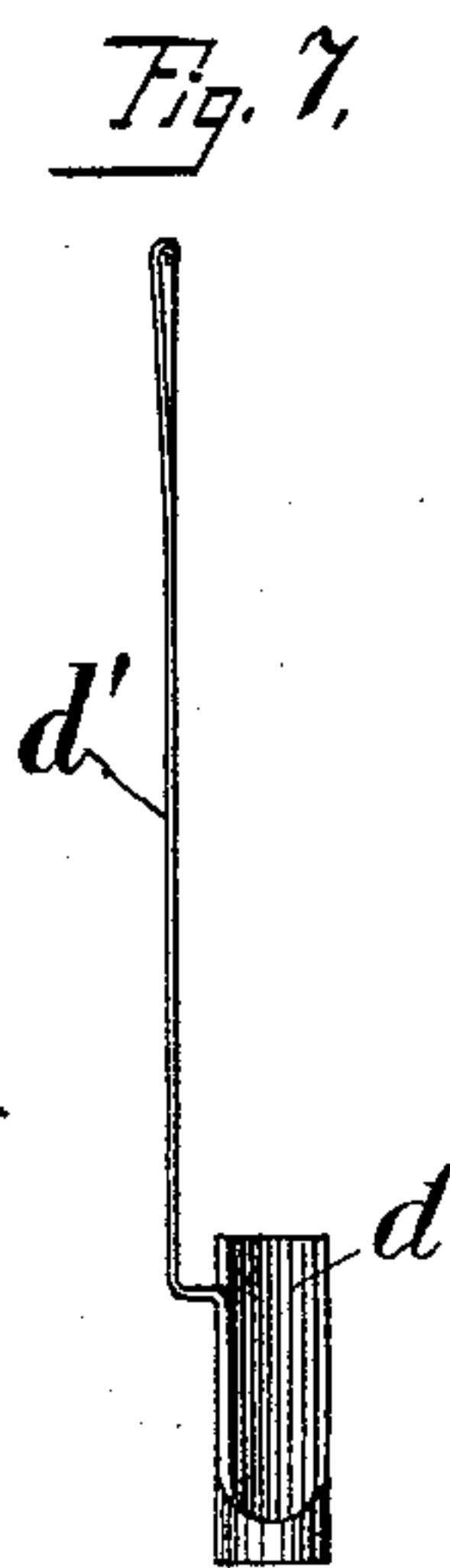
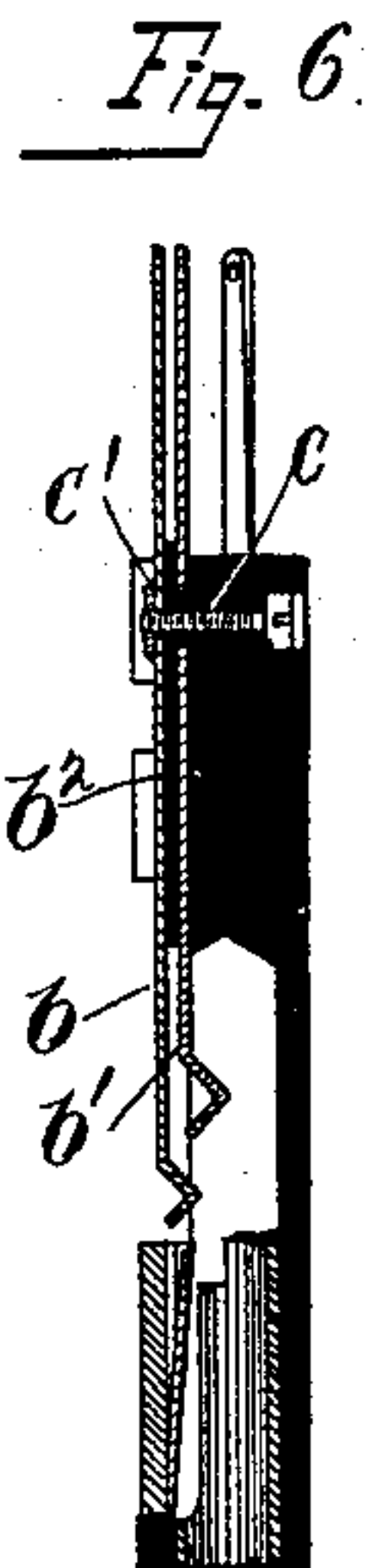
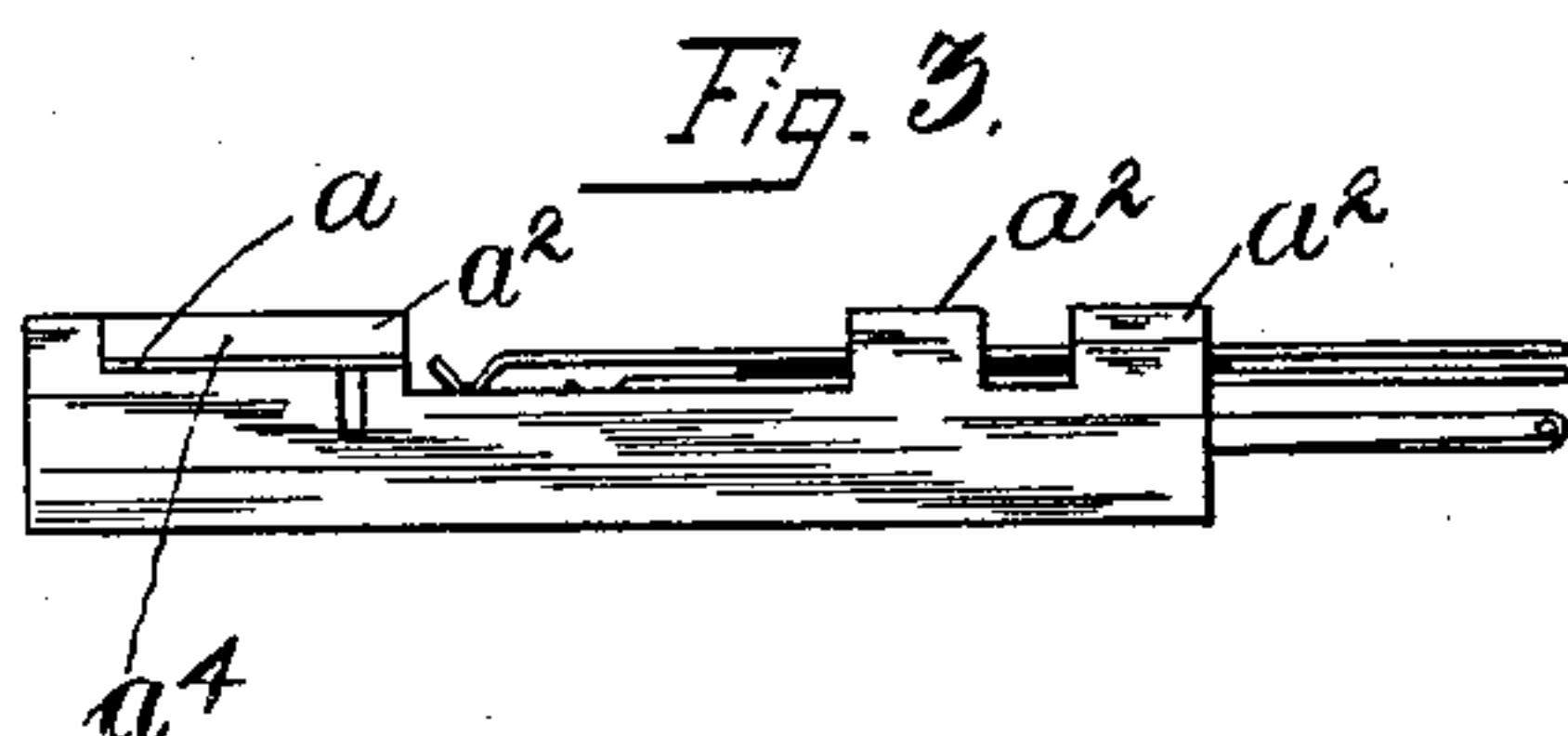
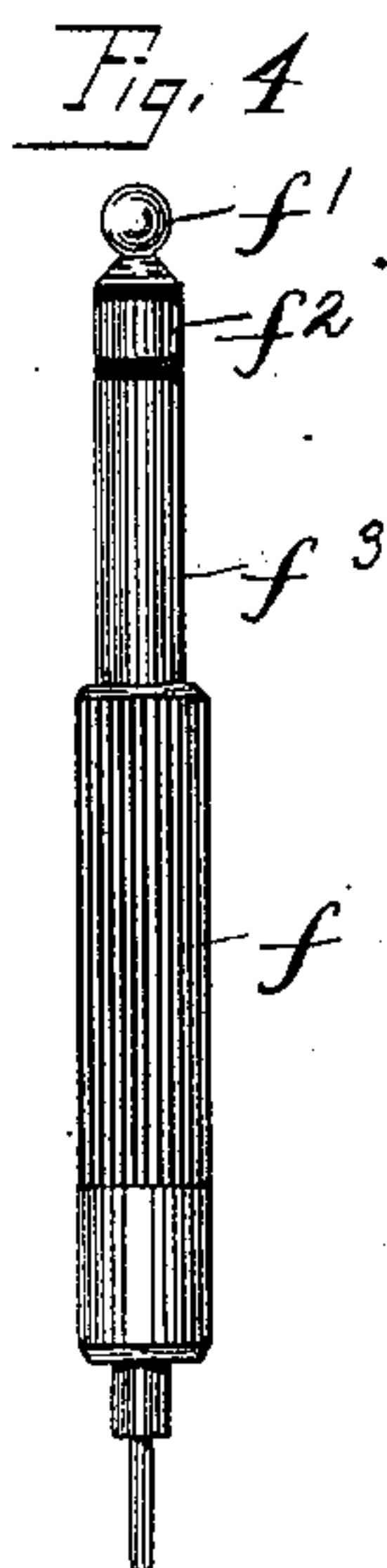
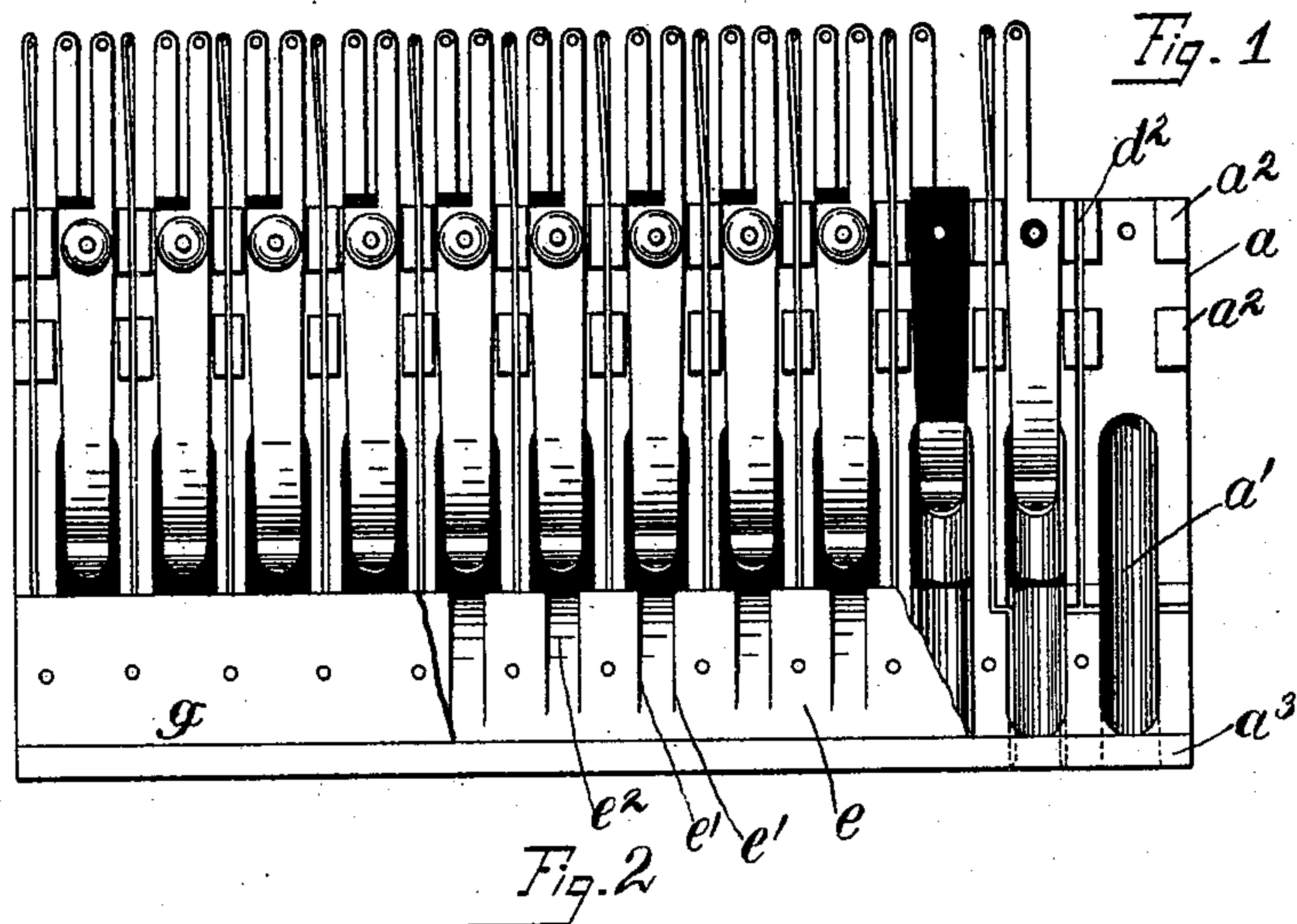


(No Model.)

H. B. THAYER.  
SPRING JACK FOR TELEPHONE SWITCHBOARDS.

No. 563,333.

Patented July 7, 1896.



WITNESSES:  
John W. Sinclair.  
De Hitt C. Tanner.

INVENTOR:  
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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 FOR TELEPHONE-SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 563,333, dated July 7, 1896.

Application filed July 5, 1895. Serial No. 554,965. (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-Jacks for Telephone-Switchboards, (Case No. 2,) 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 for telephone-exchanges; and my object is to provide a cheap and compact switch in which the contact-terminals shall make firm contact with the contacts of the plug inserted therein.

Speaking generally, my invention comprises a spring-jack provided with line-springs adapted to engage contact-terminals provided upon the plug and a test-ring, thimble, or stationary contact adapted to be engaged by a sleeve upon the inserted plug, a spring or flexible tongue being adapted to also make contact with the sleeve, whereby circuit is closed between the stationary contact and the flexible tongue through the sleeve of the plug and a firm contact insured. The spring-jacks are built up in the form of a strip containing a number, say twenty, of spring-jacks arranged side by side. The thimbles or test-rings of the different spring-jacks are cut away or slotted upon one side for the reception of the flexible tongues, which may be formed by making incisions in a strip of metal, such as German silver, to form tongues, which may be bent down to extend through the slots provided in the test-rings and thereby constitute the flexible contacts.

I will describe my invention more in particular by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a strip of spring-jacks embodying my invention, some of the parts being removed and others broken away. Fig. 2 is a front view thereof. Fig. 3 is an end view. Fig. 4 is a view of a terminal plug adapted to be inserted in one of the spring-jacks. Fig. 5 is a sectional view through one of the spring-jacks, the contact-pieces being

removed. Fig. 6 is a similar view showing the contact-pieces in position. Fig. 7 is a detailed view of the test-ring or thimble. Fig. 8 is a sectional view of one of the spring-jacks and the terminal plug inserted therein.

Like letters refer to like parts throughout the several figures.

The contact-pieces are mounted upon a strip or block  $a$ , which may be made of india-rubber, holes  $a'$  being bored into the strip from the edge, after which one side of the strip may be cut or planed away to expose the holes  $a'$  from the side and to leave the projections  $a^2$   $a^2$  on the upper surface and the ridge  $a^3$  and seat  $a^4$  along the front of the strip. The line-springs  $b$   $b'$  rest upon the face of the strip  $a$  between the projections  $a^2$   $a^2$ , a tongue  $b^2$ , of insulating material, being interposed between the strips, the whole being secured to the strip  $a$  by a bolt  $c$ , on the end of which a nut  $c'$  is adapted to be secured. The test-ring  $d$  is inserted in the hole  $a'$ , the strip  $d'$ , to which circuit connections may be made, resting in a slot  $d^2$ , cut in the face of the strip  $a$ . A thin plate  $e$ , which may be made of German silver, is provided with transverse incisions  $e'$   $e'$  at points along its length, the material between the incisions being bent down to form flexible strips or tongues. The plate thus formed is placed upon the seat  $a^4$  of the block  $a$ , with the tongues  $e^2$  extending down through the slots provided on the upper sides of the test-rings.

By providing a cylindrical test-ring with the slot on the upper side the test-ring forms a complete ring, as usual, at the front of the board, while the slot serves for the reception of the flexible tongue. Upon the strip  $e$  rests a plate  $g$ . The plug  $f$ , adapted to be inserted into the spring-jack, is provided with a tip  $f'$ , for making contact with the shorter line-spring  $b'$ , and a collar  $f^2$ , adapted to engage the longer line-spring  $b$ . Upon the plug is provided a sleeve  $f^3$ , which makes contact with the test-ring  $d$  upon one side and with the flexible tongue  $e^2$  upon the other side. Firm contact is thus insured between the sleeve of the plug and the test-ring on one side and the flexible tongue on the other.



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

1. In a spring-jack switch, the combination  
5 with a pair of terminals or contacts connected  
with the opposite sides of a telephone-line, of  
a connecting-plug adapted to be inserted into  
said switch and carrying contacts adapted to  
engage said terminals, a thimble forming one  
10 terminal of an electric circuit and mounted  
in front of said pair of terminals, a flexible  
tongue forming the other terminal of said  
electric circuit and resting opposite said  
thimble, said plug being provided with a  
15 sleeve adapted to be inserted between said  
thimble and said tongue to electrically unite  
the same, the flexible tongue serving to press  
the sleeve firmly against the thimble and thus  
insure a good electrical contact between the  
20 sleeve, the thimble and the contact-spring;  
substantially as described.

2. In a strip of spring-jacks, the combina-  
tion with the strip or block  $a$  carrying the pro-  
jections  $a^2$ , ridge  $h^3$  and seat  $a^4$ , and upon  
25 which the contacts of the spring-jacks are  
mounted, of the test-rings  $d$  forming a com-  
plete ring at the top of the strip and carrying  
each a slot in the upper side, the thin strip of  
metal  $e$  carrying the tongues  $e^2$  adapted to ex-

tend through the slots provided in the test- 30  
rings, and the plate  $g$  resting upon the strip  $e$   
substantially as described.

3. The combination with a number of  
spring-jack switches situated side by side to  
form a strip of spring-jack switches, of a pair 35  
of line-springs or contacts for each of said  
spring-jack switches, said line-springs or con-  
tacts being connected with the telephone-  
lines, a plug adapted to be inserted into a  
switch and carrying contacts adapted to en- 40  
gage the terminals of the spring-jack switch,  
a thimble for each spring-jack switch, the  
thimbles being partially cut away upon one  
side to form a slot, and a strip of metal situ-  
ated at the side of said thimbles and carrying 45  
a number of tongues, one projecting into the  
slot or cut-away portion of each of said thim-  
bles, said plug being provided with a sleeve  
adapted when the plug is inserted in a switch-  
socket to pass between its thimble and the 50  
tongue corresponding thereto to electrically  
unite the same; substantially as described.

In witness whereof I hereunto subscribe my  
name this 20th day of June, A. D. 1895.

HARRY B. THAYER.

Witnesses:

A. L. SALT,

W. T. CARLETON.