

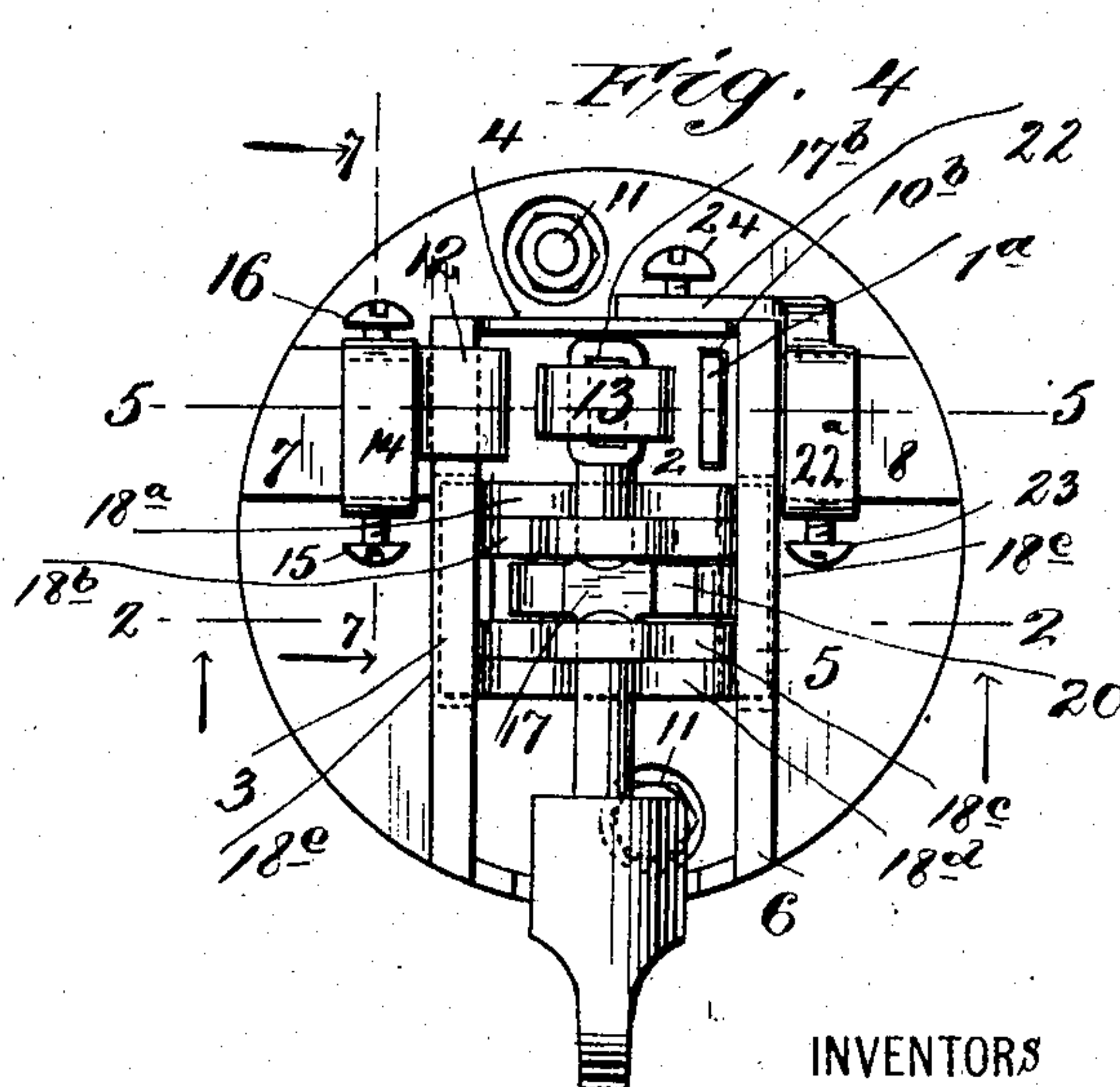
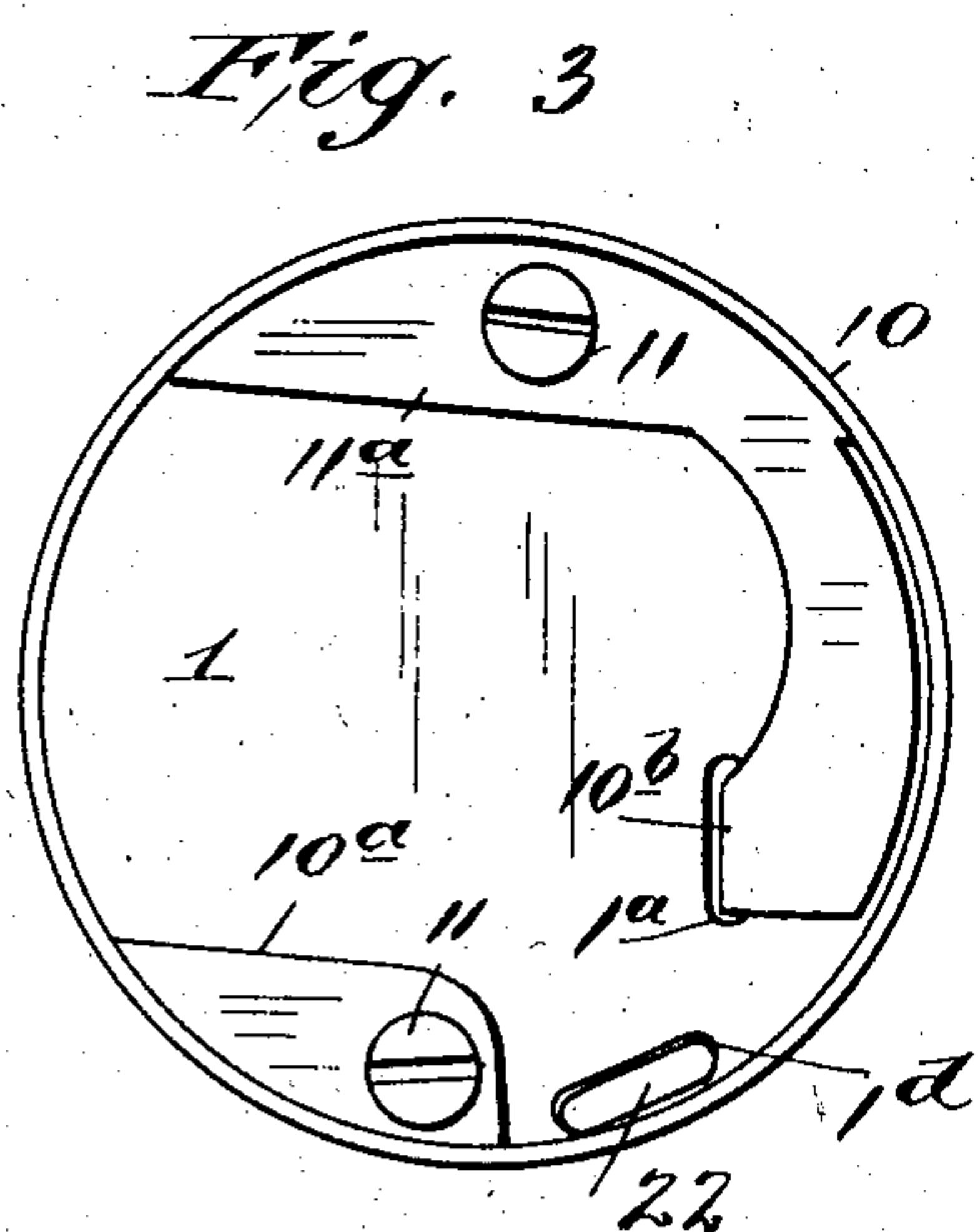
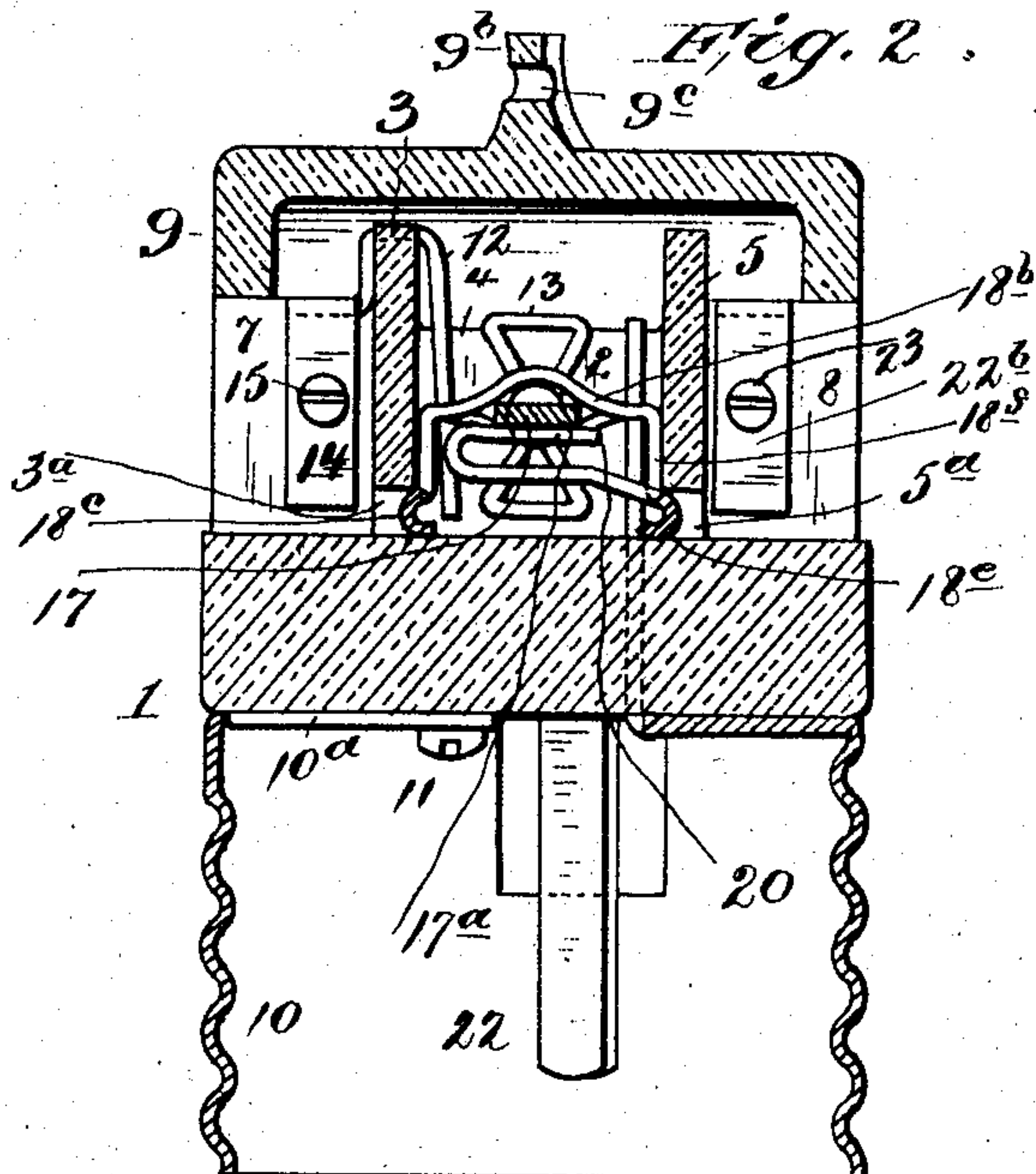
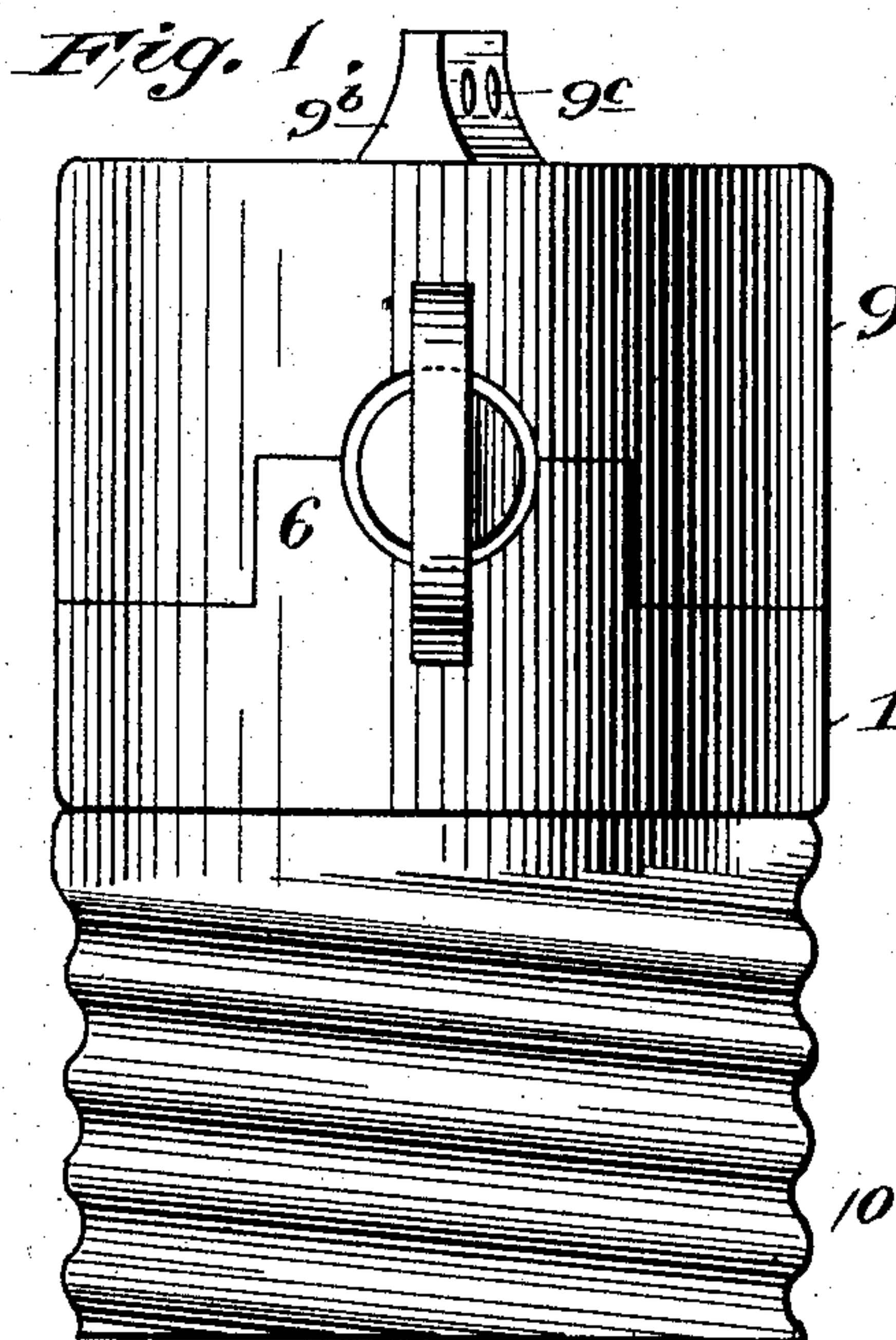
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C. C. SIBLEY & G. A. LUTZ.  
INCANDESCENT LAMP SOCKET.

APPLICATION FILED DEC. 11, 1902.

2 SHEETS—SHEET 1.



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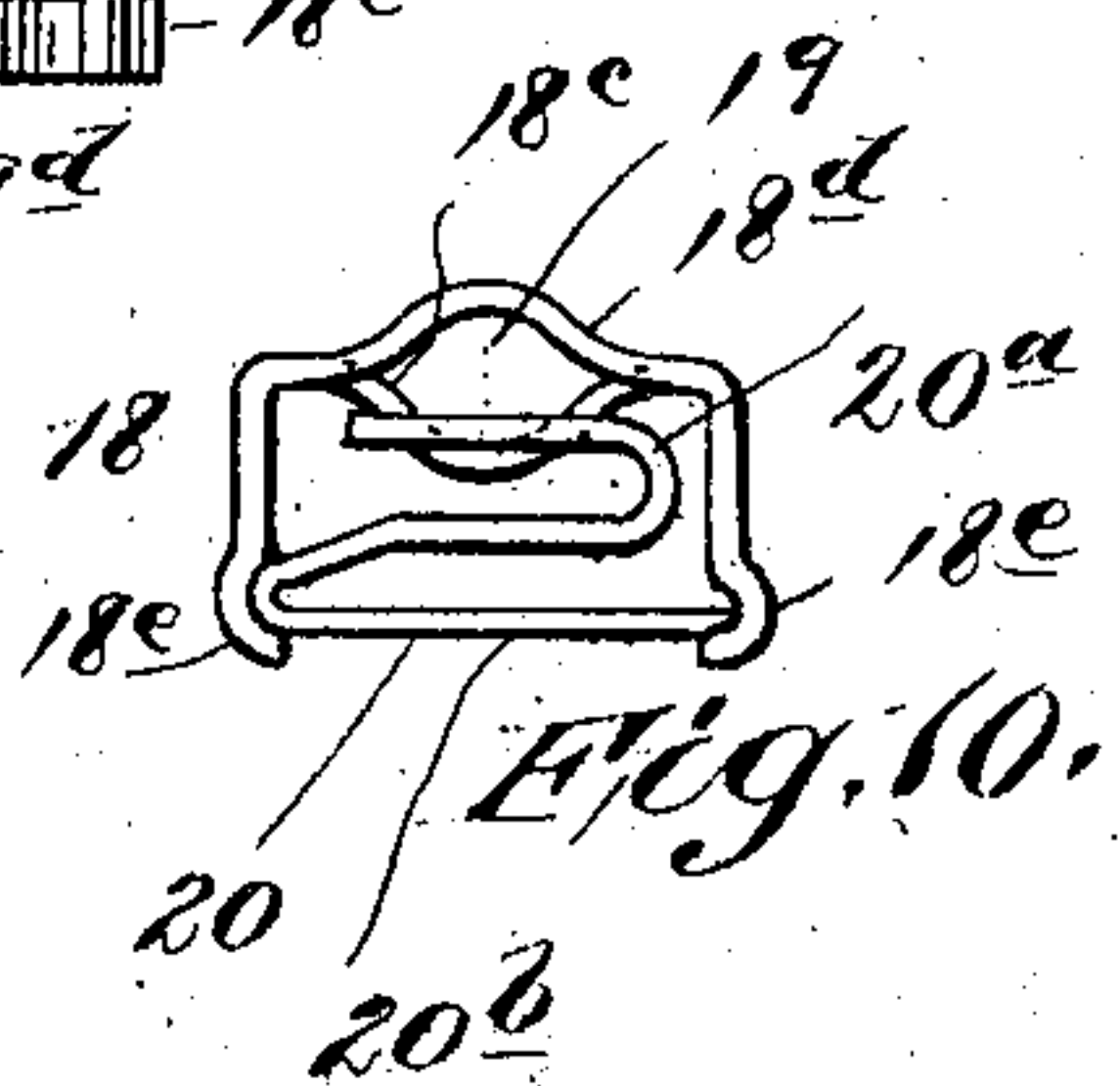
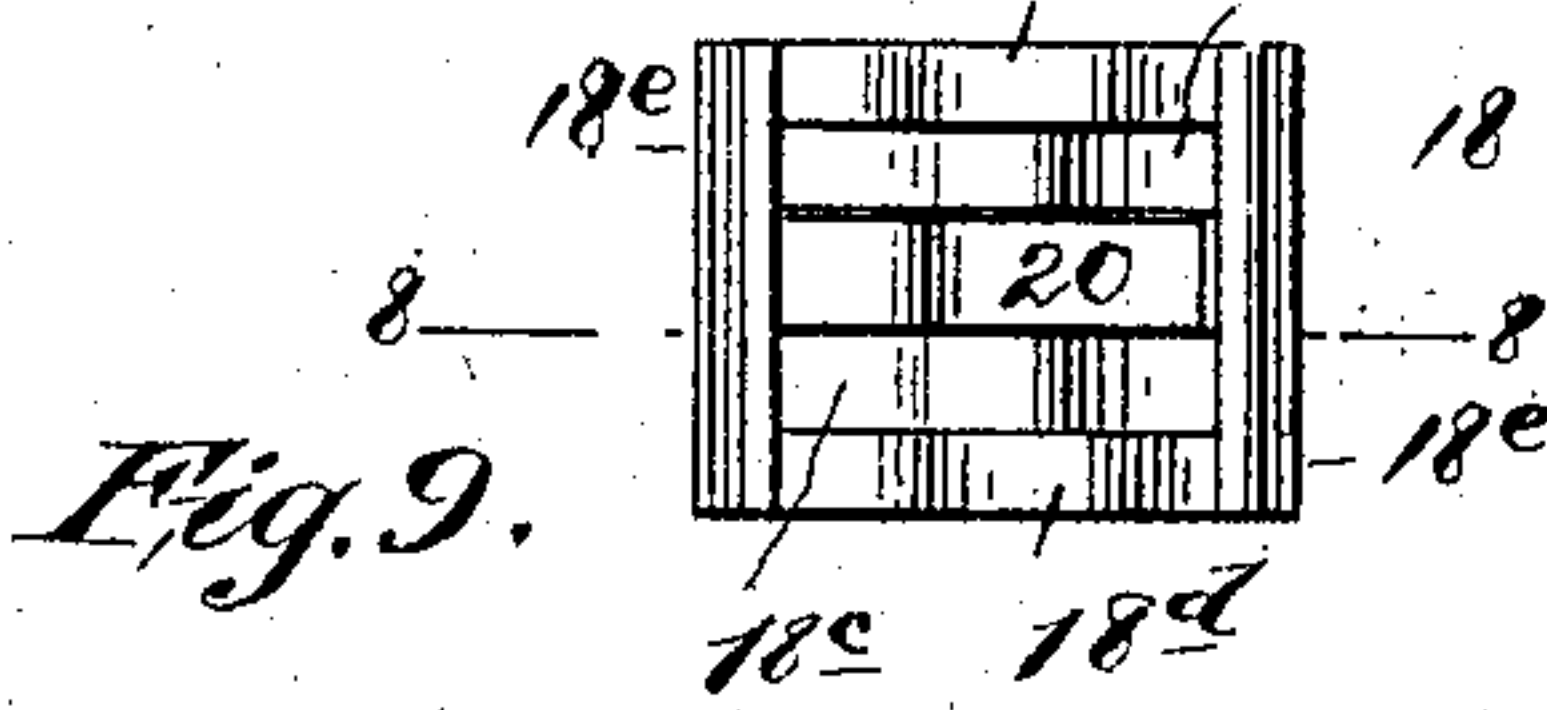
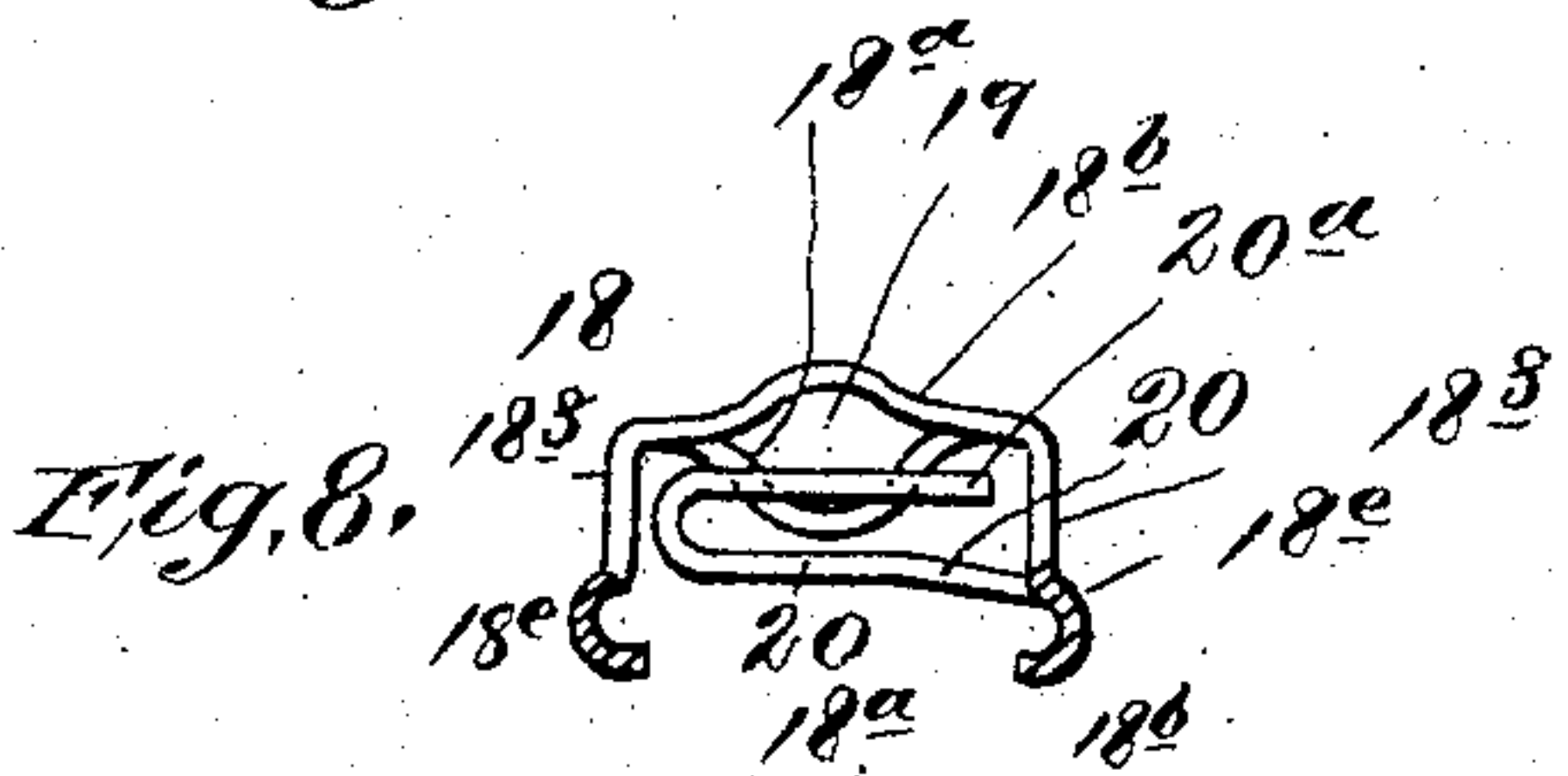
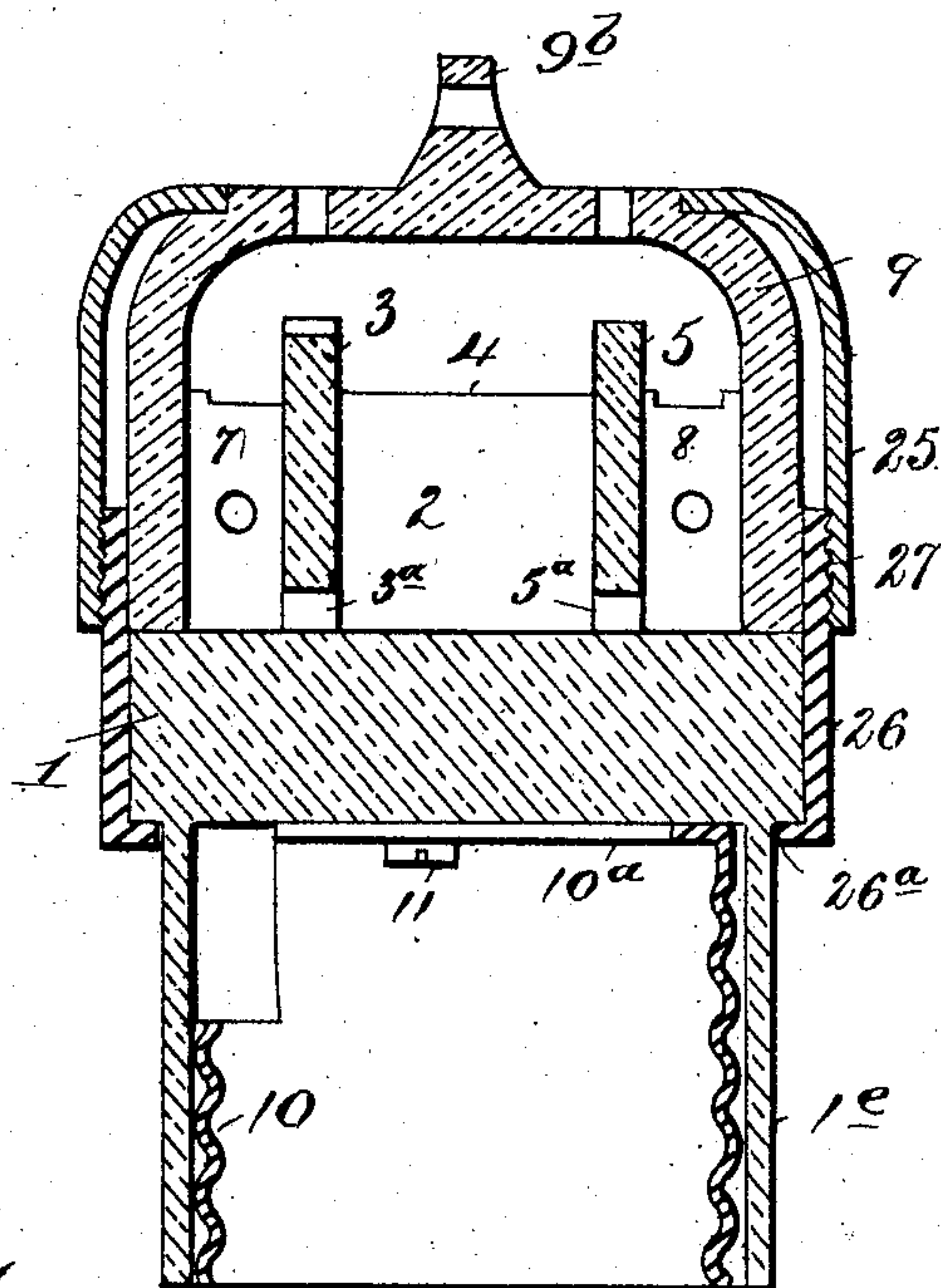
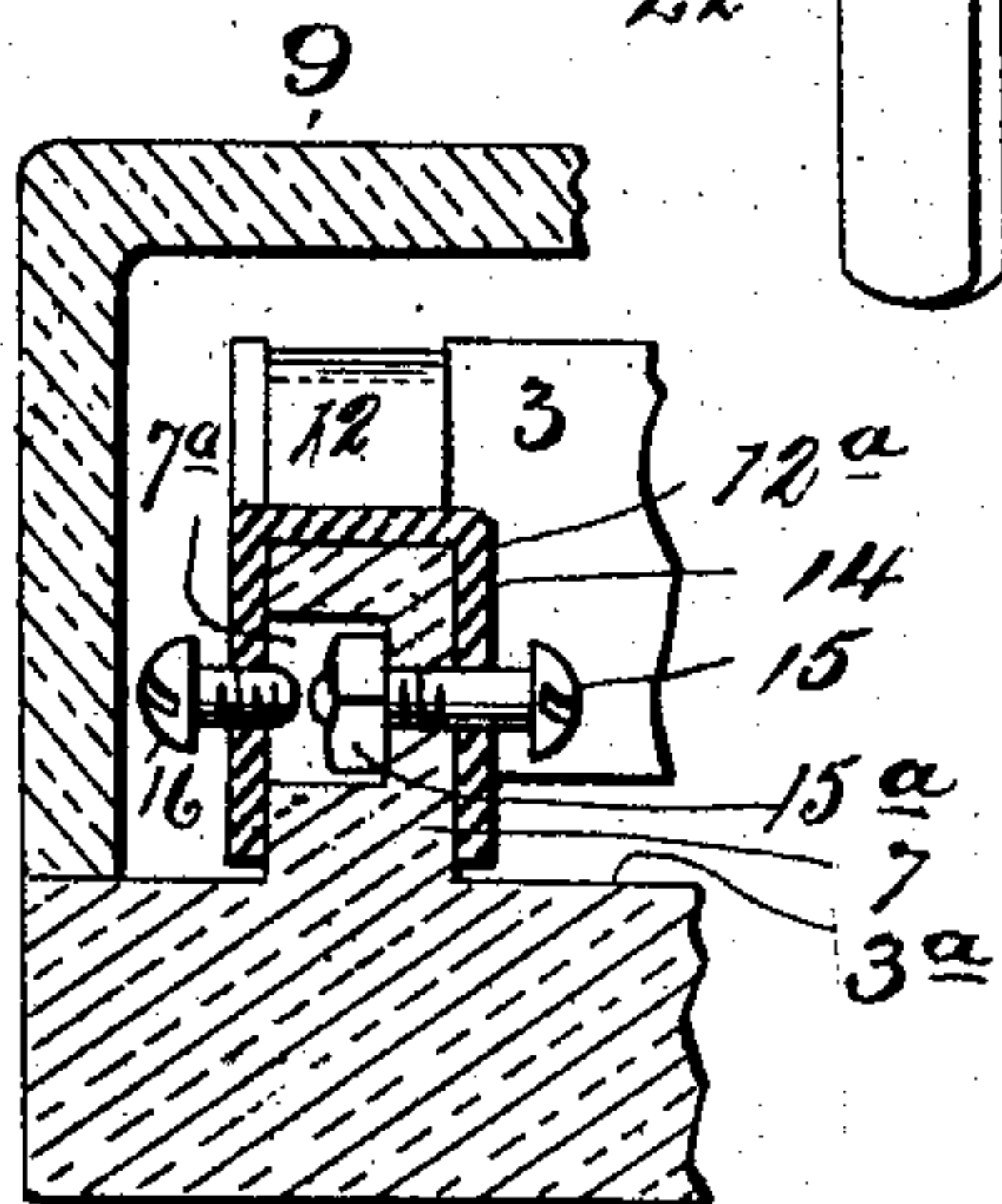
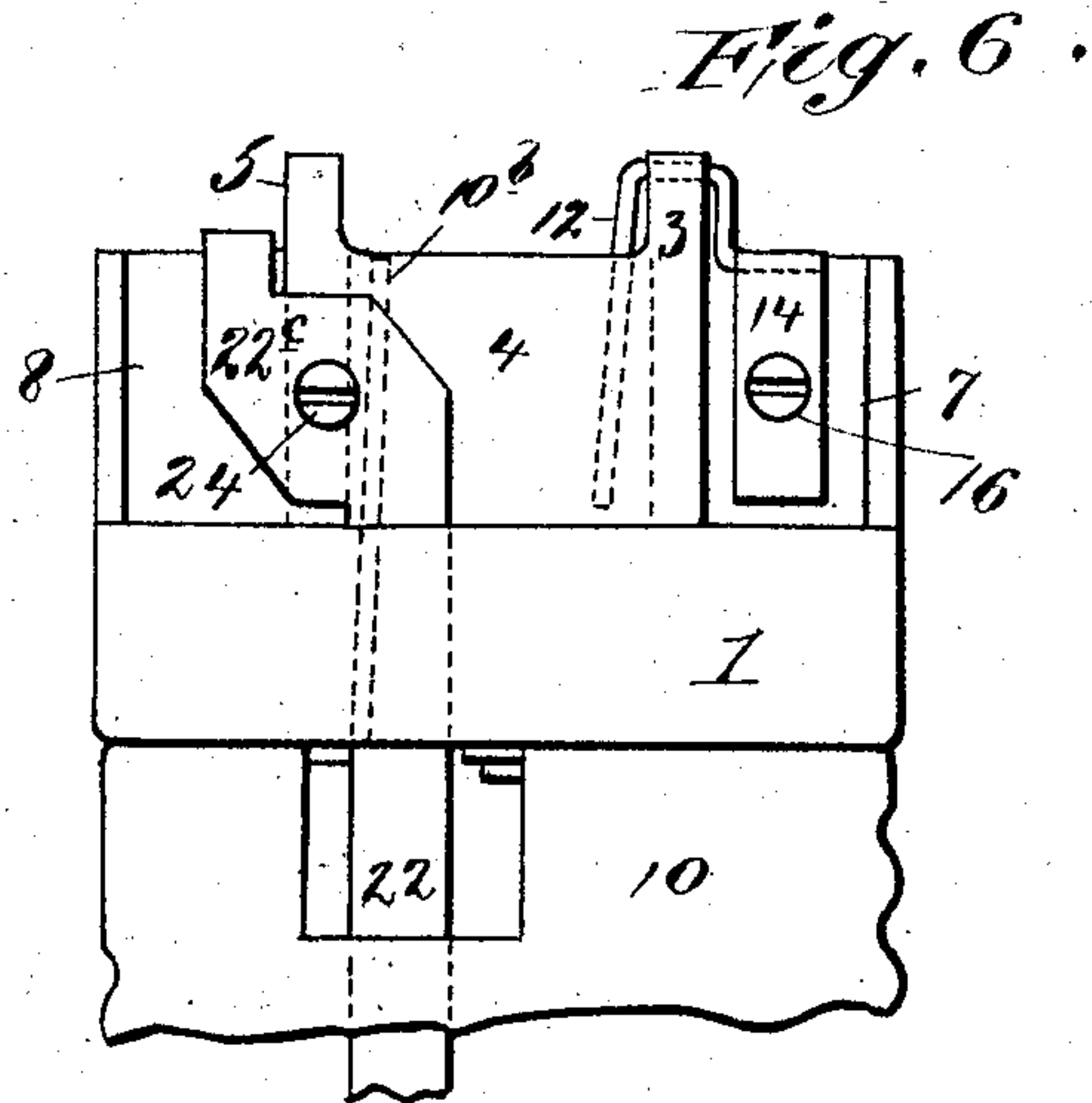
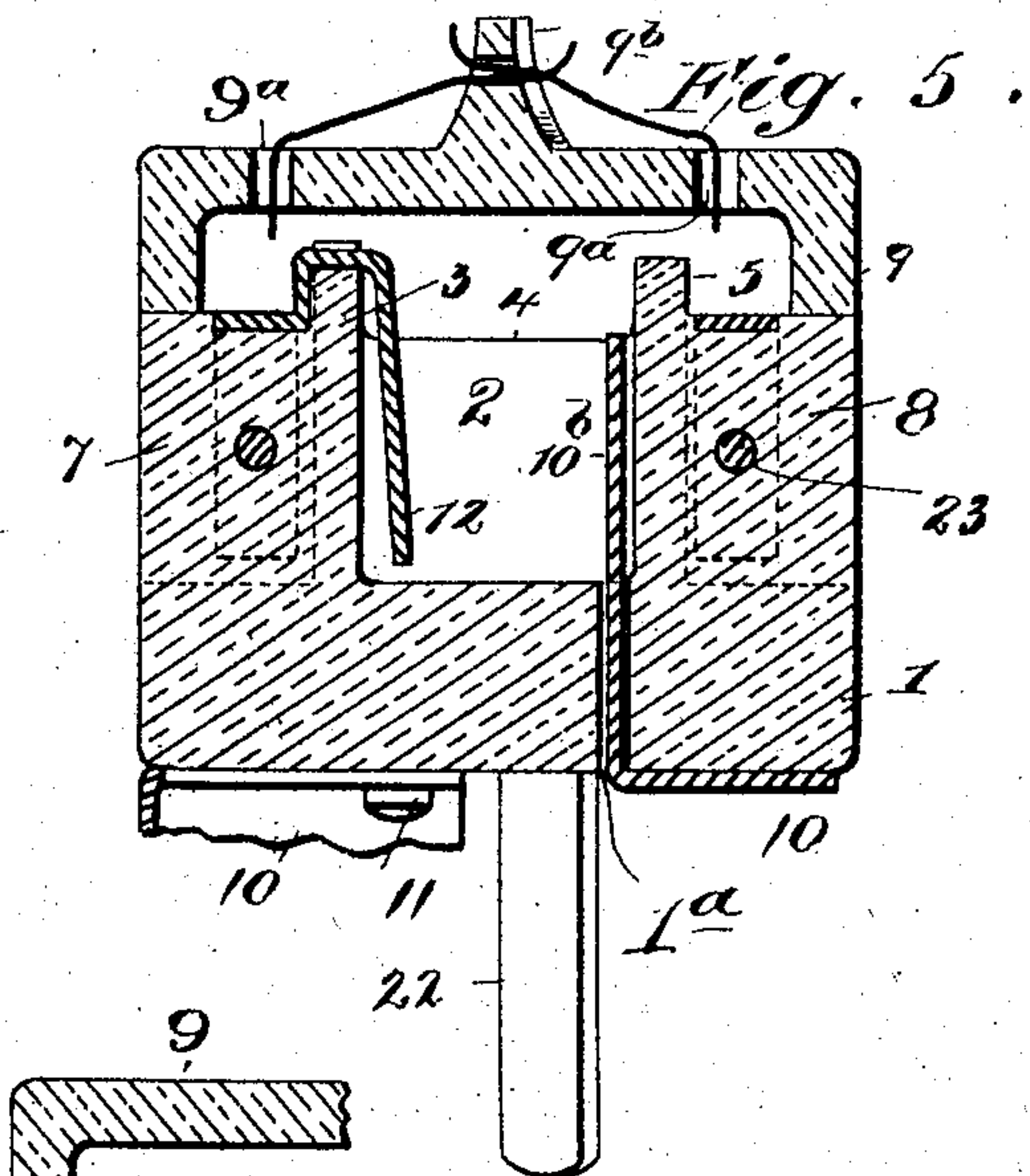
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C. C. SIBLEY & G. A. LUTZ.  
INCANDESCENT LAMP SOCKET.

APPLICATION FILED DEC. 11, 1902.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 778,281, dated December 27, 1904.

Application filed December 11, 1902. Serial No. 134,747.

*To all whom it may concern:*

Be it known that we, CLARENCE C. SIBLEY, a resident of Perth Amboy, Middlesex county, New Jersey, and GEORGE A. LUTZ, a resident of New York city, borough of Brooklyn, New York, citizens of the United States, have invented certain new and useful Improvements in Incandescent-Lamp Sockets, of which the following is a specification.

The object of our invention is to provide a socket for incandescent electric lamps wherein the operative parts will be thoroughly insulated and protected and wherein a double break in the line or circuit may be produced by the switch mechanism; and to this and other ends the invention contemplates the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side view of an incandescent-lamp socket embodying our improvements. Fig. 2 is a cross-section substantially on the line 2 2 in Fig. 4. Fig. 3 is an end view looking from below in Fig. 1. Fig. 4 is a plan view, the cap of the base being removed. Fig. 5 is a cross-section substantially on the line 5 5 in Fig. 4, the key or switch being removed. Fig. 6 is a side view of the base, the cap being removed, looking from the opposite side of Fig. 5. Fig. 7 is a detail section, enlarged, substantially on the line 7 7 in Fig. 4. Fig. 8 is a sectional view of the frame for the key-shaft substantially on the line 8 8 in Fig. 9. Fig. 9 is a plan view thereof. Fig. 10 is an edge view of the frame, showing a modification; and Fig. 11 is a sectional view of a base and cap, showing means for holding them together.

Similar numerals of reference indicate corresponding parts in the several views.

The support, base, or body portion of the socket is indicated generally at 1, and at 2 is indicated a chamber inclosed by walls 3 4 5 6, and extending sidewise from the walls 3 4 are shoulders or projections 7 8.

The above-named parts are preferably all

made in a single piece of insulating material, such as porcelain.

At 9 is indicated a cap adapted to fit over and to inclose the chamber 2, its lower edge being conformed to rest upon the surface of support 1 and upon wall 6 and to receive the shoulders 7 8, so as to form a close fit with the contiguous parts of support 1, said cap also being preferably made of porcelain. Of course the support 1 and cap 9 may be made of other insulating material, if desired.

10 indicates a screw-threaded metal shell secured to the under side of support 1, as by screws or bolts 11, extending through flanges or ears 10<sup>a</sup> on said shell, the latter being adapted to receive a screw-threaded base or cap on an incandescent-lamp socket in well-known manner, the shell 10 thus forming part of the circuit for the lamp.

The base or support 1 is provided with contacts and a key for controlling the circuit through shell 10, and we have provided means for making a double break in the side of the circuit connected with said shell. In the example illustrated the shell 10 is provided with a contact tongue or spring 10<sup>b</sup>, which may be made integral with shell 10 and is bent upwardly to pass through a vertical aperture or slot 1<sup>a</sup> in support 1 and extends into chamber 2. (See Figs. 2 and 5.)

12 indicates a contact or spring opposed to the contact 10<sup>b</sup>, between which contacts a key contact or block 13 is located and adapted to make and break the circuit through said contacts. The contact 12 is to be connected with a line-wire, and we have shown said contact as bent over and depending from the wall 3, one part passing into chamber 2 and the other part being bent sidewise at 12<sup>a</sup> and resting upon shoulder 7. To secure the contact 12 to shoulder 7, we have shown the contact provided with extensions 14, bent in yoke form, fitting over and extending along shoulder 7, (see Figs. 5 and 7,) an extension 14 being secured to the shoulder 7 by a bolt 15 and nut 15<sup>a</sup>, the nut 15<sup>a</sup> being shown located in a recess 7<sup>a</sup> in shoulder 7. (See Fig. 7.) An extension 14 is provided with a screw 16, to



which the line-wire may be connected. The arrangement described provides a convenient means for securing contact 12 to the insulating material and providing for connection of  
5 a line-wire therewith.

The key-contact 13 is carried by a shaft 17, located within chamber 2 and carried by bearings in a frame 18, also located in said chamber, whereby the contact 13 may be ro-  
10 tated between and in engagement with the contacts 10<sup>b</sup> and 12. The frame we have shown for supporting key-shaft 17 is constructed and held in place as follows: A piece of metal is provided with parallel slits form-  
15 ing strips 18<sup>a</sup> 18<sup>b</sup> 18<sup>c</sup> 18<sup>d</sup>, each two adjacent strips being bent in opposite directions to provide openings at 19 for the passage of key-shaft 17, forming bearings for the latter, as indicated in Figs. 8 and 10, said strips be-  
20 ing suitably curved to retain the shaft in place and permit it to rotate. The base portions 18<sup>e</sup> of the key-frame are bent to form shoulders adapted to be sprung into slots or recesses 3<sup>a</sup> 5<sup>a</sup> of the walls 3 5, as indicated  
25 clearly in Fig. 2, the sides 18<sup>f</sup> of the frame lying against said walls, the lower part of the frame having an outward spring tendency, all whereby said frame may be securely held upon base 1 without screws or bolts. By  
30 making the key-frame and its parts of spring metal the frame may be readily passed into chamber 2 and its base portions 18<sup>e</sup> sprung into position. The spring for holding the key-shaft in set position is formed with or  
35 connected to key-frame 18 and is indicated at 20. In the construction shown in Figs. 2, 4, 8, and 9 the spring 20 is made integral with the other parts of the key-frame, as by striking up a strip therefrom between the strips  
40 for the key-shaft and bending the same backwardly at 20<sup>a</sup>, the latter part being so located as to bear upon the key-shaft 17. (See Fig. 2.) In Fig. 10 the spring 20 is indicated as made of a piece of material separate from  
45 the key-frame and having a bottom portion 20<sup>b</sup> resting in the recess of parts 18<sup>e</sup>, the portion 20<sup>a</sup> being bent and located similarly to that shown in Fig. 8 and performing a similar function. The key-shaft 17 has an exten-  
50 sion at 17<sup>a</sup>, Figs. 2 and 4. It may be made by flattening the key-shaft by suitable dies at the part in line with spring 20. The arrangement is such that when the shaft is in the position shown in Fig. 2 spring 20 will keep the  
55 shaft from rotating, and thereby the key-contact 13 will be maintained out of engagement with contacts 10<sup>b</sup> and 12, and when the shaft is given a one-quarter turn the extension or part 17<sup>a</sup> will bear against spring 20, the flat edge  
60 of the extension, together with the spring, serving to hold the shaft in the position set, and at that time contact 13 will extend at right angles to its position shown in Fig. 2 and will make engagement with contacts 10<sup>b</sup>

and 12, and thus close the circuit to shell 10. 65  
When the shaft is in the last-named position, it cannot slide longitudinally, as the extended portions of 17<sup>a</sup> will pass between the strips 18<sup>b</sup> and 18<sup>c</sup>, and when the shaft 17 is in the position shown in Fig. 2 the circular part of 70  
the shaft will provide shoulders lying in line with the spring 20, thus preventing the shaft from being moved out of position longitudinally. The spring 20 thus serves the double purpose of holding the shaft 17 in the posi- 75  
tions set and from longitudinal movement.

The key-contact 13 may be made in any well-known manner; but in the example shown said contact comprises a strip of metal extending through a slot 17<sup>b</sup> in shaft 17, Fig. 4, 80  
the strip on opposite sides of the shaft being bent laterally and back toward the shaft, whereby the contact is retained on the shaft and may be rotated therewith. The flat outer faces of the key-contact provide surfaces to 85  
engage contacts 10<sup>b</sup> and 12.

The side of the circuit of the socket opposite that before described is entirely independent of the switch devices above described and is arranged as follows: A metal strip 22 passes 90  
through a slot or opening 1<sup>d</sup> in support or base 1 and depends within the shell 10, where it may be bent laterally to be engaged by a contact on the base of an incandescent-lamp socket of well-known construction, a piece of 95  
insulating material, such as mica, being interposed between the support or base 1 and strip 22 in well-known manner. The strip 22 at its upper part is secured to support 1, as by having a portion 22<sup>a</sup> bent over shoulder 8 and ar- 100  
ranged in yoke form, as at 22<sup>b</sup> 22<sup>c</sup>, (see Figs. 2 and 6,) and secured to said shoulder by a bolt 23, which may be arranged as the bolt and nut 15 15<sup>a</sup> shown in Fig. 7. The strip 22 is provided with a screw 24 to be connected with a 105  
line-wire. The cap 9 is provided with one or more apertures 9<sup>a</sup> for the passage of the line-wires that are to be connected with screws 16 and 24, and we have shown a projection 9<sup>b</sup> on cap 9, having apertures 9<sup>c</sup>, the line-wires being 110  
passed through said apertures and bent to pass through apertures 9<sup>a</sup>, the bends in the wires serving to firmly connect the cap therewith and take strain from the connection of the wires with their screws 16 and 24. 115

The base 1 and cap 9 may be secured together in any suitable manner. In Fig. 11 we have shown a shell or cover 25 over and engaging cap 9 and a band or ring 26, encircling support or base 1 and connected with shell 25 120  
by screw-threads at 27, the band 26 having an inwardly-extending flange 26<sup>a</sup>, passing under support or base 1 or a shoulder thereon, whereby when parts 25 and 26 are screwed together support or base 1 and cap 9 will be 125  
firmly held. Support 1 may be provided with an insulating wall or hub 1<sup>e</sup> at the lower end surrounding shell 10 to protect the same, and



by preference the support 1 and wall or hub 1<sup>a</sup> will be made in a single piece of insulating material, as indicated in Fig. 11.

From the foregoing it will be understood that when the parts of the socket are assembled and an incandescent electric lamp connected with shell 10 the circuit through the socket and lamp when key-contact 13 is turned into engagement with contacts 10<sup>b</sup> and 12 will be from a line-wire through contacts 12 13 10<sup>b</sup> and shell 10 to the lamp-base outer shell or cap, thence through the filament to the contact on the lamp-base and through contact or strip 22 to the other line-wire. When the key-contact 13 is turned to the position shown in Fig. 2, a double break will be made in the line, as the contact passes out of engagement with both of the contacts 10<sup>b</sup> and 12 and also because the contact 13, its shaft, and the key-shaft frame are not maintained in circuit or connection with either line-wire, the key-frame and key-shaft being wholly insulated from and forming no part of the circuit of the socket.

Various changes may be made in the details of construction and arrangements of parts shown and described without departing from the spirit of our invention.

Having now described our invention, what we claim is—

1. An incandescent-lamp socket comprising a support, made in a single piece of insulating material, a pair of contacts carried thereby and insulated from each other, one contact being located in a bore in said support, a key-contact, a shaft, and a frame therefor, the key-contact being adapted to engage said contacts, and the shaft and frame being insulated from and wholly out of circuit with said contacts, substantially as described.

2. An incandescent-lamp socket comprising a support, a pair of contacts carried thereby and insulated from each other, a key-contact, a shaft and a frame therefor, the key-contact being adapted to engage said contacts and the shaft and frame being insulated from and wholly out of circuit with said contacts, and a metallic shell secured to said support and connected with one of said contacts, said contact being located in a bore in said support, substantially as described.

3. An incandescent-lamp socket comprising a support, a pair of contacts carried thereby and insulated from each other, a key-contact, a shaft, and a frame therefor, the key-contact being adapted to engage said contacts and the shaft and frame being insulated from and wholly out of circuit with said contacts, and a metallic shell secured to said support and made integral with one of said contacts, the last-named contact extending through a bore in said support, substantially as described.

4. An incandescent-lamp socket comprising

an insulating-support, made in a single piece of material, a pair of contacts carried thereby at a distance from each other, one contact being located in a bore in said support, a key-contact normally out of circuit with both contacts, a shaft for the key-contact, and a frame for the shaft carried by said support and out of circuit with said contacts, substantially as described.

5. An incandescent-lamp socket comprising an insulating-support, a pair of contacts carried thereby at a distance from each other, a key-contact normally out of circuit with both contacts, a shaft for the key-contact, a frame for the shaft carried by said support and out of circuit with said contacts, and a metallic shell carried by said support and connected with one of said contacts, said contact being located in a bore in said support, substantially as described.

6. An incandescent-lamp socket comprising an insulating-support, having a chamber formed by walls of said support, a pair of contacts carried thereby at a distance from each other, and entering said chamber, a key-contact normally out of circuit with both contacts, a shaft for the key-contact, a frame for the shaft carried by said support within said chamber, and out of circuit with said contacts, and a screw-threaded shell carried by said support on the side opposite said chamber and made integral with one of said contacts, the last-named contact passing through a bore in said support into said chamber, substantially as described.

7. An incandescent-lamp socket comprising a support, contacts carried thereby, a key-contact to connect with said contacts, a shaft for the key-contact and a frame for the shaft, said support being provided with slots and the key-frame having portions adapted to pass into said slots to maintain said frame upon the support, substantially as described.

8. An incandescent-lamp socket comprising a support provided with walls having slots, contacts carried by the support, a key-contact for the contacts, a key-shaft, and a frame for said shaft, said frame being provided with extended portions adapted to enter said slots to hold the frame upon the support, substantially as described.

9. In an incandescent-lamp socket a key-shaft frame provided with strips bent to form bearings for the shaft and provided with a spring arranged to bear against the shaft, said frame having extended portions adapted to secure the frame to a support, the frame having an outward spring tendency, substantially as described.

10. In an incandescent-lamp socket a key-shaft having a flattened portion, a frame for the shaft having strips bent to form bearings for the shaft, and a spring adapted to bear



against the flattened portion of the shaft to hold the shaft in set position, substantially as described.

11. In an incandescent-lamp socket a key-shaft frame comprising a piece of metal provided with strips bent to form bearings for a key-shaft and having base portions bent outwardly from the side portions of the frame, and a spring connected with the base portions to coact with a key, substantially as described.

12. In an incandescent-lamp socket a key-shaft frame comprising a piece of metal having base portions  $18^\circ$  and side portions rising therefrom and transverse strips bent to form bearings for a key-shaft, with a spring made from a strip integral with a base portion and extending transversely of the frame and adapted to engage a key-shaft, substantially as described.

13. In an incandescent-lamp socket a key-shaft frame having bearings for a shaft, and a spring carried by said frame, combined with a key-shaft having a flattened portion to engage the spring, the shaft having shoulders at the sides of the flattened portion, the flattened portion of the shaft being arranged to engage the frame to prevent sliding of the shaft, substantially as described.

14. In an incandescent-lamp socket a key-shaft frame comprising a piece of metal having strips bent to form bearings for a shaft, and a spring, combined with a key-shaft journaled in said bearings, said shaft having a flattened portion and shoulders at the sides thereof, said flattened portion of the shaft being arranged to pass between the strips of the

bearings and the shoulders being arranged to engage the spring to prevent sliding of the shaft, substantially as described.

15. An incandescent-lamp socket comprising a support and a screw-threaded shell secured thereto, said support having an aperture, and said shell having a contact-strip made integral therewith and passing through said aperture, a shaft, and a key-contact carried thereby to engage said strip, substantially as described.

16. In an incandescent-lamp socket, a support and an apertured cap therefor, said cap having an apertured extension, a shell or cover over the cap, a band or ring around the support arranged to bear on the latter, and means to cause the shell or cover and the band or ring to hold the cap on the support, the lead-in wires passing through said apertures and being bent thereat, the bends in the wires serving to take strain from the terminals of the wires, substantially as described.

17. In an incandescent-lamp socket, a shell having an opening and an insulating member within said shell and provided with an apertured extended portion passing through the opening in the shell, said member also having apertures, whereby wires passing through the apertures will have bends to take strain from the terminal fastenings of the wires, substantially as described.

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