

May 2, 1933.

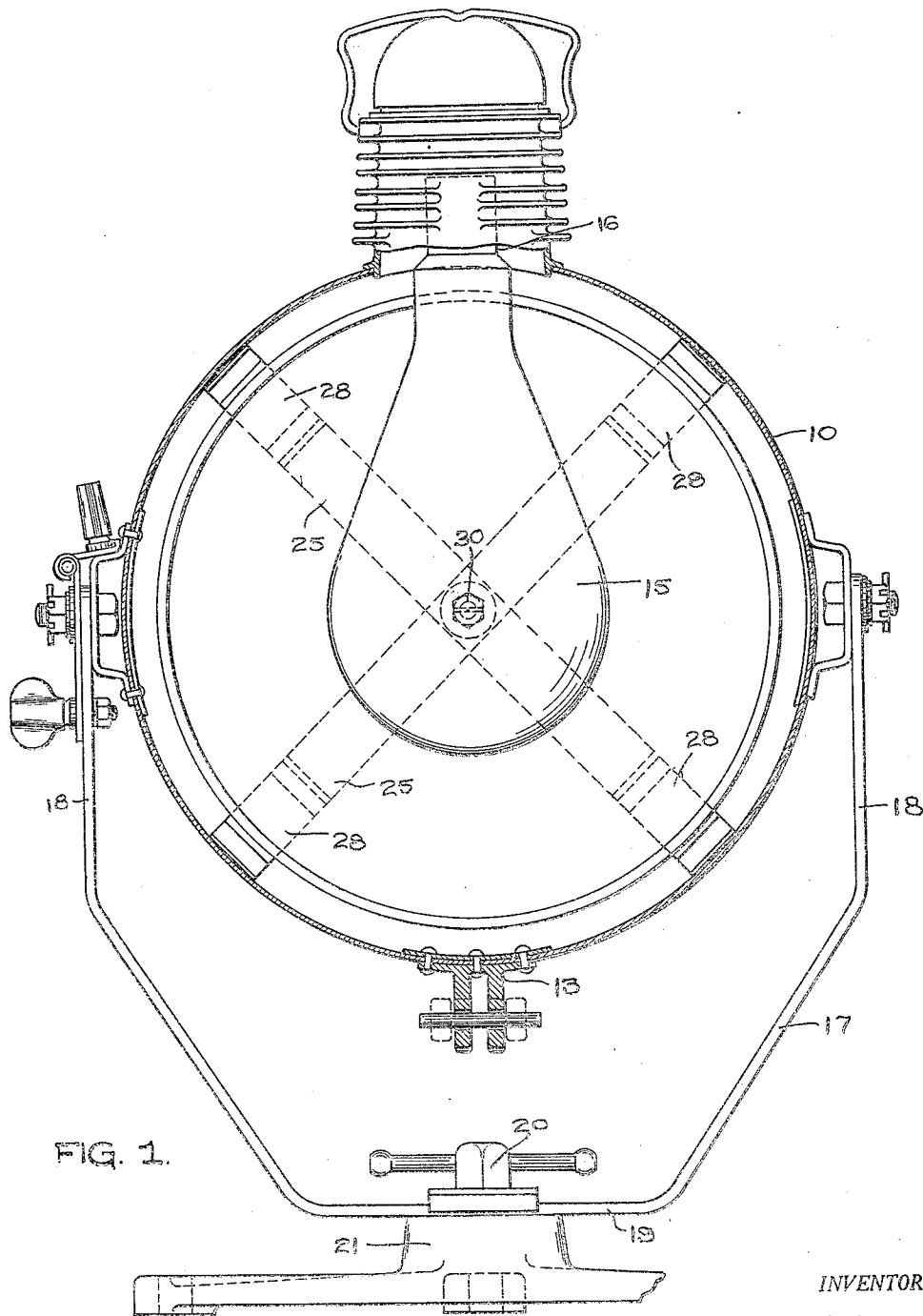
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1,906,460

LAMP

Filed Dec. 17, 1930

3 Sheets-Sheet 1



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FIG. 2.

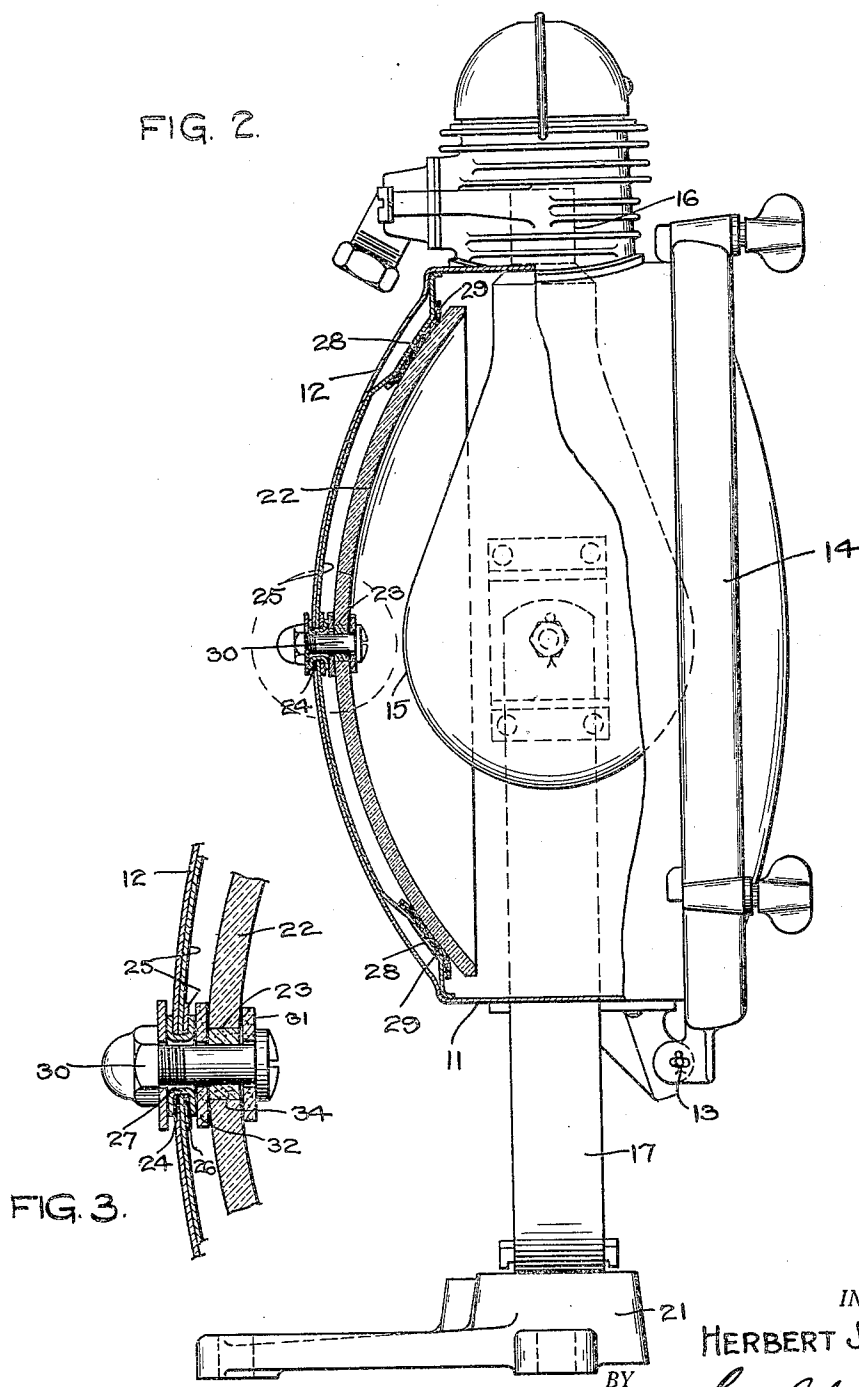


FIG. 3.

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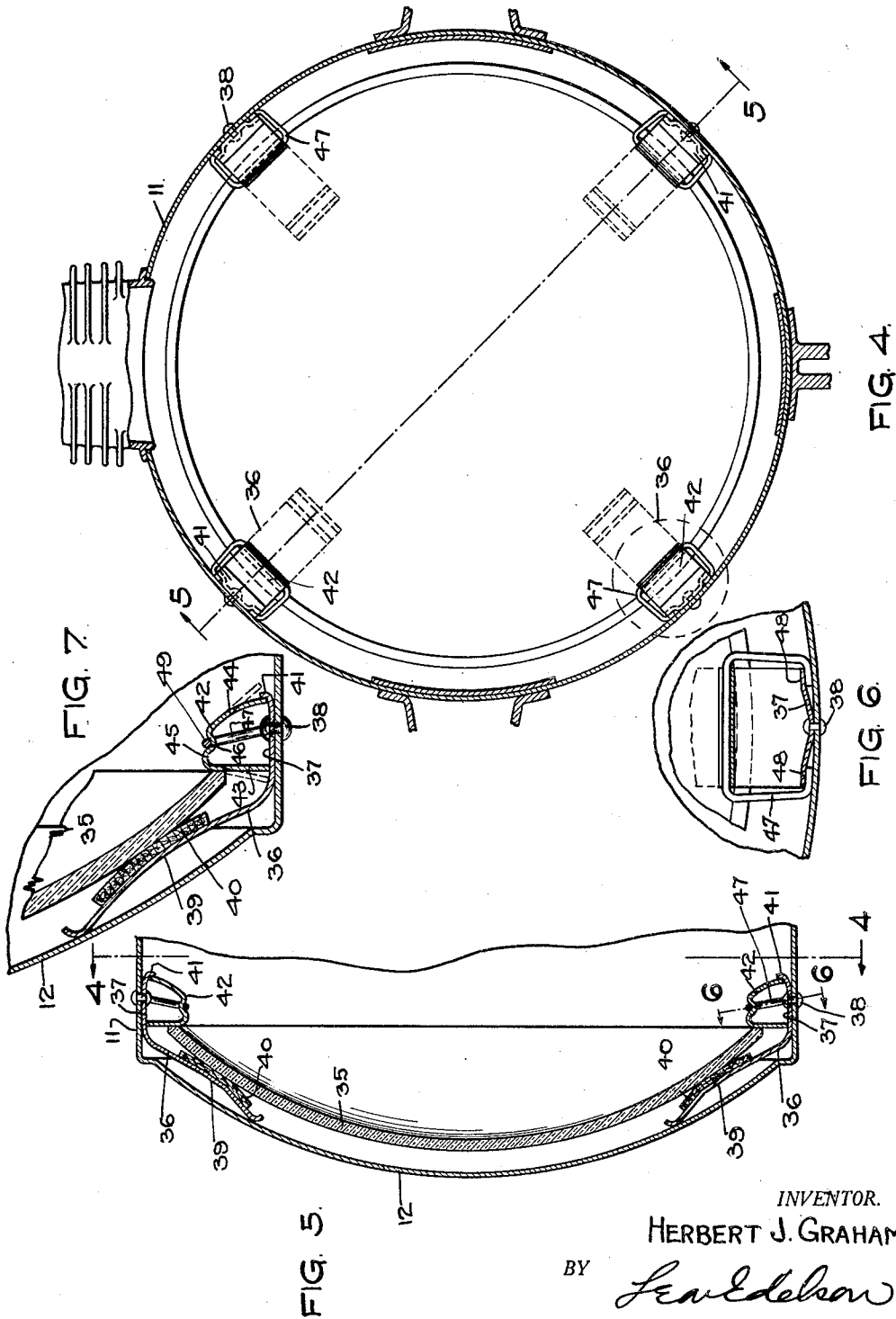
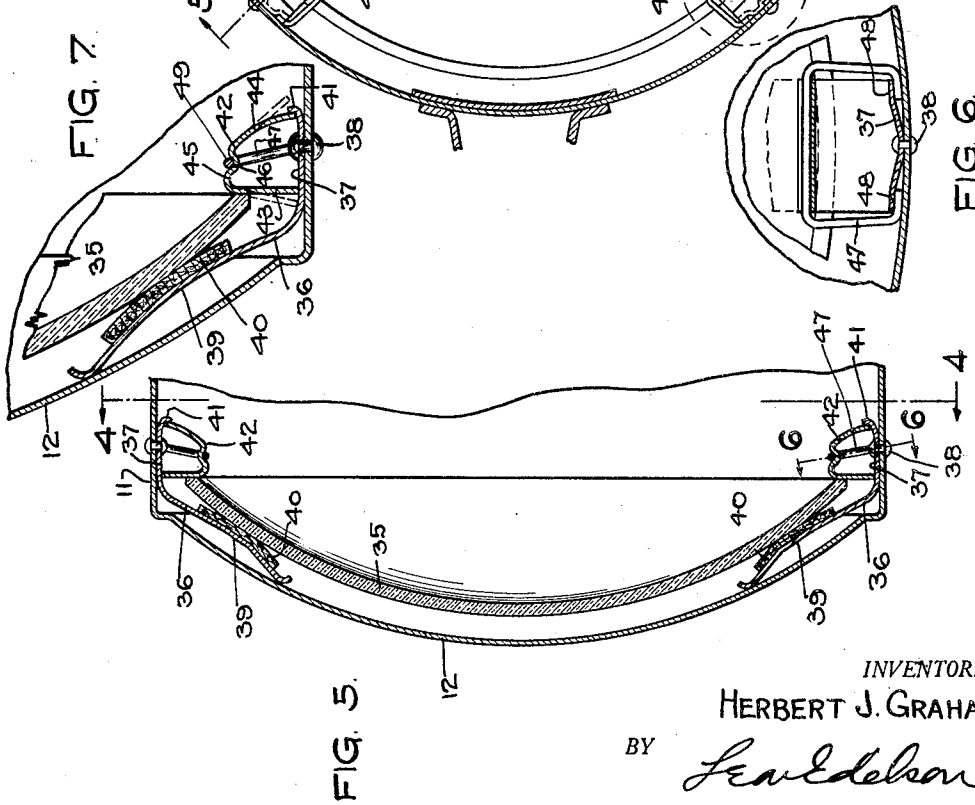
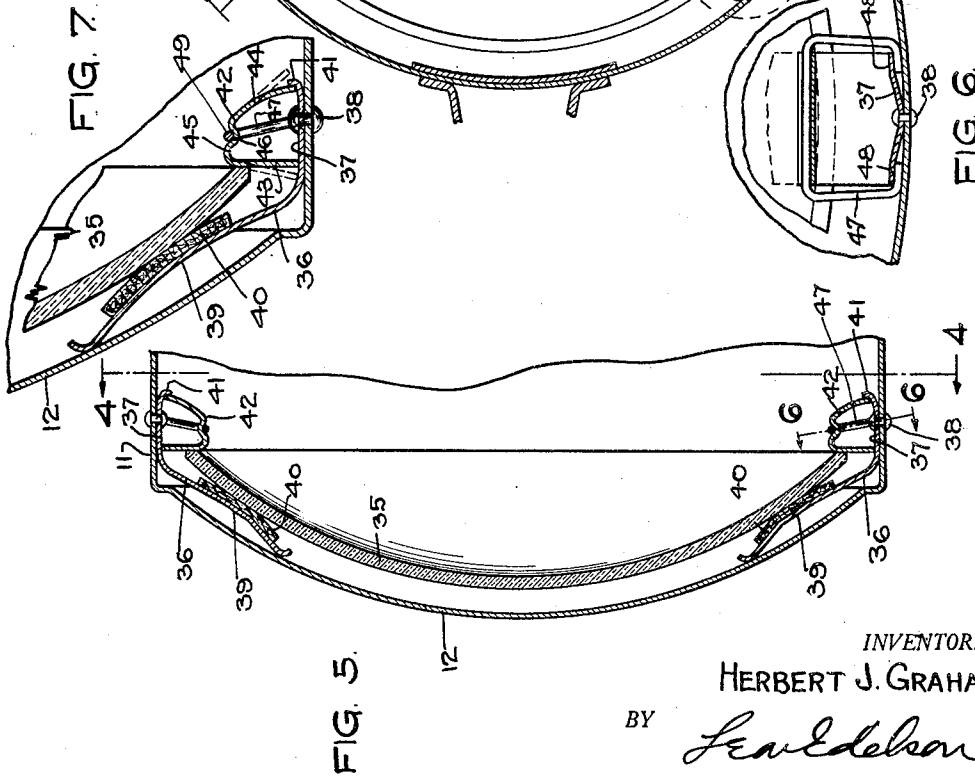
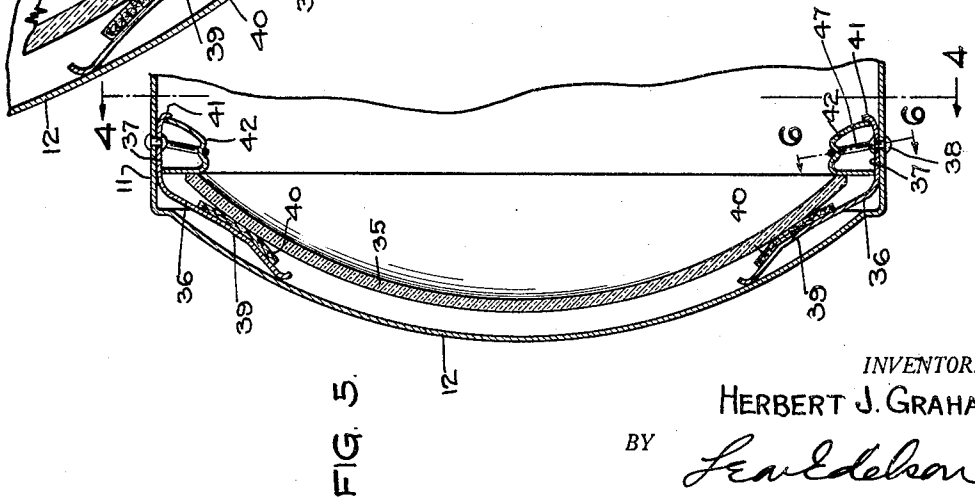
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

HERBERT J. GRAHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ELECTRIC SERVICE SUPPLIES COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

LAMP

Application filed December 17, 1930. Serial No. 502,887.

This invention relates to electric lamps and more particularly to electrically operated flood lights, search lights, head lights and the like, which are intended for the projection of light over comparatively great distances or areas.

It is among the primary objects of this invention to provide in a lamp of the aforementioned character means for resiliently supporting a reflector in secure position at the same time that the latter is afforded protection as against fracture and other such injury arising from shocks or jars incidental to its use.

A further object of the invention is the idea of securing to the lamp body or casing a plurality of radially extending members which operate conjointly as a foundation or base for supporting the back of a reflector in spaced relation with respect to the rear wall of the lamp body, said members being provided with cushioned, inherently resilient portions for protecting the reflector against damage due to shocks, jars or untoward vibration.

Still another object of the invention is the provision of a plurality of circumferentially spaced radially extending cushioning elements which operate not only to protect the reflector against injury from shocks and jars incidental to its use but also as means for retaining the reflector in fixed position within the lamp body.

A still further object of the invention is the provision of simple, reliable and efficient means for readily and firmly mounting a reflector within a lamp body or casing but in such manner that it may be as readily removed therefrom for purposes of replacement, adjustment, repair and the like, said means serving further to effectively preclude all rattling or vibration of the reflector when mounted within the lamp body.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the combination, construction, location and relative arrangement of parts, all as will be described more fully hereinafter, as shown in

the accompanying drawings and as finally pointed out in the accompanying claims.

In the said accompanying drawings.

Figure 1 is a front elevational view of a lamp embodying the features of this invention; the front cover thereof being removed;

Figure 2 is a side elevational view of the lamp shown in Figure 1, the rear portion thereof being broken away and in vertical section to show certain constructional details of the present invention;

Figure 3 is an enlarged view of the portion inscribed within the dotted circle of Figure 2;

Figure 4 is a partial front elevational view of a lamp, the front cover of which is removed, showing a modified form of combined reflector retaining and cushioning means;

Figure 5 is a partial sectional view taken on the line 5—5 of Figure 4;

Figure 6 is an enlarged view of the portion inscribed within the dotted circle of Figure 4; and

Figure 7 is an enlarged vertical section of the portion shown in Figure 6.

Referring now more particularly to the drawings, it will be observed that the invention has been embodied in a lamp body or casing 10 having an annular portion 11 and a rear wall 12, the said annular portion and rear wall being preferably integrally formed. Cooperating with the lamp body, and hinged thereto as at 13, is a front door closure 14 whereby there is provided a normally closed protective housing for an incandescent electric bulb 15. The bulb 15 is mounted within a socket 16 supported in suitable manner upon the annular portion 11 of the lamp body while the latter is sustained, with capacity for adjustment about vertically and horizontally extending axes, by a U-shaped yoke or bracket 17 having a pair of upstanding arms 18 between which the lamp body is pivotally mounted. The base 19 of the bracket 17 is suitably supported, preferably by means of a headed bolt or stud 20, upon a base or foundation member 21. Inasmuch as the aforedescribed parts form no real part of the present invention, further description thereof will not be given herein

except in so far as they are related to the present invention.

As appears most clearly in Figure 2, the back or rear wall 12 of the lamp body is concaved so as to conform to the transverse curvature of a parabolic reflector 22 which is removably positioned within the lamp body in the manner to be now described. In one preferred arrangement this reflector 22, which is preferably made of frangible material, such as glass or porcelain, with the concaved face thereof treated to produce a reflecting surface, is provided with a central aperture 23 adapted for registry with a corresponding aperture 24 provided in the concaved back 12 of the lamp casing.

Interposed between said back 12 of the lamp casing and the rear surface of the reflector are a pair of strap members 25—25 arranged in transversely extending relation with respect to each other. The overlapping portions of these straps 25—25 are apertured, as at 26, and are secured to the rear wall of the lamp casing by means of a tubular rivet or similar anchorage 27 which is passed commonly through the apertured straps and the aperture 24 of said casing rear wall. As is shown most clearly in Fig. 2 the opposite ends of each of the straps 25, the latter being fashioned from comparatively thin and resilient strip metal, are provided with portions 28 which are offset and spaced from the casing wall to which the straps are secured. These offset portions 28 constitute a plurality of spring fingers extending radially outward from the central anchorage 27, and each is faced with a padding of asbestos, felt or similar cushioning material 29 against which the back of the reflector 22 is adapted to rest.

The reflector 22 is disposed with the back thereof in contacting relation with the cushioned spring fingers 28, it being understood that except for these spaced points of contact the reflector is in spaced out-of-contact relation with the rear wall of the lamp body. A bolt 30, inserted through the central aperture 23 of the reflector and through the tubular rivet 27 which secures the straps 25—25 to the casing rear wall 12, is employed to maintain the reflector in fixed position against the cushioned resilient fingers 28. Preferably cork washers 31 and 32 are respectively interposed between the head of the bolt and the reflector and between the reflector and the tubular rivet 27, this to prevent fracture of the reflector upon tightening the securing bolt 30. To further prevent direct contact between the reflector and the bolt 30 the latter is preferably surrounded by a cork sleeve or collar 34, the length of which approximately equals that of the reflector.

From the foregoing description it will be observed that this invention provides a foundation or base for the reflector comprising the crossed strap members 25, the outer ends of

which are inherently resilient and freely movable with respect to the lamp body and covered with cushioning material. This foundation for the reflector is secured upon the rear wall of the lamp body independently of the reflector, the latter being readily detachable by merely removing the bolt 30. This bolt is the sole element employed for maintaining the reflector in position, the reflector being sustained in uniformly spaced relation with respect to the rear wall of the lamp body by the resilient outer ends 28 of the strap members, the cushioned faces of which are arranged to contact with circumferentially spaced marginal portions of the reflector back.

Figures 4 to 7, inclusive, show a modified arrangement for detachably supporting a reflector 35 in uniformly spaced relation with respect to the back wall of the lamp body or casing. In this modified arrangement the foundation or base for the reflector comprises a plurality of circumferentially spaced spring fingers 36 each of which is provided with a laterally bent portion 37 adapted to be secured to the inner surface of the annular wall 11 of the lamp body by a rivet or similar securing element 38. These spring fingers 36, each of which extends radially inward from its point of securement to the lamp body, are bowed, as at 39, the free ends thereof being in contacting relation with the rear wall of the lamp body. As in the former instance, the bowed portions 39 of the spring fingers 36 are each faced with a padding of asbestos, felt or like cushioning material 40 against which the back of the reflector is adapted to rest.

As appears most clearly in Figure 5, the portions 37 of the spring fingers extend forwardly beyond the plane of the reflector edge, the said portions 37 being provided at their free edges with inturned heel flanges 41. The reflector 35 is removably held in position against the cushioned surfaces of the spring fingers 36 by a plurality of detachable clip members 42 respectively arranged for coaction with the heel flanges 41. These clips 42, which are also fashioned of resilient strip metal, are each substantially U-shaped in cross-section comprising the flanges 43 and 44 interconnected by the base 45, the latter being provided with a transverse depression 46. In order to retain the reflector in position the clips 42 are respectively positioned with the flanges 43 thereof in engagement with the edge of the reflector while the flanges 44 thereof are engaged behind the heel flanges 41 of the spring fingers 36.

The clips 42 are each held against displacement by means of a U-shaped spring wire bail 47 having its ends pivotally engaged in aligned offsets 48 formed in opposite edges of the portions of the spring fin-

gers, the cross bars 49 of the bails being respectively arranged to snap into the transverse depressions 46 in the clips 42. To remove the clips 42, pressure is applied to the cross bars of the spring rails 47 to thereby effect their displacement from the transverse depressions in which they are respectively seated. The fact that the edge of the spring finger which is formed with the heel flange 41 may be yieldingly pressed outwardly and toward the annular wall of the lamp body is of material assistance in effecting disengagement of the bail 47 from its clip 42.

It will thus be seen that in both forms of the invention as hereinbefore described radially extending spring fingers are provided which conjointly constitute a foundation or base against which a reflector may be mounted. Due to the inherent resiliency of these spring fingers and due further to the fact that they are faced with suitable cushioning material, the reflector may be firmly secured in position without danger of its being fractured or otherwise injured due to excessive temperature variations, shocks, jar or untoward vibration incident to the use of the lamp. In each case the spring fingers are mounted upon and carried by the lamp body independently of the reflector and in such manner that the latter may be as readily removed as it may be mounted in position. It will be understood, of course, that various changes may be made from time to time without departing from the general spirit or principles of the invention and as indicated by the appended claims.

What is claimed as new and useful is:

1. In a light projecting device, in combination, a housing for an illuminating means, said housing being provided with an integrally formed back wall, a reflector arranged to be positioned coaxially with respect to said back wall and in spaced relation therewith, a foundation for said reflector secured to said back, said foundation comprising a pair of straps arranged in crosswise relation and secured centrally to said back independently of said reflector, and means projected axially through said reflector, said straps and said back wall for removably positioning said reflector with circumferentially spaced marginal portions thereof contacting with the free extremities of said straps.

2. In a light projecting device, in combination, a housing for an illuminating means, said housing being provided with a centrally apertured back, a pair of strap members arranged in crosswise relation for positionment against said back, the overlapping portions of said members being commonly apertured, a tubular securing element projected through the apertured back and strap members for securing the same to-

gether, the outer extremities of said members being bowed and freely movable with respect to said back, a reflector arranged to be positioned coaxially with respect to said back, and means projected substantially axially through said reflector and said tubular element for securing said reflector in position against said freely movable extremities of said members.

3. In a light projecting device, a reflector, and a resilient support therefor, said support comprising a pair of strap members arranged in crosswise relation and having registering openings, said strap members being each provided with bowed portions arranged to either side of the opening therein, means projected through said registering openings for securing said strap members in assembled relation to a fixed support, said means being projected substantially axially through said reflector for securing said reflector in position coaxially with respect to said resilient support and in contacting relation with the bowed portions only thereof.

4. In a light projecting device, a relatively fixed back plate, a reflector adapted to be positioned thereagainst, inherently resilient means interposed between said reflector and back plate, means for securing said resilient means centrally of and to said back plate independently of said reflector, and means projected axially through said reflector and said securing means for drawing said reflector toward said back plate against the action of said resilient means.

5. In a light projecting device, a relatively fixed back plate, a reflector adapted to be positioned thereagainst, a pair of crossed strap members interposed between said back plate and reflector, said members being provided with inherently resilient portions having a tendency to spring away from said back plate, means passing centrally through said strap members for securing the latter commonly to said back plate, and means projected axially through said reflector and said securing means for urging the reflector toward said back plate against the action of said resilient portions of the strap members.

In testimony whereof, I have hereunto affixed my signature.

HERBERT J. GRAHAM.