

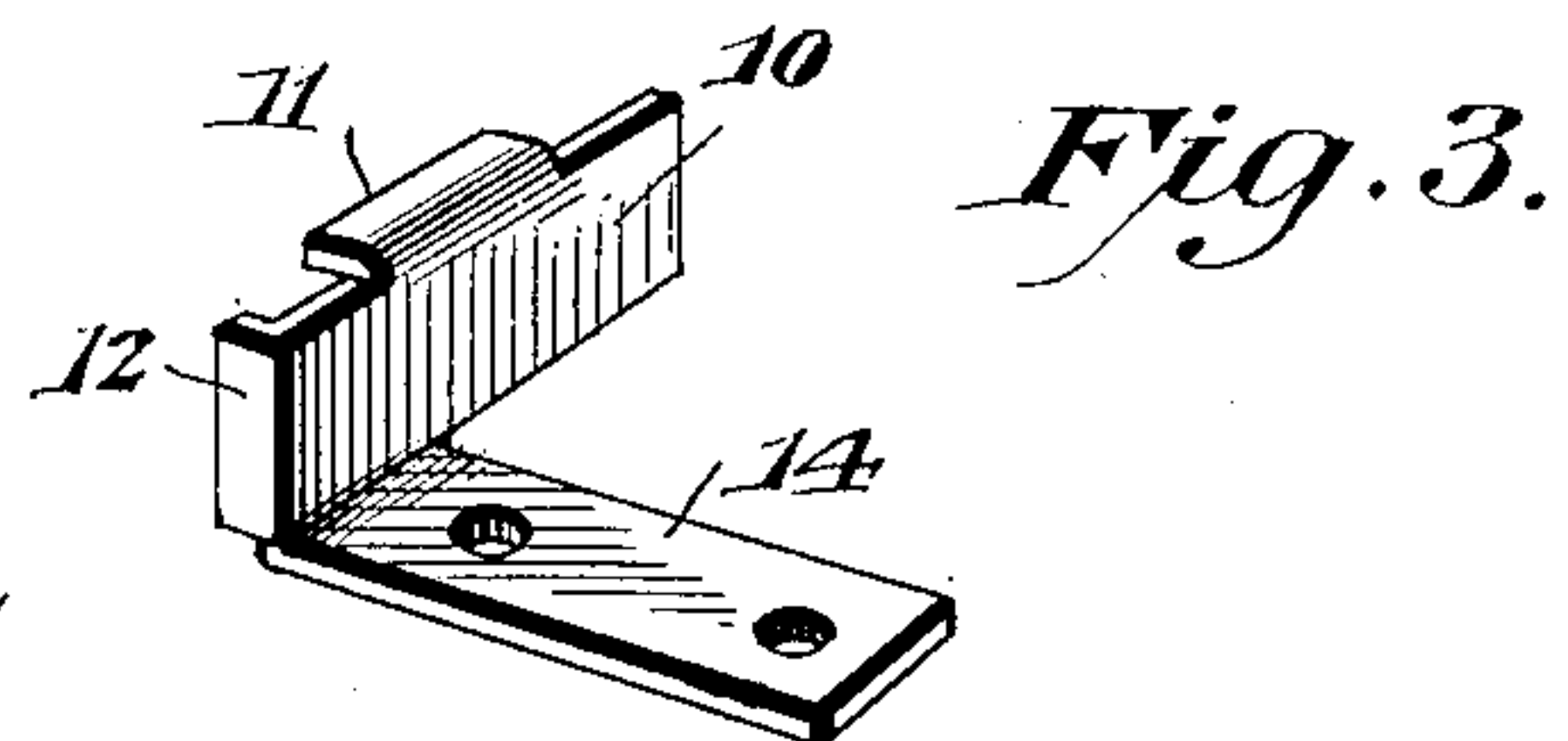
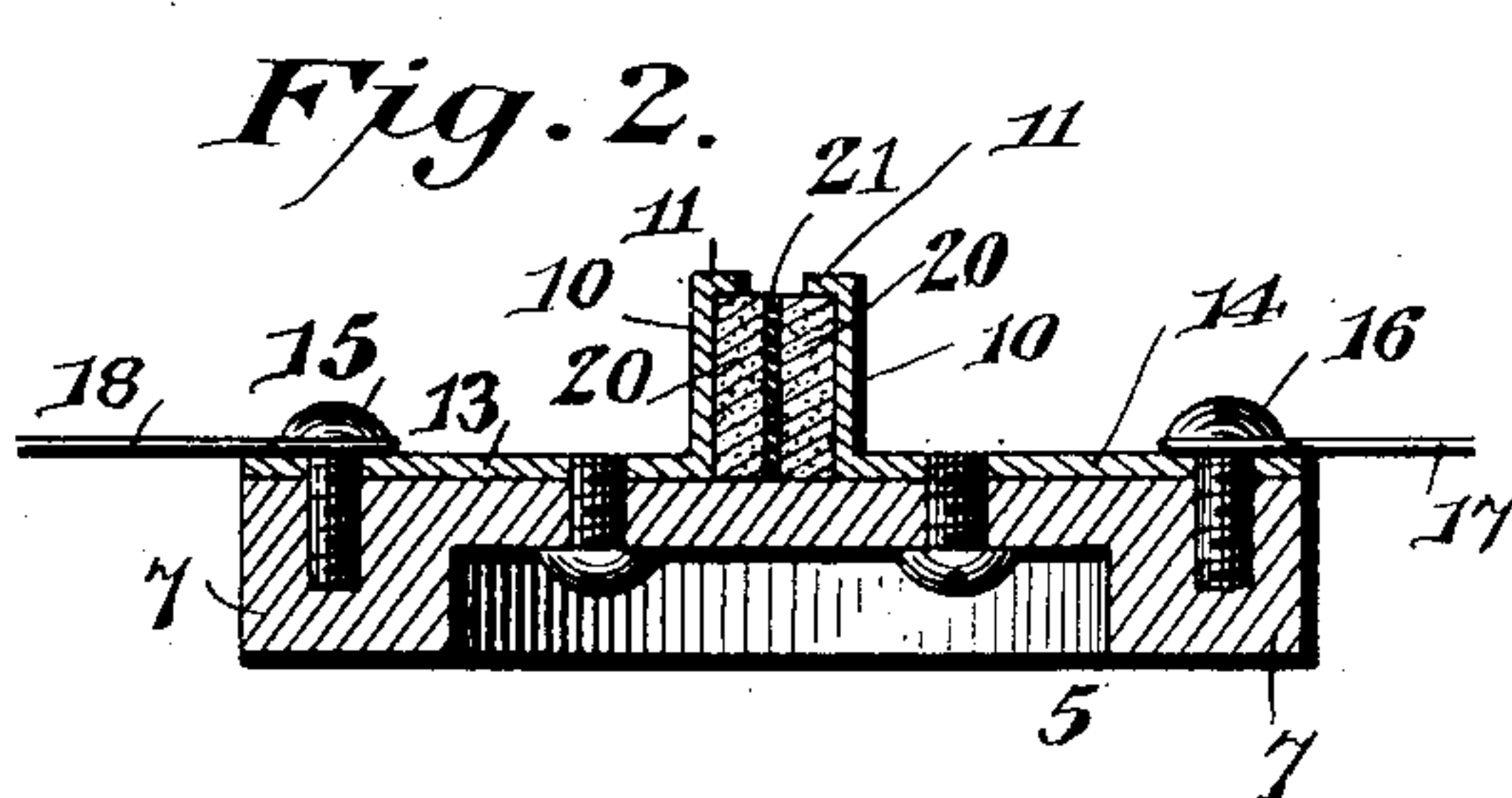
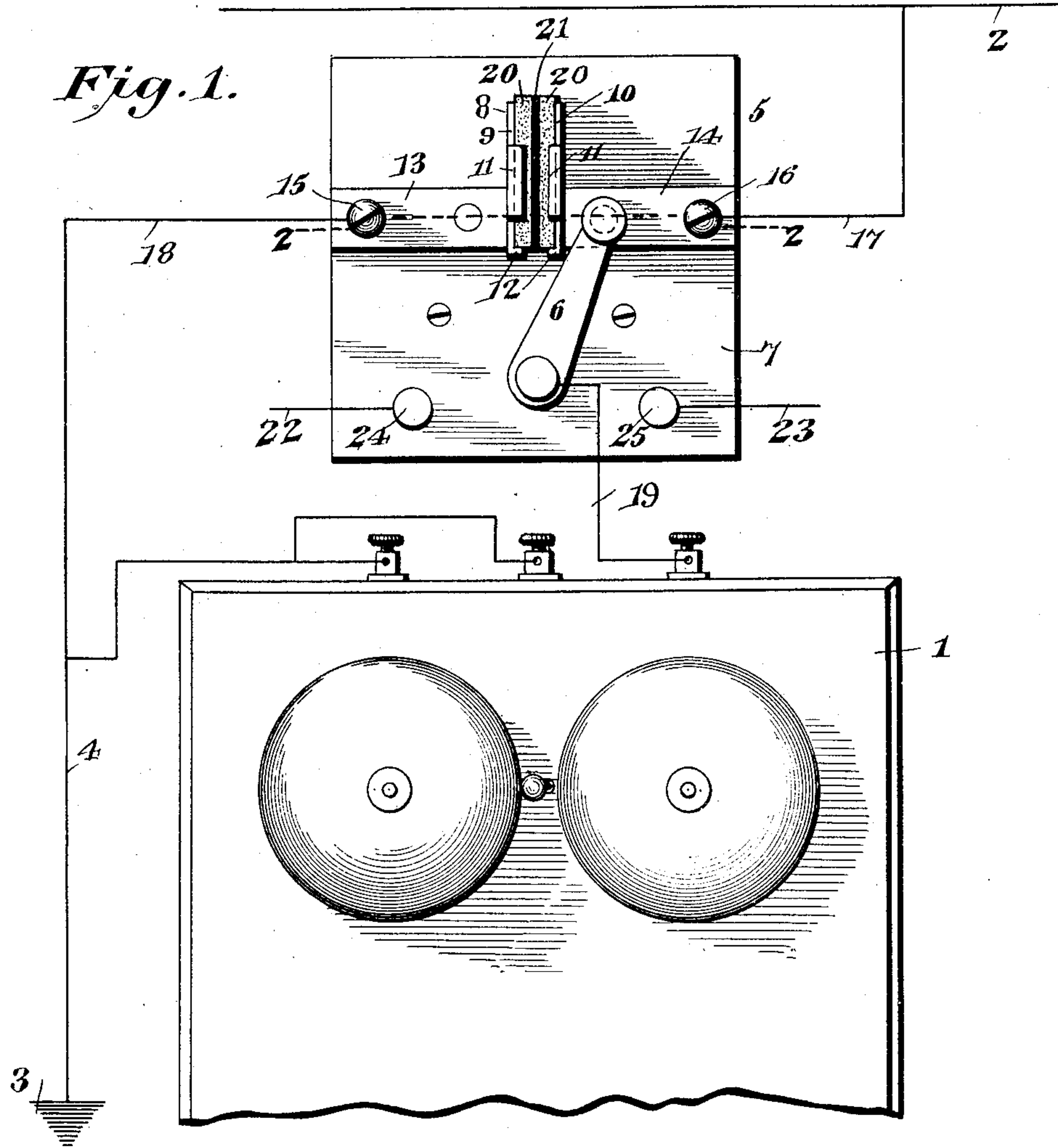
No. 744,103.

PATENTED NOV. 17, 1903.

W. L. RALSTON.
TELEPHONE CUT-OUT.

APPLICATION FILED JULY 22, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM LEE RALSTON, OF WESTCHESTER, IOWA.

TELEPHONE CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 744,103, dated November 17, 1903.

Application filed July 22, 1903. Serial No. 166,643. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LEE RALSTON, a citizen of the United States, residing at Westchester, in the county of Washington and State of Iowa, have invented a new and useful Telephone Cut-Out, of which the following is a specification.

This invention relates to a novel cut-out for telephones, the object being to provide a simple form of cut-out mechanism which will ordinarily permit the circuit to be closed through the telephone in the usual manner, but which in the event of an electrical storm may be adjusted to cut out the telephone, and thus ground the circuit from the line-wire through an artificial resistance.

To the accomplishment of this object the invention resides in the construction and arrangement of parts to be hereinafter described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is a diagrammatic elevation of a portion of a telephone, the cut-out device, and the connected wiring. Fig. 2 is a sectional view on the line 2-2 of Fig. 1, and Fig. 3 is a detail perspective view of one side section of the holder and the attached contact-plate.

Like numerals are employed to designate corresponding parts in the several views.

The telephone instrument (indicated by 1) is wired to the line 2 in the usual manner, and the circuit is grounded, as indicated at 3. Interposed between the 'phone and the line and also between the line and the grounded terminal 4 is my novel cut-out device 5, normally establishing a direct connection between the line and the phone, but embodying a movable switch or cut-out arm 6, by the manipulation of which the phone may be cut out, so that in the event of the line being struck by lightning the current of high tension thus induced will be directed harmlessly to the ground by way of a connection including an artificial resistance, which under normal conditions insures the closing of the talking-circuit through the phone.

The cut-out device includes a base 7, which may be screwed to the wall or other suitable support, and a holder 8, composed of a pair of side plates 9 and 10, bent to form front flanges

11 and bottom flanges 12. These side plates 9 and 10 of the holder are preferably formed integral with a pair of contact-plates 13 and 14, screwed or otherwise secured to the base 7 and provided with binding-posts 15 and 16. The post 16 is designed for the attachment of a wire 17, leading to the line 2, and the post 15 serves to attach to the plate 13 a wire 18, which may be connected to the grounded phone-terminal 4, as shown, or may be independently grounded, as desired. The arm 6 is mounted to swing upon the base 7 and normally contacts at its free end with the plate 14, the opposite end of the arm being wired to the phone by a wire 19. It will be seen, therefore, that normally the circuit is closed through the phone by way of line-wire 2, wire 17, post 16, contact-plate 14, arm 6, wire 19, and terminal 4.

Within the box 8 are supported a pair of carbon blocks 20, between which is interposed a thin plate or layer of mica 21, which, so far as the ordinary current is concerned, constitutes an insulation, preventing the circuit from being shunted around the phone to the ground. This layer of mica being exceedingly thin, however, and interposed, moreover, between a pair of highly conductive carbon blocks merely constitutes an artificial resistance to the passage of the high-tension current induced in the line during an electrical storm. It follows, therefore, that while this mica insures the passage of an ordinary current through the phone it will not prevent the high-tension current induced by lightning from being conducted harmlessly to the ground from the line. In other words, if the line-wire 2 should be struck by lightning or if a high-tension current should be induced in the line through any other instrumentality it will pass to the adjacent carbon block 20 and will then jump or arch around the edge of the mica to the other block and will be directed thence to the ground.

It is preferable, of course, to cut out the phone entirely by swinging the arm 6 out of contact with the plate 14 upon the approach of an electrical storm, since otherwise a portion of the current at least would pass through the phone connections. If the phone 1 is on more than a single line, my device may be used as a combined cut-out and switch by

leading the extra lines 22 and 23 to contacts 24 and 25, to which the arm 6 may be swung for the purpose of effecting a connection between either of said lines and the phone by way of the wire 19.

It is thought that from the foregoing the construction, arrangement, and utility of my combined cut-out and switch for telephones will be clearly understood; but while the present embodiment of the invention is thought at this time to be preferable I desire to reserve the right to effect such changes, modifications, and variations of the illustrated structure as may be fairly embraced within the scope of the protection prayed.

What I claim is—

1. The combination with a line-wire and a telephone; of a metallic holder having one side connected to the line-wire, a grounded wire connected to the other side of the holder, carbon blocks and an interposed layer of mica within the holder to prevent the passage of an ordinary current and to permit the passage of a current of high tension, a switch-arm in electrical connection with one terminal of the telephone and movable into and out of contact with the holder at the side connected to the

line-wire, and a connection between the other telephone-terminal and the grounded wire.

2. The combination with a line-wire and a telephone; of a base having means of attachment to a wall adjacent to the telephone, a metallic holder comprising a pair of side plates bent to form front and bottom flanges and having contact-plates secured to the base, binding-screws carried by the contact-plates, one of said screws being connected with the line-wire, a grounded wire connected to the other binding-screw, carbon blocks and an interposed layer of mica located in the holder and retained by the front and bottom flanges thereof, a switch-arm mounted on the base and movable into and out of contact with the contact-plate in electrical connection with the line-wire, and wires connecting the terminals of the telephone to the switch-arm and grounded wire, respectively.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM LEE RALSTON.

Witnesses:

J. B. MOORE,

L. P. JACKSON.