

THE ELECTRICAL WORLD

THE HOME ELECTRICIAN.

How You Can Make Yourself a Small Storage Battery.

The cell of a storage battery consists of two plates, a positive and a negative, made of lead and placed in a dilute solution of sulphuric acid. Large batteries made of large cells have a great number of plates, both positive and negative, of which all positive plates are connected to one terminal and the negative plates are connected to the other terminal. The storage cell as described below is the right size to be charged by a few gravity cells and is easily made.

Secure a piece of 1 1/4-inch lead pipe, five inches long, and cut both ends smooth and square with the pipe. Solder a circular disc of lead to one end, forming a cup of the pipe. As this cup must hold the sulphuric acid it must be perfectly liquid tight. It is necessary to get another lead pipe of the same length and three-fourths inch in diameter. Bore as many one-eighth-inch holes in this pipe as possible, except for about one inch on each end. One end of this tube is hammered together as shown at A in the sketch to make a pocket to hold the paste. This, of course, does not need to be watertight.

A box of wood is made to hold the larger tube or cup. This box can be square, and the corners left open around the cup can be filled with sawdust. A support is now made from a block of wood to hold the tube, B, in place and to keep it from touching the cup C. This support or block, D, is cut circular with the same diameter as the lead cup C. The lower portion of the block is cut away so it will just fit inside of the cup to form a stopper. The center of this block is now bored to make a hole the same size as the smaller lead pipe. Place the lead pipe in the hole and immerse it in smoking hot paraffine wax, and leave it until the wax has become thoroughly saturated with the hot wax. Use care to keep the wax from running on the lead at any place other than the end within the wood block. Two binding posts should be attached, one to the positive, or tube, B, and the other to the negative, or tube C, by soldering the joint.

A paste for the positive plate is made from one part sulphuric acid and one part water with a sufficient amount of red lead added to make of thick dry consistency. When mixing the acid and water, be sure to add the acid to the water and not the water to the acid, cautions Popular Mechanics. Also remember that sulphuric acid will destroy anything that it comes in contact with and will make a painful burn if it touches the hands. Stir the mixture with a stick and when a dry paste is formed, put it into the smaller tube and ram it down until the tube is almost filled. The paste that may have come through the holes is scraped off and the tube set aside to dry. The large tube or cup is filled with a diluted solution of sulphuric acid. This solution should be about one-twelfth acid. The cell is now complete and ready for storing the current.

The cell may be charged with three gravity cells. These are connected in series and the positive terminal binding-post on the storage cell is connected to the wire leading from the copper plate in the gravity cell. The other plate is connected to the zinc. The first charge should be run into the cell for about one week and all subsequent charges should only take from ten to twelve hours.

A LIGHTNING ARRESTER.

Simple Device That Will Prove Effective, It Is Said.

Secure a piece of wood about 3 1/2 inches square that will furnish a nice finish and round the corners and make a small rounding edge as shown in the sketch. From a piece of brass 1-16 inch thick cut two

pieces alike, A and B, and match them together, leaving about 1-16 inch between their upper edges and fasten them to the wood with binding-posts. The third piece of brass, C, is fitted between the pieces A and B allowing a space of 1-16 inch all around the edge. One binding-post and a small screw will hold the piece of brass, C, in place on the wood. The connections are made from the line wires to the two upper binding-posts and parallel from the lower binding-posts to the instrument. The third binding-post on C is connected to the ground wire. Any heavy charge from lightning, says Popular Mechanics, will jump the saw teeth part of the brass and is grounded without doing harm to the instruments used.

Sends Power Without Wires.

A young inventor of Lyons, France, is said to have solved the problem of the transmission of electrical energy without the use of wires.

AN ELECTRIC TRUMPET.

Instrument Which is More Effective Than Bell or Buzzer.

A trumpet designed to give a sound-signal by electric action has been devised in Germany, and is likely to find extended use, replacing in great part the present electric bell or "buzzer." Writes Dr. Alfred Gradenwitz, describing the new invention in Cosmos:

"The need has been frequently felt, during recent years, of a device for giving sound-signals that will be heard above disturbing noises in whose presence ordinary alarms are without effect.

"An electric siren, which appears to satisfy this demand perfectly, has been constructed by the Deutsche Telephonwerke at Berlin. In this apparatus the armature of an electromagnet, excited by a variable current of determinate frequency, acts on a metallic membrane through a lever; the ratio of the lengths of the lever arms is so chosen as to secure a strong and powerful sound.

"The sounding membrane, which is relatively solid, is made of an alloy of nickel-bronze; it closes the apparatus hermetically. The mechanism is contained in a gas-and-water-proof box, and consequently the device may be installed in the open air without any special protection.

"The electric siren uses a very small quantity of energy, while its acoustic performance is greatly superior to that of ordinary annunciators or bells. . . .

"A special advantage of these devices is the facility with which several of them are arranged in parallel and controlled from a central point by an ordinary contact button. The arrangement of connections is about the same as with ordinary annunciators.

"The electric siren is easily used for giving all sorts of well-defined signals analogous to those of the Morse alphabet. Among these numerous applications the following may be cited as most important:

"An evident field of application is for systems of fire alarm. As the sound of the siren resembles exactly that of the alarms generally used, the character of the signals will be clearly intelligible to every one.

"This device may be employed to advantage in alarm systems on board vessels, where it may take the place of various kinds of annunciators and bells now used to give orders to guard stations in the different compartments, or signals to engineers, firemen, or pilots. These orders are transmitted simultaneously to all the compartments in question by pressing on one contact button, which evidently assures great economy of time in case of imminent danger.

"Another possible application relates to railways, where the device may be used to give all kinds of signals on the Morse system, with as small an expenditure of energy as possible.

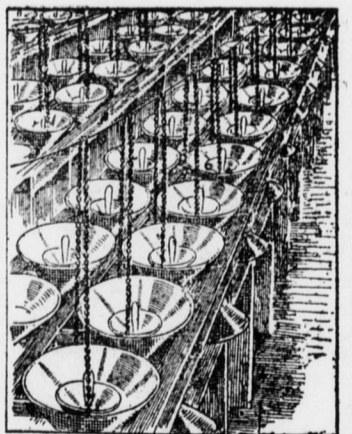
"The apparatus is also adapted to various uses in mines . . . to control the underground cableways, etc., and to give fire alarms, either within the mine or outside.

"In similar fashion it may be used in the system of annunciators of a banking house or office building. Finally, it may be employed as a signal on automobiles and motor boats."

INSULATOR TEST.

How Manufacturers Are Meeting Demand for Greater Voltage Power.

What the limits of long-distance transmission will be at the close of



Testing Insulators.

the next ten years is hard to predict. Transmission lines of 60,000 volts and 75,000 volts are now as common as those of 11,000 and 12,000 volts ten years ago, while transmission lines several hundred miles in length are now being projected and installed for an operating pressure up to 150,000 volts.

That the manufacturers of high potential insulators are meeting the ever-growing requirements of electrical engineers may be noted from the fact that they offer to supply insulators testing from 1,000 to half a million volts. The illustration, taken from Popular Mechanics, shows the equipment at Victor, N. Y., of what is said to be the largest single test of high potential insulators in the world. In addition to this testing room are several hundred other testing terminals at Victor.

A SIMPLE SAFEGUARD IN BUYING PAINT.

Everybody should know how simple and easy it is to avoid all uncertainty in buying paint materials. There are many so-called white leads on the market, which contain chalk, zinc, barytes, and other cheap adulterants. Unless the property owner takes advantage of the simple means of protection afforded him by reliable white lead manufacturers, he runs great risk of getting an inferior and adulterated white lead.

It is to protect the paint-buyer against fraud and adulteration that National Lead Company, the largest makers of genuine Pure White Lead, place their famous "Dutch Boy Painter" trademark on every keg of their product, an absolute guarantee of its purity and quality. Anyone who wants to make a practical test of white lead, and who wants a valuable free book about painting, should address National Lead Company, Woodbridge Bldg., New York, and ask for test equipment.

CARRIED GESTURE TOO FAR.

Boy's Action Possibly Appropriate, But Somewhat Unnecessary.

Vivian Burnett, the original of the still-remembered Little Lord Fauntleroy, at the Chicago convention discussed with a reporter a certain party maneuver.

"They went too far there," said Mr. Burnett. "They made themselves ridiculous by their excess. Do you know what they reminded me of? They reminded me of a juvenile elocutionist my mother often tells about."

"This lad, at a school treat, got up to recite the first piece of his life. He was ambitious; he wished to make a great success of his piece; and he had been told by his teacher that the secret of elocution was the gesture—for every phrase its fitting gesture."

"The opening line of the boy's selection was 'The comet lifts its tail of fire.'"

"The overzealous boy, to fit its proper gesture to this line, lifted up the tail of his coat and held it out in a horizontal position."

AUTOMOBILE SHOP TALK.



Fate

"What was your record across Jersey?"

"One country constable and a cow."

Critical Eye for Babies.

The five-year-old daughter of a Brooklyn man has had such a large experience of dolls that she feels herself to be something of a connoisseur in children.

Recently there came a real live baby into the house.

When it was put into her arms the five-year-old surveyed it with a critical eye.

"Isn't it a nice baby?" asked the nurse.

"Yes, it's nice," answered the youngster hesitatingly. "It's nice, but its head's loose."—Lippincott's.

Peonies as a Medicine.

Peonies were originally esteemed less for beauty of bloom than for value as a medicine. In recognition of its curative virtues, the peony was named after Paeon, the physician of the gods. An old writer says: "About an infant's neck hang peonie. It cures Aicydes cruell maladié." Nor did the use of the plant stop there, for peony water was esteemed and drank in bygone times, though whether as medicine or merely as a refreshing temperance beverage is more than modern writers can say.

Catarrh Cannot Be Cured

with LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally and acts directly upon the blood and mucous surfaces. Hall's Catarrh Cure is not a quick medicine. It was prescribed by one of the best physicians in this country for years and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing catarrh. Send for testimonials, free. F. J. CHENEY & CO., Props., Toledo, O. Sold by Druggists, price 75c. Take Hall's Family Pills for constipation.

Satisfied.

"Look here!" grumbled the old farmer. "This here almanac is a fraud. It predicted snow for yesterday and, by gum, it was hot as blazes all day."

"But my dear sir," responded the bland almanac peddler, "it snowed up at the north pole yesterday."

The old farmer's jaw fell.

"It did?" he drawled slowly. "Wal, I reckon the almanac is all right then. It did tell the truth, didn't it?"

Translated.

"What are you hunting for in the dictionary, my son?" asked old Kolldige.

"What is the Latin for 'wink'?" asked young Kolldige.

"Spiritus frumentii," replied the old man absent-mindedly.—Philadelphia Press.

Time's Changes.

Mrs. Redd—Is that your automobile your husband is in?

Mrs. Greene—I really don't know. You see, it's in the repair shop so much that I don't remember just what it does look like!

Physicians Recommend Castoria

CASTORIA has met with pronounced favor on the part of physicians, pharmaceutical societies and medical authorities. It is used by physicians with results most gratifying. The extended use of Castoria is unquestionably the result of three facts: **First**—The indisputable evidence that it is harmless; **Second**—That it not only allays stomach pains and quiets the nerves, but assimilates the food; **Third**—It is an agreeable and perfect substitute for Castor Oil. It is absolutely safe. It does not contain any Opium, Morphine, or other narcotic and does not stupefy. It is unlike Soothing Syrups, Bateman's Drops, Godfrey's Cordial, etc. This is a good deal for a Medical Journal to say. Our duty, however, is to expose danger and record the means of advancing health. The day for poisoning innocent children through greed or ignorance ought to end. To our knowledge, Castoria is a remedy which produces composure and health, by regulating the system—not by stupefying it—and our readers are entitled to the information.—Hall's Journal of Health.

Letters from Prominent Physicians addressed to Chas. H. Fletcher.

Dr. B. Halstead Scott, of Chicago, Ills., says: "I have prescribed your Castoria often for infants during my practice, and find it very satisfactory."

Dr. William Belmont, of Cleveland, Ohio, says: "Your Castoria stands first in its class. In my thirty years of practice I can say I never have found anything that so filled the place."

Dr. J. H. Taft, of Brooklyn, N. Y., says: "I have used your Castoria and found it an excellent remedy in my household and private practice for many years. The formula is excellent."

Dr. R. J. Hamlen, of Detroit, Mich., says: "I prescribe your Castoria extensively, as I have never found anything to equal it for children's troubles. I am aware that there are imitations in the field, but I always see that my patients get Fletcher's."

Dr. Wm. J. McCrann, of Omaha, Neb., says: "As the father of thirteen children I certainly know something about your great medicine, and aside from my own family experience I have in my years of practice found Castoria a popular and efficient remedy in almost every home."

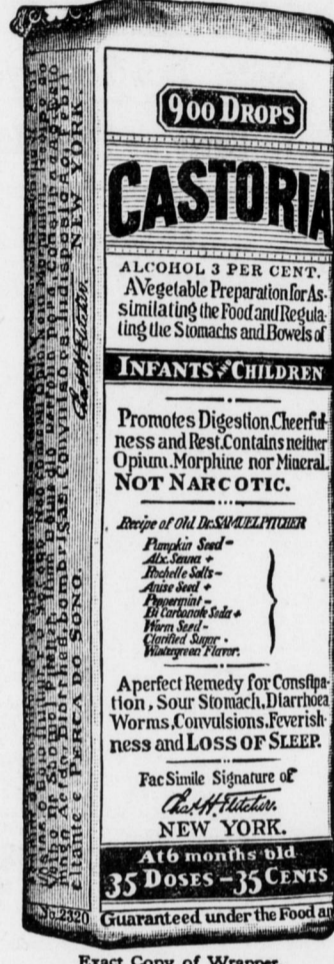
Dr. J. R. Clausen, of Philadelphia, Pa., says: "The name that your Castoria has made for itself in the tens of thousands of homes blessed by the presence of children, scarcely needs to be supplemented by the endorsement of the medical profession, but I, for one, most heartily endorse it and believe it an excellent remedy."

Dr. R. M. Ward, of Kansas City, Mo., says: "Physicians generally do not prescribe proprietary preparations, but in the case of Castoria my experience, like that of many other physicians, has taught me to make an exception. I prescribe your Castoria in my practice because I have found it to be a thoroughly reliable remedy for children's complaints. Any physician who has raised a family, as I have, will join me in heartiest recommendation of Castoria."

GENUINE CASTORIA ALWAYS Bears the Signature of

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The Kind You Have Always Bought

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Exact Copy of Wrapper.

No Automobiles There.

"There are no automobiles on the golden streets of heaven," says the Whitsett Courier, "but they're giving lots of folks a chance to walk those golden streets. One of the contraptions arrived in town last week and during the first spin the owner took in it it pitched a blind mule on top of the town hall, with the man that was ridin' the mule. The mule was so mad it kicked the town clock to pieces, likewise kickin' a hole in the roof an' fallin' on the mayor, just as he had took his seat an' called council to order. Having landed in the midst of them, the mule walked slow and dignified to the front door an' then took to the woods."

Just Suppose.

"S'pose the old man don't get the office he's a-runnin' for?"

"Well, he says that'll be a calamity to the state, but of the state won't let him save it, it'll only have its fool self to blame. Ef they turn him down, his responsibility ceases!"—Exchange.

Your Druggist Will Tell You That Murine Eye Remedy Cures Eyes, Makes Weak Eyes Strong, Doesn't Smart, Soothes Eye Pain and Itch for 50c.

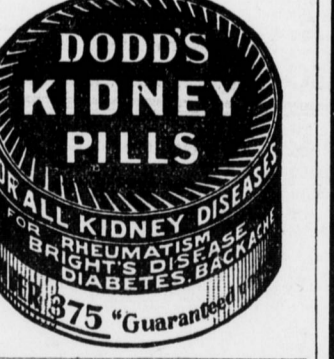
Labor rids us of three great evils; poverty, vice and ennui.—Voltaire.

Mrs. Winslow's Soothing Syrup. For children teething, softens the gums, reduces inflammation, allays pain, cures wind colic. 25c a bottle.

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Allen's Foot-Ease, a Powder For swollen, sweating feet. Gives instant relief. The original powder for the feet. 25c at all Druggists.

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WIDOWS' under NEW LAW obtained by JOHN W. MORRIS, Washington, D. C.

A. N. K.—C (1908—37) 2247.

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DEFIANCE STARCH never sticks to the iron.

Shortest Line to Rosebud Reservation

The opening of the Rosebud Reservation, October 5 to 17, next, will give over 5000 people each a choice farm in Tripp County, South Dakota, for a small sum per acre. 838,000 acres will be opened. People drawing one of these farms must pay \$6.00 an acre: one-fifth down, balance in 5 years. Chamberlain and Presho, South Dakota, are places of registration. Both are located on the shortest line to the reservation from Chicago—the

CHICAGO MILWAUKEE & ST. PAUL RAILWAY

The best of these lands are located in the northern part of Tripp County, easily reached from both Chamberlain and Presho. All persons, except certain soldiers, must be present in one of these towns for registration. Presence at the drawing is not required. Those who draw one of these farms will be notified by mail. Rosebud folder, containing map, and giving full particulars free on request.

F. A. MILLER, General Passenger Agent, Chicago.