April 27, 1948. E. F. GUTH 2,440,603

LIGHTING FIXTURE

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FIG. 1.

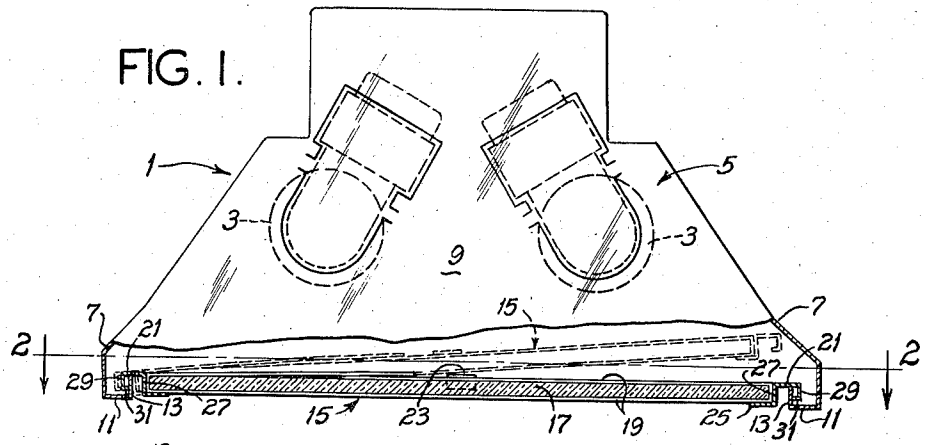


FIG. 2.

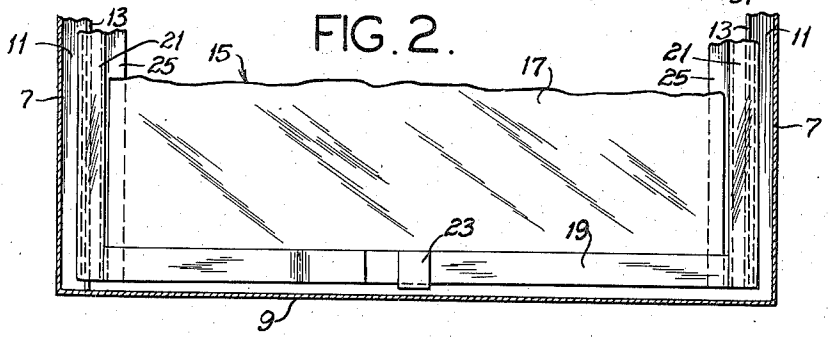


FIG. 3.

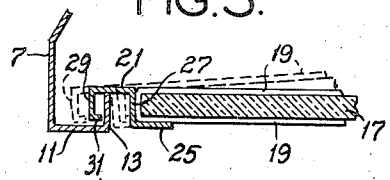


FIG. 4.

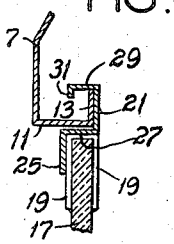


FIG. 5.

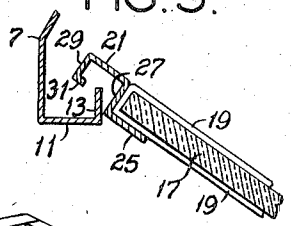
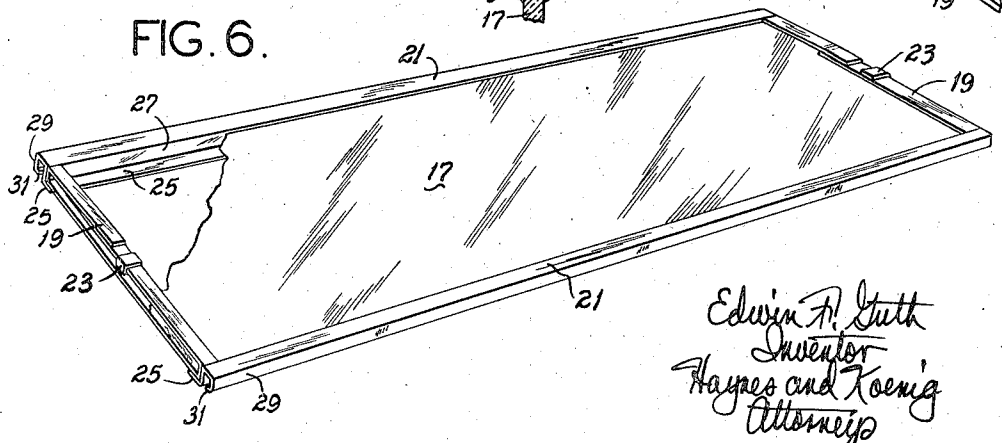


FIG. 6.



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FIG. 7.

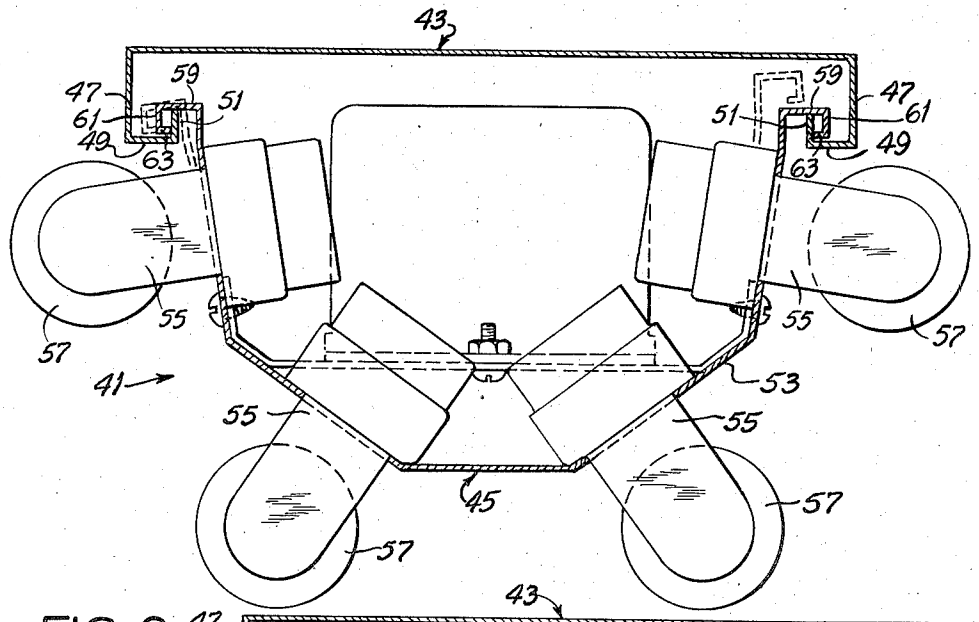
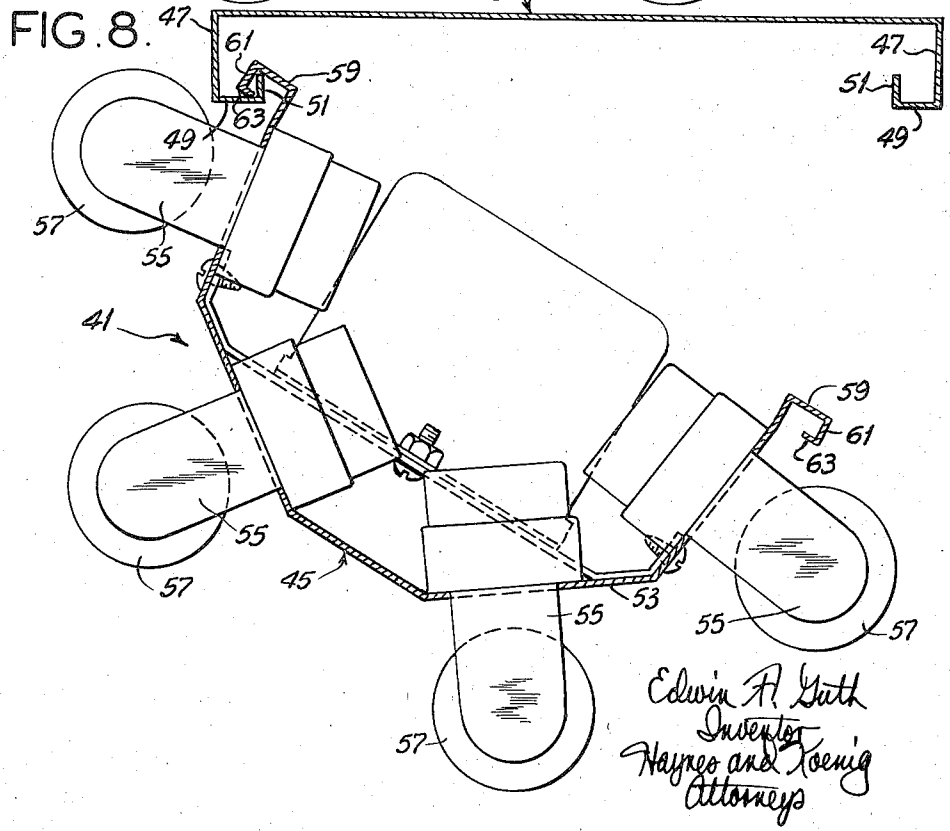


FIG. 8.



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LIGHTING FIXTURE

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Application March 12, 1947, Serial No. 734,118

1 Claim. (Cl. 240—51.11)

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This invention relates to lighting fixtures and more particularly to ceiling fixtures for tubular fluorescent lamps.

This application is a continuation-in-part of my copending application entitled Lighting fixture, Serial No. 685,547, filed July 22, 1946.

Among the several objects of the invention may be noted the provision of lighting fixtures, particularly ceiling fixtures for tubular fluorescent lamps, comprising a housing enclosing elements of the fixture, which housing may be readily opened to obtain access to its interior for cleaning, servicing or the like; the provision of lighting fixtures of the class described wherein the housing has separable parts connected in such manner that one part may be swung open without disconnecting it from the other, or, alternatively, may be completely detached from the other part; the provision of ceiling fixtures of this class wherein said one part when swung open, is suspended from the other part of the housing so as to be gravity-biased to remain open during servicing; the provision of a fixture such as described wherein said one part comprises a diffusing glass panel; and the provision of a fixture as specified wherein said one part constitutes a lamp carrier. Other objects will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claim.

In the accompanying drawings, in which several of various possible embodiments of the invention are illustrated,

Fig. 1 is an end view, partly broken away and in section, of an improved lighting fixture of this invention;

Fig. 2 is a fragmentary horizontal section, taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary detail section illustrating a quick-detachable hinge connection for a diffusing glass panel of the lighting fixture of Fig. 1;

Fig. 4 is a section similar to Fig. 3 illustrating the panel swung open and suspended;

Fig. 5 is a section similar to Fig. 3 illustrating the panel in an intermediate position during removal;

Fig. 6 is a perspective view of the diffusing glass panel;

Fig. 7 is a transverse section through a modification of the lighting fixture of this invention; and,

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Fig. 8 is a section similar to Fig. 7 illustrating a lamp-carrying part thereof opened.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring now to Figs. 1–6, which illustrate one embodiment of this invention, there is generally indicated at numeral 1 a housing enclosing tubular fluorescent lamps 3 and adapted to be mounted upon or recessed into a ceiling, or attached to any other suitable support. The housing includes an elongate, inverted trough-like casing 5 having parallel side walls 7 and end walls 9. The lamps 3 extend longitudinally within casing 5, being mounted at their ends in sockets carried by the end walls 9 in the manner more particularly disclosed in my copending application entitled Lighting fixture, Serial No. 644,324, filed January 30, 1946, or in any other suitable way.

The lower ends of the parallel side walls 7 of casing 5 are bent inward to form upwardly opening rectangular channel members 11 extending interiorly from end to end of the casing. Each channel 11 has a straight vertically upstanding flange 13 spaced inward from its respective side wall 7. These channel members function as fixed hinge elements for supporting a light screen such as a diffusing glass panel 15 in position closing the open-bottomed casing 5 in such manner that the panel may be detached from one of the hinged elements and allowed to swing downward on the other hinged element to the suspended position illustrated in Fig. 4, or, alternatively, completely detached and removed from the casing.

The panel 15 comprises a rectangular pane 17 of diffusing glass or the like of such dimensions as to fit within the bottom opening of casing 5 with its side edges substantially spaced inward from the upstanding flanges 13 of channel 11. The pane has a frame consisting of straps 19 surrounding its ends and downwardly opening rectangular channel bars 21 extending along its sides, the straps and bars being connected together. Angle clips 23 secured to straps 19 prevent endwise movement of the pane with respect to the frame. Each channel bar 21 has a web 25 extending from its inner flange 27 beneath the side margin of the pane to prevent sagging thereof. The lower margin of the outer flange 29 of each channel bar 21 is bent inward to provide a web 31 which forms the channel bar into an elongate hook.

As illustrated in Figs. 1–3, the panel 15 is nominally disposed within the bottom opening of the casing 5 to provide a diffusing glass closure for the casing. The outer flanges 29 of channel bars 21 are received within upwardly opening channels 11 and the upstanding flanges 13 of flanges 11 are received in downwardly opening channels 21. The panel is thus supported along its sides by the channels 11. Lateral movement of the panel is prevented by engagement of the outer flanges 29 (including webs 31) with the upstanding flanges 13.

To open the housing 1, the panel 15 is first tilted upward to raise one of flanges 29 out of the channel 11 in which it is received. As illustrated in dotted lines in Fig. 1, the panel has been tilted upward to disengage the right-hand flange 29 from the right-hand channel 11. The panel is then bodily shifted laterally until the inner flange 27 of the left-hand channel 21 engages the left-hand upstanding flange 13. (Note the dotted line positions indicated in Figs. 1–3.) Channels 11 and 21 are of such width that when the panel has been raised and laterally shifted as described, its right-hand outer flange 29 will clear the right-hand upstanding flange 13 so that the panel may be allowed to swing downward through the bottom opening of the casing 5.

If it is desired to open the housing without detaching the panel 15 from casing 5, the panel is permitted to swing downward to the vertical position illustrated in Fig. 4 wherein it is suspended from the left-hand side wall channel 11. Channel 21 is hooked over the upstanding flange 13 of channel 11, the web 31 preventing the panel from becoming disengaged and falling should the panel inadvertently be moved sideways. In this position the panel is gravity-biased to remain open for access to the interior of the housing. If it is desired completely to detach the panel 15 from the casing 5, the channel 21 is unhooked from channel 11 after the panel has swung downward through the bottom opening of the casing, as illustrated in Fig. 5, and the panel removed from the casing.

It will be understood that the panel may be opened from either one side of the casing or the other. It will be also readily understood that to re-insert the panel into the bottom opening of casing 5 the inverse of the above-described operations are carried out.

A significant advantage of the above-described lighting fixture is that it is practically impossible for the panel 15 inadvertently to be disengaged from its suspended position of Fig. 4. The panel cannot be lifted to the point where web 31 will clear the upstanding flange 13 of channel 11 unless it is first positively swung to an angle of about 45° (Fig. 5). This is because the width of the channel 21 is only slightly greater than the height of flange 13, and the distance from the edge of web 31 to the edge of the panel (flange 27) is less than the height of flange 13. If the panel inadvertently should be swung through a lesser angle and bodily shifted sideways, web 31 cannot be lifted out of channel 11 and the panel cannot be accidentally disengaged. Thus, there is no danger of the panel falling from the lamp housing when it is in suspended position for cleaning or servicing.

A further significant advantage of the above-described lighting fixture is that the quick-detachable hinge connections, in addition to providing for ready opening of the housing, also function to prevent leakage of light along the sides of the panel 15 since the elongate hooks 29 extend the full length of the panel and substantially the full length of the casing 5. Thus, practically all of the light from lamps 3 is diffused through the glass pane 17.

Figs. 7 and 8 illustrate a modification wherein the removable part of the housing is a lamp carrier. In this embodiment of the invention, a lamp fixture housing 41 includes an elongate trough-like member 43 adapted to be mounted in inverted position upon a suitable support with the trough opening downward, and a lamp carrier 45. Member 43 has parallel side walls 47, the lower ends of which are bent inward to form upwardly opening channel members 49 extending interiorly and longitudinally of member 43. Each of channels 49 has an upstanding flange 51 spaced inward from its respective side wall 47. These channels 49 function as fixed hinge elements for supporting lamp carrier 45 in such manner that it may be detached from one hinge element and allowed to swing downward on the other to a position such as illustrated in Fig. 8, or, alternatively, may be completely detached from member 43.

Lamp carrier 45 comprises an elongate trough 53 which opens upward when attached to member 43. Socket members 55 extend outward through the walls of the trough and carry tubular fluorescent lamps 57 extending longitudinally outside of the trough. The upper ends of the opposite parallel side walls of trough 53 are bent outward to form downwardly opening channels 59. The lower margin of the outer flange 61 of each of these channels is bent inward to provide a web 63 which forms the channel into an elongate hook.

As illustrated in Fig. 7, the lamp carrier 45 nominally has its upper open-mouthed portion fitted within the bottom opening of member 43, whereby member 43 forms a closure for the trough 53 to enclose the fixture elements within the trough. The outer flanges 61 of channels 59 are received within the upwardly opening channels 49 and the upstanding flanges 51 of channels 49 are received in downwardly opening channels 59. The lamp carrier is thus supported on its sides by channels 49. Lateral movement of the lamp carrier is prevented by engagement of outer flanges 61 (including webs 63) with the upstanding flanges 51.

To open the housing, the lamp carrier is first tilted upward to raise one of flanges 61 out of the channel 49 in which it is received. As illustrated in dotted lines in Fig. 7, the carrier has been tilted upward to disengage the right-hand flange 61 from the right-hand channel 59. The carrier is then bodily shifted laterally to the left until the left-hand side wall of the trough 53 engages the left-hand upstanding flange 51. Channels 49 and 59 are of such width that when the trough has been raised and shifted as described, its right-hand outer flange 61 will clear the right-hand upstanding flange 51 so that the lamp carrier may be allowed to swing downward through the bottom opening of member 43.

The lamp carrier 45 may be suspended from either one of channels 49, with a channel 59 hooked over an upstanding flange 51, or may be completely detached and removed from member 43, in the same manner as set forth in the above description of Fig. 1.

Thus, each disclosed embodiment of the invention comprises a two-part lamp fixture housing wherein the parts are connected by quick-detachable hinge connections so that one part may

be either detached from the other or swung downward or suspended from the other. Complete detachment of the parts is desirable for cleaning and servicing of the fixture at ground level. Suspension of the swingable parts of the housing is desirable when the fixture is to be cleaned or serviced without removal from its ceiling support.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

A lighting fixture comprising a housing enclosing elements of the fixture and having parts which are readily separable for obtaining access to the interior of the housing, one of said parts comprising a trough-like member adapted to be mounted upon a support in inverted position with the trough opening downward, said one part having side walls each of which has an upwardly opening channel interiorly of its lower edge, each channel having an upstanding flange spaced inward from the lower end of the respective side wall, the other part being a light diffusing member having parallel downwardly opening hinge hooks on opposite sides thereof engaged in said channels

and forming quick detachable hinge connections therewith, each hook including an outer flange spaced from the respective edge portion of said diffusing member and having at its lower margin a web extending toward the edge portion of said member and at right angles to the flange, the distance from the edge of the web to the edge portion of said diffusing member being less than the height of said upstanding flange, said hooks and channels being sufficiently wide to permit either side of said diffusing member to be lifted upward out of the channel of its hinge connection and shifted laterally toward the opposite side to clear the channel.

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