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RAPID-CHANGE FLASH LAMP SOCKET

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FIG. 1

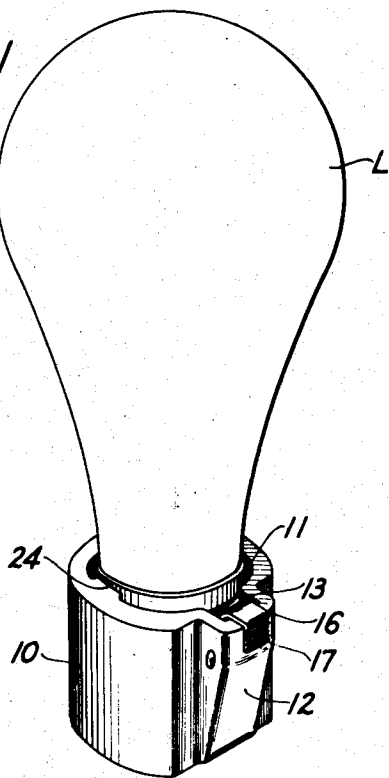


FIG. 2

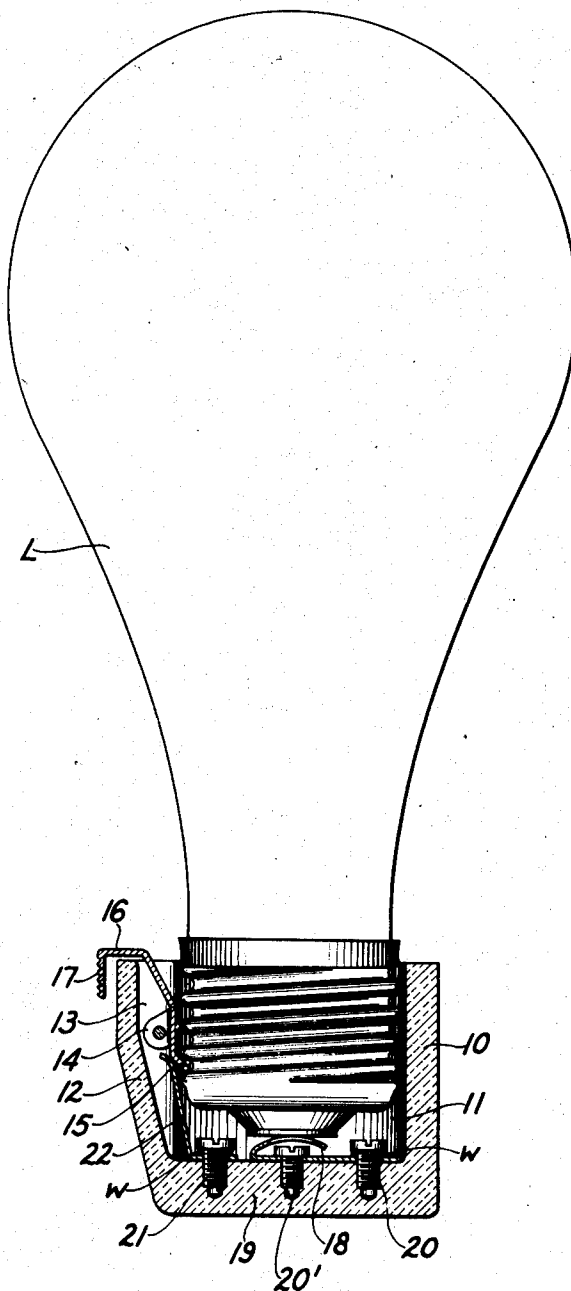


FIG. 3

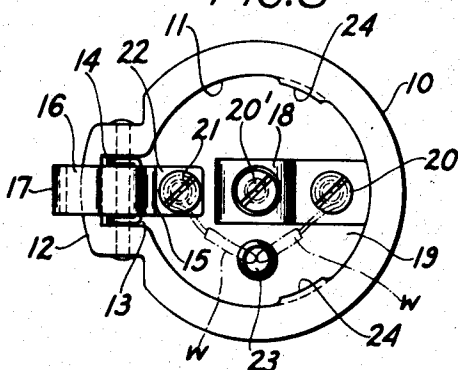
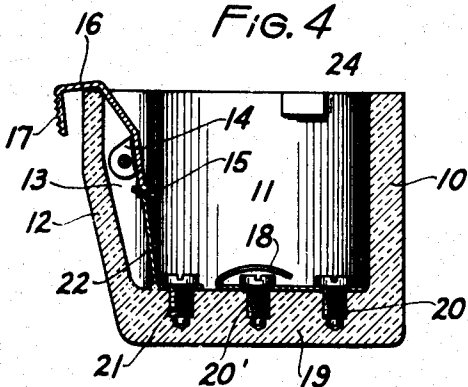


FIG. 4



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RAPID-CHANGE FLASH LAMP SOCKET

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4 Claims. (Cl. 173-358)

The present invention relates to lamp sockets, and particularly to a lamp socket for use in conjunction with flashlight synchronizers wherein it is desirable to be able to replace a burned lamp with a new one in a rapid manner and requiring the handling of the burned lamp a minimum length of time.

This application is a continuation-in-part of my copending application Serial No. 325,171, filed March 21, 1940.

Newspaper photographers, and others, who take action pictures with the use of flashlights are aware of the necessity and desirability of being able to remove a burned flash lamp from its socket and replace it with a new one in the fastest possible time. The ability to so change flash lamps in a socket is not dependent alone upon the fact that an action shot may be lost, but also upon the fact that it is very often necessary to remove a lamp from its socket before it is cooled sufficiently so that it will not burn the person handling it. While it is desirable to be able to change the lamps in a socket in a rapid manner, it is imperative that the lamp when inserted into the socket be properly situated to engage the electrical contacts of the socket and to be positively locked in the socket against accidental removal.

Therefore, one object of the present invention is to provide a flash lamp socket which permits a lamp to be inserted thereinto and removed therefrom in a rapid manner.

Another object is to provide a flash lamp socket which permits a lamp to be inserted into, or removed from, the same without necessitating a rotation of the lamp.

And still another object is to provide a socket of the type set forth which includes means for releasably locking a lamp in place therein.

And yet another object is to provide a socket of the type set forth wherein a part of the releasable locking means constitutes one contact of the socket to insure the lamp properly engaging the socket contacts when placed in said socket.

The novel features that I consider characteristic of my invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of the specific embodiments when read in connection with the accompanying drawing in which,

Fig. 1 is a perspective of a flash lamp socket constructed in accordance with the preferred em-

bodiment of the present invention, and having a lamp located therein;

Fig. 2 is an enlarged sectional view of the socket with a flash lamp shown in place therein,

Fig. 3 is a top plan view of the socket, and

Fig. 4 is a sectional view corresponding to Fig. 2, but showing the flash lamp removed.

Like reference characters refer to corresponding parts throughout the drawing.

Briefly, the socket constituting the present invention comprises a casing larger in diameter than the base of the lamp adapted to be placed therein so that the lamp may be inserted into, or removed from, the casing by a straight thrust, or retraction, of the lamp axially of the casing. The lamp is adapted to be held against one socket contact in the base of the casing by a releasable locking member movably mounted on the side wall of the casing and normally extending into the casing in a direction to permit of a lamp being thrust into the casing but positively engaging a recess in the base of the lamp to positively prevent its accidental removal from the casing. The releasable locking member is movable to a release position, and preferably constitutes one of the socket contacts to insure of the lamp being properly connected to the socket contact when placed in the casing.

Referring now to the drawing, a preferred embodiment of the rapid-change socket constituting the present invention may comprise a casing 10 preferably made of an insulating material and having a circular open end 11 slightly greater in diameter than the base of the lamp L it is to receive so that the lamp can be directly pushed into, or pulled out of, the same. One portion of the wall of the casing is built out as shown at 12 and is provided with a recess 13 extending to the bottom of the interior of the casing and being in communication therewith. Pivotaly mounted in the recess 13 is a latch member 14 one end 15 of which is adapted to extend into the casing to engage the upper side of the threads on the base of a lamp L to positively prevent its being pulled from the casing. The other end 16 of the latch member extends to the outside of the casing and provides an accessible fingerpiece 17 for pivoting the latch member to its inoperative, or release, position.

An electrical contact 18 is located in the bottom 19 of the casing in a position to be engaged by the terminal in the bottom of the lamp. This contact 18 may be formed as shown so that it will possess an inherent resiliency which will tend to force the lamp from the casing when the latch

is released. If it is desired, this contact 18 may be mounted on a spring, not shown, which would be capable of completely lifting the lamp from the casing upon release of the latch. The contact 18 may be fixed to the bottom of the casing in any suitable manner, but for the purpose of illustration I have shown it held in place in said casing by a pair of screws 20, 20', and of which pair, screw 20 may constitute one binding post for a wire W of an electric circuit.

The second binding post 21 for the other wire W of the electric circuit may be located in the bottom 19 of the casing. This binding post is electrically connected to a contact strip 22 by acting to hold the same in place in the casing, or if the contact strip is fastening in the casing in any other suitable way, then by holding the wire W in contact therewith, as shown. The contact strip 22 extends upwardly from the bottom of the casing into engagement with the end 15 of the latch member, and is preferably made in a spring material so that it will normally force the end 15 of the latch member toward the interior of the casing in addition to electrically connecting said latch member to the binding post 21 so that it becomes one electrical contact of the socket. The bottom of the casing may be provided with a bore 23 through which the wires W of the circuit may extend for connection to the binding posts 20 and 21, or these binding posts may be connected into a circuit in the manner shown in my above referred to copending application of which this application is a continuation in part. As only four or five volts are all that are needed, or generally used, for discharging a flash lamp, there is no danger of a person getting a shock from the latch member 14 is the same be made entirely of metal.

The end 15 of the latch member is normally directed toward the bottom of the casing, as best shown in Fig. 4, so that it will not prevent a lamp from being pushed into the casing, but will be pushed into the recess 13 upon such insertion of a lamp. However, when a lamp has been pushed clear into the casing the end 15 of the latch member 14 snaps into the groove between two threads and positively holds the lamp in the casing. It goes without saying that this socket is not limited to use with a lamp having a threaded base, but could be used with any lamp the base of which was provided with any sort of recess having an edge which the end 15 of the latch member would positively engage so long as the recess was located at a proper distance from the bottom of the lamp base to cooperate with said end 15 when the lamp is fully seated in the casing.

It will be readily appreciated that the amount that the end 15 of the latch member 14 can pivot into the casing will be limited due to the fact that the end 16 comes into contact with the upper edge of the built-out portion 12 on the casing wall, and that, for this reason, the greater the force tending to move the lamp from the casing, the greater will be the locking action of the latch member. The resiliency inherent in the contact 18 on the bottom of the casing 10 normally tends to force the lamp out of the casing and against the end 15 of the latch member so that the lamp will be firmly held in the socket. In order to more securely position the lamp in the casing, I have provided the upper edge of the same with two radial projections 24 arcuately spaced from one another on the periphery of the casing and disposed on the sides of the casing

opposite from the latch member, see Figs. 1, 3, and 4. These projections do not extend into the casing a sufficient distance to prevent a lamp from being pushed directly into, or pulled directly from, the same, but are adapted to engage the groove between two threads on the lamp base when the same is pushed there-toward by the spring action of the latch member. In order to remove a lamp from the casing it is only necessary to press inwardly upon the fingerpiece 17 of the latch member. This will cause the end 15 of the latch member to be retracted from engagement with the base of the lamp whereupon the resiliency of the contact 18 will tend to eject the lamp from the casing to an extent sufficient to raise the threads above the end 15 of the latch member, after which the lamp may be entirely removed from the socket by a straight pull thereon. If the contact 18 is supported on a compression spring of sufficient strength the lamp may be completely ejected from the casing by the action of such spring when the latch member is released.

From the above description it will be readily understood that the flash lamp socket constituting the present invention is such that the lamp can be rapidly inserted into, or removed, therefrom by a straight thrust or pull of the lamp axially of the socket. The lamp is automatically and positively locked in proper position in the socket upon being thrust thereinto, and is securely held in said socket until the locking means is manually released whereupon the lamp is automatically ejected from the socket at least to the extent that the locking means in the socket cannot re-engage it. It is very advantageous to have the latch member constitute one socket contact as shown because the proper engagement of the lamp terminals and socket contact is insured without requiring that the shell of the lamp base directly engage the walls of the socket to affect the electrical connection of one lamp terminal with one socket contact as has heretofore been necessary.

Although I have shown and described certain specific embodiments of my invention, I am fully aware that many modifications thereof are possible. My invention, therefore, is not to be limited to the precise details shown and described but is intended to cover all modifications coming within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A flash lamp socket for a lamp having a threaded base comprising a casing slightly larger in diameter than the threaded base of a lamp adapted to be inserted into the same, means normally permitting a lamp to be pushed into said casing and for releasably locking the same against being pulled out of the same after being inserted therein, said means including a latch member pivotally mounted in the wall of said casing to move in a clockwise direction from a locking position, wherein it extends into, and toward the bottom of, said casing to positively engage a thread on the base of the lamp, to a release position, wherein it is retracted from the space ordinarily occupied by the base of a lamp, means normally moving said latch member in a counter clockwise direction to its locking position, and means extending to the outside of said casing for moving said latch member to its release position.

2. A flash lamp socket for a lamp having a

threaded base comprising a casing slightly larger in diameter than the threaded base of a lamp adapted to be inserted into the same, means normally permitting a lamp to be pushed into said casing and for releasably locking the same against being pulled out of the same after being inserted therein, said means including a lever pivotally mounted in a recess provided in one wall of the casing to move in a clockwise direction from a locking position, wherein one end thereof extends into and toward the bottom of said casing, to a release position, wherein said end is retracted from said casing into said recess, a spring normally moving said lever in a counter clockwise direction to its locking position, and an arm extending outside of said casing and connected to said lever for moving the same to its release position.

3. A flash lamp socket comprising an insulating casing slightly larger in diameter than the base of a lamp adapted to be inserted into the same, a resilient electrical contact in the bottom of said casing for electrically engaging the contact in the bottom of the lamp, means normally permitting a lamp to be pushed into said casing and for releasably locking the same against being pulled out of the same after being inserted therein, said means including a lever forming the second contact of said socket and pivotally mounted in a recess in the wall of said casing to move between a locking position, wherein it extends into and toward the bottom of said casing to engage the shell on the base of a lamp inserted into said casing, and a release position, wherein it is retracted from said casing into said recess, a spring nor-

mally moving said lever to its locking position, and an arm extending to the outside of said casing and operatively connected to said lever for moving the same to its release position.

4. A flash lamp socket comprising an insulating casing of slightly larger diameter than the threaded base of a lamp adapted to be pushed into, and pulled out of, the same, a spring contact mounted in the bottom of said casing, means for permitting a lamp to be pushed into said casing and for releasably locking the same against being pulled out of the same, said means including a lug on the wall of said casing and projecting radially into the same, to engage a thread on the base of a lamp pushed into the socket, a double-ended lever pivotally mounted in a recess in the wall of said casing and disposed substantially diametrically of the casing with respect to said lug, one end of said lever adapted to move between a locking position, wherein it extends into and toward the bottom of said casing to engage a thread on the base of lamp pushed into said casing to positively hold the lamp base against the action of said spring contact, and a release position, wherein it is retracted from engagement with the base of the lamp, the other end of said lever extending to the outside of said casing for moving said first mentioned end to its release position, and a resilient contact strip connected to a binding post in said casing engaging and normally moving said lever to its locking position, whereby said lever constitutes the second contact of the socket and normally forces the threaded base of the lamp into engagement with said lug.

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