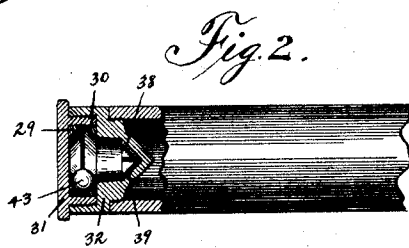
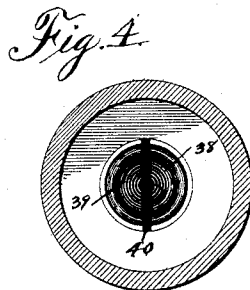
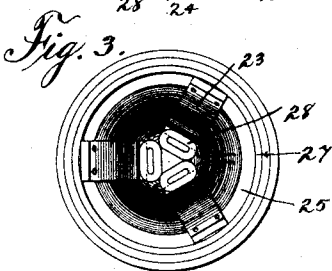
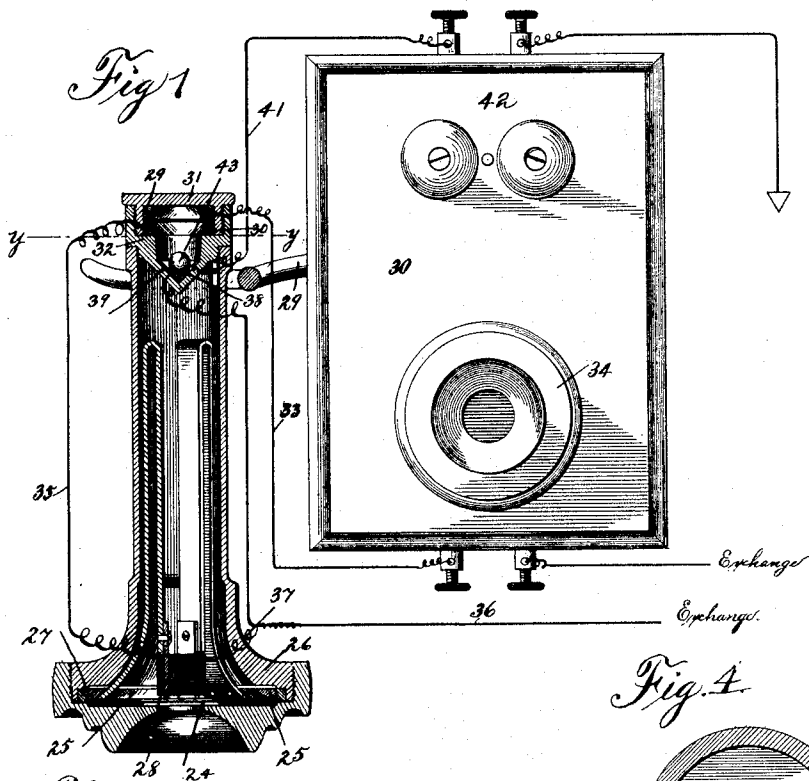


(No Model)

C. F. DUNDERDALE.
ELECTRIC TELEPHONE.

No. 585,560.

Patented June 29, 1897.



Witnesses:
Ell Graham
W. T. Tompkins

Inventor
Cleaveland F. Dunderdale
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Attorney.

UNITED STATES PATENT OFFICE.

CLEAVELAND F. DUNDERDALE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY
DIRECT AND MESNE ASSIGNMENTS, TO THE AUTOMATIC LONG
DISTANCE TELEPHONE COMPANY, OF ILLINOIS.

ELECTRIC TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 585,560, dated June 29, 1897.

Application filed January 7, 1895. Serial No. 534,083. (No model.)

To all whom it may concern:

Be it known that I, CLEAVELAND F. DUNDERDALE, a citizen of the United States, residing at Chicago, in the county of Cook and
5 State of Illinois, have invented certain new and useful Improvements in Electrical Telephones, of which the following is a specification.

My invention relates to certain improvements in a telephone-switch; and it consists in an arrangement and construction whereby the switching device is disposed within the end of the hand-receiver and operated in the manipulation of the said receiver.

15 Reference may now be had to the accompanying drawings, in which—

Figure 1 is a front view of a transmitter and a vertical central section through the hand-receiver, which latter is shown supported
20 upon the transmitter. Fig. 2 is a view of a portion of the hand-receiver broken away and in section at its end to show another position of the circuit-changer or switching device in the end of the receiver. Fig. 3 is an end view
25 of the receiver, the cap-piece being removed. Fig. 4 is a sectional view on the line *y y* of Fig. 1.

I provide a plurality of magnets 23, each one of which has its end disposed in proximity to the outer edge of the diaphragm 24, secured to a ring 25, seated within the casing 26 by being screw-threaded to a housing-ring 27, set and held within said casing, so that
35 these magnets may be adjusted toward or away from the diaphragm 24 by manually rotating them bodily and thus rotating the ring 25 on the ring 27 through the medium of the screw-thread connections between them.

Having reference now to the features of my
40 invention which reside particularly in the means for establishing or disestablishing contact and circuits, I provide a supporting-hook 29, projected from the transmitter-box 30, which hook, however, is not employed for
45 switching purposes. The automatic switch or circuit-changer is located in that end of the receiver opposite to the diaphragm and consists of two conducting-rings 29 and 30, located in a cap 31, that screws into a bushing
50 32, which latter in turn screws into the end

of the receiver. These two conducting-rings 29 and 30 are insulated from one another, and the plate 29 is connected with the lead 33 to the transmitter 34, and the ring 30 is connected with the helices 28 by the lead 35,
55 which helices are also connected with the lead 36 to the exchange by the branch lead 37. The bushing 32 has an apex cavity within which two contact-plates 38 and 39 are disposed and separated from one another by an
60 insulating-partition 40, the plate 39 being connected with the lead 36 to the exchange and the plate 38 being connected with the lead 41 to the ringing apparatus 42.

When the receiver is hung upon the hook
65 29 in an inverted position, a metal ball 43 rests upon the two plates 38 and 39 within the apex-shaped cavity and thus maintains continuity of circuit between the exchange and
70 the ringing apparatus 42, so that the subscriber may signal either to the exchange or to another instrument without removing the receiver from the hook 29. When, however, the subscriber removes the receiver from the
75 hook and holds the same to the ear in that natural position assumed when used for listening purposes, the contact-ball 43 then rolls out of the apex-shaped cavity into a position between the two conducting-rings 29 and 30
80 and thereby establishing continuity of circuit between the helices 28 and the transmitter 34.

It is obvious that this type of automatically-operating circuit-changer may be employed in conjunction with any type of telephone or telephone system, and is not limited to its use in conjunction with a magneto-telephone.

Having thus described my invention, what I claim as new therein, and desire to secure by
90 Letters Patent, is—

In a telephone-receiver a gravity-switch therefor consisting of a chamber divided into two compartments, located in the interior end of the receiver, a movable-ball contact-maker
95 normally resting within one compartment of the chamber when the receiver is not in use, leads of the signaling-circuit terminating in said compartment whereby the said circuit is normally completed by said movable-ball con-
100

tact and leads of the talking-circuit terminating in the other compartment of said chamber whereby when the receiver is tilted in use the movable-ball contact shifts from one compartment into the other thereby disestablishing the signaling-circuit and establishing the talking-circuit.

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

CLEAVELAND F. DUNDERDALE.

Witnesses:

CHAS. C. BULKLEY,
C. W. GRAHAM.