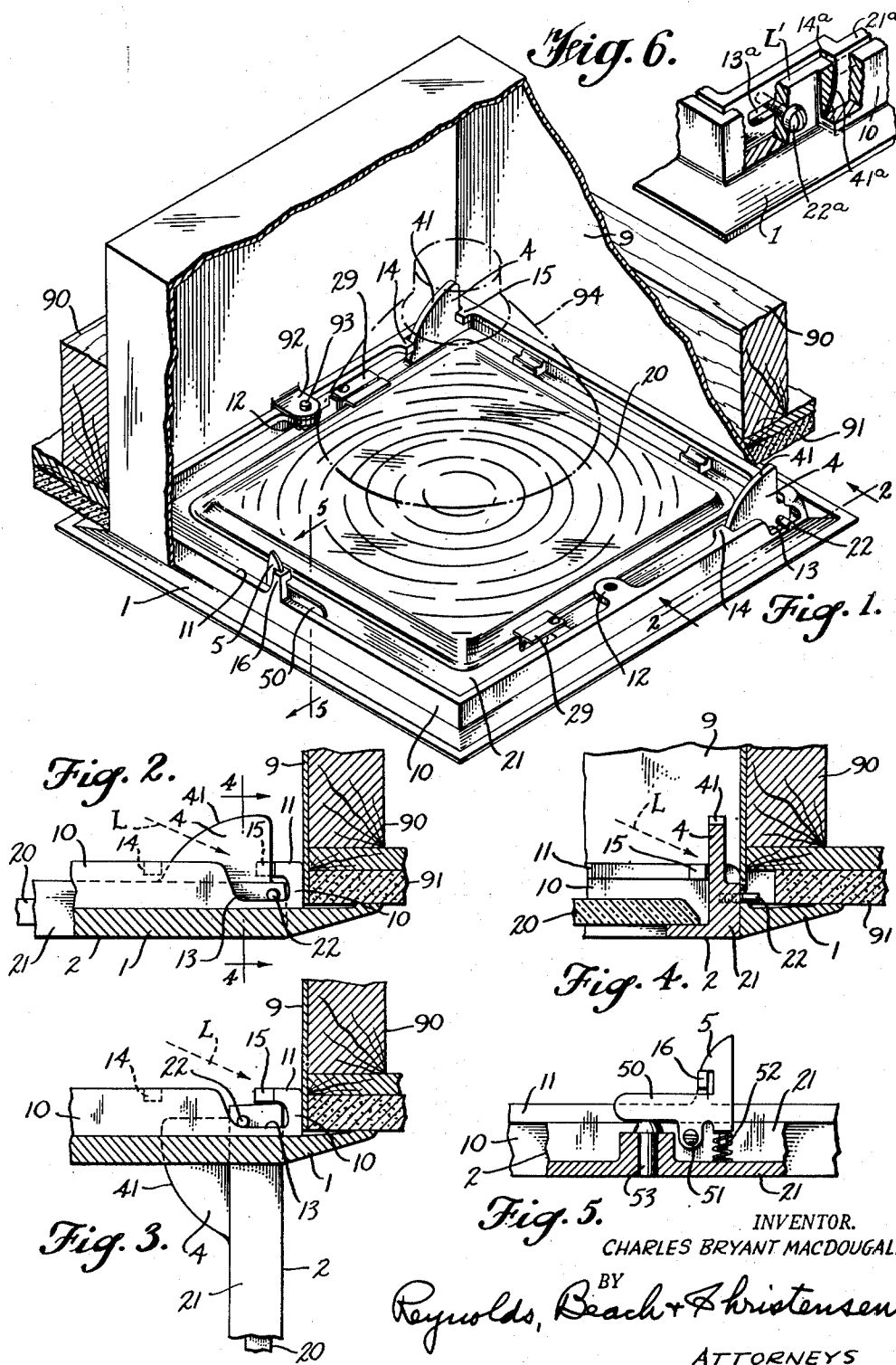


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HINGED FLUSH LAMP BOX COVER HAVING MEANS
TO PREVENT LIGHT EMISSION AT ITS EDGES
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HINGED FLUSH LAMP BOX COVER HAVING
MEANS TO PREVENT LIGHT EMISSION AT
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Instead of light fixtures which hang pendent from or project into the room from a ceiling, lights are now commonly installed inset into the ceiling, with a translucent diffuser or covering substantially flush with the ceiling; these are termed flush lights. They may, of course, be installed otherwise than in ceilings, but since the flush ceiling light is the most common type of installation the present specification will refer to the light as a ceiling light, bearing in mind always that the same principle may be employed to advantage if the light were installed, for instance, in a vertical wall, as sometimes they are.

The interior of such flush lights must be accessible for occasional replacement of a burned-out lamp. Sometimes this is accomplished by unscrewing the retaining screws which hold the diffuser lens and its mount upon the installed box. That is not wholly satisfactory, however, for a number of more or less obvious reasons, and accessibility is better promoted by mounting the lens hingedly, as a door which can swing open, or otherwise be moved aside or out of its flush position. One drawback to such a door, however, is that the hinges either must protrude and destroy the smooth flush appearance of the fixture as a whole, or somewhat elaborate provisions must be made interiorly for the hinge, which in turn increases the cost of the fixture. Moreover, unless the door fits quite tightly entirely about its margin, light issuing from the crack roundabout the door provides a disturbing and undesirable light streak. Provision can be made for blocking or stopping such light emission, but in turn this is subject to interruption to the extent of still leaving a light streak in the vicinity of the hinge, if interior hinging is employed.

The present invention has for its object the provision of a flush light of the general nature indicated, in which an interiorly hinged door is employed, with a light stop, which though interrupted by the concealed hinge mechanism is automatically restored by portions of the hinge mechanism itself when parts are in the closed position. Moreover, the hinge mechanism, though simple, is of a type to close, as tightly as is feasible within production tolerances, the crack about the door and between it and its frame. The provision of simple and inexpensive structures to these ends is the primary object of this invention.

It is also an object of the invention to provide latch means for securing the door in closed

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position which are readily releasable without the use of more than the simplest of tools, and which will, to the very minimum, interrupt the smooth, flush appearance of the installation.

With such objects in mind, and others as will appear hereinafter, this invention comprises the novel flush light installation or cover construction, as shown in an illustrative form in the accompanying drawings, and as will be hereinafter more fully disclosed and claimed.

Figure 1 is an isometric view looking into the interior of the housing for the lamp, and at the top of the flush light cover, with parts shown in closed position.

Figure 2 is a detail sectional view transverse to the hinge axis, the viewpoint being indicated by the line 2—2 in Figure 1, and Figure 3 is a similar view with parts shown, by way of comparison, in the open position.

Figure 4 is a sectional detail, the viewpoint being indicated at 4—4 in Figure 2.

Figure 5 is a sectional view of a detail of the latch, the viewpoint being indicated by the line 5—5 of Figure 1.

Figure 6 is a broken-away isometric view of a modification.

In such installations a rather deep inverted outlet box 9 is permanently supported from the rough construction typified by the joists 90, with its edge in position to come flush with the finish plaster 91. The box 9 mounts a lamp socket to support a lamp 94, and has knockouts or apertures for the passage of electric wiring, of which only the location of the lamp is shown herein, as such elements are conventional. The box also is provided with lugs 92 for the mounting of the cover, as by means of screws 93. The lamp 94 is shown in the position it would occupy with respect to the box and to the cover in the normal installation. Such details are not in themselves important to the invention, and the present invention is merely adapted to the conditions created by such a typical installation.

The cover, according to the present invention, is formed in two parts instead of one—a marginal frame 1 and a door 2 hingedly mounted thereon. The door is composed principally of glass, in the form of a lens to diffuse the light, and indicated in the drawings at 20, which is supported in any suitable manner from the mount ring 21 of metal, to which the lens 20 is secured by such means as are indicated at 29 in Figure 1.

As will be understood, the marginal frame 1 is provided with lugs 12, matching with the lugs 92, whereby the frame 1 may be drawn up tightly

against and held substantially permanently to the finish plaster 91, roundabout the margin of the box 9. Both the mount ring 21 and the marginal frame 1 are of appreciable thickness, with square-cut meeting edges; the mount ring is of a size and shape to fit closely within the opening of the marginal frame 1, notwithstanding the thickness of the two, and to lie flush therewith, with just enough clearance between them to insure that the door can move open and shut, and to leave a minimum gap through which light can be emitted. When such frames and doors are rectangular, as usually they are, one of the door or the marginal frame may have trunnions received in pivot apertures in the other, so located that the door will be pivoted along or near one edge. To avoid light emission, the door should fit closely within the frame at this hinged edge, as well also at the opposite or swinging edge, and, of course, along the two radial edges.

An upstanding flange 10 on the marginal frame 1 has its upper or inner edge turned inwardly at 11, the whole constituting a light stop, which will intercept light directed along the general line L, and prevent it from escaping through or brightly illuminating the small space between the mount ring 21 and the marginal frame 1.

In order to hinge the door 2 along one edge, trunnions or pivot pins 22 are shown as secured in and extending outwardly from the door or its mount ring 21 at one edge, and these are received, not closely, within a pivot aperture in the frame 1, but within an elongated slot or notch 13 of the flange 10. This notch is elongated in the general plane of the marginal frame, and in consequence the trunnions 22 may move in this general direction, as may be seen by comparison of Figures 2 and 3, showing the door in the closed and in the open position, respectively. Notwithstanding that the hinge axis does not coincide with the line of juncture between the marginal frame and the mount ring at their lower flush surface, this construction will enable the door, upon first swinging open, to move bodily towards its own swinging edge, as soon as the latter has cleared the lower surface of the marginal frame. By so doing the mount ring and the marginal frame may be kept so nearly flush, and so nearly in contact, as to create the illusion that there is no discontinuity, and that they are one and the same.

In order to restore parts to their tight-fitting, substantially light-tight position, as the door swings closed, and to do so automatically, I provide a cam member and a follower cooperating therewith, one on the marginal frame and the other on the door. The contoured edge 41 of a flat lug 4, carried by the mount ring of the door, and which lies in a plane generally normal to the pivot axis of the trunnions 22, adjacent the corners where the latter are located, may constitute the cam. This movable cam cooperates with a lug 14, constituting a fixed follower, which is formed on the flange 10 of the marginal frame, or its intumed edge 11, whereby, as the door swings upwardly toward closed position, the cam edge 41 is engaged by the lug 14 to urge the cam, and consequently the door which carries it, backwardly, or to the right as viewed in Figures 3 and 2. This will close the gap between the door and the marginal frame at the pivoted edge, and will afford room at the swinging edge so that the door's edge may pass within the opening of the marginal frame, yet lie closely thereto when fully closed.

The cam 4 is made large enough that when closed it registers with the notch 13, and thereby closes this interruption to the light stop, so that light which might leak at this notch is stopped and prevented from being emitted there, as will be clearly evident in Figure 4.

The cams 4 (and preferably there is one at each pivoted corner) are relatively thin, and in order to afford them somewhat greater support, and to guide and hold parts in position such that the radial edges of the door are properly located within the marginal frame, lugs 15 are provided on the light stop 10 or its intumed flange 11, in position to engage the inside face of each cam, and to locate and hold the same, and support it. This is evident from Figures 2 and 4.

The latching means, to hold the swinging edge of the door, may be any that is found suitable, but the latch which is shown herein is well suited to the requirements of such a cover as this. It consists of a latch dog 5 formed as an upstanding part of a bellcrank lever 50, pivoted at 51 upon the mount ring 21, and urged by a light spring 52 against the head of a stop pin 53, which is slidably mounted in the mount ring 21, and the end of which projects through and is flush with the under surface of the latter. Thus the latch dog 5 is held in locking position, where it will automatically engage and overlie, and secure the door to a fixed locking lug 16, formed upon the light stop flange 10. By pressing inwardly on the lower end of the pin 53, with a nail or even with a matchstick, the lever 50 is tilted sufficiently to disengage the latch dog 5 from its lug 16, whereupon the door may swing open. While open it is supported by the trunnions 22, as in Figure 3, and in swinging closed it is accurately positioned by the cam 41, as has already been described.

Figure 6 illustrates a modified form of the invention in which the pivot pins or trunnions and the slot in which the pin slides have been reversed from that shown in the other form of the invention. Thus, as in Figure 6, the pivot pin 22a is fixedly secured to the flange 10 of the marginal frame, said frame having an offset cam lug L' provided with a cam surface 41a. The mount ring 21a of the door has an offset portion forming a cam surface 14a engageable with the cam surface 41a as the door is moved to open or closed position. The pivot pin 22a is adapted to slide in the slot 13a formed in the mount ring 21a as the door is moved to open or closed position.

I claim as my invention:

1. A flush light cover, for securement to a lamp-mounting box inset into, for example, a ceiling, comprising a marginal frame and means to secure the same fixedly in a generally horizontal plane about the rim of such box, a translucent door of a shape to fit closely within said marginal frame, for substantial blocking of light emission between them, means including pin and slot connections between the door and the frame for pivotal mounting of the door to open or closed position, and for bodily horizontal shifting of the door as the same is moved to open or closed position, cam means and a cam follower between the door and the frame interengageable positively during closing movement of the door to urge the upper edge of the door laterally into close proximity to the frame upon completion of its closing movement, whereby its opposite edge may enter and lie close to the corresponding

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edge of the frame, and releasable means to retain the door in its closed position.

2. A flush light cover as in claim 1, including a flange upstanding about the upper side of the frame and inturned as a light stop over the crack between the frame and the door, said flange being interrupted to form the slots of the pivotal mounting, and the pins of such pivotal mounting being carried by the door, the cam means being located, when the door is closed, in registry with and upstanding before the slots to complete the interrupted light stop.

3. A flush light cover as in claim 1, wherein the cam means comprises a flat lug on the door contoured at its edge and lying in a plane normal to the pivotal axis, and the cam follower comprises an abutment fixed to the frame in position to engage such contoured edge, and thereby to displace the trunnions laterally in their slots and the door bodily sidewise as it closes.

4. A flush light cover as in claim 3, including a retaining lug on the frame positioned to engage the inner flat side of the cam lug as the door arrives in its closed position, to retain the door against shifting in the direction of its pivot axis.

5. A flush light cover, for securement to a lamp-mounting box inset into, for example, a ceiling, comprising a rectangular marginal frame and means to secure the same in a generally horizontal plane about the rim of such box, a flange upstanding around the upper side of said frame and directed inwardly as a light stop, said flange being notched at two opposite sides of the

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frame, adjacent like corners, with the notches extending parallel to the plane of the frame, a translucent door of a size and shape to fit snugly within the frame, trunnions carried by the frame in position to be received within said notches, and to constitute therewith a pivotal support for the door along one edge, releasable means to secure the door in upswung position, a cam on the door adjacent each trunnion and disposed in a plane normal to the pivot axis, two lugs fixed on the frame in respective positions to engage the edge of each cam, each such edge being shaped to press the frame's pivoted edge back closely to the corresponding edge of the frame, when so engaged and as the door approaches its closed position, but enabling lateral shifting of the trunnions in their slots, and of the door bodily relative to the frame, as the door swings open, the cams by their location closely adjacent the corresponding notches closing the interruptions in the light stop flange when the door is closed.

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