

# MOTORISTS FACE PROBLEM OF GAS

Automobile and Petroleum Men Must Get Together in Close Harmonious Co-operation.

## INCREASE IN MOTOR CARS

Said to Be Possible to Construct Internal Combustion Engines Which Will Consume Much Less Fuel of Inferior Kind.

"The perennial fuel problem will never be solved until the automobile industry and the petroleum industry get together in close and harmonious co-operation," says Mark L. Regan, general director of the oil division of the United States fuel administration, in an interview, which appears in Motor, the national magazine of motoring.

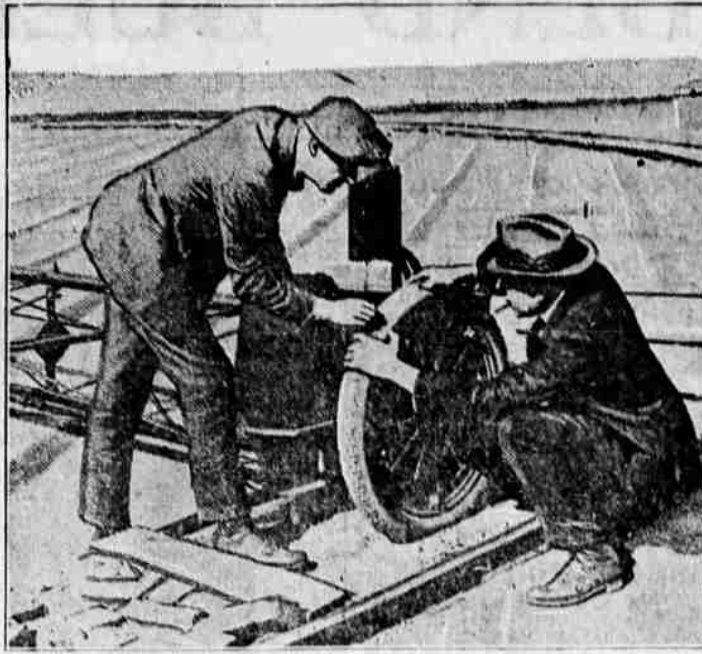
"The motor fuel problem is not only a possibility of the future," continues Mr. Regan, "but even an actuality of the present, as will be understood by anyone who takes the trouble to make even the most cursory examination of the situation. In 1912 our production of petroleum was 222,935,044 barrels of 42 gallons. In 1916 the output of this basic producer of motor

fuel was 300,767,158 barrels, an increase in four years of less than 30 per cent. On the other hand, in 1912 there were about 1,000,000 motor vehicles in the country, while in 1916 the motor population of the United States had risen to 3,541,738. This represents an increase of over 300 per cent in four years. With one side of an equation growing less than 30 per cent and the other side increasing more than 300 per cent, the ultimate situation is not hard to foreshadow.

**Engine Uses Less Oil.**  
"I am not an automobile engineer, so I cannot speak from personal knowledge, but I have been informed that it is possible to design internal combustion engines which will consume much less fuel per mile than is now being consumed, and of a much inferior quality. If this is a fact and the automobile industry faces the situation in co-operation with the oil men to effect this saving, while these latter are devoting their best effort to increasing production, it would seem that we might cut enough off each end of our problem to solve it.

"We seem to be only at the beginning of the gasoline era; a few years ago gasoline was a wasted by-product; today it is the most important product of petroleum, amounting to almost 50 per cent of the total value of petroleum products. With the record of the past as a guide, it would seem that the two great industries so interdependent upon each other should co-operate in bringing about the most efficient consumption of gasoline and the most intelligent understanding of each other's problems."

## UNIQUE METHOD OF TESTING AUTO TIRES



A novel method of testing automobile tires, employed by a Denver manufacturing concern, is shown in the photograph. The track, one-half mile in circumference, presents every feature of good and bad roads. An ingenious machine, with its long arm to which the tire is attached, propels the tire around the track. A weight equivalent to that of a heavily loaded automobile is suspended over the tire in such a way that the tire itself carries the load. Once started on its journey the tire continues until it has given its maximum of mileage.

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## LUBRICANT WILL STOP SQUEAKING

Tighten Bolts Here and There Around Machine and Make Liberal Use of Oil.

## TROUBLE IS MOST ANNOYING

Noises Frequently Occur in Springs and Spring Shackles if Neglected and Allowed to Run Dry—Hoods Are Offenders.

"Squeak, squeak," said the car, and again it said "squeak, squeak, squeak," while the driver pondered unmentionable thoughts. "This is one of the most annoying troubles while driving a car that is otherwise in good condition," says William H. Stewart, Jr., president of the Stewart Automobile school. "The squeak may not be anything serious or it may indicate a trouble which may grow to be dangerous. In any case it gives the sensitive motorist no rest until it is removed.

"If the noise occurs when you apply the brakes it is evidently in the brake bands, but other places are not so readily located. For instance, if the car squeaks when you go over water-bars and other jounces the trouble may be in the springs, the spring shackles, the mud guards, fenders, where the body rests on the frame, or a multitude of other places.

**Squeaks in Springs.**  
"But squeaks frequently occur in springs and spring shackles, particularly if neglected and allowed to run dry. In order to prevent this these parts should be gone over and thoroughly greased at frequent intervals. Jack up the frame to take the weight of the car off the springs. Spread the leaves apart, one by one, prying them open with a cold chisel or a screw driver with a metal handle, using a medium weight hammer. The process will chip off some of the paint, but this is unavoidable. Now spread graphite-grease between the leaves, using a thin-bladed knife or a back-saw blade. Use cylinder oil mixed with a little kerosene to reach in further than you can force the grease. This will frequently stop a squeak that cannot be reached by the grease alone.

"In rare cases the springs will have to be taken off and the leaves taken apart to give them a thorough oiling, particularly if they have been neglected for a year or more and have become badly rusted. There is a special tool on the market for spreading spring leaves. This may be used to advantage.

**Other Offenders.**  
"Hoods and mudguards are frequent offenders. Inspect the strips of rawhide on which the hood rests. If these are broken or missing they must be replaced. Close down hood and see if it touches metal at any place. If it does a squeak is sure to develop. Stand on the spring hanger or the running board and shake the car up and down. This will cause the squeak to start, and it is then merely a matter of injecting oil into all places where metal or wood may rub together. If possible tighten the parts and eliminate the cause. An oil gun, with which a heavy oil may be injected with considerable pressure is a great help. Follow the whole length of the mudguards, the bottom and sides of the hood, the hood fasteners, where running board and mudguards join, the radiator supports and every likely and unlikely place.

"If the brake band squeaks place a little, a very little, grease on drum in space where end of brake bands join. This will be carried into the lining and help stop the squeak. But use very little, as grease is not noted for its tendency to make brakes hold.

mentioned, and go over the work again and again until success crowns your efforts."

## PROPER PRESSURE FOR TIRES

Inflation Should Be Same for All Seasons—Gauge Is Not Absolutely Necessary.

Tire air pressure should remain the same winter and summer, says the manager of a tire company.

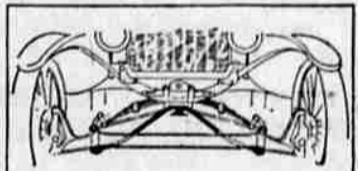
"Many car owners labor under a false impression regarding the tire pressure," he adds. "Tires should not be pumped up harder in the winter months. Likewise pressure should not be reduced in summer because decreases cause the tire to bend more, create more friction and naturally to generate heat. Motorists are inclined to make a complicated matter of inflation. While too little pressure is extremely important and is undoubtedly the biggest abuse tires are put to, determining the proper air pressure for tires is really a simple matter.

"A tire gauge is not absolutely necessary. Just stand in front or rear of your car and observe that the tires are full and round, that they do not sag noticeably under the weight of the car. Proper inflation is so important that no chances should be taken. At all times the tire should receive the benefit of the doubt."

## HOLDS AXLE IN ALIGNMENT

Adjustable Radius-Rod Support Fashioned for Certain Car is Easily Attached.

Broad claims of merit are made for an adjustable radius-rod support that has been fashioned for a certain type of light car. The device is intended to keep the front axle of the machine in proper alignment and relieve driv-



Showing the Adjustable Radius-Rod Support in Place, Bracing the Front Axle in a Way to Prevent Back "Crawling."

ing strains, says Popular Mechanics Magazine. While it is sufficiently strong to prevent an axle from "crawling" back, and a radius rod from being broken thereby, it has enough resiliency to take up the shock in the event of a head-on collision and safeguard the crank case from injury. Attachment of the support is a simple matter, requiring only a few minutes of labor.

## FOR INCREASE OF AMPERAGE

Crowd Down Material Near Carbon Element With Small Bit of Wood and Hammer.

Increased amperage may be secured from partly run-down dry cells by crowding the material near the carbon element down with a small bit of wood and a hammer. This loosens the obstructing material from around the carbon and permits free chemical action. The asphaltum material may be sealed again by the use of a little bent.

## FIND LUBRICATING FAILURE

Car Owner Should Emulate Example of Locomotive Engineer by Using Hand to Find Trouble.

The locomotive engineer frequently uses his hand to determine lubrication failure, and this is a hint that the car owner can put to good use. Failures of lubrication permits excessive friction, and friction generates heat. Any part which is discovered to be too hot to the hand held near it is probably suffering from faulty lubrication.

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