

April 30, 1963

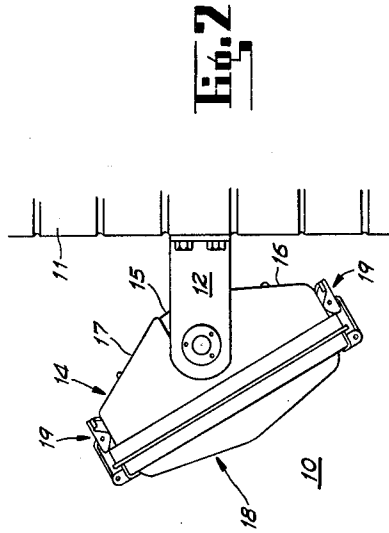
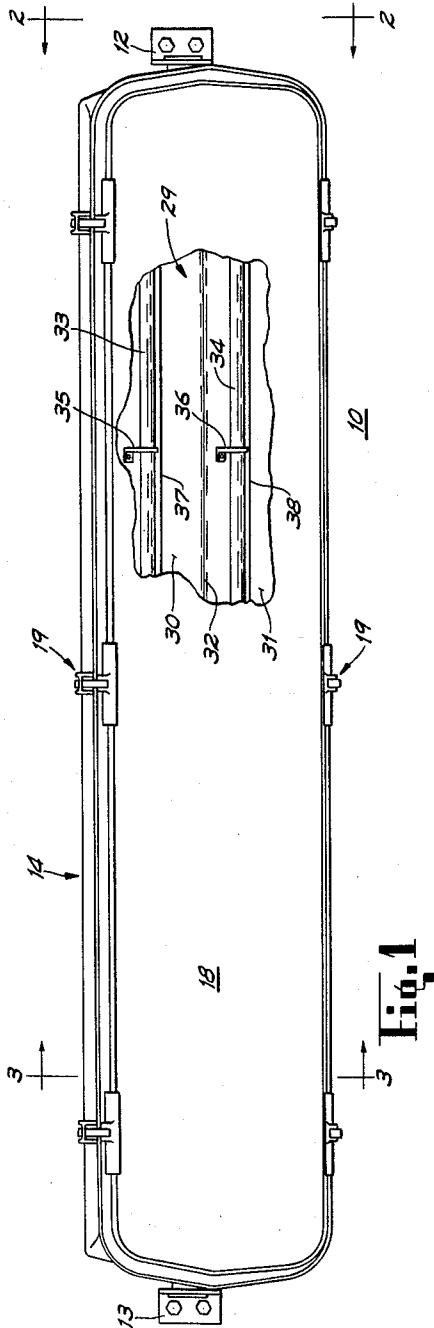
D. W. HARLING

3,087,981

FLUORESCENT LUMINAIRE

Filed Dec. 20, 1957

3 Sheets-Sheet 1



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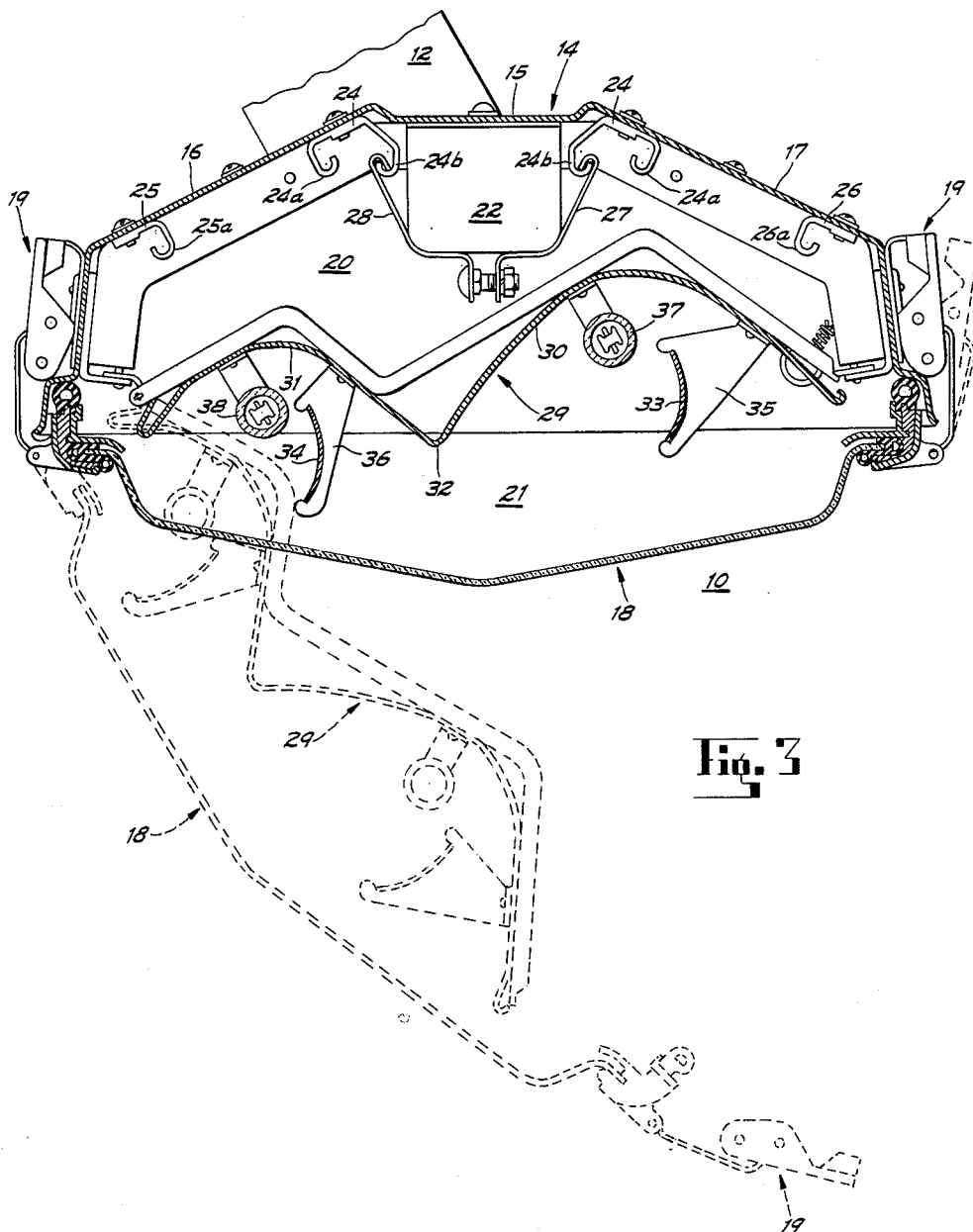


Fig. 3

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Fig. 4

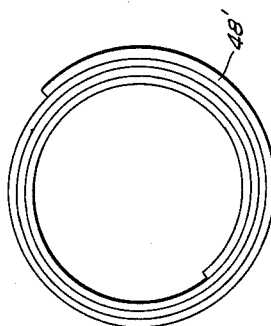
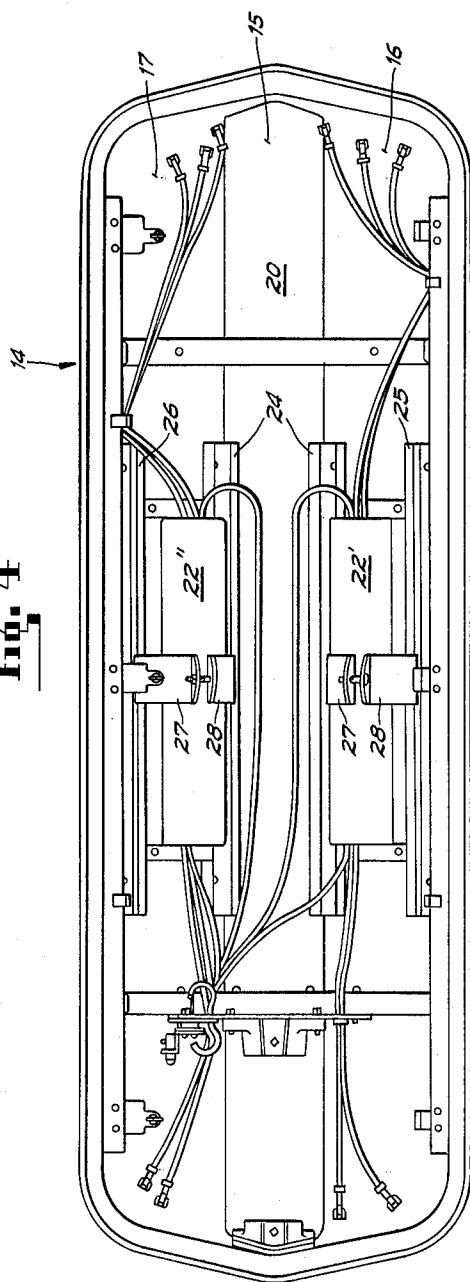


Fig. 7

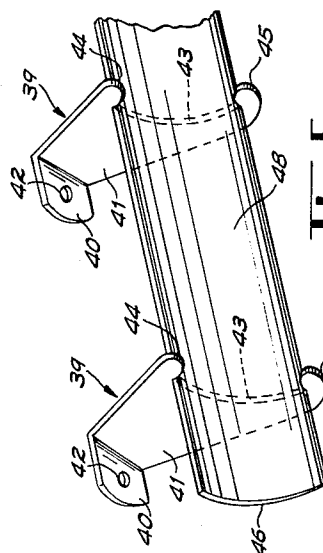


Fig. 6

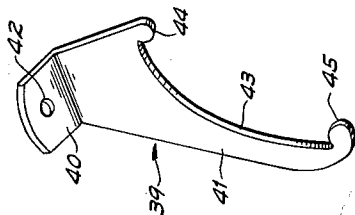


Fig. 5

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3,087,981

FLUORESCENT LUMINAIRE

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Filed Dec. 20, 1957, Ser. No. 704,201

2 Claims. (Cl. 174—52)

This invention relates to improvements in luminaires and, more particularly, relates to improvements in fluorescent luminaires adapted for outdoor street lighting, area lighting and the like.

Heretofore, the mounting of auxiliary deflectors and ballasts within outside type fluorescent luminaires normally situated at an elevated height have posed problems in initial installation and during later removal and reinstallation occasioned by maintenance procedures.

It is an object of this invention to provide a simplified method and apparatus for mounting auxiliary deflectors and ballasts within luminaires adapted for outdoor lighting and the like.

It is another object of this invention to provide an auxiliary deflector means which is exceedingly easy to mount in the field, easy to remove, easy to clean, easy to package and ship, requires no mounting screws or other mechanical fasteners in installation and requires no tools in installation or removal, and is otherwise well adapted for the purposes for which it was designed.

It is a further object of this invention to provide means for mounting ballasts and other heat causing control means in intimate engagement with the housing of a luminaire, said means eliminating the use of nuts, bolts, screws or the like through apertures in the outer housing, while retaining the ballast and other heat dissipating type control means in intimate engagement with the outer housing for good heat dissipation purposes.

The novel features that are characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof will best be understood by the following description of specific embodiments when read in connection with the accompanying drawings in which:

FIG. 1 is a front plan view of a fluorescent luminaire embodying applicant's novel concept, a fragmentary portion of the globe assembly being removed to show the alignment of some of the internal components;

FIG. 2 is a side view of the luminaire taken as shown along lines 2—2 of FIG. 1;

FIG. 3 is an enlarged cross sectional view taken on lines 3—3 of FIG. 1, the sectional view being rotated 60° clockwise relative to FIG. 2 for ease of disposition upon the sheet;

FIG. 4 is a view of the inside of the upper housing, the globe assembly and the primary reflector means having been removed therefrom for clarity, said drawings showing an alternative mounting for the ballast means differing from that shown in FIG. 3;

FIG. 5 is a fragmentary perspective view of the mounting means for the auxiliary deflector means;

FIG. 6 is a fragmentary perspective view of the assembled relationship of the auxiliary deflecting means and the mounting means therefor; and

FIG. 7 is a view of the auxiliary deflecting means shown rolled up in an annular tape-like package in the manner generally used for the shipping thereof.

Returning now to the drawings, FIGS. 1 and 2 show an elongated fluorescent luminaire 10 which is adapted to be mounted to a wall 11 or other suitable mounting means by use of rotatably adjustable mounting hanger

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means 12 and 13, respectively. The luminaire 10 comprises an upper housing means 14 and a lower light transmitting housing means or globe assembly 18. The upper housing means 14 has a center section 15 which is depressed slightly from the slanting sidewall portions 16 and 17, as best shown in FIG. 3 of the drawings.

The detachable globe assembly means 18 is sealably mounted to the housing means by suitable latch means 19. The detailed characteristics of the globe assembly latching means 19 and the sealing means associated therewith are more particularly described in the copending application of Donald W. Harling and Philip B. Clark having Serial No. 685,438, filed September 23, 1957, and assigned to the same assignee.

A unitary reflector assembly 29 is disposed intermediate the globe assembly 18 and the housing means 14 to divide the interior of the luminaire into an upper chamber 20 and a lower chamber 21. The reflector assembly 29 is pivotally mounted to a rib of the upper housing and is latched in place by suitable latching means as set forth in my copending application having Serial No. 685,439, filed on September 23, 1957, now Patent No. 2,886,699, granted May 12, 1959, and assigned to the same assignee. For the purposes of the present application, it is sufficient to note that the parabolic reflecting assembly 29 may be quickly and easily moved to the alternate position shown in dotted lines of FIG. 3 to provide quick, easy access to the electrical control means such as the ballast, the electrical wiring, the mounting means, and/or other parts as suitable and desired both in original installation and when necessary for maintenance and repair purposes.

Mounted in the upper chamber 20 of the embodiment shown in FIG. 3 is an electrical control means commonly known as a ballast 22 which is mounted in intimate engagement with the central surface 15 of the upper housing means 14 for good heat dissipation reasons. The ballast 22 is mounted by the use of novel, quick attachable and detachable mounting means as shall now be described. The ballast mounting means comprises two components, namely, rail means and hanger strap means. The rail means comprises a pair of center rail means 24, left hand rail means 25 and right hand rail means 26 as viewed in FIG. 3 of the drawings. Each of the center rail means 24 may be made of extruded stock, for example, aluminum or the like, and is provided with a pair of oppositely disposed depending hook-like portions, the one on the left as viewed in FIG. 3 being denominated 24a and the one on the right being denominated 24b. The left hand rail means 25 has a single depending hook portion 25a and the right hand rail means 26 has a single depending portion 26a. Strap means or hangers 27 and 28 are adapted to slidably coast with the rail means for quickly mounting the ballasts in intimate engagement with the upper housing means 14 without puncturing the housing. The hanger strap means are in the form of two oppositely disposed preformed straps 27 and 28, each having an aperture near one end receiving a clamping bolt, the opposite end of each strap being provided with a hook-like portion which is engaged with the depending hook-like portion of the rail means to thereby mount the ballast within the upper housing. It will be apparent that this method of mounting the ballasts in the luminaire may be quickly and easily accomplished in initial field assembly and during field assembly, maintenance and repair procedures. When an installation requires more than a single ballast 22, then, as shown in FIG. 4, the ballasts 22' and 22'' may be mounted between rails 24 and 25 and 24 and 26 or otherwise as desired.

Returning now to the pivotally mounted means 29, it essentially comprises spaced parabolic primary reflectors 30 and 31 which have a common cutoff point 32. The

particular optical structure of the primary parabolic reflectors is more particularly set forth and described in my copending application having Serial No. 484,703, filed January 28, 1955, now Patent No. 2,875,323, granted February 24, 1959. As shown, each of the primary parabolic reflecting means 30 and 31 have an auxiliary deflector 33 and 34 spacedly mounted relative thereto by mounting means 35 and 36, respectively, which shall be described in detail later. The particular relationship of the auxiliary deflecting means to the primary reflecting means is also more particularly set forth and described in the last mentioned copending application. Spaced elongated fluorescent light sources 37 and 38 are associated respectively with the primary parabolic reflectors 30 and 31 and auxiliary deflectors 33 and 34. As shown in the dotted lines of FIG. 3, the primary reflector means 30, 31 and 32, the light sources 37 and 38, the mounting means for the auxiliary deflectors 35 and 36, and the auxiliary deflectors 33 and 34 are all pivotally mounted relative to the housing 14 for ease of access to the upper chamber 20 which includes the ballast area.

In the maintenance and repair of the reflector assembly 29, it is often desirable to be able to quickly and easily get at the primary reflectors 30 and 31 for cleaning and the like. Further, there are many applications where primary deflectors alone are used and other applications where auxiliary deflectors are desired only at particular times. To provide exceedingly easy mounting means for the auxiliary deflectors, an L-shaped mounting means 39 as shown in FIGS. 5 and 6 is provided with a short base portion 40 having an aperture at 42, and an elongated projecting portion 41 having an arcuate end face 43 bounded at each end by inwardly projecting ears or nibs 44 and 45.

The auxiliary deflectors such as 33 and 34 (FIG. 3) are designated in FIG. 6 by the numeral 48 and are made of thin, elongated, flexible material. They are generally flat like in appearance and preferably have an arcuate transverse cross section as shown at 46. However, it is to be expressly noted that while the arcuate transverse cross section provides added strength, this is the preferred embodiment only and it is within the purview of the present invention that the auxiliary deflectors may take any of a plurality of suitable and desired shapes such as rectangular, bent or upset, etc.

In mounting the auxiliary deflectors such as 33 and 34, all that is necessary is that the operator compress the deflector at the point of contact with the nibs 44 and 45 of the mounting means, insert the deflector within the arcuate slot 43, release the deflector 48 which will then be held captive by the slot 43 and the nibs or ears 44 and 45. It is apparent that, depending upon the length of the deflector needed, any number of mounting means 39 may be spaced along the primary deflector such as 30 and 31 to mount the deflectors such as 33 and 34 relative to the light sources 37 and 38. Inasmuch as auxiliary deflector means such as 33 and 34 are not always desired in some applications of fluorescent luminaires, the deflectors are often packaged and sent separately. For this purpose, it has been found that the particular auxiliary deflector used is exceedingly

simple to ship and package; all that is required is that thin, flexible material be rolled into the annular shape resembling a roll of tape as shown in FIG. 7 of the drawings and indicated with the reference numeral 48'. In this form, it is inserted within a cardboard ring and shipped to the installer for use as he sees fit.

From the foregoing description, it will be apparent that the mounting means herein disclosed for the auxiliary deflector means and the ballast means are particularly well adapted to ease of maintenance and ease of installation are also well adapted for providing good efficient street lighting applications.

Although specific embodiments have been shown and described, it is with full awareness that many modifications thereof are possible. The invention, therefore, is not to be restricted except insofar as is necessitated by the prior art and by the spirit of the appended claims.

What is claimed as the invention is:

1. A luminaire for gaseous discharge lamps comprising, in combination, outer housing means, first and second spaced rail means rigidly attached to said housing means, ballast means disposed between said rail means and having a side thereof in intimate engagement with said housing means, and quick attachable and detachable clamp means for maintaining said intimate engagement between said ballast means and said housing means, said clamp means slidably supported by said rail means for sliding movement relative to said rail means and said ballast means, said clamp means engaging a side of said ballast means opposite to said side in engagement with said housing means so that said clamp means, when attached, continuously urges said ballast means into intimate engagement with said housing means to maintain a good heat transfer relationship therebetween.

2. A luminaire for gaseous discharge lamps comprising, in combination, outer housing means, first and second spaced rail members rigidly attached to said housing means, ballast means disposed between said rail members and having the upper side thereof in intimate engagement with said housing means, and quick attachable and detachable clamp means for maintaining said intimate engagement between said ballast means and said housing means, said clamp means slidably supported by said rail members for sliding movement relative to said rail means and said ballast means, said clamp means engaging the lower side of said ballast means so that said clamp means, when attached, continuously urges said upper side into intimate engagement with said housing means.

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