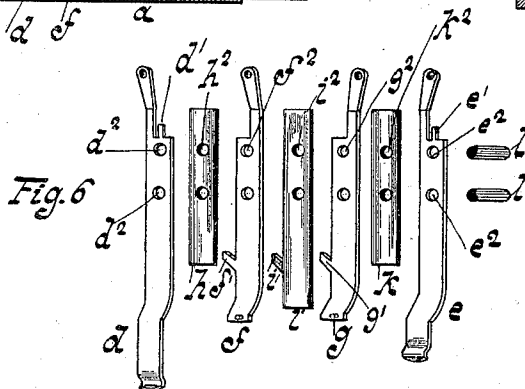
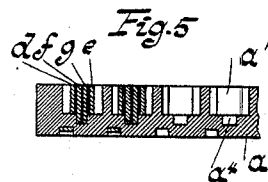
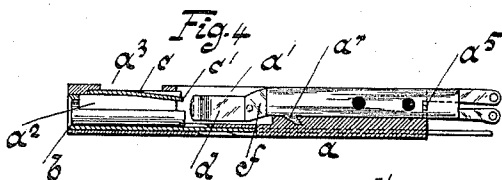
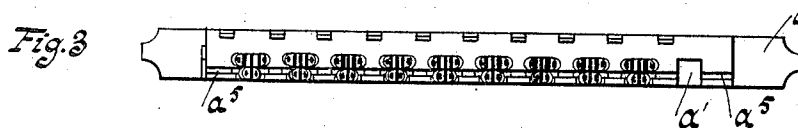
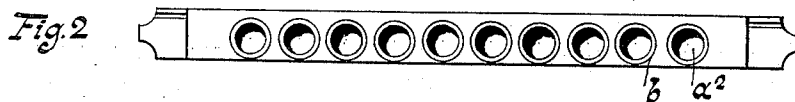
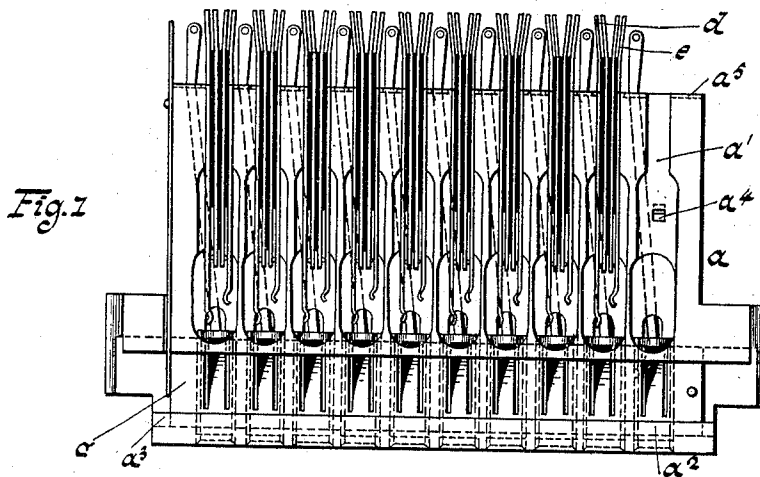


(No Model.)

C. E. SCRIBNER.
SPRING JACK FOR TELEPHONE SWITCHBOARDS.
No. 584,418. Patented June 15, 1897.



Witnesses:

John W. Sinclair

Inventor:

Charles E. Scribner

By: Robert Brown Atty's

UNITED STATES PATENT OFFICE.

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

SPRING-JACK FOR TELEPHONE-SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 584,418, dated June 15, 1897.

Application filed July 20, 1896. Serial No. 599,800. (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-Jacks for Telephone-Switchboards, (Case No. 428,) 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 concerns the construction of spring-jacks for telephone-switchboards, the object being to produce a cheap, simple, compact, and efficient device for securing the switch-springs in the usual base or frame of insulating material.

The invention applies to that type of spring-jacks in which each jack comprises a number of switch-springs lying parallel on their edges in a transverse groove in the frame or base-plate of insulating material which constitutes the support of a number of spring-jacks.

The invention consists in details of form and construction of the springs and the strip of insulating material for the purpose of preventing the movement of the group of springs in the groove, as follows: The bundle of springs—usually four—with intervening tongues of insulating material, are secured together by transverse pins of insulating material. One or more of the springs is formed with a downwardly and rearwardly projecting tongue or lug which enters an opening of corresponding form and size in the floor of the groove wherein the springs lie, whereby the movement of the springs backward or out of the groove is prevented. One or more of the springs is provided with another lug at its rear extremity, which when the springs are in place in the groove is bent into such position that any forward movement of the springs is prevented.

The device is illustrated in the accompanying drawings, wherein—

Figure 1 represents a plan of a portion of a strip of spring-jacks, one of the groups of springs constituting the movable parts of the spring-jack being removed to display the form of the groove in the base. Fig. 2 is a front elevation of the same. Fig. 3 is a rear

elevation. Fig. 4 is a sectional view through the center line of a spring-jack. Fig. 5 is a transverse section of a spring-jack on line 5 5 of Fig. 1. Fig. 6 is a perspective view of the springs and other parts of a spring-jack displayed in their relative positions, but separated from each other.

This spring-jack in general is of well-known type. The common support for the parts of the different spring-jacks is a strip *a* of insulating material, wherein a transverse groove *a'*, extending nearly across the strip, and a transverse perforation *a²*, meeting the groove, are formed for each spring-jack. A longitudinal groove *a³* is milled throughout the length of the strip, meeting and intersecting all the perforations *a²* of the strip. The groove *a'* is contracted at one point of its length at the rear of the strip. The remainder of the groove is wider to permit the free play of the springs in it.

The switch portions of the spring-jack comprise a thimble *b*, inserted in the opening *a²*, a strip *c*, formed into a number of tongues *c'*, one for each spring-jack, projecting into openings in the thimbles, two switch-springs *d* and *e* and their respective anvil-straps *f* and *g*, and tongues *h*, *i*, and *k*, of insulating material, interposed between the different springs of the spring-jack.

In the present invention an oblique rearwardly-projecting hole *a⁴* is drilled into the floor of the groove *a'* in the strip *a* beneath the axial line of the spring-jack and about the middle of the wider portion of the groove; also, at the rear of the strip a narrow and shallow groove *a⁵* is milled throughout the length of the strip, intersecting the grooves *a'*. Each of the anvil-straps *f* and *g* and the intermediate tongue *i*, of insulating material, has a downwardly and rearwardly projecting extension or lug (designated *f'*, *g'*, and *i'* in the respective parts mentioned) corresponding in size and inclination to the opening *a⁴* in the rubber strip. Further, each of the switch-springs *d* and *e* has a rearwardly-projecting lug *d'* and *e'*, respectively, formed upon it of substantially the same width as the groove *a⁵*. Each of the springs, anvil-straps, and insulating-tongues has also two holes, (indicated at *d²* *e²* *f²* *g²* *h²* *i²* *k²*, respectively),

these openings being adapted to come into
 alinement when the springs are assembled in
 proper position. Through these openings are
 thrust pins *l*, of hard rubber, whereby the
 5 parts are bound into a compact bundle and
 are secured against longitudinal play among
 themselves. In assembling the spring-jack
 the bundle of springs thus secured together
 is pressed down into the groove *a'*, the springs
 10 being placed a little forward of their final
 position to bring the extremity of the lugs *f'*,
g', and *i'* into coincidence with the orifice of
 the hole *a*⁴. The springs are then pressed
 downward and at the same time backward in
 15 the groove, whereby the lugs are forced into
 the opening *a*⁴. Finally the lugs *d'* and *e'* are
 bent outward at right angles until they lie
 closely in the groove *a*⁵, as seen in Fig. 3.
 The springs then have no longitudinal play
 20 with relation to each other. The bundle of
 springs cannot be withdrawn from the groove
a', since they are retained therein by the lugs
d' and *e'*, lying in the groove *a*⁵, and by the
 obliquely-projecting lugs on the anvil-straps.
 25 They cannot be moved backward on account
 of the engagement of the last-mentioned lugs
 with the opening in the floor of the groove,
 while they are prevented from forward move-
 ment by the before-mentioned lugs on the
 30 switch-springs.

This improvement therefore provides a sim-
 ple and strong means for securing the switch-
 springs and their associated parts in the
 spring-jack strip, and it tends to a consider-
 35 able saving in the cost of construction, since
 the lugs may be formed in the operation of
 punching the springs, while the grooves and
 holes are made by the usual simple and cheap
 processes of milling and drilling.

40 I claim as my invention—

1. The combination with a strip of insulat-
 ing material having a groove therein, of a con-
 tact-strap lying in the groove, an obliquely-
 projecting lug formed upon one of the edges
 45 thereof, an oblique recess in the floor of the
 groove engaging the lug, a laterally-project-
 ing lug formed on the contact-strap, and a
 portion of the insulating material engaging
 the said laterally-projecting lug, whereby the
 50 contact-strap is prevented from moving in
 the groove, as described.

2. The combination with a block of insulat-

ing material having a groove formed therein,
 of a contact-strap and spring lying in the
 groove and extending beyond the block of in- 55
 sulating material, a lug formed on the said
 spring at its rear end, and a recess in the
 block of insulating material adapted to re-
 ceive the lug, whereby the movement of the
 spring out of the groove is prevented, another 60
 lug formed on the anvil-strap of the said
 spring, and a recess in the insulating material
 engaging the last-mentioned lug adapted to
 prevent the rearward movement of said spring
 and anvil-strap, whereby the parts are re- 65
 tained in the groove, as described.

3. The combination with a block of insulat-
 ing material having a groove in it, of a switch-
 spring and its anvil-strap laid in the groove,
 said parts being secured together, one of said 70
 parts having an inclined lug at one edge, and
 another of said parts having a laterally-pro-
 jecting lug, and recesses in the block of in-
 sulating material adapted to receive said
 lugs, substantially as described. 75

4. The combination with a block of insulat-
 ing material having a groove formed therein,
 of a switch-spring, its anvil-strap and an in-
 terposed tongue of insulating material, placed
 on edge in the groove, a rearwardly-project- 80
 ing extension from the contact-anvil and an
 inclined recess in the block adapted to re-
 ceive the extension, a laterally-projecting lug
 on the switch-spring, and a recess in the block
 adapted to receive the said lug, substantially 85
 as described.

5. In a spring-jack the combination with a
 block of insulating material having a groove
 formed in it, of a switch-spring, its anvil-
 strap, and a tongue of insulating material, 90
 laid on edge in the groove, a downwardly and
 rearwardly projecting lug on the anvil-strap,
 an oblique recess in the floor of the groove
 receiving said lug, a laterally-projecting lug
 at the rear of the switch-spring, and a groove 95
 in the insulating material to receive the said
 lug, substantially as described.

In witness whereof I hereunto subscribe my
 name this 26th day of May, A. D. 1896.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,
 FRANK R. MCBERTY.