

Jan. 27. 1925.

1,524,205

J. PAPKE

ELECTRIC LAMP

Filed Jan. 2, 1924

2 Sheets-Sheet 1

Fig. 1.

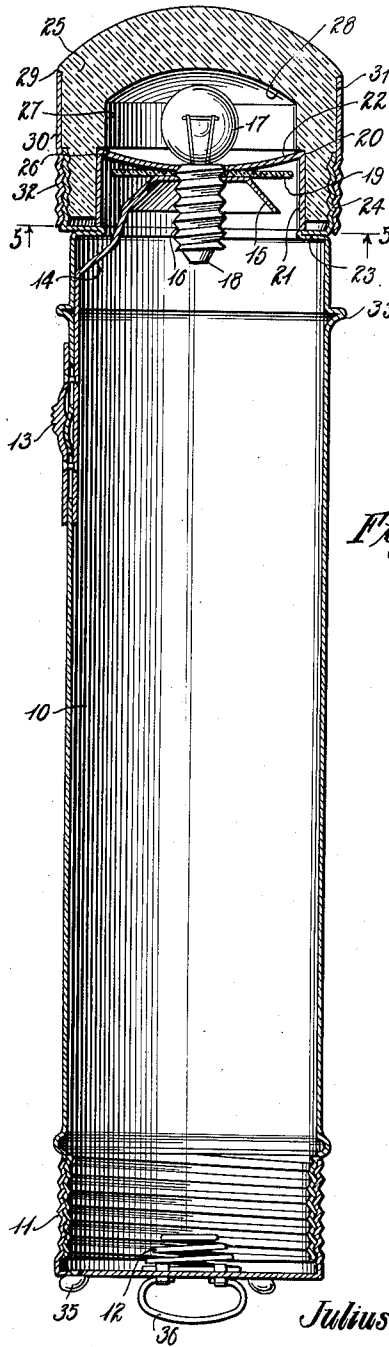
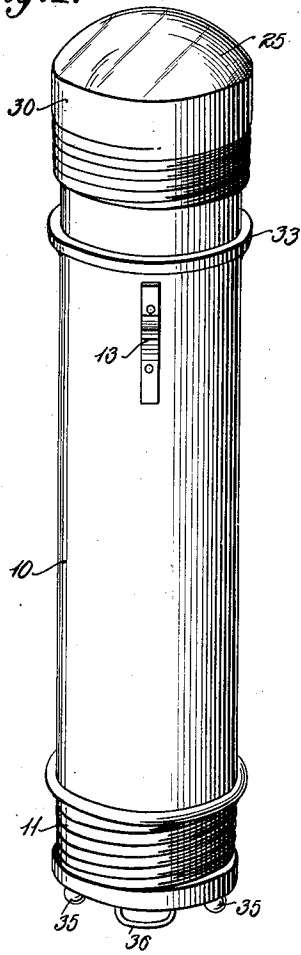
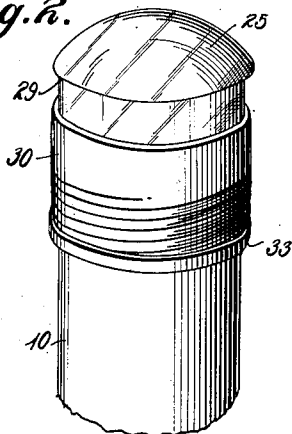


Fig. 3.

Fig. 2.



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Fig. 4.

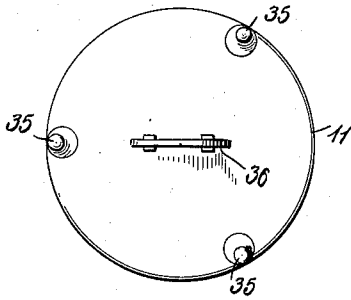


Fig. 5.

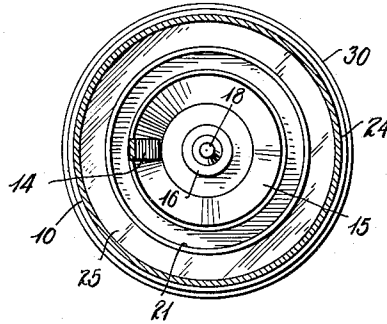


Fig. 6.

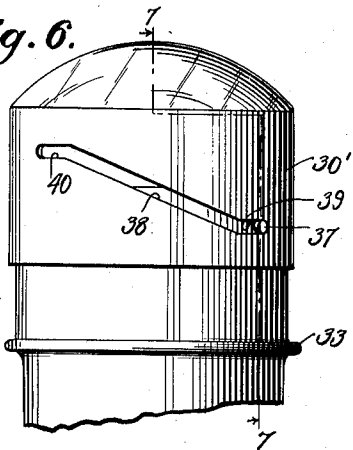


Fig. 7.

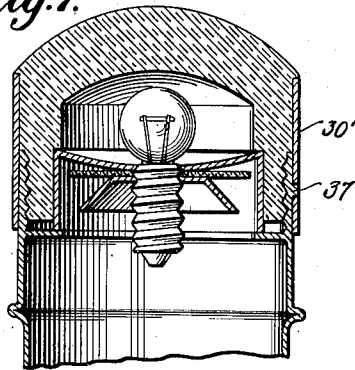


Fig. 8.

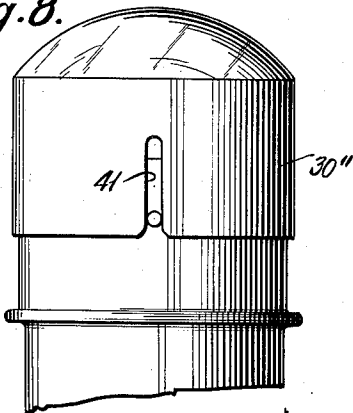
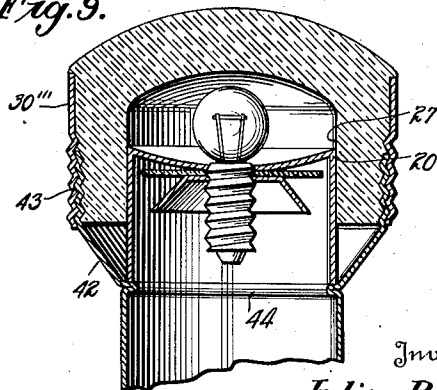


Fig. 9.



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# UNITED STATES PATENT OFFICE.

JULIUS PAPKE, OF MOBERLY, MISSOURI.

ELECTRIC LAMP.

Application filed January 2, 1924. Serial No. 683,943.

*To all whom it may concern:*

Be it known that I, JULIUS PAPKE, a citizen of the Republic of Germany (final papers for naturalization as American citizen after January 11, 1924), residing at Moberly, in the county of Randolph and State of Missouri, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

The invention relates to illuminating devices, and has as an object the provision of an electric lamp which may be used either as an ordinary flash light for directing its light mainly forward, or may be used for a steady illumination, throwing its light through a large portion of a sphere.

An object of the invention is the provision of a device of the class described which may be very readily shifted from condition for one use to that of the other.

A further object of the invention is the provision of a lamp of the class described which shall be efficient for both purposes.

Further objects will appear from the following description when read in connection with the accompanying drawing wherein—

Fig. 1 is a perspective view with the parts in a position for use as a flash light.

Fig. 2 is a like view with the parts in position for use as a lamp or candle.

Fig. 3 is a central vertical section of the device with the parts shown as in Fig. 1.

Fig. 4 is a bottom plan view.

Fig. 5 is a horizontal section on line 5, 5 of Fig. 3, looking in the direction of the arrow.

Fig. 6 is a detail side elevation of a modification.

Fig. 7 is a central vertical section of the modification of Fig. 6.

Fig. 8 is a detail elevation of a further modification, and

Fig. 9 is a central vertical section of a still further modified form.

As shown in Fig. 1, the device comprises a barrel 10 of the form usual with flash lights provided with a screw threaded closure 11 at its lower end, the interior of which bears a spring 12 for making contact with the bottom of the exterior casing of the usual flash light battery. There is also shown an external thumb piece 13 for actuating the switch slide member 14 making contact when closed with a pan shaped contact 15 in electrical connection with the shell 16 of the socket to receive the electric bulb 17. The

central contact 18 of the bulb 17 is adapted to make contact with the central contact of the flash light battery which is pressed there-against by the spring 12, all in the usual and well known manner. A disk 19 of insulating material is shown to insulate the contact 15 from the reflector 20.

The reflector 20 is shown as formed with a cylindrical portion 21 and a shallow concave reflecting portion 22.

To support the reflector the upper portion of the barrel 10 is shown as provided with an internal annular flange 23 preferably formed by crimping inwardly the material of the barrel, the extremity of the barrel being returned to substantially its original diameter and pressed into threads at 24.

A lens 25 of special form is provided having an internal shoulder 26 fitting over and retaining the reflector 20 and having external threads to coact with the interior of the threaded portion 24 of the barrel. The extent of the lens from the shoulder 26 to its edge is shown as less than the length of the cylindrical portion 21 of the reflector with result that when the lens is screwed home the shoulder 26 will press the reflector firmly against the flange 23. The recessed portion of the lens is shaped with a cylindrical portion at 27 and with a concavity at 28, the lamp 27 being housed within the recess of the lens. Exteriorly the lens is formed with a shoulder 29 to retain the sleeve 30.

The sleeve 30 is provided as a means for modifying the direction of the light from the lamp 17, and for this purpose is provided with a highly reflecting surface within its cylindrical portion 31. The lower portion of the sleeve 30 is, as shown, formed into threads at 32 to coact with the exterior of the threads formed upon the portion 24 of the barrel.

With the parts in the position as shown in Fig. 3, the light from the lamp will be allowed to escape only forwardly through the convex portion of the lens 25, and that striking the inner portion of the sleeve 30 will be reflected back to the interior of the lamp, all at a forward angle from the lamp so as to conserve a large portion of the rays which will finally find a forward direction from the reflecting and refracting surfaces of the lamp.

When it is desired to use the lamp for steady and general illumination the sleeve 30 may be turned upon the threads 24 until

the upper edge of the sleeve is substantially in the plane of the upper edge of the cylindrical portion 21 of the reflector 20, when rays from the lamp may escape not only longitudinally of the lamp but in all directions forward of, and to some extent, backward from a plane through the outer edge of the reflector 20.

To act as a stop for the backward motion of the sleeve 30 the material of the barrel 10 is shown as pressed into an outwardly extending annular flange 33, in which position of the sleeve the threads 32 will not be completely separated from the threads 24.

To permit the device to stand while being used for general illumination, there are shown a plurality of studs 35, preferably three in number, upon the exterior of the lower closure 11 thereof. A ring 36 is also shown attached to said closure to enable the device to be suspended when it is desired to use the same in that position.

In the form of the device shown in Fig. 6, the exterior of the threaded portion of the barrel 10 is shown as provided with a projecting stud 37, and a cam slot 38 is formed in the reflector 30'. The extremities of the slot 38 are shown as formed horizontal at 39 and 40. With the slot as shown, rotation of the sleeve 30' will cause the same to be moved longitudinally into contact with the flange 33 from the position shown in Fig. 6, and a reverse movement will return the same to the position shown. The horizontal extremities 39, 40 of the slot 38 will act as locks against horizontal movement when the sleeve is in either extreme position.

In the modification of Fig. 8, the stud 37 is also provided with a vertical slot 41 in the sleeve 30''. In this form of the device the sleeve must be made a snug sliding fit upon the parts so as to retain the same in the desired position.

To secure an added thickness of the side walls of the cylindrical portion 27 of the lens, the form of Fig. 9 is shown as having its barrel 10 provided with a frusto-conical extending portion 42 terminating in a threaded portion 43 over which the sleeve 33''' fits, and upon which it may be screwed to the rear in the same manner as described with the form of Figs. 1 to 3 inclusive.

The reflector 20 in this form of the device is supported by an inner annular flange 44 after the manner already described in connection with the forms of Fig. 1 to 3 inclusive. With the increased surface of the lens of Fig. 9, the forward illumination of the lamp when used as a flash lamp will be given a wider area.

Other modifications may be made in the physical embodiment of the invention without departing from the spirit thereof.

I claim:

65 1. A flash lamp comprising, in combina-

tion, a reflector having a cylindrical portion and an outwardly directed shallow concavity provided with a reflecting surface, a lens having a recess therein and a cylindrical portion adapted to fit over the cylindrical portion of said reflector, a lamp housed in said recess and enclosed thereby and by said reflector, and a casing having a retaining portion to engage the exterior of said lens and the first mentioned cylindrical portion to support said reflector, the interior of said casing adapted to house a battery for energizing said lamp.

2. A flash lamp comprising, in combination, a lens having an outwardly convex end wall and cylindrical side wall and having a cylindrical recess therein terminating in a concave portion, said cylindrical recess formed with an internal shoulder, a reflector having a cylindrical portion fitting within said recess and against said shoulder and having a shallow concave reflecting portion, a lamp housed in the recess and enclosed by the outer wall of the lens and by the concave portion of said reflector, a casing engaging the outer cylindrical portion of said lens, and an inwardly extending annular flange carried by said casing supporting the cylindrical portion of said reflector.

3. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess formed with an internal shoulder, a reflector having a cylindrical portion fitting within said recess and against said shoulder, a disk-like reflecting portion carried by the cylindrical portion of said reflector, a portion of the outer surface of said lens being screw threaded, a casing having internal screw threads to engage the threads upon said lens, an inwardly directed annular flange to support the cylindrical portion of said reflector, the distance from said shoulder within said lens to the edge thereof being less than the extent of the cylindrical portion of the reflector whereby the reflector will be tightly pressed against said flange when the lens is screwed home, and a lamp housed between the outer wall of said lens and said reflector.

4. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess therein, a lamp housed within said cylindrical recess, and a sleeve engaging the outer cylindrical portion of said lens and adapted to be moved axially thereof from a position with its outer edge in a plane forwardly of said lamp to a plane rearwardly of said lamp.

5. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess therein, a lamp housed within said cylindrical recess, and a sleeve engaging the outer cylindrical portion of said lens and adapted to be moved axially thereof from a position with its outer edge

in a plane forwardly of said lamp to a plane rearwardly of said lamp, a reflecting surface upon the interior of said sleeve.

5 6. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess therein, a lamp housed within said cylindrical recess, a sleeve engaging the outer cylindrical portion of said lens and adapted to be moved axially thereof  
10 from a position with its outer edge in a plane forwardly of said lamp to a plane rearwardly of said lamp, and means to retain said sleeve in its forward and rear positions.

15 7. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess therein, a lamp housed within said cylindrical recess, a sleeve engaging the outer cylindrical portion of said  
20 lens and adapted to be moved axially thereof from a position with its outer edge in a plane forwardly of said lamp to a plane rearwardly of said lamp, and means to prevent excess rearward movement of said  
25 sleeve.

8. A flash lamp comprising, in combination, a lens having a cylindrical portion and a cylindrical recess therein provided with

an internal shoulder, a shallow concave reflector seated against said shoulder, a lamp  
30 in said recess enclosed by said lens and reflector, the cylindrical portion of said lens extending beyond the outer plane of said lamp, and a sleeve enclosing the outer surface of the cylindrical portion of said lens  
35 and adapted to be moved longitudinally thereof to a position in the rear of the plane of said reflector.

9. A flash lamp comprising, in combination, a lens having a cylindrical portion and  
40 a cylindrical recess therein formed with an internal shoulder, a shallow concave reflector seating against said shoulder, a lamp housed between the outer wall of the lens and said reflector, the cylindrical portion of said lens  
45 extending to a plane beyond said lamp, an external shoulder adjacent the extremity of the cylindrical portion of said lens, a sleeve enclosing said lens and limited in its outward movement by said shoulder, said  
50 sleeve movable longitudinally of said lens to a position rearwardly of the plane of the outer edge of said reflector, and means to prevent excess rearward movement of said sleeve.

JULIUS PAPKE.