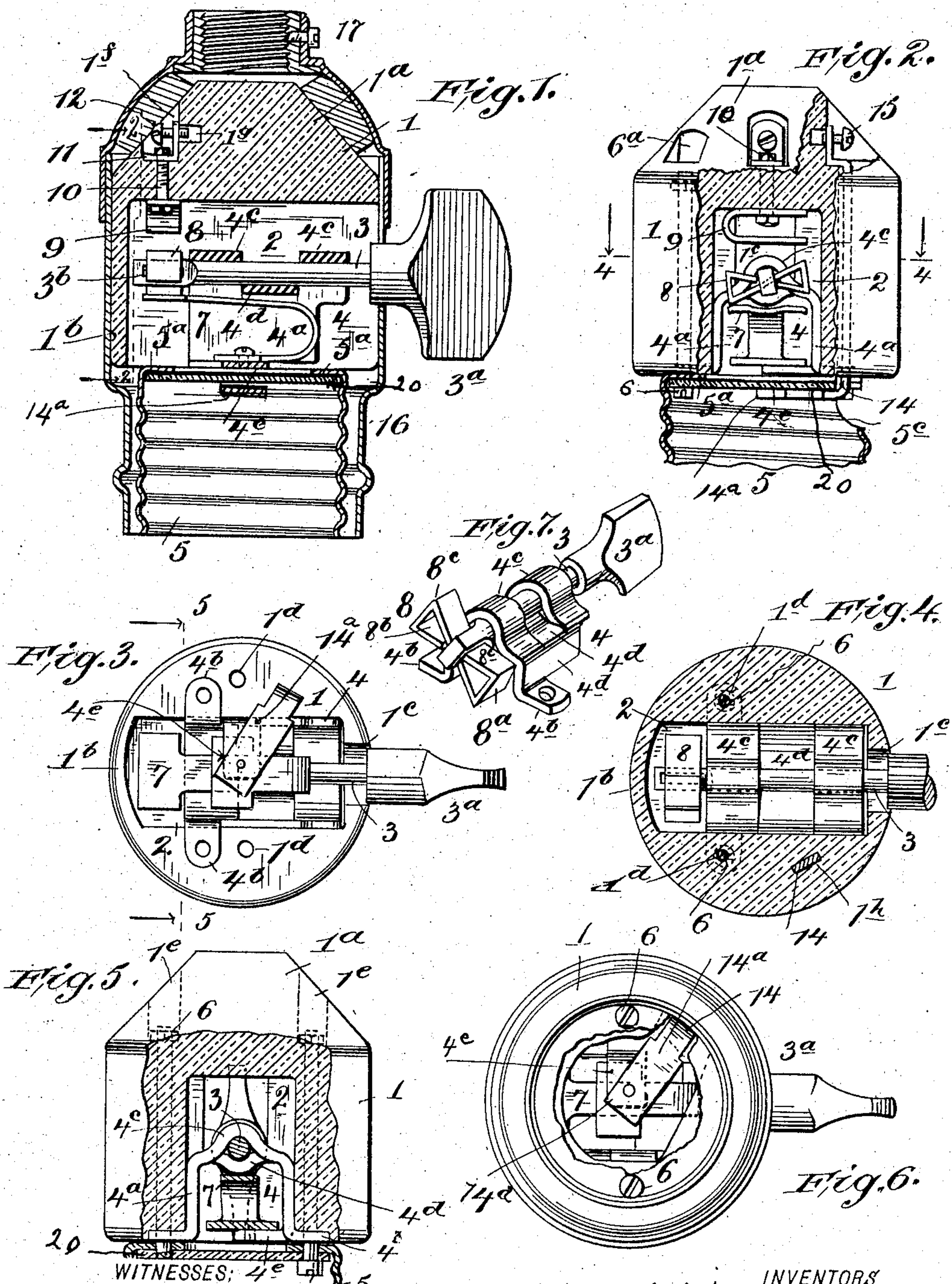


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INCANDESCENT LAMP SOCKET.

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INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 778,280, dated December 27, 1904.

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To all whom it may concern:

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

Our invention relates to improvements in switch mechanism for incandescent-electric-lamp sockets and also to the formation of the insulating base or body portion of such socket wherein the switch mechanism is contained, and 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 central sectional view of an incandescent-lamp socket embodying our improvements. Fig. 2 is a side view thereof, partly in section, substantially on the line 2 2 in Fig. 1, and partly broken. Fig. 3 is an under side view of Fig. 1, the shells being removed. Fig. 4 is a horizontal section on the line 4 4 in Fig. 2 looking in the direction of the arrows. Fig. 5 is a side view, partly in section, substantially on the line 5 5 in Fig. 3. Fig. 6 is an under side view of the socket complete, and Fig. 7 is a perspective view of the key-shaft and its supporting-frame.

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

The numeral 1 indicates the base or body portion of an incandescent - electric - lamp socket which may be made of porcelain or other suitable insulating material, and the same is shown of cylindrical form provided with a tapering or cone-like upper portion at 1^a, and the base is shown provided with a recess or chamber 2, which enters the same from the lower side, but does not extend entirely across the base, the wall 1^b of the base wholly closing one end or side of said chamber, the opposite side of the chamber being slotted or open at 1^c to permit the passage of the key-shaft 3. By this means the shaft mechanism

hereinafter described is substantially wholly contained within said chamber and protected on substantially all sides by the insulating material of the base to avoid danger of short-circuiting.

The key-shaft or spindle 3, provided with a thumb-piece 3^a, is supported within chamber 2 of base 1 in a frame 4, provided with bearings for said shaft. The frame 4 we have shown is composed of substantially parallel side walls 4^a, having a transverse connecting portion forming bearings for shaft 3 and lugs 4^b, that are to be connected firmly to base 1 and also to the cylindrical screw-threaded shell 5, that is adapted to receive corresponding threads on the base of an incandescent lamp in well-known manner. The bearings for key-shaft 3 are shown as struck up from the frame 4, and to this end we cut transverse slots in the connecting-piece between the walls 4^a and bend two or more of the cross-strips thus formed in one direction and one or more of the cross-strips 4^d in the opposite direction, curving such strips midway, and thereby providing a bearing or journal for the shaft 3. The frame 4 is of such dimensions as to fit within chamber 2 of base 1, and the lugs 4^b are adapted to aline with the bottom of base 1, and the latter is provided with apertures, as at 1^d, Fig. 4, for the passage of bolts or screws 6, that also pass through the apertures in lugs 4^b to clamp the latter and frame 4 upon the base. The bolts or screws 6 are thus protected within the insulating-base and at their upper ends are located within recesses 1^e, formed in base 1, the nuts 6^a of said bolts or screws being located within said recesses, and thus within the surface of base 1, and are thus protected from contact with outside elements. The flange 5^a of the screw-shell 5 rests against the lugs 4^b and is provided with apertures to receive the bolts or screws 6, and said flange is thus secured by said screws or bolts 6 to lugs 4^b of frame 4, and thereby to base 1, whereby the key-shaft frame is in permanent electrical connection with the cylindrical shell 5. The key-shaft 3 is adapted to coact with a spring 7, which is shown secured

at one end to a lug 4^e, bent inwardly from one of the walls 4^a of key-frame 4, said spring 7 being bent, as indicated in Fig. 1, and lying under shaft 3. The shaft 3 is provided with a contact-piece or key-contact 8, adapted to coact with spring 7 and also with a contact-spring 9, located in chamber 2 above the contact 8, so that when shaft 3 is turned properly the contact-piece 8 may close circuit between the springs 7 and 9 by engaging them.

The contact-piece or key-contact 8 we have shown consists of a metal strip located within an aperture 3^b in shaft 3, and on opposite sides of the shaft said strip is bent sidewise at 8^a and angularly inward at 8^b in opposite directions, so that the ends of 8^b may bear against shaft, as clearly illustrated in Figs. 2 and 7. The ends 8^a of contact 8, therefore, form surfaces to engage the springs 7 and 9 when the circuit is to be closed, and the contact 8 lies transversely between said springs when the circuit is broken, as in Fig. 2. The width of aperture 3^b in shaft 3 is slightly greater than the thickness of strip 8, so that the key-contact may have a swinging or loose side motion in its aperture 3^b, which will permit a quick break or snap action influenced by the spring 7 when shaft 3 is turned. The construction of key-contact 8 is such that it need not have adjustment in the direction of its length on shaft 3, as the springs 7 and 9 permit proper contact to be made therewith by the contact 8. The strip forming key-contact 8, bent as described, is simple to manufacture and efficient in use.

The spring 9 is to be connected with one of the lead-wires of a circuit and bears at one portion against the wall of chamber 2 of base 1 and is provided with a screw or bolt 10 for securing it in place, the bolt being located in a bore in the base, the upper end of said bolt being shown located in a recess 1^f in base 1 and connected with a contact-strip 11, located in said recess and shown in the form of an angle-piece, having a screw 12 adapted for connection with a lead-wire, the base 1 being shown provided with a bore 1^g to permit the necessary movements of screw 12. It will thus be seen that the screw or bolt 10, the angle-piece 11, and the screw 12 are located or buried within the surface of the insulating-base 1. From the foregoing it will be understood that when the parts are in the position shown in Fig. 1 and the key-shaft 3 is turned so that the contact 8 will connect springs 7 and 9 the circuit in the socket will be closed from the shell 5 directly to frame 4 and thence through spring 7, contact 8, spring 9, bolt or screw 10, strip 11, and screw 12, to the line. For the opposite side of the circuit in the socket we provide base 1 with a passage-way or bore 1^h, in which is located a metal strip 14, that projects at the lower end through base 1 and is provided with a head 14^a, adapt-

ed to be bent sidewise beneath base 1 in position to be engaged by the contact at the end of the base of an incandescent lamp, the shell 5 being shown provided with an opening 5^c to permit the passage of the head 14^a. The upper end of the strip 14 opens into a recess 1^j in base 1, and said strip is provided with a screw 15 to receive a line-wire of the circuit. In the example shown in Fig. 2 the upper end of strip 14 is bent sidewise at 14^b and then outwardly in recess 1^j to carry the screw 15 well within said recess. A disk or the like 20, of insulating material, such as mica, may be located above the head 14^a in usual manner to prevent short-circuiting.

When an incandescent lamp of usual form is screwed into the shell 5, one side of circuit of the lamp is through shell 5 thus brought into electrical connection with the key-frame 4 through the lugs 4^b and flange 5^a, the circuit being adapted to be made and broken by the key-contact 8, and the other side of the circuit of the lamp extends from its central contact to the head 14^a and through strip 14 and screw 15 to the line. The strip 14 being thus embedded in base 1 is thoroughly insulated from the key-frame and the other connections of the lamp-socket.

The entire socket may be inclosed in a shell 16, provided with a cap-piece 17, covering the upper end of the socket, which may be arranged and secured in any well-known manner.

By means of our improvements the cylindrical shell 5 being in permanent contact with key-frame 4 the circuit is not made and broken between the key-frame and said shell, but on the side of the frame opposite said shell at the contact or spring 9. Thus the best electrical contact is maintained between the key-frame and shell 5. Furthermore, the operative parts and connections are wholly inclosed within the insulating-base, so that danger of short-circuiting is avoided.

Having now described our invention, what we claim is—

1. An incandescent-lamp socket having a base, a metallic shell for connection with a lamp, a key-frame having a portion exposed on the outer face of said base, the shell having an extension bearing against said exposed portion of said frame, a key, and connections for making and breaking a circuit of the lamp by said key, substantially as described.

2. An incandescent-lamp socket having a base provided with a chamber, a key-frame located in said chamber and having a portion exposed on the outer face of the base, a metallic shell overlying and secured to said exposed portion of said frame and adapted to receive a lamp, a key, and connections for making and breaking the circuit by the key, substantially as described.

3. An incandescent-lamp socket having a

base, a key-frame provided with lugs that are exposed on the outer face of the base, a metallic shell having a flange overlying and connected with said lugs and adapted for connection with a lamp, a key, and connections for controlling the circuit thereby, substantially as described.

4. An incandescent-lamp socket having an insulating-base provided with a chamber, a key-frame located in said chamber and having lugs exposed on the outer face of and aligned with the material of said base, a metallic shell overlying and connected with said lugs and adapted for connection with a lamp, means for securing said shell, lugs and frame to said base, a key, and connections for controlling the circuit thereby, substantially as described.

5. An incandescent-lamp socket having an insulating-base provided with a chamber having one side closed by the material of the base and an opening at the other side for the passage of a key-shaft, a key-frame located in said chamber, a screw-threaded shell extending from the base and permanently electrically connected with said frame, a key, and connections for controlling the circuit thereby, substantially as described.

6. An incandescent-lamp socket having a base, a key-frame carried thereby and having a portion exposed on the outer face of the base, a metallic shell overlying and connected with said frame, means for securing the frame and shell to the outer face of the base, a spring secured to said frame, a key provided with a contact to coact with said spring, and a contact carried by the base to coact with said key-contact, substantially as described.

7. A frame for an incandescent-lamp-socket key-shaft comprising two sides connected by a plurality of strips respectively bent in opposite directions forming a bearing for the key-shaft, substantially as described.

8. A frame for an incandescent-lamp-socket key-shaft comprising two sides connected by a plurality of strips respectively bent in opposite directions forming a bearing for the key-shaft, and lugs extending from said sides for holding the frame upon a base, substantially as described.

9. A frame for an incandescent-lamp-socket key-shaft comprising two sides connected by a plurality of strips respectively bent in opposite directions forming a bearing for the key-shaft, lugs extending from said sides for holding the frame upon a base, and a lug extending inwardly from one of the sides for connection with a spring, substantially as described.

10. An incandescent-lamp socket having an insulating-base provided with a chamber, a key-frame having a plurality of strips respectively bent in opposite directions forming a

bearing for the key-shaft and provided with outwardly-extending lugs aligned with portions of the base, said frame having an inwardly-extending lug, a spring connected with said lug, and a key-shaft carried by said frame and provided with a contact-piece to coact with said spring, substantially as described.

11. A key for an incandescent-lamp socket comprising a shaft having a slot and a contact consisting of a strip passing through said slot and bent backwardly at opposite ends of the shaft, the ends of the strip extending toward the shaft, substantially as described.

12. A key for an incandescent-lamp socket comprising a shaft having a slot and a strip of less width than the slot passing there-through and on opposite sides of the shaft being bent backwardly so that its ends project toward the shaft, substantially as described.

13. An incandescent-lamp socket having an insulating-base provided with a chamber, a contact located in said chamber, a bolt or screw located in a bore in said base and holding said contact, said bore leading from said chamber to a recess in the outer surface of the base, and a metal strip located in said recess and connected with said bolt or screw said strip being of angle form and having a screw located in said recess for connection with a line-wire, substantially as described.

14. A base for an incandescent-lamp socket comprising a block made of a single piece of insulating material provided with a chamber opening through one end of the block having one side entirely closed by the material of the block and provided with a slot in the opposite side wall opening through the end of the block forming a partially-closed wall, substantially as described.

15. A base for an incandescent-lamp socket comprising a block made of a single piece of insulating material provided with a chamber opening through one end of the block having one side entirely closed by the material of the block and provided with a slot in the opposite side wall opening through the end of the block forming a partially-closed wall, said base also having a bore extending longitudinally in the same independent of the chamber and opening through opposite ends thereof, substantially as described.

16. A base for an incandescent-lamp socket comprising a block made of a single piece of insulating material provided with a chamber opening through one end of the block, having one side entirely closed by the material of the block, and provided with a slot in the opposite side wall opening through the end of the block forming a partially-closed wall, said base also having a bore extending longitudinally in the same independent of the chamber and opening through opposite ends thereof, said base also having a recess at one end of

the bore in communication therewith, substantially as described.

17. In an incandescent-lamp socket a key-
frame comprising sides having cross-pieces
5 bent to form bearings, a shaft journaled in
said bearings and projecting therebeyond, and
a contact-piece carried by said shaft and lo-

cated outside of said frame, substantially as
described.

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