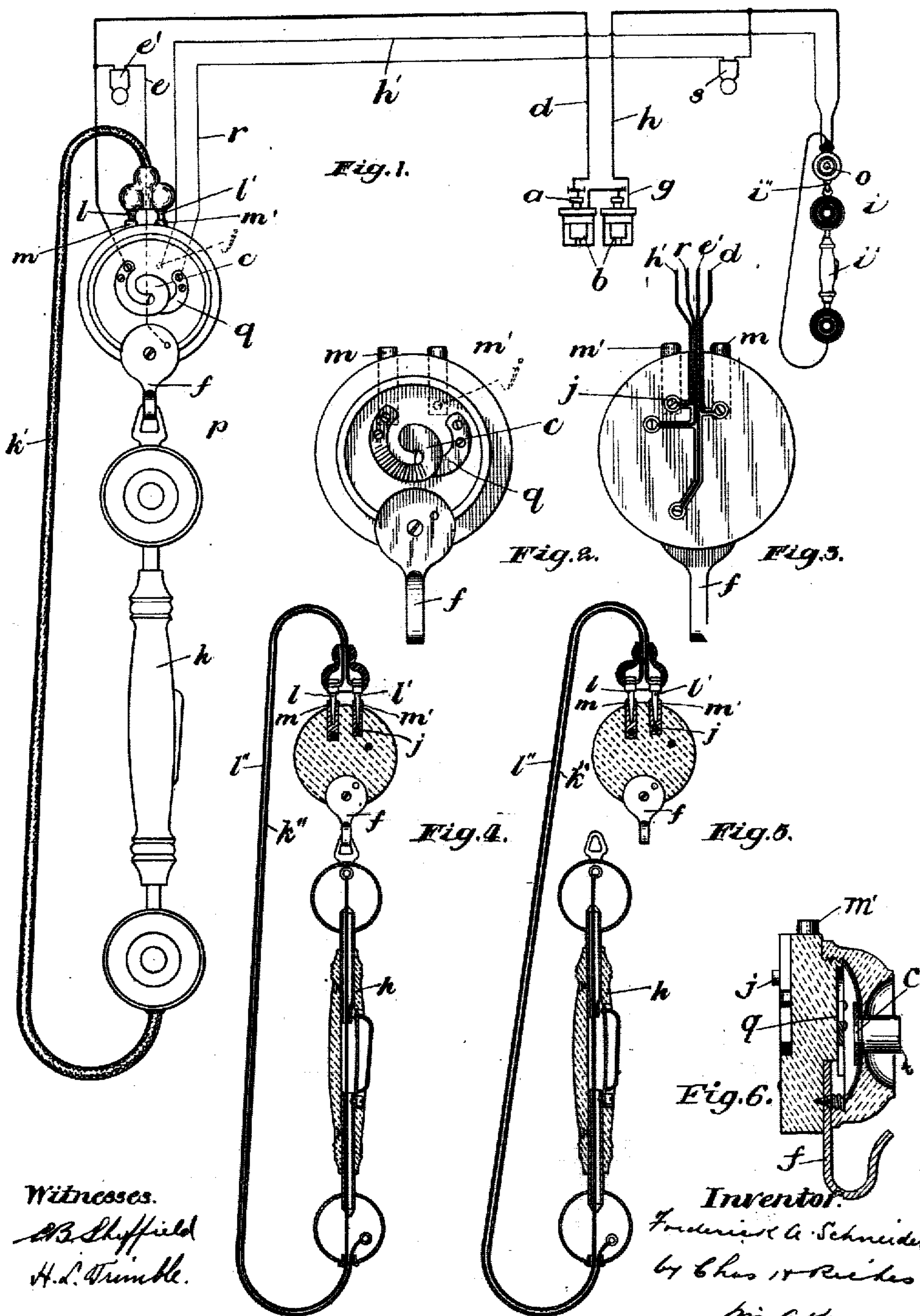


No. 825,488.

PATENTED JULY 10, 1906.

F. A. SCHNEIDER.
PUSH BUTTON.

APPLICATION FILED MAR. 21, 1905.



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FREDERICK AUGUST SCHNEIDER, OF TORONTO, CANADA.

PUSH-BUTTON.

No. 825,488.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed March 21, 1905. Serial No. 251,340.

To all whom it may concern:

Be it known that I, FREDERICK AUGUST SCHNEIDER, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Push-Buttons; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to a push-button for a three-circuit system—viz., a receiving-signal circuit, a transmitting-signal circuit, and a communicating or talking circuit; and the object of the invention is to so arrange the terminals and contact-points of the push-button that the circuit of the current can be translated over any one of these three circuits to operate, respectively, the receiving-signal, the transmitting-signal, or the instruments of the communicating or talking circuit.

In carrying out the invention the push-button is provided with the usual stationary and spring contact-plates constituting the terminals for the transmitting-signal circuit which is normally open, and with an instrument-supporting hook in shunt to the conductor leading to the spring contact-plate, and a terminal to which is adapted to be connected a conductor forming with the conductor leading to the supporting-hook a receiving-signal circuit when the instrument is suspended from the hook and with the conductor leading to the spring contact-plate a communicating or talking circuit when the instrument has been removed from the hook, as hereinafter more fully set forth in the specification and more particularly pointed out in the claim.

For a full understanding of the invention reference is to be had to the following description and to the accompanying drawings, showing the push-button used in conjunction with an intercommunicating system.

Figure 1 is a diagrammatic view showing the push-button installed in a central station of a three-circuit system. Fig. 2 is an enlarged view of the push-button looking at it from the front. Fig. 3 is an enlarged view looking at it from the back. Fig. 4 is a sectional view of the push-button receiver and connecting-cord, showing the receiver upon the hook. Fig. 5 is a similar view showing the receiver removed. Fig. 6 is a vertical section of the push-button.

Like letters of reference refer to like parts throughout the specification and drawings.

One pole *a* of the battery *b* is connected with the spring contact-plate *c* by the electrical conductor *d*, and in shunt with the electrical conductor *d* is the signal-conductor *e*, leading through the signal *e'* to the instrument-hook *f*. The other pole *g* of the battery is connected by an electrical conductor *h* with the substation *i*, and the substation *i* is connected with the terminal *j* by an electrical conductor *h'*. When the instrument *k* is suspended from the instrument-hook *f* and the plugs *l* and *l'* of the usual electrical conductors *k''* and *l''*, respectively contained in the cord *k'*, are inserted in the jacks *m* and *m'*, respectively, the signal-circuit is from the pole *a*, by means of the conductor *d*, to the shunt and then through the signal *e'* over the conductor *e* to the instrument-hook *f*, through the instrument *k* and electrical conductor *l''*, contained in the flexible cord *k'*, to the plug *l'* and terminal *j*, from which it flows by means of the conductor *h'* to the substation *i*, and by the electrical conductor *h* to the other pole *g* of the battery. This circuit is normally open, and to close it it is only necessary to operate the push-button *o* in the substation *i* and bring the terminals for the conductors *h* and *h'* together, which completes the circuit between the poles *a* and *g* of the battery through the calling-signal *e'* of the station *p*.

To establish a signal-circuit, the spring contact-plate *c* is moved into contact with the stationary contact-plate *q*, which is connected by the conductor *r* through the signal *s* with the conductor *h*, and when the two contact-plates are together the circuit of the current is from the pole *a* over the conductor *d*, spring contact-plate *c* to the stationary contact-plate *q*, and over the conductor *r* to the signal *s* at the substation *i*, which it operates so long as the two contact-plates are together, and from the signal *s* to the conductor *h* and pole *g* of the battery, the resistance in this circuit being less than the resistance of the circuits hereinbefore and hereinafter described.

The resistance of the conductor *k''* exceeds the resistance through the signal *e'* and conductor *e*, and when the instrument is on the hook *f* the circuit is through the signal to the hook and then through the conductor *l''* to the plug *l'* and terminal *j*; but by removing the instrument *k* from the hook *f* the circuit through the signal *e* is cut out and a talking-circuit is established from the pole *a* to the spring terminal plate *c* by means of the

electrical conductor *d* and from the spring terminal plate through the plug *l*, constantly in contact with it to its respective electrical conductor *k''*, contained in the cord *k'*, then
 5 through the instrument *k* and electrical conductor *l''* to the plug *l'* and terminal *j*, with which the socket *m'* of the plug *l'* is in constant contact, and from the terminal *j* to the substation *i* by the electrical conductor *h'*
 10 through the instrument *i'* when off the hook *i''* to the electrical conductor *h*, over which it flows to the other pole *g* of the battery.

In the operation of the system when the station *p* desires to call the station *i* the operator without removing the instrument *k*
 15 from the instrument-hook *f* presses the plunger *t* to bring the spring contact-plate into engagement with the stationary contact-plate *q*, so that the current can flow from the pole *a* to the pole *g* over the circuit formed
 20 by the electrical conductor *d*, contact-plate *c* and *q*, electrical conductor *r*, signal *s*, and electrical conductor *h*, the signal continuing to operate while the contact-plates remain
 25 together. When the contact-plates have again separated, the calling-signal circuit is broken and the receiving-signal circuit is established over the conductor *d* to the shunt through the signal *e'*, conductor *e* to the instrument-hook *f* and instrument *k* to the terminal *j*, and then to the pole *g*, as above described, so that the operator at the substation *i* when his signal has ceased operating

can acknowledge the signal from the central station by pressing his push-button *o* to close
 35 the circuit to the pole *g*. Both substations are then ready to communicate with one another when both instruments are removed from the instrument-hooks.

A push-button constructed and arranged
 40 as above outlined will perform the functions which have heretofore been required to be performed by a push-button and switch in systems of this nature.

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

A push-button comprising two normally separated contact-plates constituting the terminals for the conductors of the opposite
 50 poles of an electric circuit, means for bringing said contact-plates together to close said circuit an instrument-hook constituting a terminal for a conductor in shunt to the conductor of one of the contact-plates; two
 55 sockets for the push-button, a plug for one of the sockets in circuit with the last-mentioned contact-plate, a plug for the other socket and a terminal in circuit with the last-mentioned plug.

Toronto, February 25, A. D. 1905.

FREDERICK AUGUST SCHNEIDER.

In presence of—

L. FLORELLA BROCK,
 C. H. RICHES.