

### UNIVERSAL REQUIRES CARE AND ATTENTION

#### Faulty Lubrication Is Often Cause of Trouble.

#### PART IS SADLY NEGLECTED

#### Housing of Joint Should Be Removed Periodically and Packed With Fresh Grease.

Here is one of the hardest working parts of the motor car's mechanism and yet many car owners are unaware of the existence of such a thing as a universal joint. The most universal runs most of the time without lubrication.

In spite of the fact that the universals will continue to function for a long time even when they are consistently neglected, the running of the car will be improved if these parts are maintained as they should be. Most drivers have noticed a tendency on the part of the car to jerk, when it is running slowly in high gear. This may be caused in the main by a badly worn universal joint and the wear is probably due to faulty lubrication.

While, as we have noted, the universal joint is a remarkably efficient bit of mechanism, in fact some makes are claimed to be 95 per cent efficient, it is a fact that lubrication of the part is difficult at best. From the character of its movement, the universal movement is a tendency to throw off the lubricant to the side. This is due to the centrifugal force that is present. Also the lubricant is likely to be squeezed out of between the rubbing surfaces, by reason of the twist or torque on the joint.

In the design of the modern car there is a propeller shaft, which carries the drive to the rear axle. This is fitted with one or two universal joints, so that it may conform with the movements of the rear axle. If the propeller shaft were not so fitted, it would snap off the first time the rear axle bounced up and down with the action of the springs. The universals compensate for this movement of the axle.

It doesn't take any great amount of imagination that a part charged with a function or rather functions, of this sort, should have a certain amount of care and attention. For such continuous movement as here takes place, the only alleviating condition is constant and continuous lubrication. Some of the universals get this kind treatment at the hands of the average owner? They do not.

The original universals consisted simply of a cross-shaped piece, the ends of which acted as bearings for U-shaped parts. With two of these, one moving up and down and the other sideways, universal action was obtained. These primitive universals practically always ran exposed.

After long experiment and improvement, the engineers hit upon the ball type of universal. This type embodies a ball which rests in a socket, thus producing the universal movement. Some of the present designs of universals provide not only for up and down and sideways movement, but for forward and back thrust as well. While this sliding joint idea has found considerable favor, most engineers prefer to provide for this front and back thrust in some other part of the mechanism.

Strange as it may seem, universal joints are not always made of metal. Within the past few years there have been introduced a number of fabric joints, leather joints and combinations of the two. The great advantage of this non-metal type is that it can do without lubrication. Further, noise is practically eliminated from the operation of the part. In fact, the only care the fabric and leather joints require is an inspection once in a while or so and a tightening up of the retaining members as they happen to need it.

The non-metal or flexible universal joint cannot be employed with all constructions of mechanism, its availability depending largely on the angle of operation of the propeller shaft. In construction where the shaft is nearly level, the flexible joint is most desirable, and is warmly advocated by some designers. When the shaft is placed at a great angle, the metal joint is necessary, because it has a greater radius of action. Flexible universals are used mainly where the transmission is located amidships and separate from the clutch and engine. The universal is then placed between clutch and transmission.

Some of these fabric joints are made of a single piece of leather, while others embody a number of leather parts stretched together. The latter is a universal on the market today made up of several layers of a close-woven cotton fabric, placed one on top of the other and each at a different angle, so as to compensate for the pull at any given point and thus give uniform strength.

There is little that the car owner is called upon to do to keep the universal joints in the best possible shape. Once a month or oftener if experience shows it to be necessary, the housing of the joint should be removed. Sometimes the housing is of metal and again it takes the form of a leather boot. At any rate it should be taken off periodically, and after the joint has been flushed out thoroughly with kerosene, it should be repacked with fresh grease, graphite or one of the non-fluid lubricants sold for the purpose. Oil would be the best lubricant for this part, but unfortunately the tendency of the joint to throw the lubricant to the side, makes it necessary to use the non-fluid substance. However, by giving this hard-working part the slight attention it requires, it will be kept working without complaint for very much longer than the nature of its service would seem to promise.

### AUTO RACE DATE CHANGED

#### LIBERTY SWEEPSTAKES WILL BE STAGED MAY 31.

Event of 500 Miles on Indianapolis Speedway Will Be International Contest.

INDIANAPOLIS, Dec. 28.—The Liberty Sweepstakes race for a distance of 500 miles and a cash purse of \$50,000, will be run on the Indianapolis Motor Speedway on Saturday, May 31, instead of May 30, as originally announced. Popular demand by the patrons of the big plant and because of a feeling that Memorial day will have a new meaning to the entire country influenced the Speedway owners, who are spending the winter in Miami, Florida, to make this change. The name "Allied Liberty Sweepstakes" might well be applied to the great auto race scheduled for May 31, 1919, because there will be competitors of both cars and drivers representing England, France, Italy, Belgium and the United States. This is

confirmed by a cablegram received from W. F. Bradley, Paris, France, who is the foreign representative of the Indianapolis Motor Speedway, stating that two Fiat cars and three Sunbeams are available immediately for racing, and negotiations are being started to secure entries of these cars to be piloted by noted drivers, for the 500-mile race.

The Sunbeams are well known to the patrons of the Indianapolis track, having appeared first in the 500-mile race on May 20, 1913, the car being driven by Albert Guyot, he bringing with him an Englishman named Crossman, as a mechanic. Guyot drove the entire 500 miles without relief and finished fourth in this race. The next appearance of the Sunbeams sent by the English factory was in 1914, when two cars were entered and driven by Van Raalle, an Englishman, and Porporato, an Italian. The most noted performance of this team was Porporato's finish in second place in the opening 500-mile race at the Chicago Speedway in June of 1914. Of these drivers Guyot is a Frenchman, he joined his colors at the beginning of the war in 1914 and for quite some time was a driver for General Joffre and later was engaged in special work in connection with the motor service of the French army.

Crossman also went to the front with the English army, but was captured by the Germans in the early months of the fighting and no late information has been received regarding him. Porporato

### HERE'S THE VERSATILE FORD CAR IN A BRAND NEW ROLE.



Fords Often Haul Hay, Fruit, Cabbages and Almost Everything Else Under the Sun. But This Ford Goes 'Em All One Better Hauling Bibles.

RIDDLE, Or., Dec. 28.—(Special.)—Now comes the versatile Ford car in a new role. Everybody has seen Fords employed to carry hay, fruit, cabbages, livestock and all kinds of things, but never before, until the Rev. C. L. Hall came on the scene had anyone here seen a Ford used to carry Bibles. Mr. Hall, who is a colporteur for the American Baptist Publication Society, and former pastor of the First Baptist Church at Medford, Or., toured Oregon to bring Bibles to the small communities. He has traveled hundreds of miles and has placed many a Bible en route where it will do the most good. While crossing the state line between California and Oregon shortly before he reached Riddle, a skeptical official insisted on inspecting Mr. Hall's Bibles to make sure they were Bibles and not books.

is an officer in the Italian army and has served his country with distinction.

After the announcement of the 500-mile race for May 30, 1917, the Fiat factory, an engineer in the Fiat factory, and an Italian driver named Fagan, who participated in a number of European events with marked success. On account of difficulties in shipping from Italian ports because of the submarine menace, the Fiat officials were sending their race cars by trucks to Bordeaux and were half way between Turin and Bordeaux when Fagan was notified by cable of the cancellation of the Indianapolis event on account of America's entry into the hostilities. The cars were immediately shipped to Bordeaux and the Fiat officials canceled and it is believed that these cars have been held in the factory since that date and are the ones that are available at this time.

### VOWS PROVE SHORT-LIVED

#### WALT MASON ADVISES ALL TO CUT OUT WASTE.

#### Writer Declares New Year's Resolutions Last Just Long Enough to Break.

Walt Mason has written the following on "The New Year" for the Haynes Automobile Company:

On New Year's day we vow our vows, and put new halos on our brows. We swear off habits punk and vain, and say we'll all be safe and sane, and set examples shining bright; we'll be the smoothest things in sight. We'll wear our pipes upon the lawn, and break the good old demijohn, and give our corkscrews to the poor; we'll be a lot of angels, sure. We'll all be sweet and saintly men; we'll never rip or cuss again, or tell a falsehood vile to see, or chop down father's cherry tree. We'll be such pure and lovely things you'll hear the rattle of our wings. A lot of vows we reubens make will last just long enough to break. We try our natures to renew, and bite off more than we can chew.

But there are many ways in which a reformation pays. For instance, if we cut out waste, we'll find that scheme in splendid taste. The most of us are driving cars, and will be till we reach the stars. We save when we are buying meat, when buying caskets for our wives, when buying clothes and butcher knives. We watch the seals with anxious eyes, we struggle to economize.

And then we take our wasteful cars, and let down all the splendid bars. We burn up gasoline as though we dipped it from the river's flow. We use up oil, whose price is high, as though it rained down from the sky. We grind up tires so blooming fast we often pause and cry, "Dod-gast!" The coin it costs to go a verst would buy the children weinert.

About a million men or less will buy new cars this year. I guess. Then why not make a New Year pledge from which you will not need a hedge? Why not resolve to get a car that will not give your purse a jar? Why not exert your store of brains, and buy yourself nice, new Haynes? Then you can take your wife and aunt, and o'er the country gallivant, and have the blindest of times—nor will your gas bill be a crime. Extravagance gives wise men pains; be thrifty, then, and own a Haynes.

### ELECTRIC CONCERNS ORGANIZE

#### National Association Formed, With Chicago Man at Head.

"To promote and improve service on the electrical equipment of automotive vehicles in the United States" the National Automotive Electric Service association was formed last week at the Chicago Automobile Club at a meeting of the executives of various concerns which maintain electric service stations. Membership is to be by firms rather than by individuals, each firm to have two representatives with one vote for each representative. Arthur Jones, of the Arthur Jones Electric Company, Chicago, was elected president of the organization.

### PIERCE-ARROW FIRM HERE CHANGES NAME

#### Charles C. Fagan Company, Inc., Now Distributors.

#### BIG TERRITORY OBTAINED

#### Four-Passenger Touring Car and Four-Passenger Roadster, Just In, Are Smart Models.

Reorganization of the Portland firm distributing Pierce-Arrow automobiles and trucks has resulted in a change in name from the Pierce-Arrow Pacific Sales Company, Inc., to the Chas. C.

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# CHANDLER

GREATEST OF ALL SIXES

## Chandler is Back to \$1795

### THAT'S the word on the street today. It's good news to the car-using public.

### With this \$300 Reduction

Chandler leads in price, now as always, because it is a basic policy of the Chandler Company to build a really fine car and price it as closely as it can be priced. The great Chandler plant, the millions of capital employed in Chandler production, are back of that statement. They exist because of that policy.

Chandler is the greatest of sixes. Cars come and go. Types of motors, Chandler lives and grows, and every season multiplies its friends. On the splendid Chandler chassis, famous for its marvelous motor, are mounted most attractive styles of body, distinguished in design, luxuriously comfortable, handsomely finished and upholstered.

**Dispatch Car**  
The Chandler Dispatch Car, seating four, is all that its name implies. A car to "go get there" in. Snappy, fast—with just a touch of raciness in its make-up.

**Convertible Sedan and Coupe**  
In the four-door Convertible Sedan, seating seven, and the four-passenger Convertible Coupe, Chandler offers the very finest development of the all-season type of car. Beautifully built cars, both of them. With windows closed they offer snug protection against snow or rain or cold. With windows lowered or removed, they are quite as open to the sunshine and soft warm air of pleasant days as is any other type of car. Thousands are buying Chandler sedans and coupes now, and enjoying their delightful riding comfort.

**Touring Car**  
The big, roomy Chandler Touring Car, seating seven in perfect comfort, leads the line. In grace and beauty of design, it holds pre-eminence.

**Four-Passenger Roadster**  
The Chandler Roadster, seating four, continues to hold its favor with a big public. Chandler design has solved the problem of the close-coupled seating arrangement without the sacrifice of beauty of body lines.

**And Chandler is Back to \$1795**

In choosing your new car you will consider the Chandler. Let us show you now why Chandler is the greatest of sixes. Come, decide for yourself.

SIX SPLENDID BODY TYPES  
Seven-Passenger Touring Car, \$1795 Four-Passenger Roadster, \$1795  
Four-Passenger Dispatch Car, \$1875  
Convertible Sedan, \$2495 Convertible Coupe, \$2395 Limousine, \$3095  
All prices f. o. b. Cleveland

**Twin States Motor Car Co.**  
514 Alder Street, Corner Sixteenth, Portland, Oregon  
Phone Broadway 494

**CHANDLER MOTOR CAR COMPANY, CLEVELAND, OHIO**  
(Prices as listed above effective on and after January 6, 1919.)

### FURTHER CUTS FAR AWAY

CHEVROLET NOW SELLING AT PRE-WAR PRICE. Industry Must Become More Stabilized Before Another Reduction Is Possible.

No further reductions in the prices of motor cars can come for many months according to an analysis of the present situation made by Le Roy Fields, of Regner & Fields, Chevrolet distributors. This price of this car in common with others put out by the larger motor car corporations dropped to the before-the-war price, but it is Mr. Fields' opinion as well as the consensus of opinion of the other motor car dealers of the city that there can be no further drop in prices until the automobile industry becomes more stabilized and the manufacturers return to a capacity production.

Mr. Fields points out that low prices in machines are made possible through quantity production. Then materials can be bought in larger quantities and many items of cost cut to the minimum. For one thing the cost of materials is still high and will remain so until the steel people catch up. Labor is high and these both affect not only the cost of the chassis alone, but every accessory which goes into a completed automobile, such as the Chevrolet. There are starters, batteries, tires, rims, speedometers and the entire electrical equipment to be taken into consideration. The manufacturing costs on all of these have mounted and he predicts that it will be some time before the manufacturers will be able to reduce prices. In the low-priced car field any reduction will be small, when it does come, possibly a year from now, he declares.

**KEATON TIRE & RUBBER CO.**  
Portland  
Sixth and Main Streets. Main 3210



To Be Discontinued in a Few Days.

At present a Keaton Heavy Red Tube will be given without charge with every Keaton Non-skid and Ribbed Type Tire. This applies to exchanges for old tires as well as straight sales. Order your Winter equipment before this liberal offer expires, as it is subject to withdrawal without notice. Keaton Non-skids are guaranteed to stop your skidding.

Don't fail to inspect the level of liquid in the storage battery every two weeks. Avoid high speed. The average car is most economical at 15 to 25 miles an hour.