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O. A. SHANN

2,261,419

ELECTRIC SWITCH

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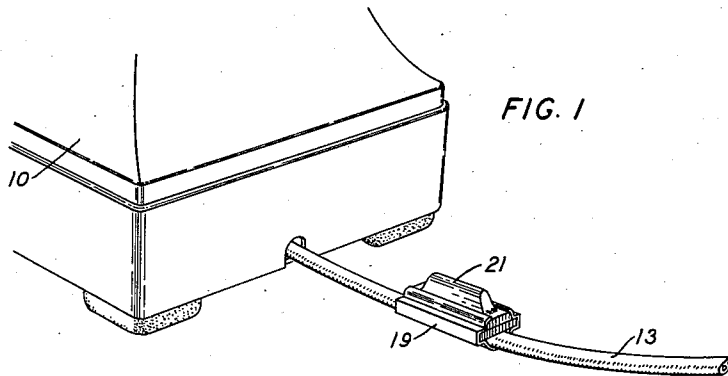


FIG. 1

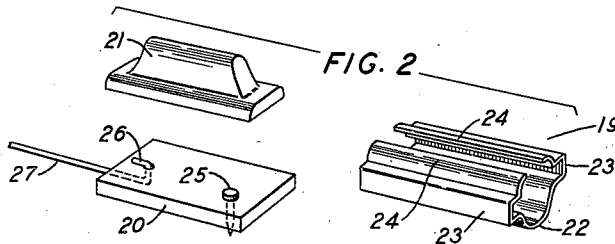


FIG. 2

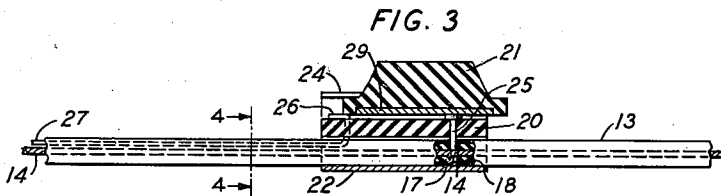


FIG. 3

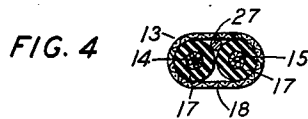


FIG. 4

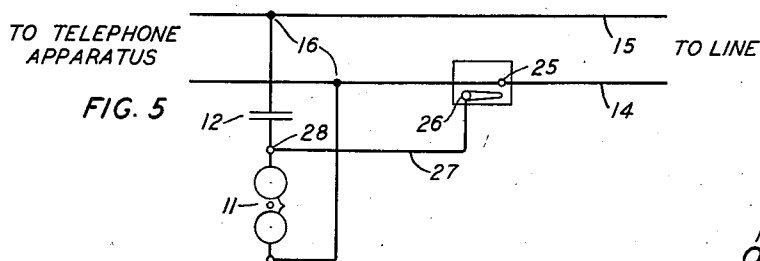


FIG. 5

INVENTOR
O. A. SHANN

BY
Walter C. Kiesel
ATTORNEY

UNITED STATES PATENT OFFICE

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ELECTRIC SWITCH

Oscar A. Shann, Bayside, N. Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

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2 Claims. (Cl. 200-163)

This invention relates to electric switches and more particularly to ringer cut-out switches for telephone substation apparatus.

One object of this invention is to enable the expeditious establishment of a controllable connection between an electrical conductor and apparatus associated therewith.

Another object of this invention is to facilitate the installation of a ringer cut-out switch in telephone substation apparatus.

In one illustrative embodiment of this invention, a ringer cut-out switch comprises a body member having therein a groove or channel for accommodating a cord for a telephone set, a plate member mounted on the body member and having a pair of terminals or contacts thereon, and a movable finger piece having an electrically conductive portion adapted to bridge the terminals or contacts. One of the terminals or contacts has connected thereto a metallic pin adapted to pierce the insulation on the telephone cord and to engage one of the conductors of the cord. The other terminal or contact has connected thereto a conductor which may be connected to a point in the substation circuit such that when the two terminals or contacts are bridged a short circuit is placed across the ringer of the telephone set.

The invention and the features thereof will be understood more clearly and fully from the following detailed description with reference to the accompanying drawing in which:

Fig. 1 is a perspective view of a portion of a telephone set and the cord therefor and showing a cut-out switch constructed in accordance with this invention in place upon the cord;

Fig. 2 is a perspective exploded view of a cut-out switch illustrative of one embodiment of this invention;

Fig. 3 is a view, mainly in section, illustrating the association of the switch and the cord;

Fig. 4 is a view in cross-section along line 4-4 of Fig. 3; and

Fig. 5 is a circuit diagram illustrating the operation of the switch shown in Figs. 2 and 3 as a ringer cut-out.

Referring now to the drawing, the telephone set shown in part in Fig. 1 comprises a mounting 10, which may be of the construction shown in Patent 2,096,046, granted October 19, 1937 to John J. Kuhn and George R. Lum, the mounting having therein telephone substation apparatus including a ringer 11 and a condenser 12. The substation apparatus may be connected to the telephone line by a cord 13 having a pair of con-

ductors 14 and 15 which are connected to suitable terminals 16 in the mounting 10.

Each of the conductors 14 and 15 may be stranded, as shown in Fig. 4, and individually encased in insulation tubing 17, for example of soft rubber, and the insulated conductors may be encased in turn by a fabric covering 18.

Mounted upon the cord 13 is a ringer cut-out switch, which, as shown in Fig. 2, comprises a body member 19, an insulating plate 20 and a finger piece 21. The body member, which may be formed of metal or insulating material, includes a grooved or channeled bottom portion 22 for accommodating the cord 13, a pair of aligned grooved side portions 23 in which the insulating plate 20 is slidably fitted, and a pair of curved fingers 24 for frictionally engaging the finger piece 21.

The insulating plate 20, which may be of any suitable insulating material, has thereon a pair of terminals or contacts 25 and 26, the terminal 25 having a pointed pin portion adapted to pierce the fabric covering 18 and insulating sleeve 17 and to firmly contact with the conductor 14, as shown in Fig. 3. The terminal or contact 26 has extending therefrom a conductor 27, which may be an integral extension thereof, connected within the mounting 10 to one terminal 28 of the ringer 11. Preferably, the conductor 27 is of relatively heavy wire so that, as illustrated in Figs. 3 and 4, it may be inserted easily under the fabric covering 18 of the cord 13.

The body portion of the finger piece 21 preferably is of insulating material and has embedded in or coated upon the base thereof an electrically conductive plate or layer 29. The finger piece 21 is slidably movable in the groove between the fingers 24 of the body member 19 so that the plate or layer 29 may be out of contact with the contact or terminal 26, as shown in Fig. 3, or may be in intimate engagement with both of the contacts or terminals 25 and 26 whereby, as will be apparent from Fig. 5, a short circuit is placed across the ringer 11 and the ringer thereby is rendered inoperative.

It will be appreciated that the cut-out switch constructed in accordance with this invention may be installed expeditiously and without the exercise of any particular skill or the use of any special tools. For example, the insulating plate 20 may first be placed in position on the cord 13 with the conductor 27 inserted under the fabric covering 18 and the pin 25 piercing the fabric covering and engaging the cord conductor 14. The body member 19 then may be slipped on

to the plate 20, the fit between the plate 20 and grooved portions 23 being fairly close so that the plate and body member are held together by the frictional engagement of the plate and the grooved portions. Finally, the finger piece 21 may be slid into position between the fingers 24.

Although a specific embodiment of this invention has been shown and described, it will be understood, of course, that various modifications may be made therein without departing from the scope and spirit of this invention as defined in the appended claims.

What is claimed is:

1. An electric switch for attachment to a conductor, comprising a body member including a base portion, open ended grooved side portions and fingers extending from said side portions, a plate member overlying said base portion and defining therewith a channel for accommodating said conductor, said plate member being fitted in said grooved side portions and slidably insertable therein from one end thereof, a pair of spaced terminals mounted on said plate member, one of said terminals having a portion extending into said channel for engaging said conductor, and a finger piece slidably mounted be-

tween said fingers and having a conductive surface for bridging said terminals.

2. An electric switch for attachment to an insulated conductor, comprising a unitary member including a base portion having therein an elongated channel, side portions each having therein an elongated groove parallel to said channel and finger portions extending inwardly from said side portions, an insulating plate overlying said channel and slidably fitted in said grooves, said plate defining with said channel an elongated, open ended tubular opening for accommodating said insulated conductor, a pair of terminals mounted on and projecting through said insulating plate, one of said terminals having a pin portion extending into said channel for piercing the insulation on said conductor and engaging said conductor, a conductor extending from the other of said terminals, and a finger piece slidably fitted between said finger portions, said finger piece including an insulating body portion and a conductive member overlying said insulating plate and adapted to bridge said terminals.

OSCAR A. SHANN.