Feb. 4, 1958 E. A. PRICE 2,822,462

LIGHTING DEVICE

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Fig. 1.

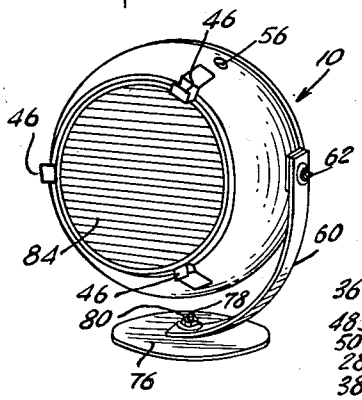


Fig. 2.

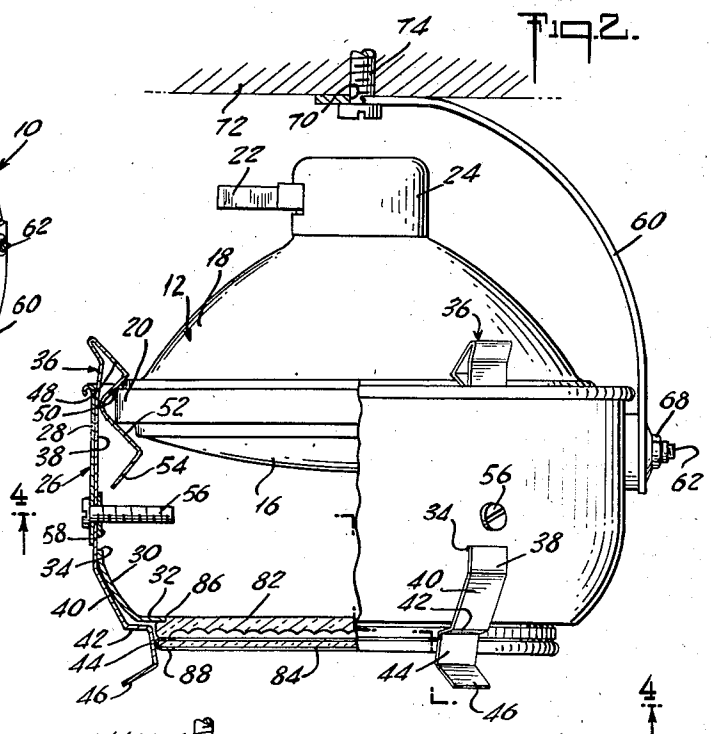
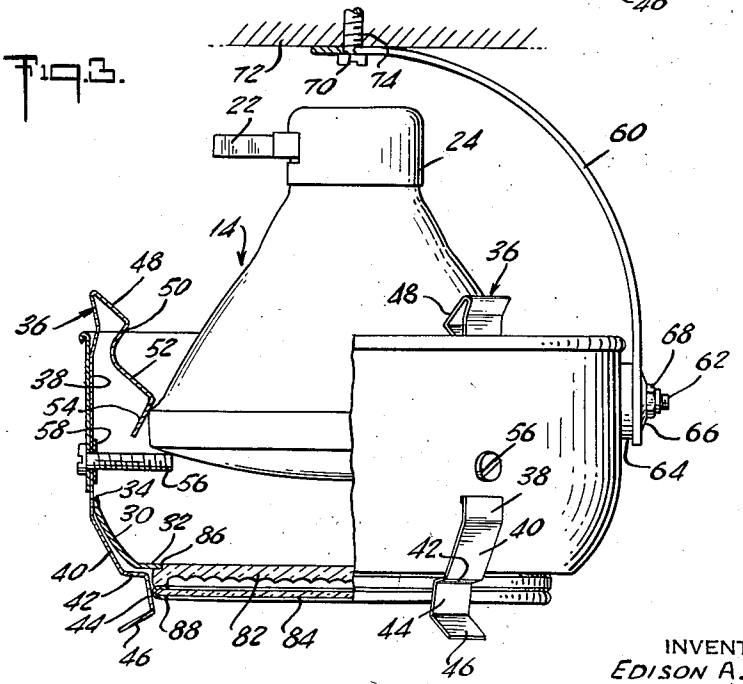


Fig. 3.



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Fig. 4.

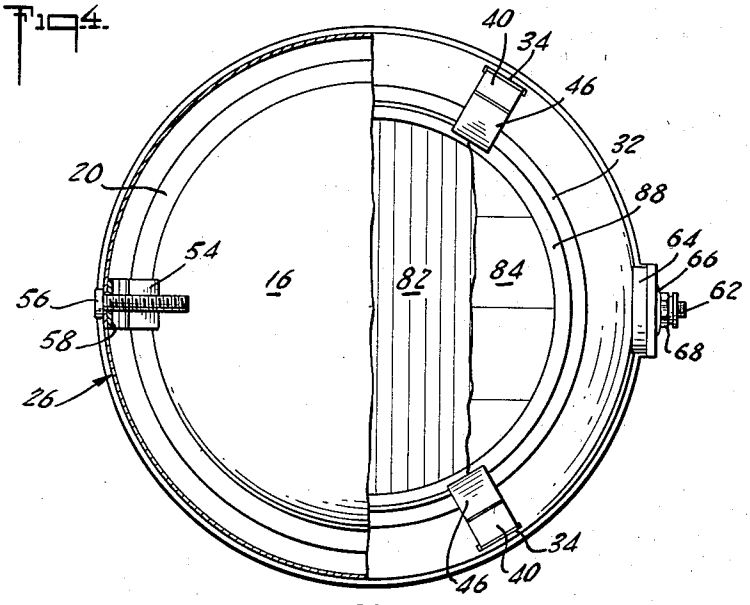
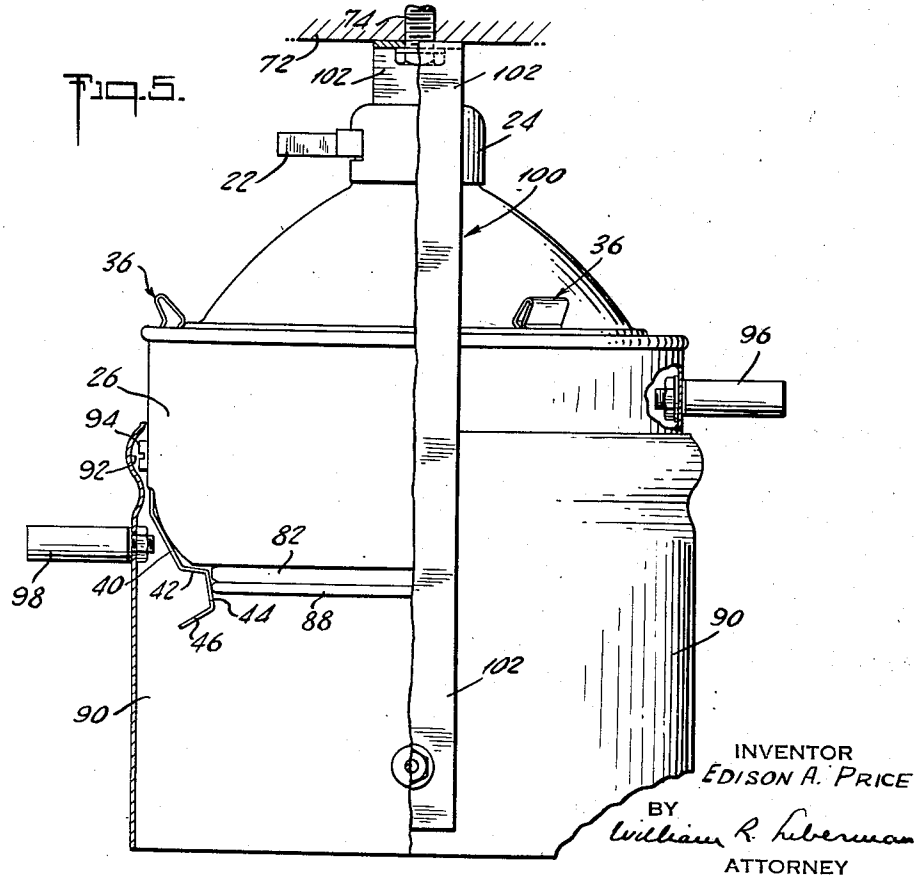


Fig. 5.



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LIGHTING DEVICE

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Application February 15, 1954, Serial No. 410,088

6 Claims. (Cl. 240—138)

The present invention relates to an improved lighting device and it relates more particularly to an improved device of the spotlight type for use in connection with the lighting of window displays, display counters, stage presentations, and in many other similar applications.

In the proper and effective lighting of window displays, counter displays, and other displays requiring an attractive and appealing presentation it is necessary to employ numerous spotlights and lighting fixtures whose arrangements, patterns, intensities and colors depend largely on the particular display. These displays, being frequently changed, necessarily require the frequent changing of the lighting fixture arrangements as well as of their individual characteristics. The lighting fixtures and spotlights conventionally employed are bulky and expensive devices of little versitility or flexibility and difficult to handle. Thus the proper and effective lighting of displays with the lighting fixtures and spotlights heretofore available is awkward, highly time consuming and expensive. Furthermore, since the fixtures themselves are expensive and heavy and the support structures are correspondingly heavy and complicated the initial installations are likewise costly.

It is thus a principal object of the present invention to provide an improved lighting device.

Another object of the present invention is to provide an improved electric spotlight.

A further object of the present invention is to provide an improved mount for the conventional spotlight type electric bulb which can support the bulb in any desired direction and position in a variety of manners and which is provided with means for removably holding one or more lenses, filters or similar optical elements confronting the face of the bulb.

A further object of the present invention is to provide an improved simple mount for removably supporting a spotlight type of electric bulb for universal adjustment and having means for holding one or more lenses, light filters, and other optical elements in front of the face of the electric bulb.

A further object of the present invention is to provide an improved mount for spotlight bulbs and co-acting optical elements said device being characterized by its ruggedness and high versatility and flexibility as well as its simplicity and inexpensiveness.

A further object of the present invention is to provide a simple improved mount for spotlight bulbs and co-acting optical elements which permits support of the assembly in various attitudes and positions and by various means.

The above and further objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawing wherein:

Figure 1 is a front perspective view of a preferred embodiment of the present invention shown mounted on a flat base;

Figure 2 is a side elevational view, partially in section,

illustrating the improved device employed with a conventional large size projection bulb;

Figure 3 is a side elevational view, partially in section, illustrating the improved device employed with a conventional small size projection bulb;

Figure 4 is a sectional view taken along the line 4—4 of Figure 2; and

Figure 5 is a side elevational view, partially in section, of another embodiment of the present invention.

Reference is now made to the drawings and more particularly to Figures 1 through 4 thereof which illustrate a preferred embodiment of the present invention, and wherein the numeral **10** generally designates the improved device, and the numerals **12** and **14** indicate conventional large size and small size projection bulbs employed with the present device. The bulbs **12** and **14** are of conventional construction including an evacuated envelope having a front or lens portion **16** and an internally coated reflector portion **18** circumferentially joined by a heavy outwardly projecting reinforcing rib **20**. Electrical energization of the bulb filament is effected by way of a pair of prongs **22** connected to the filament and projecting laterally from the base **24** of the bulb. The prongs **22** are of such configuration and spacing as to accommodate the conventional electric socket employed with these bulbs. The bulbs **12** and **14**, for present purposes, differ principally in the diameter of their rib portions **20** and in their overall length.

The bulb mount and filter holder **10** includes a shell **26** of roughly tubular configuration having a rear cylindrical wall **28** terminating in a beaded edge and an inwardly curved forward wall **30** terminating in an inwardly directed flange **32**. A plurality, preferably three, of transversely extending circumferentially regularly spaced horizontal slits **34** are formed in the bottom portion of the cylindrical wall **28** the lower borders of the slits **34** being inwardly depressed to permit the vertical passage of a strip therethrough as illustrated.

A clip member generally indicated by reference numeral **36** registers with each of the slits **34** and is formed of an elongated band or strip of resilient material. The clip **36** includes a main vertical leg **38** abutting the inner face of the shell **26** and passing vertically through a corresponding slit **34**. Depending from the leg **38** is an arm **40** normally substantially tangent to the curved wall **30** and joining an inwardly directed leg **42** normally horizontal and abutting the lower face of the flange **32** and extending to a point short of the inner edge of the flange **32** where it joins a downwardly and slightly inwardly directed leg **44** which in turn terminates in an outwardly downwardly directed lug **46**. Each of the legs **38** is inwardly and thence outwardly curved approaching its upper end and is there joined by an inwardly and downwardly directed leg **48** forming an acute angle with the leg **38**. The leg **48** is followed successively by a rearwardly downwardly directed leg **50** extending by way of a curved joint into a downwardly and inwardly directed leg **52** which terminates in a downwardly and outwardly directed lug **54**. It should be noted that the upper end of the clip **36** including the legs **48**, **50** and **52** and the lug **54** constitute the lamp engaging portion of the clip **36**, whereas the lower portion of the clip **36** including the legs **40**, **42** and **44** and lug **46** constitute the optical element-engaging portion of the clip **36**. Each of the clips **36** is secured in the position shown by means of a long screw **56** passing through corresponding holes formed in the shell wall **26** and the clip leg **38** directly above the respective slit **34** and engaged by a nut **58**. The screw **56** projects radially inwardly into the shell interior directly below the clip lug **54** with which it coacts to provide means for engaging and supporting spotlights of smaller dimensions, as in Figure 3.

A curved supporting arm or bracket 60 is pivoted at its lower end to the shell wall 28 by means of an outwardly projecting screw 62 fixed to the wall 28 and passing through an opening in the lower end of the arm 60. Suitable washers 64 and 66 register with the screw 62 and are disposed on opposite sides of the bracket 60 and the assembly is secured by a self locking nut 68 engaging the screw 62. The bracket 60 extends to a point considerably above the rear aperture of the shell 26 and is provided with an opening 70 which is coaxial with the longitudinal axis of the shell 26 when the bracket 60 is in its topmost position. As illustrated in the drawings the entire assembly may be suspended from an overhead support 72 by means of a screw 74, passing through the bracket opening 70 into the overhead support 72, or the assembly may be mounted on a base plate 76 which is provided with an upwardly directed screw 78, passing through the opening 70, and a cooperating set nut 80. It is apparent from the drawings and description that the lamp mount and filter holder is rotatable about mutually perpendicular axes thus permitting universal adjustment in direction.

The insertion of a spotlight bulb 12 or 14 into the mount 10 is simply accomplished. In the case of the large bulb 12 the bulb 12 is tilted and the lower positioned portion of rib 20 is disposed in the crotches between the legs 50 and 52 of two of the clips 36 and pressed against them. Thereafter, the bulb is twisted toward horizontal to bring the bottom of the upper positioned portion of the rib 20 to bear upon the leg 48 to urge the bulb engaging portion of the respective clip 36 outwardly, thereby allowing the rib 20 to fall into the crotch between the corresponding legs 50 and 52 whereup this portion of the clip 36 springs outwardly and the bulb 12 is firmly engaged and held in position, as shown in Figure 2. The bulb may be simply removed by reversing the above procedure. The insertion of the bulb 14 which is of smaller dimensions is similarly accomplished, as shown in Figure 3, except that the rib 20 is brought into registry between the confronting faces of the clip lugs 54, and the screws 56 which define stop elements or detents. The bulb engaging portion of the locking clip 36 is urged outwardly by the rib 20 successively bearing against the upper faces of the corresponding clip legs 48 and 52. It should be pointed out that in normal unstressed condition the bulb engaging portions of the clips 36 project radially inwardly a distance somewhat greater than that illustrated in Figure 3 of the drawings.

The optical elements, normally being less rugged than the bulbs must be inserted with more care to avoid breakage. However, in the present device this may be simply accomplished. By way of example there is shown supported by the mount a beam spreading lens 82 for producing an oval beam and a conventional light filter 84. The lens 82 has a corrugated front surface and a peripheral shoulder 86 whereas the light filter 84 is provided with the usual channel shaped metal frame 88. In inserting the lens 82, it is tilted and inserted below two of the clip legs 44 and the other clip leg 44 is manually sprung outwardly and the lens located in the position illustrated with the shoulder 86 bearing against the shell flange 32. The sprung clip leg is then released thereby firmly to engage and retain the lens 82 in position. The light filter may be similarly inserted. The optical elements may be removed in a reverse manner.

In the embodiment of the present invention illustrated in Figure 5 of the drawing the shell 26 and clips 36 and their arrangement and assembly are similar to that of the embodiment earlier described. However, the mounting and adjusting arrangement are somewhat modified and, in addition, a shade is provided. The shade is in the shape of a sleeve member 90 having formed in its upper inner face a peripheral depression 92. The shell 26 registers with the sleeve 90 and the heads 94 of the screws 56 slideably engage the depression 92, thus permitting the rotation of the shell 26 relative to the sleeve 90 about their longitudinal axes. In order to facilitate the rotational adjustment between the shell 26 and the sleeve 90 they are each provided with outwardly directed handles 96 and 98 respectively. Each of the handles has an inwardly directed threaded shank which passes through an opening in the corresponding wall of the shell 26 or sleeve 90, the threaded shank being engaged by a matching nut to lock the handles 96 and 98 in position. In order to permit the support of the assembly and the further adjustment thereof, a bracket or saddle 100 is provided with depending legs 102 which straddles the shell 26 and sleeve 90. The lower ends of the legs 102 are pivoted to opposite sides of the lower portion of the sleeve 90 by any suitable screw and washer arrangement which permits the rotational adjustment and setting of the assembly about a transverse axis. The crotch of the saddle 100 is disposed somewhat above the shell 26 and is provided with an opening co-axial with the longitudinal axis of the sleeve 90 when the saddle 100 is in upright position. The saddle 100 may be adjustably suspended from an overhead support 72 by means of a suitable screw 74 passing through the crotch opening into the overhead support 72. The manipulation of this last embodiment of the present invention is similar to that earlier described and requires no further explanation.

While there has been described and illustrated preferred embodiments of the present invention, it is apparent that numerous alterations and omissions may be made without departing from the spirit thereof. Having described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination comprising an electric light bulb, a circular lens element, a shell member having front and rear apertures and a plurality of peripherally spaced openings formed in its wall, a clip element formed of resilient material passing through each of said openings and extending rearwardly within said shell and forwardly external to said shell, each of said clip elements being provided at its rear portion with a section engaging said electric bulb and at its forward portion with a section engaging said lens element.

2. The combination comprising an electric light bulb, a circular lens element, a shell member of substantially tubular configuration having front and rear apertures and a plurality of circumferentially spaced openings formed in the wall thereof, a plurality of clip elements formed of resilient material, each of said clip elements having an intermediate section passing through each of said openings and a back section substantially along the inner face of said shell member and a front section extending forwardly from said intermediate section external to said shell member, said clip back sections having rear reentrance sections including forwardly directed legs which are successively inwardly and outwardly directed, said reentrance sections engaging said electric bulb and said front sections engaging said lens element.

3. The combination in accordance with claim 2, wherein said clips are formed of resilient strip material and said openings in said shell member are in the shape of circumferentially extending slits having lower edges radially inwardly depressed to permit the intermediate sections of said clips to pass through said openings in a direction substantially parallel to the wall of said shell member.

4. The combination in accordance with claim 2, in which each of said rear re-entrant sections forwardly directed legs comprise a first inwardly directed leg, a second outwardly directed leg, a third inwardly directed leg, and fourth outwardly directed leg and stop members are mounted on said shell and project inwardly to points forward the termini of said fourth legs.

5. The combination in accordance with claim 2, includ-

ing stop members mounted on said shell and projecting inwardly to points forward of the termini of the front legs of said re-entrant portions said electric bulb having an edge disposed between said stop members and said front leg termini.

6. The combination in accordance with claim 5, wherein said stop members are defined by fastening elements securing said clips to the wall of said shell member and projecting radially inwardly substantially beyond the inner face of said shell wall.

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