(No Model.) 2 Sheets—Sheet 1.

C. H. LOTHROP.

LINE CHANGER FOR TELEPHONIC AND OTHER ELECTRICAL PURPOSES.

No. 277,145. Patented May 8, 1883.

Fig. 1.

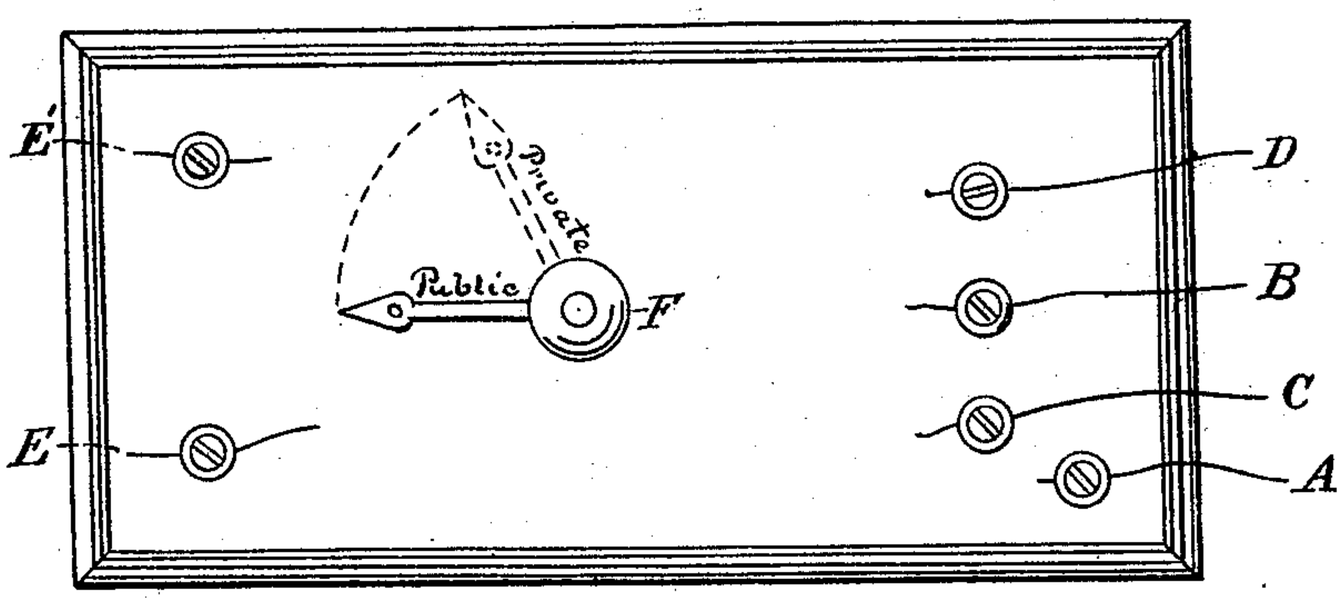


Fig. 2.

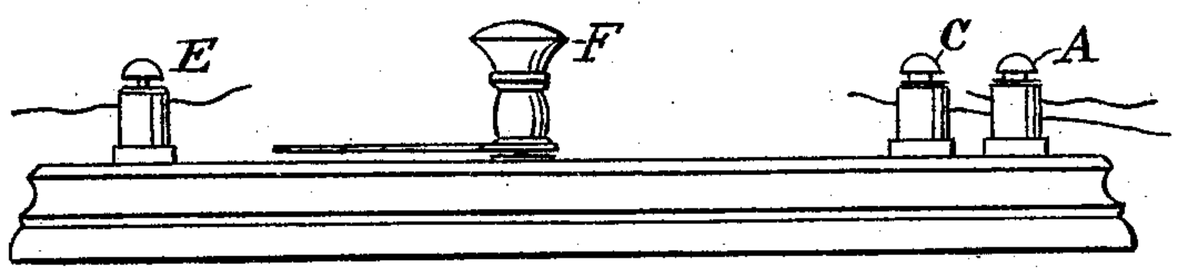


Fig. 3.

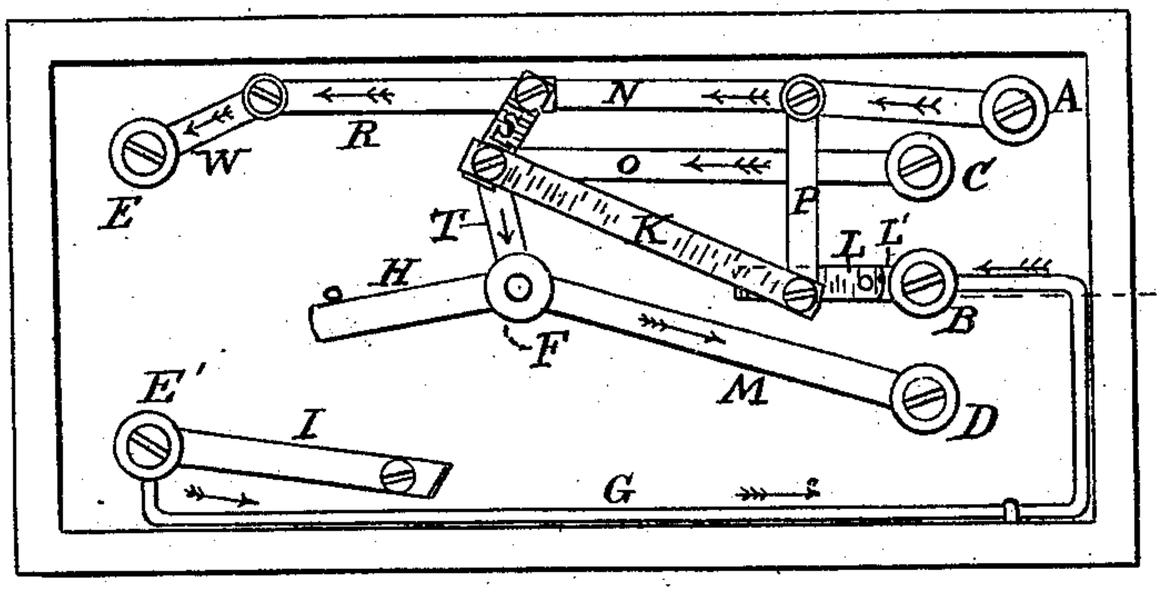


Fig. 4.

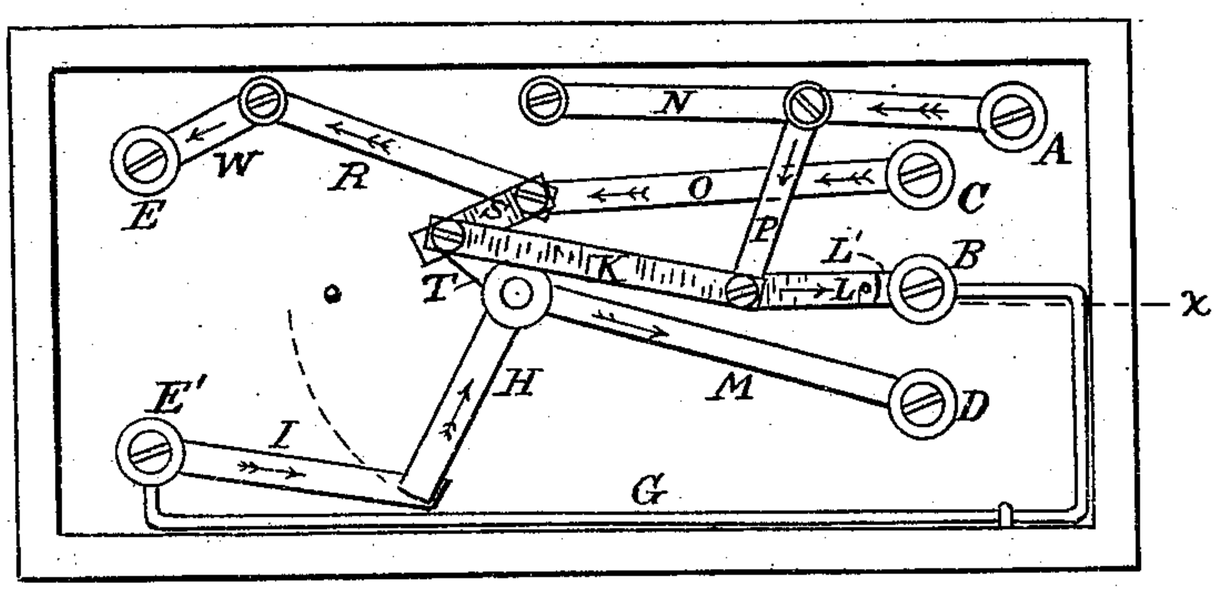
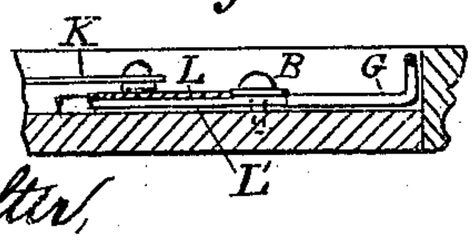


Fig. 5.



Witnesses:
William L. Poulter,
G. W. Knotts

Inventor:
Chas. H. Lothrop
By W. Burris
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(No Model.) 2 Sheets—Sheet 2.

C. H. LOTHROP.

LINE CHANGER FOR TELEPHONIC AND OTHER ELECTRICAL PURPOSES.

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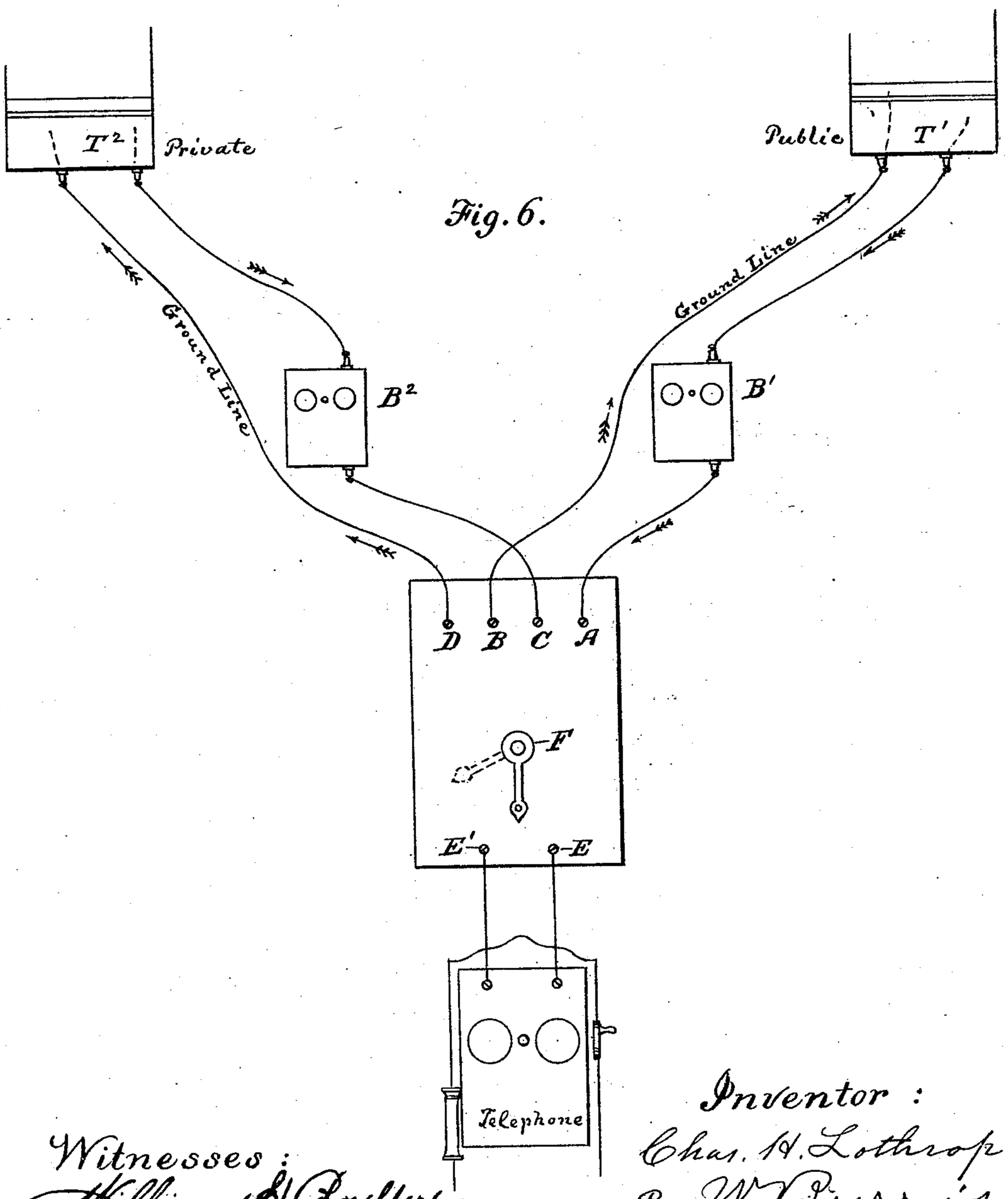
Fig. 6.



Witnesses:
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G. W. Knotts.

Inventor:
Chas. H. Lothrop
By W. T. Burris
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UNITED STATES PATENT OFFICE.

CHARLES H. LOTHROP, OF LYONS, IOWA.

LINE-CHANGER FOR TELEPHONIC AND OTHER ELECTRICAL PURPOSES.

SPECIFICATION forming part of Letters Patent No. 277,145, dated May 8, 1883.

Application filed October 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY LOTHROP, a citizen of the United States of America, residing at Lyons, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Line-Changers for Telephonic and other Electrical Purposes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to apparatus for changing currents of electricity in electrical instruments, such as telephones and telegraphs.

The particular object of my invention is to change a current without the use of the ordinary plug, pin, or slide, which are found to be cumbersome, out of place, and often inefficient in action. I accomplish this in the following manner:

In the accompanying drawings, Figure 1 is a top view. Fig. 2 is a side view. Fig. 3 is a view of the inside, showing the working parts. Fig. 4 is a view of the inside, showing the parts changed. Fig. 5 is a section on line *x* on Figs. 3 and 4. Fig. 6 is a plan showing the connecting lines.

A represents the positive pole of the main line; B, the negative pole of the same main line. C is the positive pole of the second line. D is the negative pole of the second line. E is the positive pole to the instrument. E′ is the negative pole from the instrument. F is a knob or button, made of non-conducting material, to operate the device. G is a connecting-wire from the pole B to the pole E′. H, I, M, N, O, P, and R, T, and W are connecting-arms made of conducting material. K, L, and S are arms made of non-conducting material. Under L is a piece of conducting material, L′, with a lug at the end opposite of the pole B, so constructed that when the arm P is in position, as shown in Fig. 4, the current will pass from pole A to pole B over arm P.

When a person upon the public line desires communication he rings the call-bell upon that line. The current takes the following course upon that circuit: It passes upon the public line from the distant telephone at T′, through the electro-magnet of the call-bell B′ (setting the vibrating armature of the electro-magnet in motion and thereby ringing the bell) to the line-changer at binding-post A, thence over the conducting material to arm P, thence through the lug at end of metallic connection under non-conducting material L, to binding-post B and "ground-line of public line," making a circuit through the line-changer only. The indicator is then turned upon public line, thereby placing the telephone in circuit which before had been cut out. The current now takes the following course, passing from the distant telephone at T′ over the public line through the electro-magnet of the call-bell B′ of that line to the line-changer at binding-post A, thence over the metallic conductors N, R, and W to binding-post E, (see Fig. 3,) thence over the connecting-wire with the telephone, through the telephone and out over the connecting-wire to binding-post E′, thence over the metallic conductor (copper wire) G to the binding-post B and the ground-line of the public line. The effect produced upon the "private line" by thus changing the indicator to "public line" is as follows: The telephone (or instrument) is cut out of that (private) line. The line, in common parlance, is "grounded," and communication can only be had through the call-bell B^2 of that line.

When a person on the private line desires communication he rings the call-bell upon that line. The current takes the following course upon this circuit: It passes upon the private line from the distant telephone at T^2, through the electro-magnet of the call-bell B^2 of this line to the line-changer at binding-post C, thence over the conducting material O T M to binding-post D and ground-line of private line, making a circuit through the line-changer only. (See Fig. 3.) The indicator is then turned upon private line, thereby placing the telephone (or instrument) in circuit which had before been cut out. The current now takes the following course, passing from the distant telephone T^2, over the private line, through the electro-magnet call-bell of this line to the line-changer at binding-post C, over the metallic conductors O, R, and W to binding-post E, (see Fig. 4,) thence through the conducting-wire with the telephone (or instrument,) through it and out over the conducting-wire to binding-post E′, over the metallic conductors I, H, and M to binding-post D and ground-line of

the private line. The effect produced upon the public line by thus changing the indicator to private line is as follows: The telephone or instrument is cut out of the circuit of that public-line, and in common parlance, the line is "grounded," and communication can be had only through the call-bell of that line.

The advantages of this device are, the button F does all the changing; no time lost in searching for a pin or slide; it is always at hand and unfailing in its work. By this arrangement only one telephone-instrument is needed in the office, as both lines are connected with it.

I claim as my invention—

1. The combination, with the button F, of the posts A B, conducting portions N P L′, and non-conducting portion K, substantially as and for the purposes described.

2. The combination, with the button F, of the posts A B E E′, conducting portions N R W, and non-conducting portions K L S, substantially as and for the purposes described.

3. The combination, with the button F, of posts C D, conducting portions O T M, and non-conducting portion S, substantially as and for the purposes described.

4. The combination, with the button F, of posts C D E E′, conducting portions I H M O R W, and non-conducting portion S, substantially as and for the purposes described.

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

CHARLES HENRY LOTHROP.

Witnesses:
W. W. SANBORN,
WILLIARD I. BLOCK.