Oct. 27, 1959 L. W. LESSLER 2,910,554

FLASH BULB RETENTION AND EJECTION DEVICE

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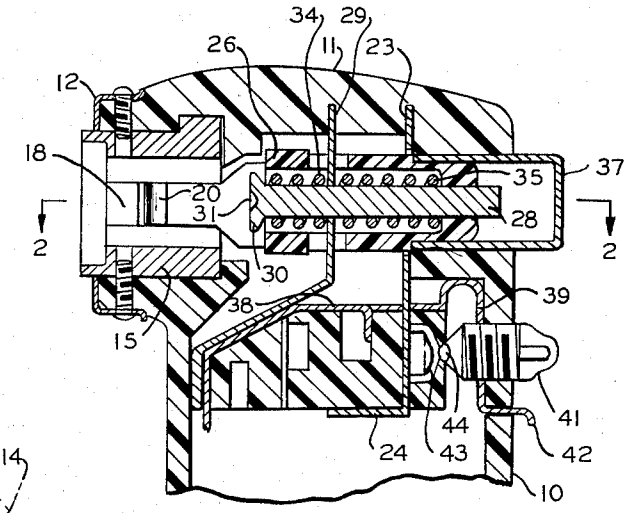


FIG. 1

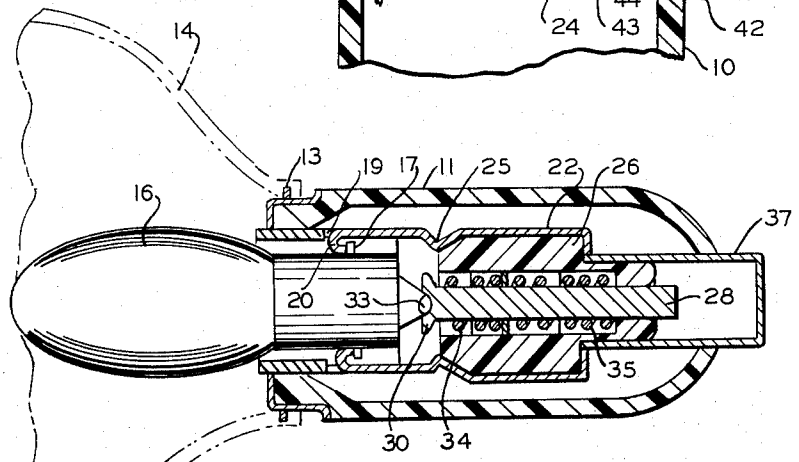


FIG. 2

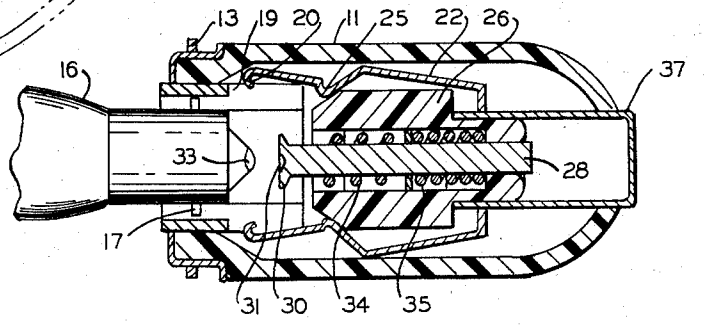


FIG. 3

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FLASH BULB RETENTION AND EJECTION DEVICE

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2 Claims. (Cl. 200—51.08)

The present invention relates to flash bulb ejector socket assemblies used in photographic flash lamps and is particularly directed to such socket assemblies wherein a flash bulb having a bayonet-type base may be speedily ejected from the socket after being fired and a new bulb speedily inserted into the socket.

Flashlight photography has become quite common and photographers who take action pictures by the use of flashlights are aware of the necessity and desirability of being able to remove a fired flash bulb from its socket and replace it with a new one in the fastest possible time. These bulbs become very hot when fired and will burn the fingers if an attempt is made to grasp them for removal from the socket. Hence, ejector sockets have been proposed in numerous designs for solving the aforesaid problems.

A primary object of the persent invention is to provide a novel ejector socket assembly by which mechanism within the socket will propel the bulb out of the socket upon manipulation of a button readily available to the operator who may then simply thrust the new bulb into the socket and be ready for a fresh exposure.

A further object of the present invention is to provide a novel ejector socket assembly wherein a bulb of the type having a bayonet base with radially projecting prongs may be mounted in the socket by a single axial thrust and gripped and held there until fired and then ejected at the will of the operator without the operator having to handle the bulb.

A particular feature of the invention is that the ejector socket assembly comprises relatively few parts, is simple to operate, and lends itself to mass production.

Other objects and features will be apparent from the following description of the invention, pointed out in particularity in the appended claims and taken in connection with the accompanying drawing in which:

Fig. 1 is a side elevational view in section showing the bulb in operative position;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1; and

Fig. 3 is a view similar to Fig. 2 with the apparatus in ejection position.

Referring to the drawing in detail, the housing indicated by numeral 10 may be of usual construction and is only partially shown since it forms no part of the present invention.

The upper part of the housing which forms the lamp socket comprises an open-ended casing 11 made of any suitable insulating material, preferably molded plastic.

Surrounding the open end of the casing is a collar 12 having oppositely disposed pins 13 for receiving a reflector shown in dotted line. Positioned within the open end of the casing and suitably anchored thereto is a cylindrical metal shell 15 which is adapted to receive the conventional bayonet-type base of a flash bulb 16 which has laterally projecting pins 17 for locking it into the socket.

The shell 15 has laterally disposed grooves 18 through which the pins 17 may pass. Coextensive with the grooves 18, a cutout portion 19 is formed in the wall of the shell 15. The latter is for the purpose of accommodating hook portions 20 of a U-shaped spring 22 which is held in the casing by means of an upper supporting member 23 and a downwardly extending supporting member 24 solidly anchored in the casings 11 and 10, respectively.

The U-shaped spring member 22 also has cam formation 25 which rests on a wedge piece 26 made of insulating material and disposed in such manner as to be slideable between the legs of the U-shaped spring 22. The wedge piece 26 has centrally located cutout portions, one in the horizontal direction so as to accommodate a contact pin 28 and the other in the vertical direction through which a plate 29 may pass.

The plate 29 is solidly anchored in the housings 11 and 10 and also has a suitable aperture for the pin 28 to pass through. The latter has a flattened head 30 with a depression 31 for seating the center contact 33 of the flash bulb 16.

Surrounding the pin 28 is a spring 34 which abuts against the head 30 and the plate 29. A second spring 35 surrounds the pin 28 and abuts against the other side of the plate 29 and the inner face of the cutout portion of the wedge piece 26. Release button 37 is cup-shaped and is secured to the wedge piece 26. The downwardly extending supporting member 24 is so bent as to form a surface for contacting one terminal of a power source, such as a battery, not shown here; whereas the lower end of the plate 29, extending downwardly, provides a conductor from the power source to the center contact 33 of the flash bulb 16.

A cross member 38 in contact with the plate 29 is shaped into a flexible support 39 accommodating the base of a test lamp 41. The support 39 has a finger piece 42 extending from the casing 10. The downwardly extending support member 24 has a tab 43 so positioned that, upon pressing the finger piece 42 inwardly, it will engage the center contact 44 of the test lamp 41.

The operation of the socket and ejector mechanism may readily be seen from the illustration. The flash bulb 16 may be inserted into the shell 15, the pins 17 riding past the hook portion 20 which closes behind them retaining the flash bulb 16 in the socket. When ejection is desired, the release button 37 is pressed, causing the wedge piece 26 to move forward and engage the cam formation 25, thereby separating the leg portions of the U-shaped spring 22 and disengaging the hook portions 20 from the pins 17. The spring 34 which was depressed by the insertion of the lamp 16 will now eject the latter as it abuts against the plate 29 and the head 30 of the pin 28.

The forward motion of the wedge piece 26 compresses the spring 35 which abuts against the plate 29 so that, upon removing the pressure from the button 37, the wedge piece is retracted by the spring 35 into its original position allowing the legs of the U-shaped member 22 to close for the acceptance of the flash bulb to be inserted into the socket.

Whenever it is desired to test the condition of the power source, such as the battery, the finger piece 42 is pressed, closing the circuit for the test lamp 41.

I claim:

1. A flash lamp ejector socket for receiving a lamp bulb having projecting locking pins, comprising a casing, a cylindrical shell supported in said casing and having oppositely disposed longitudinally extending grooves for guiding said pins into said socket, locking means including a generally U-shaped spring having a pair of leg members, each placed alongside one of said grooves and bent into cam formation, a hook portion formed at the end of each leg and adapted to engage said pins thereby locking said bulb in said socket, said U-shaped spring

having an upwardly and downwardly extending supporting member anchored in said casing, a release mechanism including an insulated wedge piece placed within said U-shaped spring, said piece having a cutout portion, a sliding button attached to said piece and extending from said casing, a contact pin slideably supported in said piece, a pair of springs surrounding said pin, a plate vertically extending through said cutout having an aperture through which said pin may slide, said plate forming an abutment for each of said springs whereby, upon inward sliding of said button, said wedge piece engages said cam formation causing spreading of said leg members and disengagement of said hook portions, one of said springs abutting against said plate forcing said pin for ejection of said bulb and the other of said springs abutting against said plate providing retraction of said wedge piece upon release of said button.

2. An ejector socket in accordance with claim 1 wherein said supporting member forms a contact for one terminal of an electric power source and said plate forming a conductor for the other terminal thereof.

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