

Proper Care of an Automobile

IN considering the car upkeep question, three things have to be considered—the driver, the car and the road. A reckless driver may ruin a good car or bad roads may do the same, in spite of careful running. While the writer realizes that it would be advantageous to have upkeep figures given, it would be of no practical value as the cost of upkeep is not identically the same, even with the same make of car, or even the same driver, as roads and weather cut a big figure in fuel.

It is well known that driving into the wind takes more gas than when there is none and the harder the wind the more gas required.

Different stretches of road also require different amounts of gas. However, more gasoline is wasted by faulty engine adjustment than any other way. Too rich or too poor mixture in the carburetor, missing cylinders, leaking or wrongly timed valves, and carbon in the cylinders all are wastes of power.

How to Test the Mixture.

One of the best ways to test the quality of the mixture is to turn the engine over a couple of times with the switch off and the throttle open, remove one of the spark plugs and hold a lighted match to the hole. If the mixture is too poor it will burn weakly or not at all, or if too rich will burn with a yellow colored flame. A mixture which is about right will explode, not burn.

A carburetor adjusted for Summer may not be just right for Winter, but when once set should be let alone. If there is still trouble it may be dirt in the carburetor, faulty ignition or carbon in the cylinders. A carburetor should be flushed out often and if there is much trouble with dirt, the gasoline should be strained through a fine-meshed smooth cloth.

Locating Cause of Trouble.

When an engine runs after the switch is turned off or knocks in the cylinder while running, it is a pretty sure sign of carbon. The spark lever too far advanced will also cause knocks in the cylinder.

The only satisfactory way of removing carbon is to take the engine apart and scrape the cylinders with the steel carbon remover, which can be bought for the purpose.

This will take some time, but if done carefully and methodically will not be very difficult. Put everything aside in just such order that you can get it back in just the way it was before.

Poor oil or too much oil is the cause of carbon, and while it is necessary for the cylinders to have plenty of oil, too much is just as bad as not enough. Only the best grade of oil should be used. It pays in the end.

Grinding Valves.

Valves generally have to be ground every 30 or 40 days if the car is used steadily. On some cars the engine has to be taken apart to do this; on others there are plugs directly over the valve heads, which may be removed to get at them. The edge of the valve head should be coated with valve grinding paste, which can be bought in tubes, and turned back and forth with a short motion till the edge of the part and the valve show bright all the way around. While doing this, repeatedly shift the valve around so as to grind evenly. Be careful not to get any of the paste in the cylinders, as it will injure them. Valves seldom get out of time, but if they do, they had best be adjusted by an expert. It is too particular a job for one who is not used to the work.

Most ignition troubles are confined to dirty or improperly spaced spark plugs. Excessive oil or too rich a mixture causes fouling of the plugs and should be remedied. Engines with magnetos have less trouble than those depending on batteries. Batteries should not be allowed to fall below 20 amperes, all wiring kept from getting oil soaked, or chafed, as this will soon cut through the insulation and cause a short circuit, as will also oil if it penetrates the insulation. The space between the points of the spark plugs should be between one-sixteenth and one-thirty-second of an inch, so as to give a thick spark.

An Overheated Engine.

This may be caused by driving too long on low, too late a spark, or too rich a mixture. A clogged circulation may also be the trouble. Loss of power may be due to a slipping clutch if a leather-faced clutch, and may be oil soaked or may need a new leather. Disc clutches have to be kept oiled.

All hubs, differential and gear case must be well packed with hard oil. A mixture of half cylinder oil and half hard oil is good for the gear case. The main thing required to get good

service of a car is to keep the engine tuned up in good order, and use reasonable care in driving. Better go several miles around a very bad spot of road and save the wear and tear on the car.

As to tire service, the important thing is to have good tires to start with. A thick-treaded casing and the thickest red inner tube you can buy are good insurance against trouble. A small vulcanizer is a good investment as all small cuts in the casing and all ordinary inner tube punctures can be repaired and is a great saving. Tires must be kept inflated till they stand up, well rounded under the load, if you would prevent tire trouble.

Need of Good Roads.

There was a time when the advantage of good roads was recognized but in these days of rapid movement good roads are a necessity. Holes in a road were always dangerous. Many a farmer has been thrown from his load and killed or injured for life by one of his wagon wheels dropping into a comparatively small hole in the road. If such a place was dangerous to a slowly moving vehicle what must it be to an auto going at a speed of 20 miles to 30 miles an hour?

We have reached the stage where good roads are essential. We cannot do business without them. And in making them and maintaining them we should exercise good business judgment. That means that we should build them right in the first place. It means that we must keep them right. In other words we must go over them at just the right time and smooth them when the ground is in such condition that it may be done easily. It means furthermore that we must not leave small rocks in the

road. They are harmful to a steel-tired vehicle and doubly so to a rubber tire and furnish jolts to passengers that are anything but comforting. A good, smooth road is a credit to any community and a something certain to be a financial benefit.

Fastenings and Door Catches Made at Home

A DOOR that will not stay shut when it is supposed to be shut or stay open when you want it open is a nuisance. Some of these little devices have helped with the barn doors and gates.

Heavy galvanized wire can easily be bent into a hook shape and nailed or stapled to the barn siding so that the door can be automatically caught and held open. Hoop iron about



three-fourths inch in width can be used the same way and is easier to fasten and adjust. See Fig. 1.

Cast catches are to be bought at the hardware stores sometimes. These are for heavy swing or hinge doors. They cost from a nickel to a dime each. When placing them it is unnecessary to cut a notch in the door if they are set at an angle so that they slip over the side of the door.

Even a wooden button 2x4 inches with a nail through it is quicker to turn over the door's edge than the old system of propping the door with a piece of rill. Fig. 3.

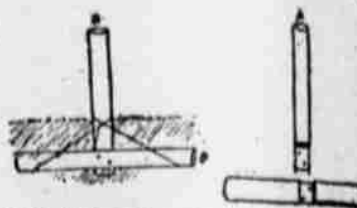
A very handy latch or improved door button is made in the shape of a T. A bolt through the top of the T and through the jamb makes this

satisfactory for any use. Because its three points there is only one position that will allow the door to be opened. Stock cannot well fall into this position. Fig. 4.

An automatic gate catch is here on several small gates. It is made of a loose iron bar usually 12 or 10 inches long, about one inch wide and not over one-fourth thick. This falls into a notch cut in the bar. The stick with the notch is fastened to the jamb or gate post. The loose bar is held in place by a wooden piece cut out enough to allow the bar free movement. It is fastened with one nail or screw to the pivot. Fig. 5.

Invisible Brace for a Corner Fence Post

IT is often desirable to set a corner post for yard fence so that an invisible brace will not be visible. The post here shown will be as rigid as when anchored by the above ground brace, and no part of the brace will show. The hole is dug long enough to contain the horizontal brace, in the center of which a notch is cut as shown in the illustration. A corresponding cut is made on the post so that the two fit together, and are held in place by two long bolts. To make this doubly rigid, wire brads are run from the lower part of the post to near the ends of the anchor.



and twisted tight. If used for a corner post, the anchor will be set diagonal to the two lines of fence, while for an end post it would be parallel to the fence. H. F. G.

PILOTS OF OREGON AND WASHINGTON SHIPS OF STATE.



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Lieutenant Governor



Hon. Ernest Lister
Sixth Governor of
Washington



W. W. Connor,
Speaker of the House



AT INAUGURATION OF OREGON'S GOVERNOR—Seated at Speaker's Desk, Left to Right—Speaker Selting, ex-Governor West, W. Lair Thompson, President of the Senate; Governor Withycombe, ex-Governor T. T. Geer