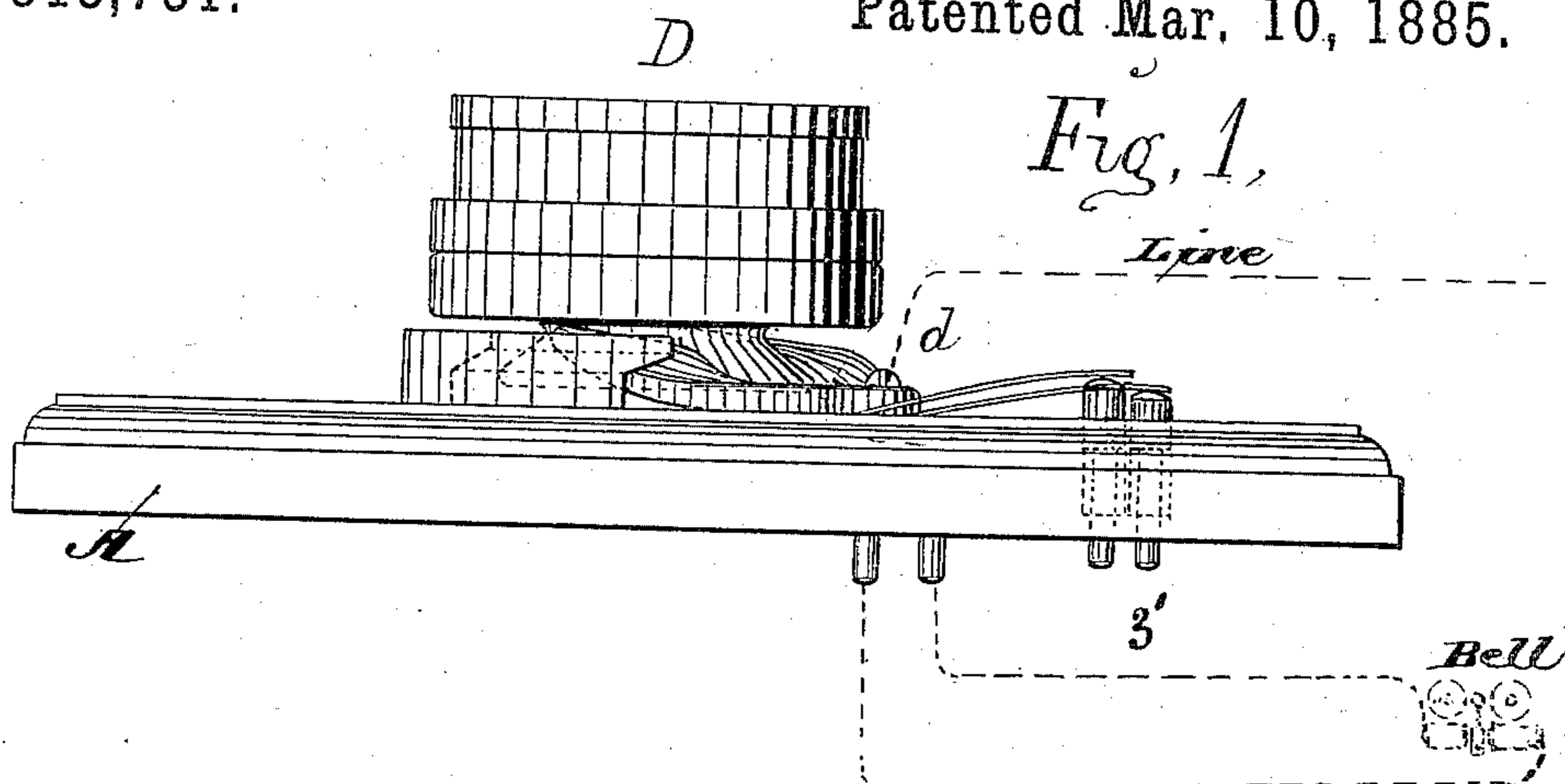


(No Model.)

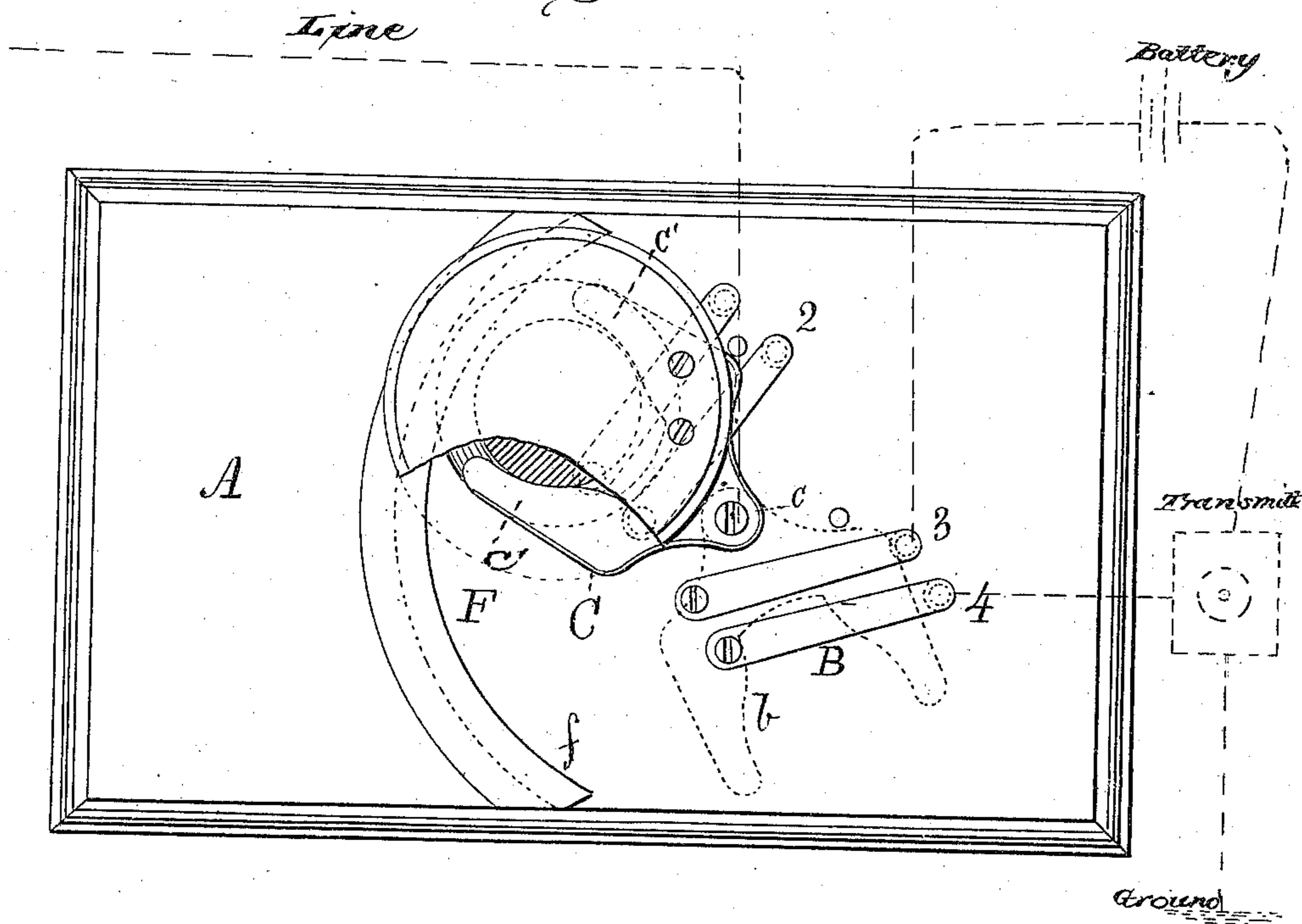
J. A. HARLAN.  
TELEPHONIC CONNECTION.

No. 313,731.

Patented Mar. 10, 1885.



*Fig. 2.*



WITNESSES:

*W. H. Sullivan*  
*E. H. Reeves.*

INVENTOR

*James A. Harlan.*  
BY  
*E. H. Reeves*  
his ATTORNEY

# UNITED STATES PATENT OFFICE.

JAMES A. HARLAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

## TELEPHONIC CONNECTION.

SPECIFICATION forming part of Letters Patent No. 313,731, dated March 10, 1885.

Application filed March 28, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES A. HARLAN, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Telephonic Connections, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to telephonic connections; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The essential object of the invention is to provide means whereby the switch at the transmitter may be made to operate positively to throw the signal, the local circuit, and the line into or out of operation, as occasion may require, so as to insure the proper connections in transmitting the signals and messages.

In general, the invention consists of spring-arms secured to the side of the transmitter-box, which arms carry or operate upon pins or projections, which serve to make the circuit when said projections are forced inward. The normal position of these arms is to break the circuit, the arms being held in such position by the constant force of their adjacent springs, or by a spring force which may be inherent in the arms themselves. These arms and their adjuncts are arranged in sets, one set being adapted to make and break the signal-circuit and the other the line with the local circuit, and between these sets I pivot an oscillating jaw in such manner that if forced in one direction its bearing-surface will pass from over one set of arms and allow them to be sprung back to break a circuit, and will pass over the other set to force them inward and make a circuit, and vice versa. The diverging arms of this oscillating frame or jaw are adapted to receive the neck of an instrument or receiver, and such instrument is held within the said arms by the resistance of a segment secured to the side of the box and arranged approximately in the arc of a circle which has the pivot of the oscillating arm for a center. The instrument has an ordinary trumpet, the flaring edge of which forms an annular flange, and this flange passes under the arms of the oscillating frame upon one side and under a projecting portion of the segment upon the

other, the neck of the instrument resting and being locked in the jaw until required for use. When thus released for use, the oscillating frame throws the line into connection with the induction-coil, and when the instrument is locked, as suggested, the said line and local current are thrown out of connection and the signal-circuit is made. In either case it will be observed that it takes a voluntary effort upon the part of the operator to make and break properly, and that the result is necessarily positive and arbitrary.

For convenience I will describe the invention as applied to an ordinary telephone and adapted to make and break the signal and local circuits with the line; but it will be obvious that other and several circuits may be made and broken in the same manner by the same means.

In the accompanying drawings, Figure 1 is an edge view showing the instrument locked and the signal-current "on;" and Fig. 2, a plan view with the instrument in the same position, but in dotted lines showing the position of the oscillating jaw when the instrument is removed for use, the line being then "on" and ready for use.

Referring to the drawings, A designates the side of the box, upon which are secured, at b, the spring switch-arms B, the free ends of which operate pins or plugs 3' to make the circuit in any suitable manner.

In the arrangement illustrated the arms marked 2 operate to make and break the signal-circuit, the arm 3 the local battery, and the arm 4 the induction-coil.

Pivoted at c is an oscillating metal frame, C, having diverging jaws c', which jaws are adapted to receive the instrument D. This instrument has an annular flange, d, which is received under the jaws c', and which passes under a projection, f, upon a segment, F, as shown.

When the oscillating metal frame C is in the position shown in dotted lines in Fig. 2, the instrument is released for use, the signal-circuit broken, and the line-circuit is on with the local circuit.

When the instrument is not in use, it cannot be properly laid aside without breaking the line-circuit and making the signal-circuit, for the reason that the frame C will not sup-

port the said instrument until it is oscillated in the direction to bring the instrument and segment into engagement, and that such movement releases the arms 3 and 4 to break the circuit, and brings the arm 2 into position to make the signal-circuit.

The importance of the invention lies, mainly, in the adaptation of the frame C for double function—viz., to lock the instrument when not in use and to properly make and break circuits as such instrument is laid aside or taken up.

What I claim as new is—

1. In a telephone-switch, the combination of an oscillating forked lever, inwardly-moving contact-buttons, and springs operating said

buttons to make and break the circuit, substantially as described.

2. In a telephone-switch, the combination, with an oscillating forked lever carrying the instrument, of inwardly-moving contact-making buttons or posts, springs operating said buttons or posts to make and break the circuit, and a segmental guard, substantially as set forth.

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

JAMES A. HARLAN.

Witnesses:

H. CLAY SMITH,  
J. C. LATHROP.