March 17, 1925. 1,530,345

B. A. BENSON

DASHBOARD LAMP

Filed Nov. 2, 1922

Fig. 1.

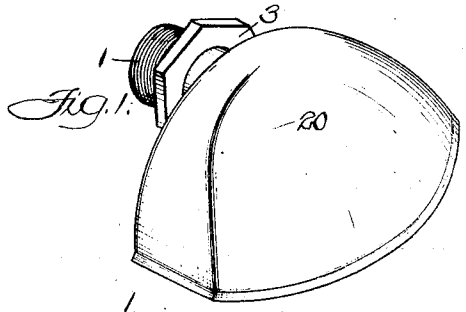


Fig. 6.

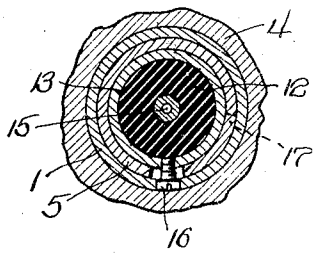


Fig. 2.

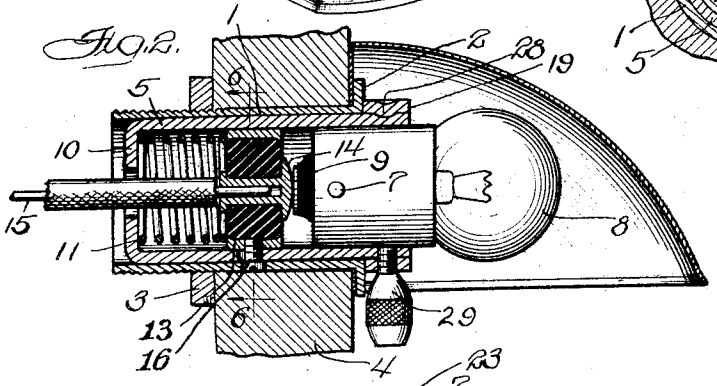


Fig. 3.

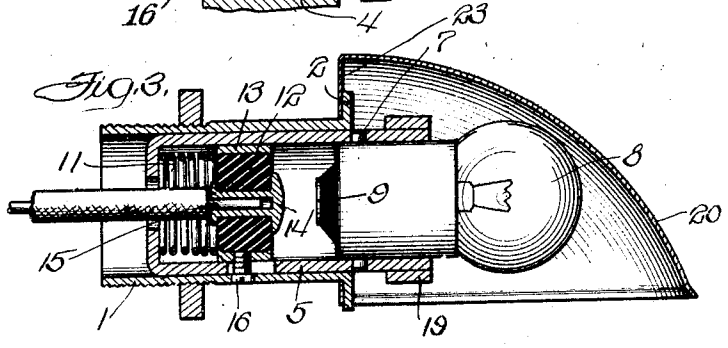
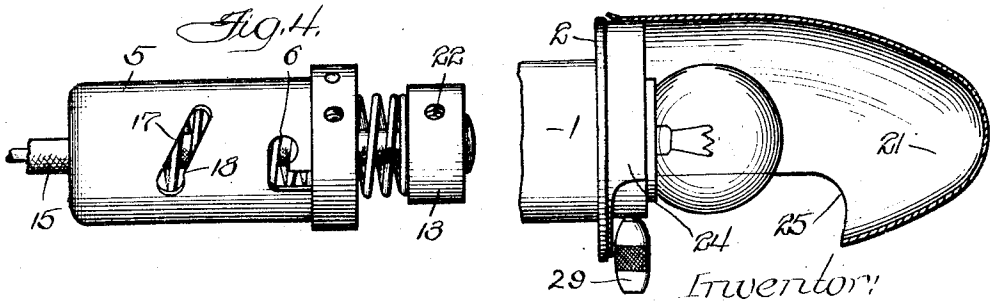


Fig. 5.

Fig. 4.



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1,530,345

UNITED STATES PATENT OFFICE.

BERNHART A. BENSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDMUNDS & JONES CORPORATION, A CORPORATION OF NEW YORK.

DASHBOARD LAMP.

Application filed November 2, 1922. Serial No. 598,499.

To all whom it may concern:

Be it known that I, BERNHART A. BENSON, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Dashboard Lamp; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to sockets for electric lamps and in some of its general aspects aims to provide a simple, inexpensive, compact and easily manipulated socket in which the current can be switched on or off by the partial rotation of a portion of the socket; in which the needed rotational movement can readily be effected at the forward end of the socket; in which one of the contact-making terminals is stationary; and in which the switching is effected by moving the lamp-holding portion of the socket toward or away from the said stationary terminal.

More particularly, my invention aims to provide a lamp-socket having a stationary outer shell and a stationary terminal-carrying body member mounted within this shell, and having an inner shell extending between the outer shell and the said body member, the inner shell being equipped for interlocking with the base of a lamp. It also aims to provide conveniently arranged means for imparting a rotational movement to the inner shell, and desirably aims to provide such means in the form of a handle extending radially of the socket and projecting through the mouth of the hood or cowl if one is used in connection with the socket.

Furthermore, my invention aims to provide cooperating cam means associated with the inner and outer shells for causing a relative rotational movement thereof to produce a corresponding relative longitudinal movement thereof, and desirably aims to employ as a portion of the cam means the fastening member which connects the outer shell to the terminal-carrying body member so as to support the said body member in a stationary position. It also aims to provide spring means operatively interposed between the said body member and the inner shell for continuously tending to move the inner shell longitudinally in one direction with respect to the outer shell; aims to provide simple means (desirably in the form of a stiffening collar secured to the mouth of the inner shell and also arranged for supporting the operating handle) for limiting the said relative movement of the two shells by the spring; and aims to provide the cam means with a suitable latching formation for locking the two shells in a predetermined position after they have been relatively moved against the resistance of the spring. Moreover, my invention aims to provide a socket of the class described in which the contact member carried by the body member also affords a wire terminal, in which the wire can readily be connected to this terminal while the body member is drawn entirely out of the socket, in which the detaching of a single cam-operating element in the form of a screw will permit both the body member and the spring to be withdrawn from the socket shells, and in which the said single screw serves as the sole means for securing the body member and the two shells in their normal operative relation. Still further and also more detailed objects will appear from the following specification and from the accompanying drawings, in which—

Fig. 1 is a perspective view of a dash board socket embodying my invention and having a hood fastened to the outer shell for downwardly deflecting and distributing the light of the lamp and for shielding the driver of the automobile from the direct rays of light of the lamp.

Fig. 2 is an enlarged central and longitudinal section through the same embodiment, showing the socket in its "on" or "circuit-closing" position.

Fig. 3 is a similar section taken after the handle or lever has been moved to partially rotate the inner shell and to cause the cam means to move the inner shell for-

wardly so as to bring the lamp out of contact with the stationary wire terminal and contact member.

Fig. 4 is an elevation of the inner shell as well as the body and spring members of the socket and the wire connected to the latter, showing these as they appear when the handle and the fastening screw have been removed and when the spring has expanded to slide the body member out of the inner shell.

Fig. 5 is a fragmentary central and longitudinal section showing the forward portion of another socket embodying my invention, namely one in which the outer shell is equipped with a collar having a forwardly directed cylindrical portion for holding a hood of the cowl type.

Fig. 6 is a transverse section taken along the line 6—6 of Fig. 1.

In the embodiment of Figs. 1 to 3 inclusive, the lamp socket of my invention includes an outer shell 1 equipped at its forward end with an outwardly directed flange 2 and having its rear end portion threaded for receiving a clamping nut 3 by means of which the flange 2 can be clamped against the face of a dashboard 4, this dashboard having a bore through which the said outer shell extends. Extending into this outer shell and projecting somewhat beyond the forward end thereof is an inner shell 5 which has its forward end equipped with opposed bayonet slots 6 for interlocking with the usual lateral pins 7 on the base of an incandescent lamp 8, the lamp being here shown as of the socalled single pole type in which one terminal of the filament is grounded to the metal shell of the lamp base while the other terminal of the filament is grounded to an axial contact 9 disposed on the rear end of the lamp base.

The inner shell 5 desirably has its rear end contracted to form a perforated bottom 10 which takes the thrust of a compression spring 11 interposed between this bottom of the shell and the body member of the socket. This body member is here shown as including an insulating disk 12 pressed tightly into a metal sleeve 13 which fits slidably into the bore of the inner shell 5, and a combination wire-terminal and lamp-contacting member, the latter member desirably consisting of a hollow rivet 14 extending through the insulating disk 12 and presenting a head on the forward face of its insulator for contacting with the axial lamp terminal 9, the rivet 14 being bored out from its rear end as shown in Figs. 2 and 3 so that the tip of a wire 15 can be soldered into the same.

Intermediate of its length, the outer shell 1 has a transverse bore at one side for receiving the head of a screw 16 which extends through a cam slot 17 in the inner shell and which is threaded into the body member of the socket, for which latter purpose the screw 16 is desirably threaded at its inner end into the said metal sleeve 13 as shown in Figs. 2, 3 and 6. The slot 17 through which the screw 16 extends is disposed substantially spirally of the inner socket shell and desirably has a recess formation 18 adjacent to its rear end, this recess formation being joined to the main portion of the slot at a ridge 18 over which the fastening screw 16 can ride when the parts are relatively rotated to a sufficient extent in one direction. To effect such rotation, I provide means associated with the forward end of the inner shell and for this purpose desirably provide a collar 19 mounted on the forward end of the inner shell and secured against rotation with respect to the inner shell by indentations such as the indentation 28 of Fig. 1. Then I desirably also employ this collar 17 for affording the additional length of thread which is desirable for connecting the inner shell to the threaded stem of a handle 29 by means of which the above described rotational movement can be effected.

In assembling the socket as above described, the spring 11 is slid into the inner shell 5, and the wire 15 is secured to the combined wire terminal and contact member 14 while extending through the bore of the spring and through the perforation in the bottom 10 of the inner shell. Next, the inner shell is inserted in the outer shell 1 and the body member of which the wire terminal 14 forms a portion is forced back into the inner shell against the pressure of the spring until the threaded bore 22 in the collar 13 of the body member alines both with a portion of the cam slot 17 of the inner shell and with the lateral bore in the outer shell which bore normally houses the head of the screw 16, the alining of the latter being secured by suitably moving the handle 29. Then this screw 16 is inserted so as to hold the body member stationary with respect to the outer shell while also furnishing a cam element adapted to travel in the slot 17.

On releasing the hold on the handle 29, the spring will slide the inner shell still further rearwardly until the shank of the screw 16 engages the forward end of the cam slot 17, which forward end appears as the upper end portion in the view of Fig. 4. This brings the bayonet catch formation 6 on the inner shell into such a position with respect to the body member that the wire terminal 14 on the latter will be engaged by the axial tip 9 of a standard lamp when such a lamp is interlocked with the bayonet slots on the forward portion of the inner shell in the usual manner as illustrated in Fig. 2. From then rotating the inner shell by moving the handle 19 in a direction in which

it would move toward the observer in Fig. 2, the engagement of the upper wall of the cam slot 17 with the shank of the screw 16 will cause the inner shell to move forwardly of the outer shell during such rotational movement. As soon as this movement has extended to the point where the shank of the screw 16 passes over the ridge 18, the shank of the screw 16 will snap into the recess at the rear end of the cam slot, whereupon the ridge 18 will act as a shoulder for locking the inner shell against rearward sliding with respect to the screw 16 and the outer shell. When the inner shell has been moved to this position as shown in Fig. 3, the lamp is moved so far forward that its axial terminal 9 is entirely out of contact with the wire terminal 14, thus switching the current off the lamp. However, by making the ridge 18 quite obtuse, I provide merely a yielding latch, so that a slight pressure on the handle 29 tending to move the latter in a direction reverse to that above mentioned will snap the ridge 18 of the cam slot over the shank of the screw 16, thereby permitting the spring 11 to move the inner shell of the socket rearwardly until the axial terminal of the lamp engages the wire terminal on the body member of the socket. The socket can therefore readily be switched on or off by merely moving the handle 29 in one direction or the other, and the single spring serves for holding the parts either in the circuit-closing or circuit-opening position, while also serving to hold the contacting elements 9 and 14 in firm contacting relation when the socket is in its "on" position.

If the socket of my invention is to be used as a dashboard lamp, I desirably slip the outer shell 1 through a corresponding bore in the back 23 of a reflector 20, which reflector is shown in Figs. 1 to 3 as being of a scoop shape so as to deflect the light in a wide spread downwardly while permitting the handle 29 to be reached with ease from below the reflector. However, I do not wish to be limited to the use of any particular shape of reflector in connection with my lamp socket, nor to the employment of the same on the dashboard, nor to the various details of the construction and arrangement above disclosed. Obviously, many modifications might be made without departing either from the spirit of my invention or from the appended claims. For example, I can stop the rearward sliding of the inner shell either by the engagement of the forward end of the cam slot with the shank of the fastening screw, or by having the rear edge of the collar 17 engage the face of the flange 2 on the outer shell.

Neither do I wish to be limited to the use of any particular form of reflector-holding portion on my socket. For example, Fig. 5 shows the forward portion of another socket embodying my invention, namely one having the collar 2 on the outer shell provided with a forwardly directed collar 24 upon which the rear end of a cowl 21 can readily be sleeved. In this embodiment, the cowl has a more restricted downward opening 25 and the collar 24 has a corresponding opening through which the operating handle 19 projects. In either case, it will be obvious that by having the inner socket shell project forwardly of the outer shell, I can readily provide actuating means (here shown in the form of a lever or handle 29) in front of this outer shell. By so doing, I avoid the necessity of having the outer shell project far beyond the dashboard, as has been true of sockets employing a switching disk or the like disposed behind the lamp. Moreover, since the collar 17 at the forward end of the inner shell can readily be reached, this might be manually rotated even without the use of a handle for effecting the switching, hence I do not wish to be limited to the use of such a handle or lever.

I claim as my invention:—

1. A lamp socket comprising an outer shell, an inner shell extending into the outer shell, the inner shell being slidable and rotatable with respect to the outer shell, the inner shell being equipped at one end with means for holding a lamp and extending at its said end beyond the outer shell, a contact element mounted within the inner shell and stationary with respect to the outer shell, and cooperating means associated respectively with the said two shells for causing a relative rotational movement of the two shells to afford a relative longitudinal movement thereof.

2. A lamp socket comprising an outer shell, an inner shell extending into the outer shell, the inner shell being slidable and rotatable with respect to the outer shell, the inner shell being equipped at one end with means for holding a lamp and extending at its said end beyond the outer shell, a contact element mounted within the inner shell and stationary with respect to the outer shell, and cooperating means associated respectively with the said two shells for causing a relative rotational movement of the two shells to afford a relative longitudinal movement thereof, the said cooperating means comprising a cam slot on the inner shell and an element extending through the cam slot and fast with respect to the outer shell.

3. A lamp socket comprising an outer shell, an inner shell extending into the outer shell, the inner shell being slidable and rotatable with respect to the outer shell, the inner shell being equipped at one end with means for holding a lamp and extending at

its said end beyond the outer shell, the inner shell having a slot extending substantially spirally thereof, a circuit-terminal and contact-element disposed within the inner shell, an insulating body carrying the said element, and a connecting element fast with respect to both the insulating body and the outer shell and extending through the said slot, the slot and the connecting element cooperating upon relative rotary movement of the two shells to effect relative longitudinal movement thereof.

4. A lamp socket comprising an outer shell, a circuit terminal rigidly mounted therein, an inner shell extending into the outer shell; the inner shell having means at one end for holding a lamp, and having means at one end whereby the inner shell may be moved to bring the lamp into or out of contacting relation to the circuit terminal; and means continuously urging such movement in one direction.

5. A lamp socket comprising an outer shell, a circuit terminal rigidly mounted therein, an inner shell extending into the outer shell; the inner shell having means at one end for holding a lamp, and having means at one end whereby the inner shell may be moved to bring the lamp into or out of contacting relation to the circuit terminal; means continuously urging such movement in one direction, and means for latching the inner shell against such movement.

6. A lamp socket comprising an outer shell, a circuit terminal rigidly mounted therein, an inner shell extending into the outer shell, the inner shell having means at one end for holding a lamp and having means at one end whereby the inner shell may be moved to bring the lamp into or out of contacting relation to the circuit terminal, spring means continuously tending to move the inner shell to bring the lamp out of its said contacting relation, and means for latching the inner shell against such movement when the lamp is contacting with the circuit terminal.

7. A lamp socket as per claim 4, in which the means whereby the inner shell may be moved include a collar mounted on one end of the inner shell.

8. A lamp socket as per claim 4, in which the means whereby the inner shell may be moved include a collar mounted on one end of the inner shell and a handle carried by the collar.

9. A lamp socket as per claim 4, in which the means whereby the inner shell may be moved include a handle fast on the inner shell and disposed beyond the adjacent end of the outer shell.

10. A lamp socket comprising an insulating body, wire-terminal and lamp-contacting means mounted thereon, a shell carrying the insulating body, a lamp-holding member extending between the shell and the insulating body and movable with respect to both of the latter to bring a lamp held by the said member into or out of contact with the said lamp-contacting means, and cooperating means associated with the lamp-holding member and one of the members between which the latter extends for causing a rotational movement of the lamp-holding member to move the latter longitudinally with respect to the said shell so as to move the lamp into or out of contact with the said lamp-contacting means.

11. A lamp socket comprising an insulating body, wire-terminal and lamp-contacting means mounted thereon, a shell carrying the insulating body, a lamp-holding member extending between the shell and the insulating body and movable with respect to both of the latter to bring a lamp held by the said member into or out of contact with the said lamp-contacting means, and yielding means for maintaining the lamp-holding member in either of two positions between which it is thus movable and in only one of which it holds the lamp in contacting relation to the said lamp-contacting means.

12. A lamp socket as per claim 10, in which the said cooperating means include a cam slot in the lamp-holding member and an element extending through the slot and fast with respect to the shell.

13. A lamp socket comprising an insulating body, wire-terminal and lamp-contacting means carried thereby, an inner shell slidably housing the insulating body and provided at its forward end with means for holding a lamp, the said inner shell having a perforated rear end and having a cam slot in its side; an outer shell within which the inner shell is slidable, a fastening member rigidly connecting the insulating body with the outer shell and extending through the same slot, the cam slot having its rear end formed for latching the fastening member in a rearward position, and a compression spring interposed between the insulating body and the rear end of the inner shell for continuously urging the inner shell rearwardly with respect to the outer shell and the fastening member, and means on the inner shell disposed forwardly to the outer shell whereby the inner shell may be manually rotated to cause the cam slot to cooperate with the fastening member for moving the inner shell forwardly against the resistance of the spring.

14. A lamp socket comprising an insulating body, wire-terminal and lamp-contacting means mounted thereon, a shell carrying the insulating body, a lamp-holding member extending between the shell and the insulating body and movable with respect to both of the latter between two positions in which a lamp held by the lamp-holding member is

respectively in and out of contact with the said lamp-contacting means, yielding means operatively interposed between the insulating body and the lamp-holding means for continuously urging a relative movement thereof in one direction, and cooperating means respectively fast on the insulating body and the lamp-holding member for latching the latter in one of its said positions.

Signed at Chicago, Illinois, October 28th, 1922.

BERNHART A. BENSON.