

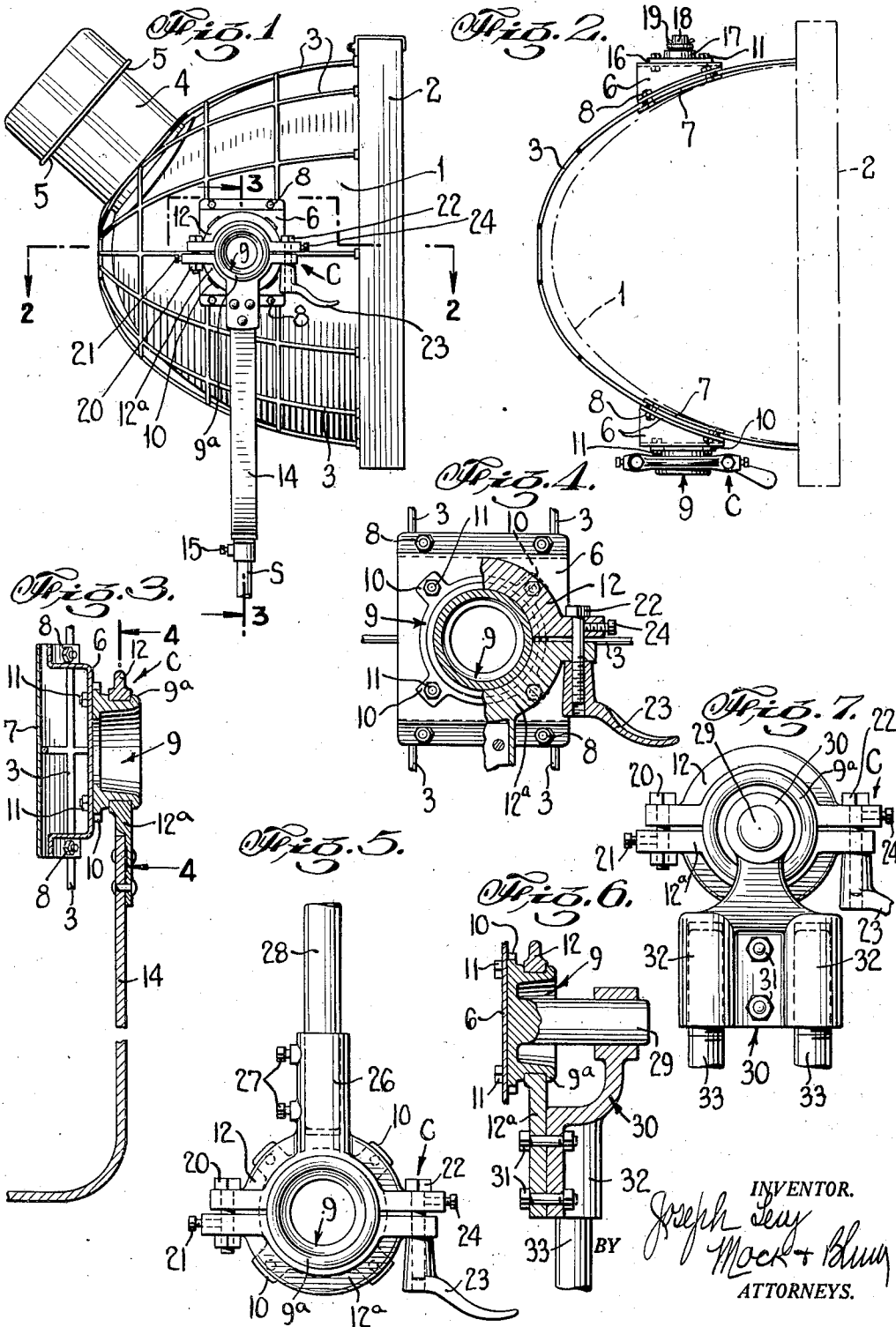
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LIGHTING FIXTURE SUPPORT.

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# UNITED STATES PATENT OFFICE

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## LIGHTING FIXTURE SUPPORT

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2 Claims. (Cl. 240-3)

My invention relates to a new and improved lighting fixture support.

One of the objects of my invention is to provide an improved adjustable support for lighting devices of the type which are used in stage lighting, such as projectors of various types.

Another object of my invention is to provide a device of this type, by means of which the projector or the like can be readily and accurately adjusted, and be firmly held in adjusted position.

Another object of my invention is to provide a device which shall eliminate the necessity of using friction washers, ratchets, and other devices which either wear out or which cannot be accurately adjusted.

Other objects of my invention will be set forth in the following description and drawing which illustrates preferred embodiments thereof, it being understood that the above general statement of the objects of my invention is intended to generally explain the same, without limiting it in any manner.

Fig. 1 is a side elevation showing my invention applied to a projector.

Fig. 2 is a sectional view on the line 2-2 of Fig. 1.

Fig. 3 is a sectional view on the line 3-3 of Fig. 1.

Fig. 4 is a sectional view on the line 4-4 of Fig. 3.

Fig. 5 illustrates a modification of the invention.

Fig. 6 illustrates a second modification of the invention.

Fig. 7 is a front view of Fig. 6.

Adjustable reflectors and similar devices have been used for many years in stage lighting. In such cases it is necessary to throw a long beam of light with great accuracy. The use of ordinary set-screws for holding the reflector in proper position has been found to be unsatisfactory even after the screws were tightened with a large wrench, because the reflector always tilted out of the proper position. It has been proposed to use ratchet discs, but such discs are unsatisfactory, because the angle of the reflector cannot be controlled with sufficient precision. For more than twenty years it has been customary to employ clamping discs having intermediate washers for holding the reflectors in proper position, but such devices have not been satisfactory, because the washers which were made of leather or similar material, rapidly wore out, so that the operation of such devices was neither reliable nor precise.

According to my invention, a very simple clamping or control device is provided, which does not

require the use of wrenches or the like, and which is very simple and compact.

I have illustrated the invention as applied to a projector of the reflector type, but the invention is generally useful in connection with any type of lighting fixture or projector, in which the position of the beam of light must be accurately controlled.

The reflector shell 1 is made of aluminum or other suitable metal, and it is provided with a flange 2, which serves as a color frame, in which suitable colored slides may be mounted. The outside of the reflector shell is reinforced by wires 3.

The reflector shell 1 is provided with a lamp housing 4, which can be made of spun aluminum, and a ventilation opening 5 is provided in the lamp housing 4. The shell 1 is provided with a pair of bearing members 6. Clamping plates 7 are located between the outer wall of the shell 1 and the wires 3. The bearing members 6 are clamped to the clamping plates 7 by means of screw and nut devices 8, or any other suitable clamping devices.

As shown in Fig. 1, the flanges of the bearing members 6 are made sufficiently large so that each said bearing member 6 can be clamped against a suitable number of the wires 3. Each of the clamping members 6 is connected to a sleeve 9. For this purpose and as shown in Fig. 4, the inner end of the sleeve 9 is provided with a flange 10 having a number of perforations. The adjacent or outer end of the bearing member 6 has a wall which is provided with perforations which correspond to the perforations of the flange 10 so that the flange 10 can be clamped to the outer end of the bearing member 6, by means of suitable clamping members 11.

Hence, the sleeves 9 turn in unison with the reflector 1. Each sleeve 9 is also provided with an enlarged flange 9a at its outer end. As shown in Fig. 3, a control sleeve C can be clamped around the sleeve 9. As shown in Fig. 3, the control sleeve C is located in a suitable recess which is provided in the outer wall of the sleeve 9, so that lateral movement of the control sleeve C with respect to the sleeve 9 is prevented. Said sleeve 9 has a flange 9a.

As shown in Fig. 4, the control sleeve C comprises two parts 12 and 12a.

As shown in Fig. 3, the sleeve member 12a is riveted or suitably fastened to a supporting member 14. The supporting member 14 may comprise a supporting standard, a supporting yoke or the like. Likewise, and as shown in Fig. 1, the supporting member 14 may be located upon a

standard S, so that the member 14 is vertically movable with respect to the standard S. A set-screw or other clamping device 15 is provided, so as to hold the supporting member 14 in vertical adjusted position.

It is preferred to have the member 14 in the shape of a yoke which is connected to the opposite sides of the reflector and to have this yoke provided with a central projection, which enters the upper end of the standard S.

Since only a single control sleeve C is required, one of the bearing members 6 has a plate 16 clamped thereto, and said plate 16 is provided with an integral projection 17 from which extends another integral projection 18, the projection 18 being of smaller diameter than the projection 17. The yoke 14 has an opening through which the projection 18 extends, and an ordinary cotter pin 19 maintains the assembly of the parts.

As shown in Fig. 1, the sleeve members 12 and 12a are provided with flanges. These flanges are adjustably connected to each other at adjacent ends thereof, by means of a clamping member 20. After the clamping member 20 has been adjusted, it can be held in adjusted position by means of a set-screw 21. As shown in Fig. 7, the sleeve members 12 and 12a are provided with relatively long flanges. Hence said sleeve members can move away from each other, when the bolt 22 is loosened to an extent sufficient to permit the free turning of the sleeve 9. Likewise, there is a slight relative movement between the member 20, and the sleeve member 12. The sleeve members 12 and 12a are forced against the outer periphery of the sleeve 9, in order to frictionally clamp the same, by means of a bolt 22 which extends through the flanges of said sleeves and a threaded handle 23.

In order to prevent the turning of the bolt 22, a set-screw 24 is provided.

The sleeves 12 and 12a are so adjusted by means of the member 20 so that said sleeve members 12 and 12a are forced into final clamping position by less than a complete turn or revolution of the clamping member 23. When the control sleeve C is in the inoperative condition, the handle 23 may abut one face of the depending extension of the sleeve member 12a, and when the sleeve members 12 and 12a have been forced into their operative or clamping position, said handle 23 may abut the opposite face of said depending extension. By loosening the grip of the control sleeve upon the bearing sleeve 9, the reflector may be tilted with perfect freedom and with great accuracy because the sleeve 9 can turn relative to members 12 and 12a. It is then merely necessary to turn the handle 23, and since the pitch of the threaded part of the shank of the bolt 22 is small, the handle 23 will remain self-locked in its operative position.

In the embodiment shown in Fig. 5, the sleeve member 12 is provided with a tubular projection 26, which can be clamped by set-screws 27, to a rod 28. The rod 28 may depend from any suitable support, so that the device shown in Fig. 5 is suitable for use with a hanging fixture.

Likewise, the construction shown in Fig. 5 makes the device easily demountable from its support.

In the embodiment shown in Figs. 6 and 7, the device is intended for use in connection with heavy reflectors or other fixtures. In this embodiment the sleeve 9 is integral with a central pin 29.

The depending projection of the sleeve member 12a has a bearing 30 secured thereto by means of clamping members 31. The bearing member 30 is provided with integral sleeves 32, which are internally threaded, and standards 33 have their upper and externally threaded ends fitting within the sleeves 32.

Whenever I refer to a reflector either in the description or in the claims, it is to be understood that I include all devices for directing or controlling the direction of a beam of light. Likewise, while I have shown the reflector as being mounted upon a horizontal axis, the control device can be applied to a reflector whose axis may be tilted at any angle, and it also applies to a mount which may be turnable around a vertical axis.

Referring to Fig. 3, the parts 6 and 9 together with the intermediate connecting parts, may be generally referred to as "bearing means" for the reflector.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A reflector having bearing means, a control sleeve located around said bearing means and adapted to clamp the same, said control sleeve comprising a plurality of sleeve members, a support connected to one of said sleeve members, and means adapted to force said sleeve members towards each other in order to clamp said bearing means, the sleeve member to which said support is connected also having a supplemental bearing member connected thereto, said bearing means having a projecting member which enters said supplemental bearing member.

2. A reflector having external wires connected thereto, bearing means secured to said wires, a control sleeve located around said bearing means and adapted to clamp the same, a support connected to said control sleeve, and means adapted to force said control sleeve into clamping engagement with said bearing means.

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