April 4, 1950 F. GRADISCHNIG, JR 2,503,040

SWITCH SOCKET

Filed Feb. 28, 1947

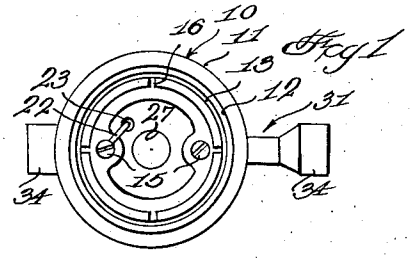


Fig. 1

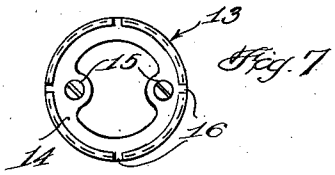


Fig. 7

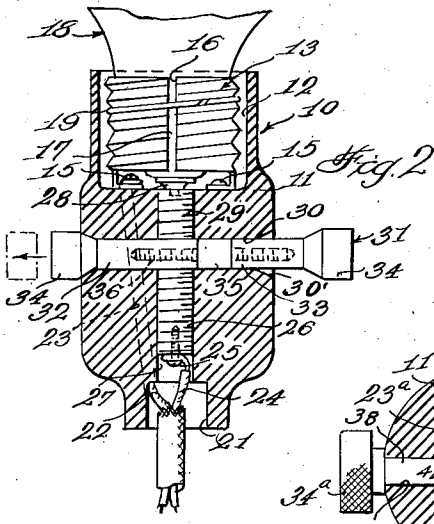


Fig. 2

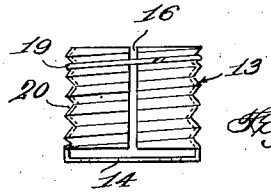


Fig. 8.

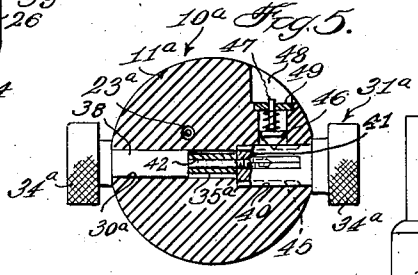


Fig. 5.

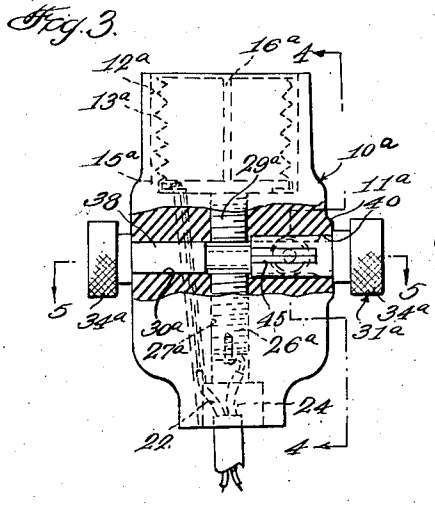


Fig. 3.

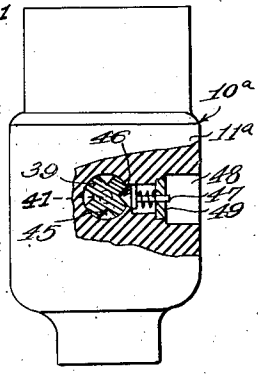


Fig. 4

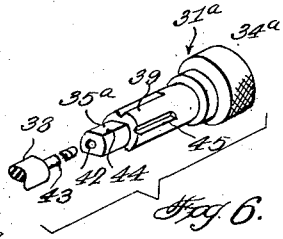


Fig. 6.

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Patented Apr. 4, 1950 2,503,040

UNITED STATES PATENT OFFICE

2,503,040

SWITCH SOCKET

Frank Gradischnig, Jr., Milwaukee, Wis.

Application February 28, 1947, Serial No. 731,512

1 Claim. (Cl. 200—51.17)

1

This invention relates to improvements in switch-equipped sockets for electric bulbs and the like, and the primary object of the invention is to provide a socket of this type which involves fewer than the usual number of parts and wherein the parts are themselves of simple form, whereby the socket can be manufactured at a worthwhile reduction in cost.

Another important object of this invention is to provide a socket of the character indicated above which is substantially foolproof against short circuiting and arcing, and in which the installation and removal of a bulb can be performed more quickly and efficiently.

Other important objects and advantageous features of this invention will be apparent from the following description and the accompanying drawing, wherein for purposes of illustration only two presently preferred embodiments of the invention are set forth in detail.

In the drawing:

Figure 1 is a top plan view of the embodiment shown in Figure 2;

Figure 2 is a general transverse vertical section taken therethrough, showing a bulb in place in the socket; and showing the switch in "off" position in full lines and in "on" position in dotted lines;

Figure 3 is a side elevation of another embodiment of the invention, in which the switch element is rotatable for closing and opening the switch, instead of being movable endwise for this purpose, as in the embodiment shown in Figure 2; and partly in section to show details of the switch mechanism;

Figure 4 is a side elevation taken at right angles to Figure 3, partly in section to show further details of the switch mechanism;

Figure 5 is a horizontal section taken in the line 5—5 of Figure 3;

Figure 6 is an exploded fragmentary perspective view showing details of the rotary switch element;

Figure 7 is a top plan of the spring socket element common to both embodiments, and

Figure 8 is a transverse vertical section taken therethrough.

Referring in detail to the drawings, and first to Figures 1 and 2, the switch equipped bulb socket, generally designated 10, consists of an insulated, generally cylindrical body 11 formed in one end with a cylindrical recess 12 of a diameter to freely receive a threaded socket element 13, having a skeleton bottom 14 seated on and fixed to the bottom of the recess 12 by means of diametrically

2

opposed screws 15. The socket element 13 has a suitable number of circumferentially spaced slots 16 which permit its walls to flex, so that the base 17 of an electric bulb or the like 18 can be properly engaged in the socket element 13 or removed therefrom simply by pushing the base therein or pulling the base therefrom without the delay and trouble required for screwing the base 17 into or out of position in the socket element 13 although this may be done if desired. To increase the spring tension and strength of the socket element 13, a split metal tension ring 19 may be circumposed thereon in the grooves 20 forming the threads of the socket element.

At its opposite end, the body 11 has an axial recess 21 to protectively pass the usual conductors into the body, one such conductor 22 being passed through a bore 23 and connected by one of the screws 15 to the socket element 13, and the other conductor 24 being connected by a screw 25 to the near end of a contactor rod 26 which is threaded in an axial bore 27 formed through the body 11 and opening into the socket recess 12 in line with the central base contact 28 of the base 17 of the bulb or the like 18. A second contactor rod 29 is threaded in the bore 27 to engage the bulb base contact 28 and has its opposite end spaced from the adjacent end of the contactor rod 26 at opposite sides of a transverse bore 30 formed diametrically through the body 11. The ends of the transverse bore 30 are flared as indicated at 31' for a purpose hereinafter described.

For electrically connecting and disconnecting the contact rods 26 and 29, and thereby closing and opening the electrical circuit to the bulb or other fitting engaged in the socket element 13, the longitudinally shiftable or reciprocable switch element 31 is provided, consisting preferably of two insulated round rods 32 and 33 arranged to slide in the bore 30 and having flared buttons or heads 34 on their outer ends, so arranged that when either button is pushed home it will slightly wedge in the adjacent flared bore end 30' and thereby retain the switch element in the "on" and "off" positions, as indicated in Figure 2.

The inner ends of the rods 32 and 33 are spaced and connected by a round contact 35 of the same or slightly greater diameter than the rods, having pins 36 extending from opposite sides thereof into the rods, so that when the switch element 31 is moved by manual pressure upon the buttons 34 to place the contact 35 between the contacts 26 and 29, the "on" position of the switch

mechanism obtains, this being, in the above described embodiment of the invention the dotted line position or left-hand of the switch element 31 the right-hand position being the "off" position.

In the embodiment of this invention shown in Figures 3, 4, 5 and 6, and generally designated 10*a*, the construction is similar to that above described, but the switch element 31*a* is axially rotatable without endwise movement, instead of being movable endwise, to achieve the "on" and "off" positioning of the switch mechanism.

In this case the switch element 31*a* consists of a dielectric rod 38 turning in one end of the transverse bore 30*a* and having a knurled knob 34*a*; and a larger diameter dielectric rod 39 turning in a correspondingly enlarged other end 40 of the bore 30*a* and having a knurled head 34*a*, both heads bearing against the exterior of the body 11*a* so as to preclude any substantial endwise movement of the switch element 31*a*. The inner ends of the rods 38 and 39 are spaced and connected by a contact 35*a* having a bore 42 extending axially therethrough to receive a threaded shank 43 which extends from the inner end of rod 38 therethrough and into a threaded axial recess 41 of rod 39. The contact 35*a* has flattened opposite sides 44 so that when the switch element 31*a* is turned by means of the knobs or buttons 34*a* so that the flats 44 face the contact rods 26*a* and 29*a*, the electrical connection between these rods and the contact 35*a*, which otherwise obtains, will be broken due to the spacing of the contact 35*a* from the rods thereby achieved.

In order to facilitate accurate operation of the switch element 31*a* and hold it in "on" and "off" positions, the enlarged rod 39 is provided at circumferentially spaced intervals corresponding to the positions of the full-round and flattened parts of the contact 35*a*, with longitudinal notches or grooves 45, for cooperation with the conical head 46 of a spring pressed detent 47, which is mounted in a chordal bore 48 formed in the body 11, by a plate 49, through which the shank of the detent works, as shown in Figures 4 and 5.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit and scope of the invention as hereinafter defined by the appended claim.

I claim as my invention:

In a switch structure comprising a body having a longitudinal and a transverse bore therethrough, a pair of rotary elements each of insulation, disposed into the end portions of the transverse bore and provided with knobs at their outer ends, conductor elements in said longitudinal bore, a contact connecting the rotary elements and having flattened sides normally spaced from the conductor elements when said flattened sides opposed said conductor elements, said knobs abutting the outer side of the body to prevent longitudinal movement of said rotary elements, and detent means carried by the body and engageable with one of the rotary elements, said rotary element having the detent means associated therewith being of greater diameter than the other rotary element, said detent means consisting in the provision of a spring pressed plunger, the large rotary element being formed with longitudinal grooves for receiving the spring pressed plunger.

FRANK GRADISCHNIG, JR.

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