

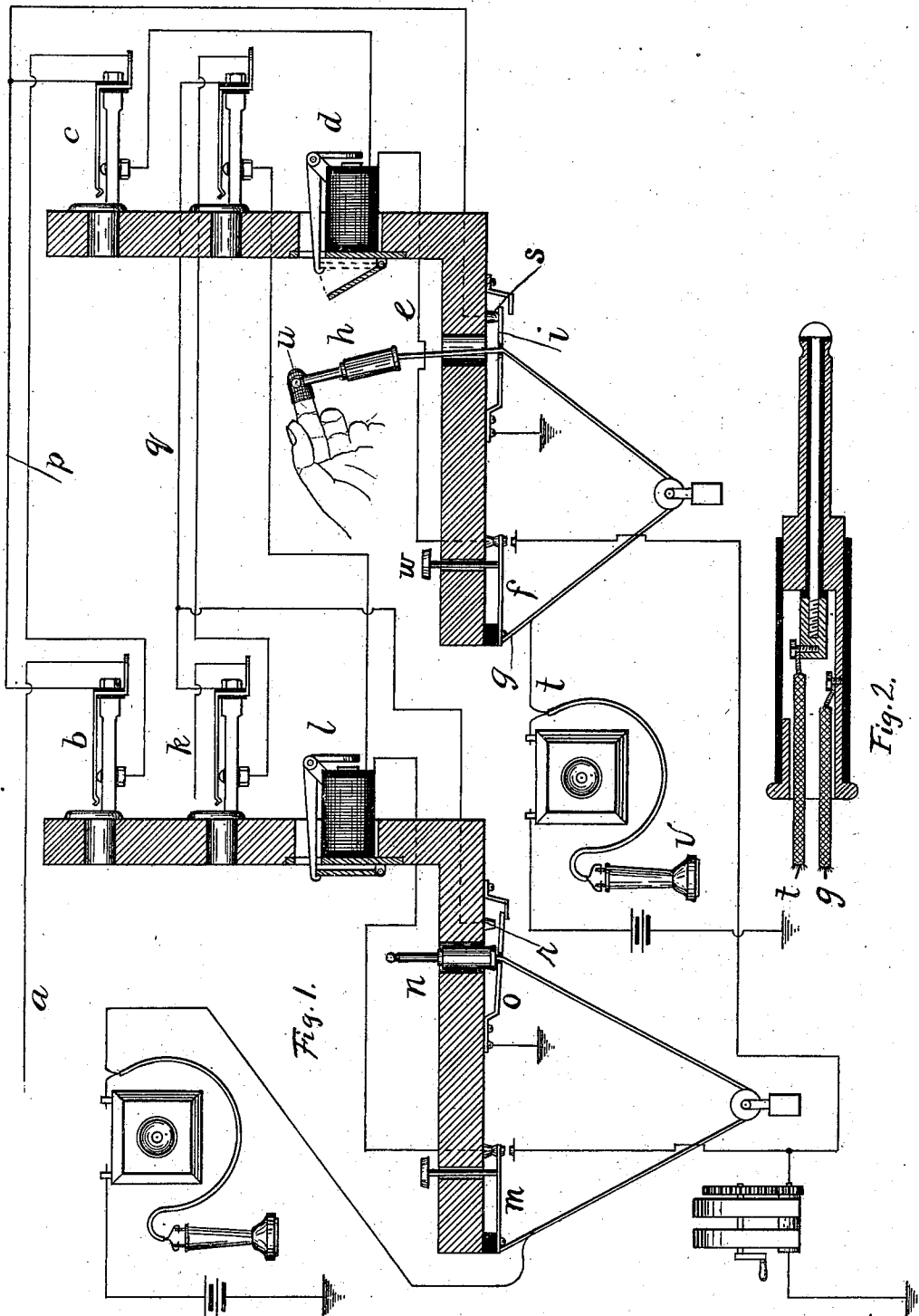
(No Model.)

C. E. SCRIBNER.

MULTIPLE SWITCHBOARD KEYBOARD APPARATUS.

No. 504,249.

Patented Aug. 29, 1893.



Witnesses.  
Charles Hawley.  
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# UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

## MULTIPLE SWITCHBOARD KEYBOARD APPARATUS.

SPECIFICATION forming part of Letters Patent No. 504,249, dated August 29, 1893.

Application filed December 6, 1887. Renewal December 13, 1892. Serial No. 455,011. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Multiple Switchboard Keyboard Apparatus, (Case No. 145,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to the flexible cords and terminal plugs of a single cord multiple switchboard system, and its object is to afford a ready means of closing a telephone through the operator's telephone line when a plug is lifted and the normal ground removed. The plug is provided with a metallic shank which is insulated from the extreme tip, the extreme tip and shank being connected with different strands of a flexible cord, one strand leading to the line and the other to the operator's telephone line. On lifting the plug and closing the connection between the extreme tip and the metallic shank, the line is at once connected with the operator's telephone. I preferably provide a flexible metallic tinsel piece in the form of a cot upon the finger of the operator which the operator presses against the plug point so as to bridge over the insulation between the extreme tip and the shank. Instead of tinsel the operator may insert the tip of the plug in mercury or make the connection in other suitable manner.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a diagram illustrative of sections of two multiple switchboards and two telephone lines connected therewith according to the single cord system, the test wires being also shown connected in the usual manner. Fig. 2 is a detailed sectional view of the plug.

The circuit of telephone line *a* may be traced normally through spring-jack *b* upon the first board and spring-jack *c* upon the second board through the individual annunciator *d* and thence by wire *e* to switch *f* and

thence by strand *g* of the flexible cord to the shank of plug *h*, the shank of plug *h* being in electrical connection with the heel piece of the plug. The heel piece normally rests upon ground contact spring *i*, thus closing the circuit of line *a* normally to ground. In like manner the circuit of line *k* may be traced across the switchboards and through annunciator *l* through switch *m* and thence to plug *n* which rests upon ground plate *o*.

The test wires *p q* and their contacts *r s* need not be described herein in detail since they form no part of my invention herein.

At each board is provided the usual telephone outfit. This telephone outfit, as shown at board 2, is connected with strand *t* of the flexible cord, this strand *t* leading to the extreme tip of the plug. The operator at board 2 on seeing the shutter of line *a* fall, at once picks up the plug of line *a*, thus lifting the heel of said plug from the ground plate and taking off the normal ground connection of the line. At the same time he lifts the plug. He also by means of the tinsel *u* upon his finger bridges over the insulation between the tip and the shank. Thus the line *a* is connected with the telephones *v*. The circuit thus closed may be traced by line *a* through the spring-jacks *b c* and annunciator *d* and wire *e* to spring *f* and thence by strand *g* to the shank of plug *h* and thence by tinsel *u* to the extreme tip of the plug which is connected with strand *t* of the flexible cord and thence through the telephone *v* to ground. The operator thus, as he lifts the plug, may, by the same hand and at the same time, close the circuit of the line through his telephone. Upon receiving the order he uses, preferably, the same plug to make the usual test, and if he finds the line wanted free, he at once inserts his plug *h* therein and by means of a key *w* or in any other suitable manner, throws current to line to call the desired subscriber. Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A telephone line connected with one point of a terminal plug and a telephone connected with another point of the same plug,

and a connecting device for closing the circuit between the two points of the plug to connect said line with the telephone, substantially as described.

- 5 2. A plug provided with an insulated shank and an insulated tip and a yielding metallic fabric adapted to be worn upon the finger so as to readily close the connection between the

tip and the shank at the will of the operator, as described. to

In witness whereof I hereunto subscribe my name this 17th day of October, A. D. 1887.

CHARLES E. SCRIBNER.

Witnesses:

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CHAS. C. WOODWORTH.