

# IN THE AUTOMOBILE WORLD

## GASOLINE IS DANGEROUS, YET SAFE WHEN IT IS HANDLED WITH CARE

The Vapor is Highly Explosive—Many a Car Has Been Burned Through Tossing of a Match Near or Under Machine.

Everyone knows how powerful gasoline is and how dangerous, but few know how safe it is and how properly to handle and store it. Gasoline, as we all know, is derived from crude petroleum by a process of distillation. Other products are kerosene, lubricating oils and greases, and paraffin, all used about an automobile. It has no color of its own. It boils at a temperature from 130 to 150 degrees, depending on the grade. It is composed of two such dissimilar elements as hydrogen and carbon. The latter is familiar to us in the form of charcoal and hydrogen is a gas, one of the constituents of water. It is a remarkable fact that two such elements as hydrogen and carbon should combine and form a substance with none of the characteristics of either of them.

### Should Stop Engine.

The dangerous nature of gasoline is well known, so that it will not be necessary to emphasize the following details of care while filling tanks: Stop the engine, so that the flame from the exhaust will not set fire to the vapor; put out all open-flame lights, such as kerosene or acetylene; prevent spilling, as the vapor may easily be ignited as soon as the engine is started. We formerly advised the use of a chamois strainer, but the friction of gasoline against a chamois skin causes a static spark which will set fire to the vapor. The Government has issued bulletins against this practice.

Gasoline should be stored in an underground tank since it is always

cool eight feet underground and the fire danger is completely removed, there being no case on record where an underground tank has exploded, although we have had some terrific fires over them. Small quantities of gasoline should be kept in a cool, well-ventilated place, preferably out of doors. The can should not be airtight, but should allow some vapor to escape in order to avoid dangerous pressure. As this vapor is exceedingly dangerous it must be carried off as fast as formed by thorough ventilation. If allowed to accumulate it sinks to the floor, as it is very heavy and only needs the flame to give a disastrous explosion.

On the other hand, gasoline is extremely safe when properly handled. An electric spark or a naked flame is required to set it on fire. The real reason for the "No Smoking" signs in garages and wherever gasoline is handled is to prevent striking matches. Many a car has been burned by having a lighted match tossed under it or near it. The heavy vapor from the gasoline, perfectly invisible, creeps along the ground, where it lies waiting such an accident.

Contrary to popular opinion, a full tank is far safer than one which has just been emptied. In the latter case the vapor is mixed with air in explosive proportions, whereas the full tank has so saturated the air in the top that it cannot explode. When any soldering has to be done on a gasoline tank be sure that it is nearly full and then you can work on the tank with perfect safety.

## UNIVERSAL JOINTS IMPORTANT ON CAR Should Be Lubricated Frequently to Prevent Wear and Breakage.

Automobiles, as everyone knows, are driven by power, delivered from the engine to the rear drive wheels, in some form or other. In most of the modern cars the engine is fastened to the frame of the automobile with the transmission fastened directly to the engine. The rear axle, through which the axle drive shafts extend, is fastened to the main frame of the car by means of springs in order to make the car ride easy. This means that the distance between the

rear axle and the frame is constantly changing when the car is being driven over uneven roads.

If we had a rigid shaft to carry or transmit the power from the transmission to the rear axle, the shaft would have to bend with every up and down motion of the car or change of distance between the axle and the frame, which would be a mechanical impossibility. For this reason it is necessary to put some kind of flexible connection between the shaft which drives the wheels and the transmission, in order to allow for the action of the springs.

In most cars, this flexible connection or universal joint, as it is usually called, is placed at the forward end of the driving shaft, just at the rear of the transmission. In comparative-

ly few makes of cars, there are two universal joints, one at the front and another at the rear end of this shaft.

There are two general methods of making these universal joints, the older method which is in most general use, consists of sliding or moving mechanical parts, which must be lubricated periodically in order to keep them from wearing, and thus from becoming noisy or wearing out. The newer type of flexible joint requires occasional attention, but no lubrication, so there is a slight amount of labor connected with the care of either type.

As these joints are placed directly under the centre of the car where they are hard to reach, they are often neglected. This neglect is sure to cause serious trouble before the car is very old. They are usually, in the case of the type which requires lubrication, packed with a light cup grease when they leave the factory, and they should be refilled at least once every 1,000 miles.

This refilling in most cases, must be done by means of a grease gun, and while it is what we might call a rather dirty job, it requires only a few minutes' time and will save this part from wearing out and becoming noisy. Improper lubrication also will cause this to wear so that it is easily broken when an excessive load is put on the engine, such as in trying to pull from a mud hole or in starting a steep hill.

If the universal joints become worn so that they are noisy, it is wise to have them checked over by an experienced man in order to see whether they are liable to break. The breaking of a universal joint not only prevents the car from running, but causes the driving shaft to whirl around while the car is coming to a stop and damages the machine in other ways aside from the breaking of the joint itself.

### Neglecting the Spare Wheel.

Thanks to the excellent workmanship and substantial nature of the average small car, says The Light Car and Cyclecar, tire troubles in the first few thousand miles are exceptional, and very often one notices that on a car which has actually covered this mileage the spare wheel has not been used at all.

It is not realized that it would be far better to put this wheel on, say, at the end of 500 miles, and change over periodically so that all five covers are used.

So long as the spare wheel remains inflated, its condition is never doubted, and it is very often overlooked; hence it may be found that the sun has had a damaging effect, that serious chafing has been taking place between the wall of the cover and the edges of the well, and that, very likely, there is a small quantity of water in the base of the well

which may have penetrated the bedding and rotted the canvas within.

### AUTOMOBILES ARE SAVING THE RURAL SCHOOLS

Eighteen thousand rural U. S. schools are furnishing transportation for pupils to and from their homes. Through the motor bus the consolidated rural school is made possible and the number of consolidations is going forward at the rate of about 1,000 per year. There are still 130,000 one-room schools which should be consolidated. Since a consolidated school combines several adjacent school districts into one school it means a larger and better equipped school house. Since in the one-room rural school one teacher teaches all grades from the kindergarten to the eighth grade, while in the consolidated school each teacher instructs but two or three grades, this means fewer and more highly qualified teachers and better teaching.

### Valve Tapping.

When one is travelling, and time is not to be wasted in such tedious and exacting work as taking up extra clearance between a push rod and a valve stem, there is a simple way to stop an annoying valve tap. The tappet with the extra clearance should first be located by turning over the engine slowly by hand and feeling each push rod when it is at its lowest position (when the valve is closed). Having found the guilty tappet, insert a thin piece of paper between the end of the rod and the valve stem. As the paper is continually under pressure it will not slip out, and it is not likely to wear out for quite a number of miles. If the clearance is very excessive, a piece of a visiting card will do the trick.

### The Rays of Head Lamps.

When a car is used for night driving, head lamps should be properly focused. Place the car in front of a white wall, so that the lamps take the object at a distance of 20 feet, and try the effect of changing the adjusting screw back and forth until the best effect is obtained.

### Driving Without Tires.

When a tire goes bad and there is no other to replace it, it is better to run on the rim than on the felloe band. The band is quite thin and easily bent. Any damage to it will be transmitted to the wooden felloe, which will make a much more expensive repair.

### 650 Rural Counties Want More Trucks.

A survey by U. S. County Agricultural Agents reports a need for more motor trucks in 650 counties. Georgia reports the biggest demand with 59 counties; Pennsylvania is next with 43.

### To Cover Brass With Paint.

Before attempting to paint over polished brass the metal should first be scoured with a mixture of salt and vinegar to remove all grease, after which the surface should be washed with hot soap-suds and wiped dry with a clean rag.

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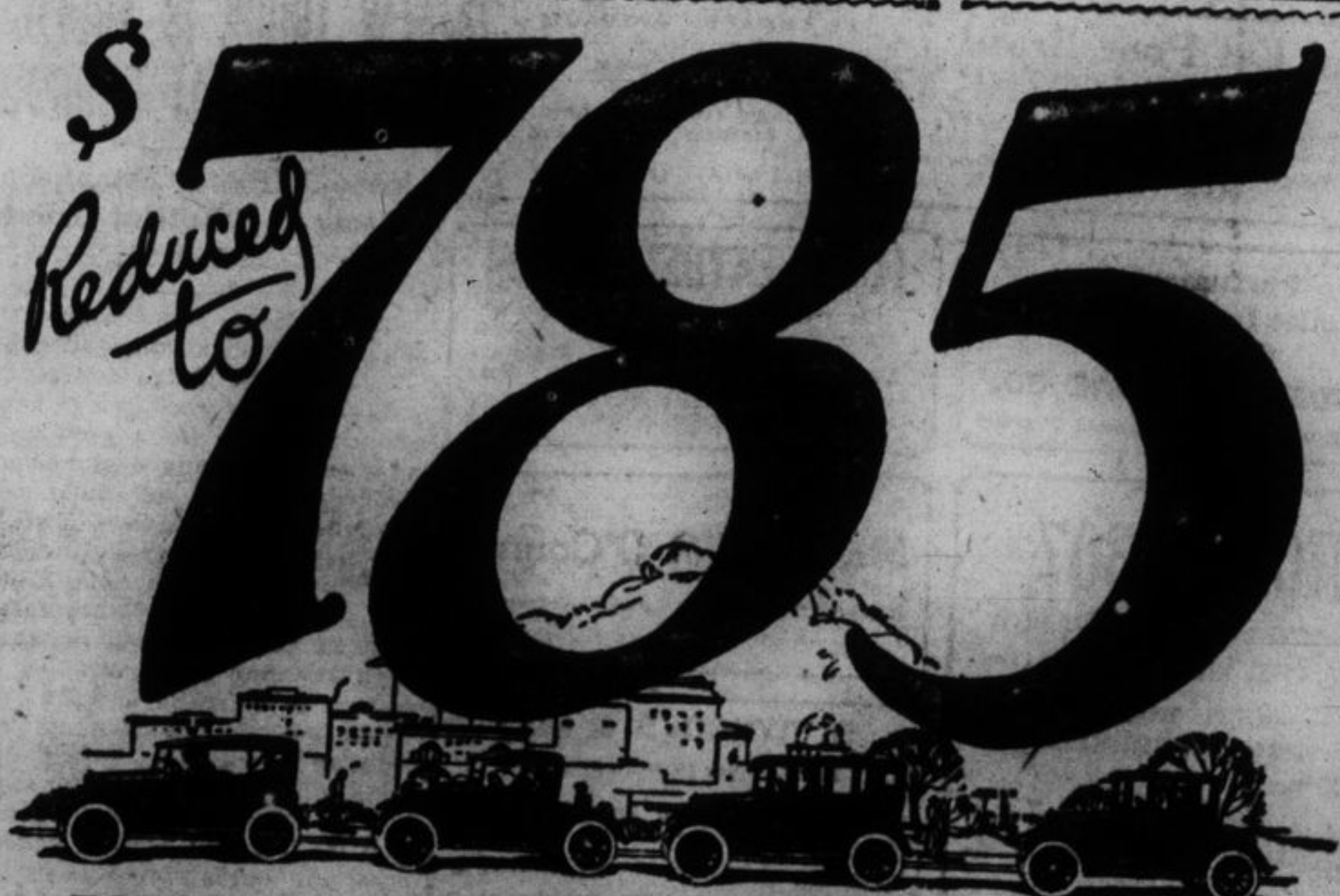
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