

No. 672,449.

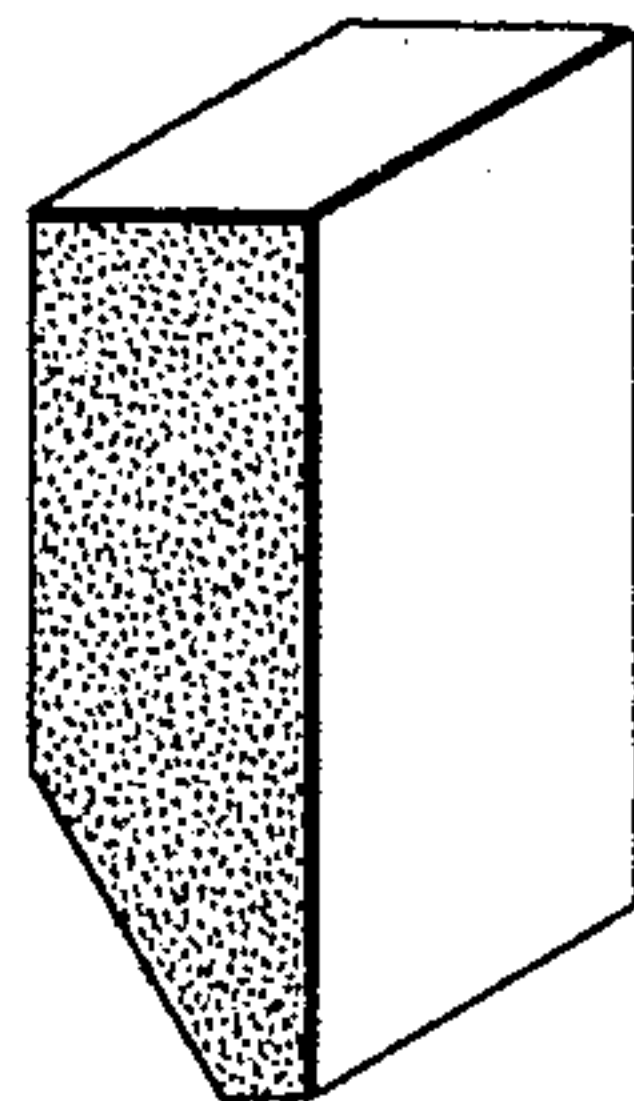
Patented Apr. 23, 1901.

W. A. MARKEY.
ELECTRICAL CONDUCTOR.

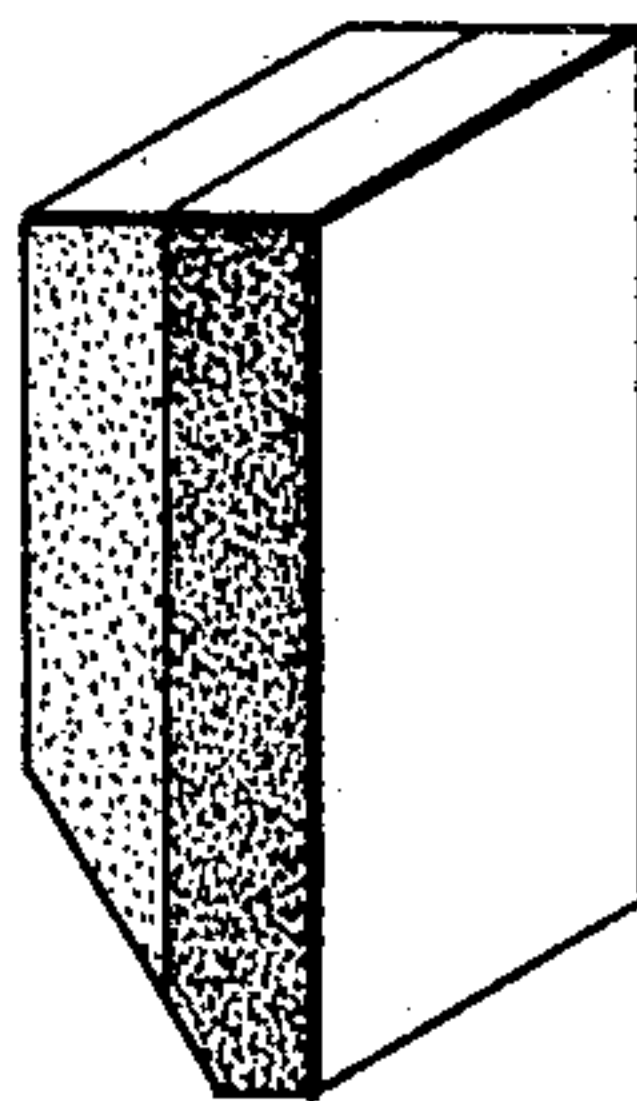
(Application filed Aug. 31, 1900.)

(No Model.)

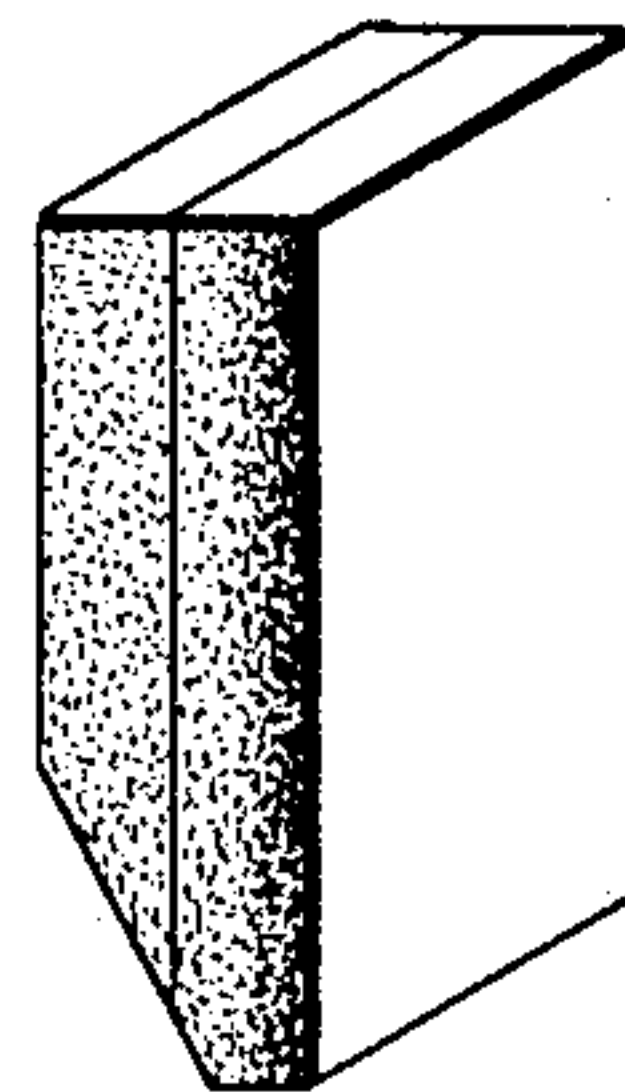
- FIG. I -



- FIG. II -



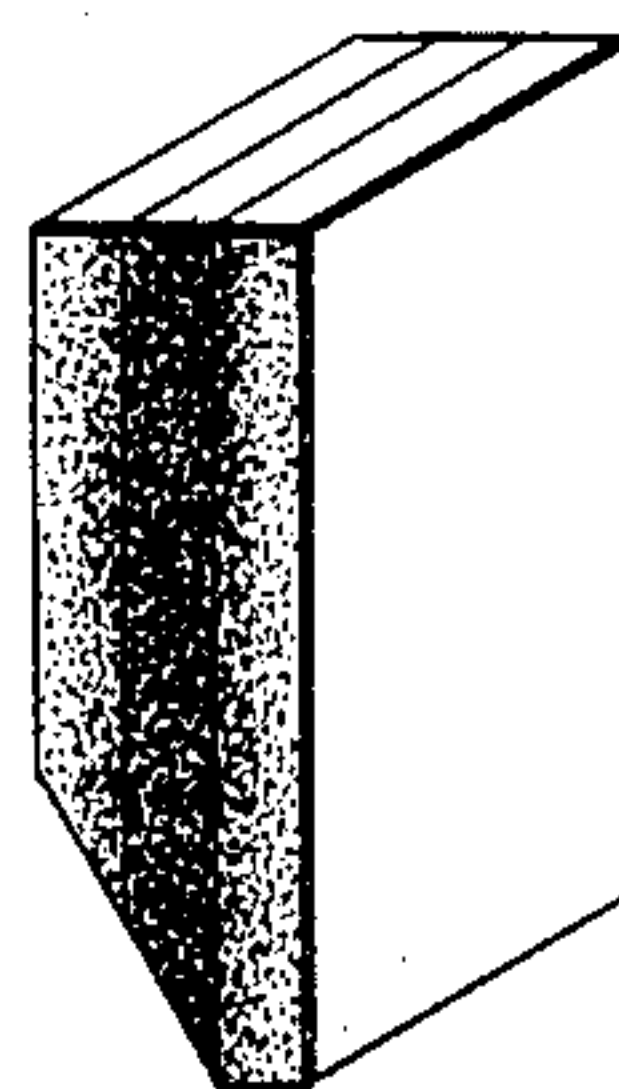
- FIG. III -



- FIG. IV -



- FIG. V -



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UNITED STATES PATENT OFFICE.

WILLIAM A. MARKEY, OF SAGINAW, MICHIGAN, ASSIGNOR TO EMMET T. BOWEN, OF SAME PLACE.

ELECTRICAL CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 672,449, dated April 23, 1901.

Application filed August 31, 1900. Serial No. 28,720. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MARKEY, a citizen of the United States, and a resident of Saginaw, county of Saginaw, and State of Michigan, have invented a new and useful Improvement in Electrical Conductors, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to conductors used for electrical purposes, and particularly to a modification of the device shown and described in United States Letters Patent No. 656,652, issued August 28, 1900.

In the manufacture of my improved conductor I employ a modification of the process described and claimed in my application for United States Letters Patent, Serial No. 1,550, filed January 15, 1900.

The annexed drawings and the following description set forth in detail certain means embodying the invention, such disclosed means constituting but one of various forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a perspective view of a carbon brush embodying my invention, the molecular construction of such brush being indicated upon the front face thereof. Figs. II, III, IV, and V represent similar views illustrating the construction of compound brushes embodying my invention and illustrating modified uses thereof.

In carrying out my said invention a block of porous material, such as carbon, is immersed in a solution of a silver compound, such a silver nitrate or ammonia-silver chlorid, and permitted to remain in such solution until saturated, so as to cause the impregnation of the material to become uniform. After such saturation the material is treated in a manner similar to that described in my said last-named application—that is, it is first thoroughly dried at a moderate heat and then heated sufficiently to reduce the silver compound to metallic silver. The metallic silver so formed is deposited in the pores of the ma-

terial and coats the particles thereof, thereby uniting them mechanically and electrically and forming an electrical conductor of increased conductivity. As in the inventions described in the above-named applications, such conductor is particularly adapted for forming brushes for dynamo-electric machines.

When it is desired to form a brush having zones or areas of varying conductivity, a block of untreated carbon may be cemented to a block of treated carbon, as shown in Fig. II, or a block of carbon treated so as to have the silver distributed non-uniformly to form varying zones of conductivity, such as is described in said applications, may be cemented to such carbon treated as herein described, as shown in Fig. III.

For a reversing dynamo-electric machine a block of carbon treated so as to have uniform conductivity is placed between two untreated blocks, as shown in Fig. IV, or two blocks treated so as to have varying conductivity, as shown in Fig. V, as will be readily understood, thereby producing a compound structure having a central portion of high conductivity and lateral portions of lower conductivity.

Other means of applying the principle of my invention may be employed instead of the one explained, change being made as regards the means herein disclosed, provided the means covered by any one of the following claims be employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a conductor for electrical purposes, a porous body having silver distributed uniformly throughout its pores, substantially as set forth.

2. In a conductor for electrical purposes, a porous body having metallic silver distributed uniformly throughout its pores, substantially as set forth.

3. In a conductor for electrical purposes a porous body having its molecules covered with a deposit of silver uniformly distributed throughout such body, substantially as set forth.

4. A conductor for electrical purposes comprising a porous body having silver distributed uniformly throughout its pores, and a sec-

ond porous body of lower conductivity than said first-named body secured thereto, substantially as set forth.

5 5. A conductor for electrical purposes comprising a porous body having silver distributed uniformly throughout its pores, and a second porous body having silver distributed

non-uniformly throughout its pores, substantially as set forth.

Signed by me this 24th day of August, 1900.

WILLIAM A. MARKEY.

Attest:

EDWARD OSCAR,
HENRY MCCHESS.