

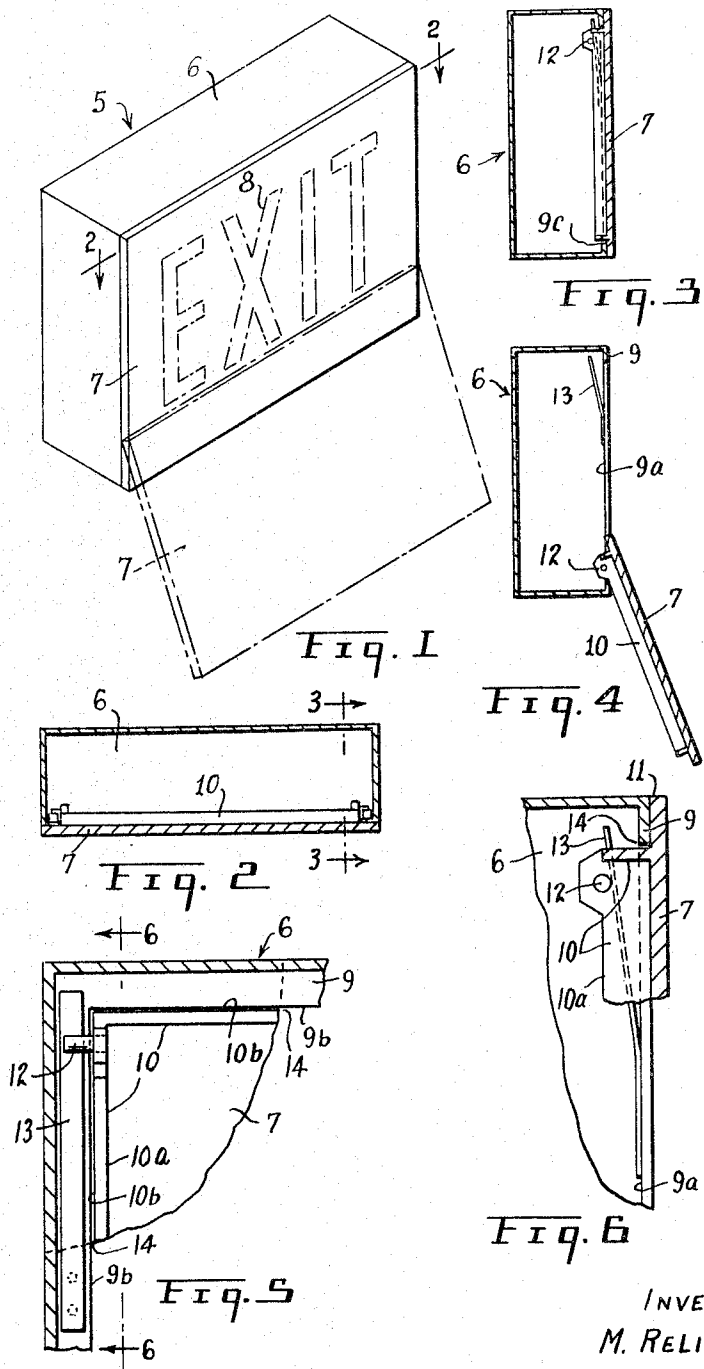
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M. RELICH
LIGHT FIXTURE

3,276,618

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2 Sheets-Sheet 1



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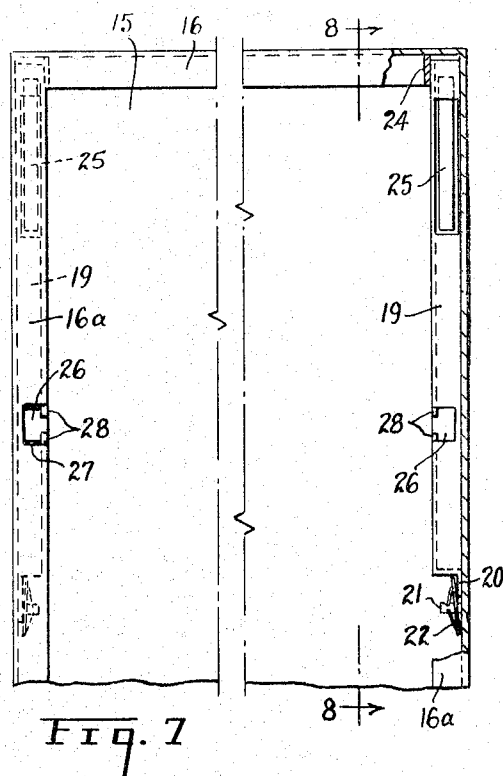
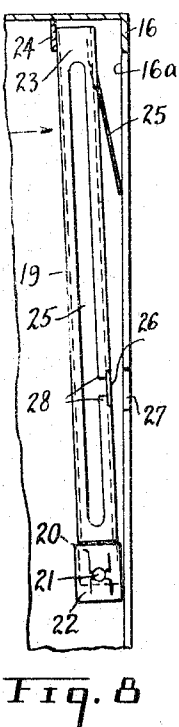
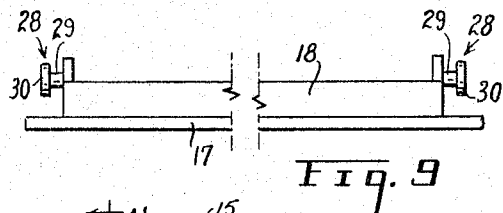
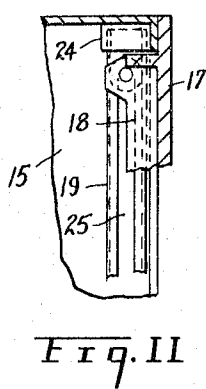
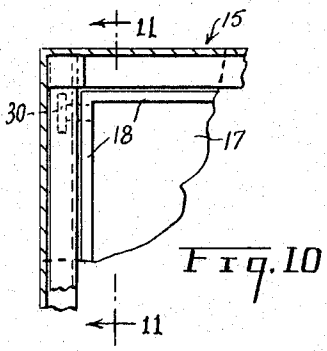
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LIGHT FIXTURE

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878,735

8 Claims. (Cl. 220-41)

This invention relates to light fixtures and particularly to light fixtures which include a box-like housing and a front cover plate having a light opening or having a direction sign cut-out illuminated from a light source within the housing of the fixture.

It has been the practice in such light fixtures to either hinge the front cover plate to one edge of the housing, or to fasten the cover plate to the housing by means of cap screws or, in some cases, by means of nuts threaded on studs projecting outwards from the housing. In the case of a hinged cover plate it has not been possible to have the fixture flush mounted in a wall without providing clearance at the hinge side of the fixture which would allow the cover to be hinged against the wall. Such clearance is unsightly and usually resulted in breaking up of the plaster around the fixture. Where screws and nuts are used to fasten the cover plate to the housing, tools were required and very often the screws or nuts became lost, again resulting in an unsightly appearance.

In the present invention these objectives are overcome as neither screw fastenings or tools are required to secure the cover plate to the housing.

The invention consists essentially in the provision of a housing having an open front surrounded with an inwardly projected peripheral flange in the plane of the open front face of the housing, and a cover plate having a peripheral flange projecting at right angles from the inner face of the cover and located a distance inwardly from the peripheral edge of the cover, only slightly greater than the width of the flange at the open front face of the housing. A pair of housing engaging members project outwardly from the peripheral flange of the cover at opposite edges thereof and being located adjacent one edge of the cover. A pair of springs located behind the peripheral flange of the housing, when engaged by the housing engaging members, forces one edge of the cover tight against the open front face of the housing and, when the opposite edge of the cover is pushed inwards towards the housing, it is held firmly in place to seal the open front of the housing. In order to displace the cover relative to the open front of the housing, it is only necessary to pull out the edge of the cover opposite from the housing engaging members, sufficient to clear the projecting peripheral flange of the cover from the peripheral flange of the housing, the cover, with its housing engaging members still engaging with the peripheral flange of the housing, can then be slid along the front of the housing to expose the interior thereof for maintenance or replacement of the light bulbs etc. Provision is made to remove the cover entirely from the housing by either angling of the cover to clear the housing engaging members from the housing or by providing suitable slots in the peripheral flange of the housing through which the housing engaging members can pass to clear the cover from the housing.

The object of the invention is to provide a cover for a box-like light fixture, which is held in place without the use of screws or other like attaching members.

A further object of the invention is to provide a box-like light fixture having a cover which is slidable relative to the open front of the fixture housing, to provide access to the housing for maintenance purposes.

A further object of the invention is to provide a box-like light fixture suitable for flush mounting in a wall, and

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having a cover member which can be closed or opened without damage to the surrounding wall.

A further object of the invention is to provide a cover for a box-like light fixture which, when in place on the fixture housing, presents a flat face without visible securing means.

These and other objects of the invention will be apparent from the following detailed specification and the accompanying drawing, in which:

FIG. 1 is a perspective view of the light fixture showing in chain dot lines the position taken by the fixture cover to provide entrance to the fixture.

FIG. 2 is a horizontal section of the fixture on the line 2-2 of FIG. 1.

FIG. 3 is a vertical section of the fixture on the line 3-3 of FIG. 2.

FIG. 4 is a vertical section similar to FIG. 3 but showing the cover moved to its open position.

FIG. 5 is a partial vertical section from inside the fixture housing, to an enlarged scale showing the spring means holding the cover tight against the open front of the housing.

FIG. 6 is a partial vertical section on the line 6-6 of FIG. 5.

FIG. 7 is a partial vertical elevation looking on the open front of the fixture housing, partially in section showing a modified track means on which the housing cover is supported.

FIG. 8 is a vertical section on the line 8-8 of FIG. 7, showing the spring backed track means.

FIG. 9 is a plan view of the top horizontal edge of the cover adapted to engage with the housing shown in FIGS. 7 and 8.

FIG. 10 is a partial vertical section from the inside of the housing and showing the cover in place and mounted in its tracks.

FIG. 11 is a partial vertical section on the line 11-11 of FIG. 10.

Referring to the drawings and particularly to FIGS. 1 to 6 inclusive, the light fixture 5 is here shown as having an open front box-like housing 6 and a cover 7. The housing 6 can be fitted with light bulbs or any other type of electrical equipment such as fuse assemblies and the like. The cover 7 can be a blank sheet or have a sign cut-out as shown at 8, which cut-out could be suitably backed with a transparent or semi-transparent sheet through which a light within the housing can shine through. The housing 6 can be mounted on the front of a wall or like surface, or be recessed into a wall for flush mounting.

The open front of the rectangular shaped housing 6 is provided with a peripheral flange 9 projecting inwardly in the plane of the front of the housing.

The cover 7 is formed from a flat sheet 7a of the same size as the rectangular shaped housing 6. A rectangular shaped flange member 10 projects outwardly at right angles to the inwardly facing side of the cover sheet 7a, and its outer peripheral size is only slightly less than the size of the rectangular opening in the front of the housing 6, as is clearly seen in FIG. 5. A pin 12 is mounted on each of the vertically disposed members 10a of the rectangular shaped flange 10 of the cover, and projects horizontally outwards in a plane parallel with the plane of the sheet 7a and at a spaced distance therefrom. The pins 12 are adapted to be engaged behind the adjacent vertically disposed members 9a of the peripheral flange 9 of the housing, by tilting the cover in a vertical plane to permit the flange 10 and its pins 12 to pass through the opening in the front of the housing.

A flat leaf spring 13 is secured by spot welding, to the inward facing surface of the vertically disposed members 9a of the housing 6, adjacent the upper ends thereof, with

the free ends of the springs being uppermost, as shown in FIGS. 4 and 6.

When the cover 7 is fitted on the housing 6 with the pins 12 engaging behind the vertically disposed members 9a, the cover can be slid upwards and downwards with respect to the open front of the housing. When the cover 7 is moved upwards, the pins 12 make contact with the leaf springs 13 and depress the leaf springs in the direction towards the vertically disposed members 9a. This causes the upper portion of the cover to be forced into contact with the front of the housing 6. The lower portion of the cover can then be pushed inwards towards the front of the housing to bring the peripheral surface 7b of the cover into sealing contact with the peripheral flange 9 of the housing. In this position of the cover relative to the housing, owing to the relatively small clearance 14 between the inwardly facing peripheral edge 9b of the flange 9 and the surface 10b of the cover, no appreciable play of the cover relative to the housing can take place. Furthermore, the weight of the cover, combined with the horizontal depth of its flange 10, resting on the upward facing edge of the lower horizontal portion 9c of the housing flange 9, provides a high degree of friction between the cover and the housing which, together with the pressure of the springs 13, precludes easy displacement of the cover from the housing, once the cover has been pushed home into the housing.

In the modified form of the device shown in FIGS. 7 to 11, the housing 15 is provided with a peripheral flange 16 around the front opening similar to that shown in the housing 6 above described. Similarly, the cover 17 is provided with a rectangular shaped flange 18 similar to the cover 7 above described. In place of the spring 13, the housing 15 is provided with a pair of track members 19 located adjacent the vertical members 16a. The lower ends 20 of the tracks are pivoted on the pins 21 and are held in place by the spring fasteners 22. The upper end 23 of the tracks 19 is held for limited movement by the keepers 24. A leaf spring 25 is mounted on the upper end of the tracks, and the free end of the spring bears against the adjacent inner facing surface 16a of the flange 16 to hold the upper end of the tracks away from the surface 16a and against the keepers 24, as shown in FIG. 8.

The tracks 19 are each provided with a guide slot 25, and the surface of the tracks adjacent the housing flange surface 16a is notched at 26. A matching notch 27 is cut in the adjacent housing flanges 16.

In place of the straight pins 12 provided on the cover 7, the cover 17 is provided with pins 28 undercut to a smaller diameter at 29 to form the end flanges 30.

The cover 17 is fitted to the housing 15 by first inserting the pins 28 through the notches 27 in the vertically disposed flanges 16 of the housing, and then through the notches 26 in the tracks 19. The lips 31 at the notches 26 form a restricted slot through which the reduced diameter portion 29 of the pins 28 can pass in order to enter the longitudinal slot 25 on one face of the tracks 19, thereby restraining the flanged portion 30, of the pins to movement along the inside of the tracks.

As the cover 17 is moved upwards over the open face of the housing, the tracks 19 are constrained to move into a position parallel with the rear surface 16a of the housing flanges 16, against the pressure of the springs 26. The springs 25 therefore hold the top portion of the cover tight against the housing and, when the lower portion of the cover is pushed inwards of the housing, the lower horizontal portion of the cover flange 18 will rest on the adjacent horizontal edge of the housing flange 16 to hold the cover firmly in place in the same manner as described in connection with the housing 6 and cover 7.

In the operation of this device, the cover 7 need only be pulled away at its bottom horizontal edge, from the housing, to bring the cover flange 10 clear of the peripheral flange 9 of the housing. The cover can then slide

down the front of the housing to take the position shown in FIGS. 1 and 4. The equipment within the housing can then be serviced with ease. The cover is retained on the housing under normal conditions. However, should it be desired to remove the cover completely, it can, in the case of FIGS. 1 to 6 be tilted in a vertical plane to bring the pins clear of the housing flange, and then be withdrawn from the housing. In the case of FIGS. 7 to 11, the pins 26 are first aligned with the notches 26 and 27 and the cover can then be lifted clear of the housing.

The covers 7 and 17 are held in place on their housings without the use of external fastening means, and the housing can be opened or closed without the use of tools.

As will be seen in FIG. 1, if the housing is recessed into a wall, to the full depth of the housing, the cover can be opened or closed without causing damage to the wall. In contrast, if one edge of the cover were hinged to the housing, as is the common practice, special hinge construction is required in order that the opening cover will not damage the wall adjacent the hinge.

What I claim is:

1. An electrical fixture box comprising a rectangular housing having a front opening, and a cover for closure of the open front of the housing, the said housing having rear, top and bottom and side walls and a flange projecting inwardly of the said top and bottom and side walls to define the opening in the front of the housing, the said cover comprising a flat member and a rectangular flange member projecting at right angles from one face of the flat member at a distance inwardly of the peripheral edge thereof, the said rectangular flange member having an overall dimension only slightly less than the dimension of the opening in the said housing, a pin projecting outwardly from opposing vertically disposed members of the said rectangular flange member and in spaced relation to said flat member, the said pins adapted to engage behind adjacent vertical members of the flange defining the opening in said housing, and a flat spring mounted on the inwardly facing surface of the vertical members of the said housing flange, the said springs adapted to engage with the said pins to hold said cover in sealing engagement over the open front of the said housing.

2. An electrical fixture box as set forth in claim 1 in which the said pins are located adjacent the top horizontal edge of the said rectangular flange of the cover.

3. An electrical fixture box as set forth in claim 1 in which the said flat springs are disposed vertically on the vertical members of the housing flange and are secured at their lower ends to the said vertical members, the opposite ends of the said springs being free and located adjacent the top horizontal member of the housing flange.

4. An electrical fixture box comprising a rectangular housing having a front opening, and a cover for closure of the open front of the housing, the said housing having rear, top and bottom and side walls, and a flange projecting inwardly of the said top and bottom and side walls to define the opening in the front of the housing, the said cover comprising a flat member and a rectangular flange member projecting at right angles from one face of the flat member at a distance inwardly of the peripheral edge thereof, the said rectangular flange member having an overall dimension only slightly less than the dimension of the opening in the said housing, a pin projecting outwardly from opposing vertically disposed members of the said rectangular flange member and in spaced relation to said flat member, a vertically disposed track member pivotally mounted on the inside surface of the side walls of the housing adjacent the flange of the housing, a spring in each of said tracks, the said springs forcing the ends of said tracks opposite from their pivots, away from the said housing flange, the said pins engaging with the said tracks to hold the said cover in sealing engagement over the open front of the said housing against the pressure of the said springs.

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5. An electrical fixture box as set forth in claim 4 in which the said tracks are slotted longitudinally and the said pins are slidably captive in the slotted tracks.

6. An electrical fixture box as set forth in claim 4 in which the flange adjacent the side walls of the housing are notched and matching notches are cut in the said tracks permitting the said cover pins to be engaged in the said tracks.

7. An electrical fixture box as set forth in claim 4 in which the said springs are located in said tracks adjacent the ends thereof opposite the track pivots, and the pins are located adjacent the top horizontal edge of the said rectangular flange of the cover.

8. An electrical fixture box comprising a rectangular housing having a front opening and a cover for closure of the front opening of the housing, a pair of vertically disposed tracks pivotally mounted at their lower end in said housing adjacent the vertical side of the housing opening,

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springs in said housing contacting the said tracks to hold the top ends of the tracks inwardly of the housing opening and pins on the said cover slidable in the said tracks, the said springs holding the said cover in sealing engagement over the open front of the housing.

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