Sept. 2, 1969 E. PASCUCCI 3,464,727

LATCHING MEANS FOR CLOSURES

Filed Oct. 18, 1967

Fig. 1.

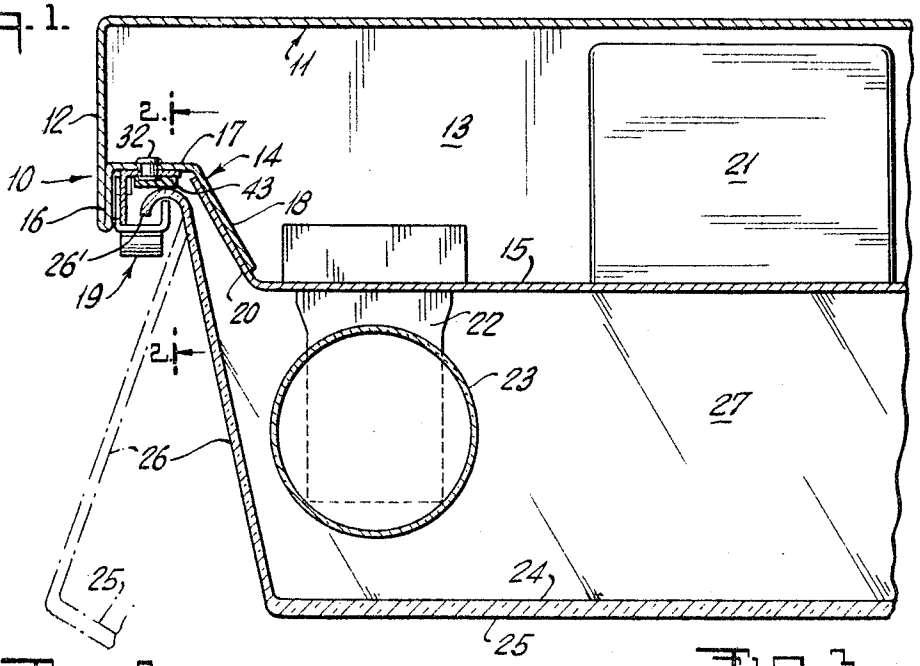


Fig. 2.

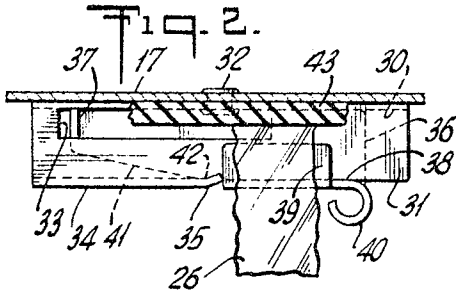


Fig. 3.

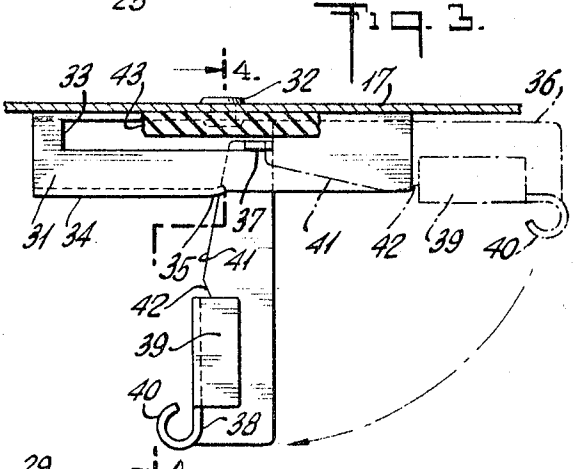


Fig. 5.

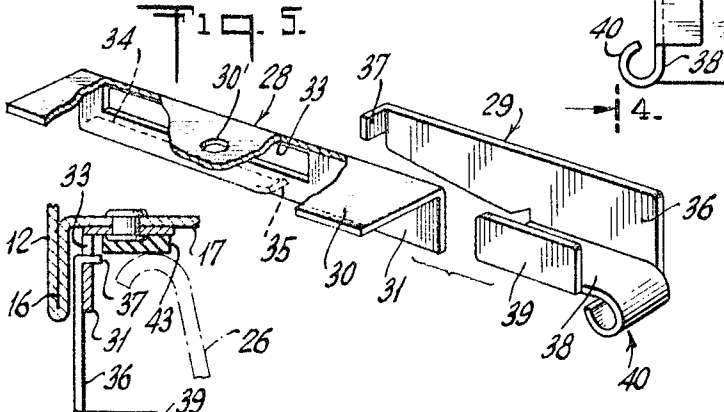


Fig. 4.

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LATCHING MEANS FOR CLOSURES

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ABSTRACT OF THE DISCLOSURE

Latching means for closures such as light transmitting closures for lighting fixtures and the like which are mounted on opposed edges of the fixture to function either as a hinge or a latch.

This invention relates to a novel and improved latch for closures such as light transmitting closures for lighting fixtures and the like. The latch in accordance with the invention is applicable for use in a wide variety of applications though it is particularly useful for light transmitting closures for lighting fixtures.

In the case of fluorescent fixtures, the light transmitting closures are relatively long, and it is desirable to provide appropriate means for hinging the closure to the fixture so it can be conveniently opened to provide access to the lamps and other electrical components. For this purpose fluorescent lighting fixtures are frequently provided with closures hinged along one edge thereof and having some means on the other edge releasably securing the closure in the closed position. This invention overcomes the aforementioned difficulties and provides a novel and improved latch which may be utilized on two opposing edges of a light transmitting closure for lighting fixtures so that one set of latches will serve hinging means for the closure when the other set of latches is opened to permit the closure to swing away from the fixture. This procedure greatly simplifies the manufacture of fluorescent lighting fixtures since identical latching devices are utilized on both sides thereof and further affords the advantage of permitting access to the lighting fixture from either edge.

Another object of the invention resides in the provision of a novel and improved latch for lighting fixture closures and other similar applications which is characterized by its simplicity, ease of operation and dependability.

A still further object of the invention resides in the provision of a novel and improved latching means for lighting fixture closures and the like which may function both as a hinge and as latching means.

The above and other objects of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIGURE 1 is a fragmentary cross-sectional view of a lighting fixture and closure therefor which utilizes a closure latch in accordance with the invention;

FIGURE 2 is a cross-sectional view of FIGURE 1 taken along the line 2—2 thereof;

FIGURE 3 is a view similar to FIGURE 2 with the latch in the open position;

FIGURE 4 is a cross-sectional view of FIGURE 3 taken along the line 4—4 thereof; and

FIGURE 5 is an exploded perspective view of the latch in accordance with the invention.

For the purpose of this application, the latch will be described in connection with a lighting fixture having a light transmitting closure which encloses one or more fluorescent lamps. It will become apparent, however, that the latch is useful in other similar applications.

Referring now to the drawings, the lighting fixture is generally denoted by the numeral 10 and is provided with a rectangular housing 11 having side walls 12 and end walls 13. Both side walls 12 (though only one is illustrated in FIGURE 1) are provided with recessed structures 14 along the lower edges thereof to support a horizontal plate and reflector 15. Each recessed structure 14 may be formed integrally with its associated side wall 12 by bending the bottom edge of the side wall to form an upwardly extending wall portion 16, an inwardly extending wall portion 17 and an inwardly and downwardly inclined portion 18. This arrangement forms a recess for reception of the latching assembly generally denoted by the numeral 19. The reflector 15 has outwardly inclined flanges 20 which cooperate with the wall portions 18 to secure the reflector in position though other means for attaching the reflector to the rectangular housing 11 may be employed. The space within the housing form a wireway which houses a suitable ballast 21 as well as the wiring for connecting the ballast to the sockets 22 on each end of the lighting fixture for supporting and energizing the fluorescent lamps 23.

The lighting fixture closure is generally denoted by the numeral 24 and is formed of a suitable light transmitting material. It includes a bottom wall 25 and upwardly inclined side walls 26 and end walls 27. The side walls 26 terminate at their upper ends in outwardly curved flange portions 26' which cooperate with the latches 19 to secure the closure 25 in position and also serve as hinging as well as latching means.

The latching assembly 19 is shown more clearly in FIGURES 2 through 5 and comprises an angle member generally denoted by the numeral 28 and a locking member 29. The angle member has an upper horizontal leg 30 and a downwardly extending leg 21 substantially at right angles to the leg 30. The angle member 28 is fastened to the wall portion 17 of the fixture by a rivet 32 or other suitable fastening means which extends through the opening 30' in the leg 30 and a cooperating opening in the wall portion 17. The downwardly extending leg 31 is positioned in spaced relationship to the wall portion 16 to provide space for reception of the locking member 29 as will be described and also retain the locking member 29 in engagement with the angle member 28.

The leg 31 of the angle member 28 includes an elongated slot 33 in closely spaced relationship to the top leg 30 and an outwardly extending flange 34. The righthand edge of the flange 34 as shown in FIGURE 5 includes an upwardly bent portion 35 which cooperates with the locking member to hold it in the closed position as will be described. Furthermore, the end portion 35 of the flange 34 is severed from the leg 31 for a short distance in order to provide resilience to permit downward motion of the end portion 35 during the locking operation.

The locking member 29 includes a sidewall 36 having an inwardly extending tab 37 on one end thereof, a base 38 at the other end thereof extending inwardly from the bottom edge of the other end thereof, and an inner upwardly extending wall 39. The base 38 is bent downwardly in an arcuate configuration as indicated at 40 to form an operating handle. It will be observed that the base 38 and the wall 39 are less than half the length of the wall 36 and the lower edge of the wall 36 between the base 38 and the tab 37 is inclined as indicated by the numeral 41 and terminates in a notch 42 adjoining the inner edge of the base 38.

With the foregoing arrangement and with the tab 37 extending into the slot 33, when the locking member is pulled outwardly as indicated in dotted outline in FIGURE 3, it can pivot downwardly to the full line position

shown in that figure. To place the locking member in the locking position, it is rotated in a counter-clockwise direction as viewed in FIGURE 3 and then moved toward the left as shown in the same figure. In so doing, the inclined edge **41** of the wall **36** engages the upwardly bent end **35** of the flange **34** which forces the locking member in an upper horizontal position and then engages the notch **42** as shown in FIGURE 2 to hold the locking member in the latching position.

It will be observed in FIGURE 1 that the upper edge of the wall **39** on the locking member **29** is spaced from the leg **30** of the angle member **28** and the leg **30** may include a layer of resilient material **43**. With this arrangement the curved end portion **26'** of the closure **24** is held tightly between the wall **39** of the locking member **29** and the resilient pad **43**.

With the latch as above described and with reference to FIGURE 1, if the latches **19** on the edge of the lighting fixture, not shown, are released, the closure **24** will pivot downwardly as indicated by the dotted outline position of the wall **26** so that the illustrated latches will form hinges to support the closure **24** in the open position. It is apparent however that the closure **24** may be formed with other edge configurations and still achieve the hinging effect afforded by the latch **19**. Should the hinge feature not be desirable, the upper edge of the closure side wall **26** may merely be provided with an outwardly extending flange.

While only one embodiment of the invention has been illustrated and described, it is apparent that alterations, modifications and changes may be made without departing from the true scope and spirit thereof as defined by the appended claims.

What is claimed is:

1. Latching means for holding a closure having an outwardly formed element along an edge thereof to a cooperating structure comprising an elongated angle member with the legs thereof at substantially right angles, one of said legs having an elongated slot therein, means on said other leg for securing it to a supporting plate on said cooperating structure, an outwardly extending flange carried by the edge of said one leg and disposed at substantially a right angle thereto, a cooperating locking member having a first elongated side wall, means holding said side wall in closely spaced slidable relationship with said one leg, an inwardly formed tab carried by said side wall and extending into and slidably engaging said slot, a base member secured to an elongated edge of said side wall and inwardly thereof, a second side wall carried by the inner edge of said base and extending in parallel with the first said wall, the upper edge of said second side wall underlying said other leg when said tab is at one extremity of said slot and means on said first elongated side wall engaging said outwardly extending flange to hold the locking and angle members in substantially parallel relationship whereby said outwardly formed closure element on said closure will be firmly secured when said locking member is in the latching position with the locking member in engagement with said flange.

2. Latching means according to claim **1** wherein the first side wall one said locking member extends beyond said base, said tab narrow compared to the height of the last said wall and the lower edge of the last said wall is tapered upwardly from the edge of said base to said tab.

3. Latching means according to claim **2** wherein said outwardly extending flange on said one leg of said angle member includes an upwardly extending portion and the lower edge of said first wall includes a notch engaging the last said upwardly extending portion to retain the locking and angle members in the latched position.

4. Latching means according to claim **2** wherein the slot in said one leg is in closely spaced relationship to said other leg and extends from a point adjoining one end of said one leg to a point spaced from the other end of said leg a distance less than the length of said first side wall between said base and said tab.

5. The combination with a lighting fixture having a rectangular housing including light sources carried thereby and a light transmitting closure enclosing said light sources and having outwardly extending closure holding elements on at least two opposing sides thereof and latching means carried by opposing edges of said rectangular housing to hold said closure to said housing said latching means comprising an elongated angle member with the legs thereof at substantially right angles, one of said legs having an elongated slot therein, means on said other leg for securing it to said rectangular housing and in spaced relationship to the housing wall an outwardly extending flange carried by the edge of said one leg and disposed at substantially a right angle thereto, a cooperating locking member having a first elongated side wall positioned in the space between said angle member and said adjoining housing wall, an inwardly formed tab carried by said first elongated side wall and extending into and slidably engaging said slot, a base member secured to an elongated edge of said side wall and inwardly thereof, a second side wall carried by the inner edge of said base and extending in parallel with the first said wall, the upper edge of said second side wall underlying said other leg when said tab is at one extremity of said slot and means on said first elongated side wall engaging said outwardly extending flange to hold the locking and angle members in substantially parallel relationship whereby said outwardly formed closure element on said closure will be firmly secured when said locking member is in the latching position with the locking member in engagement with said flange.

6. The combination according to claim **5** wherein said outwardly formed elements on said closure are arcuate in shape.

7. The combination according to claim **5** wherein the first side wall one said locking member extends beyond said base, said tab narrow compared to the height of the last said wall and the lower edge of last said wall is tapered upwardly from the edge of said base to said tab.

8. The combination according to claim **5** wherein the outwardly extending flange on said one leg of said angle member includes an upwardly extending portion and the lower edge of said first wall includes a notch engaging the last said upwardly extending portion to retain the locking and angle members in the latched position.

9. The combination according to claim **5** wherein the slot in said one leg is in closely spaced relationship to said other leg and extends from a point adjoining one end of said one leg to a point spaced from the other end of said leg a distance less than the length of said first side wall between said base and said tab.

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