

AUTOMOTIVE SECTION

Here's the Truth About Battery Dope

There are a lot of places offering to give your battery a fresh start in life by putting "dope" in it.

As a matter of fact there isn't any kind of dope made that will take the place of re-charging and proper care.

If your battery does really need acid it is far cheaper and safer to come to Battery Headquarters to have it put in. Whether your battery is a Willard or not, bring it to us—if it can be done at a saving to you, we'll set it on its feet in the quickest possible time.

The Auto Shop

MARK E. OWEN
Representing
Willard Storage
Batteries

GREASE USED IN SEVERE WEATHER

Has Distinct Drawbacks as Lubricant for Automobile During Winter Season.

GEARS OPERATE ENTIRELY DRY

When Used in Cups It Has Characteristic of Getting So Hard That Little Lubrication Gets to Bearing Surface.

For several years past no wise motorist has used grease as a lubricant for his transmission, yet many car owners who ought to know better employ this heavier lubricant. Grease cannot flow to the bearing surfaces and in the transmission the gears cut a clean path through the grease when it is cold and run practically unlubricated thereafter. In addition, grease has the unfortunate characteristic of carrying dirt and foreign matter that it may pick up. It has distinct drawbacks as a lubricant in any location, especially in cold weather, when it ought never to be used. In winter the grease is almost certain to become packed against the walls of any case in which it is used, while the gears operate entirely dry.

When grease is used in cups, it has the characteristic of getting hard, so that the cup cannot be turned down properly, and little lubrication gets to the bearing surface for which it is intended.

On practically all cars of any but the most recent vintage grease cups are fitted at various locations. If the owner desires to substitute oil as a lubricant for the grease he has practically to replace the cups every day. In many cases this would be worth the increased labor.

Wick Feed Devices.

On the other hand, it may be possible to replace the grease cups with large oil cups having gradual feed. Some of the newer car models have been designed with central lubricating points and with wick oiling devices which require replenishment only once or twice a season. At any rate the substitution of oil for grease for almost any lubrication service will be a benefit to the parts affected.

Naturally different parts of the mechanism require different lubricants, that is to say, different grades of oil. For the gears, the transmission, differential and rear axle, a heavy oil will be the most satisfactory lubricant. The last year or so has seen a number of extremely ingenious oil cups offered to the motoring public, some of them embodying a gradual feed, achieved by means of constricted passages that allow the oil to leak out only by degrees. Others employ what is known as wick feed, in which the oil is carried up in a wick and fed gradually to the part needing lubrication. For such places as the axle bolts of the springs, the cross shafts of the brakes, the universal joints, in some types this makes a satisfactory arrangement.

Use of Graphite.

It has always been the custom to lubricate universal joints by means of grease or graphite, because there is great difficulty in keeping oil in the joint. This sort moves with great

FORD RETAIL SALES GO OVER MILLION

Show Increase of 105,000 Cars and Trucks Over Previous Year.

Retail sales of Ford cars, trucks and Fordson tractors have again exceeded the million mark for the year 1921, according to a statement given out recently by the Ford Motor Company.

The Ford factory and assembly plant production figures reached a total of 1,050,740 cars, trucks and tractors for the year, with retail sales by dealers approximating 1,093,000, which in the United States alone surpassed the 1920 retail sales record by 104,213 Ford cars and trucks.

The Ford Company says the outlook for 1922 is decidedly optimistic. In fact, concrete evidences already exist in that car and truck sales for December 1921 exceeded December 1920 sales by almost 25 per cent, and Fordson tractor retail sales for the same periods show an increase of over 100 per cent for December 1921, as well as an increase over the total tractor sales for the month of November.

These facts seem to indicate that not only are the farmers buying more freely, but that the general public is becoming more responsive and receptive.

Another point brought out by a comparison of production figures for the past two years show that Ford enclosed cars are gaining in popularity, as 23 per cent of 1921 production were Sedans and Coupes as against a total of 18 per cent for the year previous.

Recent reductions in Ford cars and truck and tractor prices brought them to a new level. The Touring car now sells for \$348, the Runabout for \$319, the Coupe for \$580, the Sedan for \$645, the Chassis for \$285, the Truck for \$430, and the Tractor for \$395, all F. O. B. Detroit.

This fourth price cut in the past sixteen months. During that time the price of the Touring car has been cut from \$375 to \$348, a reduction of 40 per cent. Reductions on some of the other types have been even greater.

The Ford Company believes that this reduction, while not a large one, is especially important at this time as it should go a long way toward stabilizing market conditions.

Ford is giving employment at present to approximately 40,000 men in his main plant at Detroit, the importance of which, emphasized when consideration is given to the fact that nearly 20 per cent of the city's population is directly dependent upon the Ford Motor Company.

rapidity when the mechanism is in operation and needs the most effective lubrication. Recently it has been found possible to lubricate the universals by means of oil fed through wicks. In many cases this change would have to be the result of altered design, which the manufacturer is loath to do because of the cost involved.

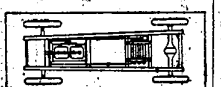
Wick feed has the double advantage of being economical as well as efficient. In operation the oil flows up the wick by capillary attraction, just as it does up a lamp wick, and is discharged upon the surface requiring lubrication. The oil spreads itself all over the whole surface, and really this method is the next best thing to having the parts run in oil. The wick oil cup does not require frequent filling and another advantage of the system is that dirt or foreign matter, even if it is present in the oil, cannot make its way to the bearing surface.

NEW ANTI-FREEZING DEVICE

Apparatus May Be Attached to an Automobile Without Interfering with Running.

The Scientific American is illustrating and describing an anti-freezing device, the invention of P. Wendling of Alberta, Canada, says.

The invention relates to automobiles and other vehicles using water-cooled motors and particularly to anti-freezing devices in connection with



A Top Plan View of Chassis Showing Condensation Tank and Condenser Coil at Rear.

the radiators of such motors, and has for its object the prevention of loss by volatilization of the volatile portions of anti-freezing solutions commonly used. The device is accomplished by an apparatus which is ready attachment to an automobile without interference with the normal operation thereof.

Ford
THE UNIVERSAL CAR

New Prices

Effective January 16, 1922

Chassis	-	\$285
Runabout	-	\$319
Touring Car	-	\$348
Truck	-	\$430
Coupe	-	\$580
Sedan	-	\$645

Fordson Tractor - \$395

F. O. B. DETROIT
(War Tax Extra.)

These are the lowest prices of Ford cars in the history of the Ford Motor Company.

Orders are coming in fast, so place yours promptly to insure early delivery.

Ford Sales & Service

OLIN RUSSELL, Prop.

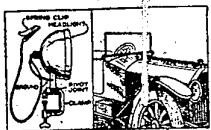
Farmington, Phone 151. Michigan.

DETACHABLE TROUBLE LAMP IS VERY HANDY

Discarded Electric Headlight and Clamp Are Needed.

Light is Quite Convenient When It is Necessary to Make Repairs at Night, as It Can Be Attached in an Instant.

A handy detachable trouble lamp for automobiles can be made from a discarded electric headlight, and a clamp of the type illustrated. The headlight bracket is attached to the clamp by a small bolt that is passed through holes of suitable size in both pieces. This provides a joint which permits the position of the lamp to be changed when the device is fastened to fender, or some other part of a car. If the car has a grounded electric system, one of the wires leading to the light bulb is grounded on the lamp, while the second is fastened with a metal clip for attaching it to a "live" point on the wiring system. With a double wire system, clips should be fastened to the ends of



By Combining an Old Electric Headlight and a Clamp, as Shown Here, a Handy Trouble Lamp for Automobiles Can Be Made.

both wires. The lamp is very convenient when it is necessary to make repairs at night, as it can be attached in an instant wherever it is needed. Popular Mechanics Magazine.

TEST FOR INDUCTION COIL

Simple Way to Find Out if the Secondary Winding is in Good Condition.

To test the secondary winding of an induction coil connect a volt meter and a six-volt storage battery to the secondary terminals. The voltmeter should be connected in series, that is, in the wire leading from battery to coil and attach each terminal of the voltmeter to an end of the wire that is broken. If the current will not flow in the battery the winding is good. If the voltmeter will show a reading of 100, the storage battery voltage.

Announcement!

LEE HARDWARE CO.

WILL OPEN THEIR NEW STORE

Saturday, February 4th.

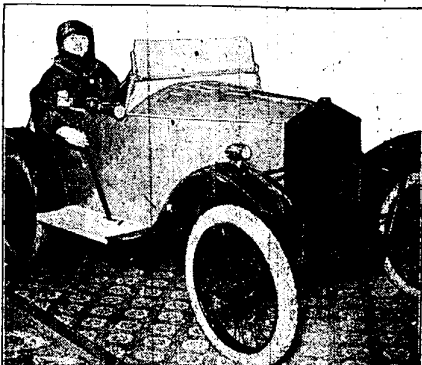
Every lady attending our Opening will be presented with a KEEN CUTTER Paring Knife.

Also—With every Two Dollar Purchase a KEEN CUTTER Safety Razor will be given away.

LEE HARDWARE CO.

Corner Division Street and Grand River Avenue.

CHEAP CAR PROBLEM IS SOLVED



In the opening of the Michigan Motor Show, at London, many new automobiles were among the exhibits. The photograph shows a new 'ladies' runabout, simple to manipulate and the smallest car at the show. This type of car is to prove popular with "Hubby," who pays the bill.

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