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3,315,074

LIGHTING FIXTURE

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2 Sheets-Sheet 1

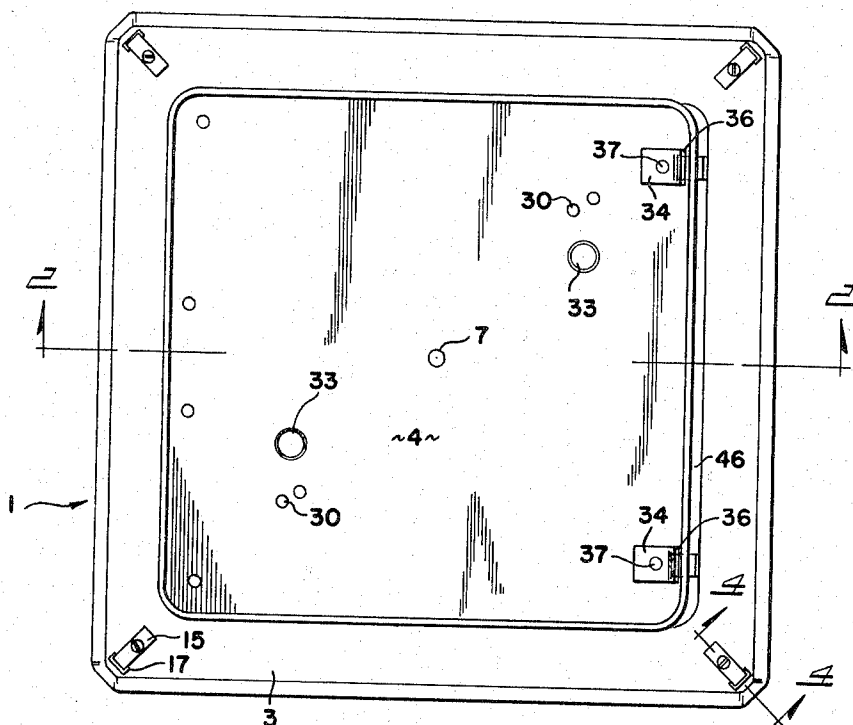


Fig. 1

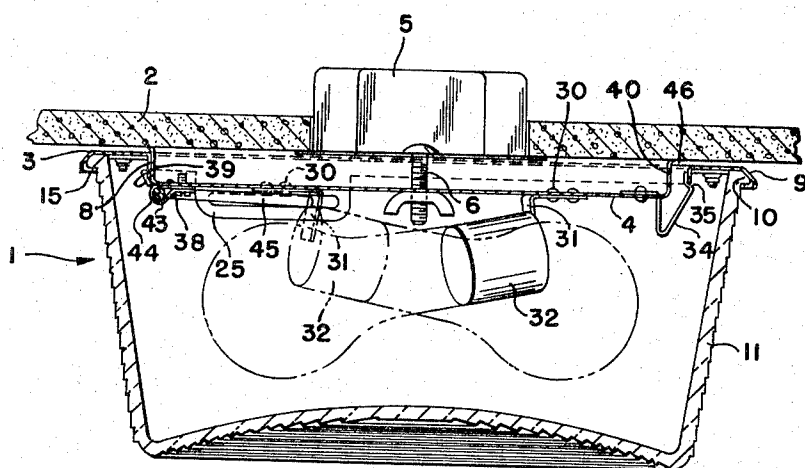


Fig. 2

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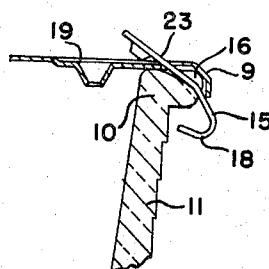
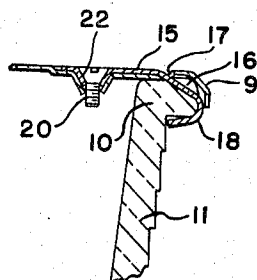
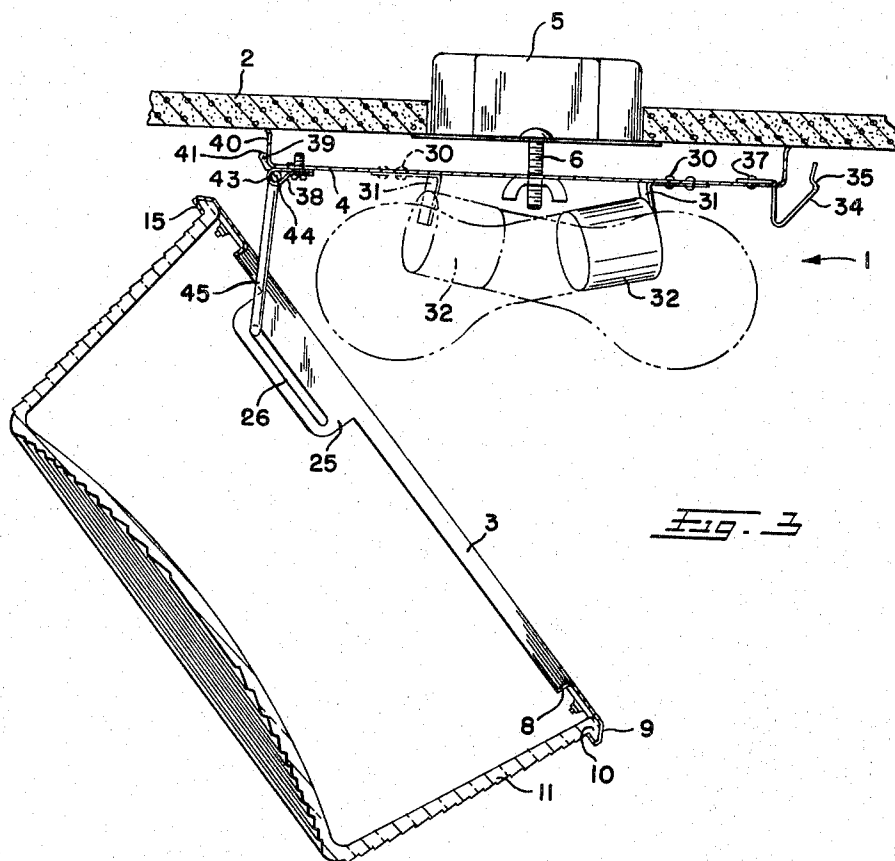
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## LIGHTING FIXTURE

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This invention relates generally, as indicated, to a lighting fixture and, more particularly, to a surface mounted type lighting fixture the frame of which is quite narrow to reduce to a minimum the amount of exposed unlighted surface of the fixture.

Heretofore, surface mounted lighting fixtures have generally had rather long peripheral flanges which either supported the glass of the fixture a considerable distance from the mounting surface or gave that appearance by extending along a substantial portion of the outside surface of the glass. Further, if the frame did have a rather narrow flange, the frame was usually secured to a pan or other such supporting structure that spaced the frame and glass a considerable distance from the mounting surface. This was particularly true in wall or ceiling mounted lighting fixtures the glass and frame of which were adapted to be swung away from the supporting structure to replace the light bulbs.

It is therefore a principal object of this invention to provide a novel surface type lighting fixture the glass frame of which has an extremely narrow flange.

It is another object to provide such a lighting fixture with a support pan which is adapted to be mounted flush against the mounting surface and extend into the frame so that the frame is likewise substantially flush with such mounting surface.

It is still another object to hingedly support the frame and glass to the pan of such a lighting fixture in such a manner that the frame and glass may be swung away from the pan for replacing light bulbs.

Another object is to secure the glass to the frame by means of a plurality of clips each having a hook-shaped end adapted securely to grip the flange of the glass.

Yet another object is to provide recesses in the flange of the glass for receiving the clips.

A further object is to provide a lighting fixture of the nature outlined above which is simple in construction, durable, inexpensive, and can easily be mounted without the aid of special tools.

Other objects and advantages of the present invention will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail a certain illustrative embodiment of the invention, this being indicative, however, of but one of the various ways in which the principle of the invention may be employed.

In said annexed drawings:

FIG. 1 is a top plan view of the preferred form of lighting fixture constructed in accordance with the present invention;

FIG. 2 is a sectional view taken on the plane of the line 2-2 of FIG. 1;

FIG. 3 is a view similar to that of FIG. 2 except that the frame and glass are shown swung downwardly away from the pan;

FIG. 4 is an enlarged fragmentary sectional view taken on the plane of the line 4-4 of FIG. 1; and

FIG. 5 is a view similar to that of FIG. 4 except that the glass clip is shown extending through an aperture in

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the frame with the hook portion disposed adjacent the shoulder of the glass prior to being cammed into position.

Referring now more particularly to the drawings, there is shown in FIGS. 1 and 2 the preferred form of lighting fixture 1 attached to a mounting surface 2, such as a ceiling, for example. The lighting fixture 1 comprises a frame 3 in which there is disposed a pan 4 adapted to be secured to a junction or outlet box 5 of standard construction recessed in the ceiling 2 by means of a suitable fastener 6 extending through an aperture 7 in the pan 4. While the frame 3 and pan 4 are shown as being substantially rectangular, it of course should be understood that such frame and pan may be of any desired configuration.

The frame 3 is provided with an inner flange or lip portion 8 which defines an opening for receiving the pan 4, and a short outer flange or lip portion 9, the length of such flange 9 being such that the same just overlaps an outwardly projecting shoulder 10 of glass 11. The glass 11 is shown as having a drum shape, the outer surface of which consists of a multitude of prisms. However, it should be appreciated that the glass 11 may be of any desired form.

The glass 11 is secured to the frame 3 by means of four glass clips 15, one clip being disposed in a recess 16 (see FIGS. 4 and 5) in each corner of the glass 11 and extending through an aperture 17 in the frame 3, such clips having a hook portion 18 on the outer end thereof which is adapted to engage the shoulder 10 of the glass 11. Desirably, the upper surface of the frame 3 is provided with depressions 19 adjacent apertures 17 for receiving the glass clips 15 in such a manner that such clips are substantially flush with the upper surface of the pan in the assembled position.

The clips 15 are secured to the frame 3 by means of screws 20 having tapered heads which are adapted to be received in countersunk holes 22 in the clips.

To mount the glass 11 to the frame 3, first the frame is disposed over the glass with the outer flange 9 of the frame overlapping the shoulder 10 of the glass 11. Then the clips 15 are inserted through the apertures 17 in the frame 3 with the hook portion 18 disposed adjacent the shoulder 10 and the body portion 23 of the clips disposed in the recess 16 in the glass in the manner shown in FIG. 5. Next, the clips 15 are cammed into the FIG. 4 position so that they are disposed in the depressions 19 in the upper surface of the frame 3 and the screws 20 are inserted in the holes 22 of the clips to hold the clips in place.

As perhaps best seen in FIG. 3, the inner flange 8 of the frame 3 is provided with two laterally disposed downwardly extending flanges 25, each flange having a longitudinal slot 26 therein.

The lower surface of the pan 4 is preferably covered with an asbestos heat baffle (not shown) having a thin sheet of aluminum foil laminated thereto, the purpose of which are to insulate the pan 4 from the heat of the light bulbs and to reflect the heat away from the pan, thus increasing the proportion of heat dissipated downward and outward through the glass 11. Such an aluminum coated baffle insures that the pan 4 will not become sufficiently hot to damage either the ceiling 2 or the supply conductors in the outlet box 5.

Mounted on the lower surface of the pan 4 as by means of rivets 30 are a pair of brackets 31 for supporting conventional ceramic light sockets 32.

The brackets 31 and sockets 32 are desirably mounted on the pan 4 adjacent opposite corners thereof, such brackets 31 and sockets 32 extending inwardly toward the center of the pan in the manner shown in FIGS. 1-3. It should be pointed out that the left hand bracket and socket would ordinarily not appear in FIGS. 2 and 3,

since such figures are taken on the plane of the line 2—2 of FIG. 1, but are shown in phantom to illustrate their angular disposition on the lower surface of the pan 4. Adjacent each bracket 31 an aperture 33 is provided through which lead wires (not shown) are adapted to extend from the light sockets to the supply conductors of the outlet box 5. While it is preferred that two such sockets 32 be provided, it should of course be understood that the particular number and location of such sockets on the pan may be varied as desired.

A pair of laterally spaced spring steel lock springs 34 are mounted adjacent one edge of the pan 4, such springs having shoulder portions 35 adjacent the outer ends thereof which are adapted resiliently to engage and support the lower edge of the inner lip 8 of the frame 3. It is preferable that the mounting of the springs 34 be effected by passing the inner ends thereof upwardly through apertures 36 in the pan 4 and securing such inner ends to the pan as by means of rivets 37.

Mounted on the bottom edge of the pan 4 directly opposite the springs 34 are a pair of laterally spaced cable clips 38 and a centrally disposed latch 39. The latch 39 extends upwardly a short distance along the side wall 40 of the pan 4 and then extends inwardly and engages such side wall to form an abutment surface 41 on which a portion of the inner lip 8 of the frame 3 is adapted to engage.

Thus, as is readily apparent from FIG. 2 of the drawings and the above discussion, the frame 3 and glass 11 are held in position adjacent the pan 4 by means of the latch 39 and lock springs 34 in such a manner that the upper surface of the frame 3 is substantially flush with the upper edge of the pan 4 so that the frame is in substantial face-to-face contact with the mounting surface 2.

The spaced cable clips 38 form a pair of hinge knuckles or channels 43 for receiving a hinge pin 44 about which the frame 3 and glass 11 is adapted to be swung to provide easy access to the light sockets 32 for replacing light bulbs. The hinge pin 44 is operatively connected to the frame 3 by means of L-shaped arms 45 projecting from either end thereof, the short legs of the L extending in a direction parallel to the hinge pin 44 and being received in the slots 26 provided in the flanges 25 of the frame 3.

As perhaps best seen in FIGS. 1 and 2, a sufficient space 46 is provided between the lip portion 8 of the frame 3 and the adjacent wall 40 of the pan 4 beyond which the lock springs 34 extend so that when the frame is urged to the left against the bias of the lock springs 34, that portion of the flange 8 supported by the abutment 41 will clear such abutment, after which the cleared portion of the frame 3 may be swung downwardly to clear the pan. Such horizontal movement of the frame is possible because of the sliding connection established between the pan 4 and frame 3 by means of the short legs of the hinge pin arms 45 extending into the slots 26 in the flange.

After clearing the pan, the frame 3 can then be moved to the right as viewed in FIG. 2 to free the frame from the lock springs 34, after which the entire frame 3 may be lowered and pivoted about the hinge pin 44 to the FIG. 3 position, thus making the light bulbs easily accessible for replacement.

To reposition the frame 3 adjacent the pan 4, the procedure for opening the frame as outlined above is again followed, but in reverse order. Thus, first the frame 3 is pivoted and raised until the spring engaging lip portion 8 of the frame 3 is adjacent the shoulders 35 of the springs 34, after which the frame is moved toward the left to seat the lower edge of the lip 8 on the shoulders 35 and move the opposite lip portion laterally beyond the latch 39. Finally, the frame and thus the opposite lip portion 8 is raised to a position above the abutment 41 of the latch 39 and the spring bias of springs 34 is allowed to move the frame 3 to the right

so that such opposite lip portion 8 again engages the abutment 41.

Alternatively, the frame 3 may be repositioned adjacent the pan 4 by first pivoting and raising the opposite lip portion 8 of the frame 3 to a position above and in engagement with the abutment 41 of the latch 39, and then raising the spring engaging lip portion 8 to force the springs 34 inwardly until the shoulders 35 thereof snap into place beneath such spring engaging lip portions to support the same.

It can now be seen that the lighting fixture of the present invention is of relatively simple construction and yet is adapted to be mounted directly on a ceiling or similar such supporting structure in such a manner that there is a minimum amount of exposed unlighted surface. Moreover, the frame and glass of the lighting fixture may be readily swung away from the pan for easy access to and replacement of light bulbs.

Other modes of applying the principles of the invention may be employed, changed being made as regards the details described, provided the features stated in any of the following claims or the equivalent of such be employed.

We therefore, particularly point out and distinctly claim as our invention:

1. A ceiling type lighting fixture comprising a frame, a pan disposed within said frame, said pan being adapted to be mounted flush against such ceiling, means for releasably securing said frame about said pan with said frame substantially flush with the upper edge of said pan in the secured position, a glass, and means for securing said glass to said frame, said frame having an outer flange portion the length and disposition of which is such that the same extends downwardly over the adjacent edge of said glass only a short distance to reduce to a minimum the amount of exposed unlighted surface of said fixture, said glass having a narrow shoulder on the edge thereof adjacent said frame, said means for securing said glass to said frame including a plurality of glass clips having hook portions on the outer end thereof which are adapted to engage said narrow shoulder, said shoulder being provided with a plurality of recesses for receiving said glass clips, said glass clips extending through apertures in said frame.

2. The lighting fixtures of claim 1, wherein said outer flange portion of said frame extends downwardly only a sufficient distance to overlap said narrow shoulder of said glass and said glass clips.

3. The lighting fixture of claim 1, wherein said frame is provided with depressions in the upper surface thereof adjacent said apertures for receiving said glass clip.

4. The lighting fixture of claim 1, wherein there are four of said recesses, one being provided in each corner of said glass, and four of said glass clips.

5. A ceiling type lighting fixture comprising a frame, a pan disposed within said frame, said pan being adapted to be mounted flush against such ceiling, means for releasably securing said frame about said pan with said frame substantially flush with the upper edge of said pan in the secured position, a glass, means for securing said glass to said frame, said frame having an outer flange portion the length and disposition of which is such that the same extends downwardly over the adjacent edge of said glass only a short distance to reduce to a minimum the amount of exposed unlighted surface of said fixture, said frame being provided with an inner flange which defines an opening for receiving said pan therewithin, said frame securing means including a plurality of lock springs mounted adjacent one edge of said pan and a latch mounted adjacent the opposite edge, said lock springs having shoulder portions adjacent the outer ends thereof which are adapted resiliently to engage and support a first portion of said inner flange, said latch extending upwardly along and inwardly toward the side wall of said pan to form an abutment surface for supporting a second

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portion of said inner flange, and means for pivotally mounting said frame to said pan, said pivotal mounting means comprising a pair of laterally disposed downwardly extending flanges on said frame, said flanges having a longitudinally extending slot therein, and a hinge pin mounted adjacent one edge of said pan for rotational movement, said hinge pin having a pair of arms extending radially outwardly therefrom, the outer end portions of said arms being bent for receipt within said longitudinal slots.

6. The lighting fixture of claim 5, wherein the relative dimensions of said pan and frame are such that a sufficient space is provided between said inner flange of said frame and the adjacent wall of said pan beyond which said lock springs extend that movement of said frame toward said adjacent wall against the bias of said lock springs will cause said second inner flange portion to clear said abutment whereby said frame may be swung downwardly to clear said pan.

7. A ceiling type lighting fixture comprising a frame, a glass, means securing said glass to said frame, a pan adapted to be mounted flush against a ceiling or like surface, said frame having an inner flange which defines an opening for receipt of said pan therewithin, said pan having an outwardly extending abutment surface for supporting said frame thereon and spring means for yield-

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ably maintaining said frame in position overlying said abutment surface, and means mounting said frame for pivotal and lateral movement with respect to said pan to permit disengagement of said abutment surface and swinging of said frame and glass away from said pan, said last-mentioned means comprising a hinge pin mounted adjacent one edge of said pan for rotational movement and having a pair of arms extending radially outwardly therefrom, the outer end portions of said arms being bent for receipt in longitudinal slots in said frame.

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