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41

EXCELLENT SERVICE ADVERTISING

The Improved Ford Motor Cars

NEW CAR

WITH CAR FUNCTION

EXAMINE

FREE LAMPS

FREE LAMPS

COUPE

MIDDLESEX MOTORS LIMITED

CUSTOMERS WELCOME

LINCOLN MOTOR CARS

KINABOIT

USED Ford CARS

The Truth About the Used Car Business

What Ford Interests Mean to You

\$200,000

\$100

\$15,000

WARRANTY

SEE NEXT PAGE

Excellent Service Advertising

Middlesex Motors Limited, London, Ontario, have devised an effective method of advertising their service, (see illustration on front cover).

They have taken advantage of the opportunity of placing an eight-page folder in our "Improved Ford Motor Car" booklet. In this way, they have brought before their prospects their splendid facilities for giving service, at the same time that the improved models were shown.

This idea is a good one; the advertising value is strong and forceful and can be used by many of our Dealers to advantage.

Smaller Dealers do not necessarily need as an elaborate folder, but the general idea can be carried out. The eight-page folder is the same size as the "Improved Ford Motor Car" booklet and is rivetted into the center, thereby becoming a part and making the whole appear to the prospect as one book.

Service at a Profit

In order for a dealer to be successful, he must operate every department of his business on a profitable basis.

We are periodically confronted with a dealer who insists that it is an impossibility to operate his Service Department at a profit. At the same time, he is unable to explain the reasons for this condition existing.

During the past few years, most of our dealers have adopted the Flat Rate system on repair work. This move is highly recommended by us, but, in order to make it successful you must place a check on the cost of each operation.

The main reasons that Flat Rates have been universally adapted are:

- (1) A Standard price is established to the owner on every repair operation, regardless of the length of time required to perform the work.
- (2) Prices for labor operations can be quoted before work is commenced, thereby eliminating possibility of complaints.
- (3) To allow the dealer to increase his profit without increasing charge to customer.

The last mentioned is the point that must be considered by every dealer. There are many ways in which a dealer can reduce his cost on repair operations.

In Fig. 65 is shown a simple form that can be used by all dealers that are operating on Flat Rate charges and that are paying mechanics on hourly basis.

FORDVILLE MOTORS					
RECORD OF REPAIR ORDERS					
DATE	WORK PERFORMED	TOTAL LABOR CHARGE	APPROX. HOURS	AVG. RATE PER HOUR	REPAIR SERVICE
1074	Overhaul Rear Axle	18.00	6.00	3.00	
1068	Front Axle	8.00	2.00	4.00	
1071	Generator	4.25	1.00	4.25	
1080	Repair Carburetor	4.25	1.00	4.25	
1075	Front Valve	4.25	1.00	4.25	
1070	Repair Cyl Head Gasket	1.50	1.25	1.20	
1084	Overhaul Motor & Pump	20.00	20.00	1.00	
1064	Rear Axle	20.00	6.50	3.08	
1077	Carburetor	2.00	1.50	1.33	
1072	Replace Front Spring	4.25	1.25	3.40	
1060	Adjust Drive Band	4.25	1.00	4.25	
1062	Overhaul Generator	4.25	3.00	1.42	
1082	Motor	22.50	20.00	1.13	
1085	Repair Generator	22.50	20.00	1.13	
1081	Replace Front Spring	4.25	1.25	3.40	
- Totals -		201.85	102.75	1.97	

Fig. 65

As soon as each repair order is completed the necessary information is copied to this form. At any given time preferably at the end of each day, the dealer or his Service Manager can see at a glance exactly the results of the repair shop. In dividing the Labor Charge on each job by the number of hours taken, you arrive at the average charge per hour made on the different operations. When you find certain classes of work averaging less than your usual charge it is necessary to check that department of your shop with a view of reducing the time required or if this is impossible it is obviously necessary to increase your Flat charge accordingly. If, however, your average is found a considerable amount in excess of your usual charge, a reduction should be made on your established charge.

To maintain this record will cost but a few cents a day and it gives you up-to-date information at all times on the cost of performing labor operations. Without a similar record, it is practically impossible to obtain the full benefit of Flat Rates.

These forms, with your name imprinted may be obtained by ordering direct from The Curtis Company, Windsor, Ontario, as outlined in Service Bulletin of March 1924.

Front Wheel Alignment

Front Wheel Alignment not only adds to the life of the front tires, but has an important bearing on the steering of the car and the ease with which it is handled.

This important operation is frequently neglected by repairmen, with the result that owners in a good many cases are not getting nearly the mileage from their tires they should.

Front wheels have a tendency to toe out when running and it is due to this that we toe them in. The amount of toe-in of the Ford front wheels is from $\frac{3}{16}$ " to $\frac{1}{4}$ ". When toed in this amount, the wheels will pull straight when travelling along the road.

We have experimented with numerous devices for checking front axle alignment and can recommend the Aligner shown in Fig. 66. Its advantages warrant its being included in the equipment of every Dealer's shop. It is not only a time saver, but it insures a more accurate check on the alignment of the wheels than it is possible to secure with the ordinary means generally used.

How an Aligner is Used

First see that both tires are inflated evenly. Place the car on the floor or on the ground where it is fairly level and straighten out the wheels. Then compress the Aligner by taking hold of each end just back of the Cross Bars and pull inward.

This operation allows the Bars to slide in their Guides. When the Aligner is in place, the spring naturally pulls the abutment bars

outward against the wheels. Place the bars firmly on the felloes and against the steel rim of the wheels. Be sure they do not rest on any of the spokes or bolt heads.

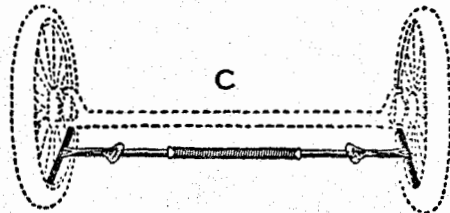


Fig. 67

When the abutment bars cannot be placed on the felloes, they should be placed on the straight edge of the rim, without resting on the tire.

Figures 67 and 68 show positions of the Aligner for toe-in and camber. The letter "C"

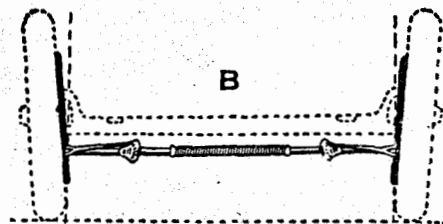
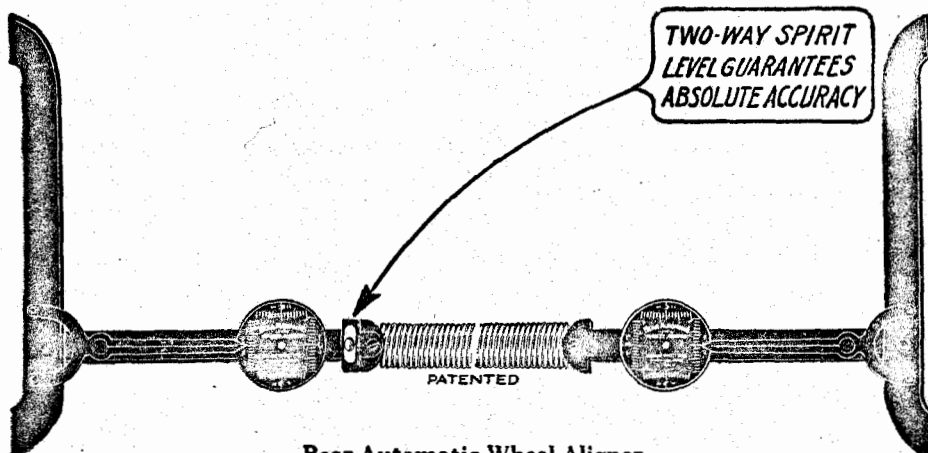


Fig. 68

on the dial represents the center, or position in which the abutment bars are parallel with each other. Each line on the dial represents $\frac{1}{4}$ " on the wheel.

An Automatic Wheel Aligner



Bear Automatic Wheel Aligner

Fig. 66

For toe-in, place the Aligner between the wheels, as shown at "C" Fig 67. Have ends of abutment bars same distance from floor, or as nearly parallel with the floor as possible. This can be determined by the small spirit level on the Aligner.

Position the wheels so that the one arrow points to the centre, or to "C," on one dial—the other dial then will register the toe in for both wheels.

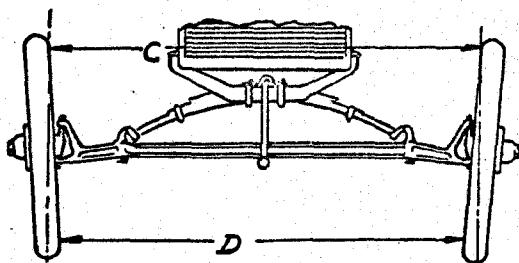


Fig. 69

For instance, if you desire $\frac{1}{4}$ " toe-in, this means that the two front wheels should be $\frac{1}{4}$ " closer together at the front than at the rear, see Fig. 70. It is easier to get the reading on one dial instead of both, as, if you take the reading on both dials, they would both be set at $\frac{1}{8}$ ".

Care should be taken to see that the abutment bars are not tilted up or down, as this will change the reading on the dial every time the position on the Aligner is changed.

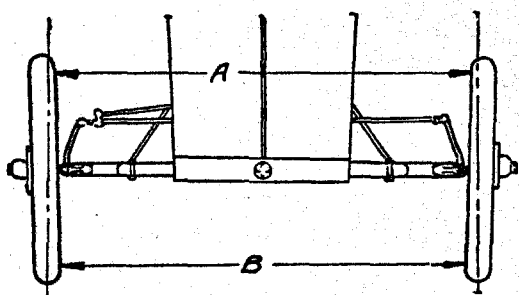


Fig. 70

The arrow for toe-in should point towards the rear of the car. If arrow points towards the operator from the centre, this shows that the wheels are toed out and must be corrected.

For camber, place abutment bars between wheels, as shown at "B," Fig. 68. Have abutment bars vertical, or at right angles with the floor. This position can be determined by the small spirit level, mentioned before.

Each dial will register the position of each wheel. The amount of camber is shown on the dial, as indicated by the arrow above the

centre line. Fig. 69 shows how the camber is obtained.

How to find Wobbly or Sprung Wheel

Place instrument in position for camber; then take measurement; then move car forward one-third of a turn of the wheel; take measurement; move car forward another one-third of a turn of the wheel; take measurement.

If the aligner has been correctly placed in each case, the wheel is perfectly straight and true. All three measurements should be the same—if they vary, that indicates a sprung wheel.

Alignment of Rear Wheel

The alignment of rear wheel is also essential. The rear wheels should register on centre, or zero, on both dials in both positions. It is very essential in wheel alignment to have rear wheels tracking with front wheels and at the same time in line with the chassis.

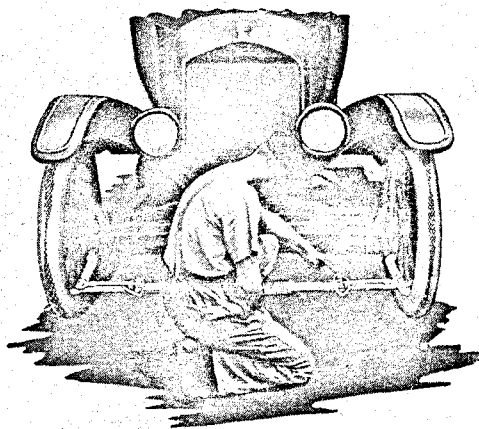


Fig. 71

In using the Aligner on either the front or rear wheels, if it is found that they are very much out of alignment, it is advisable to take readings in two other positions, as described, to be sure that the wheels are straight and true before making adjustment or repairs.

How to find a Sprung Rear End or Sprung Chassis

Place the Aligner in position for toe in; then split the toe in so that each dial shows the same. In this position, both wheels will be aligned with the frame.

Now measure the distance from centre of front wheel to centre of rear wheel. This distance should be exactly the same on both sides of the car, providing that the axle or radius rods are not sprung or bent.

New Design Fan Mounting

The Fan on all present models is mounted on an extension of the cylinder head outlet connection, Fig. 72. When adjusting Fans, it is important that the nut "A" on end of Fan Shaft be left tight. Loosen adjusting screw nut "B" on adjusting screw just enough to enable the adjusting screw to be turned. Adjust screw "C" until proper tension has been obtained.

If the belt will not ride properly on the pulley, it is because the adjusting cam "D" is not riding squarely in the holder "E." To remedy this, loosen adjusting screw nut just enough so that the screw may be turned.

Turn adjusting screw until all tension is taken from the belt. This allows axis of cam to come to its proper position at right angles of axis on adjusting screw. With adjusting screw nut still tight, adjust screw until proper belt tension is obtained. Tighten adjusting screw; lock nut.

Brush Holder Assembly

We have had a number of cases brought to our attention where the spring slot in the Brush Holder Assembly No. 5132-C is broken and have quite recently discovered that the cause for some of these breakages lies in the fact that mechanics pry open the spring slot with a screw driver to insert the spring, consequently breaking half of the small post.

This practice will invariably result in breakage of this part. Kindly bear this in mind when repairing Generators.

Window Regulators

On page 39 of October, 1925 Service Bulletin, we illustrated No. 17200-E and No. 17201-E Window Regulators. These types of Regulators were used on Tudors with steel Doors.

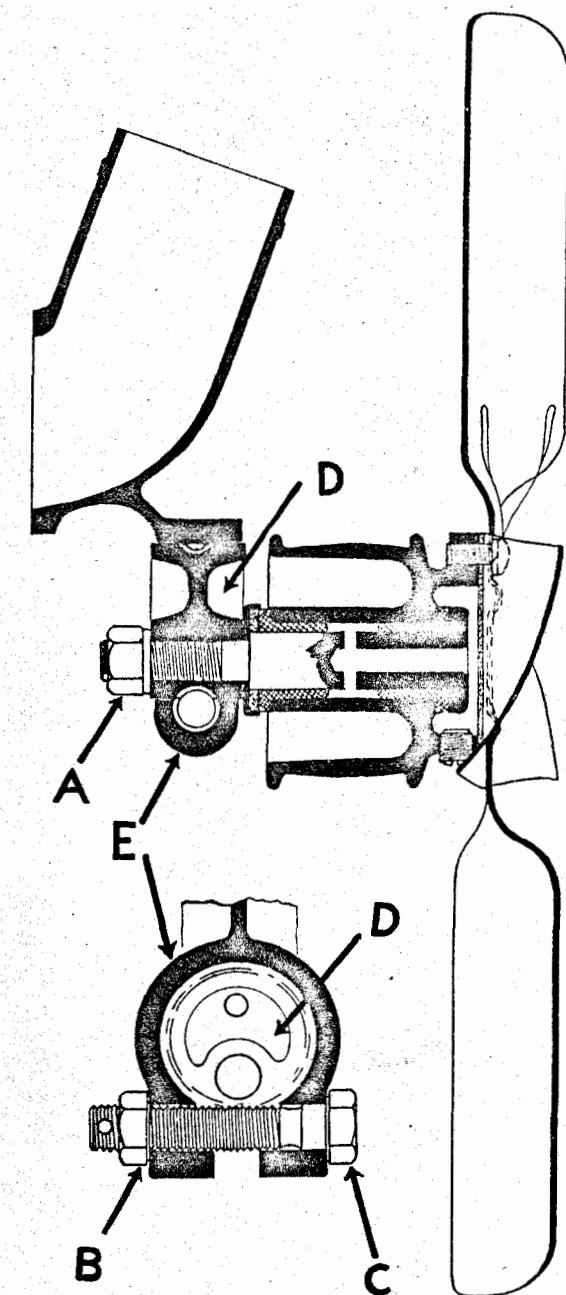


Fig. 72

We also illustrated No. 17200-F and No. 17201-F—these Regulators were used on Coupes and Fordors with steel Doors.

We neglected to give this information with the illustration.

Radius Valve Seat Reamer

The Radius Valve Seat Reamer as used by us in production has many advantages, when properly used, as it gives a hair line contact with the valve face.

If the seats are burned out of true, we advise the use of the 20° Reamer before finishing with the Radius Seat Reamer.

It is very important that the Reamer Pilot be a snug fit in the Valve Guide so that the seat will be reamed true. Oversize pilots can be secured to insure this.

This type of Reamer is now being manufactured by Arthur Jobborn, Hamilton, Ontario, and fits the standard Jobborn Reamer Pilots—see Figure 73.

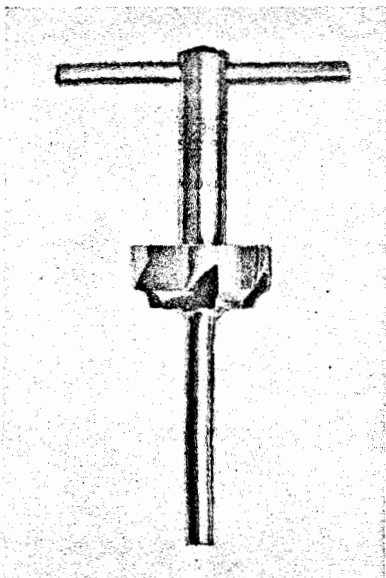


Fig. 73

Installing Transmission Bands

To Remove Left Control Cars—Remove Inspection Cover; pack rags under the ends of the Brake and Reverse Pedal Shafts—these are to prevent nuts and washers dropping down into Transmission Case when they are removed. Remove Adjusting Nuts and Lock Washers from Reverse and Brake Shafts. Remove Low Speed Adjusting Screw and the three Springs. Slide Reverse and Brake Pedals out as far as possible. Slide bands around so that detachable ear can be removed. Place Screw Driver in hole in end of band in front of the detachable ear; pry backwards. This operation unlocks ear from band, after which it can be easily removed. Pull Bands out, taking care not to bend them out of shape when removing; install new Linings.

To Install Left Hand Control—Install wide or Brake Band in reverse operation to removing it. Replace detachable ear and pack rags under the end of shaft; replace Spring, Lock Washer and Nut. If nut is only turned on a few threads, pedal may be pulled out far enough to clear support and turn downwards out of the way. Install slow speed band over reverse drum. Replace ear; slide assembly into place on drum. Replace reverse band and install ear. Pack rags under end of shaft and install spring, Lock washer and nut. Install spring and adjusting screw on low speed pedal. Remove all rags and pull brake pedal up in position and adjust all bands.

To Remove Right Hand Control—Remove Inspection Cover; pack rags under the end of low speed shaft under lock washer and nut. Remove nut, lock washer and spring; slide pedal out as far as possible. Remove the two adjusting screws and springs from brake and reverse pedals. Loosen detachable ear on low speed band by placing a screw driver in the hole in the end of the bands in front of ear, then pry back. This unlocks the ear from the band. Remove ear; remove low speed band; slide reverse band over slow speed drum; remove ear and band; slide brake band on centre drum, removing it in similar manner.

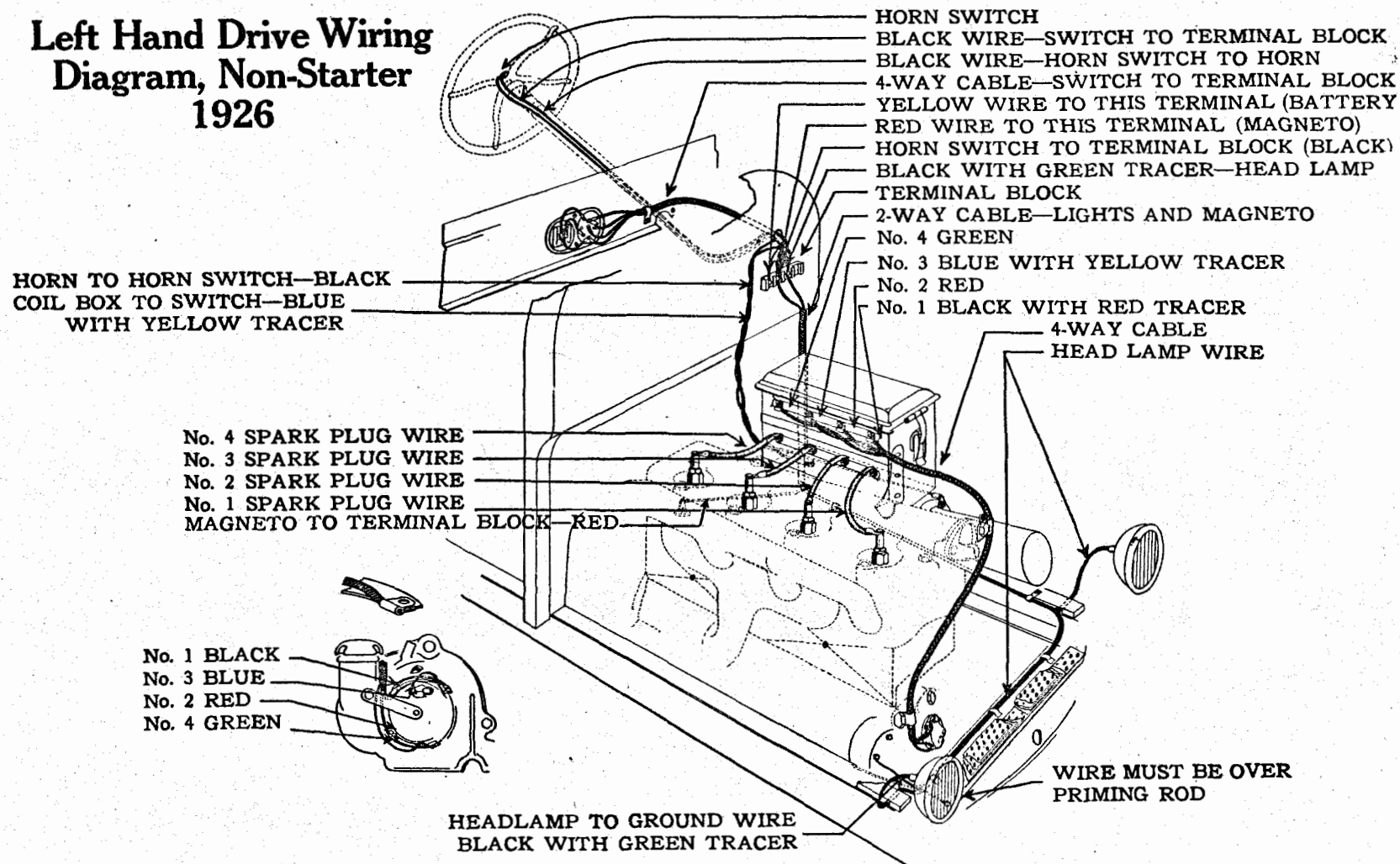
To Install Right Hand Control—Insert wide or brake band in reverse operation to removing. Install ear and slide band in its correct position. Shove brake pedal in past support and turn down backwards. Install reverse band in a similar manner. Replace ear and position over reverse drum.

To install slow speed drum, take a piece of belt lace about three feet long and cut a one-half inch eye in one end; insert opposite end in small hole between brake and low speed drum. Have motor cranked until end comes around. Insert eye end of lace in hole in the end of band from under side and place eye over detachable ear lug; bring end of band up from under crankcase between brake and low speed pedals; work band around into place, lightly pulling on the end of the lace at the same time. The purpose of the leather lace is to guide the end of the band around and to pull it up far enough so that ear may be installed. Pack rags under end of slow speed shaft and install spring, lock washer and nut. Install spring and adjusting screw on reverse and brake bands.

Remove all rags and adjust bands.

NOTE—A piece of wire with a hook on it will be found to help considerably in pulling free ends of the band around.

Left Hand Drive Wiring Diagram, Non-Starter 1926



The Fordson

Oil Retainer for Drive Pulley

To eliminate the possibility of oil leaks at the outer end of the belt pulley assembly, a new design retainer and drive pulley packing, part No. F-3125 is now being used at this point. See Fig. 74. This retainer and packing replaces the felt and retainer formerly used.

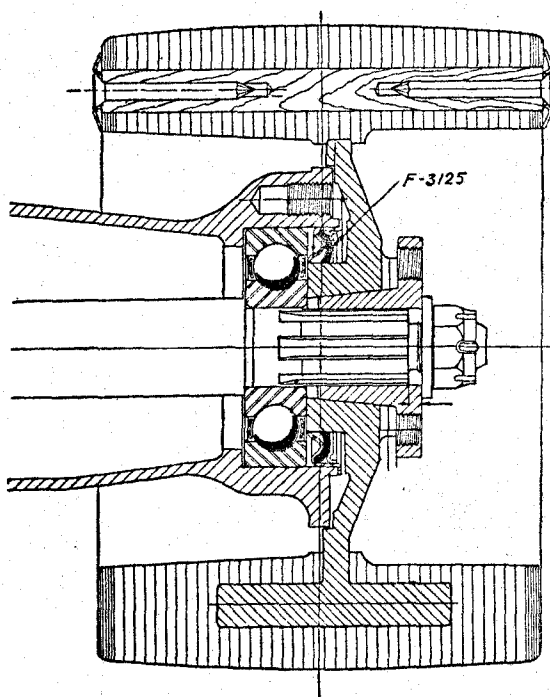


Fig. 74

The new packing material is made from the best quality of close grained chrome tanned leather and was selected from several different kinds of packings after numerous tests had been made. The new packing can be installed in both old and new type pulleys.

Sediment Bulb

The new bronze sediment bulb and combined two-way fuel is of an exceptionally efficient design. The material being bronze eliminates the trouble experienced from water in the fuel, causing rust to clog the screen.

The fuel strainer screen is removable and easily replaced without disconnecting the fuel line. Also, a straight passage into the tank allows the use of a wire to clean out the passage in case any foreign matter should get

into the tank and stop the flow of fuel. A drain valve facilitates removing any dirt and water which the sediment bulb collects.

Sand, and Failure to Change Oil Affect Transmission Gears

Occasionally a report is received that the gears and bearings in a Fordson transmission have worn prematurely.

When instances of this kind are brought to our attention, we obtain the parts and have them returned to our laboratory for inspection and analysis.

In practically every instance, the bearings and gears which were returned, were found to have the proper physical qualities, although plainly showing the effects of wear. The cause of this condition was found in deposits which were scraped from the parts—these deposits being composed principally of sand.

In interviewing the owners of the tractors with reference to how often they changed the oil in the transmission, it was found that very little attention had been given to this important detail. The only definite report we received was in one case in which the owner stated that he replaced the transmission oil every 300 hours. This might be satisfactory for industrial work, but for agricultural purposes the oil should be replaced every 100 hours. There is no doubt but that the sand which entered these tractors and which was allowed to remain there by the owners failing to change the oil in the transmission with any degree of frequency, was the cause of the trouble they experienced.

Page 28 of the Manual states that the oil should be replaced every two weeks and the housing flushed with kerosene. (This applies to the transmission only, as the engine should not be flushed with kerosene on account of the numerous pockets in the crankcase which prevents all of the kerosene draining out.)

The filler cap should be wiped clean before taking it off to prevent any possibility of sand falling into the opening, also all oil receptacles should be kept tightly covered and oil measures thoroughly cleaned before using.

By emphasizing the importance of following these suggestions, dealers can render tractor owners a real service.

To Re-charge a Set of Ford Magnets out of Car

With the magnets bound together on the fly-wheel, select a set of arms that attract the blue end of the compass needle (mark the arms with a piece of chalk or pencil). Now place it opposite and in contact with the pole piece on the field coil. (The first to the right of coil outlet is always correct and the south pole.) Opposite polarity is now established and magnets are ready to be re-charged. Fasten the clip of cable to the flywheel and hold small plug to the current outlet of the field coil and turn on the switch the same as when in the car. (Always see that the blue end of the compass points north before locating the pole, as the poles of the compass sometimes change. In case the blue end points south, use the white end to locate pole.) In case the compass becomes deranged, place it on a field coil between two pole pieces, and with the current turned on touch one end of cable to outlet and the other to a pole piece beyond the compass. If it doesn't right itself, reverse this operation.

To Re-charge a Fordson Tractor

The pole is located on the left side of tractor where the body is joined together. You will locate the pole on the opposite side of the seam from the magneto binding post. Close to the seam and one inch below the head of the top bolt, is the correct position. Turn your engine over until the blue end of your compass needle points directly across the tractor (away from operator). Now remove binding post and connect up the same as in the car or truck.

Important

1—If for any reason, the operator should make a mistake and demagnetize the car, do not worry, just find the proper pole and re-charge.

2—Watch the water in the jars; use only distilled water; keep it up to normal, about one half inch from top of jars. The chemical (Squibbs Pure Sodium Phosphate) is held in solution and does not have to be removed very often. If used a great deal, it would be wise to change the solution perhaps every four months.

In case a magneto is grounded badly, it is a case of taking it out of the car, but before doing so, we would suggest the killing of the magneto. In doing so, it can't make matters worse and if the ground is not lodged in some corner it will fall off when the engine is turned

over in the oil. In three cases out of four it will. Now find the pole again and re-charge, as in any other case.

In case of killing the magnet so dead that it will not attract a compass, turn on machine with contacts made and at the same time, turn the crank of engine very slowly until you hear the usual noise, there will be magnetism enough in the magnets to attract the compass.

Read these instructions over again carefully, and follow them closely and the results will be completely satisfactory.

To Re-charge, using Storage Batteries

Hook up five or six storage batteries in series. These do not need to be new batteries, as old batteries not fit for car service, yet possessing some energy may be used. Prepare motor as above explained, to charge with the Wonder Charger. Connect negative terminals of battery to magneto terminal and ground positive on engine. Do not make contact for more than one second at a time, or there will be danger of melting the solder on the coil terminals. Five or six applications should be sufficient. If engine runs irregularly or stops at low speed, this will be caused by either weak magnets or improperly adjusted coil units. If magneto is weak, charge as above described. If field coils are defective, proceed as follows:

Repairing Field Coils

Field coils may not function properly, due to one or more of the following reasons:—improper adjustment; burned out points; shorted at condenser, or open circuit.

Improper adjustment of coil units accounts perhaps for more irregularity of engine operation than any other cause. If coil uses too high amperage, the motor will be hard to start and will not properly operate at low speed. If coils are unevenly set, the motor cannot operate evenly. This adjustment can only be made satisfactorily on a coil tester. This tester is equipped with Ford magneto and ammeter for giving the correct reading. In making the test, first see that the points are in good condition and adjust to between .025 and .030 of an inch apart. Place coil in tester and turn handle at a moderate speed. When coils are properly adjusted, the ammeter will show a reading of $1 \frac{3}{10}$ amperes. If the coils show a higher reading, it is using too many amperes and may be adjusted by placing a fairly heavy screw driver under the