Feb. 1, 1938. R. G. SANDS 2,106,902

SUBSTATION PROTECTOR

Filed Oct. 25, 1935

FIG. 1

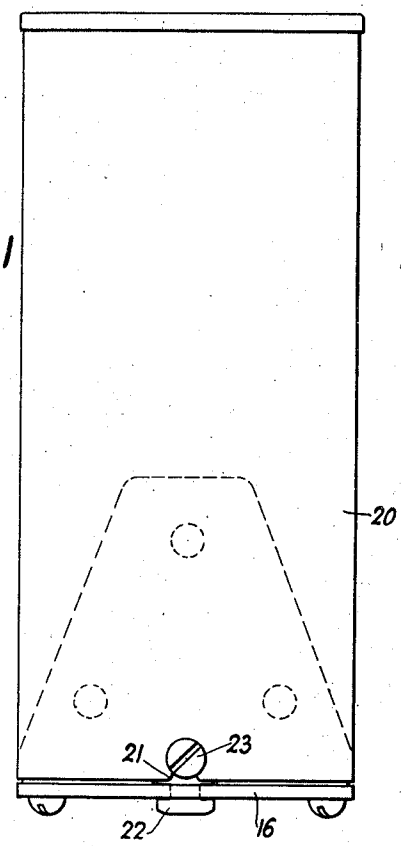



FIG. 2

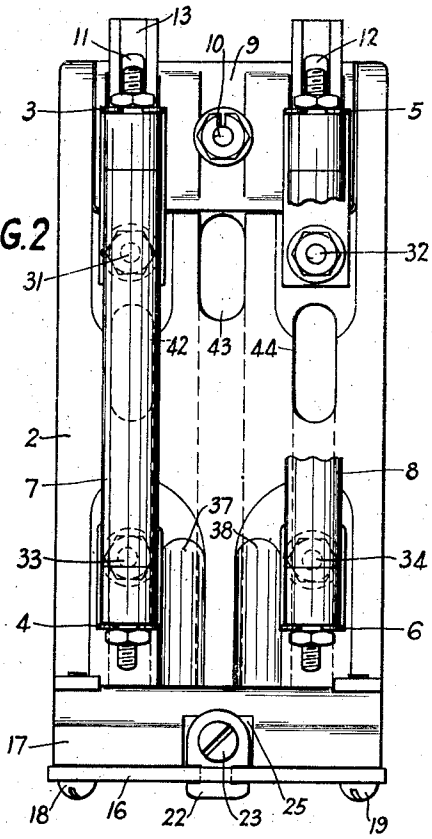



FIG. 3

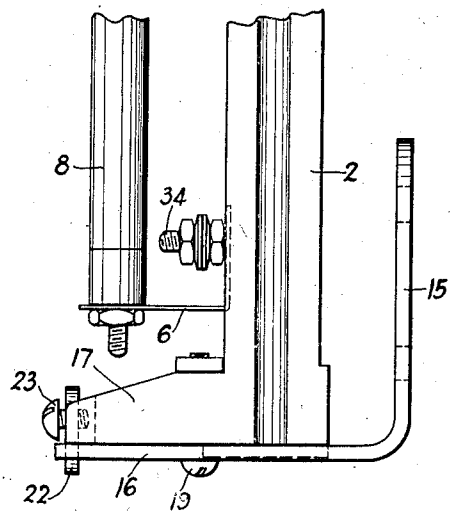
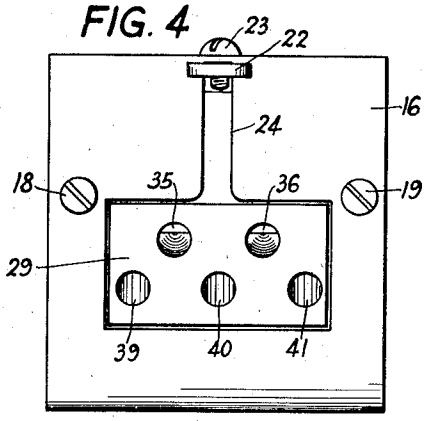



FIG. 4

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2,106,902

# UNITED STATES PATENT OFFICE

2,106,902

## SUBSTATION PROTECTOR

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Application October 25, 1935, Serial No. 46,653

6 Claims. (Cl. 200—133)

The present invention relates in general to substation protectors, for subscribers' telephone stations, and the object of the invention is to provide an economical and efficient protector of the weatherproof type, suitable for mounting outside the subscriber's premises.

A feature of the invention is a supporting bracket, with a cover securing device supported thereon, both of which are reversible so as to adapt the protector either to inside or outside use.

The invention will be described hereinafter with reference to the accompanying drawing, comprising Figs. 1 to 4, inclusive, which show different views of the protector, as specifically pointed out below.

Referring to the drawing, Fig. 1 is a front view of the complete protector with cover in place; Fig. 2 is a similar view with the cover removed; Fig. 3 is a side view or the lower end of the protector as seen in Fig. 2; while Fig. 4 is an end view showing the lower end of the protector as seen in Fig. 1, or Fig. 2.

The protector itself will first be described. It comprises a base 2 of porcelain, upon which are mounted the usual fuses and protector blocks. For mounting the fuses there is provided a pair of fuse clips 3 and 4, and a pair of fuse clips 5 and 6. These clips are held to the base by binding posts, as shown in the case of clip 6 in Fig. 3. Fuses 7 and 8 are supported between these pairs of clips in known manner.

The upper end of the base 2 is provided with a recess at the bottom of which is a ground plate 9 secured in position by the binding post 10. The binding posts 31 and 32 which secure the upper fuse clips 3 and 5 also serve to secure the spring clips 11 and 12, which lie just underneath the fuse clips 3 and 5, respectively, and extend upward over the recess in which the ground plate is located, being tensioned toward the latter. A pair of protector blocks of which one block is indicated by 13 is inserted between the ground plate and spring clip 11, and a similar pair of protector blocks is inserted between the ground plate and the spring clip 12.

Considering now the reversible supporting bracket, this is an L-shaped member comprising a leg 15, designed to lie against the wall of a building, and a leg 16 to which the protector is attached. In order to save space in the drawing the bracket is shown assembled to the protector in the position which is preferable for indoor use. For outdoor use it is usually desirable to have the bracket reversed so that the leg 15 will not be concealed beneath the protector. In explanation of this it may be pointed out that the protector may be more quickly installed with the bracket reversed from the position in which it is shown in the drawing, and the saving of space and somewhat neater appearance is generally of no consequence in an outdoor installation. When the protector is installed indoors, however, especially if in an occupied room, these factors are important, and the longer installation time is justified.

The base 2 has an offset portion 17 formed integrally therewith and also a rectangular projection 29. The leg 16 of the bracket has a rectangular opening which conforms to the dimensions of the projection 29. The bracket may therefore be assembled to the protector base as shown in the drawing, and is held in place by means of bolts 18 and 19 which pass through holes in the offset 17.

The metal cover 20 is rectangular in cross section and just fits the protector base at the lower end 17, being long enough to clear the arrester blocks at the other end. The cover is held in place by means of a member 22 and a screw 23. The member 22 can be seen clearly in Fig. 2, which also shows a recess 25 in the end 17 of the base which is provided to receive the member 22. It will be noted also from Fig. 4 that the restricted portion of member 22 lies in a slot 24 in the bracket. When the cover 20 is placed on the protector the shank of screw 23 enters the slot 21 in the cover. The screws 23 may then be tightened, which clamps a portion of the cover surrounding the slot between the head of the screw and the member 22. This holds the cover in place and prevents removal of it until the screw 23 is loosened up.

Considering the reversible feature more in detail it will be evident, referring to Figs. 2 and 3, that with the cover removed the bracket can readily be reversed to a position in which the leg 15 points away from the protector, or downwardly as seen in Fig. 3. To do this it is merely necessary to remove the bolts 18 and 19, reverse the bracket, and then replace the bolts. It will be noted, however, that this operation would result in changing the position of member 22 so that the screw 23 would not engage the cover 20 when the latter is in place. To overcome this difficulty the member 22 is made reversible also. When the bracket is removed and reversed the member 22 is moved along the slot 24 until it

reaches the large opening provided for 19, when it can be withdrawn from the bracket entirely. It is then replaced in reversed position and will be in the proper position to engage the cover when the bracket is again assembled to the protector by bolts 18 and 19.

Since the protector shown herein is of the weatherproof type it will generally be ordered for outdoor use and will be supplied with the bracket assembled in the outdoor position, that is, reversed from the position shown in the drawing. The installation is then merely a matter of attaching the protector to the outside wall of the building by means of screws, the leg 15 being provided with holes for this purpose. In case a protector has to be installed indoors, however, and it is desired to have the bracket concealed, the installation involves the removal of the bracket and reversal thereof. After the bracket is removed it is attached to the wall in the proper position while separate from the protector, as otherwise the protector would interfere with the insertion of the screws for holding the bracket to the wall.

The manner of connecting up the protector will now be explained briefly. The two wires from the telephone instrument are passed through holes 35 and 36, which communicate with grooves 37 and 38, respectively. See Figs. 2 and 4. The wires therefore are brought alongside the two binding posts 33 and 34 at which they are respectively terminated in the usual manner. The two outside line wires are passed through holes 39 and 41, and the ground wire through hole 40. These three holes communicate with three grooves on the underneath side of the base 2, which in turn merge into openings 42, 43, and 44, respectively. After passing through the holes therefore the three wires run along their respective grooves and are fished out through the three openings 42–44. This brings the wires out in convenient position so that the line wires can be terminated at binding posts 31 and 32 and the ground wire at binding post 10. When the connections are completed the two outside line wires will be connected to the two telephone wires through the fuses, and each side of the line will have a shunt path to ground by way of the discharge gap in the associated arrester blocks.

The invention having been described that which is considered to be new and for which the protection of Letters Patent is desired will be pointed out in the appended claims.

What is claimed is:

1. In a protector, a base of insulating material, a reversible L-shaped bracket including a leg for attaching said base to a wall and adapted to be exposed or concealed when said protector is mounted on said wall depending upon the position of said bracket, a cover, and means carried on said bracket for securing said cover in place independently of said base.

2. In a protector, a base of insulating material, an L-shaped bracket for attaching said base to a wall and having one leg attached to the base, said bracket being reversible so that the other leg may be exposed or concealed beneath the protector base when the protector is mounted by means of said bracket on a wall, a cover, and means carried on said bracket and adapted to secure the cover in place with the bracket in either position and independently of said base.

3. In a protector, a base of insulating material, an L-shaped bracket for attaching said base to a wall and having one leg attached to said base, said bracket being reversible so that the other leg may be exposed or concealed beneath said base, a cover, and a cover securing device mounted on said bracket and adapted to engage the cover with the bracket in one position, said securing means being reversible also so that it can engage the cover with the bracket in the other position.

4. A mounting bracket and cover fastening means for a protector, said bracket being reversible with respect to the protector, whereby it may be exposed or concealed by said protector, and said fastening means being mounted on said bracket and reversible with respect to the bracket, whereby the fastening means assumes the same position relative to the protector cover regardless of the position of the bracket.

5. In a protector, a base of insulating material, a pair of binding posts at one end of said base, a corresponding pair of binding posts near the opposite end, fuse clips secured by said binding posts, fuses extending between opposite fuse clips, a head formed integrally with the base at one end thereof, said head having two pairs of holes therein, one pair communicating with a pair of grooves in the upper surface of the block and leading to the nearest pair of binding posts, and the other pair of holes communicating with a pair of grooves on the lower surface of the block which lead to openings in the block adjacent the other pair of binding posts, a bracket for supporting said protector, said bracket including a plate-like portion of the proper dimensions to cover the surface of said head, said portion having an opening therein, and means for securing said bracket in position against said head with the said opening exposing the said holes in the head.

6. A protector as claimed in claim 5, characterized by the provision of a ground post adjacent one pair of binding posts, and provided with an additional hole in the head communicating with a groove on the lower side of the base which leads to an opening adjacent the ground post.

ROY G. SANDS.