

No. 656,780.

Patented Aug. 28, 1900.

W. E. ATHEARN.
LIGHTNING ARRESTER.

(Application filed Feb. 16, 1898.)

(No Model.)

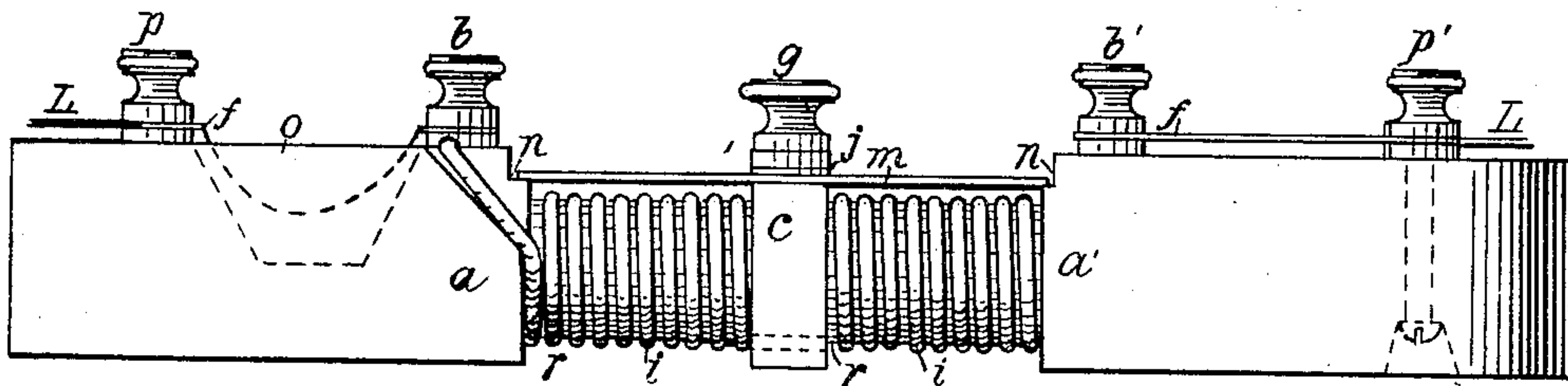


Fig. 1

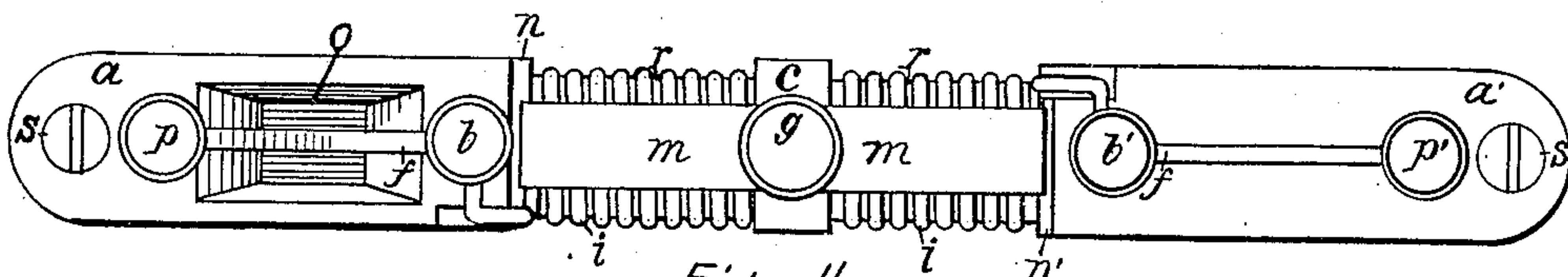


Fig. 2

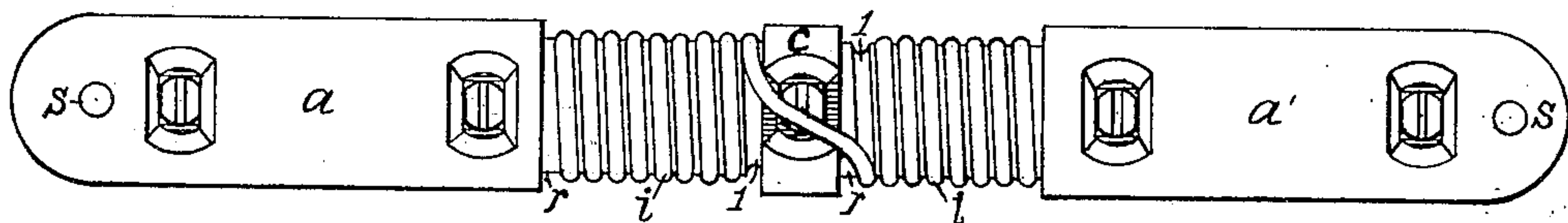


Fig. 3

WITNESS
F. P. Mauer Jr.
Frank Jones and.

INVENTOR
William E. Athearn
BY
H. Anderson
ATTORNEY

UNITED STATES PATENT OFFICE

WILLIAM EDWARD ATHEARN, OF NEW YORK, N. Y.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 656,780, dated August 28, 1900.

Application filed February 16, 1898. Serial No. 670,596. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EDWARD ATHEARN, a citizen of the United States, and a resident of New York city, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lightning-Arresters, of which the following is a specification.

This invention relates to the class of lightning-arresters that depend upon "choke-coils" for effect, and has for its object a simple, compact, self-contained instrument possessing the highest efficiency.

The object is attained by the means set forth in the accompanying drawings, in which like characters refer to similar parts throughout the several views.

Figure I represents an elevation of the arrester. Fig. II represents a top view of the arrester. Fig. III represents a bottom view of the arrester.

The arrester consists of an elongated porcelain block, the ends $a a'$ of which are rectangular in cross-section, having holes $s s$, Fig. 2, at their extreme end, for fastening the arrester in place. A central section c of the block is likewise rectangular in cross-section, while the portions $r r$ are round and are provided with a spiral groove like a screw-thread, except that the cut of the thread is semicircular to conform to the shape of the wire to be wound in it, as shown at 1 1, Fig. III. In the said groove a copper wire i , preferably bare, is wound, starting with the binding-post b and winding in a single piece to the binding-post b' . In Fig. III is shown how the wire passes from the section r to r' , the section c being recessed on the under side to admit of the wire crossing over below the surface of the block, as also indicated in Fig. I, so that when the arrester is placed in position the wire will not be in contact with whatever the arrester may be affixed to. It will be observed also, by reference to Fig. I, that the screw that holds the binding-post g also lies in a recess still farther within the block to avoid all contact with the wire. The wire thus wound on the block constitutes a part of the circuit in which the arrester is placed. Each of the parts $a a'$ is provided with two binding-posts. The line L is connected with

the two outer posts $p p'$, and these two posts are connected with the posts $b b'$ by fuses $f f$.

All the screws securing the binding-posts to the block have their heads in deep recesses in the base of the block, as in Figs. I and II.

Numbers of these arresters are often installed together, being placed vertically in rows side by side and close together. To provide for fuses that in "blowing" might interfere with neighboring fuses, a recess is provided in one end, or both ends, if needed, beneath the fuse, as in Fig. II, at o . When the fuse is placed beneath the binding-posts, it may be depressed within the recess, as indicated by a broken line, Fig. I. The recess is of such capacity as not to interfere with a proper circulation of air around the fuse. When the fuse is so placed, its blowing can do no harm. The ends $a a'$ are notched on their inner top ends, as at $n n'$, Figs. I and II, to receive a brass plate m , and the section c is reduced at the top to a level with the notches. The brass plate m rests on the section c and the notches n close to the wire coils, where it is securely held by a nut i under the binding-post g . This plate constitutes the "ground," and the ground-wire is connected to the binding-post g .

While the arrester shown is described as made of porcelain, it will be understood that this material has been found to be the best for the purpose; but the block may be made of any non-conducting material. I also reserve the right to vary the shapes herein shown, so long as the principles of the invention are adhered to.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A lightning-arrester comprising a block of non-conductivity having elongated ends bearing connections for the line and fuses, a central portion to which the ground-plate and ground connection are secured, and intermediate sections wound with coils of wire that constitute part of the line-circuit, and a ground-plate secured to the said central portion and extending contiguous to the said coils to each of the said end sections, substantially as herein shown and described.

2. The combination in a lightning-arrester of a non-conducting block having sections

a, a', provided with binding connections for the line and fuses, screw-holes for securing the block to a base, the central section for the support of the ground-plate having its top surface on the plane of the notches in the end sections, and the intermediate spirally-grooved sections, with the binding-posts, fuses, and coils forming a part of the line, and the ground-plate and connection, substantially as herein shown and described.

3. A lightning-arrester comprising a block of non-conductivity having elongated ends with connections for the line and fuses, a recess in the end for the depression therein of

the fuse, a central portion to which the ground-plate and connection are secured, and intermediate sections wound with coils of wire that constitute part of the line-circuit and a ground-plate supported on the central portion and notches in the end portions, substantially as shown and described.

Signed at New York city, in the county of New York and State of New York, this 10th day of February, A. D. 1898.

WILLIAM EDWARD ATHEARN.

Witnesses:

WM. ARNOUX,

W. A. VAN ORDEN.