

The Human Automobile

"All rules of success overlook the most essential element—Getting started, therefore use a self-starter on your human automobile.

"Use the brakes of patience and self-Control.

"Put large quantities of Hope in the grease cups.

"Use the perseverance brand of gasoline as motive power instead of hot air.

"Have the timer properly set—Early.

"Have the carburetor properly adjusted admitting a mixture of equal parts of earnestness and will power.

"Use the primer of enthusiasm.

"Best results can be had by using the four cylinders of knowledge:

"The knowledge of self.

"The knowledge of company.

"The knowledge of your goods.

"The knowledge of men.

"Advance the spark of ambition for more speed.

"Open wide the throttle of faith in yourself, your company and your calling—to secure more power.

"Polish with powder of Courtesy.

"Use stick-to-it tires on non-discouragement rims.

"Use the Golden Rule steering wheel.

"Put on Search-lights of character.

"With the foregoing equipment the human automobile will take every hill of disappointment and discouragement on high gear."

The above is O. K. We do not sell Automobiles but do have a line of Tools and Oils that we'll be pleased to show you

CHURCHILL HARDWARE CO.

Fundamental Features of Electric Storage Battery

By W. R. Brown.

There probably is no other single electrical device in general use about which there is so much popular misconception as the storage battery, or accumulator, as it is more technically known.

It does not within itself create a current of electricity—as does a primary battery, such as the familiar dry cell, in which a chemical process actually generates a current of electricity, and for this reason the storage battery is called a secondary battery.

The word storage in connection with this type of battery is really a trade name, as this process by which it absorbs electricity and re-delivers it is not one of storage in any sense of the word, but consists of chemical conversion and re-conversion upon a reversal of conditions.

During the process of charging a storage battery a direct current of electricity must be used and the chemical action produced by such a current reduces the active material on the positive plates of the battery to lead peroxide, and to spongy metallic lead on the negative plates.

When the action is complete the battery is said to be charged. The electrolyte or solution used in such batteries is composed of chemically pure distilled water and a chemically pure sulphuric acid, the proportions of which is specified by the various battery manufacturers.

The electrolyte in the storage battery serves to carry the electric current from the positive plates to the negative plates during the process of charge and discharge.

When a battery gives up its charge the chemical action which takes place is the reverse, in other words, the active material on the positive and negative plates is reduced to lead sulphate, the sulphuric acid in the solution or electrolyte combine with the active material on the plates to form sulphate of lead, thereby reducing the density of the electrolyte to that of water.

Normal sulphate of lead in the storage battery is perfectly legitimate, as it is a normal reaction.

However, when a storage battery is allowed to stand in a sulphated condition for some time it not only forms a non-conducting film over the surface of the plates, but fills the pores of the plates, rendering them hard and brittle.

A battery in this condition when put on charge must be handled with care, as it may easily be ruined.

The sulphated mass of the active material have no porosity and are very stubborn to chemical action, throwing more work upon the healthy parts of the plate to the extent that the active material expands, loosens from the grid, and falls to the bottom of the jar as a worthless sediment. This sediment accumulates until it fills the bottom of the jars up to the plates, causing a short circuit, hastening the battery along the road to destruction.

The active material on the plates of the storage battery is its very life; when this is lost, the battery is dead.

Sulphation of the storage battery is only one cause of its failure and destruction. There are many others.

The most common abuses a battery is subjected to are as follows: Over-charging, over-discharging, using water which is not pure, adding acid to the solution when the battery falls to reach its maximum gravity during the process of charging.

Acid should under no circumstances be added to the electrolyte of the storage battery during its entire life, unless it is positively known that the acid has been lost.

In cold countries freezing of the battery is very common and is sure to ruin them. Batteries when partly or fully charged will freeze only under very cold weather conditions.

All lead storage batteries are very much alike in their construction as to design and material used, but this does not imply that one storage battery is as good as another. There are today throughout the United States more storage battery manufacturers than any other country on earth, and each one of them claims some special advantage in their product.

It is not a difficult matter to go shopping for a suit, a hat, or a pair of shoes, because you can see and test the material used in their manufacture. You will naturally ask the name of the manufacturer and insist upon a brand which gave you satisfactory service.

In the selection of a new storage battery the case is quite different. In the first place you should know the proper size, that is a battery having the capacity as specified by the manufacturer of your car, and in the second place, the name of the battery or who manufactured it.

The automobile manufacturers are very particular in the selection of the best storage battery for their cars, and the name of the battery you find used on the majority of cars manufactured in the United States is the most reliable.

CLEANING CAR NOW FINE ART

Using Modern Methods Owner May Keep His Machine Looking New all the Time.

WASHING NOT CASUAL JOB

Large Sponges Sopped Against Surface So That Water Trickles Down is Best Way—Use Chamols for Polishing.

The last two or three years have brought a very remarkable development in American body-building. The mechanism of the modern motor car has reached an approximate degree of perfection, leaving the manufacturers free to devote more time to increasing the attractiveness of the vehicle. The present day American car as it leaves the factory is really a thing of beauty with the highly polished surfaces and shiny metal. Naturally this has induced the owner to take more pride in keeping up the appearance of the gasoline steed. The result is that cleaning methods and equipment have greatly advanced over

those of a few years back.

Easy to Keep Clean.

The present day owner using modern methods may keep his car looking new all the time, nor will he have to spend more than a few moments a day to accomplish this end. For instance, there are now on the market a number of liquid and wax polishes which will give admirable results if they are used as directed.

In the use of wax polishes the first step is to clean the body of the car thoroughly. The polish is applied to the surface with a piece of cheese cloth and then another clean cloth is used to distribute the wax evenly all over the surface. Car owners commonly make the mistake of thinking that the more wax applied the better. As a matter of fact a very thin film is all that is needed.

Washing the car is not the casual job some owners seem to imagine. To begin with, the car should be washed immediately after it has been dirty. If mud is allowed to remain on the varnished surface more than a day it is difficult to eradicate it. For the washing plain water should be used, neither too hot nor too cold, about 50 degrees Fahrenheit being the proper temperature. A large sponge soaked in clear water and then sopped against the surface so that the water trickles down is best. Never turn a stream of water at high pressure on the body.

Use Chamols for Drying.

In drying the body a clean chamols skin should be used, rubbing being done in straight lines. If spots of tar or road oil are found on the body it is best to treat them with salt butter or kerosene. The butter softens the deposit so that it may be wiped off easily. Kerosene should be applied locally and wiped off within a minute.

To keep pace with the improved appearance of the body it is necessary to give some attention to the top and the upholstery. A weekly brushing of the top, inside and out, will aid materially in its life. Fabric tops should never be cleaned with gasoline, kerosene, or other oils, as they tend to destroy the rubber in the top. Castile soap and water applied with a stiff brush is the best cleansing medium for the top.

HOW TO PRESERVE RUBBER

Saturated Solution of Turpentine in Alcohol Makes an Effective and Simple Dressing.

A saturated solution of turpentine in alcohol makes an effective preservative for rubber. The point of saturation is reached when a drop of undissolved turpentine remains suspended in the alcohol and a little more of the spirit should be added to dissolve the turpentine. Rubber articles should be painted with this solution occasionally.

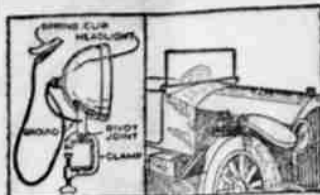
DETACHABLE TROUBLE LAMP IS VERY HANDY

Discarded Electric Headlight and Clamp Are Needed.

Light Is Quite Convenient When It Is Necessary to Make Repairs at Night, as It Can Be Attached in an Instant.

A handy detachable trouble lamp for automobiles can be made from a discarded electric headlight and a clamp of the type illustrated. The headlight bracket is attached to the clamp by a small bolt that is passed through holes of suitable size in both pieces. This provides a joint which permits the position of the lamp to be changed when the device is fastened to a fender, or some other part of a car. If the car has a grounded electric system, one of the wires leading to the light bulb is grounded on the lamp, while the second is fitted with a metal clip for at-

taching it to a "live" point on the wiring system. With a double-wire system, clips should be fastened to the ends of



By Combining an Old Electric Headlight and a Clamp, as Shown Here, a Handy Trouble Lamp for Automobiles Can Be Made.

both wires. The lamp is very convenient when it is necessary to make repairs at night, as it can be attached in an instant wherever it is needed.—Popular Mechanics Magazine.

CAR PILOTS NOW HAVE SORE FEET

Physicians Are Treating Victims Who "Step on Gas" Too Long Without Rest.

CLAIM EFFECTS NOT SERIOUS

Disease Usually Follows Long Trip Through Which Driver Has Remained Continually at Wheel.—Origin Easily Traced.

It is not all smooth sailing for the driver of a "gasoline wagon," according to physicians, who report that many motorists are returning from long trips with a decidedly noticeable limp. It is the new foot disease. But don't be alarmed; it is not at all serious.

The disease is always acquired in the accelerator foot, the appendage that shoves the car over the road at a fast clip. Continued pressure of the foot on the accelerator button causes a displacement of the metatarsal bones, declare physicians who have diagnosed cases that have been brought to their attention. Its effects are not serious. Rest is the only cure.

One Day Turns Trick.

More than one motorist returns home limping in one day, doctors aver. Long trips cause strains on the car and the driver. The strain on the accelerator foot sets up a nervous irritation that results in pain, and as a result the driver abandons his car with a limp every time he walks. The disease is commonly known as the "motor foot," but is technically called the "metatarsal displacement."

The limp usually develops in the right foot, for few drivers are "left-footed." The disease usually follows a long overland trip, through which the driver has remained steadily at his post, and never has thought to give the pedal extremity a rest.

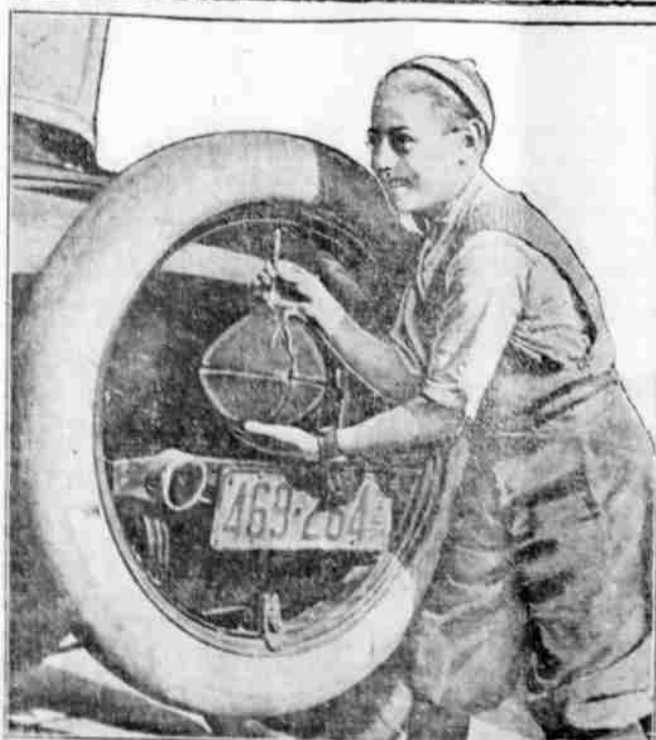
Swell Doctors' Coffers.

The coffers of the chiropractors and orthopedic surgeons have taken on a silver lining since the arrival of the new hoof affliction. Many motor vacationists return to receive treatments. Massages and rest are said to cure the pains as rapidly as other treatments.

Motorists accustomed to long drives scoff at the idea of the disease. If there is any such ailment, they declare, it easily can be thwarted by shifting feet.

Some doctors call the ailment "acute foot strain." The origin of the disease is easily accounted for, they say. Releasing the tension of the accelerator spring, followed by more moderate driving, will diminish the prevalence of the ailment, physicians say.

BOYS TAP SPARE TIRES FOR AIR



The photograph shows how "Kainay" eliminates all lung-breaking efforts in blowing up his deflated footman. He goes around to the rear of your automobile and taps the old spare tire and gets a much better result.

STATEMENT OF THE CONDITION OF

The Douglas National Bank

AT THE CLOSE OF BUSINESS, DECEMBER 31, 1921

AS MADE TO THE COMPTROLLER OF THE CURRENCY.

RESOURCES

Loans and Discounts	\$ 553,427.84
United States Bonds and Certificates	112,246.00
Other Bonds and Securities	115,919.97
Banking House	23,000.00
Furniture and Fixtures	1.00
Other Real Estate	15,733.79
Cash on hand and in Banks	215,366.39
Total	\$1,035,694.99

LIABILITIES

Capital Stock	\$ 100,000.00
Surplus	30,000.00
Undivided Profits	9,224.08
National Currency	24,700.00
Deposits	871,770.91
Total	\$1,035,694.99

This is the Oldest Bank in Southern Oregon and Has Twice the Paid Up Capital of Any Other Bank in Douglas County

J. H. Booth, President H. H. Stapleton, Cashier
E. L. Parrott, Vice-President F. P. Clemens, Asst. Cashier
Harrie W. Booth, Assistant Cashier



L. W. Metzger

CONTRACTOR

AND
Structural Engineer

All Kinds of Building Material
Handled, including
Lime, Cement, Plaster, Brick, Lath, Shingles