

MOTORS AND MOTORING:

A Page Full of Interest to the Owner or Prospective Owner of an Automobile.

STORAGE BATTERY IMPORTANT UNIT

Since the introduction of the starting and lighting system, the storage battery has become an extremely important unit of the automobile, and it is one which needs a certain amount of attention. The work it does is tremendous in comparison to its size, while the enormous sale of autos in the last few years can be assigned to it perhaps more than to any other feature.

A battery is composed of cells; thus a dry battery is composed of two or more dry cells, and a storage battery of two or more storage cells, or, as they are also called, accumulator cells, and sometimes secondary cells.

Each accumulator cell, no matter how small or how large, will yield a current having a voltage (electrical pressure) of very slightly over two volts. The cell will give almost the full voltage even though it be nearly discharged.

Of course two volts is not enough pressure for practical purposes. We must have six or more volts. In order to get the increased voltage, a number of cells are connected together in "series", that is the positive pole of one cell is connected to the negative pole of the next cell, and so on. Thus if a six-volt battery is required, three cells are so connected up, while if a twelve-volt battery is required, six cells are used.

In many cars the twelve-volt battery is used for the starting motor, but only six volts can be used for the lights and ignition. In this case a separate "cut-in" is made, so as to use only three cells for the lights, etc.

The capacity, or let us say the amount of current, which can be stored up in a storage battery is given in ampere-hours. Thus, there are 40, 60, 80, 100, etc., ampere-hour batteries. The number of amperes flowing, multiplied by the number of hours it flows, being the ampere hour. So a 60-ampere hour battery can yield 1 ampere for 60 hours, or 2 amperes for 30 hours, or 10 amperes for 6 hours or 120 amperes for 1 hour etc.

Also to bring a completely discharged 60-ampere-hour battery to a full charge, when charged by a 5-ampere current, the battery must be connected to this charging current for 12 hours. As it is customary to give a battery a 10 per cent. overcharge, it would, in fact, have to be connected long enough to give it 66-ampere hours, or 13 1-5 hours.

Understanding the above will help you to tell what the condition of the battery of your car is. As, for example, a starting motor will require anywhere from 120 to 250 amperes in order to crank the engine. Assuming that it requires a 180-ampere current then a fully charged 60 ampere hour battery would be discharged completely in 1-3 of an hour, or twenty minutes. Now, the charging generator charges at about a 6 ampere rate, so that it would take 10 hours to charge this battery. Thus you see it takes about 30 minutes of cranking to send back the same amount of current to a battery as is taken out or used up in one minute of use of the self starter. At night the

lights will take all of the current made by the generator and so there will be no charging. A battery will also discharge slowly when idle.

From the above you can see that where the starter is much used and the car driven for short runs only the battery will become discharged and have to be recharged at an outside source: as at a charging station. If your battery has a tendency to become discharged, reasoning from the above will tell you if the discharging is natural or if something is wrong.

A man brought a battery to a service station to be charged and rented a battery in its place. Three days afterwards he decided to have his car overhauled and repainted and without returning the rented battery and getting his own, put his car out of commission. More than a month afterward he called for his battery and when he received a bill at 15 cents a day for the rental of the battery became very indignant, claiming that he should not be charged for more than three days, the time his car was in service.

TO PREVENT REGRETS

"Watch the car ahead,"—this is evidently intended for the youths—and some of the older men—who watch the side walk when driving downtown rather than the car in front of them.

"Slow down at crossings"—either comply with this or some

day you are going to be calling the insurance company, or perhaps some friend will be calling up the undertaker.

"Obey the law" are indeed words of wisdom, yet how many of us let our cars remain parked overtime, hoping that they will not favor us with a sticker! How many of us run on past a street car that is loading or unloading passengers, just as though no car was there, thinking and hoping that the conductor was too busy to get our number or that all the motorcycle men had left for parts unknown? How many of us resist the temptation to push the accelerator to the floor-board when we hit a nice stretch of paving? Not many, unless we happen to be driving an old car that is so full of carbon that it will not do over twenty without pounding the engine to pieces.

How many of us ride over the safety zone and park our cars without any lights, or have the license tag covered with mud, or a hundred and one other things which cause us to spend an enjoyable two hours or so "explaining to the judge" that we could not understand how it happened? Obey the law, and while speaking of the law, remember that ignorance of the law excuses no one. In this connection it might be a good idea to get a copy of the rules and regulations and see just how many of them will be foreign to you the first time you read them.

Minard's Liniment for Dandruff.

WHEN IT MATTERS

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From framework to window mouldings the body is built of steel. It is the first all-steel closed car ever marketed. This design anticipates every possible requirement of commercial travel. It insures unusual quietness—unusual grace—unusual stamina. It has made it possible to give the Coupe that same lustrous baked-on enamel finish for which Dodge Brothers open cars have long been famous.

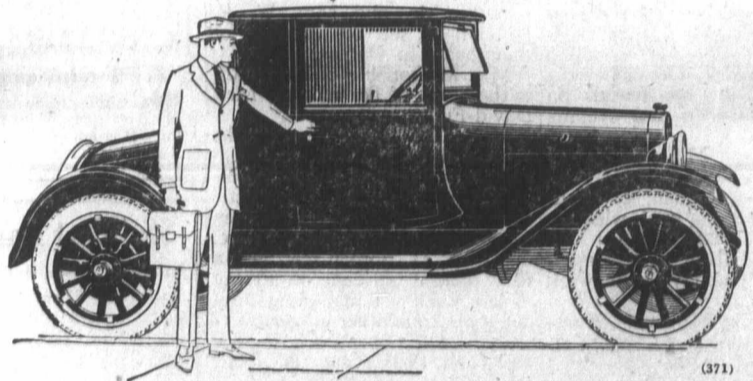
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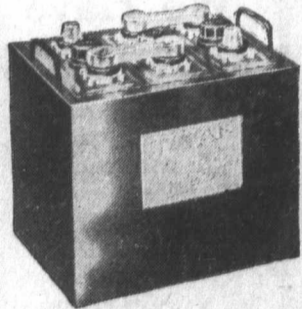
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TITAN BATTERIES



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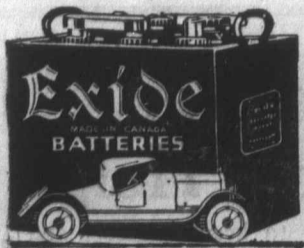
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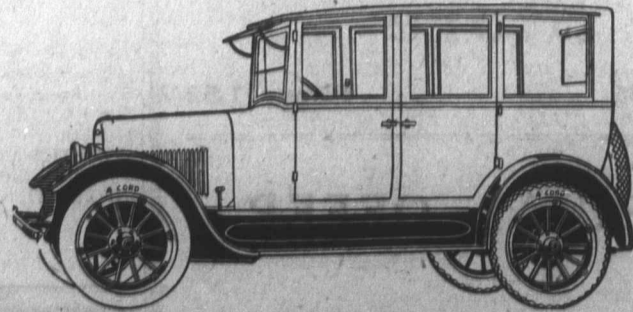
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