

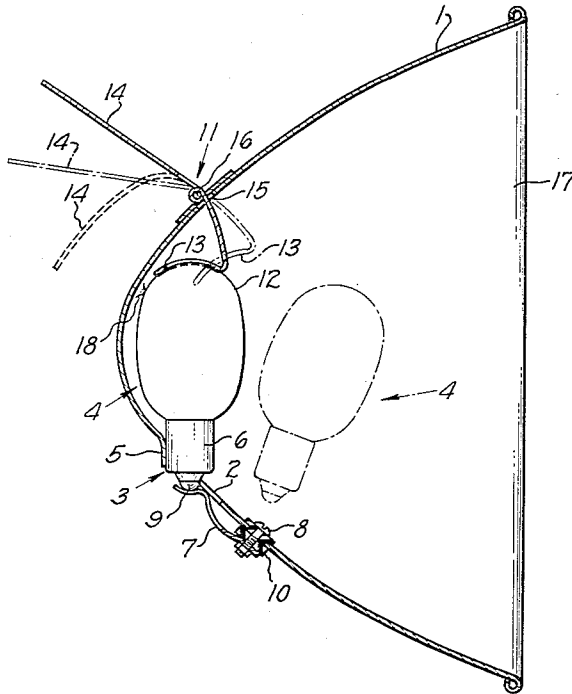
May 15, 1956

R. BLOUNT

2,745,945

FLASH LAMP ENERGIZING AND REFLECTING HOLDER

Filed Jan. 4, 1954



Inventor:
Richard Blount
by *Vernon C. Kaufman*
His Attorney

1

2,745,945

FLASH LAMP ENERGIZING AND REFLECTING HOLDER

Richard Blount, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Application January 4, 1954, Serial No. 401,850

5 Claims. (Cl. 240—1.3)

The present invention relates to illuminating apparatus for photographic purposes and its principal object is to provide a portable, compact, inexpensive reflecting holder for photoflash lamps, including a lamp holding, energizing and ejecting mechanism of simple structure and positive action for facilitating lamp replacements.

Further objects and advantages of the invention will appear from the accompanying drawing, the single figure of which is a side elevational, sectional view of the holder embodying the invention with a miniature photoflash lamp shown in full in its holder engaging position and, in broken lines, in one of its ejected positions.

In accordance with the objects of the invention, the holder shown in the drawing comprises a light-concentrating reflector 1 of generally parabolic contour which may be of metal or of plastic material with a vapor deposited reflecting metal coating, and having an opening 2 therein to receive the base 3 of the photoflash lamp 4. A side wall 5 of the reflector opening is shaped to make a wiping electrical contact with the smooth surface of the metal shell contact 6 of the base 3 of a photoflash lamp 4 mounted in the holder. A metal spring contact member 7, which is secured to the reflector 1 by the metal bolt and nut 8, engages the center contact 9 of the lamp base 3 and is electrically insulated from the reflector 1 by the insulating material 10. The lamp 4 is energized for flashing by connecting the contact 7 and the reflector 1 to opposite terminals of a current source, such as an electric storage cell or a battery of such cells.

The spring contact 7 when flexed outwardly from the reflector 1 by insertion of a lamp 4 in the holder exerts a force in the opposite direction on the inserted lamp 4. This force is utilized in accordance with this invention to hold the lamp in the reflector with the longitudinal axis of the lamp transverse to the axis of the reflector and to facilitate ejection of the lamp from the holder through the mouth of the reflector after flashing.

This is accomplished by providing an ejector 11 having a resilient part engaging the rounded top of the bulb 12 of a lamp mounted in the holder. The ejector is positioned on the reflector opposite the opening 2 and is so spaced from the spring contact 7 that insertion of a lamp between the contact 7 and the bulb engaging part of the ejector flexes these members which then clamp the inserted lamp in the aforesaid position in the reflector.

The ejector 11 is in the form of a resilient metal lever arm having a retroverted inner end shaped as a lamp bulb engaging ring 13. The outer end of the lever arm is shaped in the form of a handle 14 for operating the ejector. The lever arm, which is preferably in the form of a strip, passes through a slot 15 in the reflector 1 and is hinged on the outer surface of the reflector, as shown at 16, to swing toward the mouth 17 of the reflector and in a single plane including the axis of the reflector. The pivotal axis of the hinge 16 is offset from the center of thrust exerted by the spring contact 7 on the lamp 4, which coincides with the longitudinal axis of the lamp, in a direction toward the mouth 17 of the reflector 1.

2

The spacing between the ring-shaped end 13 of the lever arm and the lamp contact engaging end of the spring contact 7 relative to the length of the photoflash lamp 4 accommodated therebetween is such that when the lamp is thrust therebetween and positioned as shown in full in the drawing both the contact 7 and the inner end portion of the lever arm are flexed slightly to support the lamp firmly in the holder.

The handle 14 of the lever arm is of sufficient weight to counterbalance the weight of the ring-shaped end 13 thereof, so that the latter, in its lamp receiving position, faces, at an angle, the mouth 17 of the reflector 1, as shown in dot-dash lines in the drawing, and thus facilitates the insertion of a photoflash lamp into the holder.

Two spaced indents 18 (only one of which is shown in the drawing) are provided in the reflector 1 and are positioned to engage the glass bulb 12 and serve as a stop to orient the mounted lamp 4 in the holder in the position shown in full lines in the drawing.

A lamp 4 is inserted into the holder by inserting the base 3 in the reflector opening 2 and thrusting the lamp bulb 12 sidewise against the ring-shaped end 13 of the lever arm to force the lamp 4, the lever arm 13, 14 and the spring contact 7 into the respective positions shown in full lines in the drawing with the bulb 12 against the indents 18. The center of thrust of contact 7 is then on the side of the pivotal axis of hinge 16 away from the reflector mouth 17.

After the lamp 4 has been flashed, it may be quickly ejected from the holder for replacement by forcing the handle 14 downward toward the reflector 1. The lever arm is sufficiently flexible with respect to the stiffness of the spring contact 7 that the handle 14 is flexed as shown greatly exaggerated in broken lines in the drawing as the downward force is exerted on its end.

When the lamp 4 has been tilted sufficiently by the lever arm 13, 14 to shift the center of thrust exerted thereon by spring contact 7 from the side of the pivotal axis of the hinge 16 away from the mouth 17 of the reflector to the side of the said axis toward the reflector mouth, the force stored in the flexed spring contact 7 and the handle 14 is released to kick the flashed lamp out of the holder. The handle 14 of the holder then returns to its unflexed shape. Of course, the stiffness of the handle 14 and of the contact 7 is selected so as to not break the lamp bulb or eject the lamp too forcefully for safety.

The absence from the holder of a socket of the conventional screw type or bayonet type in which the lamp must be turned for engagement and the use therein of a simple pressure or wiping type of electrical contact for both the shell contact 6 and the center contact 9 of the photoflash lamp base 3 facilitates rapid replacements of photoflash lamps which may be thrust in the holder to expedite the taking of pictures in rapid succession with a minimum of time consuming effort by the photographer.

While I have shown and described the preferred embodiment of my invention, it will be understood, of course, that numerous changes and modifications may be made in the form and details of the device without departing from the invention; for example, when the reflector is of organic plastic with a thin coating of metal thereon, the coating on the side wall 5 of the opening 2 may be a thick coating or a separate contact member may be provided thereat to withstand the abrading action of the lamp bases thereon.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A photoflash lamp holder comprising a light concentrating reflector having a mouth and an axis, and means for supporting a photoflash lamp in said reflector with the longitudinal axis of the lamp transverse to the reflector axis, said means comprising a lamp base re-

ceiving socket formed from the reflector wall and opening generally transversely of the reflector axis and spaced inwardly from the reflector mouth, said socket having spring-pressed lamp base engaging means tending to eject a lamp base thrust into the socket, said support means comprising also a pivoted arm having a lamp engaging retroverted inner end and so mounted on the reflector wall generally opposite said socket as to engage in one of its pivoted positions the top of a lamp bulb and hold the lamp in said socket against ejection by the spring-pressed means, the pivotal axis of said arm being offset from the center of thrust of said spring-pressed means in the direction of the reflector mouth and said holder comprising also a stop mounted in said reflector and positioned to orient an inserted lamp in said holder with the center of thrust exerted by said spring-pressed means on the inserted lamp on the side of the pivotal axis of said arm away from said reflector mouth, whereby turning said arm on its axis in the direction of the reflector mouth to shift the said center of thrust to the side of said axis toward said reflector mouth effectuates ejection of a flashed lamp through said reflector mouth.

2. A photoflash lamp holder as in claim 1, characterized in that the socket for the lamp base is constituted by an opening of the reflector wall and that a side of said opening engages a smooth outer shell contact of the lamp base held in said reflector by said support means and that the spring-pressed lamp base engaging means of said supporting means is constituted by a spring contact electrically insulated from and secured to the wall of said reflector and extending transversely of said socket opening to engage the center contact of an inserted lamp base.

3. A photoflash lamp holder as in claim 1, characterized in that the pivoted arm is provided with a handle extending outside said reflector for ready accessibility and that the handle counterbalances the lamp engaging inner end of said arm to hold said arm in a lamp receiving position in said holder, whereby lamp replacement is effected by thrusting the lamp base in the holder socket, exerting a sideward thrust against the lamp bulb to move said pivoted arm to its lamp holding position and whereby the held lamp after flashing is ejected from said holder by forcing said handle in a direction to move said arm on its axis to shift the center of thrust of said spring-pressed lamp to the side of said axis toward said reflector mouth.

4. A photoflash lamp holder comprising a light concentrating, open mouth metal reflector having a photoflash lamp base receiving opening in its wall, a side of said opening extending outwardly from said reflector wall substantially parallel to the axis of an inserted lamp base and adapted to make a wiping electrical contact with the outer shell contact of an inserted lamp base, an insulated spring contact secured to the wall of said reflector, one end of said spring contact extending transversely of said lamp base receiving opening to engage

and make a pressure contact with the center contact of a lamp base in the reflector opening, and a lamp holding and ejecting means also secured to the wall of said reflector opposite said base receiving opening, said means comprising a resilient lever arm passing through the wall of said reflector and having a handle at its outer end and a ring-shaped lamp bulb engaging retroverted inner end, said spring contact and the bulb engaging end of said lever arm being spaced apart sufficiently to receive and clamp therebetween a photoflash lamp, said lever arm being hinged on said reflector wall at a point offset toward the reflector mouth from the center of thrust of said spring contact on a lamp clamped between said ring-shaped lever arm and said contact whereby ejection of a supported lamp from the holder is effected by turning said lever arm on the pivotal axis of said hinge to tilt the lamp until the center of thrust of said contact is shifted from the side of said axis away from the reflector mouth to the side thereof toward said reflector mouth to release the force stored in said contact and said lever arm and thus kick the lamp out of the holder, said holder comprising also means in said reflector to stop the inward movement of a lamp thrust therein and orient the lamp in the holder for flashing.

5. A holder for a photoflash lamp comprising a bulb having at one end thereof a base including a metallic shell and an end contact insulated from said shell, said holder comprising a concave light-concentrating reflector having an opening adjacent its apex for receiving and engaging the base of said lamp, a contact spring member insulatively supported from said reflector at the outside thereof and over said opening to engage the said end contact of the lamp base and exert a thrust thereagainst laterally of the axis of the reflector and longitudinally of the lamp, and an ejection lever member pivotally mounted on said reflector at the opposite side thereof from said opening and having one arm extending outwardly and the other inwardly of said reflector, the pivotal axis of said lever being offset slightly forwardly of the said lateral direction of thrust of said contact spring member in the direction of the mouth of said reflector, the inwardly extending arm of said lever being retroverted rearwardly toward the apex of the reflector to receive the top of the lamp bulb, the spacing and proportioning of said contact spring member and ejection lever member being such that the lamp is securely clamped therebetween and against the apex of the reflector and turning of the lever about its axis effects ejection of the lamp.

References Cited in the file of this patent

UNITED STATES PATENTS

2,293,660	Nicholas	Aug. 18, 1942
2,308,016	Mihalyi	Jan. 12, 1943
2,477,895	Pollock	Aug. 2, 1949
2,672,039	Schwartz et al.	Mar. 16, 1954

FOREIGN PATENTS

936,649	France	July 26, 1948
---------	--------	---------------