

1,298,354.

Patented Mar. 25, 1919.

Fig. 1.

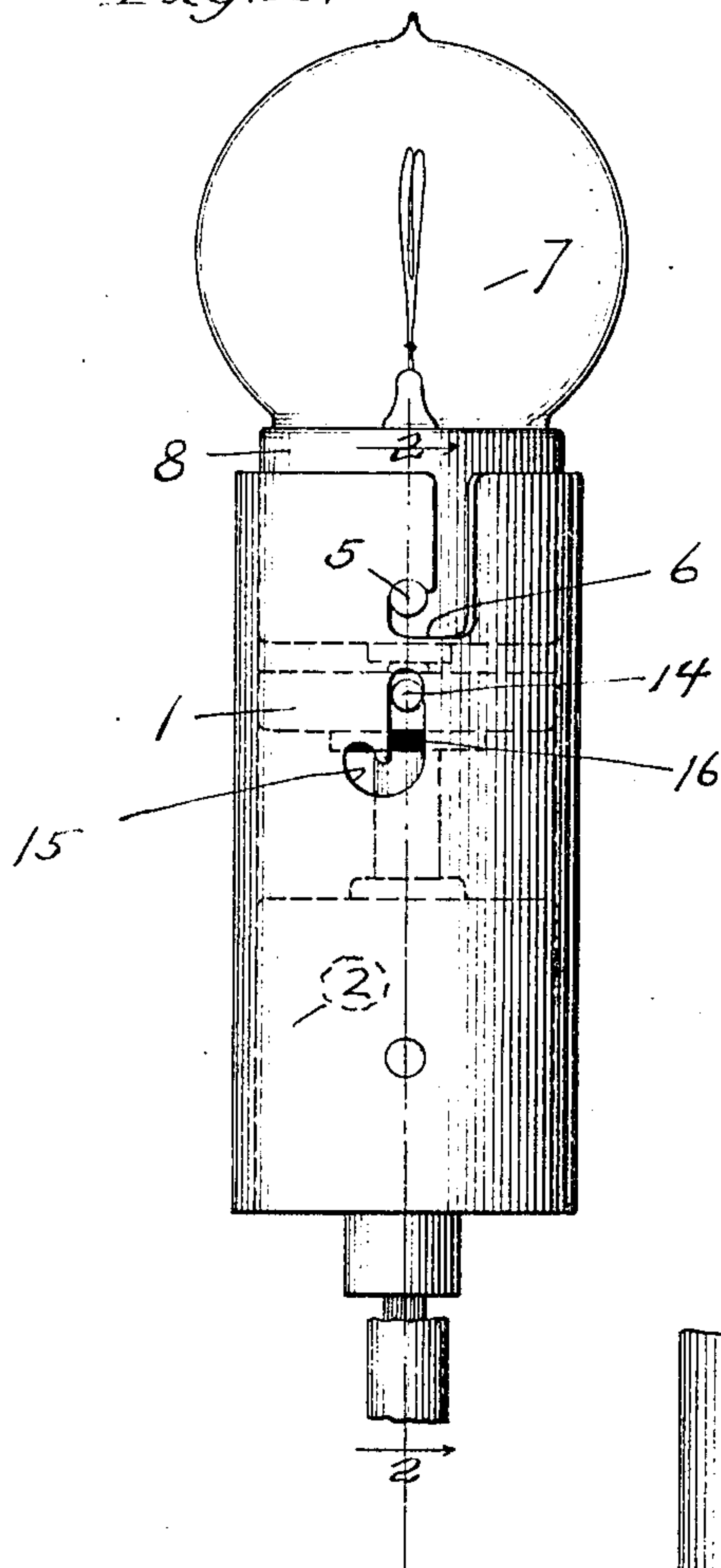


Fig. 2.

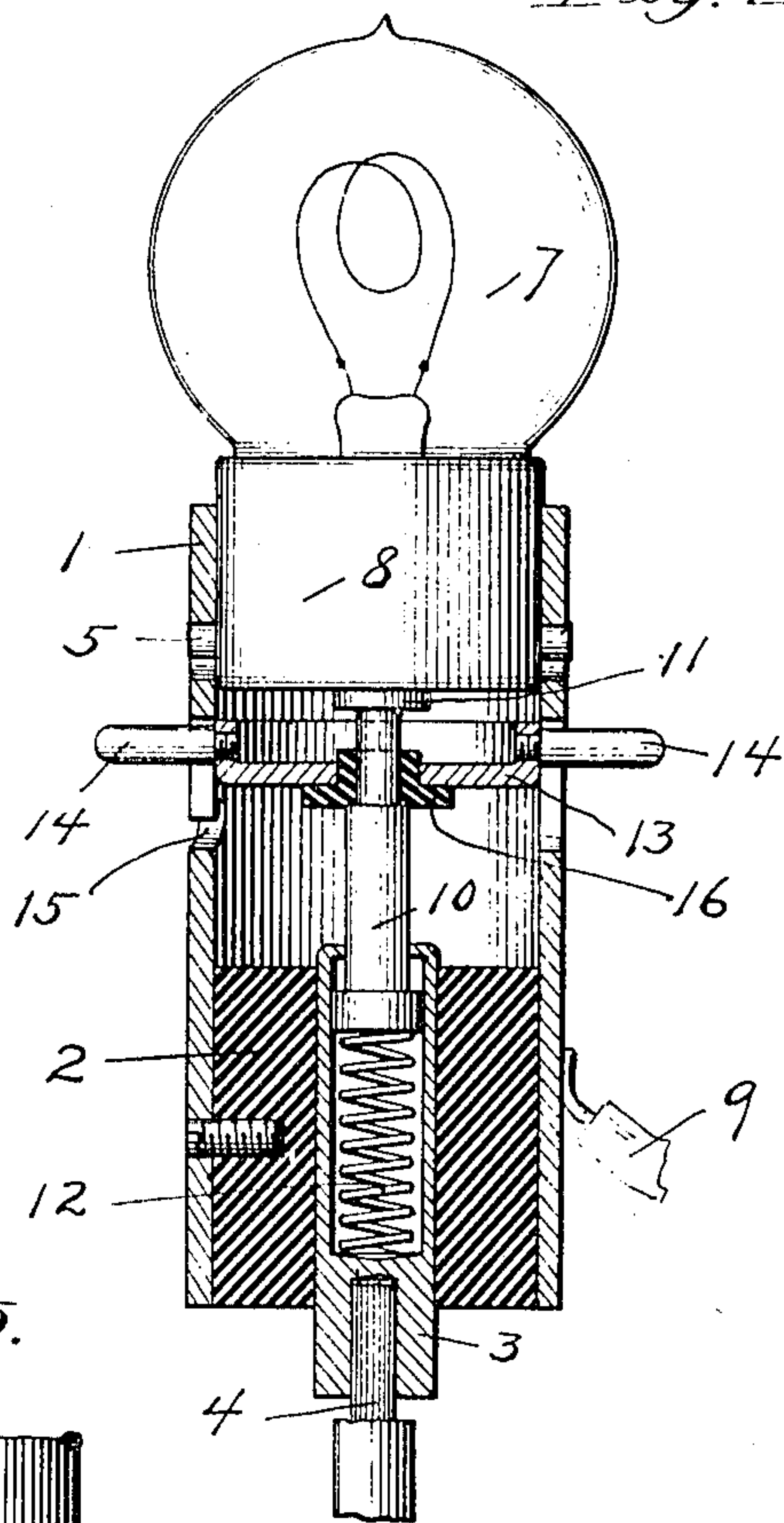


Fig. 5.

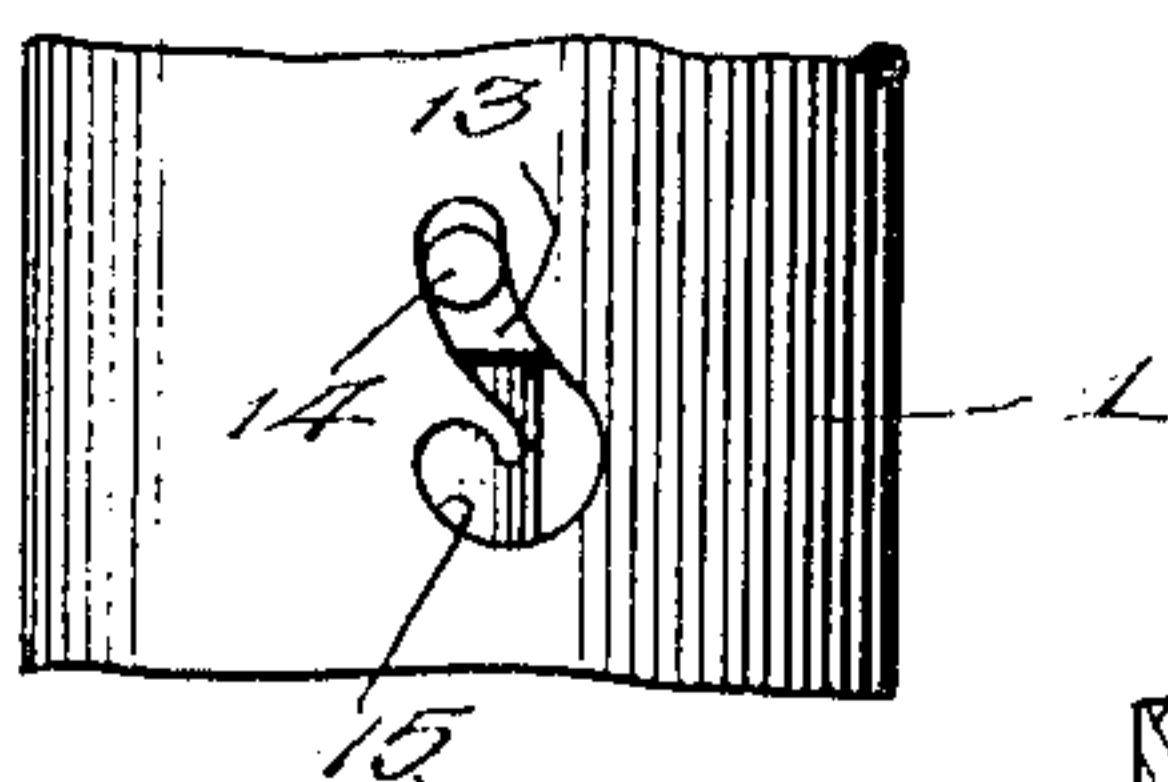


Fig. 3.

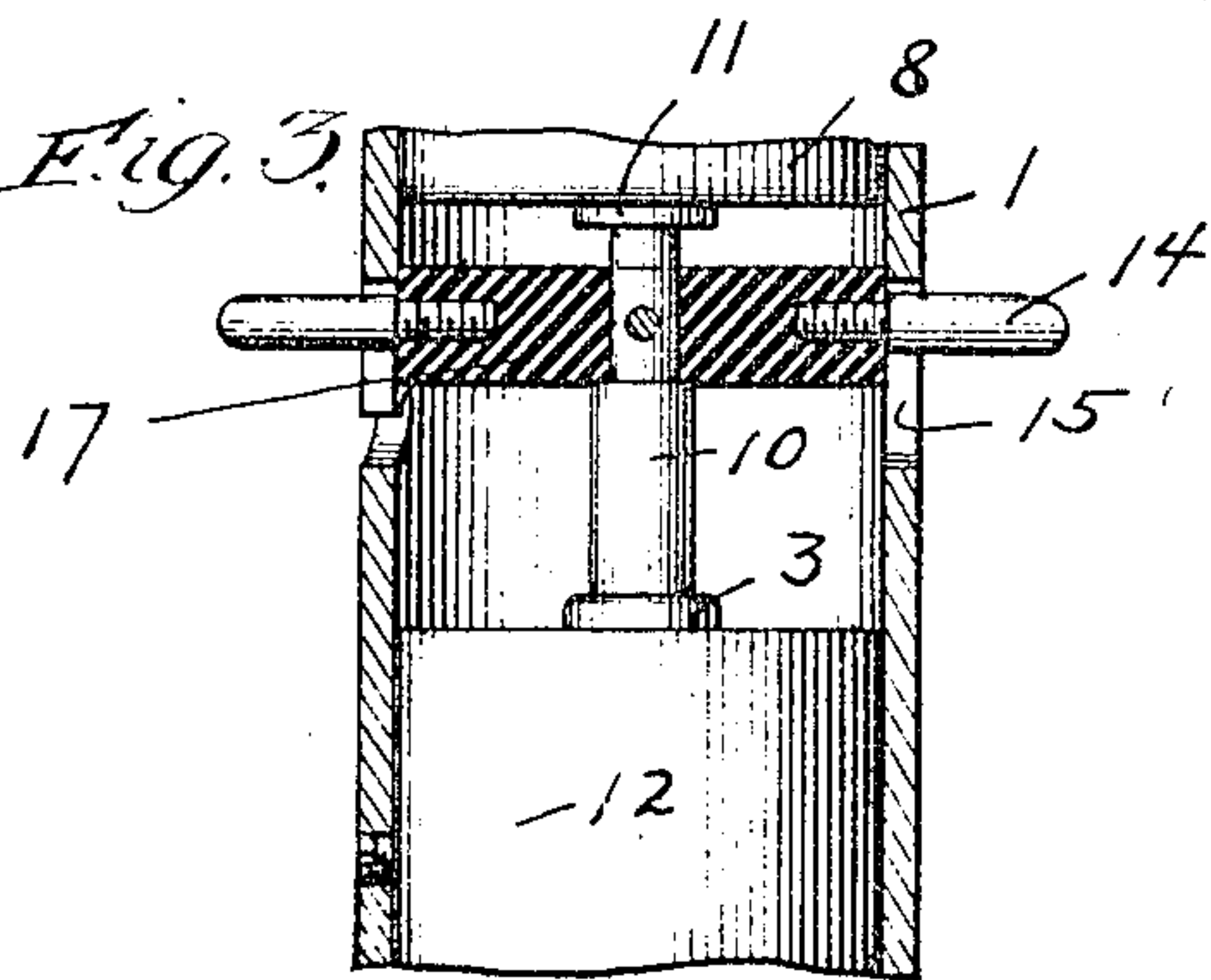
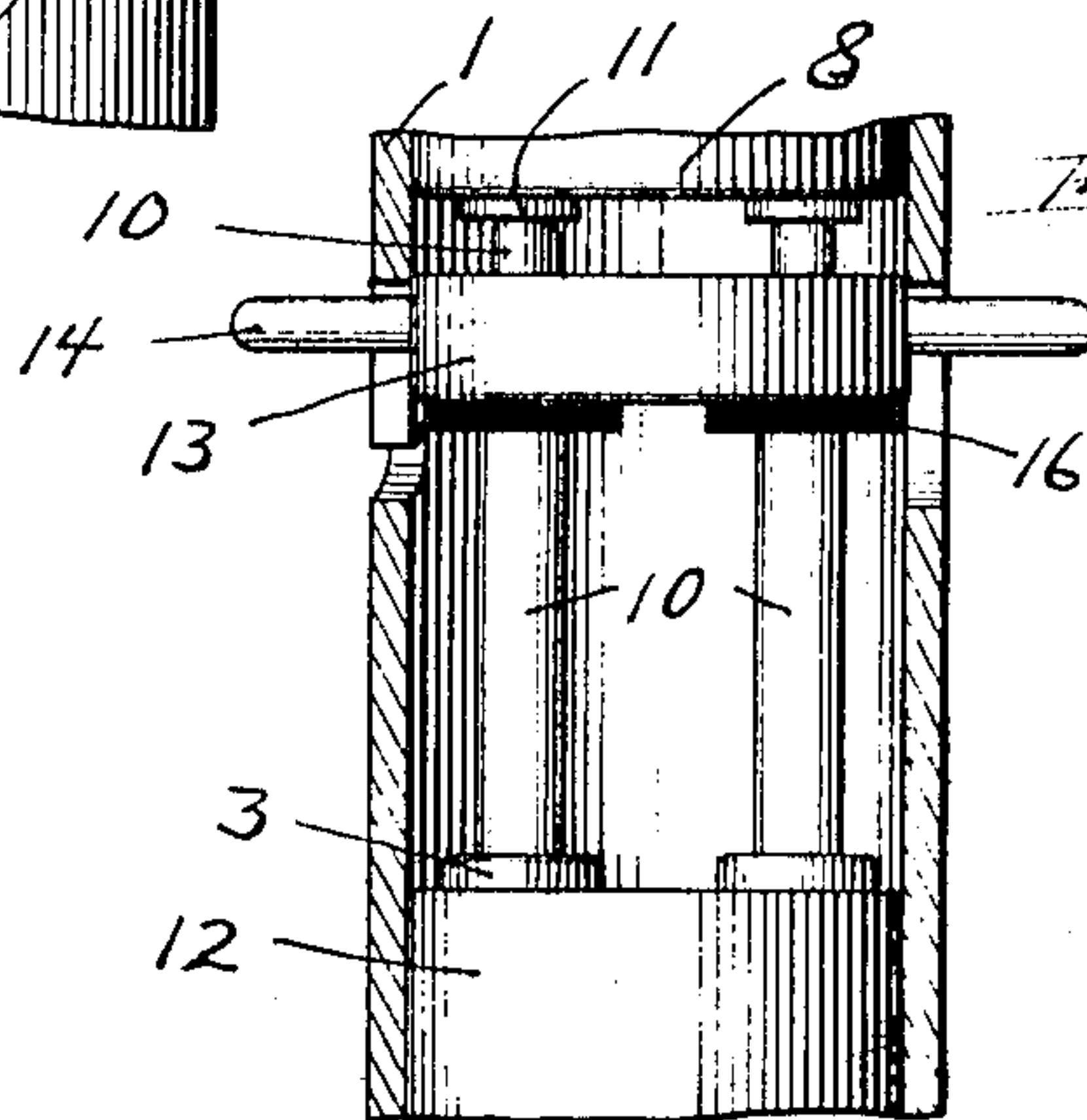


Fig. 4.



Witness:

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UNITED STATES PATENT OFFICE.

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SWITCHING-SOCKET.

1,298,354.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE C. KNAUFF, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Switching-Sockets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electric sockets or connectors, its general object being to provide unusually simple, compact and cheaply constructed means for controlling the circuit in an appliance of this class. Such appliances have heretofore been commonly constructed in forms in which at least one of the electrical connections to a lamp, detachable plug, or other terminal-carrier, is made by means of a spring-pressed extension on a circuit terminal. It has also heretofore been customary to make and break the electrical connection with such sockets or connectors by a relative bodily motion of the terminal-carrier carrying the terminal with the said spring-pressed extension, and the lamp or other portion having the terminal engaged by the said extension. My present invention aims to accomplish the same purposes without a relative movement of the two terminal carriers, thereby permitting the latter to remain rigidly spaced, and without interposing auxiliary conducting elements. This I accomplish by suitably manipulating the spring-pressed extension, as will be apparent from the accompanying drawings and from the following specification, from both of which the further objects of my invention will also appear.

In the drawings,

Figure 1 is an elevation of a single-pole switching socket embodying my invention.

Fig. 2 is a central longitudinal section through the same along the line 2—2 of Fig. 1.

Fig. 3 is a similar, fragmentary section showing an alternative construction of the means for manipulating the contact plunger.

Fig. 4 is a fragmentary section of a double-pole switching socket embodying my invention.

Fig. 5 is a fragmentary side elevation of the socket of Fig. 4.

In the embodiment of Figs. 1 and 2, the

socket or connector of my invention has a casing 1 housing an insulating body 2 carrying a cylinder 3 which forms the terminal for a wire 4. Mounted in the other end of the casing and suitably interlocked with the same (as by pins 5 engaging bayonet-catch formations 6) is a terminal-carrier, such as the lamp 7. This lamp is continuously connected to the other terminal of the circuit through the contact of the metal shell 8 with the casing 1, the latter being suitably grounded, as by the wire 9. Associated with the cylinder 3 is an extensible electrical conductor, here shown as comprising a plunger 10 contacting at its tip with the axial terminal 11 of the lamp and continuously urged toward the latter by a spring 12. Mounted on the plunger 10 is a handle member arranged for moving the plunger and for locking the latter in a position in which its tip is out of contact with the lamp terminal 11. This handle member may be constructed in various ways, as for example of a cup-shaped slide 13 fitting the bore of the casing and carrying handles 14 projecting through hook-shaped slots 15 in opposite sides of the casing, the slide 13 being insulated from the plunger 10 by a rubber bushing 16 which engages a shoulder at the juncture of the main portion of the plunger with a relatively thinner end portion of the latter. Each slot 15 is desirably of such length (as shown in Fig. 1) that the adjacent handle will not engage its upper end when the plunger contacts with the axial lamp terminal, thus permitting the spring 12 both to enforce a good electrical connection and to hold the lamp pins 5 firmly interlocked with the bayonet-slots 6. Upon depressing the handles and slightly turning the same until they are interlocked with the shorter ends of the hook-shaped slots, the plunger 10 is brought out of contact with the lamp terminal, and the spring 12 then coöperates with the handle member and the hook-shaped slots to hold the plunger in its non-contacting position until released by a slight depressing and opposite rotation of the handle member.

The same construction may readily be applied to so-called double-pole sockets as used in connection with lamps or plugs having two terminals exposed upon their bases, by using a single handle member for moving both plungers, as shown in Fig. 4, and by providing sufficient play between each plun-

ger and the mouth of the cylinder housing the same to permit the tilting of the plungers involved while turning the handles from one arm of the hook-slot to the other.

5 To minimize the required amount of this tilting, I preferably dispose the slots 15^A at an angle to the axis of the casing, as shown in Fig. 5, thereby dividing the required amount of tilting into two relatively small and oppositely directed amounts.

10 With the constructions of Figs. 2 and 4, it will be obvious that since the pressure of the spring-actuated plunger is continuously in one direction, the bushing 16 and slide 13

15 need not be rigidly fastened to the plunger, but merely need to have cooperating shoulders to oppose relative movement in one direction. However, I do not wish to be limited to this or other details of the construction

20 and arrangement above described, since the same might be modified in many ways without departing from the spirit of my invention. For example, the handle element might comprise an insulating disk 17 pinned

25 to the plunger and having handles 14 threaded into the same as in Fig. 3. It will also be evident that by omitting one of the bushings 16 from the cup-shaped slide of Fig. 4 and allowing the corresponding plunger

30 10 to project freely through the adjacent hole in the slide, a movement of the latter would lower only one of the plungers, thereby breaking the circuit while leaving the other spring-pressed plunger to hold the

35 lamp (or other upper terminal-carrier) firmly interlocked with the casing.

I claim as my invention:

1. In an electric socket, a casing having a slot, a lamp and plug held by the casing in

40 fixed relation and presenting a pair of relatively opposed terminals, a conductor movably mounted on the plug terminal and adapted in one position to contact with the lamp terminal, operating means associated

45 with the conductor and insulated therefrom and projecting through the slot in the casing for moving the conductor to a position in which it is out of contact with the lamp terminal, detent means carried by the casing for

coacting with the operating means to hold 50 the conductor in its last named position, and common spring means interposed between the conductor and the plug terminal for maintaining the conductor in either of its said positions. 55

2. In an electric socket, a casing equipped on one side with a substantially-hook shaped slot, a lamp and plug held by the casing in fixed relation and presenting a pair of relatively opposed terminals, a conductor movably mounted on the plug terminal and normally contacting with the lamp terminal, a collar slidable in the casing and carried by the conductor, a handle carried by the collar and projecting outwardly through the slot 65 in the casing and adapted to engage the hook formation in the slot, the said collar and handle being so disposed with respect to the conductor that the latter will be out of engagement with the lamp terminal when the 70 handle is in engagement with the hook formation of the slot, and a spring interposed between the conductor and the plug terminal and continuously urging the conductor toward the lamp terminal. 75

3. In an electric fitting, a casing equipped with oppositely disposed slots having main portions extending longitudinally of the casing, a pair of terminal carriers mounted in rigidly spaced relation in the casing, a 80 spring-pressed extension upon one terminal disposed for normally establishing electrical connection with the other terminal, an insulator mounted on the spring-pressed extension, a pair of handles carried by the 85 insulator and projecting respectively through the said slots at opposite sides of the casing and adapted to be manipulated from outside the casing for moving the said extension longitudinally of the casing with- 90 out tilting the extension, and means associated with the casing and the handles for locking the latter in a position in which they maintain the said extension out of contact with the said other terminal. 95

Signed at Chicago, Illinois, January 13th, 1917.

GEORGE C. KNAUFF.