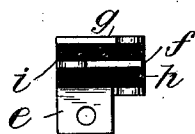
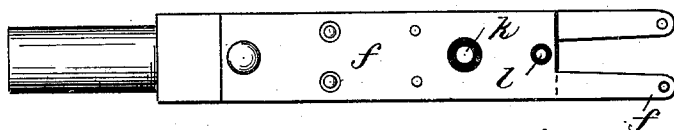
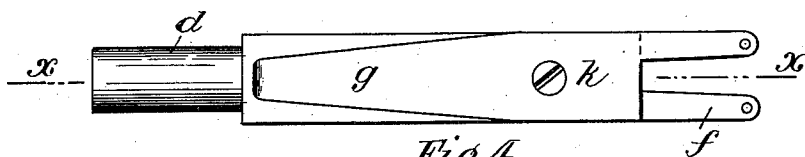
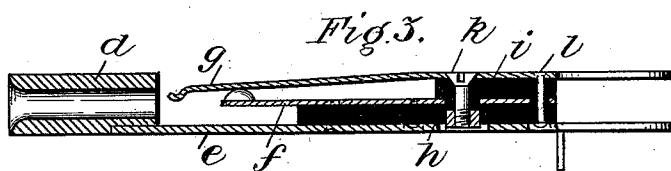
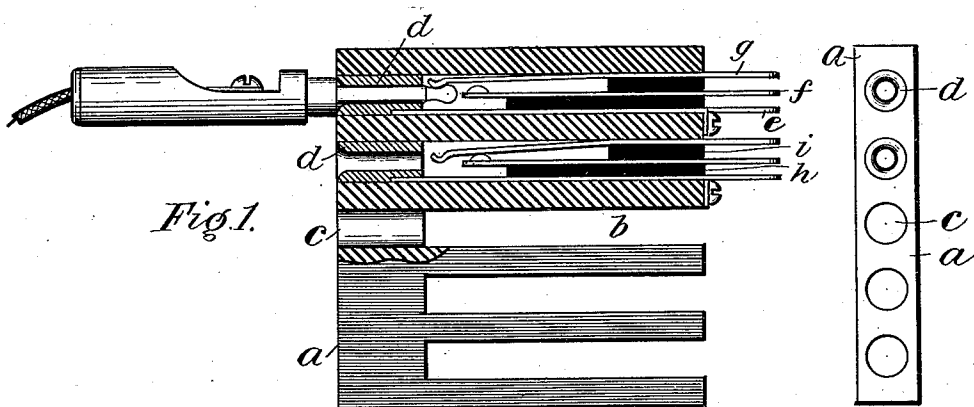


(No Model.)

C. E. SCRIBNER.
SPRING JACK SWITCH.

No. 357,538.

Patented Feb. 8, 1887.



Witnesses:
Saml. B. Dover.
Wm. M. Miller.

Inventor.
Charles E. Scribner
By George A. Barton
Att'y.

UNITED STATES PATENT OFFICE.

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

SPRING-JACK SWITCH.

SPECIFICATION forming part of Letters Patent No. 357,538, dated February 8, 1887.

Application filed November 15, 1886. Serial No. 218,952. (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 Spring-Jack Switches for Telephone-Exchange Switch-Boards, (Case 115,) 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 spring-jack switches, and is an improvement upon the switch described in my Patent No. 293,198, of February 5, 1884.

The object of my invention is to so construct the switches that they may be light, strong, and efficient, and easily accessible for adjustment or repairs, while occupying the smallest possible space upon the switch-board.

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

Figure 1 shows a top view of the rubber frame, partially in section, and two spring-jacks mounted therein, a plug being inserted in one of the spring-jacks. Fig. 2 is a front view of the rubber frame supporting two spring-jacks. Fig. 3 is a sectional view of one of the spring-jacks upon the line *x x*, Fig. 4. Figs. 4 and 5 show the different sides, respectively, of the spring-jack. Fig. 6 is a rear elevation thereof.

Like parts are indicated by similar letters of reference in the different figures.

The rubber piece or frame *a* may be, say, half an inch thick and long enough to support any desired number of spring-jacks, which may be placed half an inch apart from center to center. The slots *b* in the rubber frame are milled out, and the corresponding holes, *c*, are bored therein to correspond to the contact-pieces of the spring-jacks when constructed and connected together, as shown.

The springs or contact-pieces of the spring-jacks are preferably of German silver, less than one-half inch in width.

The tube or test-piece *d* may be of brass. To this tube is rigidly secured the strap *e*, which extends back to the rear of the board, and serves as a connection for the test-wire.

Ground-connection *f* is insulated from test-

strap *e* by hard rubber or other insulating material. The lever *g* of the spring-jack is in like manner insulated from contact-strap *e* and the ground-connection *f*, as shown, and normally rests in contact with the contact-point of the ground-piece, as shown more clearly in Fig. 3.

Rubber washers *h i* are interposed between the different metallic portions of the spring-jack, as shown, and the screw *k* serves to bind the two washers and the lever ground-connection together, as shown. The strap *e* is secured to the rubber washer *i* by means of escutcheon-pins.

A steady-pin, *l*, is provided to keep lever *g* from turning upon the screw *k* as a center. The steady-pin is insulated from the other parts of the spring-jack, as shown. After the different spring-jacks are thus built up they are inserted from the rear in the slots provided in the rubber frame, the tubes *d* being driven into the holes *c*, as shown in Figs. 1 and 2.

An ear from strap *e*, as shown, and provided with a screw-hole, comes against the rubber frame, and by means of a screw inserted through said hole into the frame the jack may be held in place. Thus each jack is held in place by the tube driven into the hole provided in the rubber piece at one end, and at the other end the spring-jack is secured to the frame by a single screw. On removing the screw of any jack it is evident that the jack may be removed, and all of its parts thus made accessible for adjustment or repairs.

The strap *e*, the ground-contact piece *f*, and the lever *g* may be punched from sheet metal. The ear for the screw is provided upon the strap at the same time the strap is punched out. These pieces are necessarily quite thin and are built up in planes substantially parallel, so as to occupy the least possible space. Being, however, connected together and supported by the rubber frame, as before described, they will be sufficiently rigid to be durable and effective for the purposes for which they are designed.

When the spring-jacks are in place, the slots in the rubber frame are completely filled at the rear, so that the strips or teeth of rubber between the slots are rigidly supported.

It will thus be seen that a switch-board may

be built up in sections, the different sections being of such length and thickness as desired.

As before stated, I have found that the sections may be half an inch in thickness and any desired length, so that four switches may be included within each square inch of switch-board surface.

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

- 10 1. The combination, with a rubber section or frame provided with slots *b* and holes *c*, of spring-jack switches driven into said holes and secured at the rear, each by a single screw, substantially as shown and described.
- 15 2. In a spring-jack switch, the combination, with the test-piece or tube *d* of the strap *e* connected therewith, of the ground-piece *f* and lever *g*, and insulated, respectively, by rubber washers *h* and *i*, said spring-jack being supported in a hole provided in a rubber frame at one end and at the other end secured by a single screw, substantially as shown and described.
- 20 3. In a spring-jack switch, the combination, with the strap *e*, connected with the test-piece

at the front of the board, of the ground-piece *f* and the lever *g*, said strap, ground-piece, and lever being punched out of sheet metal and placed in substantially parallel planes and insulated, substantially as shown and described. 30

4. A strap, *e*, of sheet metal, which supports the test-piece or tube at one end and the ground-piece and lever of the spring-jack at the other end, said pieces *e f g* being insulated from each other and held in place by a screw and pins, substantially as shown and described. 35

5. The combination, with the rubber frame or support provided with the holes and slots, of spring-jack switches inserted therein and completely filling the slots at the rear, whereby the teeth or sections of said frame are rigidly supported, substantially as shown and described. 40

In witness whereof I hereunto subscribe my name this 3d day of November, A. D. 1886.

CHARLES E. SCRIBNER.

Witnesses:

GEORGE P. BARTON,
CHAS. C. WOODWORTH.