

No. 612,560.

Patented Oct. 18, 1898.

J. E. CRIGGAL.
ELECTRIC LAMP SOCKET.

(Application filed Nov. 4, 1897.)

(No Model.)

Fig. 1.

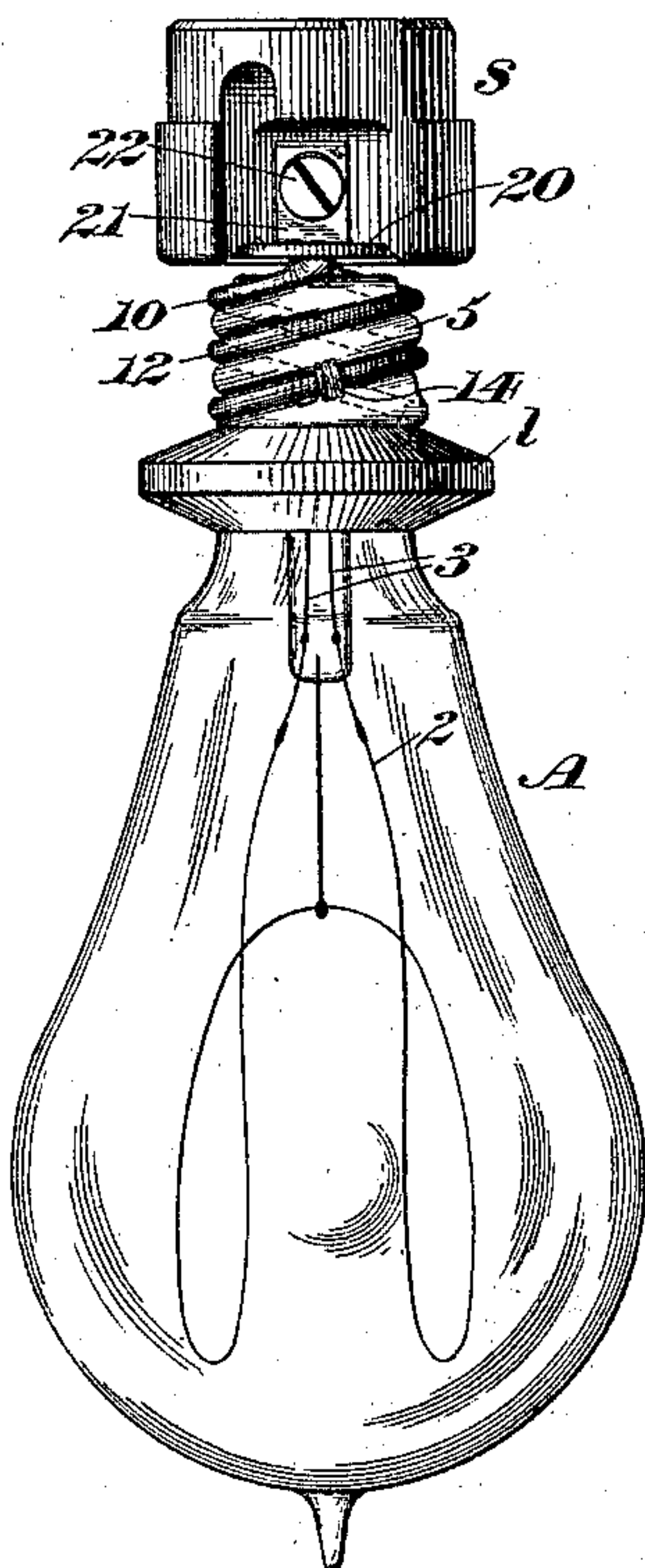


Fig. 4.

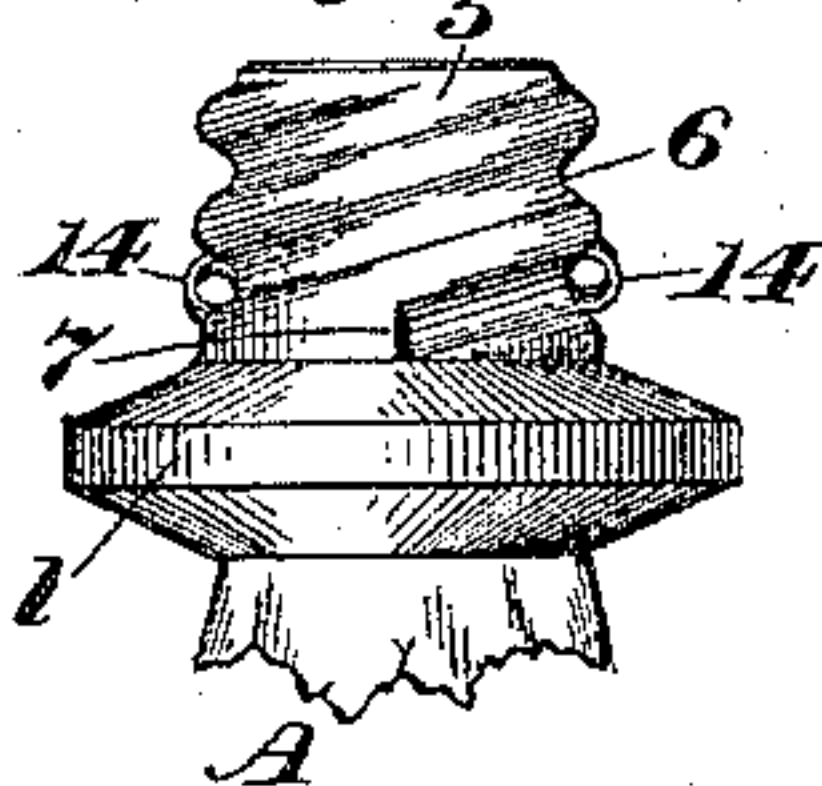


Fig. 5.

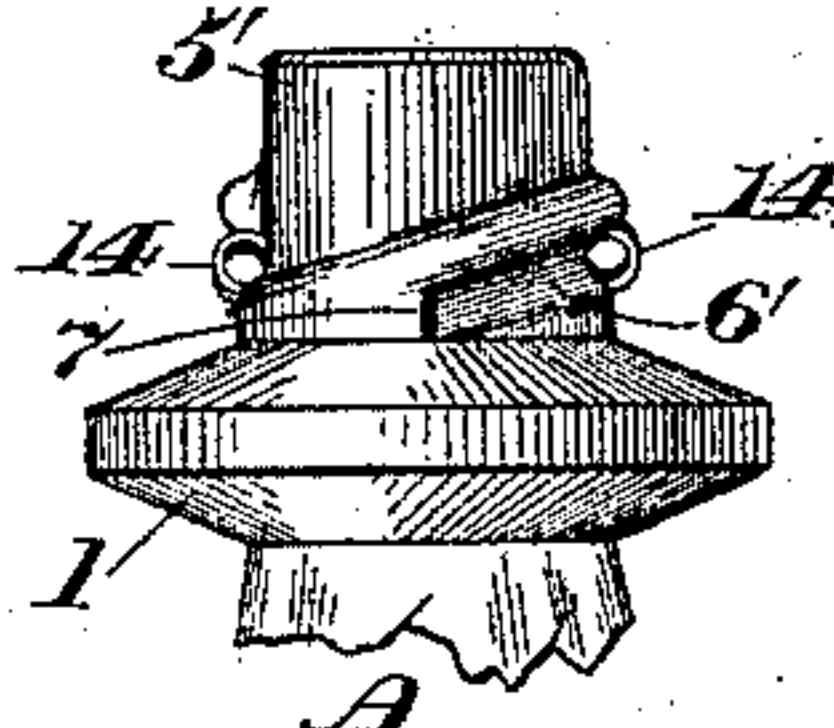


Fig. 6.

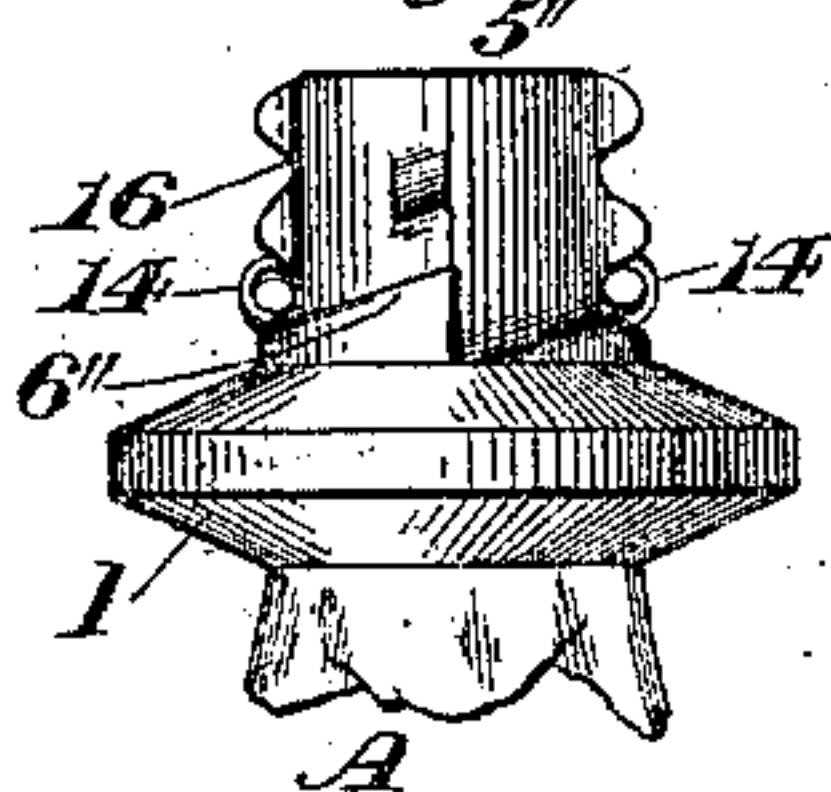


Fig. 7.

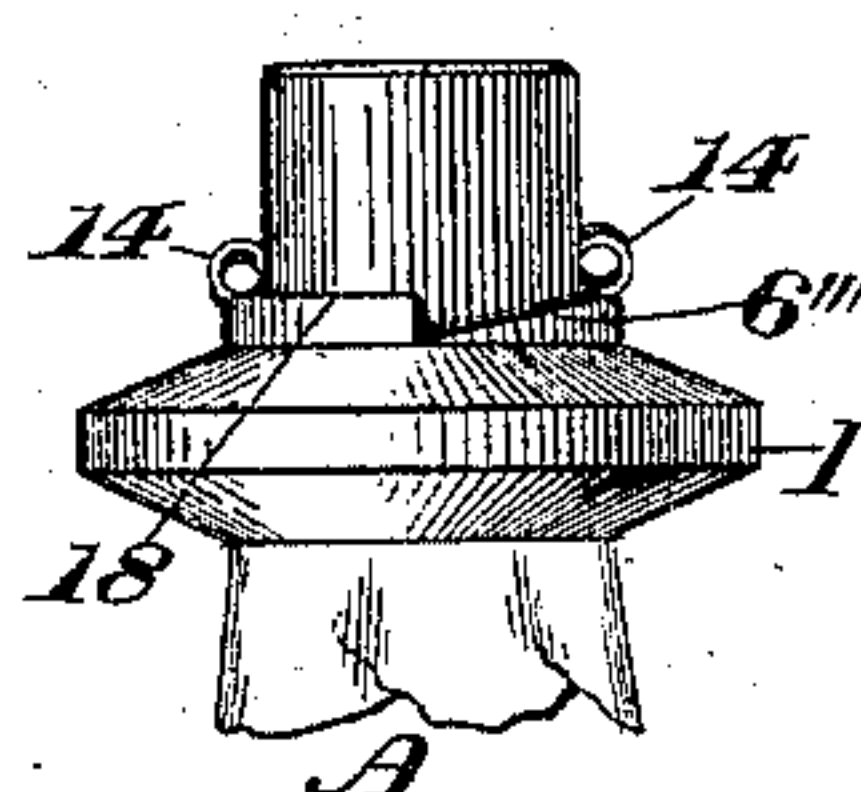


Fig. 8.

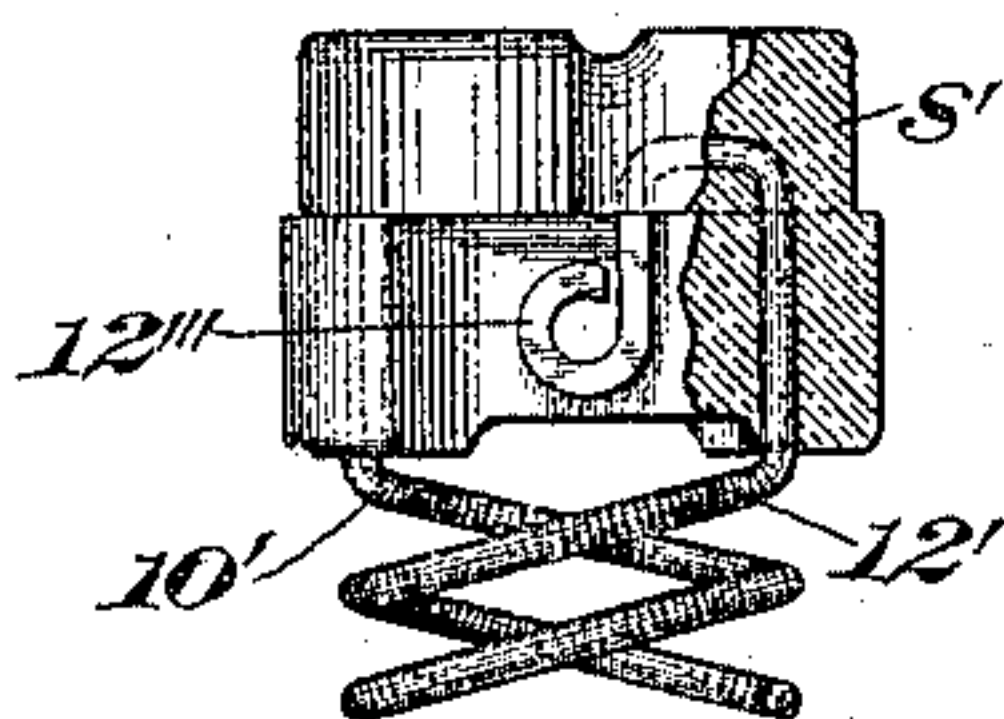


Fig. 2.

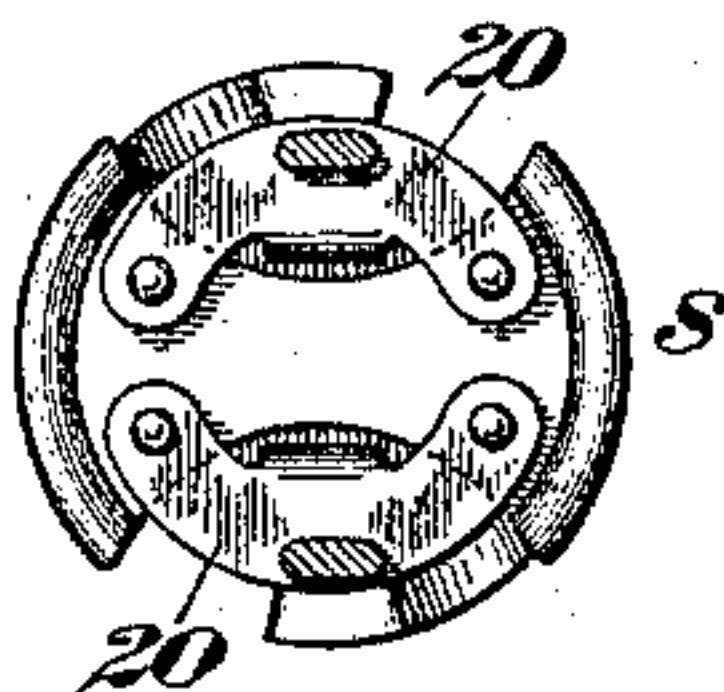


Fig. 9.

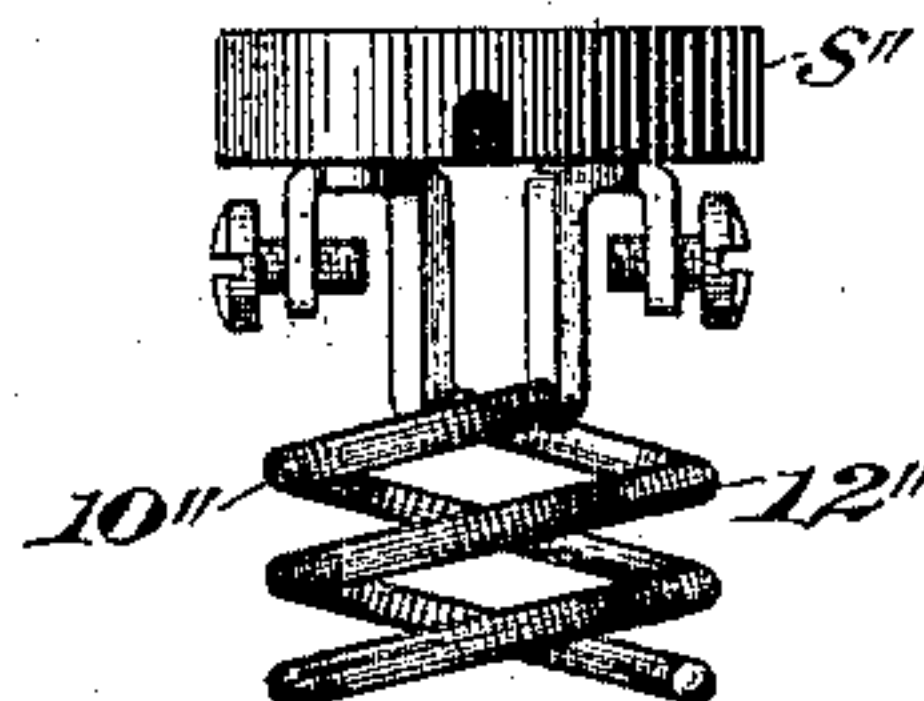
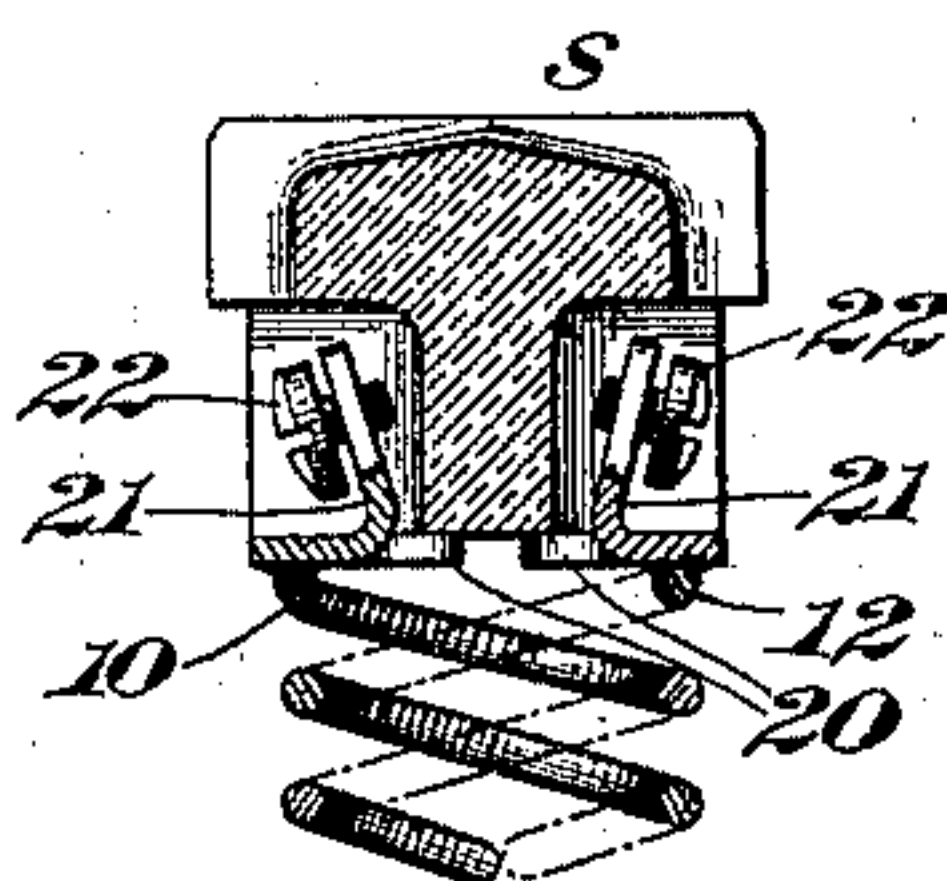


Fig. 3.



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ELECTRIC-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 612,560, dated October 18, 1898.

Application filed November 4, 1897. Serial No. 657,349. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. CRIGGAL, a citizen of England, residing in Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electric-Lamp Sockets, of which the following is a specification.

This invention relates to improvements in adapters for electric-lamp sockets; and it has for its main object the provision of an improved device of this class by means of which lamps of different systems and styles of manufacture can be used in the same circuit.

More particularly my present invention is especially designed and intended as an improvement upon the adapter shown, described, and claimed in the patent granted to me August 4, 1891, No. 457,109.

My present improvements relate especially to the connection of the spiral conducting-wires of the socket-base with the lamp-base by improved contacts on the latter; and it also embodies as one of the elements thereof means for positively limiting the positions of the lamp-base and the socket-base when assembled.

In the drawings accompanying and forming part of this specification, Figure 1 is a side elevation of an incandescent electric lamp and socket-base embodying my present improvements. Fig. 2 is a sectional end elevation of the socket-base, looking from the under side in Fig. 1. Fig. 3 is a sectional side elevation of said lamp-socket and the spiral wires thereon for engaging the lamp-base. Fig. 4 is a detail illustrating in side elevation the lamp-base shown in Fig. 1. Figs. 5, 6, and 7 are similar views illustrating modified forms of said lamp-base. Fig. 8 is a sectional side elevation of a modified form of socket-base and its spiral wires, and Fig. 9 is a side elevation of another socket-base and its spiral wires.

Similar characters designate like parts in all the figures of the drawings.

Referring first to Figs. 1, 2, 3, and 4, A designates in a general way an incandescent electric-lamp bulb of any suitable or usual construction having a filament 2 and leading-in wires 3 connected with said elements. The lamp-bulb has secured to the neck thereof in any suitable manner, as by molding, a lamp-

base, (designated herein in a general way by L.) This lamp-base is in many respects similar to that shown and described in my prior patent hereinbefore referred to, it having a neck or shank, (indicated herein by 5,) which shank has inclined guide-walls, formed in the present instance by spiral grooves encircling said shank. The extreme ends of these guide walls or grooves, which are indicated herein by 6, end abruptly in stop-walls, such as 7, only one of which is illustrated herein, these stop-walls being disposed transversely to said guide-walls, so as to form positive abutments which will engage the ends of the spiral conducting-wires secured to the socket-base and limit the positions of the lamp-base and the socket-base absolutely relatively to each other when the parts are assembled.

The socket-base shown in Figs. 1, 2, and 3 is designated in a general way by S and may be of any suitable type. It has connected thereto in any suitable way spiral conducting-wires, such as 10 and 12, inclined in such a manner as to have the same pitch as the guide walls or grooves 6 of the lamp-base. These two wires 10 and 12 form a holder for the shank 5 of the lamp-base, and said shank may be screwed into said holder substantially in the manner described in my previous patent.

For the purpose of improving the contact and exposing a greater area of surface to the spiral wire-holder I prefer to make use of conducting-helices—such, for instance, as those shown at 14—embedded in the material of which the lamp-base is formed and in alignment with the guide-walls in said shank, these helices being so positioned as to receive the free ends of the spiral conducting-wires 10 and 12, respectively. In order that these last-mentioned wires may make better contact, each helix has a plurality of coils or turns, so as to form a relatively long conducting-surface. The most important advantage, however, resulting from this construction is that the spiral wire-holder and the shank of the lamp-base are held rigidly in place when assembled, owing to the fact that each helix has a plurality of coils or turns forming a relatively long and rigid supporting-guide in which the socket-wire will fit tightly. Moreover, the coils of each helix are closely wound,

and hence any strain brought to bear upon the helix to distort and elongate the same will only result in causing the coils to grip the socket-wire more firmly. Preferably these helices will be two in number and disposed at diametrically opposite points of the shank, midway between the diametrically opposite stop-walls 7. Each helix will usually be formed from one of the leading-in wires of the lamp, the outer end of such leading-in wire being coiled, as shown herein, in some suitable manner, preferably before the leading-in wire is embedded in the composition forming the lamp-base.

In Fig. 5 I have illustrated a modification of the lamp-base, in which a smaller number of turns of the groove or guide-wall 6' is shown than is the case in Fig. 4. In other respects the construction of this part of the device is substantially the same as in Figs. 1 to 4, inclusive.

In the modification shown in Fig. 6 I have illustrated a series of peripheral stops arranged in spiral paths and having guide-walls 16 coöperating with corresponding guide-walls 6'' near the extreme inner end of the shank 5''. Obviously these isolated or spirally-arranged stop members coöperate with the spiral conducting-wires 10 and 12 in substantially the same manner as do the guide-walls of the spiral grooves in the shanks 5 and 5'.

In Fig. 7 I have illustrated still another modification, in which two cam-faces, only one of which is shown herein at 6''', coöperate to direct the ends of the wires 10 and 12 after the ends of these last-mentioned wires are passed through the helices 14, but before said wires enter said helices they may be directed by substantially transverse guide-walls 18, only one of which is shown herein.

It should be understood that the transverse guide-wall 18 and the spiral guide-wall 6''', having a helix 14 at the point of junction thereof, are disposed in a semicircle and are complementary to another helix and similar pair of guide-walls 18 and 6'''.

Besides the features hereinbefore particularly specified Figs. 2 and 3 illustrate one manner in which the wires 10 and 12 may be secured to the socket-base, the latter having in this instance a pair of plates, such as 20 20, secured thereto, and having ears 21 projecting toward the outer end of said socket-base. These ears 21 form, with suitable screws 22, binding-posts or securing means for engaging the terminals of the circuit-wires.

The wires 10 and 12 may be fastened to the plates 20 in any suitable manner.

Another style of adapter is shown in Fig. 8, in which two spiral wires 10' and 12' are embedded in a socket-base s', their outer ends forming the usual holder and their inner

ends having threaded eyes 12''', only one of which is shown herein, forming binding-posts for the circuit-wires in substantially the manner just described with reference to the ears 21.

In Fig. 9 I have illustrated still another modification, in which spiral wires 10'' and 12'' are suitably secured to another style of combined fastening-plate and binding-post carried by a socket-base s''. These parts need not be described in detail herein, but only serve to show the wide range of interchangeability secured by my present improvements.

Having described my invention, I claim—

1. In an incandescent electric lamp, the combination, with a non-conducting lamp-base having a shank with inclined guide-walls thereon, of a socket-base having spiral conducting-wires secured thereto and forming a holder for said shank and coöperating with said guide-walls, and leading-in wires sealed into the lamp-base and connected at their inner ends with the filament of the lamp and having at their outer ends helices coöperative with, and disposed at the same inclination as, said guide-walls, each helix forming a substantially rigid tubular guide comprising a plurality of closely-wound longitudinally-extensible and transversely-contractile coils of sufficient resiliency to grip the socket-wire and hold it firmly in place.

2. In an incandescent electric lamp, the combination, with a non-conducting lamp-base having a shank with inclined guide-walls thereon and stops at the end of, and disposed perpendicularly to, said guide-walls and also disposed substantially in a central longitudinal plane of the shank and forming abrupt stop-walls for engaging the ends of the socket-wires, of a socket-base having spiral conducting-wires secured thereto and forming a holder for said shank and adapted to be engaged and positioned by said stop-walls, and conducting-helices coöperative with the guide-walls of the shank and connected with the filament of the lamp, each helix comprising a plurality of closely-wound coils of sufficient length to form a rigid tubular guide and hold a socket-wire firmly in place.

3. In an incandescent electric lamp, the combination, with a non-conducting socket-base, of spiral conducting-wires sealed into said base and forming at their outer ends a helical holder, and each having at its inner end a threaded spiral eye open at one side and forming a single turn and constituting a binding-post for a circuit-wire.

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