

(No Model.)

2 Sheets—Sheet 1.

H. B. THAYER.
SPRING JACK SWITCH.

No. 400,969.

Patented Apr. 9, 1889.

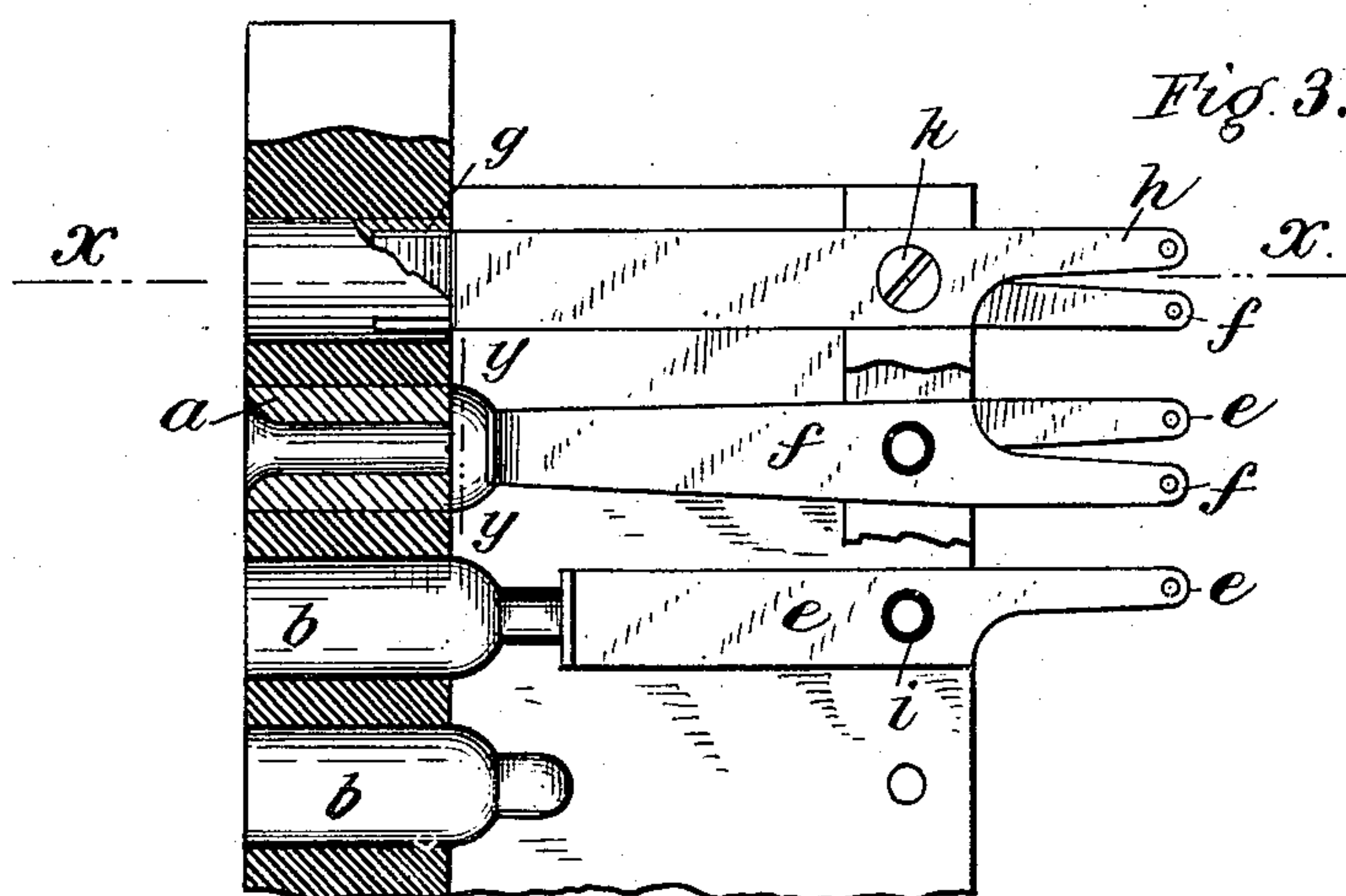
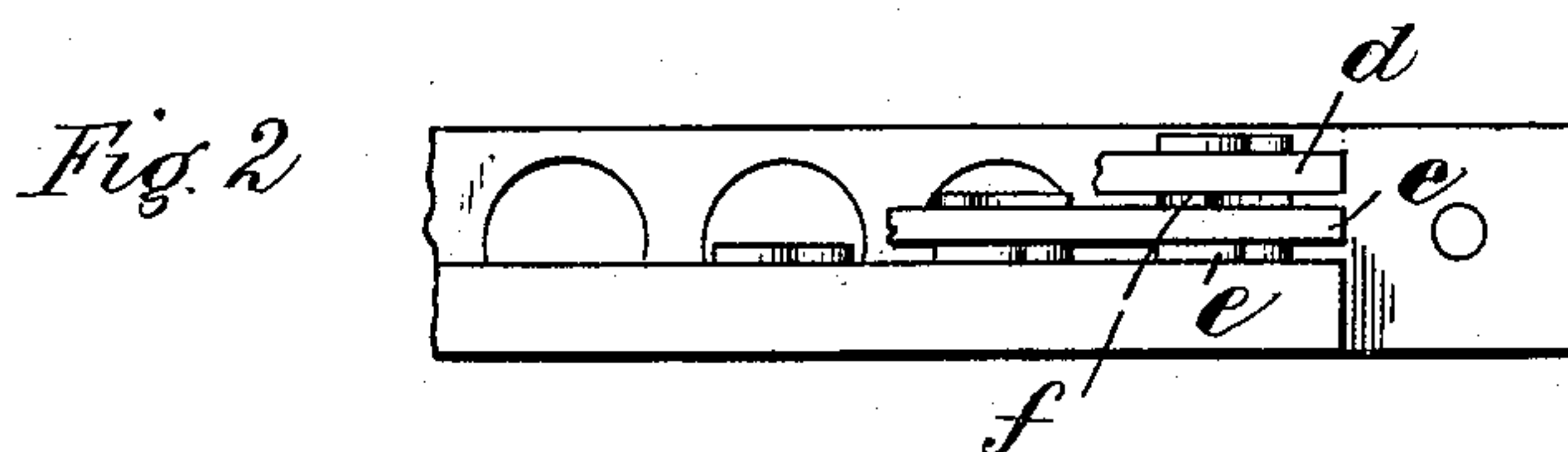
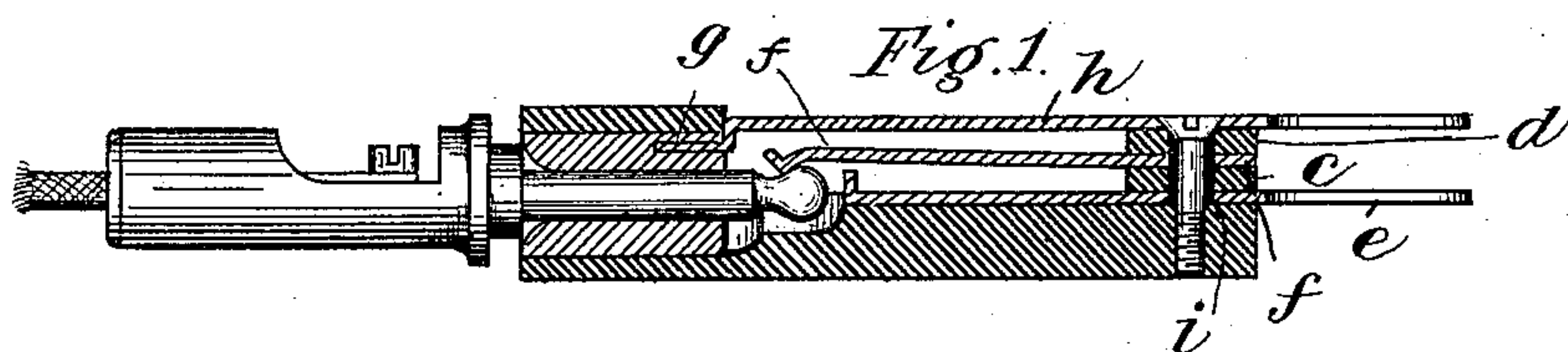


Fig. 6.

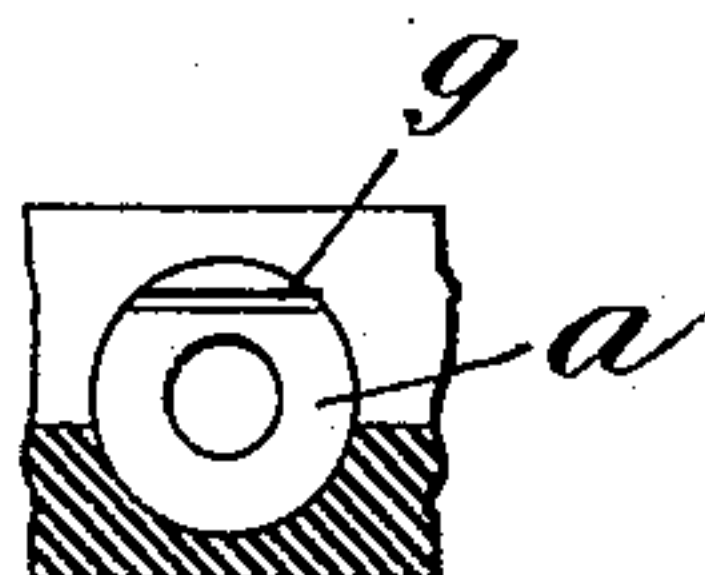
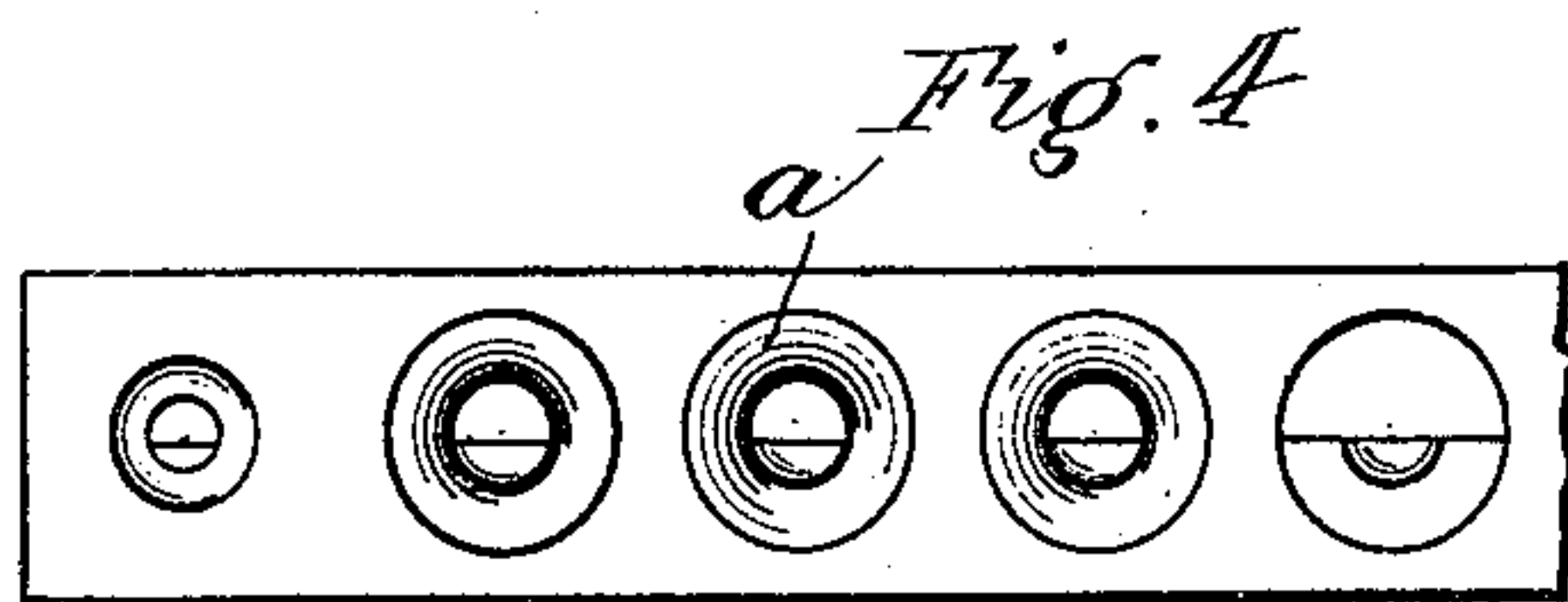
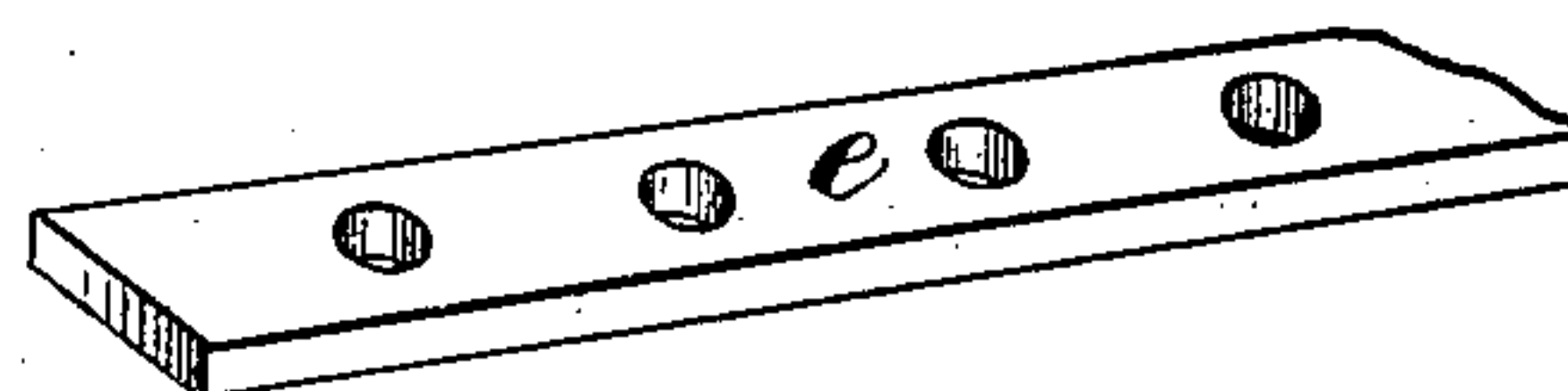


Fig. 5.

Witnesses:

Saml B. Dover
Wm M. Giller.

Inventor.

Harry B. Thayer
By Henry P. Barton
attorney.

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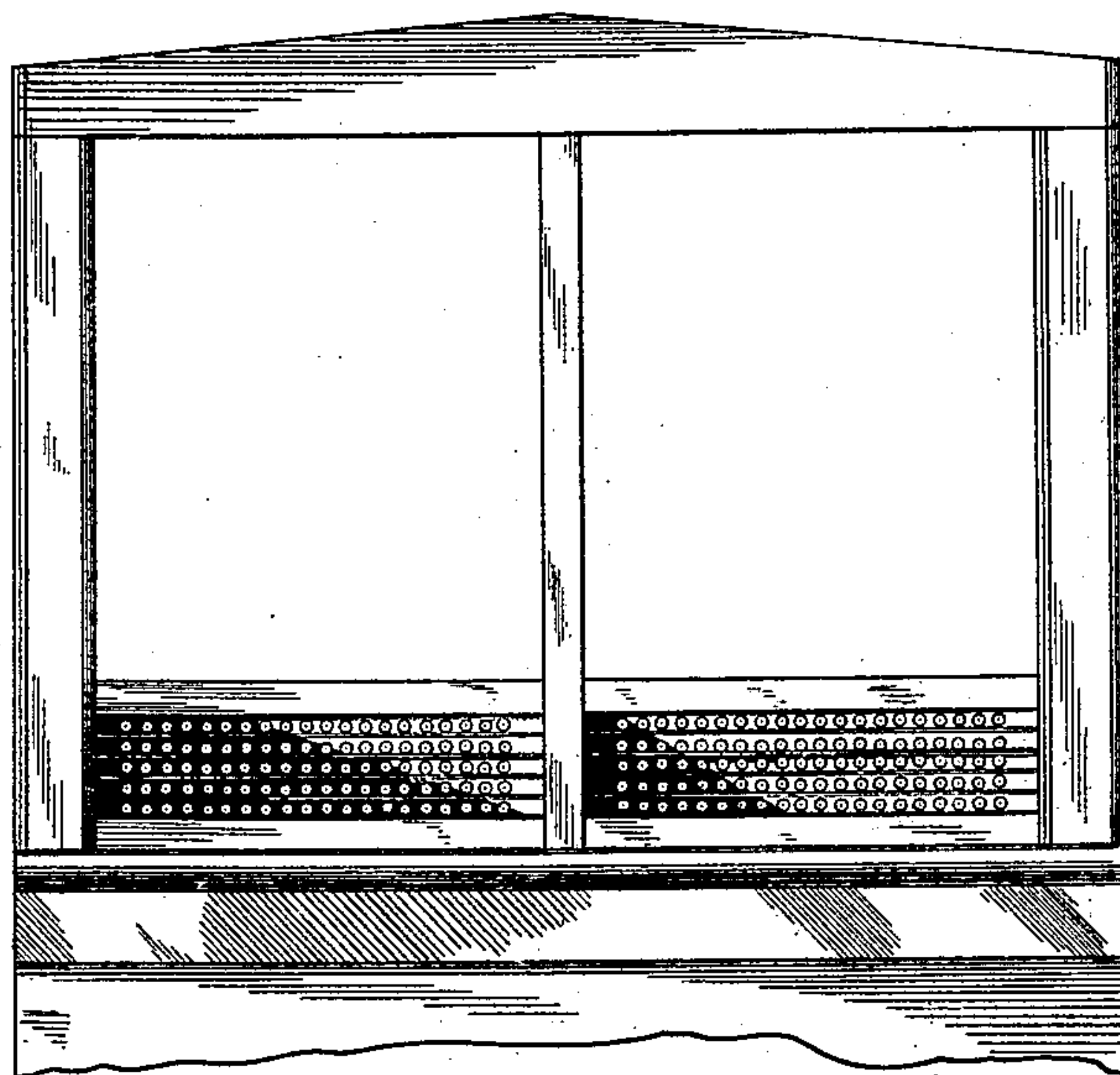


Fig. 7.

Witnesses:
Chas. G. Hawley.
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UNITED STATES PATENT OFFICE.

HARRY B. THAYER, OF NEW YORK, N. Y., ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF CHICAGO, ILLINOIS.

SPRING-JACK SWITCH.

SPECIFICATION forming part of Letters Patent No. 400,969, dated April 9, 1889.

Application filed January 31, 1887. Serial No. 225,988. (No model.)

To all whom it may concern:

Be it known that I, HARRY B. THAYER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Spring-Jack Switches, 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 its object is to cheapen the manufacture, while the switch is rendered strong, durable, and efficient.

My invention consists in building up the springs or contact-pieces of the switches in banks or layers with rubber strips interposed between the different layers, so that the different contact-pieces of each switch will be properly insulated and at the same time brought within as small an area as possible.

My invention will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional view of one of my spring-jack switches on sectional line *xx* of Fig. 3, with a plug inserted therein. Fig. 2 is a rear view of four spring-jack switches with certain parts broken away. Fig. 3 is a plan view of the same, partly in section, certain parts thereof being removed. Fig. 4 is a front elevation of the section of four spring-jacks, shown in Fig. 3. Fig. 5 is a rear view of a thimble or metallic socket upon line *yy* of Fig. 3, showing the slot for receiving the spring which is connected therewith. Fig. 6 is a detail view of one of the insulating-strips for separating the springs.

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

The base of each strip of spring-jacks consists, preferably, of rubber, and at the front is made thick enough to carry the tubes or sockets *a* of the frames, which are inserted in holes *b*, provided in the rubber, as shown. The rear portion of the rubber is cut away, as shown, so as to afford room for the springs of the spring-jacks, the corresponding springs of the different spring-jacks being arranged

in the same plane and separated by strips *cd* of insulating material, as shown.

Each spring-jack consists of three different metallic strips or springs. The first spring or ground-strip, *e*, of each spring-jack is placed directly upon the rubber base, its inner end being bent, as shown, toward the line strip or lever *f*. The plug when inserted, as shown in Fig. 1, lifts the lever *f* from its normal contact with the ground-strip. Thus the line-strip is switched from the ground to the plug, when the plug is inserted, as shown in Fig. 1. In the rear of each of the sockets *a*, I provide a slot, *g*, as shown in Figs. 3 and 5. The front end of the test strip or spring *h* of each spring-jack is inserted in the slot provided in its test ring or connection *a*, as shown.

By making the screw-holes large enough and inserting rubber bushings *i* therein the springs *ef* of the different spring-jacks are insulated from the screws *k*, which are inserted, one in each spring-jack, to hold the parts together when assembled.

I preferably build up twenty spring-jacks on each strip. These strips may be half an inch thick and eleven and a half inches in length, the holes *b* being placed half an inch from center to center, thus allowing the ends of the rubber supports to extend three-fourths of an inch beyond the spring-jacks, as shown in Figs. 2, 3, and 4.

The switch-board is built-up in sections of one hundred, five strips being laid one above the other, the different sections being separated at the ends by vertical strips an inch in width, while wooden strips an inch thick are placed between the different sections of one hundred longitudinally. In this manner each section of one hundred is brought within an area upon the switch-board of twelve inches long by three inches high.

It should be noted that the metallic strips of the different spring-jacks are placed one above the other in parallel planes, and that the corresponding strips of the different jacks of any given strip are in the same plane, while the different strips are separated and insulated, as described, by insulating-pieces *cd*.

I do not limit myself to any particular ma-

terial, though I prefer hard rubber for insulating material and German silver for the springs. The sockets or test-pieces *a* may be of brass.

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

1. A strip of spring-jack switches consisting of a supporting-base of insulating material, in combination with the springs of the
10 different spring-jacks placed with corresponding springs in the same plane, the springs of each of the different spring-jacks being placed in parallel planes one above the other, the separating-pieces *e f*, and bushing *i* around
15 the screw of each spring-jack for insulating the springs *e f* of the different spring-jacks, substantially as shown and described.

2. The combination, with the insulated springs of a spring-jack switch placed in
20 parallel planes one above the other, of a socket or test-piece, *a*, provided with a slot,

and the upper or test spring resting in said slot, substantially as shown and described.

3. The combination, in a spring-jack switch, of three springs or contact-pieces placed in
25 different parallel planes one above the other, the upper one of said springs being connected with the test piece or socket of the switch and the central spring normally resting against a point of the lower spring, and a
30 plug which, when inserted, lifts the central spring from its normal contact with the lower spring and forms connection therewith, while the test-piece is at the same time connected
35 with the shank of the plug.

In witness whereof I hereunto subscribe my name this 10th day of January, A. D. 1887.

HARRY B. THAYER.

Witnesses:

W. J. ARMSTRONG,
A. L. SALT.