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1,658,551

L. BLACKMORE

ADJUSTABLE LIGHT SUPPORT FOR REFLECTORS

Filed July 27, 1925

2 Sheets-Sheet 1

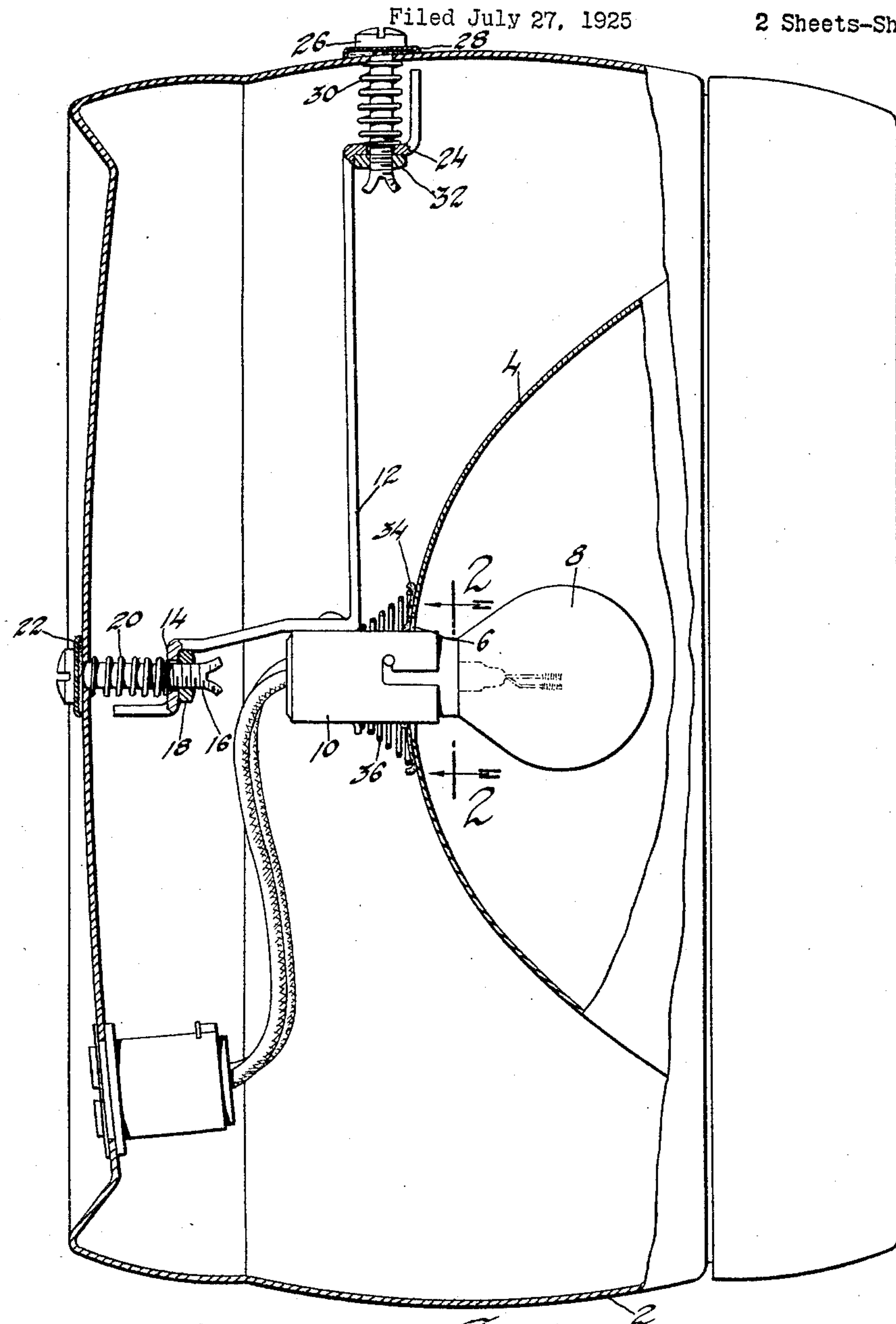


Fig. 1

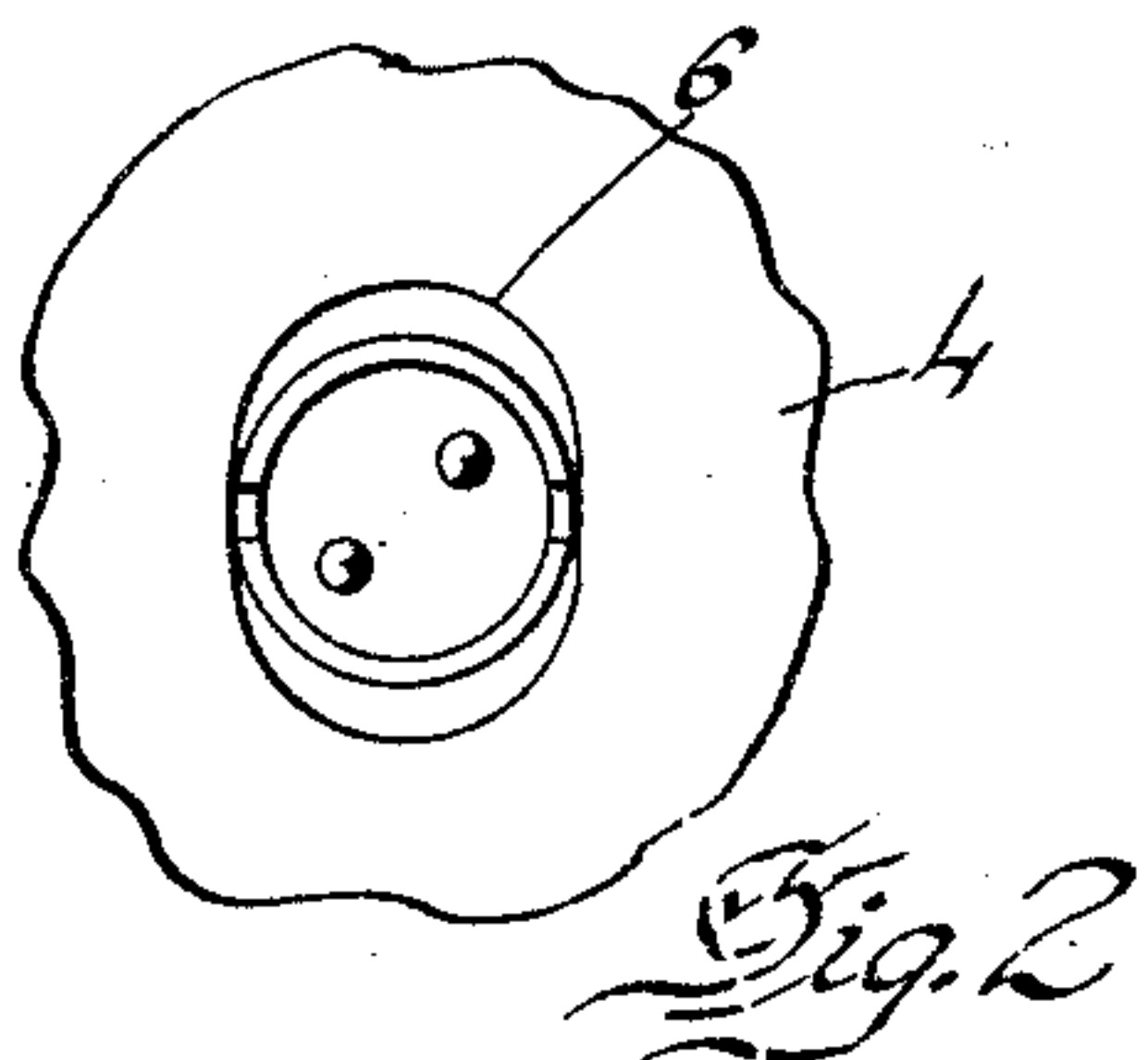


Fig. 2

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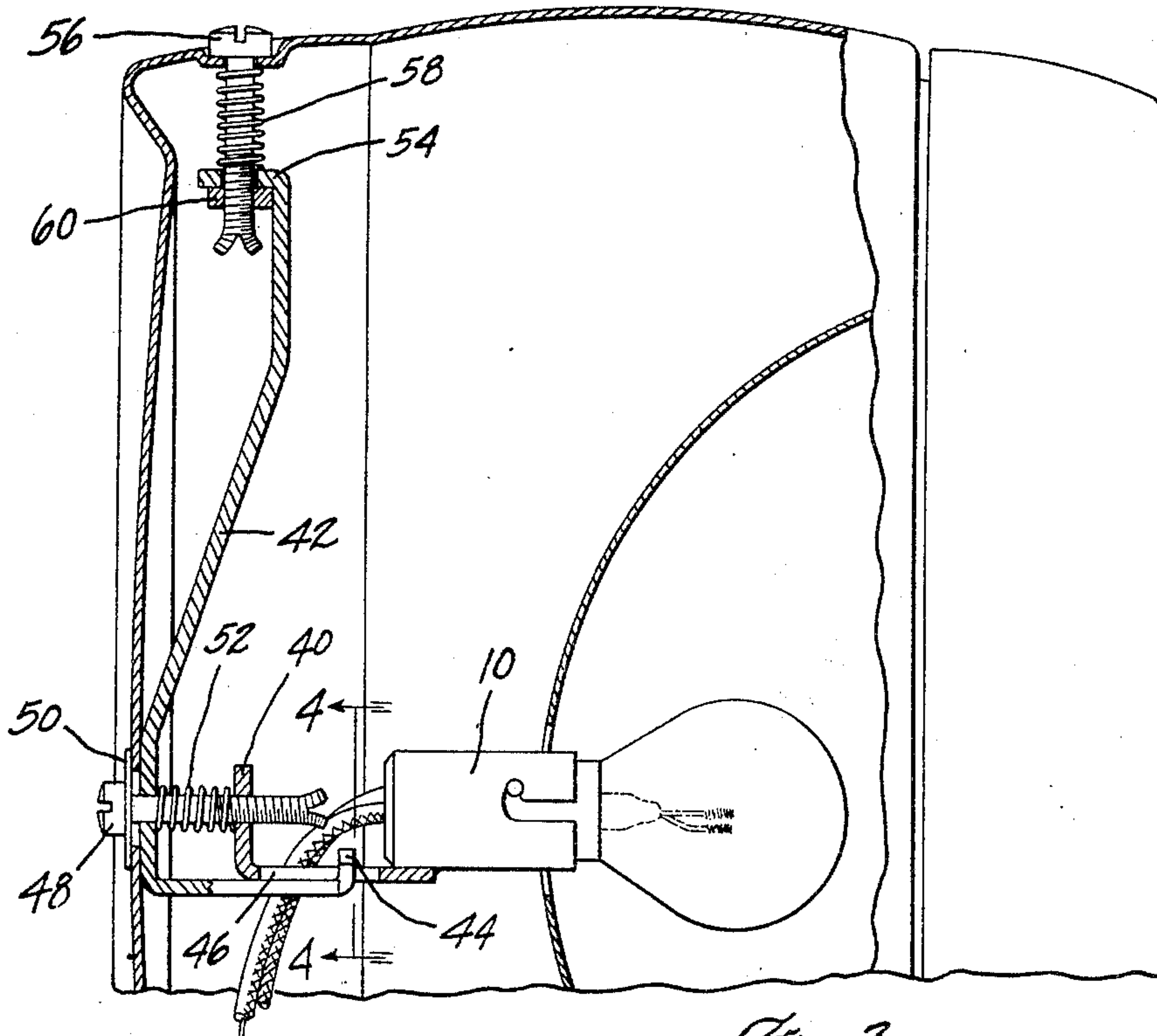


Fig. 3

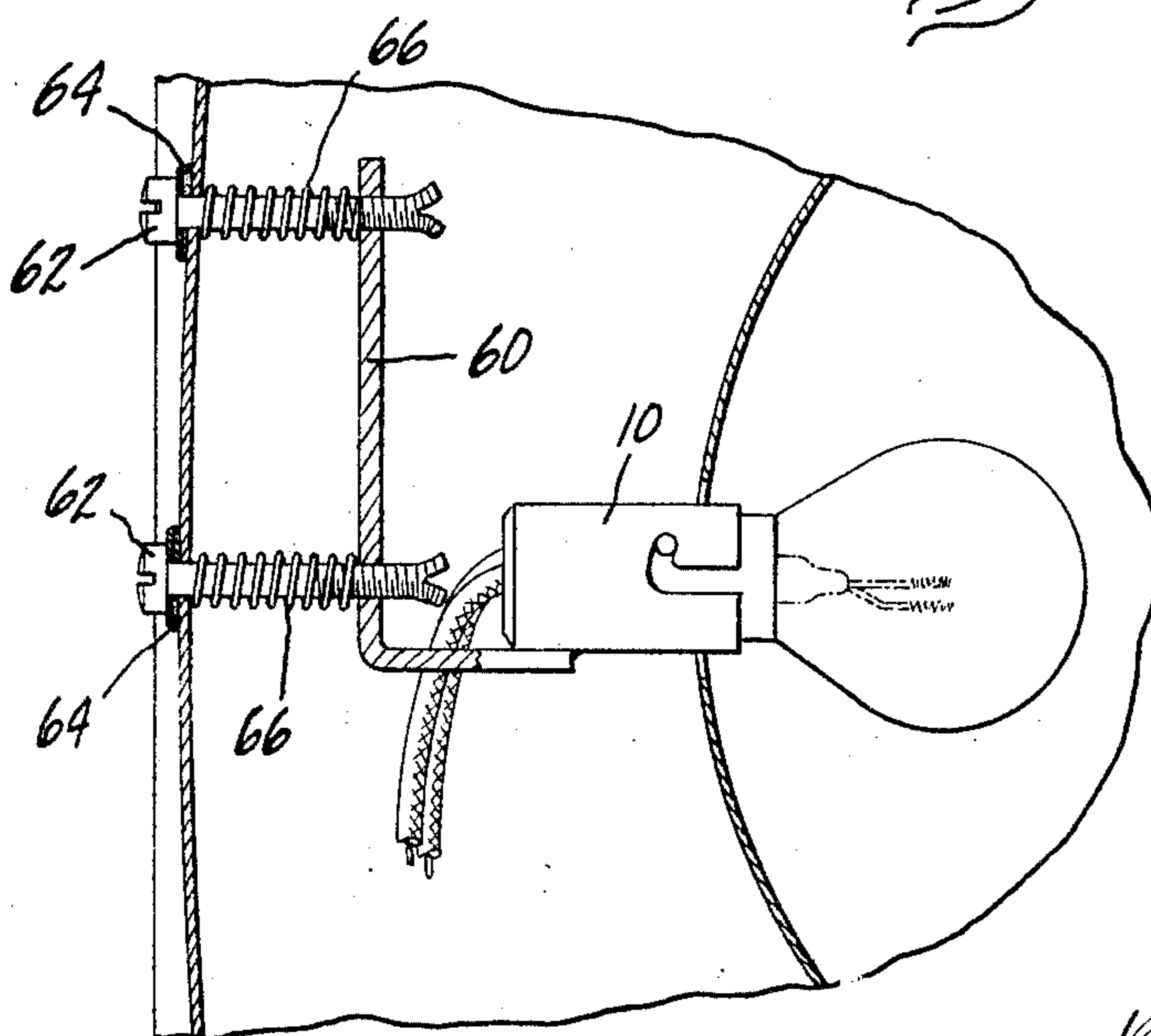


Fig. 5

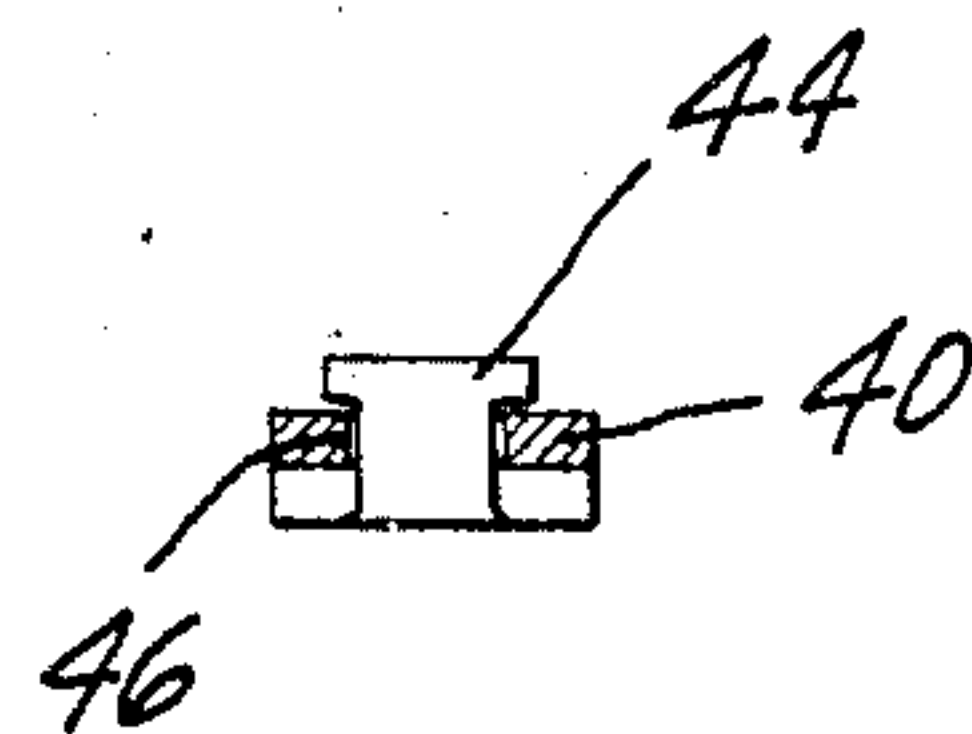


Fig. 4

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE LIGHT SUPPORT FOR REFLECTORS.

Application filed July 27, 1925. Serial No. 46,364.

In the present day automobile headlight, consisting essentially of a light source and a reflector, it is necessary to provide an adjusting means which will permit considerable variation in the position of the light source in the reflector so as to secure the desired distribution of the reflected light. This is because the parts of the lamp and casing are not manufactured with sufficient accuracy nor are the filaments positioned in the bulb with sufficient precision to permit of the latter being fixed in position in the lamp.

The adjusting means which I have devised affords the required adjustments and at the same time holds the light source so securely in its adjusted position that it will not become loosened as a result of vibration of the car. It is also of very simple but sturdy construction and may be cheaply manufactured and easily assembled.

On the drawing:

Figure 1 is a partial sectional view showing one embodiment of my invention;

Figure 2 is a view on line 2—2 of Figure 1 with the light bulb removed;

Figure 3 is a sectional view corresponding to Figure 1 showing a modified form;

Figure 4 is a section on line 4—4 of Figure 3; and

Figure 5 is a view partly in section showing a further modification.

In the form shown in Figures 1 and 2, 2 indicates the lamp housing and 4 the reflector secured therein in any desired manner. The reflector 4 is provided at its apex with a slot 6 which may be elongated as shown in Figure 2. Within this slot the light source, such as an incandescent bulb 8, is adapted to be adjustably positioned. The bulb 8 is supported in the socket 10 in any preferred manner. The socket is supported for adjustment in several directions, in this case axially and laterally, by means of a member 12 and cooperating adjusting devices. Thus one extremity of the member 12 is preferably provided with an angled portion 14 having an aperture therein through which projects an adjusting screw 16 which passes through the rear wall of the casing. A nut 18 is threaded upon the adjusting screw and is preferably held against rotation by contact with a portion of the member 12 whereby upon rotation of the screw 16 the nut 18 rides in or out upon the screw, carrying with it on its out-

ward movement the member 12 together with socket 10 and bulb 8 to effect axial adjustment. Spring 20, which encircles the screw 16, causes the angled portion 14 of the member 12 to constantly bear against the nut 18, following it when it is moved inwardly. The spring 20 also acts to draw the head of the screw 16 and the cooperating washer 22 against the rear wall of the casing 2, thus serving to hold the screw in adjusted position.

The other extremity of the member 12 is provided with a similar adjusting device consisting of an angled portion 24 on the member 12 and screw 26 provided with washer 28, spring 30, and nut 32 operating in the same manner as the similar parts previously described.

In order to seal the reflector against the entrance of dirt I have preferably provided the washer 34 which encircles the socket 10 bearing against the rear of the reflector 4 and covering the opening 6 therein. Spring 36, which should be relatively weak, bears at one end against the washer 34 and at the other end against any suitable abutments on the socket, as shown, for yieldingly holding the washer in seating engagement. These parts also serve to hold the socket against movement.

It will now be seen that by adjustment of the screw 16 the light source may be moved inwardly or outwardly in an axial direction. Movement of the light source with the construction shown on the drawing will be one of rotation about the point of connection of the member 12 with the adjusting screw 26. And, similarly, when the screw 26 is adjusted the motion of the light source will be one of rotation about the connection of the member 12 with the screw 16. However, if it is desired in either or both cases that the light source be capable of a pure motion of translation it is merely necessary to substitute slots for the close fitting apertures in the casing walls and in the angled portions 14 and 24.

In the modification shown in Figures 3 and 4, the socket 10 is directly supported by an angled member 40 which in turn is adjustably supported upon a member 42, the member 42 having an up-turned headed end 44 as best shown in Figure 4 for engagement in a slot 46 provided in the member 40. A screw 48 having a washer 50

thereon passes through an enlarged opening in the rear wall of the casing and through aligned openings in the members 42 and 40, the opening in the latter member preferably being threaded. A spring 52 encircles the screw 48 and is interposed between the members 40 and 42. The other extremity of the member 42 is provided with an angled portion 54 with which cooperates a screw 56 having spring 58 and nut 60 thereon, these parts functioning the same as corresponding parts in Figure 1.

In this form of my device it will be apparent that rotation of the adjusting screw 48 will effect axial adjustment of the light source while adjustment of the screw 56 will effect lateral adjustment thereof. It will be noted that the two adjustments are independent of each other, that is, adjusting the light source axially will not effect the previous lateral adjustment, and vice versa.

In the modification shown in Figure 5, the socket 10 is supported by an angle member 60, the up-turned portion of which has threaded engagement with two adjusting screws 62 having washers 64 thereon. Springs 66 encircle the screws and bear at one end against the rear wall of the casing and at the other end against the up-turned portion of the member 60. The threaded engagement between the screws 62 and the up-turned portion of the member 60 is sufficiently loose so that by adjusting one of the screws and not the other the angle member 60 may rock slightly about its point of engagement with the other screw thus imparting a slight rocking movement to the light source. If preferred, screws 62 may pass loosely through apertures in the member 60 and may be provided with nuts held against rotation in any suitable manner as by engagement with bent up lugs on the member 60. In this case each adjusting device is

functionally the same as the adjusting devices of Figure 1 and the loose engagement between the member 60 and the adjusting screws prevents binding. It is also obvious that by adjusting both screws the light source may be given a pure axial movement.

I claim:

1. The combination of a lamp casing, a reflector in the casing, a source of light, an angled member rigidly supporting the light source and having one arm extending substantially axially and the other arm extending substantially radially, means associated with the first-named arm for adjusting the light source in a general axial direction and means associated with the second named arm for adjusting the light source in a direction approximately transverse of its axis, said means being accessible from the outside of the casing.

2. In the combination as defined in claim 1, said first named means including a part extending through the rear of the casing, and said second named means including a part extending through the side of the casing.

3. In the combination as defined in claim 1, said means cooperating with the ends of said arms.

4. The combination of a lamp casing, a reflector in the casing, an angled member within the casing comprising a plurality of arms arranged at an angle, said angled member having a light bulb mounted thereon adjacent the apex of the angle independent adjusting devices secured to the ends of the arms and accessible from the outside of the casing, whereby when one of said devices is manipulated the angled member is tilted about its connection with the other member.

In testimony whereof I affix my signature.

LLOYD BLACKMORE.