Aug. 8, 1967 H. I. STANBACK 3,334,770

COVER, DOOR, AND LATCH ASSEMBLY FOR ELECTRICAL CONTROL DEVICE

Filed Oct. 13, 1965

Fig. 1.

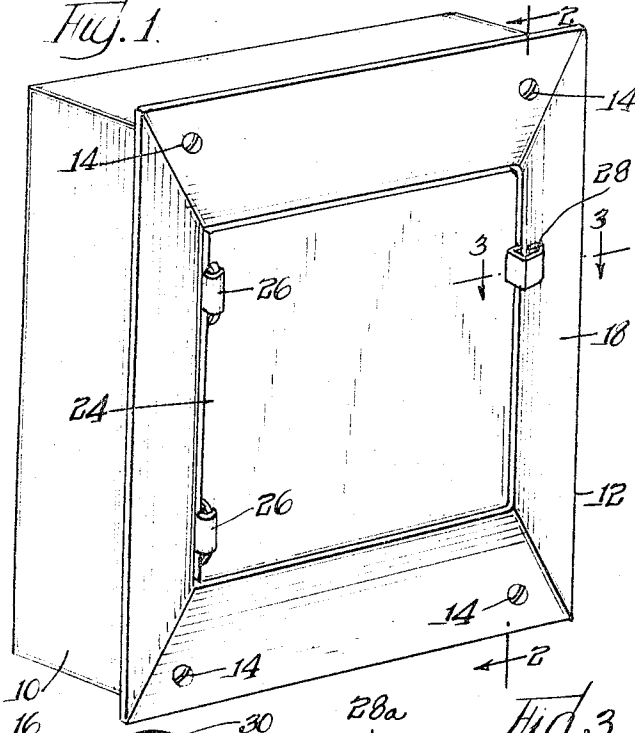


Fig. 2.

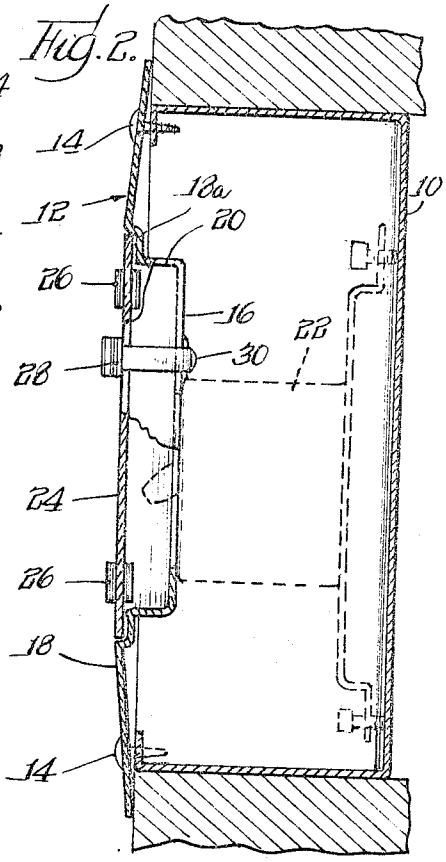


Fig. 3.

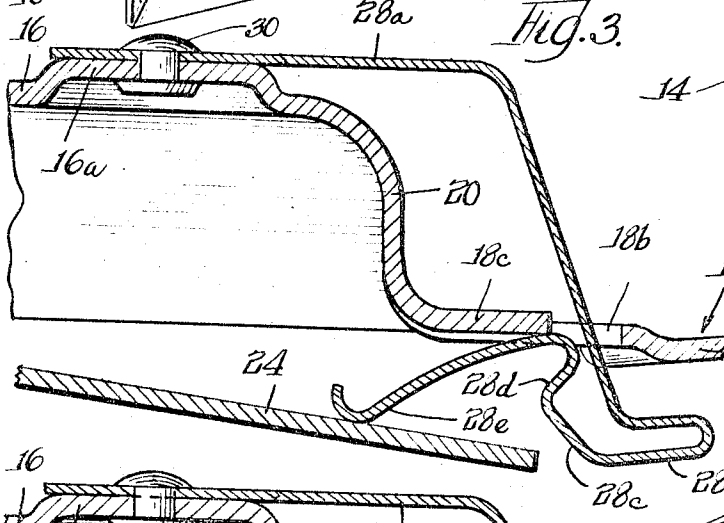


Fig. 5.

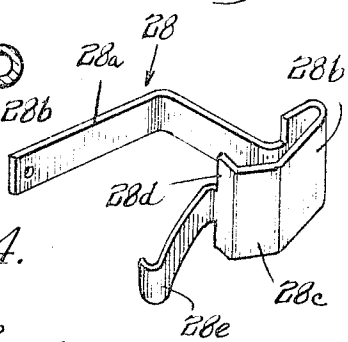
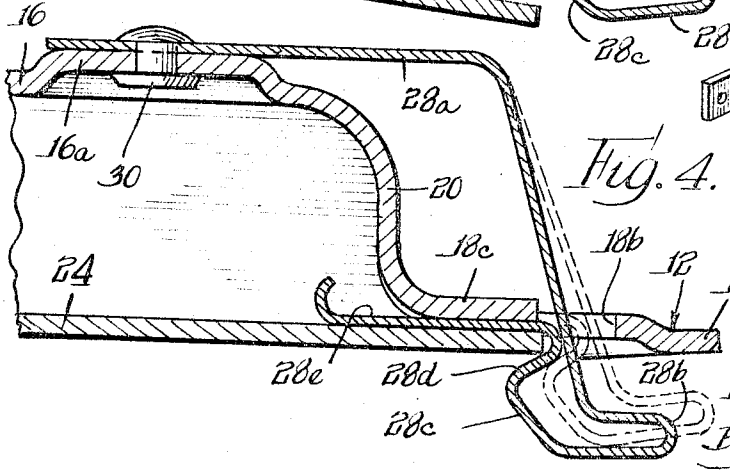


Fig. 4.



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United States Patent Office 3,334,770 Patented Aug. 8, 1967

3,334,770

COVER, DOOR, AND LATCH ASSEMBLY FOR ELECTRICAL CONTROL DEVICE

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Filed Oct. 13, 1965, Ser. No. 495,556
9 Claims. (Cl. 220—35)

This invention relates to a door latch for a door of a cover and door assembly of an electrical panelboard or load center, the cover of the assembly including an integrally formed interior trim panel.

An object of the invention is to provide a door latch for such an assembly, the door latch being formed in one piece, being readily attachable to the interior trim panel by a single rivet, and being depressible to release the door and also to push the door from the inside to a partly open position from a fully closed position flush with the cover.

In the drawings,

FIG. 1 is a perspective view of a box of an electrical panelboard and a cover and door assembly therefor, including a latch constructed in accordance with the invention;

FIG. 2 is a sectional view taken generally along the line 2—2 of FIG. 1 and showing the box recessed within a wall and the cover in engagement with the wall;

FIG. 3 is an enlarged fragmentary sectional view taken generally along the line 3—3 of FIG. 1, but showing the door in a partly open position;

FIG. 4 is a view similar to FIG. 3, but showing the door in a fully closed position; and

FIG. 5 is a perspective view of the latch of FIGS. 1–4 before assembly thereof to the cover.

With reference to the drawings, FIGS. 1 and 2 show a box **10** and a cover **12** secured thereto by a plurality of screws **14**. In the embodiment of the invention illustrated, and as shown particularly in FIG. 2, the cover **12** is of the type adapted to fit substantially flush against a wall surface with the box **10** recessed in the wall, although it will be understood the latch of the invention may be provided on a cover intended for use with a box which is not recessed in a wall and having flanges overlapping the sides of the box.

The cover **12** includes an interior trim panel **16** and an exterior trim ring **18** formed integrally with each other and with a connecting offsetting portion **20**. The trim panel **16** is provided with suitable apertures for the reception respectively of raised casing portions of electrical control devices such as a circuit breaker **22** shown in broken lines in FIG. 2. The trim panel **16** is normally covered by a door **24** recessed in a rearwardly recessed portion **18***a* of the trim ring **18** surrounding the offsetting portion **20** and the interior trim panel **16**. The door **24** is pivotally mounted at its left edge in FIG. 1 on a pair of hinge curls **26** set in the cover **12**, the hinge curls **26** receiving integral hinge pin portions of the door **24**.

The door **24** is normally held in closed position by a latch **28** formed in one piece from spring steel and best shown in FIG. 5. The latch **28** includes an attaching strip portion **28***a*, a manually depressible operating portion **28***b*, a cam follower portion **28***c*, a latching portion **28***d* and a door actuating strip portion **28***e*. As best shown in FIGS. 3 and 4, the attaching strip portion **28***a* is secured adjacent its free end to the rear surface of a dished portion **16***a* of the interior trim panel **16** by a single rivet **30** and is bent to extend through a hole **18***b* in the exterior trim ring **18**. In the vicinity of the latch **28**, the recessed portion **18***a* of the trim ring **18** is provided with a further recessed portion **18***c* which receives the door actuating strip portion **28***e*.

The relative shape and position of the latch **28** when the door **24** is closed is shown in solid lines in FIG. 4. When the door **24** is being closed, an edge portion thereof acts as a cam and engages the cam follower portion **28***c* to move it toward the broken-line position thereof shown in FIG. 4 until the edge portion of the door **24** snaps behind the latching portion **28***d*. The door **24** also resiliently deforms the door actuating strip portion **28***e* into a generally straight shape parallel with the closed door **24**, as shown in FIG. 4. When the operating portion **28***b* is depressed to the broken line position thereof shown in FIG. 4, the latching portion **28***d* releases the door **24** and the door actuating strip portion **28***e* forces the door **24** to a partly open position, as shown in FIG. 3. The door **24** can then be easily grasped and moved to fully open position.

I claim:

1. A cover, door, and latch assembly for an open-front box of an electrical control device, said assembly comprising a cover having an exterior trim ring and a rearwardly offset interior trim panel, a door having a pair of opposite edge portions and being pivotally mounted at one of said edge portions with respect to said cover, said door being disposed in covering relationship to said interior trim panel when in a closed position, and a one-piece latch disposed adjacent the other of said edge portions, said latch having a resiliently deformable attaching strip portion secured adjacent its free end to said interior trim panel and formed to extend through a hole in said exterior trim ring, a manually depressible operating portion connected to the other end portion of said attaching strip portion, a cam follower portion connected to said operating portion, a latching portion connected to said cam follower portion, and a resiliently deformable door actuating strip portion connected to said latching portion, said other edge portion of said door acting as a cam and engaging said cam follower portion upon closing of said door to resiliently deform said attaching strip portion and temporarily move said latching portion out of interfering relationship with said door as said door is being closed until said door is past the junction of said cam follower portion and said latching portion, said door actuating strip portion also being resiliently deformed by said door as said door is closed, and said operating portion being depressible to move said latching portion out of latching relationship with said door and permit said door actuating strip portion to move said door to partly open position.

2. A cover, door, and latch assembly as claimed in claim **1**, wherein said exterior trim ring and said interior trim panel are formed as one piece.

3. A cover, door, and latch assembly as claimed in claim **1**, wherein said attaching strip portion is secured to said interior trim panel by a single fastening means.

4. A cover, door, and latch assembly as claimed in claim **1**, wherein said free end of said attaching strip portion is secured to the rear surface of said interior trim panel.

5. A cover, door, and latch assembly as claimed in claim **1**, wherein said exterior trim ring includes a rearwardly recessed portion surrounding said offset interior trim panel and said edge portions of said door are received in said recessed portion of said exterior trim ring when said door is in said closed position.

6. A cover, door, and latch assembly as claimed in claim **5**, wherein said recessed portion of said exterior trim ring is provided with a further recessed portion for receiving said door actuating strip portion in the closed position of said door.

7. A cover, door, and latch assembly as claimed in claim **5**, wherein said exterior trim ring and said interior trim panel are formed as one piece.

8. A cover, door, and latch assembly as claimed in claim 5, wherein said attaching strip portion is secured to said interior trim panel by a single fastening means.

9. A cover, door, and latch assembly as claimed in claim 5, wherein said free end of said attaching strip portion is secured to the rear surface of said interior trim panel.

References Cited

UNITED STATES PATENTS

2,145,155	1/1939	Corbett	220—242
3,137,408	6/1964	Taylor	220—35

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