D. L. O'HARA.

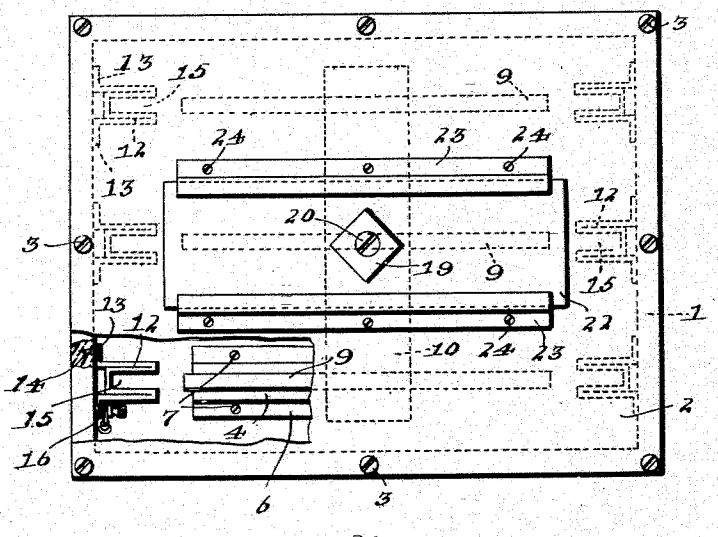
ELECTRIC SWITCH.

APPLICATION FILED DEC. 7, 1918.

1,340,788. Patented May 18, 1920.

2 SHEETS—SHEET 1.

Fig. 1.



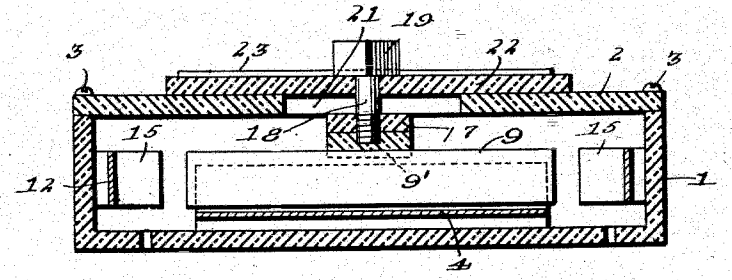
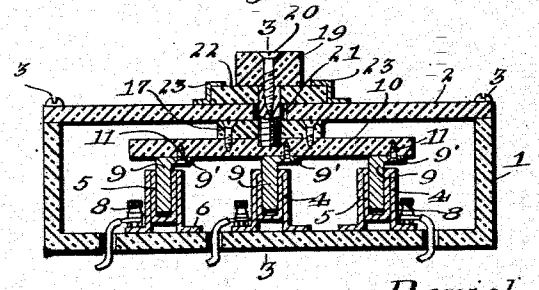


Fig 3

Fig. 2.



Witnesses

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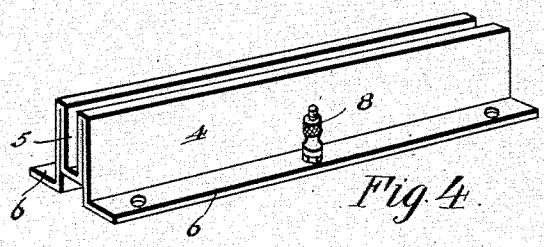


Fig. 4.

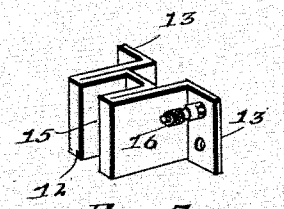


Fig. 5.

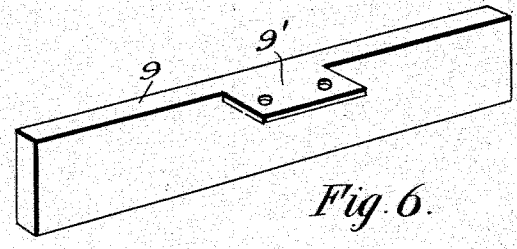


Fig. 6.

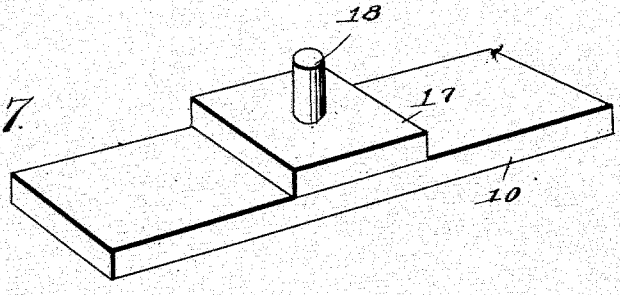


Fig. 7.

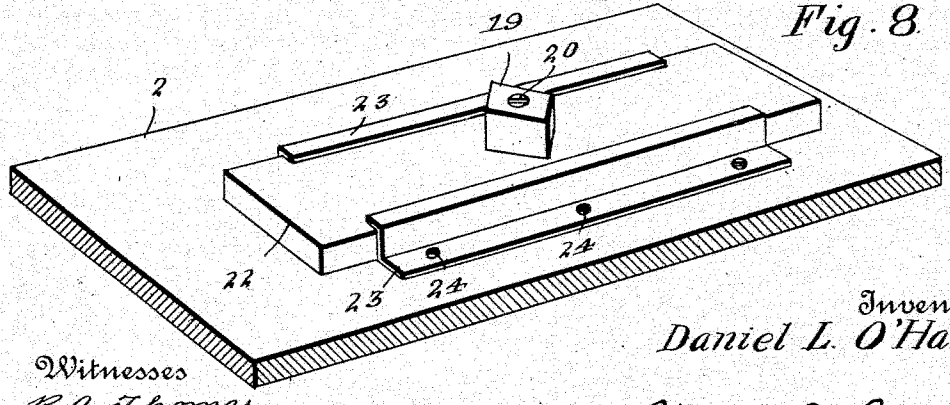


Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL L. O'HARA, OF GREENLAND, MICHIGAN.

ELECTRIC SWITCH.

1,340,788. Specification of Letters Patent. Patented May 18, 1920.

Application filed December 7, 1918. Serial No. 265,673.

To all whom it may concern:

Be it known that I, DANIEL L. O'HARA, a citizen of the United States, residing at Greenland, in the county of Ontonagon and State of Michigan, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to electric switches and the object in view is to provide a safety switch which may be operated without danger of electrocuting the person handling the switch.

A further object of the invention is to provide a switch which cannot be short circuited when water is thrown thereupon, the switch being most admirably adapted for outdoor work of all kinds.

With the above and other objects in view the invention consists in the novel construction, combination and arrangement herein fully described, illustrated and claimed.

In the accompanying drawing:—

Figure 1 is a plan view of the complete switch.

Fig. 2 is a transverse section through the switch.

Fig. 3 is a longitudinal section through the switch.

Fig. 4 is a detail perspective view of one of the blade guides.

Fig. 5 is a perspective view of one of the contact socket features or members.

Fig. 6 is a perspective view of one of the blades.

Fig. 7 is a perspective view of the yoke and its operating means.

Fig. 8 is a perspective view of the shutter and the shutter driving means.

The improved switch embodies a box or casing 1 preferably having a movable cover or face plate 2 secured in place by fastening means 3.

Fastened within the casing 1 are blade guides 4, said guides being arranged in spaced and parallel relation to each other and each of said guides being formed of metal, preferably sheet metal bent into the form shown in the drawings so as to provide a guiding channel or guideway 5 and attaching flanges 6 secured by fastening means 7 such as screws to the inside of the casing, one of said fastening means being preferably in the form of a binding post 8 to which one of the current wires is to be attached. In conjunction with each guide 4 I employ a switch blade 9 which works in the guideway 5 and is directed in its movement thereby. The several blades 9 are provided with lips or flanges 9′ and they are secured to a common yoke 10 by suitable fastening means 11. This causes all of the blades 9 to be concurrently shifted when motion is imparted to the yoke 10. The yoke 10 is composed of any suitable insulating or non-conducting material as is also the casing 1 and cover 2.

Arranged in longitudinal alinement with the guide 4 are end contact socket pieces or members 12 each of which is preferably formed of sheet metal bent into substantially the same form as the respective guide 4, said end contact socket members having flanges 13 to receive fastening means 14 for securing the same to the interior of the casing. Each socket member 12 has a socket or guideway 15 for the adjacent end of the respective switch plate thereby insuring broad and perfect contact. One of the fastening members for the end contact socket member is in the form of a binding post 16 to which one of the wires is to be attached.

Fastened about centrally to the yoke 10 is a block 17 of non-conducting material such as hard rubber and extending outwardly from the block 17 is a post 18. The latter has secured thereto the handle 19 by means of a screw 20. The post 18 which is also of insulating material works in a slot 21 in the face plate or cover 2 of the casing the slot 21 extending in the direction of movement of the switch blade 9. Attached to the post 18 is a shutter 22 which covers the slot 21 and works between parallel guides 23 secured to the cover plate 2 by fastening means 24. The shutter 22 always closes the slots 21 in all positions of the switch operating means and prevents water from obtaining access to the interior of the casing and causing a short circuit. In practice, when the blades 9 are shifted to the left of Fig. 1, and brought into engagement with the contacts 12, the current passes

through the said contacts 12 into the blades 9, thence through the blade guides 4 and out through suitable conductors illustrated in Fig. 2. When the blades 9 are shifted to the right of Fig. 1 they are brought into operative association with the contacts 12 at that side of the switch, the current flowing through the switches, and blades and through the guides 4 for the blades, through suitable conductors indicated in Fig. 2.

From the foregoing description and a study of the drawings it will now be seen that the switch can be operated with perfect safety as the metallic parts of the switch are thoroughly insulated thereby preventing the current from being transmitted to the hand of the operator and it will also be seen that all the water is excluded from the interior of the casing, the metal parts of the switch being thus insured against a short circuit. This particularly adapts the switch for outdoor purposes of all kinds.

I claim:—

1. A switch comprising in combination a substantially rectangular casing, a plurality of spaced parallel guides of conducting material, said guides being secured to the bottom of said casing, and socket members of conducting material secured to the end walls of the casing in longitudinal alinement with the aforementioned guide, said guides and socket members being formed from a single piece of material bent intermediate at its ends to provide a substantially U-shaped channel, and attaching flanges, a binding post carried by one flange of each guide and socket member, a yoke arranged within the casing, a plurality of blades depending from the yoke and arranged in said guides, and adapted to be moved into and out of engagement with the socket members, and a handle arranged exteriorly of the casing in connection with said yoke for shifting the latter.

2. A switch comprising a casing, a plurality of spaced parallel guides, secured to the bottom of the casing, socket members secured to the end walls of the casing in longitudinal alinement with the guide, said socket and guides being formed from a single length of material bent intermediate its ends to provide a substantially U-shaped portion and attaching flanges, a yoke arranged within the casing, a plurality of blades depending from the yoke and arranged in said guides, a post rising from said yoke and passed through a longitudinal slot in the top of the casing, flanges secured to said top at opposite sides of the slot, a plate covering said slot, and an opening for the reception of said post, and a handle secured to said post for shifting said yoke within the casing for the purpose specified.

In testimony whereof I affix my signature.

DANIEL L. O'HARA.