May 22, 1956 E. W. HOLRITZ 2,746,784

LATCH

Filed Oct. 30, 1953

FIG. 1

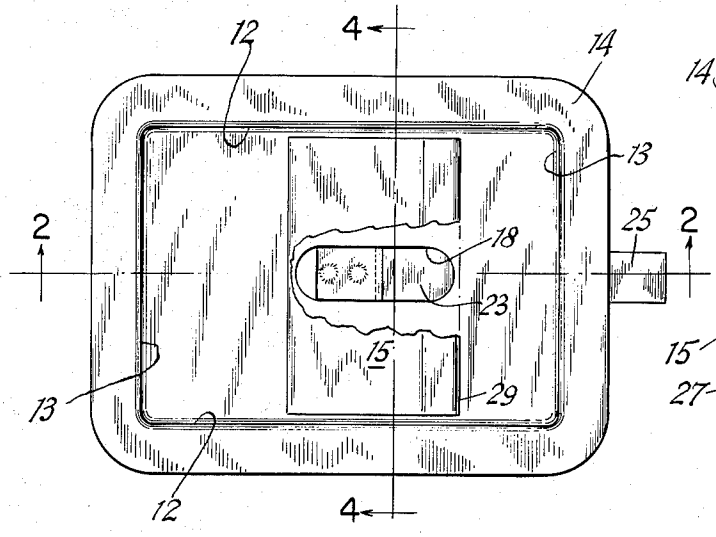


FIG. 4

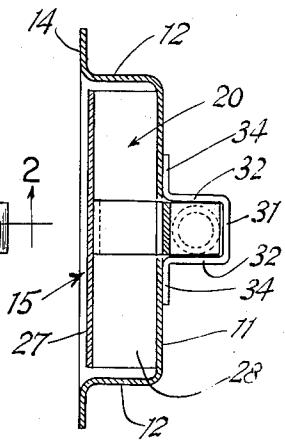


FIG. 2

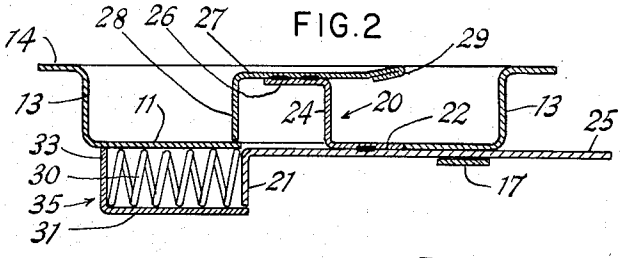


FIG. 5

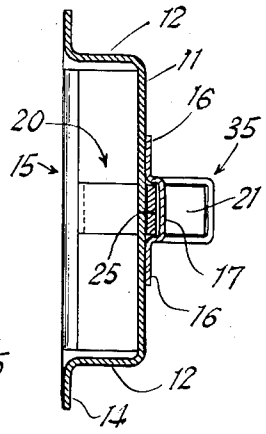
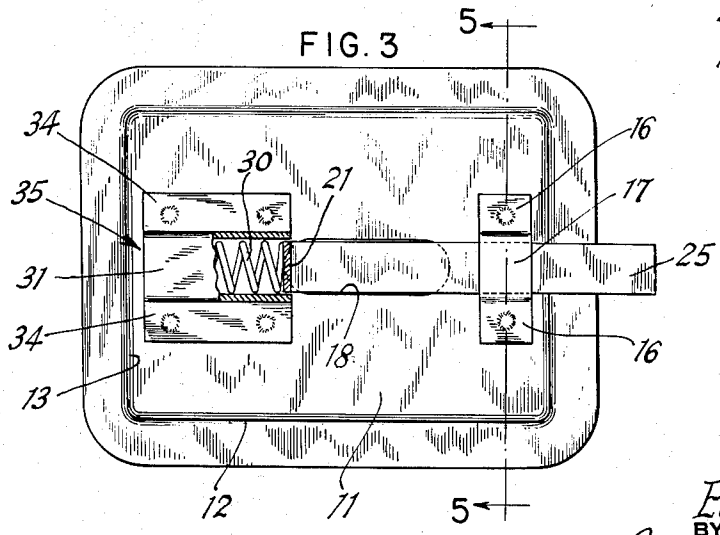


FIG. 3



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LATCH

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3 Claims. (Cl. 292—175)

This invention relates to latch constructions and, more particularly, to a simplified, rugged spring latch construction in which the manipulating handle is recessed in the latch mounting member so as to be substantially flush with the face of a door or the like on which the latch is mounted.

Recessed latch constructions as hitherto provided have been characterized by complexity of parts and assembly. These characteristics have not only resulted in relatively high manufacturing costs but also have a tendency to malfunction due to the number of components of the latch and their relatively complicated assembly.

In contrast thereto, the latch construction of the present invention is characterized by a minimum number of component parts assembled in a simplified manner, certain of the parts being permanently united into an integral subunit to further reduce the number of separate components.

More particularly, the invention latch construction includes a cup or dish shaped mounting member or casing, preferably substantially rectangular in outline, whose body portion is adapted to be set into a correspondingly shaped opening or aperture in a door or the like. The mounting member has a peripheral, outwardly extending flange by means of which the latch assembly may be spot welded or otherwise secured to the controlled closure.

A latch bolt, in the form of an elongated metal strip having one end bent outwardly to form a spring abutment, is slidably engaged with the outer surface of the bottom of the dished casing, being held thereto and guided by a spring housing and bolt guide. The two guiding elements are spaced longitudinally of the bolt, and preferably welded or brazed to the latch casing, with the spring housing comprising a flanged box having an open end receiving the bent end of the bolt which engages a coil spring abutting the closed end of the box.

In alignment with the bolt, the base of the casing is formed with a short slot of substantially the same width as the bolt. A Z-shaped bracket has one leg disposed in this slot and welded or brazed to the bolt, this leg, in cooperation with the slot edges, forming guiding means for the bolt. The web of the bracket has a length of the order of the depth of the casing, and the opposite leg of the bracket carries a substantially rectangular latch handle or manipulator. The handle lies within the casing, with its front face substantially flush with the outer flanged surface of the casing.

For an understanding of the invention principles, reference is made to the following description of a typical embodiment of the invention as illustrated in the accompanying drawing. In the drawing:

Fig. 1 is a front elevation view of a latch embodying the invention;

Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a rear elevation view of the latch; and

Figs. 4 and 5 are transverse sectional views of the latch taken on the correspondingly numbered section lines of Figs. 1 and 3, respectively.

Referring to the drawings, the invention latch construction includes a casing or mounting member **10** on which is slidably mounted a bolt assembly generally indicated at **20** and including a bolt **25**, biased toward a latching position by a coil spring **30**, and secured to an operating member or handle **15**.

The casing **10** is a drawn metal cup or dish, preferably rectangular in form, having a base **11**, side walls **12**, end walls **13**, and an outturned peripheral rim or flange **14**. By means of flange **14**, the latch assembly may be spot welded or otherwise secured to a closure having a recess receiving the body of casing **10**.

Secured to the outer surface of base **11** adjacent one end wall **13** is a metal bolt guide **15** having flanges **16** welded or brazed to base **11** and an offset center section **17**. Centersection **17** has a lateral extent and depth of the order of the width and thickness of bolt **25**. The latter is an elongated bar or strip extending through guide **15** and having a latch end normally projecting beyond on end wall **13** of casing **10**.

The opposite end of bar **25** is bent outwardly at right angles, as at **21**, to form a spring abutment. This abutment is arranged to be received in the open end of a spring housing **35** containing spring **30**. Housing **35** is a box-like metal member having a base **31**, side walls **32**, an end wall **33**, and outturned flanges **34** which are spot-welded or brazed to base **11**. Spring **30** is mounted in housing **35** with one end engaging end wall **33** and the other end abutting the bent end **21** of bolt **25**.

At substantially its center, base **11** is formed with a short, substantially rectangular elongated slot **18** having a width of the order of that of bolt **25** and centrally aligned therewith. The ends of slot **18** are illustrated as preferably rounded. Slot **18** receives a leg **22** of a Z-shaped bracket **23**, this leg being somewhat shorter than the slot and the bracket **23** having substantially the width of bolt **25**. Leg **22** is welded or brazed to bolt **25** and, in cooperation with slot **18** serves as a guide for the bolt. It will be noted that engagement of the end of leg **22** with one end of slot **18** serves to limit projection of bolt **25** to a limiting position in which abutment **21** is still within spring housing **35**.

The center section or web **24** of bracket **23** has a length of the order of the depth of casing **10**. The opposite leg **26** of the bracket supports the handle or operator **15**. The latter is an angular metal member having a relatively wide leg **27** spot welded or brazed to leg **26**, and a relatively short leg **28** extending into substantial engagement with base **11**. The free end **29** of leg **27** is inturned and bent slightly outwardly to form a finger grip for the handle **15**.

Handle **15** lies within the confines of casing **10**, its width being somewhat less than the spacing of side walls **12, 12**. This provides a flush mounted, recessed relation of the latch assembly to the associated closure.

It will be apparent, from the foregoing description, that the invention latch comprises a minimum of parts, resulting in simplicity of construction and operation and substantially lessening any possibility of derangement of the latch components.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the invention principles, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A latch assembly comprising, in combination, an integral dish shaped mounting member having a base, formed with a relatively short slot, a peripheral wall perpendicular to said base and a peripheral mounting flange extending from the outer edge of said wall substantially parallel to said base; an elongated latch bar

slidably engaging the outer surface of said base and aligned with the slot therein; guiding means for said bar secured to the outer surface of said base; spring means mounted on the outer surface of said base and biasing said bar to the extended, latching position; a bracket secured to said bar and extending along such slot in guiding relation therewith, and having a portion extending perpendicularly to said base; and a handle secured to the outer end of said bracket portion and lying within said mounting member, said handle comprising an angular member extending across said mounting member with one leg substantially parallel to said base secured to said bracket and forming a grip portion spaced from said base and the other leg extending substantially perpendicular to and engageable with said base to guide the handle relative thereto; said bracket, in cooperation with the slot, limiting projection of said bar.

2. A latch assembly comprising, in combination, an integral dish shaped mounting member having a base, formed with a relatively short substantially rectangular slot, a peripheral wall perpendicular to said base and a peripheral mounting flange extending from the outer edge of said wall substantially parallel to said base; a box shaped spring housing secured to the outer surface of said base adjacent one end thereof and having an open end; a coil spring mounted in said housing; a substantially flat elongated bolt engaged with the outer surface of said base in alignment with such slot, said bolt having

an outwardly bent end extending into said housing and engaged with said spring; a bolt guiding bracket embracing said bolt and secured to the outer surface of said base adjacent the other end thereof; a bracket secured to said bolt and extending along such slot in guiding relation therewith, and having a portion extending perpendicularly to said base; and a handle secured to the outer end of said bracket portion and lying within said mounting member, said handle having a grip portion spaced from said base; said bracket, in cooperation with the slot, limiting projection of said bolt.

3. A latch assembly as claimed in claim 2 in which said bracket is Z-shape and has two legs, one leg secured in superposed relation to said bolt and lying in the slot to guide said bolt, and the other leg secured to said handle.

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