

No. 690,487.

Patented Jan. 7, 1902.

J. C. TOURNIER.  
LAMP SOCKET.

(Application filed May 17, 1899.)

(No Model.)

FIG. 1.

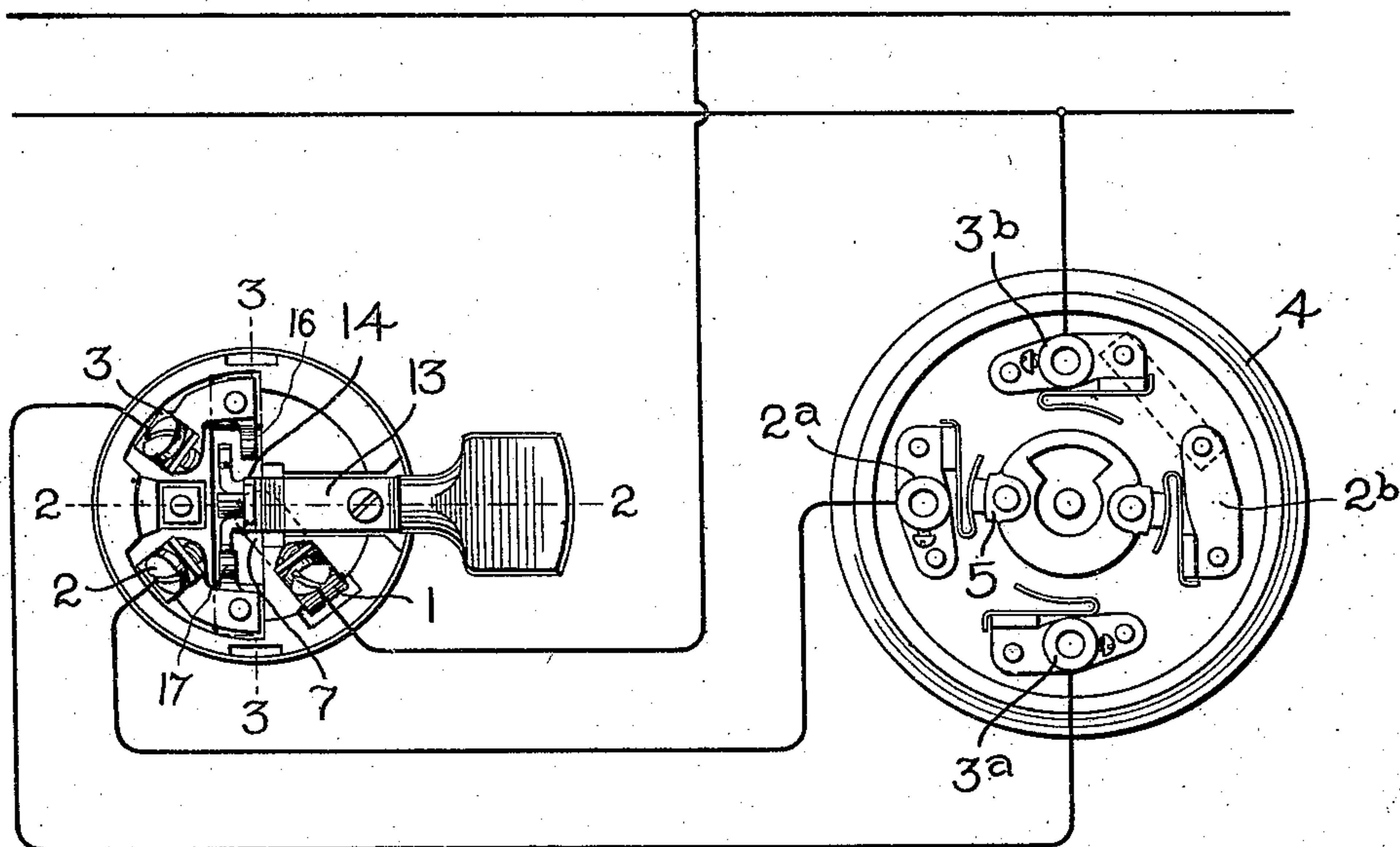


FIG. 2.

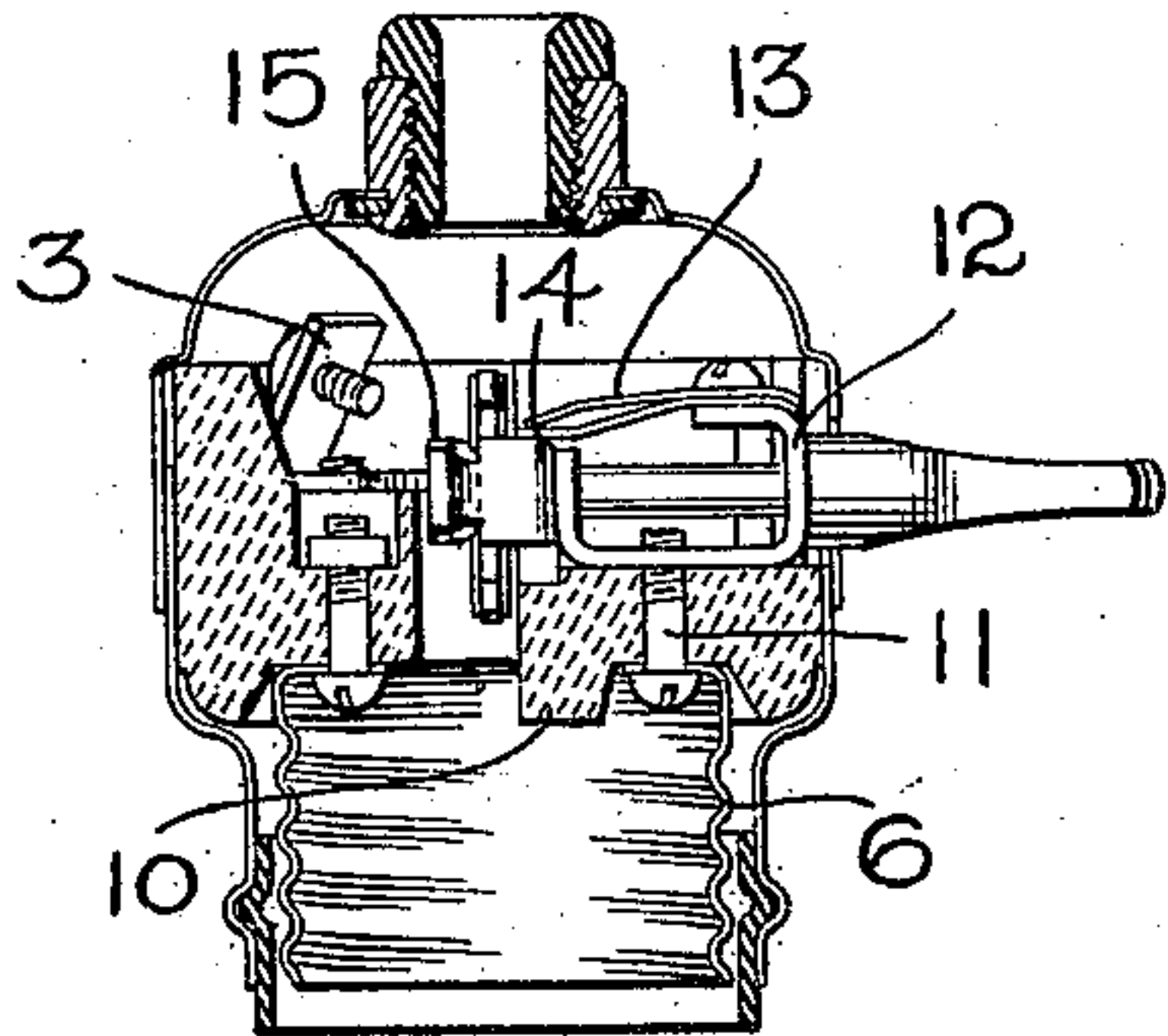


FIG. 3.

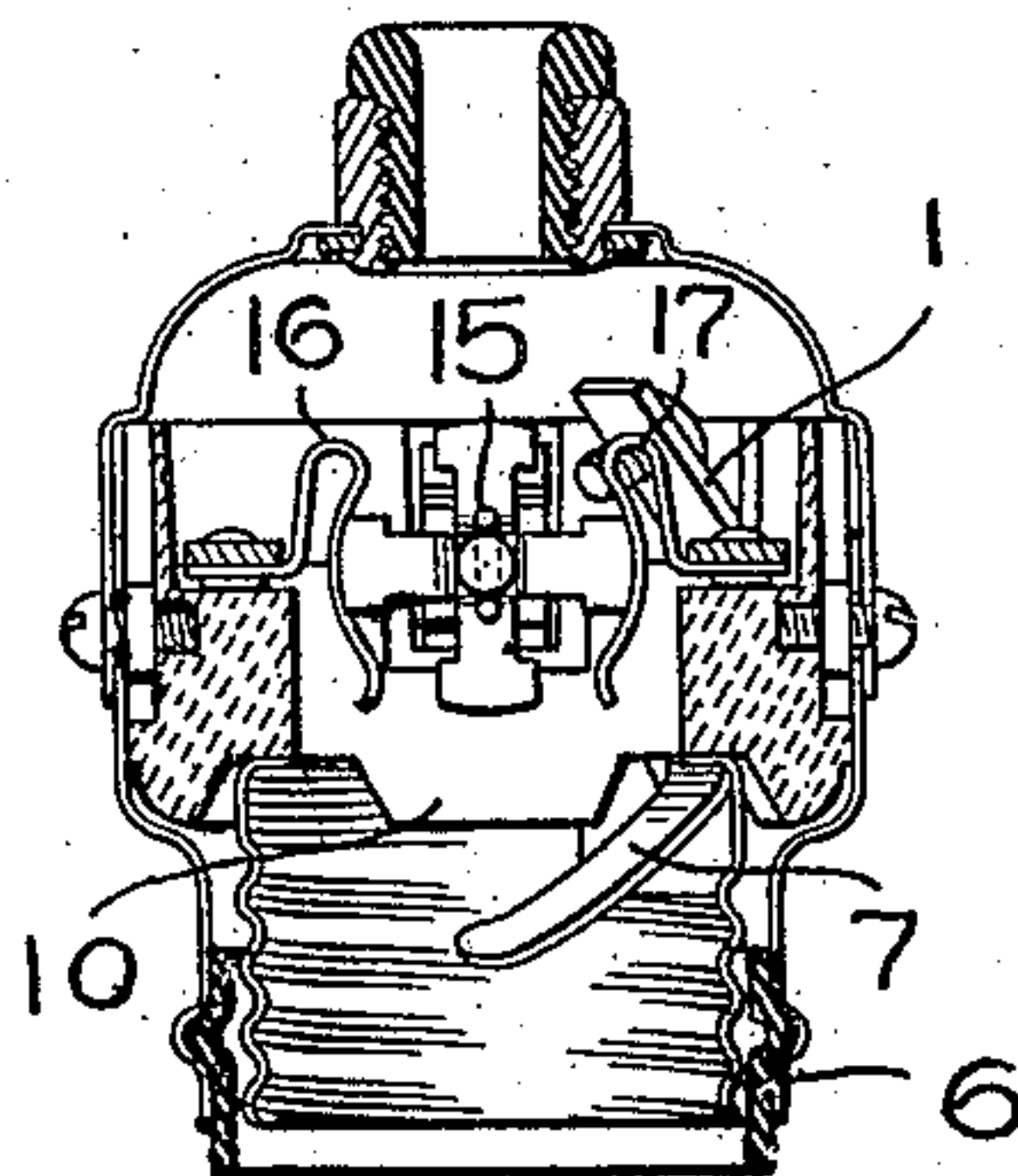


FIG. 4.

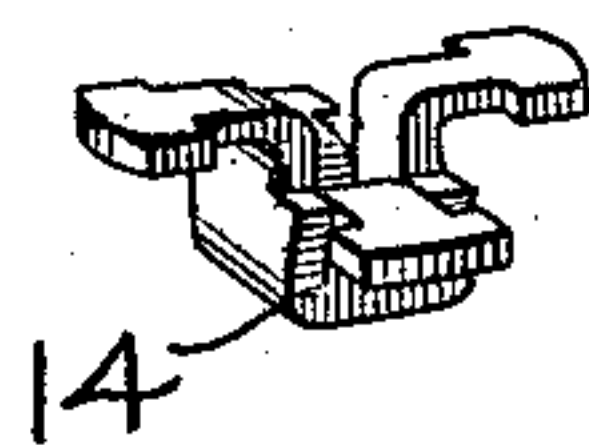
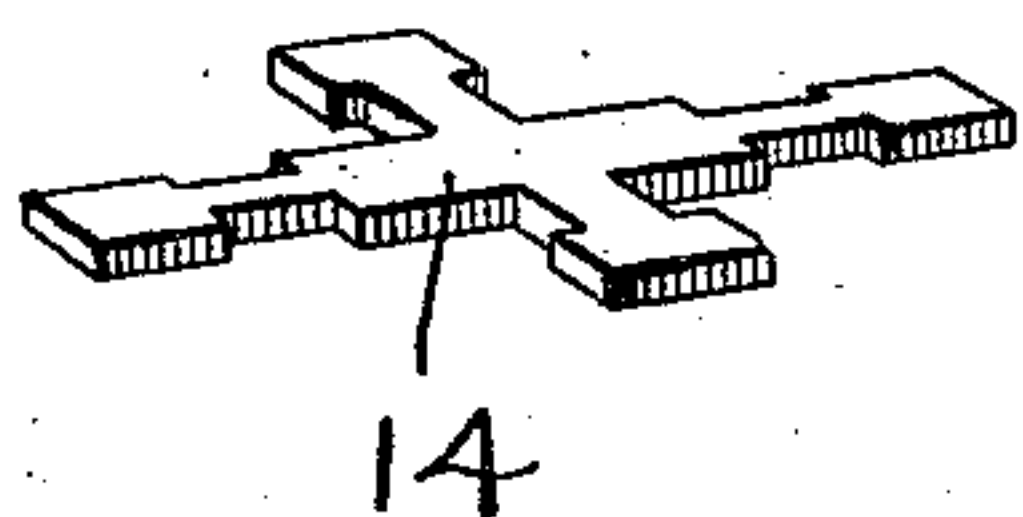


FIG. 5.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

JULIUS CH. TOURNIER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE  
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

## LAMP-SOCKET.

SPECIFICATION forming part of Letters Patent No. 690,487, dated January 7, 1902.

Application filed May 17, 1899. Serial No. 717,152. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS CH. TOURNIER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Lamp-Sockets, (Case No. 1,047,) of which the following is a specification.

The object of this invention is to provide a socket for incandescent lamps having a two-way contact device controlled by the key to permit the lamp to be operated from two points, one at the lamp and one distant therefrom, by the operation of a circuit-controller at either point.

The invention embraces structural features which render my improved socket well adapted for such a system of control as above indicated. Some of the features of the organization, however, are applicable also to lamp-sockets of the ordinary kind, which are lighted and extinguished solely by the operation of the lamp-key.

In carrying out the invention I prefer to inclose within the socket-casing an insulating and heat-refractory support formed of a chambered plug of porcelain or similar heat-refractory substance upon which the various controlling parts are mounted.

The several features of novelty will be hereinafter fully described and will be definitely pointed out in the claims.

In the drawings, Figure 1 is a diagram showing one system of circuits for a lamp-socket constructed according to my invention, showing also in plan the interior of the socket. Fig. 2 is a median sectional view on a plane indicated by the line 2 2 of Fig. 1. Fig. 3 is a similar sectional view on a plane indicated by the line 3 3 of Fig. 1. Fig. 4 is a perspective view of the blank from which the switch-contacts operated by the key are formed, and Fig. 5 is a perspective view of the said contacts when arranged for application to the key-stem.

A socket constructed according to my invention is provided with terminals for three leads, one from one of the circuit-mains and the other two from an auxiliary switch designed to be located at some point distant from the lamp at which it may be desirable

to control the lamp, as well as from the point at which the lamp is installed. These terminals are indicated at 1, 2, and 3, the latter two of which may be connected with the contacts 2<sup>a</sup> 3<sup>a</sup> of the auxiliary distant switch 4. The switch 4 is provided with an operating device carrying a metallic bridge 5, adapted to span pairs of contacts 2<sup>a</sup> 2<sup>b</sup> or 3<sup>a</sup> 3<sup>b</sup>. The terminals 2<sup>b</sup> 3<sup>b</sup> are electrically connected, so that they form, in effect, one contact electrically connected with one of the supply-wires. It is not essential that the system of cross connections shown in Fig. 1 be employed, as the same result may be attained by connecting two terminals of each switch with the mains and running a single wire between them; but in any case at least three socket-terminals must be employed. From this organization it will be seen that the lamp-switch and the switch 4 constitute a pair of two-way switches and that by the operation of the controlling-key or other operative part of either the supply-wires may be electrically connected with the lamp-terminals irrespectively of the position in which the other operative part may have been left when last manipulated. The refractory plug on which the metallic parts of the socket are mounted is provided on its top face with a deep recess, as indicated in Figs. 2 and 3, which forms a chamber the walls of which protect the shell or other metallic parts from contact with live parts and prevent arcs or sparks from injuring the casing. On the lower side of the plug is screwed the spun-metal shell 6, into which the stem of the lamp is adapted to screw. An elastic contact-tongue 7, of spring metal, as phosphor-bronze, is secured to the upper side of the porcelain plug by the screw which secures in place the terminal 1. The yielding tongue is adapted to engage with one terminal of the lamp when it is screwed home in the socket. A projecting abutment 10 on the lower side of the plug acts as a stop for the spring-tongue and insures a good and firm contact when the lamp is screwed into place. One of the screws 11, which secures the threaded shell for the lamp-stem to the plug, engages also a bent strip of brass 12, seated in a groove on the upper face of the plug, in which brass strip the stem of the key is mounted. This strip of brass also



forms a support for a leaf-spring 13, which engages the squared base of the metallic contact device operated by the key and serves to maintain good electrical connection between the contact device and the strip 12 and also to impart a snap action to the switch. This contact device is formed from a metal blank, as shown in Fig. 4, the opposite ends of which are bent upwardly and outwardly, as shown in Fig. 5, so as to provide four contact-points, the two pairs of which, on lines at right angles to one another, lie in different planes. The stem of the key threads an opening in the bottom 14 of the contact device, and a pin 15, passing transversely through the end of the key, permits a limited amount of free movement between the key and contact. The spring 13 bears upon the squared base of the contact and effects a quick movement, causing a snapping rupture of the circuit when the contact is turned so that the spring 13 rides on a corner. Each of the terminals 1 2 3 is provided with a set-screw for connecting with the supply-leads. These terminals are secured to the porcelain plug by screws passing vertically through the walls of said plug, which screws also serve to secure bent spring-contacts 16 and 17, adapted to engage the tips of the key-controlled contacts. The spring-contacts 16 and 17 are set out of line, as shown in Fig. 1, sufficiently to lie in the path, respectively, of the pairs of switch-contacts mounted on the key, which are in different planes, as will be understood from an inspection of Fig. 5. It will thus be seen that by a quarter-turn of the key in any direction one of the contacts 16 17 will be engaged by a contact controlled by the key, thus putting one terminal of the lamp on one of the leads or wires connecting with the auxiliary switch 4. The other lamp-lead 7 is of course electrically connected with the supply-circuit through terminal 1. It will be evident, therefore, that in whatever position the switch 4 may be left the lamp may be fed with current by turning the key far enough to connect with the live lead leading from the switch 4, and, vice versa, the switch 4 controls the lamp irrespectively of the position of the lamp-socket key.

In turning off the lamp the switch-contact leaves the contact-spring with which it engages, and at the moment of rupture the spring 13 is resting at an angle on one corner of the contact, and by reason of the free play between the key-stem and the contact a sudden rupture is produced, as in a snap-switch.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a lamp-socket, the combination with the insulating-base of two separate switch-contacts mounted thereon out of alinement with each other and adapted to be connected with an auxiliary switch, a terminal connected to line and to one lamp-lead, and a movable switch-piece connected to the other lamp-lead and having contacts out of aline-

ment with each other to coöperate with said separate switch-contacts.

2. In a lamp-socket, the combination with the insulating-base of a two-way switch comprising two stationary contacts and corresponding movable contacts, the stationary contacts being adapted to be connected to an auxiliary switch, a switch-actuator on which the movable contacts are loosely mounted, a binding-post adapted to be connected between line and one lamp-lead, and a spring which imparts a snap action to the movable switch-contacts and serves to maintain electrical connection between the movable switch-contacts and the other lamp-lead.

3. In lamp-socket a key, three terminals connecting with different circuit-leads, and a conducting bridge-piece connected to the key formed of a sheet-metal blank having bent arms lying in different planes to connect different pairs of leads together.

4. A contact-piece for an incandescent-lamp key, formed from a cruciform sheet-metal blank having each pair of opposite limbs bent U shape and then outwardly in the same plane, the two pairs of contacts thus formed being in different planes.

5. A lamp-socket having a snap-switch yieldingly mounted on the key-stem, said switch being formed from a cruciform metal blank, the arms bent to form contacts and the center formed into a squared hub, and a spring bearing on the squared hub.

6. A lamp-socket having a snap-switch yieldingly mounted on the key-stem, said switch being formed from a cruciform metal blank, the arms bent to form contacts and the center forming a squared hub, a spring engaging the hub, and contacts engaging the arms edgewise.

7. In a lamp-socket, the combination of two elastic terminals, a key adapted to connect either of said terminals with the same lamp-terminal, a contact device controlled by the key, provided with four contact-points arranged in pairs on different planes in alinement with the terminals, and provided with a squared shoulder or face coöperating with a spring, as 13, the contact device being so mounted with relation to the key that it has a limited amount of free movement.

8. In a lamp-socket, the combination with the insulating-base of two binding-posts mounted thereon and adapted to be connected to an auxiliary switch, two stationary switch-contacts connected with said binding-posts, a third binding-post mounted on the base and adapted to be connected to line and to one of the lamp-leads, a switch mounted on the base and adapted to engage said switch-contacts alternately, and a spring for maintaining electrical connection between said switch and the other lamp-lead.

9. In a lamp-socket, the combination with the insulating-base of a threaded-shell lamp-contact and a center lamp-contact, both



5 mounted on said base, two binding-posts  
mounted on the base and adapted to be con-  
nected to an auxiliary switch, two correspond-  
ing switch-contacts connected with said bind-  
ing-posts, a third binding-post connected to  
the center lamp-contact and to line, a switch-  
spindle, a conducting-support for the spin-  
dle, said support being connected with the  
threaded-shell lamp-contact, a switch-piece  
10 loosely mounted on the spindle and adapted  
to engage said switch-contacts alternately,  
and a spring which is mounted on the spin-

dle-support to bear on the switch-piece and  
serves to impart a snap action to the latter  
and to maintain electrical connection be- 15  
tween the switch-piece and the threaded-shell  
contact.

In witness whereof I have hereunto set my  
hand this 15th day of May, 1899.

JULIUS CH. TOURNIER.

Witnesses:

BENJAMIN B. HULL,  
MABEL E. JACOBSON.