Nov. 8, 1927. 1,648,709

W. R. WINSELL

PORTABLE ELECTRIC LAMP

Filed Oct. 23, 1925

Fig. 1.

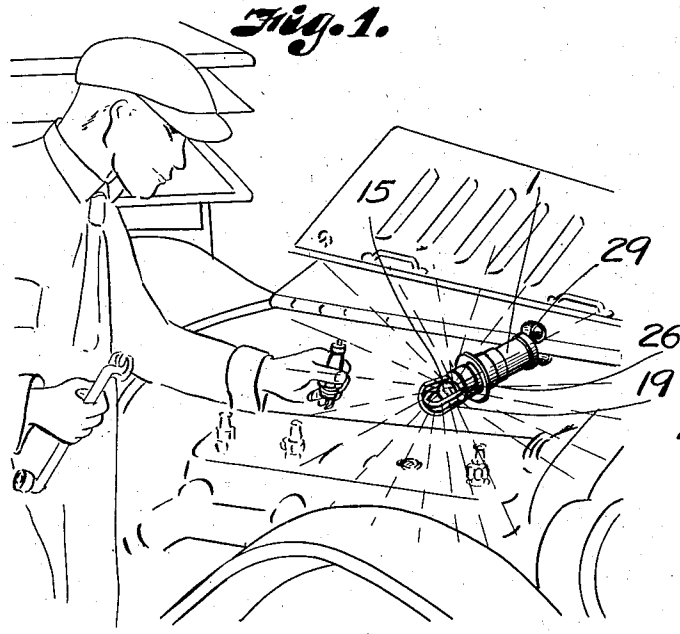


Fig. 4.

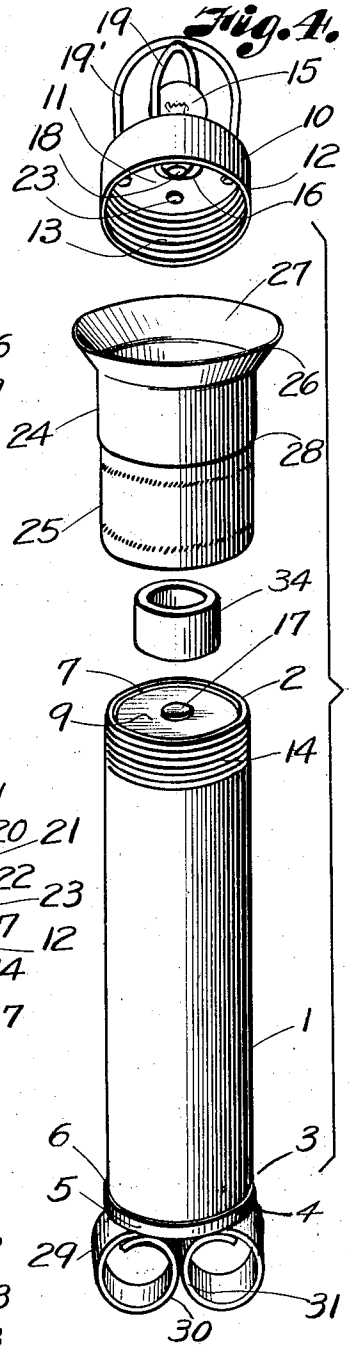


Fig. 2.

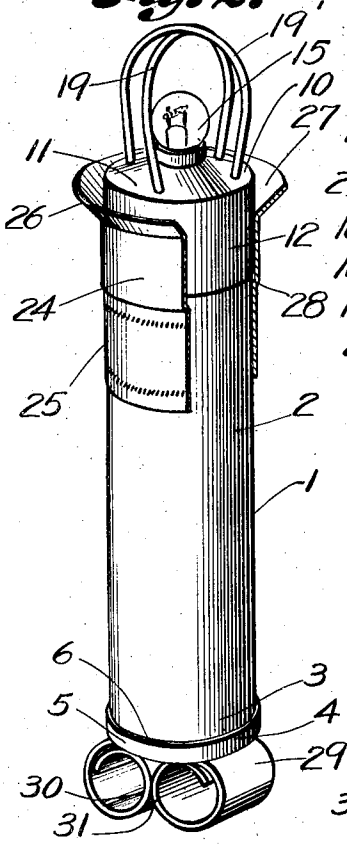
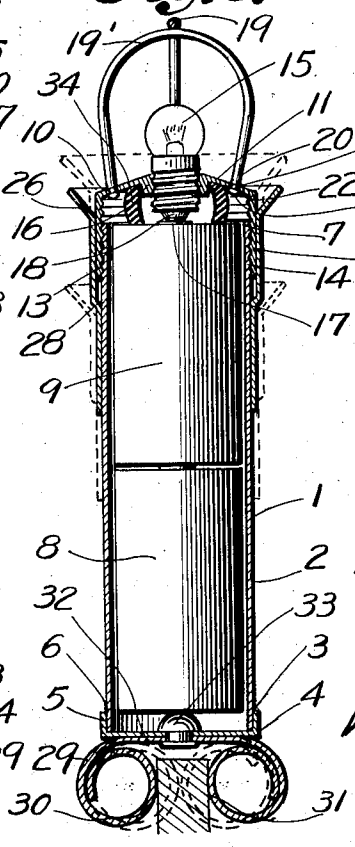


Fig. 3.



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Patented Nov. 8, 1927. 1,648,709

UNITED STATES PATENT OFFICE.

WILLIAM R. WINSELL, OF KANSAS CITY, MISSOURI.

PORTABLE ELECTRIC LAMP.

Application filed October 23, 1925. Serial No. 64,329.

My invention relates to portable electric lamps and has for its principal object to provide a lamp so constructed that it may be used as a flash or spot light for directing a concentrated beam of light, or as a lamp whereby the light is diffused in all directions for illuminating purposes.

Another object of the invention is to provide means for supporting the lamp in a convenient manner upon any object adjacent the point of desired illumination.

In accomplishing these objects I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of a lamp constructed in accordance with my invention and attached to the folded-back hood of an automobile to illuminate the engine.

Fig. 2 is an enlarged perspective view of the lamp, part of the reflector being broken away to better illustrate its construction.

Fig. 3 is a vertical sectional view through the lamp casing, the battery cells and bulb being shown in elevation.

Fig. 4 is a detail perspective view of the various parts of the lamp shown in spaced relation.

Referring more in detail to the drawings by numerals of reference:

1 designates the casing of the lamp, preferably constructed of conductive material and comprising a tubular member 2 closed at its lower end 3 by a cap 4, having an integral flange 5 for receiving the end of the tubular member and preferably soldered to said member as at 6. The tubular member has an open top 7 through which ordinary flash light dry cells 8 and 9 may be inserted but which is normally closed by a cap or cover 10.

The cover 10 comprises a slightly cone-shaped top 11, having a downwardly extending peripheral flange 12 internally screw-threaded as at 13 to engage external threads 14 on the upper end of the tubular member of the casing.

The cap 10 carries an ordinary flash light bulb 15, the base of which is threaded into an internally threaded collar 16 on the under side of the cap and in vertical alignment with the positive terminal 17 of the top cell 9 so that when the cap is screwed into place, the contact 18 on the bulb will contact with the terminal 17 of the dry cell.

To protect the bulb against accidental breakage I have provided the cap with a guard cage comprising inverted U-shaped wires 19 and 19′, crossed over the top of the bulb with their ends 20 extended through apertures 21 in the cap and peened over on the under side of the cap as at 22 and soldered to the cap as at 23, so that the ends of the wires are firmly fixed to the cap to hold the guard wires in their proper position with relation to the bulb.

From the foregoing description it will be noted that the bulb projects above the cup and that the light rays may diffuse in all directions to provide efficient illumination for lighting a considerable space about the lamp.

In order that the lamp may be used as a spot light or flash light I have provided a concave reflector 24 which may be adjusted to collect laterally directed light rays and reflect them forwardly in a concentrated beam.

The reflector consists of a sleeve 25 slidable on the tubular member 2 and having a spreading flange 26 formed on the end of the sleeve and provided on its outer face with a reflecting surface 27. The inner end of the sleeve snugly fits the member 2 and the outer end is of a diameter to fit the cap 10 so that a shoulder 28 is formed midway of the sleeve to engage the cap when the sleeve is in its functional position and hold the sleeve to the casing. Movement of the sleeve in the opposite direction is limited by the bottom cap so that when the sleeve is applied to the tubular member and the cover cap 10 is screwed into place, the sleeve is retained from sliding off the casing. Thus when the sleeve is moved to its outer position as shown by dotted lines in Fig. 3, the reflector flange projects about the top of the cap and is in position to reflect the light rays from the bulb in a concentrated beam, but when the sleeve is moved back onto the body 2 the light rays from the bulb are free to diffuse in all directions.

To support the lamp when it is to be used for illumination, the end cap 4 is provided with a clip 29, comprising a strip of spring metal, the opposite ends of which are coiled inwardly to form convolute gripping jaws 30 and 31. The flat intermediate portion 32 of the strip is secured to the cap 4 by a rivet 33. When the lamp is to be applied to an object, the clip is pushed astride the object, the con-

volutes of the jaws contracting or winding up to permit the jaws to spread, and since the convolutes wind up under spring tension, increased gripping pressure is applied to the sides of the object to secure a firm hold and support for the lamp. Attention is also called to the fact that when the clip is applied over a larger object, the convolutes simply wind a greater degree.

To retain the battery cells in place, a compressible, cylindrical ring 34, preferably of rubber, is placed between the top cell and the top cap concentrically of the battery terminal and bulb contact. The ring loosely encircles the contacts and is of such length as to place tension upon the battery cells when the cap is screwed into place. When the lamp is not in operation, a slight space is maintained between the battery terminal and the contact on the bulb by slightly unscrewing the cap. When the lamp is to be lighted, the contact between the bulb and the battery is made by screwing the cap down further upon the casing, compressing the rubber ring and closing the contact to the lamp.

In assembling the lamp, the battery cells are inserted in the casing, the zinc bottom of the lower cell resting upon the rivet 33 to make an electric connection between the zinc or negative terminal of the battery and the casing of the lamp, and the reflector sleeve is slid into place over the casing. The rubber ring is then placed upon the top battery concentrically of the positive terminal and the top cap carrying the bulb is screwed into place upon the casing, a distance to compress the rubber ring but not enough to make electric contact between the bulb and the battery. The lamp is then ready for use.

Should the lamp be used as a flash light, the reflector sleeve is slid upwardly until the shoulder 28 strikes the top cap. The reflector flange is then in position to receive the light rays from the bulb and reflect them in a concentrated beam. To light the bulb, the top cap is screwed down, compressing the rubber ring until further movement of the cap is stopped by the base of the bulb coming into contact with the positive terminal of the battery. Current then flows from the positive of the battery to the contact at the base of the bulb through the lamp filament to the bulb base which is screwed into the cap then through the casing to the rivet 33, which contacts with the negative of the lower cell, which completes the circuit.

Attention is called to the fact that the concentration of the light beam may be regulated by moving the sleeve carrying the reflector flange relative to the bulb to get the desired focus.

Should the device be used as a lamp, the reflector flange is slid backwardly on the casing away from the bulb to permit the light rays to diffuse in all directions, as shown by the lower dotted lines in Fig. 3.

The device constructed as described is particularly adapted for the use of the motorists, as a trouble lamp, as it may be conveniently attached to some part of the car adjacent the part on which he is working, giving ample light to make the required repairs.

Thus it will be seen that the device is particularly adapted to its purpose as a lamp and that it may readily be adapted for use as a flash or spot light by adjustment of the reflector flange.

What I claim and desire to secure by Letters-Patent is:

1. A lamp comprising a cylindrical casing, a cap on one end of the casing having a conical, closed end provided with a reflecting surface and a lamp socket concentric with said closed end, a lamp bulb in the socket and a sleeve slidably mounted on the casing having a flared outer end movable into concentric overlapping relation with the conical reflector for the purpose set forth, said sleeve having means thereon engaging said cap to limit the movement thereof.

2. In a device of the character described, a tubular casing, an end cap having a lamp socket therein, a reflector member telescoped on said tubular casing and slidable thereon over said cap, and an end cap on the opposite end of said casing, said reflector member having means thereon engaging said end caps to limit the movement thereof in opposite directions.

3. In a device of the character described, a tubular casing, an end cap having a lamp socket therein, a reflector member telescoped on said tubular casing and slidable thereon beyond said cap, and an end cap on the opposite end of said casing, said end cap having a pair of spring clips thereon, said reflector member having means thereon engaging said end caps to limit the movement thereof in opposite directions.

4. In a device of the character described, a tubular casing, an end cap having a lamp socket therein, a reflector member telescoped on said tubular casing and slidable thereon over and beyond said cap, and an end cap on the opposite end of said casing, said end cap having a pair of coiled spring clips thereon, said reflector member having means thereon engaging said end caps to limit the movement thereof in opposite directions.

5. In a device of the character described, a tubular casing, an end cap having a lamp socket therein, a reflector member telescoped on said tubular casing and slidable thereon, and an end cap on the opposite end of said casing, said reflector member having a flaring reflector portion at one end thereof, and an offset between the ends thereof defining a

stop shoulder engaging said first end cap to limit the movement thereof in one direction,

6. In a device of the character described, a tubular casing, an end cap having a lamp socket therein, a reflector member telescoped on said tubular casing and slidable thereon, and an end cap on the opposite end of said casing, said reflector member having a flaring reflector portion at one end thereof, and an offset between the ends thereof defining a stop shoulder engaging said first end cap to limit the movement thereof in one direction and engaging said other end cap with the other end thereof to limit the movement of said member in the opposite direction.

In testimony whereof I affix my signature.

WILLIAM R. WINSELL.