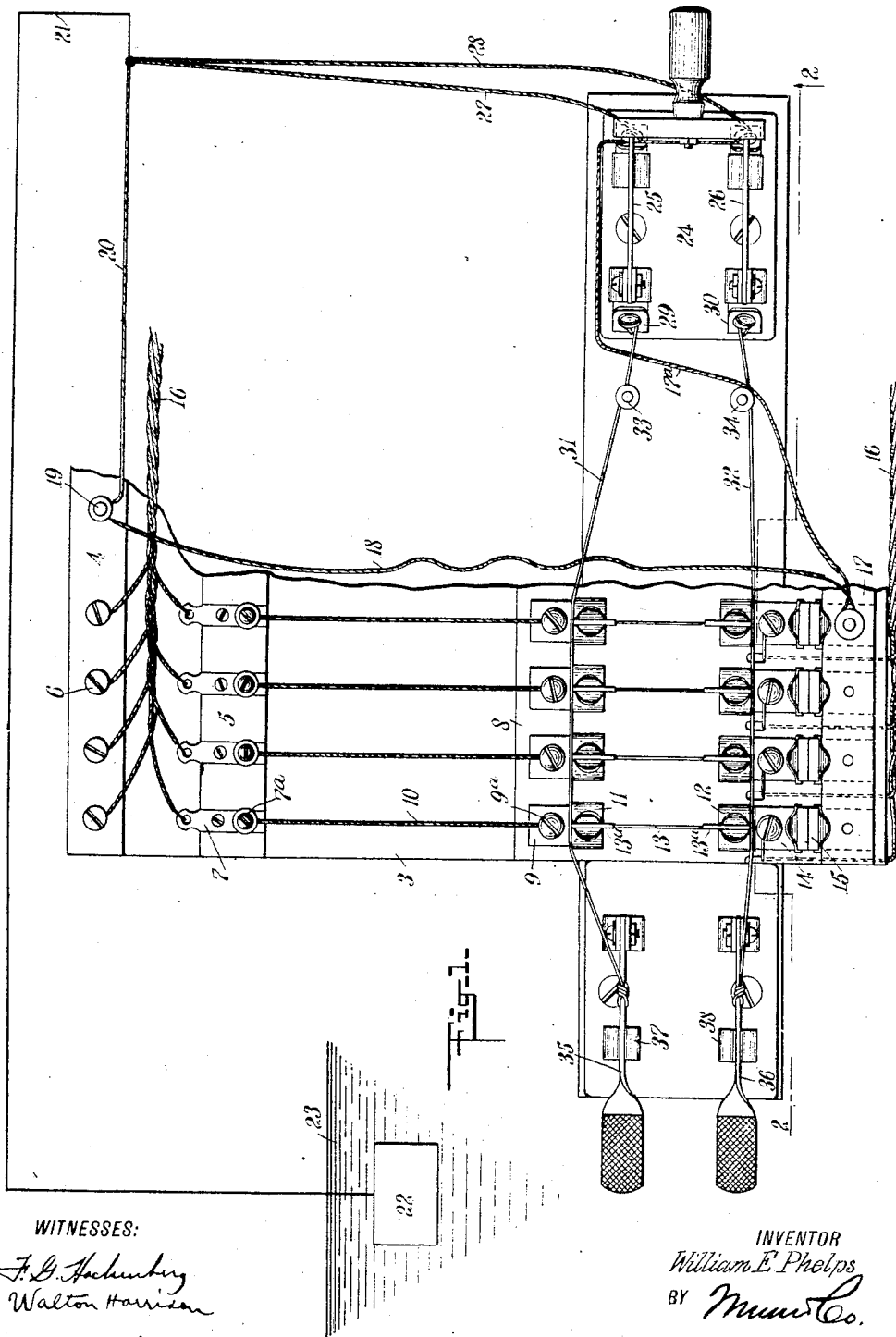


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 LIGHTNING ARRESTER.
 APPLICATION FILED FEB. 16, 1910.

968,405.

Patented Aug. 23, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

F. D. Hechumby
Walton Harrison

INVENTOR
William E. Phelps
 BY *Munroe & Co.*

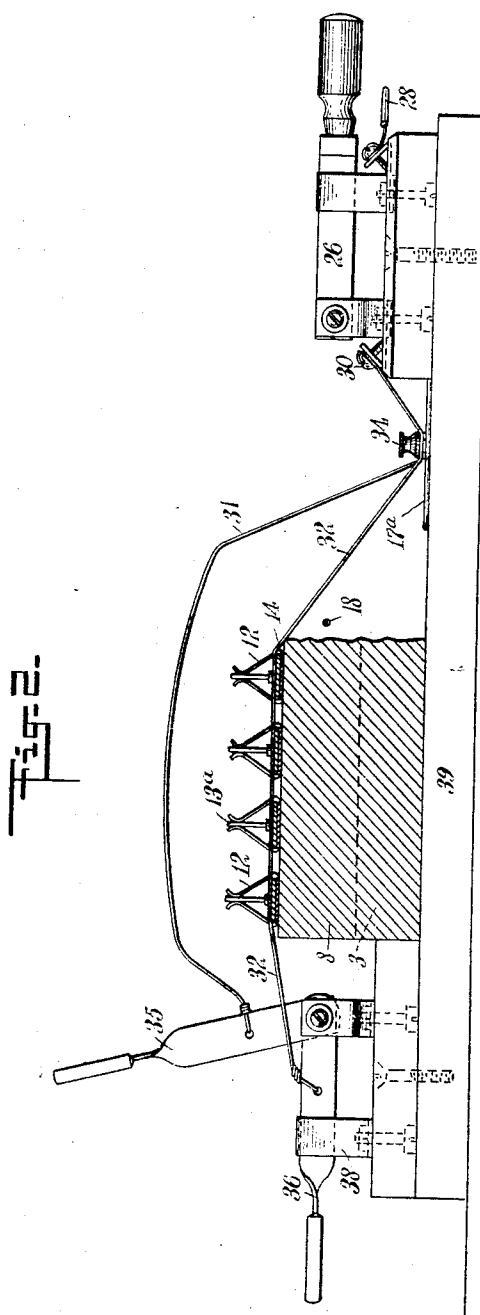
ATTORNEYS

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WITNESSES:

F. J. Hackenberg.
Walton Harrison

INVENTOR
William E. Phelps
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ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM E. PHELPS, OF COLEBROOK, OHIO.

LIGHTNING-ARRESTER.

968,405.

Specification of Letters Patent.

Patented Aug. 23, 1910.

Application filed February 16, 1910. Serial No. 544,245.

To all whom it may concern:

Be it known that I, WILLIAM E. PHELPS, a citizen of the United States, and a resident of Colebrook, in the county of Ashtabula and State of Ohio, have invented a new and Improved Lightning-Arrester, of which the following is a full, clear, and exact description.

My invention relates to lightning arresters, my more particular purpose being to provide a kind of lightning arrester suitable for auxiliary use in connection with other lightning arresters and with various parts generally employed in telephone exchanges and the like.

More particularly stated, I seek to produce a lightning arrester in which a line wire or its equivalent is movable at will into and out of engagement with various conducting members, for the purpose of quickly grounding or ungrounding all of these members by a single movement of a hand lever or the like.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a view partly in elevation and partly broken away, showing my improved lightning arrester as applied to a telephone switch board, and Fig. 2 is a section on the line 2-2 of Fig. 1, looking in the direction of the arrow.

A board is shown at 3 and is provided with supporting strips 4, 5, carrying binding posts 6 and conducting plates 7.

At 8 is a block integral with the board 3. Upon this block are a number of metallic bases 9, the latter carrying binding posts 9^a which are connected by wires 10 with other binding posts 7^a carried by the plates 7. Mounted upon the bases 9 are spring clips 11 and disposed opposite these spring clips are other spring clips 12. From each spring clip 11 to its mating spring clip 12 extends a fuse 13 which, for this purpose, is provided at its ends with contact heads 13^a. The fuses are slipped into place by forcing the contact heads 13^a into the clips 11, 12. The spring clips 12 are supported upon metallic bases 14 and connected with the latter are lightning arresters 15.

At 16 are conductors which are connected respectively with the lightning arresters, and the conducting plates 7. A metallic strip 17

is connected with and practically forms a common ground plate for all of these lightning arresters. The strip 17 is connected by a wire 18 with a binding post 19 and extending from the latter are wires 20, 21.

At 22 is a ground plate, preferably of sheet copper. A discarded kitchen vessel made of copper will answer the purpose of a ground plate.

At 24 is a hand switch provided with switch blades 25, 26. This switch is provided with binding posts to which are connected wires 27, 28, these two wires being joined with the wires 20, 21, as indicated in Fig. 1, so that the wire 21 acts as a ground wire for the three wires 20, 27, 28. A wire 17^a connects the ground plate 17 with the wires 27, 28.

The switch 24 is further provided with binding posts 29, 30 and connected with the latter are wires 31, 32. These wires are bare and may be made of non-corrosive heat-resisting metal, such as German silver, or of sections of fusible wire, as desired. These wires 31, 32 are connected with binding posts 33, 34 which I use for the purpose of lessening the mechanical strain of these wires upon the binding posts 29, 30. Two switch levers 35, 36 are disposed adjacent to clips 37, 38, these clips and levers being mounted upon a cross bar 39 which also supports the switch 24.

By raising the lever 35 the wire 31 is slackened and pressed upward out of engagement with the metallic bases 9. Similarly when the lever 36 is raised, the wire 32 is liberated from its engagement with the bases 14. By depressing both levers, both wires 31, 32 are brought into engagement with the groups of bases with which they are respectively associated, and upon the upward movement of either of these levers the corresponding wire 31 or 32 is instantly carried out of engagement with the bases with which it is associated. The operation of my device is as follows: Normally the levers 35, 36 are both raised. The fuses 13 and lightning arresters 15 then act as they do under ordinary conditions. Suppose, however, that a storm comes up and that there is imminent danger that instruments connected with the wires 16 may be damaged. To be sure, if the fuses 13 work properly, there may be no danger, but a defective fuse might enable the lightning to damage one or more instruments which are usually very delicate. In a case of this

kind, the operator presses down the two
levers 35, 36. The bases 9 are thus grounded
through the following circuit: bases 9, wire
31, binding post 29, switch blade 25, wires
5 27, 21 to ground plate 22. The bases 14 of
the lightning arresters are also grounded
through the following circuit: bases 14, wire
32, binding post 30, switch blade 26, wires
28, 21, and ground plate 22. This is inde-
10 pendent of the grounding of the ground
plate 17 in the usual manner through the
wire 17^a and wires 27, 28 to wire 21, thence
to ground plate 22.

Having thus described my invention, I
15 claim as new and desire to secure by Letters
Patent:

In a switch for lightning arresters or the

like, the combination of a plurality of con-
ducting members disposed adjacent to each
other, a wire extending across said conduc- 20
tors and secured to a fastening, a ground
connection for said wire, and a lever con-
nected with said wire for the purpose of
drawing the same tight in order to force
it into temporary engagement with said con- 25
ducting members.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

WILLIAM E. PHELPS.

Witnesses:

S. H. FRANTZ,
K. D. BUNKER.