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Julinot

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[54] **FLUORESCENT FIXTURE**

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[52] **U.S. Cl.**..... **240/51.11 R,** 240/11.4, 240/46.03

[51] **Int. Cl.** **H05b 33/02**

[58] **Field of Search**..... 240/51.11 R, 11.4 R, 46.03

[56] **References Cited**

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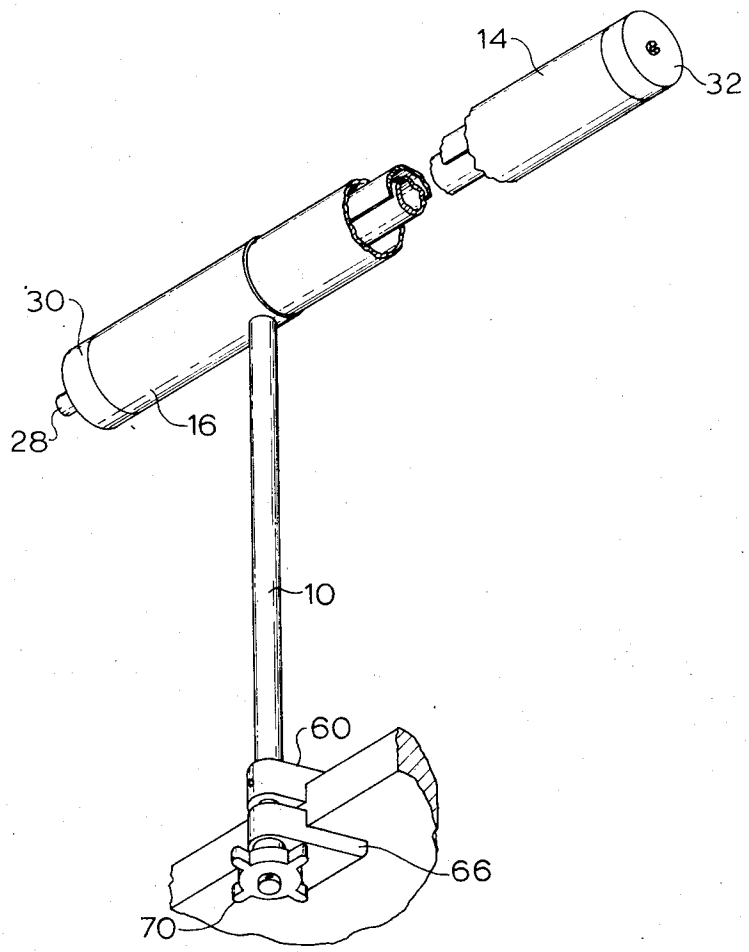
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Primary Examiner—Richard L. Moses

[57] **ABSTRACT**

A longitudinally extending, partially translucent casing for a fluorescent tube contains a shade rotatable about the fluorescent tube controlled by a member exterior to the casing.

2 Claims, 5 Drawing Figures



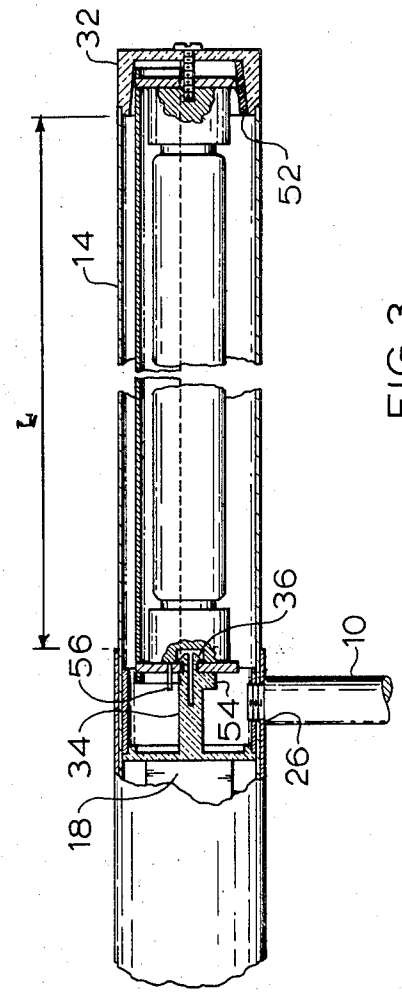


FIG. 3

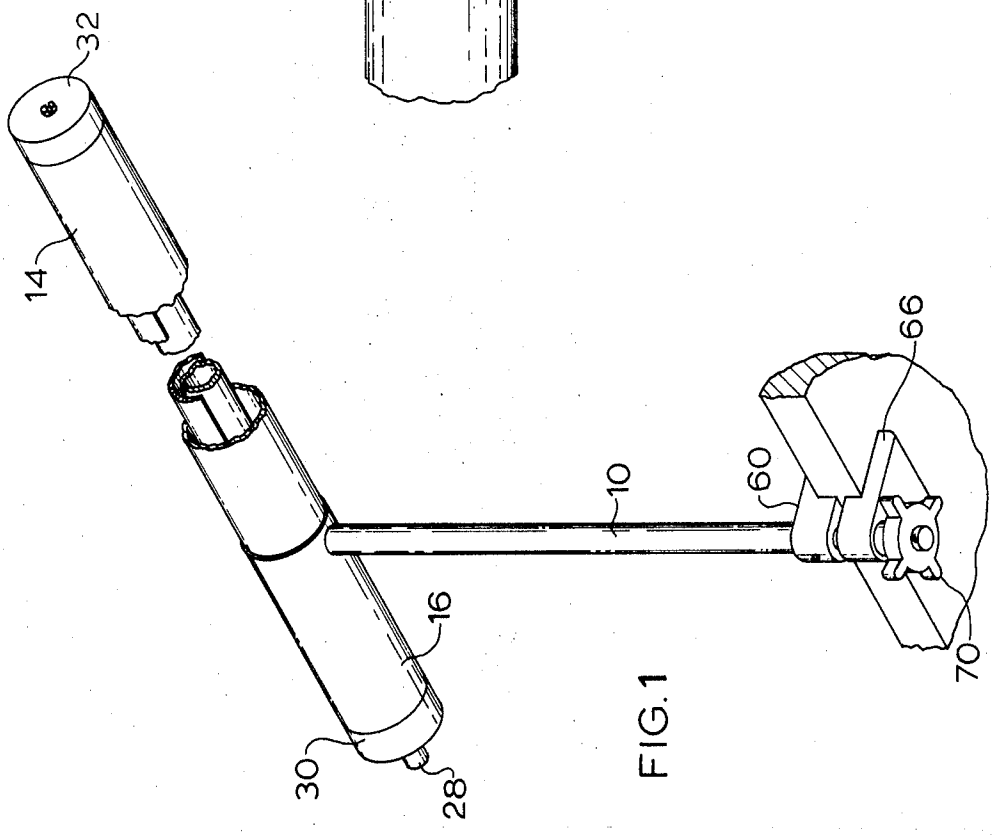


FIG. 1

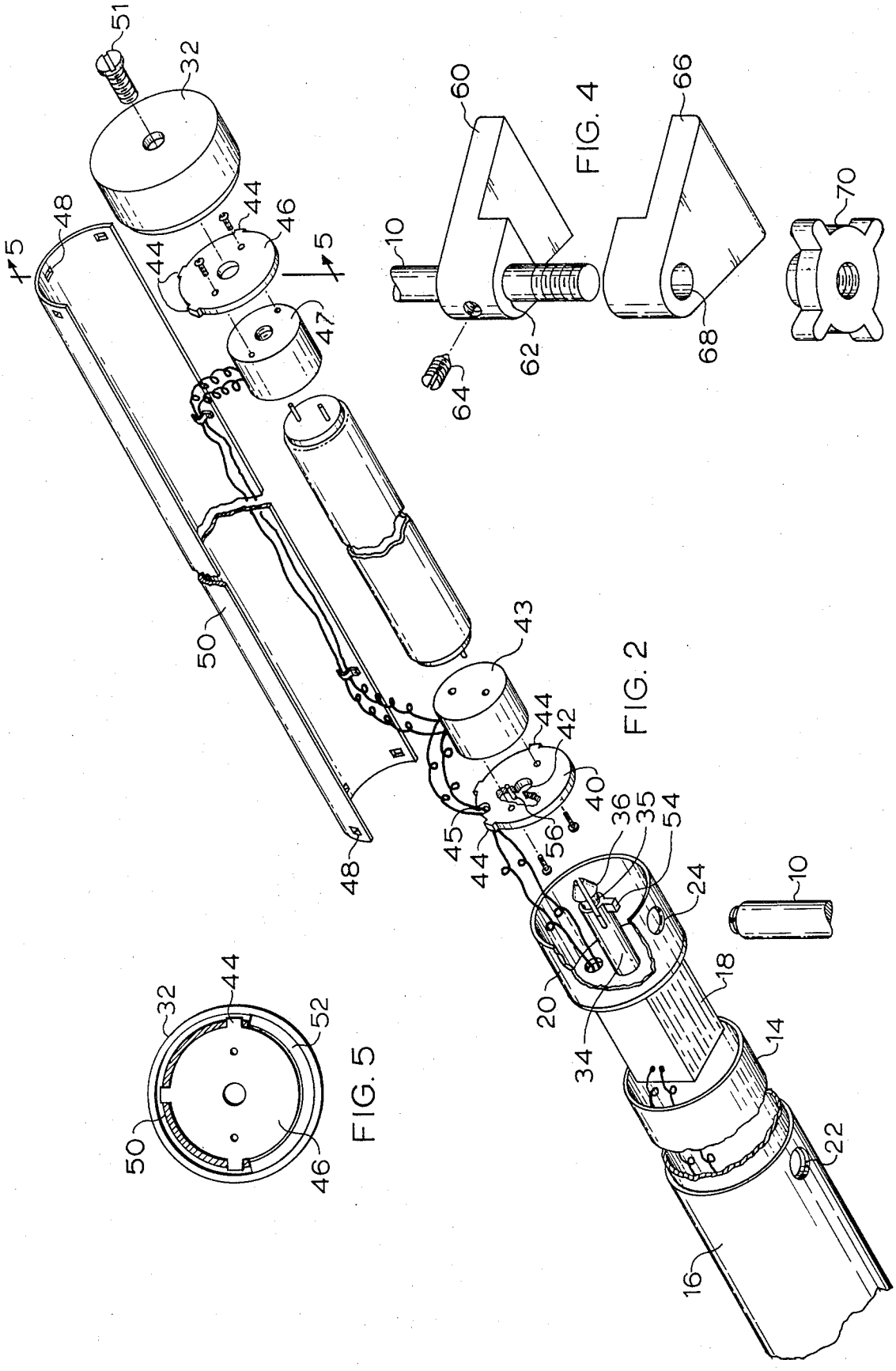


FIG. 2

FIG. 4

FIG. 5

FLUORESCENT FIXTURE

This invention relates to a fixture for supporting a fluorescent tube and for controlling the direction of illumination therefrom.

Heretofore, fluorescent tube fixtures have substantially consisted of means for supporting the tube, ballast, cord and switch with little attention being paid to shading and adjustment of the illumination direction.

This invention provides a novel mechanical arrangement for controlling the radiation direction of light from a fluorescent lamp.

In a preferred embodiment, is shown a convenient and improved clamping means for attaching a fluorescent fixture or other device.

In drawings which illustrate a preferred embodiment of the invention:

FIG. 1 shows a perspective view, partially broken away, of the inventive fixture;

FIG. 2 shows an exploded view of the fixture;

FIG. 3 shows a vertical cross-section of the fixture; and

FIG. 4 shows in detail the clamping means for the fixture;

FIG. 5 shows a cross-section along the lines 5—5 of FIG. 2.

In the drawings; a standard **10,** which may be clamped on to a table or shelf or the like is connected to support a casing **12** comprising an extended light-transmitting cylindrical plastic tube **14** extending in one direction from the standard and a shorter metallic tube **16** extending in the other direction from the standard. The plastic tube **14,** the metal tube **16** and the standard are connected together to form a unit, with the tube open at both ends and defining a passageway therethrough.

Although the clamping means forms the subject matter of some discussion hereafter, it should also be noted that in the broader aspects of the invention dealing with the radiation shade adjustment, the clamped base shown may be replaced by a stand or by a support of another kind.

The light transmitting extent **14** of the casing corresponds approximately to the extent of the illuminated portion of the fluorescent tube to be mounted therein, although, as shown, the plastic tube will extend slightly farther on each end thereof.

The fluorescent tube ballast **18** is mounted in the metal tube **16,** preferably by providing a cylindrical sleeve **20** projecting from the lamp adjacent end of the ballast, dimensioned to make a sliding fit within the plastic tube **14** which in turn, overlaps with a loose sliding fit, the tube **16.** In the preferred embodiment, the metal tube **16,** the standard **10,** the ballast sleeve and the plastic tube **14** are firmly fixed in position by: threading the end of the standard, providing an aperture **22** in the tube **16,** an aligned aperture in the tube **14** for passage of the threaded end therethrough, and providing a threaded bore **24** in the sleeve **20** designed to receive the threaded shank end. The shank is slid through bore **22** and the bore in tube **14** and threaded into the sleeve **20** and tightened to clamp the tubes **14** and **16** between a shoulder **26** on the shank and the sleeve **20.** With this arrangement, the casing is securely attached to the shank. The ballast **18** is coupled with a switch and operating stem **28** mounted in the casing and dimensioned to project out of the end of the tube

portion **16** when the ballast is fixed in position. An end cap **30** preferably of plastic is threaded into the end of the metal tube, to form a closure therefor of good appearance, and the main cap wall is centrally apertured to provide passage of the switch spindle **28.**

Adjacent and/or about the ballast, the metal tube **16** is provided with internal counter weighting, not shown, if necessary to balance the projecting weight in the other direction, of the fluorescent tube and casing.

The free end of plastic tube **14** is also provided with an end cap **32** slidably rotatable (not threaded) in the end of the tube **14** and carrying, as described hereafter, means for supporting the fluorescent tube and socket in the casing.

The ballast mounting sleeve **20** is provided with a central spindle **34** coaxial with tubes **14** and **16** extending toward the bulb location. The spindle tapers toward the outer end, and just inwardly of the taper is provided with a narrowed area **35** to provide a shoulder **36** facing the direction of the ballast. In addition the spindle is diametrically slotted at slot **38** to a depth inward of shoulder **36.**

On this spindle **34** may be snapped the support disc **40,** having an aperture **42** to slide over the tapered spindle **34** and to be held in place by the spindle shoulder **36** when the disc has passed.

As shown, one of the fluorescent lamp sockets **43** is bolted to the disc **40** on the side of the disc **40** remote from the ballast, substantially centrally of the circular edge of the disc **40.** The socket **43** is recessed sufficiently to receive the tapered end of spindle **34** when the disc **40** is received on the spindle. The circular edge of disc **40** is provided with a cut-out **45,** as shown, to allow passage of the fluorescent tube wires, and is provided with spaced (here 3) outwardly projecting tabs **44** for support of the shading shield as hereinafter discussed.

The plastic end cap **32** is provided with a central aperture as hereinbefore discussed.

A disc **46** of circular outline is designed similarly to circular disc **42,** and is provided with a similar number of tabs **44,** here three, which are designed to reside in corresponding slots in the shading member. The second socket **47** for the fluorescent lamp is fastened by bolts to the disc **46.** The socket **47** is threaded to receive the bolt **51** so that when the bolt **50,** with its head resting on the end cap and passing through the central bores in the end cap and in disc **46,** is designed to thread into the socket **47** to a depth to space the socket from its counterpart the correct distance to house the tube. The end cap **32** with its inwardly extending side walls, is provided with an arcuate lining **52** which is dimensioned to rest on that part of the edge of disc **40** which is without tabs, the lining providing a shoulder at each end to meet the side edge of the first tab **44** encountered in each arcuate direction. The effect of the interference between the side edges of the outer tabs **44** and the ends of lining **52,** is that the disc **46** is keyed to the end cap **32** for rotation therewith and for adjustment thereby.

An opaque shade **50** for the fluorescent tube is provided, being a portion of a cylinder, convex inward and concentric with the tube, encompassing preferably, about 160° of the 360° radiation direction from the tube. The opaque shade is preferably of aluminum and designed to structurally connect the two discs **40** and **46** for rotation together. In the preferred embodiment,

the structural connection is achieved by making the shade **50** of resilient material and of a shape, more convex than the complement of the tab locations and slotted at slots **48** to receive the tabs **44** from both discs. Thus the shade **50** is applied to the tabs **44** being designed to be resiliently flexed slightly wider when the tabs **44** are received in the slots, and the shade **50** inwardly biased against both disc surfaces is firmly held in position and couples the discs **40** and **46** for rotational motion together.

The wires for plugging in the lamp and for connecting the ballast and tube are shown only schematically as their arrangement and connection will be well known to those skilled in the art.

With the lamp assembled and connected, as described, the shade **50** may be adjusted by turning the end cap **32** to direct the rays from the fluorescent through a wide angle of directions. A tooth **54** on spindle **34** just inwardly of disc **40** cooperates with a tooth **56** on the disc to limit the rotation to about 350°. When the end cap **32** is rotated, the two discs **40** and **46,** coupled by the shade **50** are rotated, and with them both light sockets **43** and **48** and the tube. A convenient and straghtforward method of providing controlled illumination and shading in various directions is provided controlled by adjustment of the end cap **32.** The shade may be provided with a reflectant coating to the degree of reflectivity desired.

It is within the scope of the invention to provide a shade **50** adjustable by the end cap **32** either: coupled to both end socket supports in a different manner from that shown, or a shade **50** supported at both ends for rotation by the end cap **32** in a manner allowing rotation of shade **50** by end cap **32,** without rotation of the socket.

With the specific form of invention shown, a fluorescent bulb is replaced by removing bolt **51,** then end cap **32,** detaching disc **46** from shade **50** by flexing the latter outwardly, and withdrawing the end cap **46** and socket **47** from the fluorescent tube. The tube is then withdrawn and a new tube fitted in the remote socket **43.** The socket **47** and disc **46** are then fitted over the near prongs of the new tube, the shade is fitted over the tabs of disc **46** and the end cap screwed back into place.

In a preferred form of the invention there is provided a novel clamp, suitable for the mounting of fixtures of the type disclosed. The clamp avoids the disadvantages of prior clamps which create their clamping pressure exterior to the common mounting of the clamping ears and along the cantilever extent thereof. Such prior constructions have created oblique biasing pressures and unsure clamping.

Accordingly there is here provided a clamp for fluorescent lamps or the like, which is clamped along the common mount for the clamping ears, and thus provides direct and sure clamping pressure.

The clamp comprises a first clamping ear **60** with a stepped clamping extremity as shown, with a bore **52** to render it adjustably slidable on the standard **10** whereon it may be fixed by adjustment of the set screw **64.** A cooperating clamping ear **66** is provided with an aperture **68** to be slidable on the shank with a stepped extremity facing the extremity of ear **66** so that the two clamping ears will cooperate to attach to a shelf or table edge, as shown. A nut **70** is threaded on an extent of the shank on the side of the cooperating clamping ear remote from the first clamping ear, and designed to be rotated to limit the maximum spacing of the ears **60** and **66** whereby nut **70** may be tightened to clamp the ears about the support.

I claim:

1. Fluorescent fixture comprising:

a longitudinally extending casing;

light transmitting portions in the side of said casing;

means for rotatably mounting toward one end of said casing, one end socket for a fluorescent bulb,

means for rotatably mounting, toward the other end of said casing, the other end socket for such fluorescent bulb,

an opaque member designed to connect said rotatable mounting means and to rotate therewith whereby said opaque member couples said mounting means for rotation together,

said opaque member being designed and constructed to rotate outside the locus of a fluorescent tube mounted in said socket and designed and constructed to occlude by rotation, varying areas of said light transmitting portions,

means exterior to said casing for rotating said opaque member.

2. A fluorescent fixture comprising:

a longitudinally extending casing, light transmitting portions in the side of said casing,

a socket for each end of the tube,

means for mounting each said socket,

a shade member connectible to each of said mounting members, dimensioned so that, when connected, said sockets are spaced the length of a fluorescent tube to receive the prongs of a fluorescent tube, said shade member being located to allow the presence of said tube, but to occlude the path of radiation therefrom in predetermined directions, while allowing radiation in other predetermined directions,

whereby said mounting members and said shade form an assembly,

means for rotatably mounting said assembly in said casing,

means for rotating said assembly when so mounted.

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