May 16, 1944. J. D. KENNELLY 2,349,097

SOCKET

Filed Dec. 5, 1941

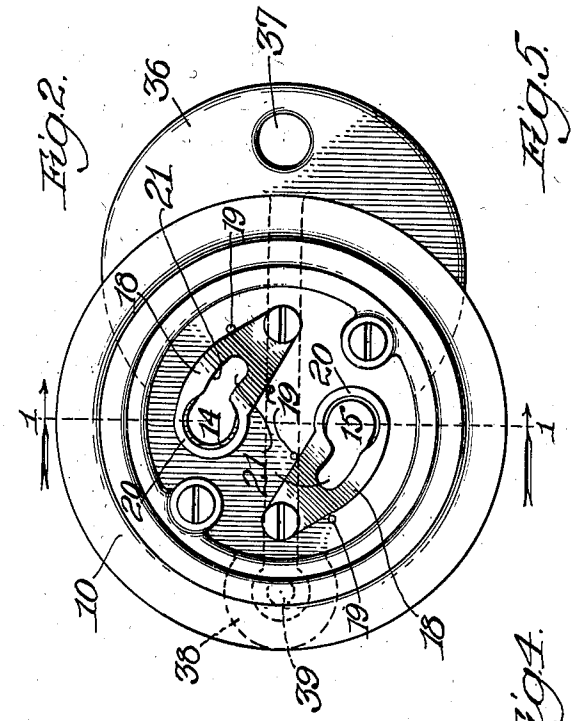


Fig. 2.

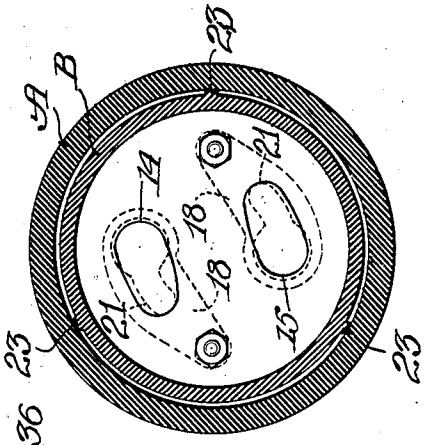


Fig. 5.

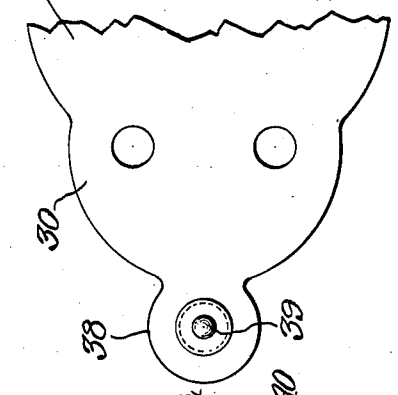


Fig. 4.

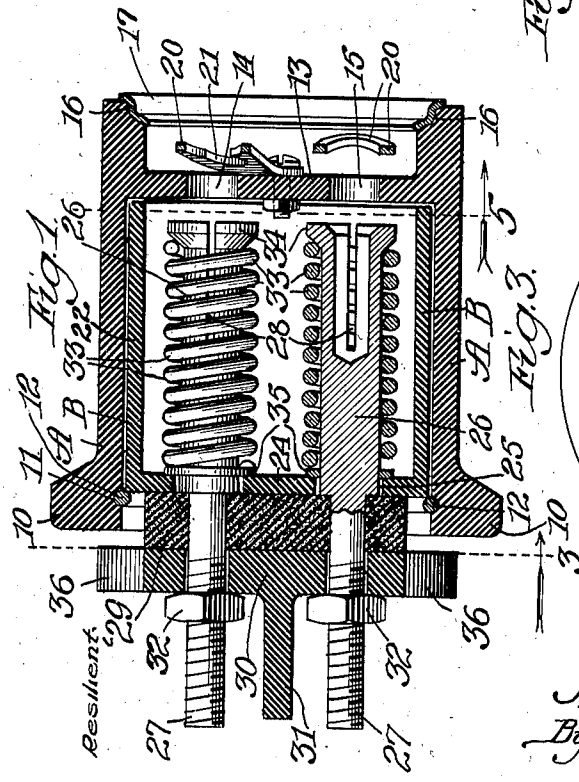


Fig. 1.

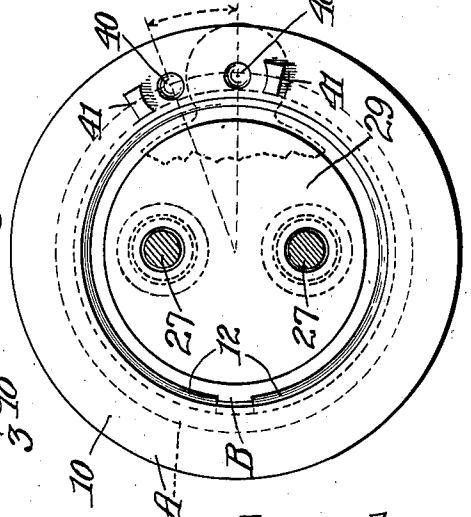


Fig. 3.

Inventor:
Jeremiah D. Kennelly,
By Dawson, Coms & Booth,
Attys.

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SOCKET

Jeremiah D. Kennelly, Oak Park, Ill.

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7 Claims. (Cl. 173—328)

This invention relates to a socket adapted for use with a light bulb. It is particularly useful in connection with a searchlight bulb for heavy duty use.

In the use of large bulbs which have posts received within a socket and which must be rotated to secure in position, there is a severe strain upon the bulb neck, resulting sometimes in breakage and resulting normally in maintaining the bulb under stress while in use.

In such structures, the bulb with its terminal posts has to be aligned with fixed socket members.

An object of the present invention is to provide a new type of socket wherein the terminal members receiving the bulb posts are yieldable and which are alignable with the posts of the bulb, thus relieving the strain heretofore imposed upon the bulb. A further object is to provide a socket structure of simple and sturdy design wherein socket members are mounted for individual or separate yielding within the chamber of the socket. Yet a further object is to provide a socket device equipped with a novel cable support carried by a socket base. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated in a preferred embodiment, by the accompanying drawing, in which—

Figure 1 is a longitudinal sectional view of a socket embodying my invention, the section being taken as indicated at line 1 of Fig. 2; Fig. 2, an end view; Fig. 3, a transverse sectional view, the section being taken as indicated at line 3 of Fig. 1; Fig. 4, a broken plan view of the inner side of the cable support shown removed from the socket; and Fig. 5, a transverse sectional view, the section being taken as indicated at line 5 of Fig. 1.

In the illustration given, A indicates an outer shell; and B, an inner shell providing a socket compartment.

The outer shell A may be formed of Bakelite, hard rubber, or any suitable material. The shell is provided at its rear side with an enlarged bead or flange 10 and on the inner side of the flange is provided with a recess 11 adapted to receive a metal-retaining ring 12. The forward end of the socket is provided with a partition wall 13 having arcuate openings 14 and 15 therein adapted to receive the terminal posts of an electric light bulb. The arcuate openings 14 and 15 permit rotation of the posts in the locking movement of the posts. The forward end of the shell A extends beyond the wall 13 and is provided with a recess 16 adapted to receive an outer ring 17. Pivotally secured upon the partition wall 13 are the locking spring members 18, such structures being of well-known construction and being adapted to engage slots within the terminal posts of the bulb for drawing the posts downwardly into the socket. The members 18 are provided with the usual openings 20 adapted to receive the terminal posts, and the openings merge into narrower slots 21 which serve to confine the posts in locked position. Since such structures are all well known, a detailed description is believed unnecessary. Pins 19 are provided for limiting the swinging movement of the spring members 18.

The inner shell B may be of any suitable type or construction. It comprises a shell body 22 formed of Bakelite, hard rubber, or other suitable material and of a diameter enabling it to be received within the outer shell A. Preferably, the inner shell is provided with a series of longitudinal ribs 23, as shown more clearly in Fig. 5, the outer portions of the ribs bearing directly against shell A and spacing the inner shell B therefrom. Within the space between the shells, carbon, dust, and other materials may collect and may be readily removed upon the separation of the shells. The shell B is provided with a rear wall 24 having openings 25 therein loosely receiving the socket terminals 26.

The socket terminals 26 have rearwardly-extending reduced portions 27, the ends of which are threaded. The forward ends of the terminal sockets are hollow, providing a socket for receiving the bulb posts, such hollow ends being split at 28.

A circular body 29 of soft rubber or other suitable material lies adjacent the rear wall 24 of shell B and is provided with openings receiving the reduced portions 27 of the terminal sockets.

At the rear of the resilient body 29 is a cable-supporting plate 30 having an integral central dividing wall 31 extending between the terminal portions 27. The plate 30 is provided with openings through which the portions 27 extend, and threaded nuts 32 engage the threaded ends of the terminal portions 27 so as to confine the members 27 within the body 29 and plate 30.

Springs 33 are received about the terminal sockets 26, and the ends thereof are confined between the outer head portion 34 of the socket and an inner washer 35.

The cable support 30 may be of any suitable construction. In the illustration given, it consists of an inner circular portion, and merging therewith, a larger outer circular portion 36,

The outer circular portion 36 is provided with an opening 37 to which the usual cable bracket may be secured for confining the cables upon the plate. The cable support 30 is provided at the opposite end with a small part-circular portion 38 which is recessed to receive a spring-pressed locking pin 39. The locking pin 39 is adapted to travel within the arc by dotted lines in Figure 3, terminal hollows or recesses 40 being provided for engagement with the spring-pressed pin 39. If desired, outwardly-extending stops 41 may be provided beyond the openings 40 so as to prevent further circular movement of the inner shell within the outer shell.

Operation

In the operation of the device, the terminal posts of the bulb are extended through the openings 14 and 15 of the outer shell A and through the openings 20 of the locking members 18, and they are further extended within the hollow socket portions of the terminal sockets 26. The terminal sockets 26 are normally secured in the position shown and maintained in a yielding parallel position by the springs 33. However, the terminals yield to permit complete alignment with the posts of the bulb without imposing stress or strain thereon. In the locking operation, the outer shell is rotated relatively with respect to the inner shell B, and the cable plate 30 to lock the posts within the spring members 18. This operation is accomplished readily without placing any substantial strain upon the neck of the bulb because of the yielding of the socket terminals 26. The locking pin 39, during the relative rotation of the inner and outer shells, travels from one opening 40 to the opposite opening and there releasably locks the two shells firmly together. Cables are attached to the reduced portions 27 of the socket members 26 and extend laterally across the circular portion 36, being kept apart by the dividing wall 31.

The operator is able to determine whether the bulb has been rotated to locked or unlocked position by feeling the engagement between the spring-pressed pin and the spaced locking indentations 40. Instead of attempting to align the bulb posts with fixed socket terminals, as has been heretofore the practice, the bulb posts can be now rotated readily to lock them in position while the yielding terminal sockets 26 automatically align themselves with the bulb posts, thus eliminating the strain and stress heretofore experienced.

While in the foregoing description, I have set forth certain details of structure for the purpose of illustrating the invention, it will be understood that such details may be varied widely without departing from the spirit of my invention.

I claim:

1. A socket, comprising an outer shell having an end wall apertured and adapted to receive the terminal posts of a light bulb, an inner shell rotatably supported within said outer shell, a resilient body associated with said inner shell, and terminal sockets extending within said inner shell and yieldably engaging said resilient body, said terminal sockets being adapted to receive said bulb posts.

2. In a structure of the character set forth, a pair of telescopically-associated shells, at least one of said shells having an end-partitioned wall provided with arcuate openings adapted to receive the posts of a light bulb and to permit the rotation of said posts, terminal sockets supported within said inner shell in alignment with said apertures, said sockets being adapted to receive said bulb posts, resilient means supporting said sockets to permit yielding movement thereof when engaging said bulb posts, and a spring member releasably locking said inner shell within said outer shell.

3. In a structure of the character set forth, a pair of telescopically-associated shells, at least one of said shells having an end-partitioned wall provided with arcuate openings adapted to receive the posts of a light bulb and to permit the rotation of said posts, terminal sockets supported within said inner shell in alignment with said apertures, said sockets being adapted to receive said bulb posts, resilient means supporting said sockets to permit yielding movement thereof when engaging said bulb posts, and yielding locking means associated with said inner and outer shells for releasably locking the same at spaced intervals of rotation.

4. In a structure of the character set forth, an outer shell having an end wall provided with arcuate openings adapted to receive the posts of a light bulb, spring-locking members carried by said wall for confining said posts, an inner shell rotatably supported within said outer shell and having an apertured rear wall, a pair of socket terminals extending through the apertures of said rear wall and aligned with the apertures of said end wall for receiving said light posts, a resilient body adjacent said inner shell and receiving said terminal sockets, a cable-supporting plate apertured to receive said terminal sockets, means confining said terminal sockets within said cable plate and resilient body, and means releasably locking said cable plate to said outer shell.

5. In a structure of the character set forth, an outer shell having an end wall provided with arcuate openings adapted to receive the posts of a light bulb, spring-locking members carried by said wall for confining said posts, an inner shell rotatably supported within said outer shell and having an apertured rear wall, a pair of socket terminals extending through the apertures of said rear wall and aligned with the apertures of said end wall for receiving said light posts, a resilient body adjacent said inner shell and receiving said terminal sockets, a cable-supporting plate apertured to receive said terminal sockets, means confining said terminal sockets within said cable plate and resilient body, and means releasably locking said cable plate to said outer shell, said last-mentioned means permitting relative movement of said inner and outer shells within a predetermined arc.

6. In a structure of the character set forth, an outer shell having an end wall provided with arcuate openings adapted to receive the posts of a light bulb, spring-locking members carried by said wall for confining said posts, an inner shell rotatably supported within said outer shell and having an apertured rear wall, a pair of socket terminals extending through the apertures of said rear wall and aligned with the apertures of said end wall for receiving said light posts, a resilient body adjacent said inner shell and receiving said terminal sockets, a cable-supporting plate apertured to receive said terminal sockets, means confining said terminal sockets within said cable plate and resilient body, means releasably locking said cable plate to said outer shell, and a coil spring about each of said terminal sockets for maintain-

ing the same in alignment with the apertures in said end plate.

7. A socket, comprising an outer shell having an end wall apertured and adapted to receive the terminal posts of a light bulb, an inner shell rotatably supported within said outer shell, ribs extending longitudinally of one of said shells and between said shells, a resilient body associated with said inner shell, terminal sockets extending within said inner shell and yieldably engaging said resilient body, and means permitting rotation of said shells to prevent a relative longitudinal movement thereof.

JEREMIAH D. KENNELLY.