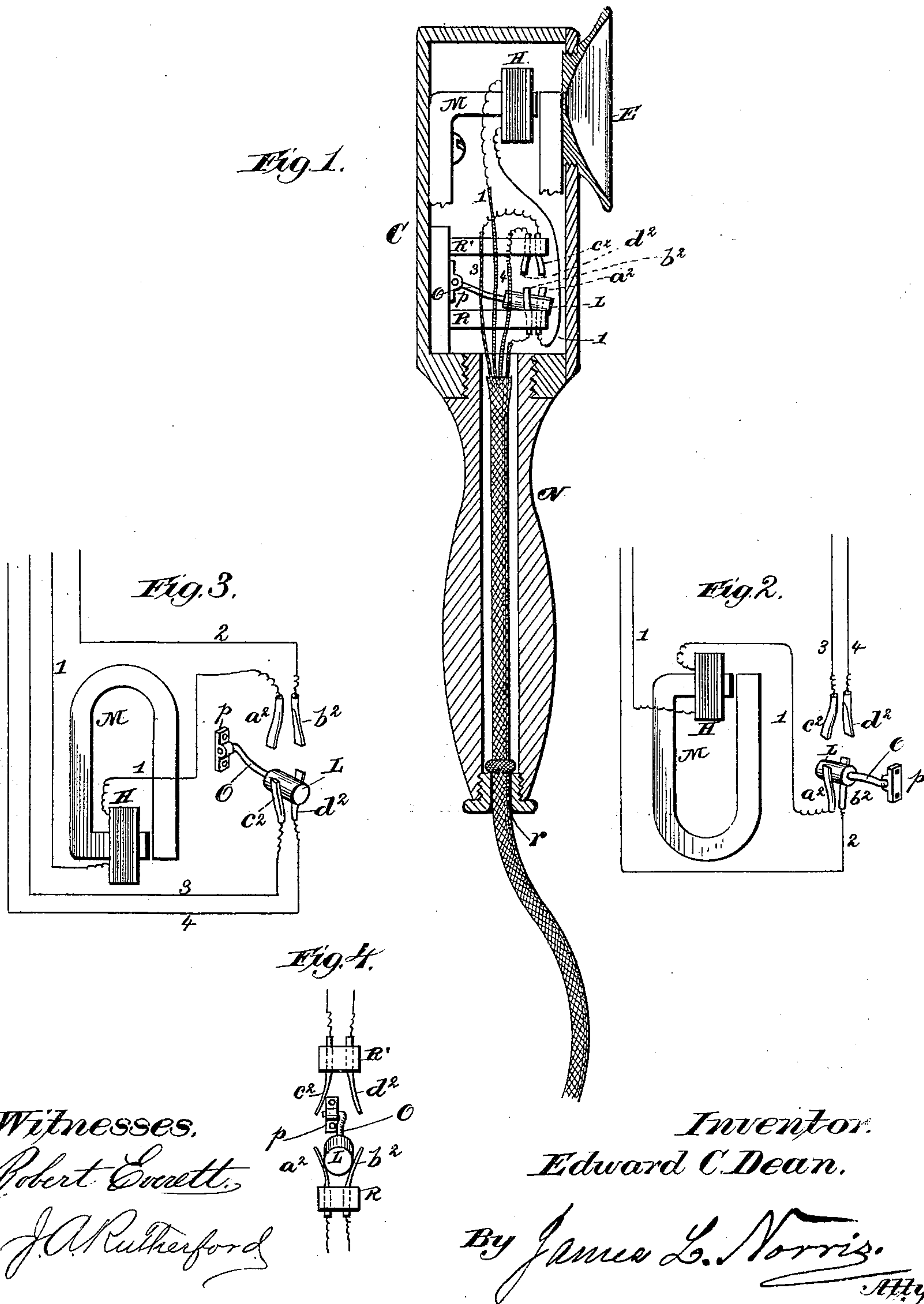


(No Model.)

E. C. DEAN.
CIRCUIT CLOSER FOR TELEPHONE RECEIVERS.

No. 271,610.

Patented Feb. 6, 1883.



UNITED STATES PATENT OFFICE.

EDWARD C. DEAN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO
THE NATIONAL SECRET TELEPHONE COMPANY, OF NEW YORK, N. Y.

CIRCUIT-CLOSER FOR TELEPHONE-RECEIVERS.

SPECIFICATION forming part of Letters Patent No. 271,610, dated February 6, 1883.

Application filed June 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. DEAN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Circuit-Closers for Telephone-Receivers, of which the following is a specification.

The necessity for an automatic device by which the transmitter at a telephone-station can be thrown into circuit when the receiver is in use, or has been taken up for use, and in which the transmitter will be cut out and the call or signaling apparatus thrown into circuit when the line is at rest and telephone in its place, has been apparent and obvious, and many plans have been devised for accomplishing the desired end. Heretofore such devices for the purpose stated have consisted in switches of various kinds operating in various ways, and, again, in a tube of glass placed centrally in the telephone-case and partially filled with mercury, that moves in the tube and makes or breaks circuit with electrodes surrounding the tube. The objections to the switch system are many and obvious, and it is not deemed necessary to set them forth here. The objection to the device last named is that when the telephone is taken up for use it must be held horizontally and the mercury assume a horizontal position in the tube, so as to make contact with one or more of the electrodes; but this movement is uncertain, for, by reason of unsteadiness of the hand, the mercury will sometimes move back to the bottom of the tube and break circuit with the main line and make circuit with the signal-bell and then again quickly run back to the electrodes and bring the main line into the circuit; and this will be done almost constantly, and great confusion and inaccuracy occur.

Now, the object of my device is to remedy these defects; and to this end my invention consists in a pivoted movable conductor which will accurately and without variation cut out the call and throw in the transmitter, or vice versa, said conductor always acting vertically so as to make the circuits above referred to.

In connection with the above, it may be here stated that the telephone in which this device is used is always held vertically when in use and at rest.

In the accompanying drawings, Figure 1 is a section of a telephone embodying my improvement; and Figs. 2, 3, and 4 are diagrammatic views, showing the telephone in different positions.

The special form of telephone shown constitutes the subject-matter of an application for patent heretofore filed by James Harris Rogers, and no claim is therefore made to it herein. However, my invention is not dependent on this or any other special form of telephone, but may be applied to telephones of various kinds.

In Fig. 1 the magnet M and helix H are arranged within the casing C of the telephone in proper relation to the ear-piece E, as fully set forth in the application of said Rogers, and will be clear to those skilled in the art.

To the back of the casing a plate, *p*, is secured, in which is movably secured one end of a lever, O, the opposite end of said lever being provided with a metallic contact-piece, L, free to move by gravity.

Secured in bracket-pieces R R', one above the other, and also fastened to the bracket-pieces, are the metallic contacts $a^2 b^2 c^2 d^2$. The wires enter the telephone-handle at *r*, the ground-line passing through helix to contact a^2 in bracket-piece R. From another contact, b^2 , on the same bracket-piece, a wire, 2, extends to the transmitter and battery to ground. Thus, with the telephones in the position shown in Fig. 1, the moving conductor rests on the contact-pieces $a^2 b^2$ and completes the circuit between them. A branch wire, 3, passes to a contact, c^2 , on the bracket R', and a wire, 4, leads from a similar contact, d^2 , to the call apparatus and ground. It is therefore obvious, now, that if the telephone be placed in a reversed position to that shown in Fig. 1 the call apparatus will be thrown into the circuit and the transmitter cut out. The telephone should be suspended from the handle N, supported in some suitable way in the position last referred to, when not in use, so that the call apparatus will be in circuit. Then, when the telephone is raised to the ear to answer a call the transmitter will be thrown into circuit, as before described, by the shifting of the movable conductor L.

In Fig. 2 the telephone-circuit is shown as

complete and the call cut out, as in Fig. 1, while in Fig. 3 the telephone is indicated as inverted and the call-circuit is completed and the other broken.

5 My invention, as above indicated, contemplates broadly a moving or shifting conductor, pivoted as described, and always acting vertically, so as to make one circuit and break another, according to the position in which the
10 telephone is placed, and the details of the position of the various parts may be varied without departing from the spirit of the invention.

I am aware of an application filed by James Harris Rogers simultaneously with this application for a shifting conductor in a closed tube,
15 which operates when the instrument is in a vertical position for throwing in or cutting out the call and receiver, and for this I make no claim.

What I claim is—

20 1. The combination of a telephone, the shifting pivoted conductor acting vertically, and the contacts, substantially as set forth.

2. The combination of the telephone, the shifting pivoted conductor acting vertically,
25 the transmitter-circuit wires, call-circuit wires, and their contacts, as set forth.

3. A telephone provided with a pivoted movable metallic conductor secured to the casing of the telephone, said conductor acting vertically by gravity to fall and rest between metallic contact-pieces connected with the main-
30 line and local circuits, so as to open or close said circuits, according to the position of the telephone, as set forth.

4. In a telephone, the combination of a shifting pivoted conductor secured to the casing of
35 the telephone, and suitable brackets containing contact-pieces, and also secured to the casing, said contacts being placed on the brackets in such position that the pivoted conductor will
40 fall and rest between two contacts when the telephone is held in a vertical position.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD C. DEAN.

Witnesses:

JAMES L. NORRIS,
J. A. RUTHERFORD.