

MOVING A BRICK HOUSE BY WATER.

BY G. P. BLACKISTON.

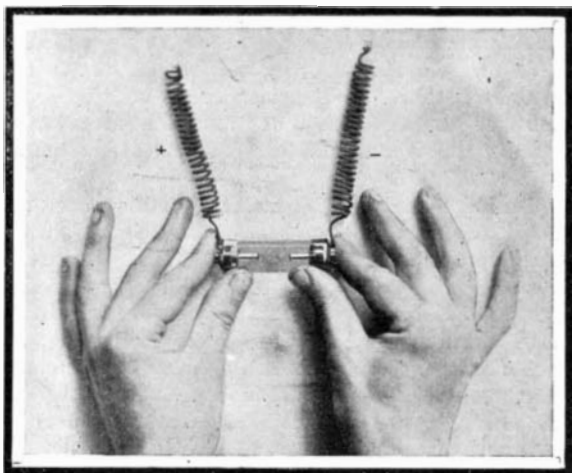
A few months ago we described and illustrated the lifting of a large brick mansion one hundred and sixty feet up the face of the steep cliffs that border the Allegheny River, near Pittsburg. We now illustrate another remarkable feat of house-moving.

The subject in question is the removal of a large two-story brick building, sixty years old, weighing over two hundred tons, from its former location at Sharpsburg, a suburb of Pittsburg, to the food product establishment of the H. J. Heinz Company in Allegheny, a distance of nearly four miles. This in itself is a very clever piece of work; but to make it all the more wonderful, most of the work was performed upon the water.

From the moment the house was lifted until it was placed upon its new foundation, there arose one complication after another. The long stretch of ground lying between it and the river was of such a soft, marshy nature, apparently without bottom, that the building was constantly in danger of collapsing; but even when these obstacles were overcome, and the house placed upon the shore of the river, a very severe flood rose, surrounding the house to a depth half way to the second story, and placing it in midstream. In order to prevent it from being washed away, the blocking and rollers had to be weighed down with immense beams and steel rails. The rushing waters abating sufficiently, the house was moved and lowered upon a large coal barge. This being done, and everything made ready, it was gradually towed down the Allegheny River, but due to the four low bridges between it and its destination, the barge had to be scuttled before passing each bridge, the water being pumped out afterward. To add to the excitement, it had to be lowered through a lock; and even when the river trip was completed, three tracks of the Buffalo, Rochester & Pittsburg Railroad had to be crossed within thirty minutes.

A SIMPLE POLARITY INDICATOR FOR INDICATING THE NEGATIVE POLE OF AN ELECTRIC CURRENT.

As is well known to electricians, the operation of determining the poles of a battery is not always an

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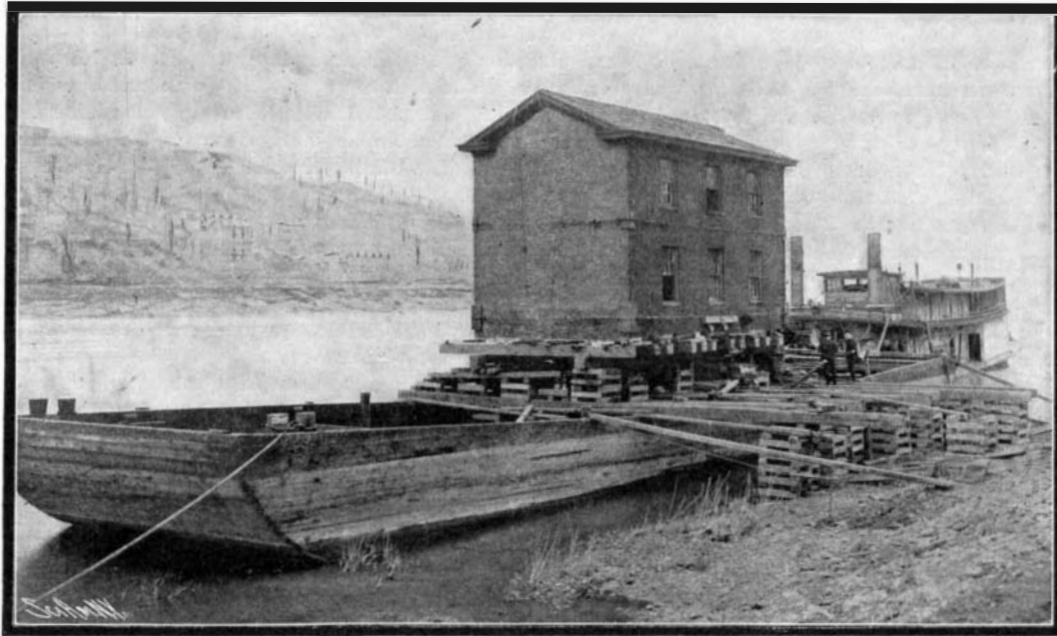
easy one to perform. A galvanometer is perfectly well adapted for the purpose, but is not very practical. The trouble with pole-paper and common blue-print paper is that both have to be moistened. A simple pole-tester, which can be had from any good electrical supply house, is shown in the illustration above. It consists of a glass tube closed at the two ends by a metal cap which is provided with a binding screw and a short internal metal rod. For the determination of polarity, the apparatus is put in circuit, and the liquid that it contains immediately becomes red at the negative pole. After the operation is finished, the tube is shaken to cause the color to disappear.

It is evident that after a certain number of determinations the liquid will have become too red to be any longer serviceable. All that has to be done in such an event is to empty the tube and fill it with fresh liquid. This very simple, and consequently inexpensive, apparatus is particularly well adapted for the use of automobilists, motorcyclists, and electricians, and, in general, of all those who, for one reason or another, have to determine electric polarities.

A STRANGE HOME.

BY CHARLES F. HOLDER.

A number of years ago a gentleman, who owned a farm near Baltimore, sent me word that he had a curiosity on his place which he wished me to see; and

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during my visit there he took me out into the field, leading the way to a clump of bushes, in the center of which was a hole two feet across, from which smoke was rising. The owner whistled or made some signal, upon which came first the woolly head, then the form of an old negro, who could well have posed as a gorilla, so remarkable were his features. The man, it appeared, insisted on living like a gopher in this hole, which I was assured was about five feet high by ten feet in length, being protected from the rain by a wooden cover. The man was allowed this ground rent, and fed by the landowner. He built a fire in the hole, and existed in a smoke that would doubtless have killed a white man; yet he lived here winter and summer an existence far below that of any cave dweller of which there is any knowledge, without the comforts, so to speak, of the gopher and other burrowing animals, which have various apartments and sleeping rooms, warm and dry.

The ground home suggests itself to numbers of persons as being already made. Holes or caves are utilized and adopted. Such a home of a very interesting native is to be seen on the island of Santa Cruz, off Santa Barbara, California. Here the oldest home on the island is underground, and has been occupied for many years. A yellowish sandstone cliff has been worn out by the wind and weather into rooms similar to those found in the various cañons, one of which may be seen on the left of the accompanying photograph. The road passes directly along the cliff, and over the excavation, which is ten or twelve feet long and fifteen or more wide, forming a commodious room for the one man who has lived there, it is said, seventeen years. By cutting the top of the entrance away he formed an arch, even this requiring but little labor. The opening was then closed by boards and braced or supported by scantling, two uprights forming a door; all being neatly whitewashed. On one side of the doorway a chimney was built of adobe bricks and mud, being on the outside after the fashion of the chimneys seen in Virginia. The top portion is a modern iron stove-pipe, but a little roof of shakes is built out from it to keep the rain from the mud, brick, and stone chimney. The earth has been leveled twelve feet out from the door, and inclosed with a fence having a gate, all neatly whitewashed. Such is the cave house of a modern islander, whose dwelling is a cross between an ancient cave dwelling and a modern shanty. Earthquakes, and some heavy ones, have shaken the island, but have failed to affect it; its roof is the solid cliff partly beneath the roadway; and so far as creature comforts go, the occupant is contented in perhaps the strangest home of a white man in this country.

The gold-mining industry in Lapland has been closed, owing to the bad results obtained.

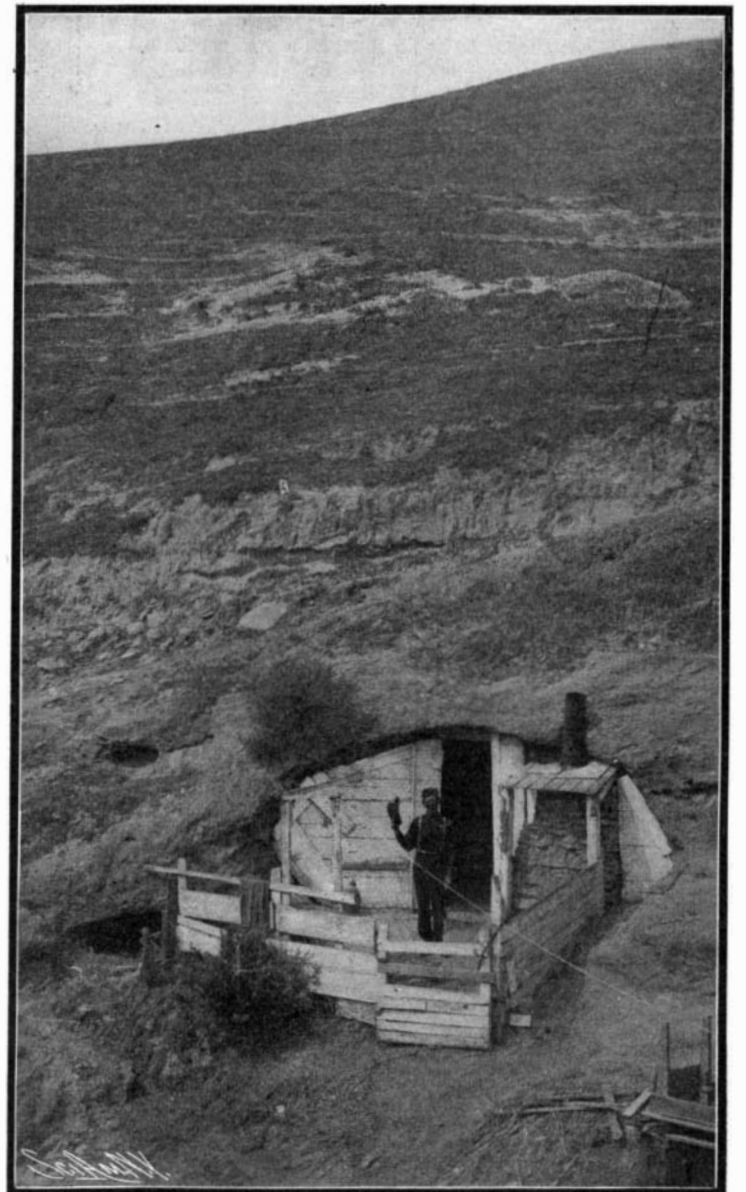
Novel Bridge Across the Wear.

A new double-deck bridge possessing several interesting features is to be thrown across the River Wear at Sunderland, England. The structure has been designed by Mr. C. A. Harrison, the engineer in chief to the North-Eastern Railroad, and is to be constructed by Sir William Arrol & Co., Limited, of Glasgow. The new bridge with its approaches will measure one and a half miles from end to end. The upper deck is to be used for the railroad, while the lower level will be utilized for road traffic. This arrangement has been adopted, as thereby the gradients from the thoroughfares on either bank, leading to the bridge approaches, are facilitated. The main river span will be of 350 feet, with a headway of 85 feet clear above high-water level at spring tides. There will be a 220-foot span on the south side, and two similar spans each of 220 feet on the north side, passing over shipbuilding works.

One of the most interesting features of the work will be

in connection with the sinking of the caissons to carry the masonry piers. The river caisson will have to be sunk to a depth of about 90 feet. The weight of the steelwork in the main girder span will be from 2,500 to 3,000 tons. The girders are to be of the lattice type, and with a total depth of 42 feet. The main girders will be placed 26 feet apart, representing the width of the roadway. Upon transverse girders supported upon the main lattice members, about 20 feet above the bottom boom, will be carried a double railroad track. Sidewalks each 7 feet wide are placed on either side of the main girders, while gas and water mains are to be carried on the outer ends of these cantilevers. The construction of the bridge will have to be carried out upon the overhang system, as according to the contract there is not to be any obstruction in the fairway of the river at any period of erection. The cost of the structure is estimated at \$1,500,000.

A good formula for aluminium silver is: 3 parts of aluminium and 1 part of silver. This alloy is very easy to work.

**A MODERN CLIFF DWELLER.**