

The adjusting screws of the carburetor are always locked, so that they cannot of themselves move. Therefore, if the mixture was right last week, it will be right this week, as far as these screws are concerned. Unfortunately, the person who knows little about his engine will, when something goes wrong, immediately play with his carburetor adjustment, as he cannot get a shock from it, and those screws are so handy. It is extremely seldom that the poor running of an engine, which ran well a short time ago, is due to the adjustment, while the sudden stopping of the engine is practically never due

Let me again say, therefore, and say with as much force as possible, that, "once your carburetor is adjusted. LET IT ALONE."



Mixture trouble may, however, develop, due to trouble in the flow of the gasoline to the carburetor; to extra air getting into the mixture, between the carburetor and engine; or to water being in the gasoline.

As to the extra air. While this is an unusual trouble, sometimes the bolts holding the carburetor to tme manifold, or the manifold to the engine loosen, thus allowing air to get in at these joints and so weaken the mixture. It is a good plan, therefore, to test and tighten these bolts once in a while. pouring oil around the joints, you can see if there is leakage, as, if there is, the oil will be sucked in.

As to trouble due to the flow of the gasoline to the carburetor. The ways in which this might be effected are as follows: You may be out of gasoline; chemical action is always going on countries tires are not to be had at all. the gasoline may be turned off; the feed pipe may be stopped up; your carif you have a pressure-feed system; there may be trouble with your vacuum liver power, the violence of the chemtank, if you have a vacuum-feed system; the gasoline strainer in the line | ical action is enormously increased may be dirty; the flat valve of the carburetor may be stuck or clogged, The illustration shows the spray nozzle, the float and float valve of a dispatched on its way as directed by

carburctor. Later you will learn that the level of the gasoline in the car- the driver of the car-to start the buretor must always be about 1-16 of an inch below the nozzle. This is motor, light the lights, or what not. accomplished by placing a float, made either of cork or hollow metal, in the ch produces the current iid in the gas

more. Suppose we try to see why and acid prevents that occurrence until 40 or so degrees below zero is reached There are several different kinds of When a persistent breakage of cells storage batteries in use today, the familiar lead battery with liquid solufamiliar lead battery with liquid solution, the same type with dry electrolyte clamps holding the part in place should be tightened occasionally. If the batand the Edison nickel-iron battery, be-

ing those commonly encountered. In tery discharges with undue rapidity motor car equipment the lead plate short circuits should be looked for, and battery with liquid solution is the prethe wiring system should be inspected at intervals for this trouble. The terminals must be kept clean and bright The automobile storage battery is an electro-chemical unit, containing and it is well to grease them occasion

as electrolyte and having a specific as electrolyte and having a specific gravity of 1.30 at 70 degrees F. The plates in the battery are of two dis-tract kinds, known as positive and tinct kinds, known as positive and legative. The current leaves the battery by way of the positive and through the negative. The returns battery plates are made in the form of grids, the spaces being filled with a special composition of lead. The positive plates have a filler consisting of peroxide of lead, reddish brown in color. The negative plates employ a

spongy composition of lead. These plates are separated by strips of specially treated wood, or sometimes of other materials. The elements, positive and negative plates, are enclosed in jars of hard rubbr, which are filled,

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vailing type.

phuric acid. Each of these jars is Chemical Action Never Stops

with

electrical current is generated and The chemical action within the bat-



Rubber Not to Be Had at Any Price in Germany and Austria

The only automobile in Germany running on pneumatic tires is Kaisernearly so, with a solution of sul- Wilhelm's. Even the crown prince is known as a cell and a battery may Hindenburg, Ludendorff, von Mackenonsist of one, two, three, four or more sen and the other diadems in the Gercells, according to the power needed. man grown, the crown prince bumps along to the front on tires filled with The word "storage" in connection rags, compressed cork and paper. the electro-chemical battery These observations form but a conveys a false impression. The stor- part of the anthology of facts gathage battery does not store anything. ered by Victor Vander Linde, special The actual work of the battery con- technical representative of B. F. Goodsists of a chemical action between the rich Rubber company, who just reacid solution, and the active material turned from Europe after a long study within the battery, even when it is not except at a fabulous price, and only actually giving out current. But when after a dozen or two high government



"Most automobiles have ground den. There she stripped the automoaway their shoes and move about on biles of the tires and abandoned the rims bound, with rope. I was fortunate brand new machines to the Swedes, But to find a taxicab in Berlin-a taxicab now Great Britain permits no cars denied the luxury. Along with von is rare there now-and experienced the shipped to Sweden with thre equipalone." sensation of riding in a machine hav- ment." ing nothing but rope bound around the

wheels. It was just like riding on a vailing price of tires in the following wagon. Every time the car struck a countries: cavity in the road you were jolted Germany-None to be had.

> Sweden-\$550 for a tire of you have permit from Royal Automobile club. Norway-\$460, with permit. Denmark-\$320 for a tire if you can

all bicycles tires seized. These have find one and give written assurance to een reduced to permit their remaking government that it will not go to Ger as automobile tires. In fact, everything many, in rubber has been reclaimed for tire Holland-\$850 for a tire with gov

ernment guarantee. Russia-\$100 for one tire construction and submarine battery

country and had them shipped to Swethe average German \$200 in gasoline

Mr. Van der Linde gave the preof "gas":



fire at seven this morning and the 1,500 hands employed had to beat a hasty retreat from the premises.

country can you get it without gov. ernment permit, and in Germany the prices are practically prohibitive. A pleasure trip of 200 miles would cost

to be over danger an ning his c less he is The Uni This is the European scale of price which na poisonous Germany, \$6 a gallon; Austria, \$6 ing the a Great Britain. 95c; France. \$1.25; Sweden. \$1.75; Holland. \$1.50; Denfumes, ki bon mond mark, \$1.35; Italy. \$1; Spain, \$1.10; gases in : pied the It has h DANGEROUS FIRE is danger Montreal, Oct. 26 .- A part of the air breat two-tentl plant of the Canada Explosive Comiment she pany at Vaudreuil was destroyed by small gar

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By referring to the illustration you will notice that, when some of the produces a substance known as lead gasoline is drawn out of the gasoline or float chamber, as it is called through sulphate which is deposited on the the spray nozzle A, the float will drop and thus raise the needle B and so plates. This sulphate is a white subpermit gasoline to enter and take the place of that drawn off. In this way stance and its presence on the plates the level in the chamber is always maintained. weakens the action of the battery be-

Let us see how this float-valve mechanism can go wrong and thus affect cause its formation has actually with-the mixture. The float itself if of cork might become saturated with gaso- drawn acid from the solution or elecline (it is protected by shellac), or if of metal might be punctured and fill trolyte. Thus, if this condition reaches with gasoline, and thus become too heavy. This would cause the level of the gasoline in the chamber to be raised, and so make the mixture too rich. thick with sulphate deposits and all the first value are the level of the sulphate deposits and all The float valve arm. C, might stick, either causing the valve to remain open the acid would be withdrawn from the or closed, the mixture thus being too rich or too lean, respectively. Dirt might get in the float valve, thus stopping the flow of the gasoline into the carburetor

Let us see, by referring to the illustration, if there is not some way which we can quickly tell if the flow of gasoline has been stopped. When the engine is not running. If we pressed down on the rod E-called primer and cometimes tickler-the needle B would be held in a raised position and gasoline would flow into the carburetor until it overflowed. Thus, if we saw the gasoline coming out through all openings, we would know that the flow was not stopped and, therefore, would be reasonably sure that our trouble, back into the liquid in the form of acid. in case of stoppage of the engine, was not due to mixture. On the other hand, if it does not flood, then we know that the trouble is in the feed of the gasoline.

## Water in the Gasoline

Water in the gasoline may cause the engine to stop suddenly, but usually the stopping is accompanied by a "popping" in the carburetor and a loss of power. Sometimes the water will cause the engine to sort of hesitate a moment, then speed up and again hesitate.

The remedy for water, when the engine has stopped or fails to start du to it, is to drain the carburetor after gently tapping it. If you know your spark is O.K. and that your feed line is all right

suspect water.



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cause its fermation has actually with. electrolyte, leaving plain water. this case the battery would be able to produce no current whatever.

Now when electrical current from an outside source is sent into the battery it causes a reaction to take place, which is exactly the reverse of the former, as it breaks up the sulphate leposit on the plates and drives it When this operation has been com-pleted and all the deposit has been removed the battery is ready to begin ts chemical action again and produce.

electric current. Must Keep Water in Battery

It is obvious that the liquid with which the battery cells are filled, in the course of time, will suffer evapor-

ation. This is doubly so because the chemical action of the battery proluces a certain amount of heat, which astens losses due to inevitable evap-To make up for this and oration. keep the liquid up to the proper level distilled water must be added at regular intervals, once a week in warm weather and once in two weeks during the cold season. Filtered water may be bought at any drug store or garage. or rain water or water made by melting ice may be used. When the liquid has been reduced by evaporation obviously its acid content is just the same. and all that is necessary is to bring it up to the proper level by adding the plain

water. On the other hand, if any of the liquid has been spilled or has leaked out of the jars in any way, acid has also been lost, so that in replenishing it will be necessary to add acid and water in proper amounts, that is to say with a specific gravity of 1.30 F.

Whenever the owner opens his battery to refill the cells with water he should test the electrolyte with an instrument called a hydrometer syringe. This is a large glass cylinder with a rubber bulb at one end and a small graduated cylinder inside. By means of the rubber bulb a quantity of the liquid is drawn up into the cylinder, the small graduated cylinder floats in this and by its depth indicates the specific gravity of the fluid. If this is 1.28 to 1.30, or thereabouts, the battery is fully charged; if it falls to 1.15 the battery is discharged and should be recharged at once.

Modern Car Reduces Work The modern car strives to remove much of the work of caring for the battery from the shoulders of the owner. A generator is installed to re-charge the battery as the car runs. This is a great convenience, but it may also be incorrectly adjusted and overcharge or undercharge. The driv-er will have to find out what rate of recharging is demanded by his par-

CARVELL'S STRONG STAND St. John, N.B., Oct. 26 .- Hon. F. B. Carvell, minister of public works, ar-rived here at noon today. Mr. Carvell said the construction of the extension of the negrotown breakwater to Par-tridge island in this harbor had been indefinitely postponed. It was a mil-lion dollar job. "We cannot spend on public works, however necessary," he said, "the mo ey we need for shells."

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