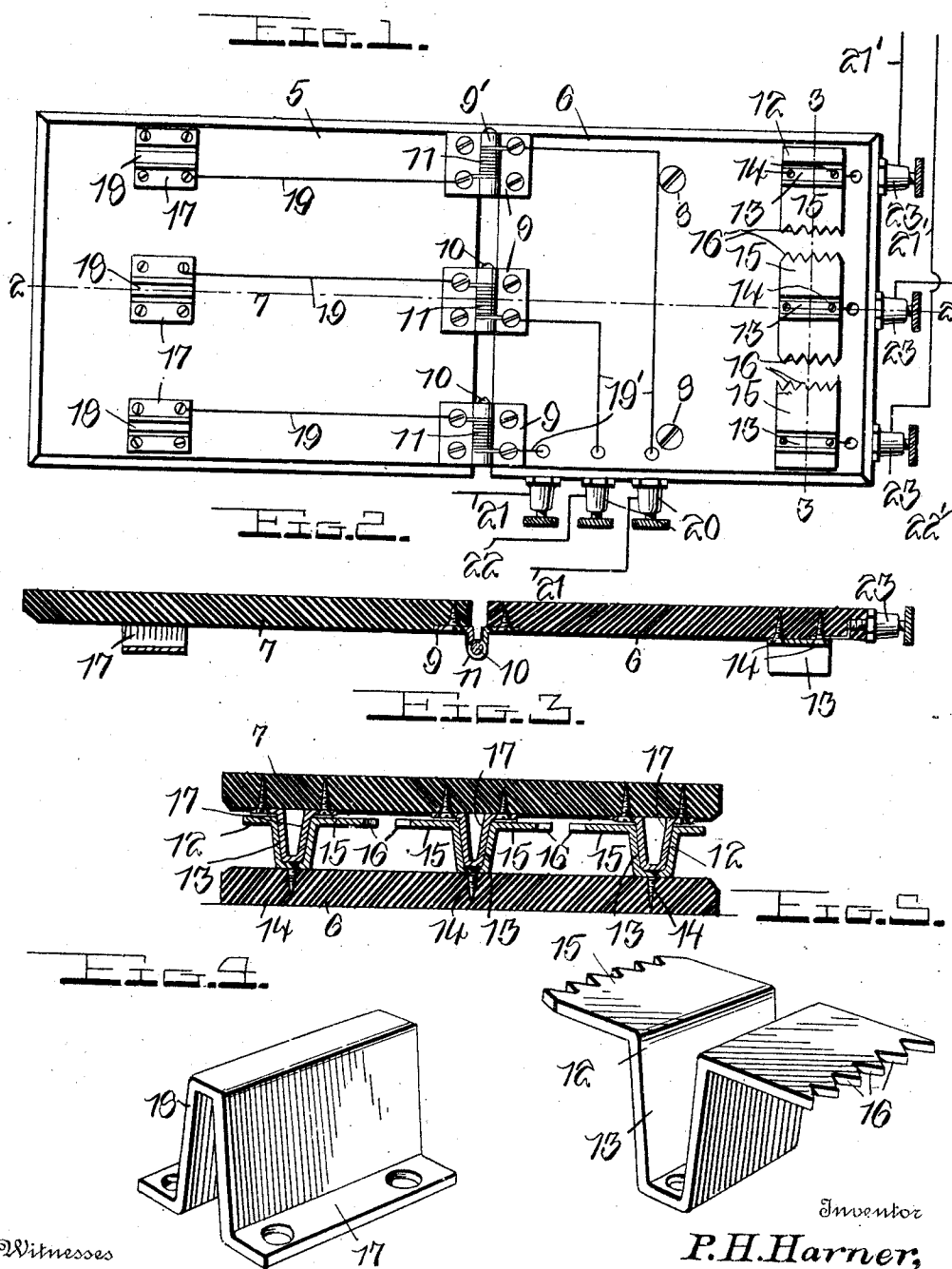


P. H. HARNER.
 TELEPHONE CUT-OUT.
 APPLICATION FILED APR. 23, 1910.

979,292.

Patented Dec. 20, 1910.



Witnesses

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PHILIP H. HARNER, a citizen of the United States, residing at Dooms, in the county of Augusta and State of Virginia, have invented certain new and useful Improvements in Telephone Cut-Outs, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain new and useful improvements in cut-outs for telephones and has for its object to provide a simple and efficient device of this character which is particularly designed for use upon
15 rural telephone lines whereby effective protection is provided to the telephones to avoid the same being burned out.

A further object of the invention is to provide a cut-out for telephones which will
20 completely neutralize the ground and line currents, and conduct the current from one or more line wires to the ground when the circuit is cut or broken.

A still further object is to provide a
25 simple and efficient cut-out of such construction that the circuit may be quickly and securely closed between the ground and line wires and the telephonic instruments.

With these and other objects in view the
30 invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

35 Figure 1 is a top plan view of my improved switch or cut-out; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged detail section through the contacts when the switch is closed; and Figs. 4 and 5
40 are detail perspective views of the contact plates.

Referring more particularly to the drawings 5 indicates a base which is formed in two sections, a stationary and movable section 6 and 7 respectively. The stationary
45 section 6 is secured by means of screws 8 to a wall or other suitable support. The movable section 7 is somewhat longer than the base section 6 and is adapted to extend beyond the end of the same to provide a suitable handle portion by means of which the
50 section 7 may be conveniently grasped to open the cut-out.

The base sections 6 and 7 are connected by
55 means of the hinges 9. In the present instance three such hinges are employed, and

the knuckles 9' thereof are spaced from each other and connected by the hinged pintles 10. Between the opposed ends of the knuckles of each hinge a coiled spring 11
60 is arranged upon the pintle. This spring is preferably formed of copper wire or other suitable conducting material and has its ends secured to the plates or leaves of the hinges 9. Adjacent to the other end of the
65 stationary base member 6, current carrying contact members 12 are arranged. These members are each formed with a groove or channel 13 intermediate of their ends, the walls of said channel being vertically dis-
70 posed with relation to the base and diverging with relation to each other. The contact members are secured to the base by suitable screws or rivets 14 which are passed through the base of the channel portion 13. The
75 ends of the contact members are laterally extended as shown at 15 and are disposed in the same horizontal plane. The end edges of the adjacent contact members are disposed in juxtaposition to each other and
80 are serrated as shown at 16. In the operation of the device the current is adapted to jump from the ends of the contact members arranged adjacent to the longitudinal edges of the base to the intermediate contact mem-
85 ber to discharge the current from the line wires into the ground as will hereinafter appear.

Upon the other movable base section 7, the contacts 17 are secured and are formed
90 with the upstanding tongues 18 which are adapted to engage in the channels 13 of the members 12 and cooperate with said members to close the electric circuit between the ground and line wires and the telephonic
95 instruments as will now be set forth. The contacts 17 are connected by means of the wires 19 to one end of one of the springs 11 of the hinges 9. The other end of said
100 springs are connected by means of the wires 19' to the binding posts 20 arranged in the edge of the stationary base section 6. Wires 21 and 22 connect said binding posts with the telephones, the two line wires 21 being
105 each connected to one phone and the ground wire 22 being connected to both phones. These wires are adapted to convey the current from the wires 21' and 22' which are
110 connected to the binding posts 23 arranged on the end of the base section 6, said binding posts being electrically connected to the contact members 12.

From the above it will be seen that when the switch or cut-out is closed and the tongues 18 disposed in the channels 13 of the contact members carried by the base section 6, the circuit will be connected through the line wires 21' and the hinges 11' to the wires 21 and the telephonic instruments and from said instruments through the ground wires 22 and 22' to the ground, the current passing through the central hinge spring 11 to the central contacts 12 and 17. To cut the telephones out of the circuit, the movable base section 7 is lifted to disconnect the contact members 12 and 17 whereby the circuit is broken. The current from the line wires 21' when of abnormal strength will extend from the serrated ends of the outer contact members 12 to the central contact member upon the base section 6 and thence through the ground wires to the ground. This increase of current is often caused by lightning and frequently causes serious damage to the telephonic instruments and puts the line out of operation for an appreciable length of time. In this manner the current between the ground and line wires is completely neutralized and danger of the telephone being burned out and cut off from electrical connection with the circuit wires is thus eliminated.

From the above it will be seen that I have provided a simple and effective cut-out for telephone systems. The device is also capable of use as a lightning arrester, the line wires serving to direct the electric fluid into the ground. It will of course be understood that the base sections 6 and 7 are formed of hard rubber, porcelain or other suitable non-conducting material. The device may be very quickly operated to make or break the electric circuit and is particularly devised with a view to its use upon rural telephone systems where party lines are generally used. The device is susceptible of a great many minor changes in the form, proportion and arrangement of the various parts without departing from the essential features or sacrificing any of the advantages of the invention.

Having thus described the invention what is claimed is:—

1. In a cut-out, the combination of a stationary base section and a movable base sec-

tion, hinges connecting said sections, a plurality of contacts secured to the stationary section each having a channel formed between its ends, the extremities of said contacts being arranged adjacent to each other, a ground wire connected to one of said contacts and line wires connected to the contacts arranged adjacent thereto, a plurality of contact members carried by the movable base section each having a centrally formed tongue adapted to engage in the channel of the first named contacts, electrical connections between the contacts of said movable base section and the hinges and the electrical apparatus, whereby when said movable base section is disposed upon the stationary section and the contacts engaged, the electrical circuit is connected through the ground wires and the hinges connecting said base sections to the electrical apparatus and from said apparatus through the ground wires and the contacts to the ground.

2. In a cut-out, the combination of a stationary base section and a movable base section, a plurality of contacts secured to the stationary section, said contacts each being formed with a central U-shaped channel, to provide oppositely extending arms, fastening devices extending through the base of the channel portion and into the base section to secure the contacts thereto, said contacts being arranged transversely on the base section and having their arms disposed in the same plane, the extremities of the arms of adjacent contacts being disposed in juxtaposition to each other, a ground wire connected to one of said contacts and line wires connected to the contacts arranged adjacent thereto, a plurality of contact members carried by the movable base section each having a centrally formed U-shaped tongue adapted to engage in the U-shaped channel of the first named contacts, and electrical connections between the contacts of said movable base section and the electrical apparatus, substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

PHILIP H. HARNER.

Witnesses:

W. K. CHEW,
J. S. DECKER.