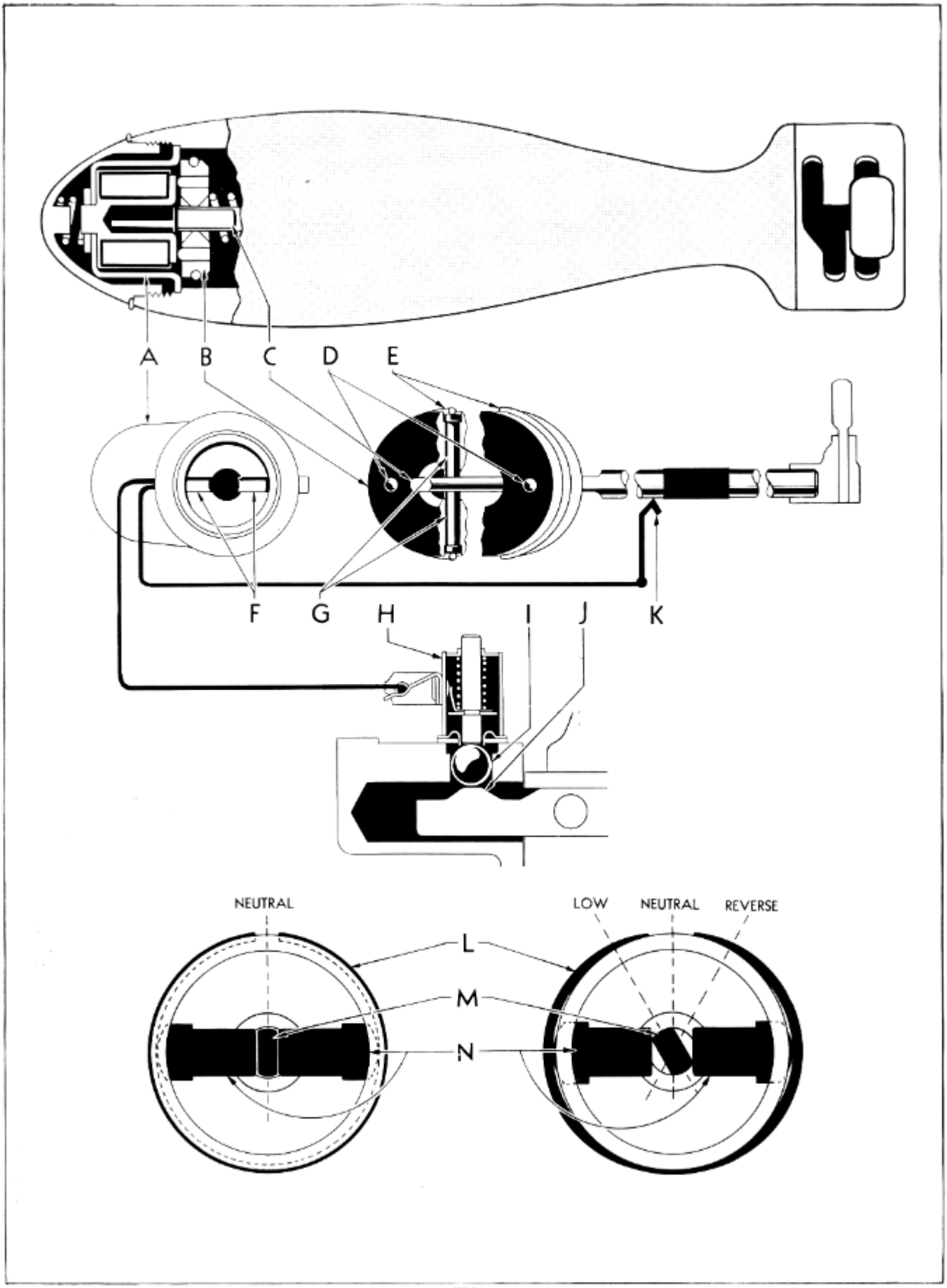


FIG. 1

trols all circuits to the automatic clutch solenoid valve. It provides positive clutch engagement for rapid acceleration in any gear selected.

ABUTMENT INDICATOR

Components

The abutment indicator is composed of two new units in the selector assembly, a shift rail switch for electrical control, and a change in the length and shape of the inner end of the selector switch shaft "C," Fig. 1.

A rigidly mounted solenoid "A" is assembled in the end of the selector switch housing and a detent rotor assembly "B" rotates and slides freely on the end of the selector switch shaft "C."

The solenoid is controlled from the "hot" or feed end of the winding by the cross shift contact "K" in the selector. The ground circuit is controlled by a shift rail switch "H" mounted on the clutch housing directly over the front end of the low-reverse shift rail "J." Two notches are cut in the shift rail and located so that the operating ball "I" will drop into the notches and allow the switch contacts to open when a shift into low or reverse gear is three-quarters completed.

Operation

With the transmission in neutral, move the finger tip control to the left through the neutral slot. The solenoid "A" becomes energized when the cross shift contact "K" closes and a circuit is completed through solenoid "A" to ground by means of the shift rail switch "H" which is closed with the transmission in neutral.

The detent rotor "B," guided by the spring loaded plungers "G" sliding along the flat sides of the shaft "C," is drawn against the solenoid "A" with the two detent pins "D" engaging slots "F" in the face of the solenoid. This magnetically operated clutch action prevents the detent rotor "B" from turning while the solenoid "A" is energized.

If the finger tip control is moved into low or reverse position with rotor "B" rigidly held by the solenoid, the rotation of the flat portion of selector shaft "C" within the rotor will spread the plungers "G" against the spring "E," which passes over their outer ends.

Gear Abutment

If a gear abutment has taken place in the transmission, the shift rail "J" has not moved far enough from its neutral position to allow the ball "I" to drop and release the plunger of switch "H." This causes the solenoid "A" to remain energized and hold rotor "B" rigidly. Spring "E" then reacts back through the rotor plungers "G" causing a torque in shaft "C." This tendency to rotate can be felt through the finger tip control and if released, the control will snap to its neutral position.

Completed Shift

If, however, the shift is three-quarters completed in the transmission, the ball "I" will drop into the shift rail slots, allowing the shift rail switch "H" to open the ground circuit to solenoid "A" and the detent rotor "B" will be released. When released from the solenoid "A," the detent rotor will rotate to take its normal position on the shaft "C" where the plungers "G" will rest flat on the sides of the shaft, and rotor "B" will then turn freely with the selector shaft.

This arrangement allows the operator to engage and disengage the clutch to change gear position when he feels opposition to a shift into low or reverse gear just as he would when using a manual shift.

Rotor Action

The turning effect of the spring loaded plungers on the flat sides of the selector shaft will be more clearly understood after a study of the two lower diagrams in Fig. 1. The lower left diagram shows the plungers "N" resting against the flat sides of shaft "M" in a neutral selector position. The lower right diagram shows shaft "M" forcing the plungers "N" outward against the restraining spring "L," increasing its tension. If, from this position, shaft "M" is released, it will be snapped to a neutral position, while if the complete rotor assembly is released with the shaft held rigidly, the rotor will turn in a counter-clockwise direction to the new position of the shaft.

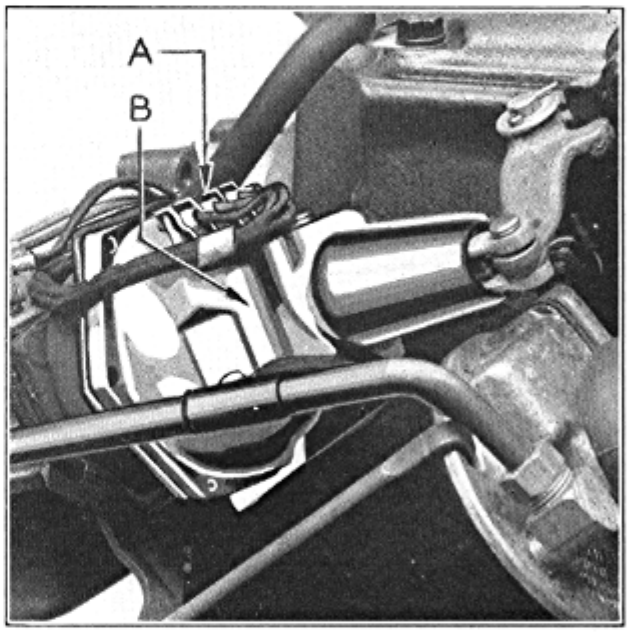


FIG. 2

Interlock Switch

The new interlock switch "A," Fig. 2, is of the breaker contact type and is mounted in a new die cast housing "B," cast integral with the cross shift diaphragm cover. The switch is composed of two sets of contact fingers "C," Fig. 3, page 18, similar to those used in the 1937 neutral switch. These two sets of switch fingers are operated in proper sequence by a rotating camshaft "E" which has two cams "D" cut near its end. This camshaft is rotated by an arm "F" connected to a floating sleeve "B" on the diaphragm rod by a link "H." The two stops "G" limit the forward travel of the sleeve, while the rod flange at the diaphragm limits the rearward travel.

Operation

When assembled in the die cast housing, the spring "J" acts against the bakelite washer "K" providing

sufficient friction to hold the switch points open while the lost motion is being taken up between the stop "G" on the rod and the floating sleeve "B." This

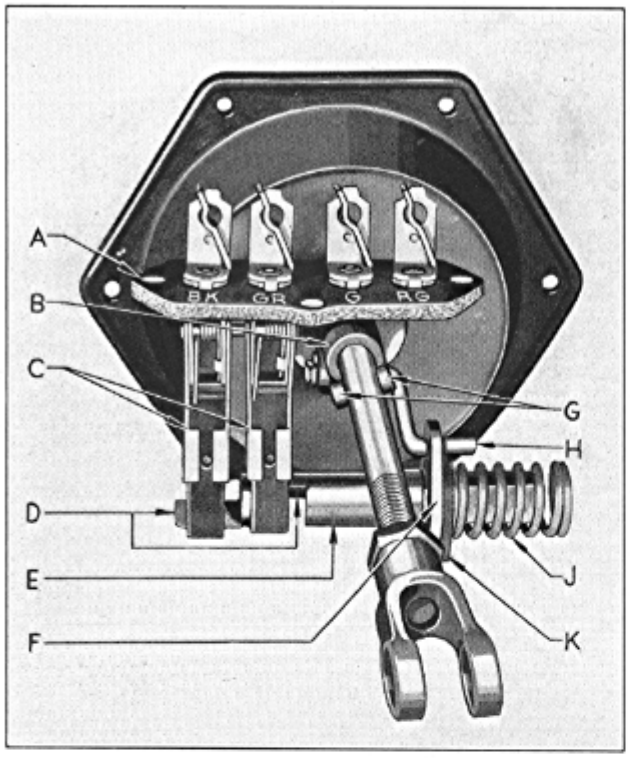


FIG. 3

delayed action is necessary for proper timing of the switch contacts.

This method of switch operation eliminates all need of adjustment.

All wiring under the terminal plate "A" is of the flat bus-bar type.

Clutch Circuit Breaker

The clutch circuit breaker switch "E," Fig. 4, is mounted on two bosses located on the left side of the transmission case in such a way that a fork "H" in the lower end of the lengthened clutch shaft operating lever "K" engages the switch plunger "F" for positive operation. This lengthened clutch shaft lever is used on all cars to facilitate field installations of the Selective Automatic Shift.

Operation

The switch is held in position by two coil springs "D" pressing against the switch mounting plate "C." These springs are secured by two cap screws "A." The switch is free to move up and down within limits of the two slots "B" when a positive pressure is applied to the top or bottom of the recess "G" cut in the switch mounting plate. This operating force is supplied by a projection "J" on the lower end of clutch shaft operating lever "K" engaging the recess and pulling the switch downward as the engagement point of the clutch changes. This compensation for clutch wear maintains a fixed relationship between the clutch engagement point and the clutch circuit breaker contact point.

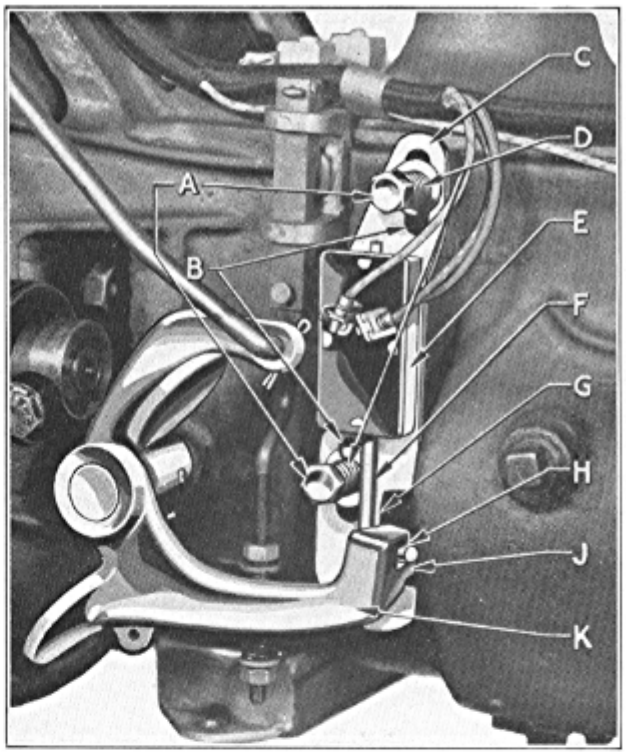


FIG. 4

Electric Hand Adjustments

All adjustments, but two, have been eliminated from the electric hand. These are the adjustments of the power cylinder piston rod "C," Fig. 5, which

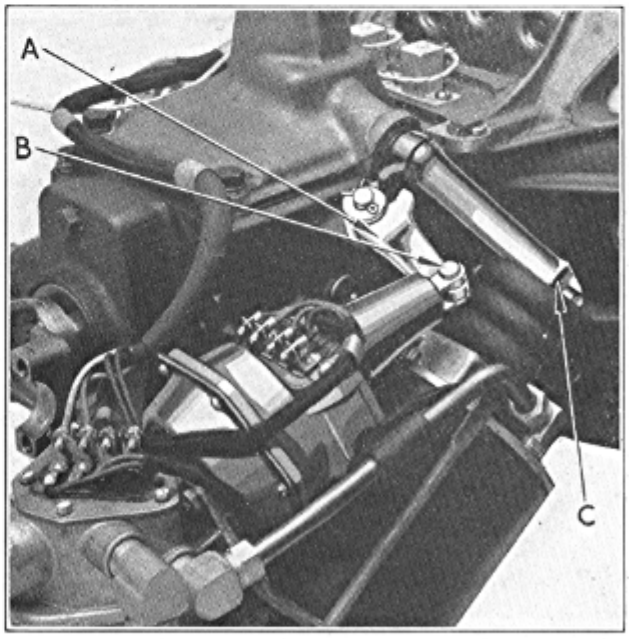


FIG. 5

does not change from previous models, and the adjustment of the cross shift diaphragm rod.

Cross Shift Rod Adjustment

This adjustment is made by lengthening the clevis at "B," Fig. 5, until only $\frac{1}{16}$ inch of light can be seen through the clevis pin hole with clevis slipped over bell crank "A." This will require $\frac{3}{16}$ inch com-

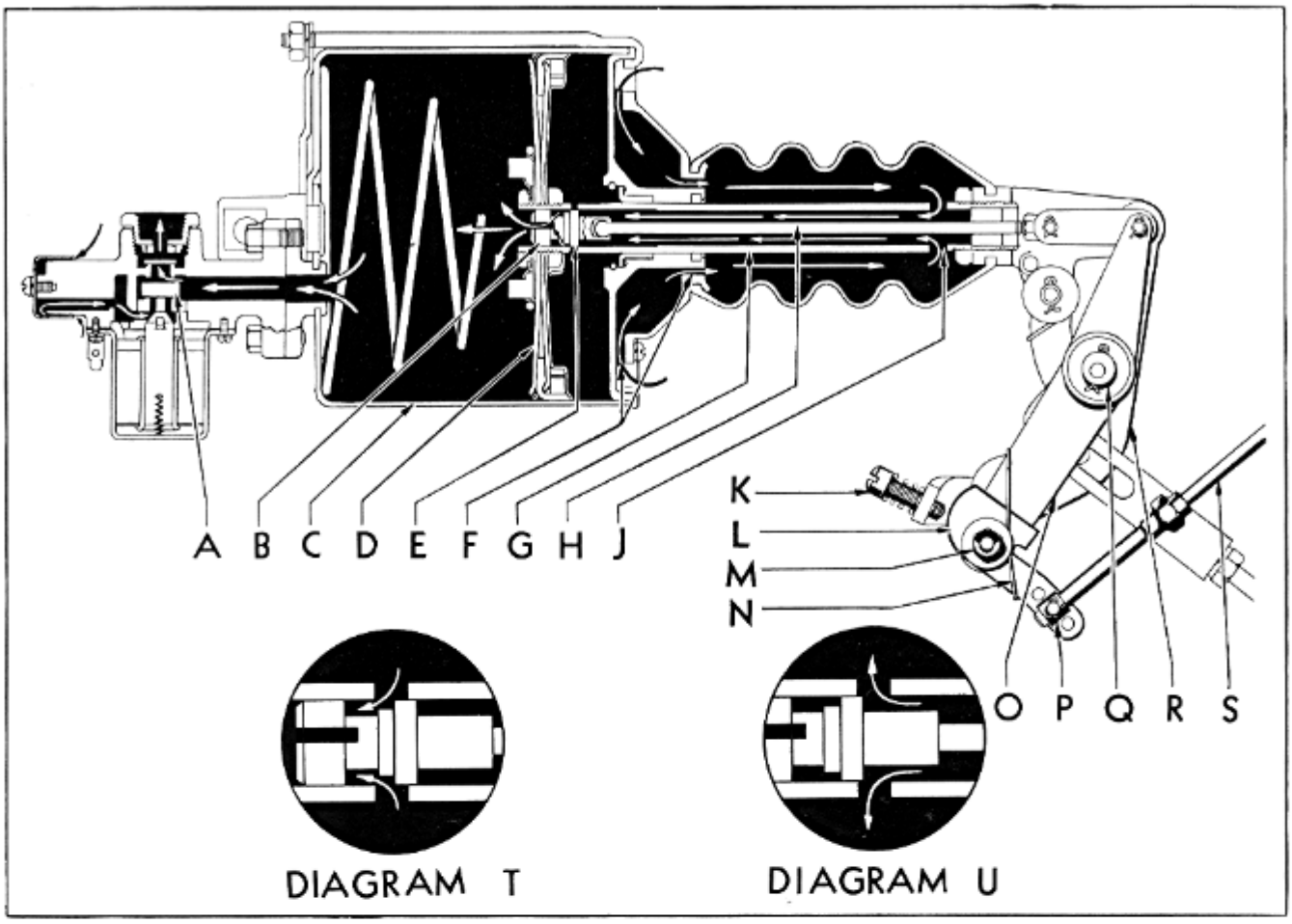


FIG. 6

pression on the piston rod before clevis pin "B" will go into place.

Automatic Clutch Control

The automatic clutch is entirely new in design, operation and control. The power cylinder is of the balanced vacuum type and is controlled by an internal piston valve. The electrical control has been changed slightly to accommodate the operating characteristics of the new valve arrangement.

Operation

When the ignition switch is turned on, the solenoid valve "A," Fig. 6 opens connecting the forward end of the cylinder "C" to the manifold through a vacuum pipe. When the engine starts, a vacuum is created in the forward end of the cylinder "C" and the piston "D" moves forward to disengage the clutch. To permit this, the vacuum has drawn the valve "B" forward allowing air to enter the air filter and passages "F," piston rod ports "J," back along the valve rod "H" to the valve "B" and out into the rear end of the cylinder through the valve ports "E" in the hollow piston rod. Diagram "U" shows the valve moved forward opening the ports to the atmosphere.

Clutch Engagement

To engage the clutch, accelerator movement is transmitted to the valve lever cam "L" at the lower end of the valve lever "O" through the threaded sleeve rod "S" acting against the guide block "P." The valve lever "O" is pivoted at "Q" to the bell crank "R" about ⅔ of the way up from its bottom end and as the lower end of the valve lever "O" moves forward, the top end moves rearward and the attached valve rod "H" moves rearward. This moves the valve "B" rearward and opens the ports "E" to connect the front and rear ends of the cylinder. Diagram "T" shows the valve moved rearward opening the ports to vacuum. Air is drawn from the rear side of the piston "D," and as the vacuum on each side begins to equalize, the clutch will pull the piston "D" rearward. As the piston rod "G" moves rearward it overtakes the valve "B" and the ports "E" are closed off thus checking the piston movement. This follow up action is continuous and takes place during the entire engaging cycle.

Valve Action

In order to obtain quick travel to the cushion point, the valve lever "O" is allowed to move rapidly with the accelerator travel until the valve lever cam "L" comes against the end of the cushion point stop screw "K." At this point all lost motion in the throttle linkage should be taken up and the throttle beginning to open. Also at this point the valve lever cam "L" stops in its forward travel and starts rotat-

ing about its pivot "M" on the valve lever "O" against the tension of the spring "N." This cam action causes the lower end of the valve lever "O" to move forward slowly during the clutch engagement period and still allows the accelerator to push the threaded sleeve rod "S" and the guide block "P" downward at the same rate of travel as before.

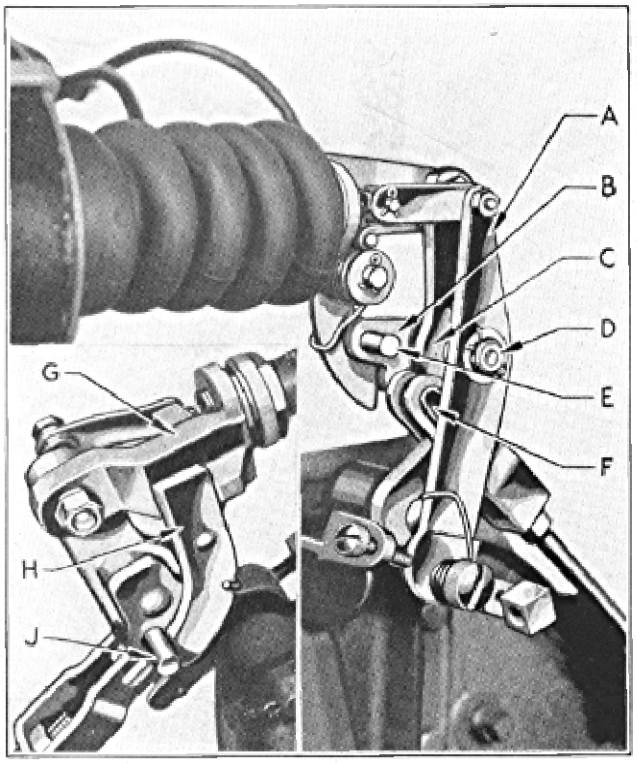


FIG. 7

Compensator

In order to compensate for the reduced friction during the initial clutch engagements, while the clutch fluid is heavy and the corks are well saturated, the relationship is changed between the valve lever pivot "D," Fig. 7, on bell crank "C" and the valve lever "A."

Eccentric Pivot

This pivot is an eccentric and is controlled by the two pins on the compensator lever "B." When the clutch is manually disengaged to start the engine, the operating rod yoke "F" strikes the outer pin "E" and swings the lever "B" and the eccentric pivot "D" forward, throwing the top end of the valve lever "A" forward and a harsher engagement is secured.

With the first clutch engagement in high gear, the trip arm "H" mounted on the piston rod end "G" strikes the inner pin "J" and rotates the eccentric pivot "D" back to its normal driving position.

Accelerator Switch Control

When the throttle is opened rapidly to a wide position for acceleration in any gear, it is desirable to have a quick and positive clutch engagement. To accomplish this it is necessary for the solenoid valve to release, closing off vacuum and opening the forward end of the power cylinder to the atmosphere.

Circuits Controlled

This is done by a throttle operated accelerator switch (see Fig. 8). This switch has two sets of contacts and controls three circuits. The first set of contacts opens the circuit from the "RW" terminal of the switch to the governor switch at from 5 to 10

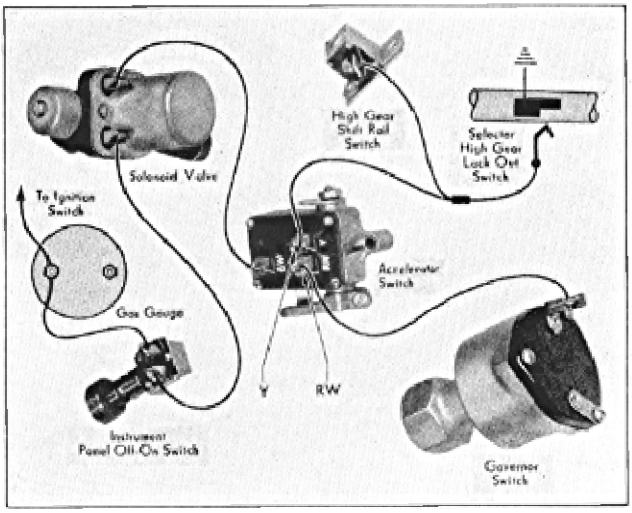


FIG. 8

degrees of switch lever travel. This releases the solenoid valve in high gear. A second set of contacts opens the circuit from the "Y" terminal of the switch to the high gear shift rail switch and to the selector switch high gear lock out contact. This releases the solenoid valve in reverse, first, and second gear with a switch lever movement of from 60 to 75 degrees.

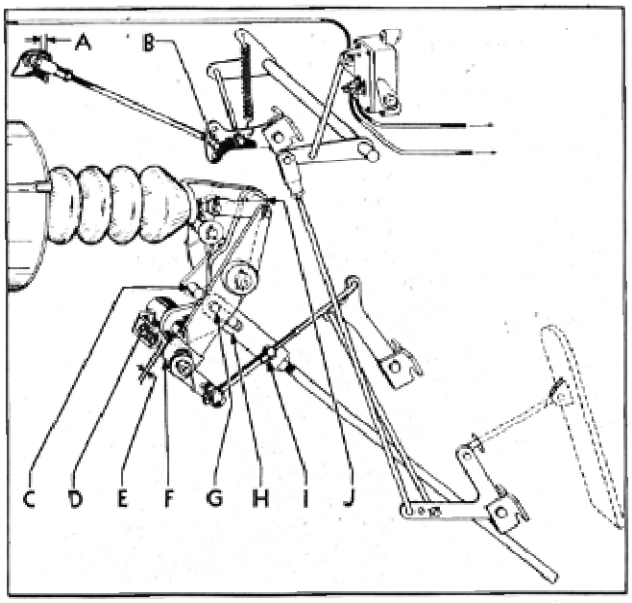


FIG. 9

Mechanical Adjustments

The following simple adjustments are necessary for satisfactory operation of the automatic clutch.

Operating Rod Yoke

Adjust yoke "H" to establish a ⅛ inch dimension between the clevis pin "G" and the front end of the slot in yoke "H."

Throttle Adjustment

Adjust the lost motion in the throttle play link as follows—(See "A" and "B," Fig. 9):

Model	*Location of "B"*	*Dimension "A"*
81	Bottom Hole	0
82-83	Top Hole	⅛
84-85-87	Middle Hole	⅛

Piston Travel

To adjust for maximum piston travel, have the engine running, the clutch disengaged, and the compensator pin "C" in its extreme rearward position. Screw the threaded sleeve "I" toward the dash until the piston rod "J" just reaches its extreme forward position. Then screw the threaded sleeve "I" away from the dash until the piston rod "J" moves rearward ¼ inch. This gives a correct adjustment.

Cushion Point

To adjust for the cushion point, have the motor running, the clutch disengaged and the compensator pin "C" at its extreme rearward position. Then adjust the cushion point stop screw "D" to have a 5/32 inch gap "E" between the valve lever cam "F" and the end of screw "D."

If, after this adjustment, the clutch engagement is slow accompanied by excessive motor speed, turn the cushion point stop screw "D" outward; if too fast, thereby stalling engine, screw inward. Do not turn screw more than ½ turn at a time. If several full turns either way are required, recheck the throttle play link adjustment and check all throttle linkage for binding or tightness that would hold the accelerator switch lever away from its stop on the side of the switch housing.

Sell Your Owners All Three

Polish and wash jobs should be sold together, often in conjunction with a lubrication job, according to Gasoline Retailer Magazine. It is easier to sell this way than to attempt to market each job individually. Remember to ask your customers to "take all three" and you'll find that your service profits are on the rise. If you consider it desirable, name one price for the three services, one for two services, or three individual prices.

Cooling System

During the summer months the evaporation from the cooling system has required frequent addition of water. This water contained some minerals which are left in the cooling system as they do not evaporate with the water. These deposits may be in the form of hard scale or soft sludge, either of which will reduce the efficiency of the cooling system and eventually clog it. It should be loosened by use of Hudson Radiator Cleaner and removed by reverse flushing.

If Hudson Rust and Corrosion Inhibitor has been used, the minerals which form scale and sludge will be in suspension and can be drained out without the use of reverse flushing. Hudson Rust and Corrosion Inhibitor should be used in every cooling system after cleaning.

Thermostats should be removed, cleaned and checked with a thermometer in hot water to determine their temperature of opening. Improper thermostat operation will cause inefficient engine performance, low heater output or overheating.

Don't overlook the possible sales of fan belts, hose and gaskets when selling cooling system service.

Service Meeting Program

FOR

OCTOBER, 1937

●

SUBJECTS FOR DISCUSSION

Mechanical Highlights For 1938
Pages—3 - 21

1938 Mechanical Specifications

1938 Accessory Program
Pages—24 - 27

Going After Winter Servicing Business
Page 28

●

MATERIAL

OCTOBER MAGAZINE

OCTOBER MAGAZINE SUPPLEMENT

HUDSON OFFERS TWO NEW SENSATIONAL

RADIOS FOR 1938

When something new happens it's news and here's some great news for Hudson Dealers and their Service Men about the new Hudson Radio Program for 1938.

There will be two distinctive sets, each entirely new in design and appearance and both embodying new exclusive engineering features never before offered in the automotive radio field.

Many of the new features of Hudson Radios have been used in home radios for several years, and are now used for the first time in automobile radios.

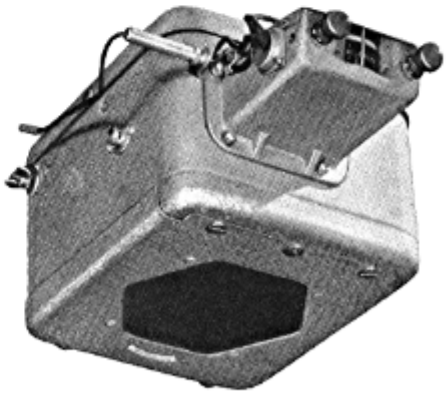
One of the outstanding developments achieved by Hudson engineers is the new automatic sensitivity control featured in the Custom model. This feature automatically controls the sensitivity eliminating between-station interference when tuning in local stations, as the volume is increased the sensitivity is automatically increased and automatically jumps to a high ratio of sensitivity as the volume is increased to bring in distant stations. This is only one of the many features which make Hudson Radios outstanding for 1938.

THE CUSTOM

The new 1938 Custom Radio is a 7 tube set of remarkable performance. The eight inch dynamic speaker and control head are built as an integral part of the set proper. The new type control head eliminates control cables and provides freeness and ease of operation to the station selector and volume control. An individual tone control is provided on the speaker. The exterior is finished in a rich silver grey crackle tone finish.

THE DELUXE

The 1938 Hudson DeLuxe Radio is a 6 tube set with built-in 6 inch dynamic speaker. This set includes the built-in control head and many other fine features found in the custom model. Hudson offers the 1938 Hudson DeLuxe Radio as the finest in its class.



TWO TYPES OF ANTENNAS ARE AVAILABLE FOR 1938

Purchasers of 1938 Hudson Radios will have their choice of either a new Hudson Running Board Antenna or else the new Hudson Telescopic Antenna which fastens to the cowl. Hudson radios for 1938 are designed with a dual antenna input circuit which allows the use of either antenna without making inside adjustments to the sets.

The new telescopic antenna is of the most practical type, finished in chromium and topped with a red transparent cataline bead which makes it in keeping and harmonious to the exterior appearance and design of Hudson cars.

New Selling Ideas and Merchandising Material Gives Hudson Dealers the Opportunity to "Go To Town" in Selling Radios During 1938

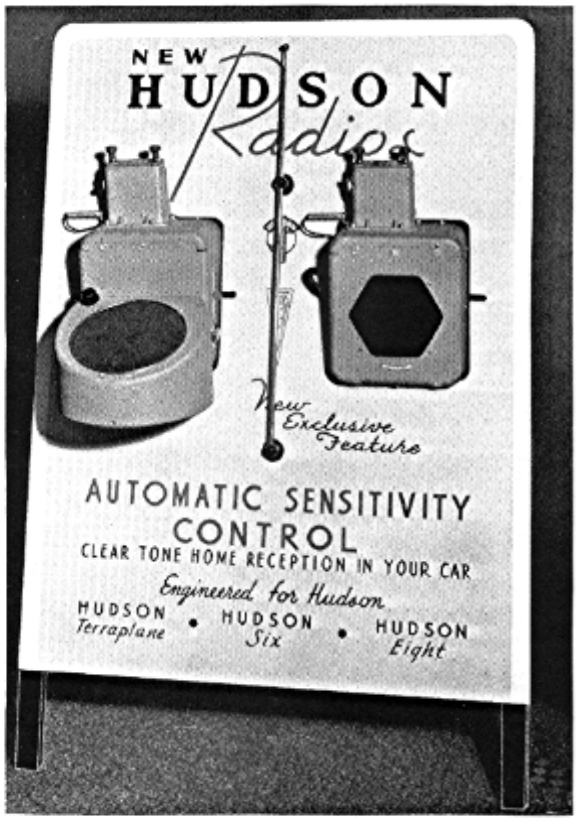
● A DEMONSTRATING STAND for displaying and demonstrating radios in Dealers' show rooms and service areas is an important factor in building radio sales. At the right is pictured the attractive 1938 Hudson Radio demonstrating and display stand beautifully finished in three colors. This stand accommodates both a Custom and DeLuxe model.

● A RADIO FOLDER will be available for direct mailings to prospect and for insertion in letters, etc.

● A RETAIL SALES MANUAL will give salesmen and service men full selling information, and selling suggestions.

● A SALES REMINDER TAG will be placed on the instrument panel of every Hudson and Hudson Terraplane which leaves the factory without a Radio.

● 12 ISSUES OF "LISTEN"—that new dynamic monthly publication of R. C. A.'s will bring Hudson Dealers new sales ideas and outstanding news interest pictures concerning the unusual and outstanding accomplishments of radio.



Installation Time Cut To Minimum

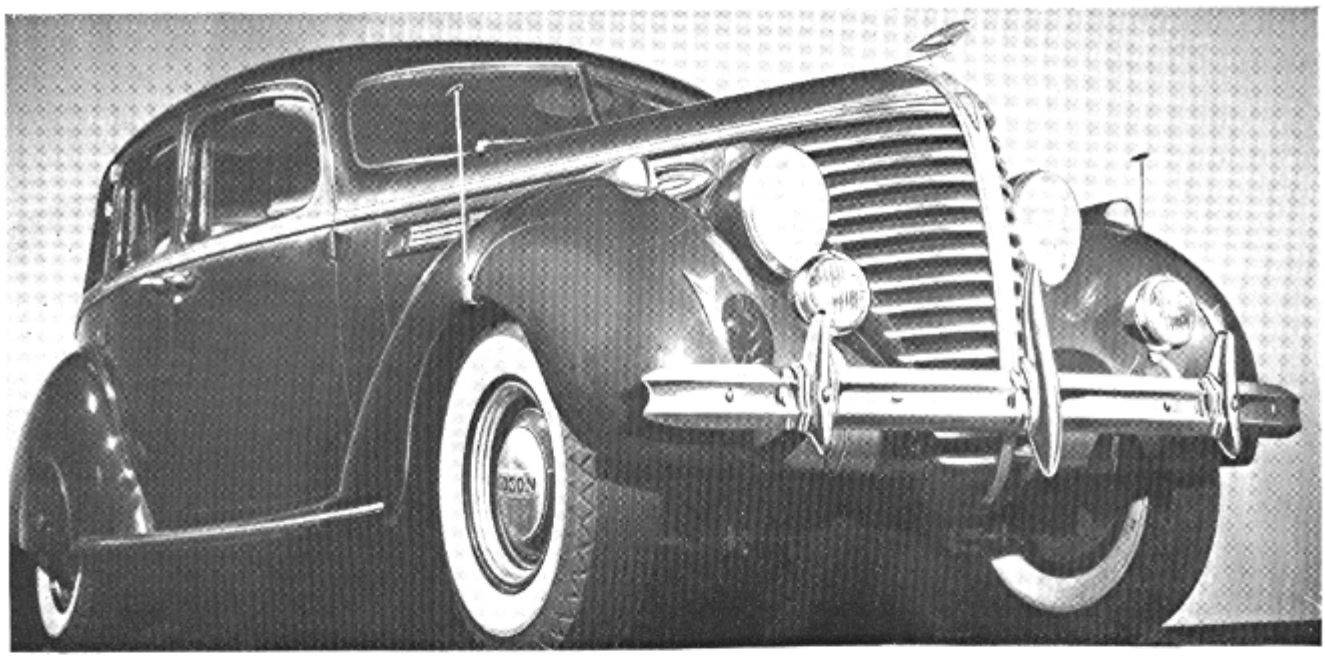
The design of the new 1938 Hudson Radios eliminating control cables and separate control head and incorporating the speakers and controls in one integral unit has brought about a much simplified installation and mounting method. Also the new design enables easy accessibility to the chassis for replacing tubes or making service adjustments.

THE NEW HUDSON RADIOS FEATURE

1. Automatic Sensitivity Control
2. "Beam Power" Tubes
3. Magnetite I. F. Transformers
4. Dynamic Speaker
5. Three Gang Condenser
6. Synchronous Vibrator
7. Dual Antenna Type Input Circuit

★ *Watch for the Announcement Broadside Which Explains Fully The Above Features* ★

HUDSON DEALERS WILL WELCOME 1938's GREATEST CAR RADIO VALUE



Accessories For 1938

Here we are at the beginning of a new sales year, one which has every indication of being a banner year. Before outlining the plans or programs for 1938, it will be well to review the season just closed, as, out of our past experiences we may profit in the future. From a volume standpoint, 1937 has left much to be desired, although showing a net increase in the accessory business of 19%.

Starting in 1934 with a first month's business of only $10,000, this activity has increased to a monthly average in 1937 of $132,000 at list prices.

We have kept before us an ultimate goal of $24.00 list per car for accessories. The national average at the start of the 1937 season was 17.18 with 10 territories showing $24.00 or better. Up to date in 1937 the national average is $17.28 with 10 territories again over $24.00. Of the 10 who were over the mark in 1936, 7 repeated in 1937. Quite a few others are close to the mark, but 50% of all Distributors Districts are below the national average which indicates a definite lack of effort in accessory merchandising.

In looking over the records we find these ten leaders have made a good showing over the entire accessory line. They haven't just sold Heaters, Radios, or Electric Clocks as customers asked for them, but have really set up a program to get all available business on all items.

There are a number of territories doing an outstanding job on certain accessories, but completely ignoring others. Other territories will pick for their leader the very items which have been passed up by someone else.

It is hard to understand why one section can sell over 1000 pairs of license plate frames, while the adjoining territory selling a comparable number of cars, has not used a single pair. Or why one sold 1800 radiator grille guards and his next door neighbor, with more cars, sold less than ½ as many. There is only one answer—Merchandising effort, constantly applied.

Again in 1938, we are striving for a national average of $24.00 list per car, and will do our utmost to assist you in reaching that goal.

Let's look over the promotional material which will be furnished, all without charge, from the central office.

Catalogue

A beautifully illustrated accessory catalogue covering the entire 1938 line. This will be mailed to each Dealer and to the entire Retail sales force. In addition one will be included in each retail sales Kit shipped throughout the year.

Car Folder

A less expensive catalogue, but showing all accessories will be in the locker box of every car leaving the factory. This is a new feature for 1938 and should help to close the gap left by the salesman who fails to mention accessories at the time of new car purchase.

As new accessories are added from time to time, an announcement broadside will be used, illustrating the item and outlining its sales features.

Salesmen's installed price list will be published periodically to keep salesmen up to date on accessory items and prices.

Mailing Pieces

Each month during 1938, we will supply you through Distributors with mailing pieces covering different accessories, fitting the accessory to the season so far as possible. The first issue, now ready for

you, covers heaters and should be mailed to all owners who purchased 1937 cars without heaters and defrosters.

Radios will be next. December will cover a general list, suitable for Christmas gifts, etc.

Displays

Heater Display Stands have already been shipped to your distributor and should be secured with your initial order of heaters. Radio Display and demonstrating stands are being prepared and will be distributed shortly.

Wholesale Order Blanks

We will continue to supply wholesale order blanks for the use of wholesale men in securing accessory business, making it easy for the dealer to order.

Accessory Boards

A new Junior accessory display board which is pictured in this magazine will be furnished without charge to each Dealer, on your order for a sufficient quantity of accessories to install on the board and replacements for stock amounting to approximately $50.00 at Dealer net prices. The list of accessories together with the display should be ordered through your distributor and will be shipped as a unit from the factory. No substitution in the group can be made. While we feel that this display will help you to get into the accessory business, we do not consider this a replacement of the present accessory board. Without a doubt there are at least a thousand Dealers large enough and whose volume of business would warrant their purchase of the $20.00 board.

Perhaps we should consider the new display a second board—one to supplement rather than supplant the larger one. Distributors and Dealers who now have the large board in their show-rooms will welcome the second board for their service and parts department.

To make the purpose of this display really effective, the wholesale man or service traveler with check the Dealer's stock on each contact and replace all items sold since the previous call.

We believe the monthly Service Magazine has found its place in the merchandising picture. The amount of material sent in from the field indicates that it is being read and enjoyed by a large number of readers. We ask your assistance in making it still more helpful and interesting to you.

This year for the first time our new car catalogue carries an accessory page on which the ten leading accessories are beautifully illustrated. The wall posters showing the new 1938 car models also depict the same accessories in a striking color. *Accessory Merchandising is a part of the car sales program and we can all profit thereby.*

The general line of accessory items for 1938 remain substantially the same. We have culled out slow moving and low profit items in order that we may better concentrate on the remainder.

Radio

Radios and Heaters have in the past and will in 1938 undoubtedly account for a major portion of the dollar volume and therefore warrant special effort. The Heater program has already been presented to you, and the Radio program is too important to be included in the presentation of the general program. You will find details on another page.

Heaters

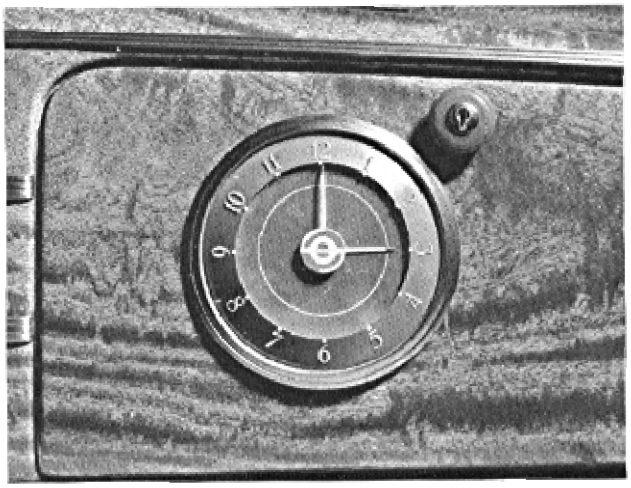
In 1937 the U. S. as a whole averaged one heater to every 2.4 cars. This includes the sunny south where very few heaters are needed or sold, although the percentage of sales increase has been greater in the warmer sections during the past year. You can easily see that the next step for increased volume must be 100% installation.

Radiator Grille Covers

Radiator Grille Covers have been designed to increase the efficieney of hot water heaters, and to protect the car cooling system in extreme cold weather. These are available for all cars, made to harmonize on the various models.

Electric Clocks

The next item in dollar volume for 1938 should be electric clocks. The instrument panels of the 1938 models are so designed that the clock mounted in the locker box door balances the appearance and completes a harmonious ensemble. The clock is a perfect



match for the speedometer which is installed in the left hand door directly in front of the driver. Some Distributors have already expressed themselves as favoring 100% installation and it will pay you to keep clocks in mind as one of your biggest volume accessories for 1938. Quotas are being established on the basis of car allotments and will be watched closely for performance. Let's "Go to Town" on this one.

Seat Covers

Seat Covers showed a large percentage of increase in 1937 and the volume should continue to grow during the coming season. One attractive pattern and one style of cover will be offered during 1938. pattern which should meet all ranges of customer preference has been selected to harmonize with the interior trim of 1938 cars. Those of you who have seen the two tone upholstery in the new Hudsons will appreciate the ready made market for Seat Covers. More and more Seat Covers are becoming a year round item. Careful buyers are quick to realize the increased trade-in value of a car whose upholstery has been protected with covers. Distributors and Dealers are

getting better prices for Used Cars by the installation of Seat Covers to give the car a dressing up.

License Plate Frames

Most Dealers will install Customers' license plates on new cars without charge as part of the new car delivery service. Why not install a set of license plate frames along with the plates and defray the expense with the profit from the frames. This practice is being used by some Dealers on all deliveries.

Master Guards

In order to conform to the bumper shape and styling on all cars, two different Master or Radiator Grille Guards are included in the 1938 line, one to fit the Hudson, the other the Terraplane. Repairs to the new Radiator Grilles, in case of damage, will be costly, and a master Guard is mighty cheap insurance against such damage. A hinged type for the rear bumper is being designed and will be ready for you very soon.

Fog Lights

During the past few months Fog Lights have captured public interest both from the standpoint of appearance, and safety in driving under adverse weather conditions. This interest on the part of the motoring public brought the subject to the attention of State Officials interested in highway safety. As a result, we now have very definite specifications set up by a number of Eastern States and only such lights as meet these specifications are approved for sale and use in those States.

The principal points on which the specifications are based are candle power and the effectiveness of the lens in penetrating fog. You will be pleased to know that our fog lights complied with these specifications, while many of the less expensive lights were rejected. To make our lamps more closely match the headlamps and create a more harmonious appearance, the entire lamp has been redesigned so that we now have a lamp strictly individual and one which is not available through jobbers or chain stores.

The rules of one State, as now in effect, insist on the installation of fog lamps in pairs and we have accordingly changed our method of packing and shipping lights to agree. The wiring is complete for all Hudson Terraplane cars which will greatly simplify your installation problem. Every effort should be made to sell fog lamps in pairs as their effectiveness is considerably reduced, when they are used with other lights.

Spot Lights

The Spot Light has been redesigned in harmony with the fog lights. Every fog light purchaser is a potential customer for a spot light and should be offered a deal on a pair of fog lights and a spot light in combination.

Rear View Mirror

We will continue to handle the oval Rear View Mirror of the same type as in the past. This is another of those items that some Dealers are merchandising very effectively while others are not securing any volume at all. It is so necessary to driving safety to have an unobstructed rear view that it seems to us every new car should have the oval Rear View Mirror installed.

The outside rear view mirror mounted on the front pillar post or hinge is another safety item which has met with the approval of a large number of owners.

Defrosting and Ventilating Fans

Although the volume of business on fans was somewhat reduced last year because of our built-in defrosters, there seems to be sufficient demand to warrant our carrying an inventory. A new type bracket has been designed and will be furnished with all fans shipped after this date. This new bracket permits the mounting of the fan just above the instrument panel in the exact center of the windshield and allows the air stream to be directed at either windshield or towards the occupants of the car. This will be an excellent sales feature and should greatly assist you in increasing your volume.

Vanity Mirror

The present style vanity mirror has been a real hot number in the accessory line and will be continued without change. This is an item that can best be merchandised by our Service Salesmen when an automobile driven by a lady comes in for service.

Glare Shield

At the same time it is a simple matter to slip a glare shield onto the visor and make a sale of that item. Glare shields are a practical necessity when driving against the bright sun or oncoming headlights.

Automatic Cigar Lighter

Early last spring we introduced the Automatic Cigar Lighter. From the number of repeat orders on this accessory it is evident that the public liked this new feature. Again this year Automatic Cigar Lighters will be packed in the attractive display carton for better merchandising appeal.

Fender Lamp

For 1938 an entirely new fender lamp has been designed to harmonize exactly with the Hudson tail lamp and our volume of business should increase tremendously as a result.

Fender Guides, Gas Tank Locking Caps, and Tail Pipe Extensions have all shown a steady business and will be carried during 1938. Each of these items are worth while accessories and find a ready acceptance with the motoring public.

Accessory Groups

Those Distributors and Dealers who have operated with the Accessory Group Plan have been the most successful in securing a large volume from both dollar and item angles. Even with the comprehensive list adopted by Hudson, the retail salesmen can become confused as to just what items he should pick out to sell. With groups of varying dollar value, he will quickly get into the habit of using one or the other of the defined group. Then, if there are other individual items which have interested the buyer, these can be taken out of stock and added

to the group sale. See that your retail salesmen are familiar with the various groups offered and do not let the oportunity of selling one or another of these groups pass when closing a retail car sale.

Package Goods

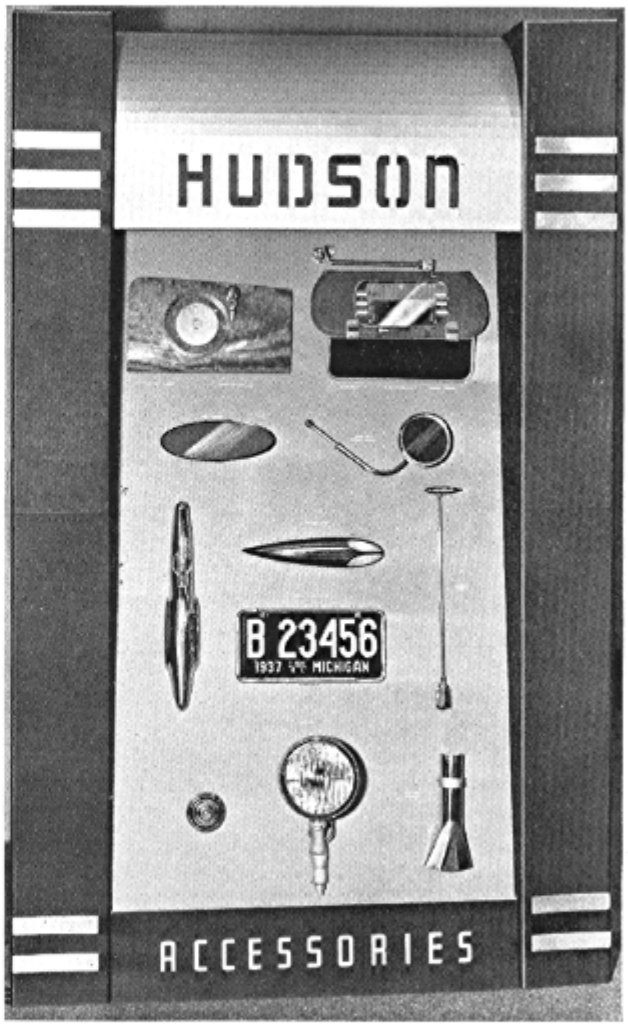
During the past three years we have built up a line of car waxes and polishes in addition to special lubricants which we consider to be the best obtainable on the market. During that time, our laboratories inspected and tested over 200 different kinds of polish, a great many of which proved actually harmful to lacquered finishes. Frankly you cannot afford to take chances on products offered to you by the jobbers' salesmen when you have a line of merchandise which has been thoroughly tested by our Engineering Department. You are entirely familiar with this particular group of products, but I want to call your attention especially to Hudsonite Clutch Compound. During the past year nearly 125,000 additional Hudson and Terraplane cars were put into operation and still our sales on Clutch Compound did not increase proportionally. There is no question in our minds, but what Dealers as a whole are using Hudsonite in their own service operations and we must assume that some Dealers are using substitute fluid. You have all seen enough instances of clutch failure where substitutes have been used to appreciate that there is only *one Hudsonite*. In the interest of owner satisfaction as well as an increased volume of business, use Hudsonite exclusively for servicing Hudson built clutches.

A well organized program regularly followed will enable you to get all available profit from the accessory business. Regular meetings of all men in the parts and service department is vitally necessary to the success of your program. This meeting should be attended by service salesmen, mechanics, and parts men and in addition to the discussion of the general matters of interest to the department the subject of accessories should have definite attention. These meetings must be carefully planned in advance and the programs varied to hold the interest of your men. At least once a month retail salesmen should be included and the program shaped around accessory selling as part of the new car sale. Your service salesmen and parts counter men should be especially trained to talk accessories at every customer contact. The various methods of approach can be used effectively and by concentrating on a certain item during a given week, a sales talk can be built up around each item in the entire line. Have your accessory display so located that both retail and service salesmen can show prospective customers the actual item in which they indicate interest.

In making up your seasonal specials for shop work mention should be made of seasonal accessories as it is during the season for which an accessory is particularly adapted that you will secure your greatest volume. You should make it your job to see that accessories are displayed on cars on the showroom floor at all times. Whenever a completely equipped car is sold make sure that another one is immediately dressed up to take its place. It is vitally necessary to watch every angle of your program. Only by getting every member of your organization accessory minded can you hope to gain the fullest measure of success.

We are sincere in our belief that we are presenting you for 1938 an excellent line of accessories with exceptional profit possibilities, tied in with a sound merchandising program and effective promotional material. From this point on the job is largely in your capable hands.

New Junior Accessory Board is most Attractive



In addition to the Hudson Approved Master Accessory Board a Junior board, pictured above, will soon be available. This board is about half the width of the Master board and stands over six feet high. The display panel on the new smaller board reclines back towards the top, so that indirect lighting from under the hood at the top gives effective lighting all the way down the panel. The pillars and hood are finished in black and silver while the accessories are set off by a jade green background. For details on how to secure this board at no extra charge, see article on page 25.

Proper Conditioning Of Cars For Winter Gives Car Owners

1. ADDED ECONOMY
2. ADDED SAFETY
3. ADDED COMFORT
4. TOP PERFORMANCE

And Brings Extra Dollars To Your Service Department

Hudson Dealers and Service Men located in parts of the country which experience cold weather during the winter months, should be planning now the most effective means for getting winter conditioning and accessory business.

How Are You Going To Increase Your Service Business This Fall And Winter?

There will probably be more soliciting of automobile users by Service Station operators than ever before. Your present customers will be solicited by your competitors and so will your prospects. Therefore, to maintain your regular service customers and increase your quota of new customers, you too will have to organize a sound program of solicitation and owner contact. So let's not wait any longer, let's go after this business right now. Make calls (phone or personal) on all Hudson and Terraplane owners in your neighborhood. Set up a quota of how many new contacts you will make each day during October. Sell lubrication contracts, sell owners on the merits of your service and show them how certain necessary services will benefit their winter driving.

SELL ECONOMY

You can show many customers how they will save money by having certain services done now. There is probably no more effective means of selling than this. If a customer drives into the shop with a dented fender, don't just ask him if he wants it bumped out and refinished. Show the customer how this work will save further deterioration of the fender which would mean a more costly repair job later or even the necessity of a new fender. Such services as motor tune up, car waxing, proper lubrication, assure economy, and are all important to efficient and maximum car performance during the winter months.

SELL SAFETY

Sell Brake Adjustments—maximum stopping ability assures safety in winter driving. Wheel alignment increases stability on slippery pavements. Good tires for better traction and preventing skidding. Sell windshield wiper blades, defrosters, electric fans, and fog lights for safety.

SELL COMFORT

Shock Absorber Service is often neglected—sell your owners a refill for comfort's sake. Many heaters have been disconnected during the summer months and will have to be connected up again. Sell new heaters at every opportunity.

SELL PERFORMANCE

Motor Tune Up will insure easy starting and maximum performance, Radiator flushing, anti-freeze, radiator grille cover, and electrical system check are all most important to give satisfaction to car owners during cold weather.

No opportunity should be overlooked to sell needed services or accessories as customers bring their cars into your shop. Keep those accessories which are most suitable to winter driving well displayed.

Start your program today—Don't wait until November—get a head start on your competitors so that you can get a greater share of this profitable business.