

(No Model.)

C. E. SCRIBNER.  
SPRING JACK FOR TELEPHONE SWITCHBOARDS.

No. 584,418.

Patented June 15, 1897.

Fig. 1

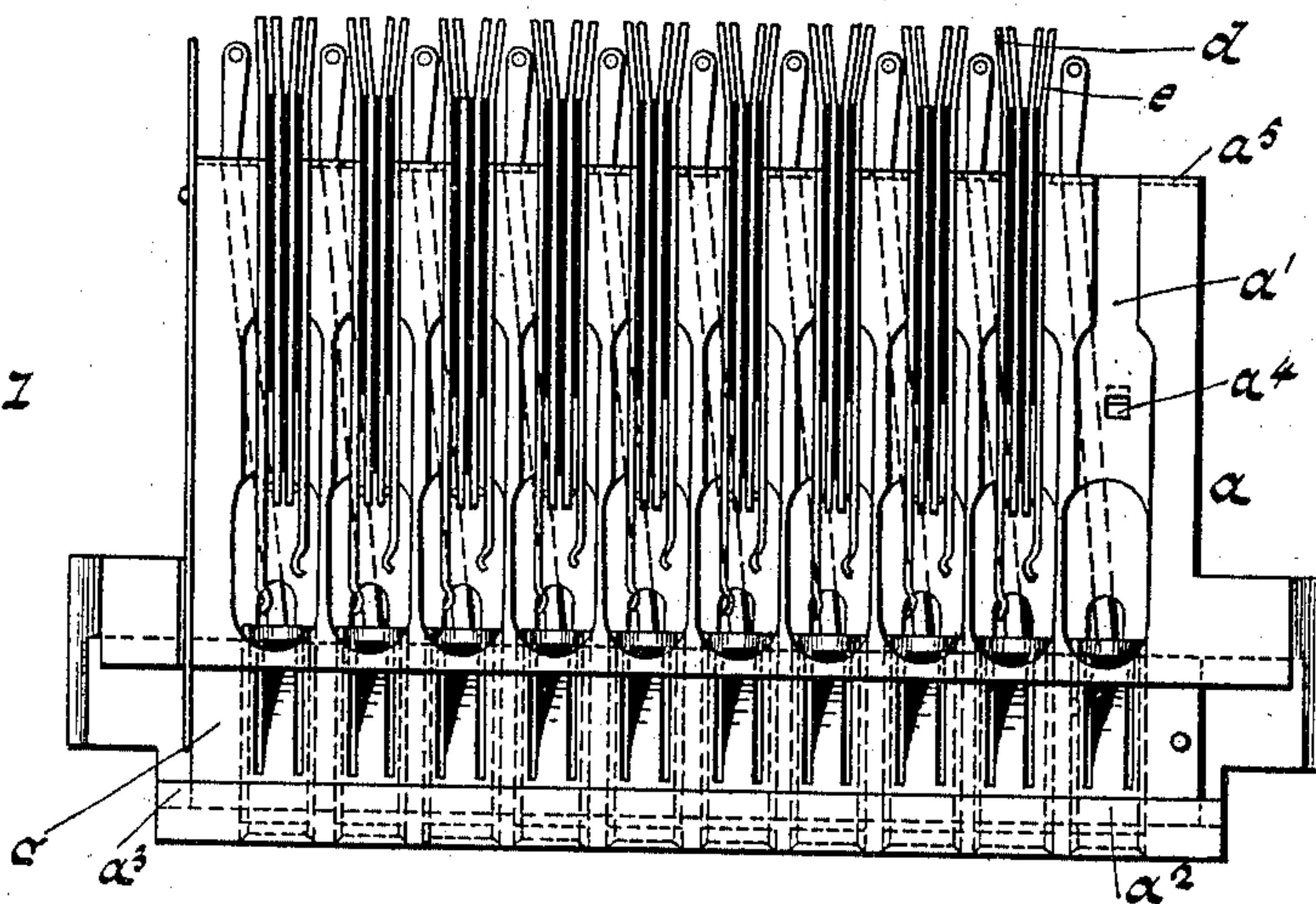


Fig. 2

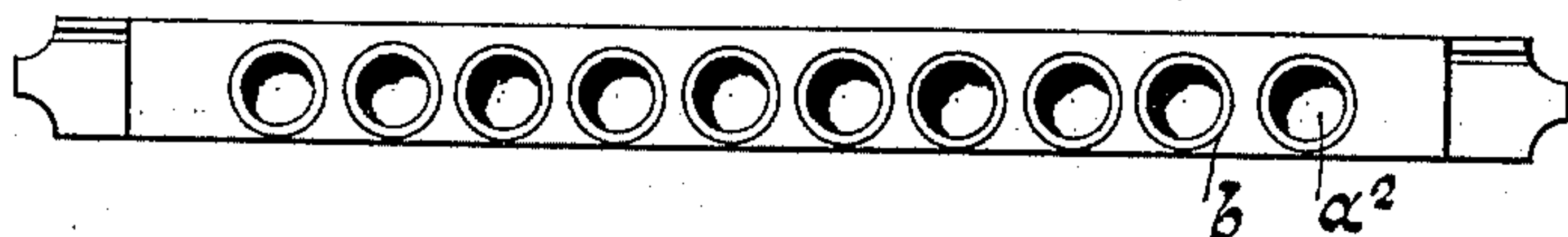


Fig. 3

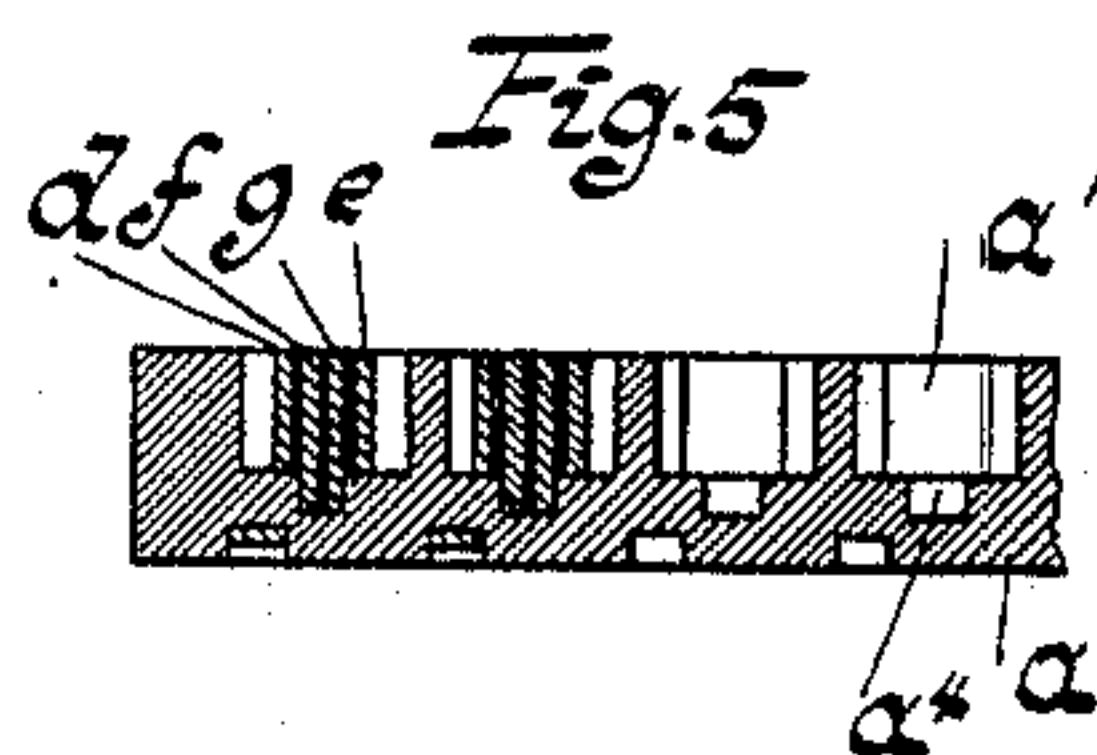
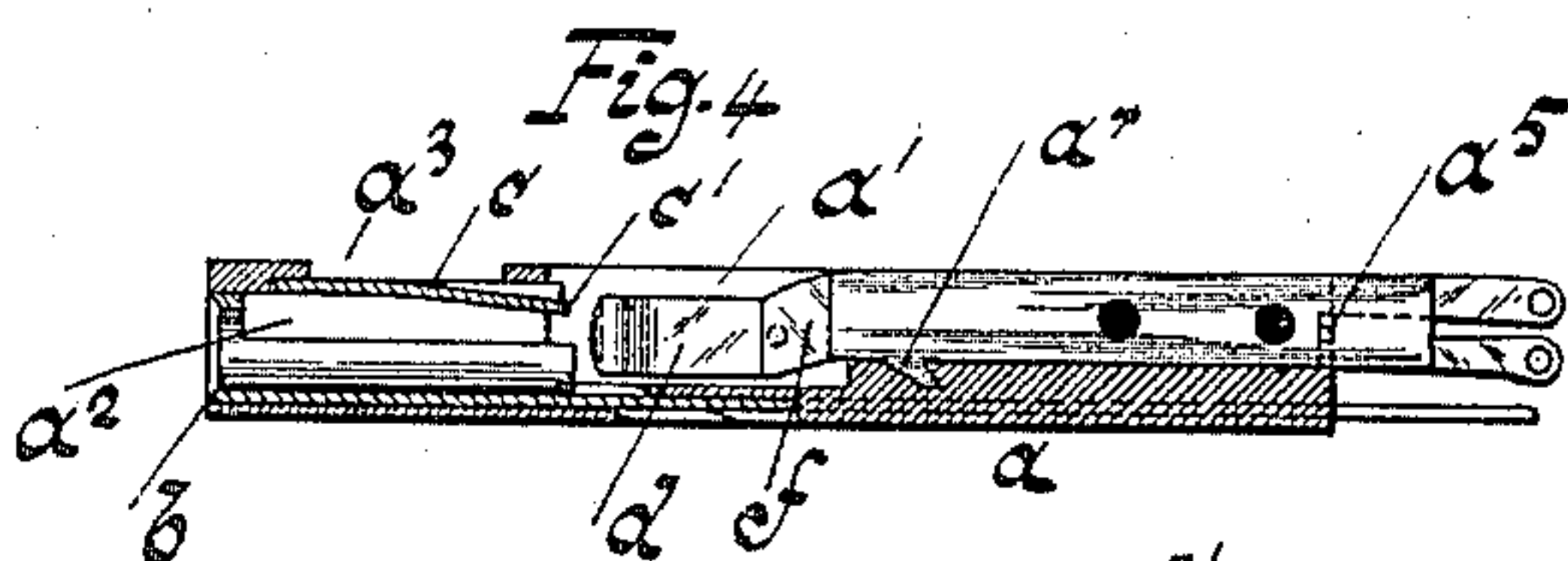
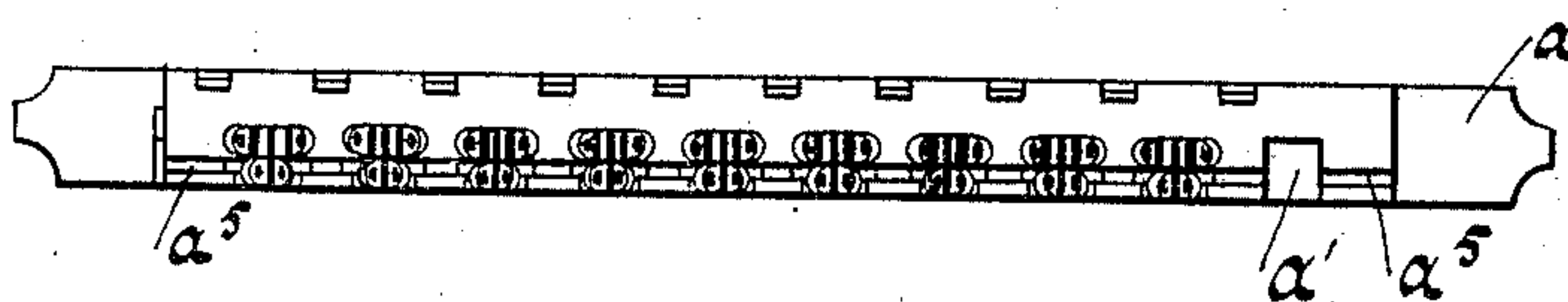
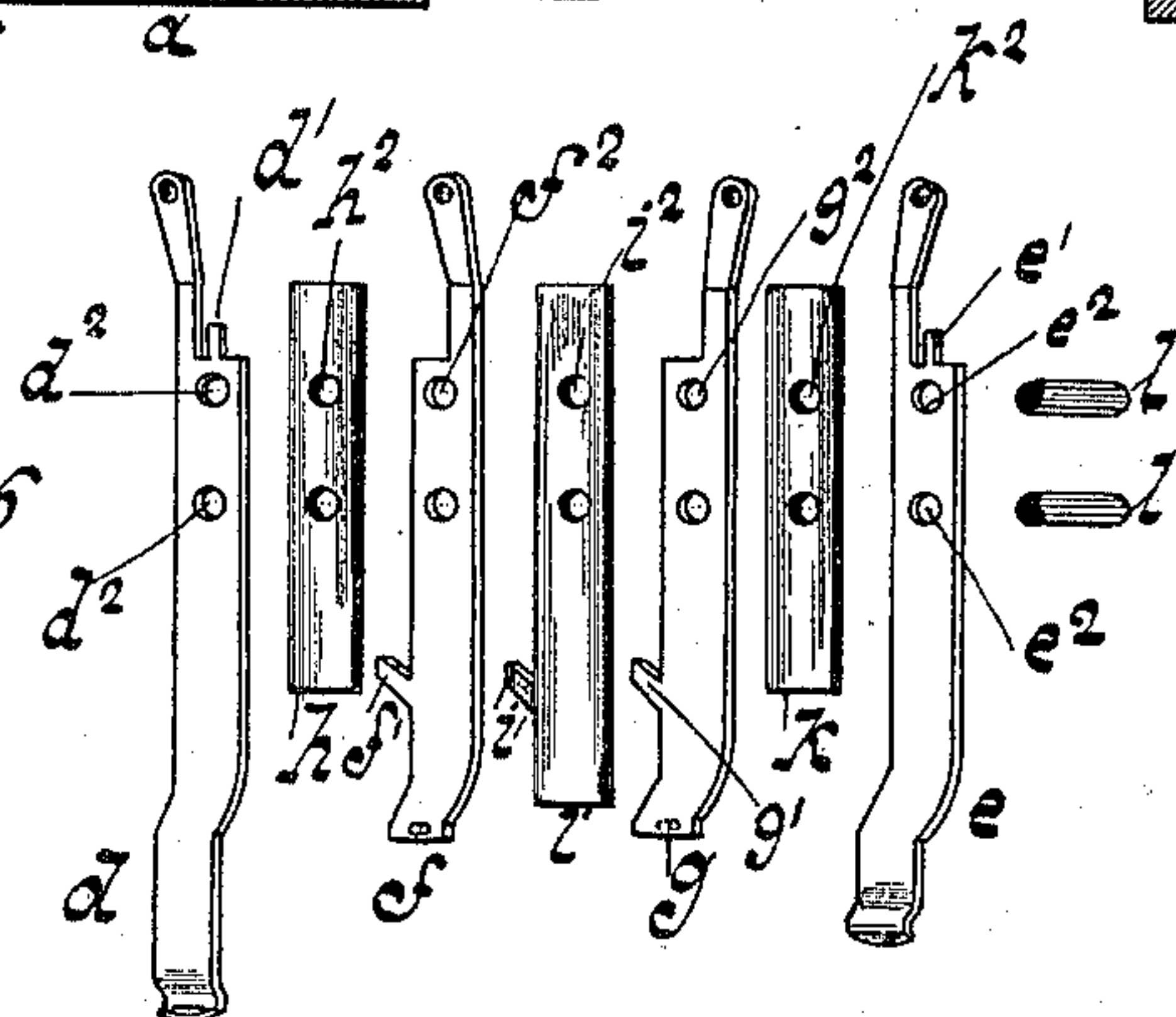


Fig. 6



Witnesses:

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# 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 *a<sup>2</sup>*, meeting the groove, are formed for each spring-jack. A longitudinal groove *a<sup>3</sup>* is milled throughout the length of the strip, meeting and intersecting all the perforations *a<sup>2</sup>* 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 *a<sup>2</sup>*, 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 *a<sup>4</sup>* 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 *a<sup>5</sup>* 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 *a<sup>4</sup>* 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 *a<sup>5</sup>*. Each of the springs, anvil-straps, and insulating-tongues has also two holes, (indicated at *d<sup>2</sup>* *e<sup>2</sup>* *f<sup>2</sup>* *g<sup>2</sup>* *h<sup>2</sup>* *i<sup>2</sup>* *k<sup>2</sup>*, 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 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 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*<sup>4</sup>. The springs are then pressed downward and at the same time backward in the groove, whereby the lugs are forced into the opening *a*<sup>4</sup>. Finally the lugs *d'* and *e'* are bent outward at right angles until they lie closely in the groove *a*<sup>5</sup>, as seen in Fig. 3. The springs then have no longitudinal play 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*<sup>5</sup>, and by the obliquely-projecting lugs on the anvil-straps. 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 movement by the before-mentioned lugs on the switch-springs.

This improvement therefore provides a simple and strong means for securing the switch-springs and their associated parts in the spring-jack strip, and it tends to a considerable 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.

I claim as my invention—

1. The combination with a strip of insulating material having a groove therein, of a contact-strap lying in the groove, an obliquely-projecting lug formed upon one of the edges thereof, an oblique recess in the floor of the groove engaging the lug, a laterally-projecting lug formed on the contact-strap, and a portion of the insulating material engaging the said laterally-projecting lug, whereby the 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 insulating material, a lug formed on the said spring at its rear end, and a recess in the block of insulating material adapted to receive the lug, whereby the movement of the spring out of the groove is prevented, another 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 retained in the groove, as described.

3. The combination with a block of insulating 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 parts having an inclined lug at one edge, and another of said parts having a laterally-projecting lug, and recesses in the block of insulating material adapted to receive said lugs, substantially as described.

4. The combination with a block of insulating material having a groove formed therein, of a switch-spring, its anvil-strap and an interposed tongue of insulating material, placed on edge in the groove, a rearwardly-projecting extension from the contact-anvil and an inclined recess in the block adapted to receive the extension, a laterally-projecting lug on the switch-spring, and a recess in the block adapted to receive the said lug, substantially 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, 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 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.