Oct. 25, 1955 E. W. HOLRITZ 2,721,751

LATCH ASSEMBLY

Filed March 1, 1954

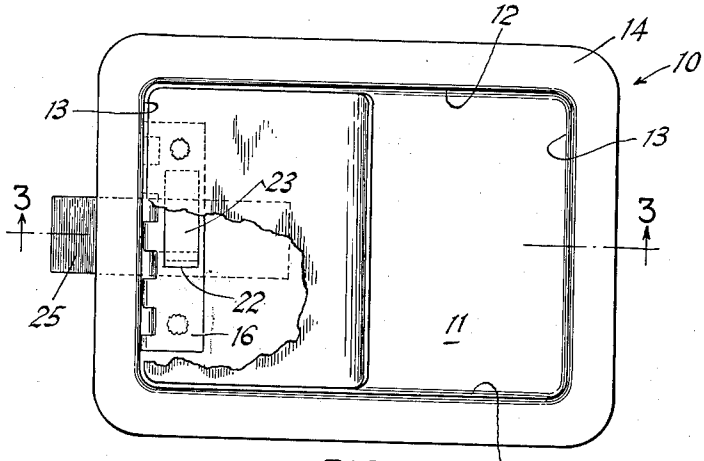


FIG. 1

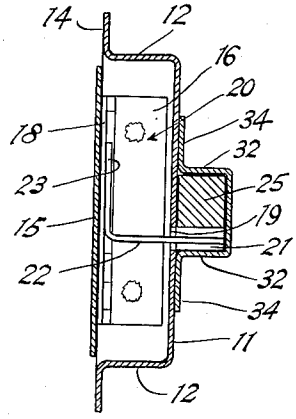


FIG. 2

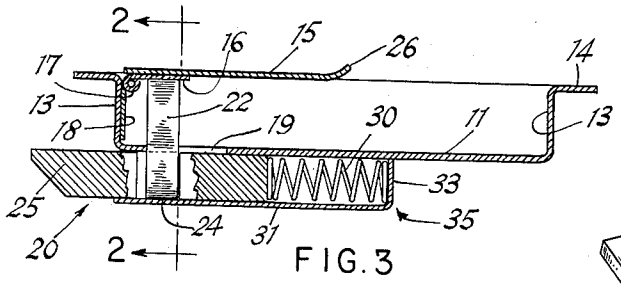


FIG. 3

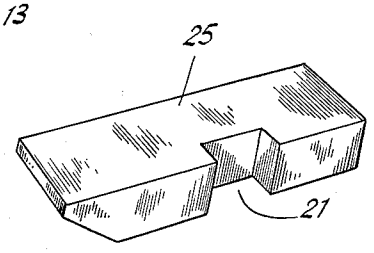


FIG. 5

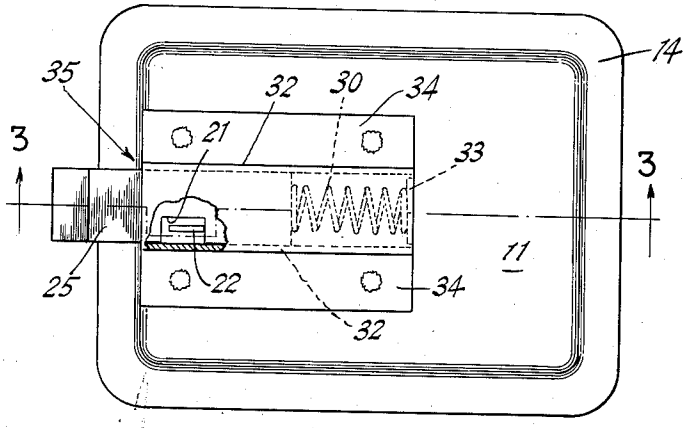


FIG. 4

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United States Patent Office 2,721,751 Patented Oct. 25, 1955

2,721,751

LATCH ASSEMBLY

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Application March 1, 1954, Serial No. 413,051

2 Claims. (Cl. 292—169)

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.

This invention is an improvement upon the latch construction of my copending patent application Serial No. 389,200, filed October 30, 1953.

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 in 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 sub-unit 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.

Another object is to provide a flush type door lock in which a spring-pressed bolt is retained and activated in a guideway by an arm or bracket projecting from the back of the actuating handle and extending into the guideway through an opening or short slot of the bottom wall or base of the pan-shaped body member and into a side slot in the bolt.

The latch bolt, in the form of an elongated solid metal bar one end of which forms 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 which is positioned longitudinally of the bolt, and preferably welded or brazed to the latch casing. The spring housing comprises a flanged box having an open end through which the bolt passes, the inner end of the bolt engaging 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 slightly wider than the thickness of the actuating arm. An L-shaped bracket has the short leg welded or brazed to one leaf of a hinge which in turn is brazed or welded to the handle or operating member, the other or long leg passing through the short slot of the base or bottom wall into the side slot of the bolt. The short slot is of a length to stop the inward movement of the bolt while the long leg of the L-shaped bracket has a length to regulate the outward movement of the bolt.

For a fuller understanding of the nature and objects of the invention, reference is made to the following detailed description in connection with the accompanying drawing in which:

Fig. 1 is a front elevational view of a latch embodying the invention, the actuating handle being partially broken away;

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 3;

Fig. 3 is a longitudinal sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a rear elevational view of the latch with a portion of the spring and bolt housing broken away; and

Fig. 5 is a perspective view of the bolt.

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**, the bolt **25** being retracted by a bracket arm **22** which is 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**.

An open ended spring housing **35** comprises 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** at one end along the longitudinal medial line of casing **10**. Housing **35** receives the bolt **25** and the spring **30**, the spring **30** having one end engaging the end wall **33** and the other end abutting the flat or inner end of the bolt **25**.

The handle **15** is secured to a leaf **16** of a hinge **17** by spot welding, the other leaf **18** of hinge **17** being secured to an end wall **13** of the casing **10** by spot welding or other means. An L-shaped bracket arm **22** has its short leg **23** spot welded to leaf **18** of hinge **17**, the longer leg of bracket arm **22** passing through an elongated slot **19** in base **11** to one side of the longitudinal medial line of the casing **10**. Slot **19** is slightly wider than the arm **22** which enters notch or cutout **21** in a side of the bolt **25** and serves to retract bolt **25** into the spring housing **35** by manual outward movement of handle **15**. The slot **19** is of a length to stop the inward movement of bolt **25** while the right angle blunt end **24** of arm **22** regulates the outward movement of bolt **25** by stopping against the inner surface of the base **31** of the spring housing **35**. The free end **20** of handle **15** is bent slightly outwardly to form a finger grip for the handle **15**.

Handle **15** lies within the confines of casing **10** and at one end thereof, its width being somewhat less than the spacing of side walls **12**, **12**, its attached end being almost in line with the end wall **13** providing a substantially 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, a substantially rectangular disk-shaped mounting member having a base, bounded by end and side walls, and formed with a slot, and a peripheral mounting flange extending outwardly from said walls; an elongated latch bolt slid-

ably engaging the outer surface of said base and having a notch in a side surface aligned with said slot; a housing for said bolt secured to the outer surface of said base; a spring in said housing biasing said bolt to the projected latching position; a hinge including a leaf secured to one end wall of said mounting member; a bracket arm secured to the other leaf of said spring and projecting from said other leaf through said slot into said notch; and a handle secured to said other leaf and lying substantially flush with said peripheral flange when said bolt is projected.

2. A latch assembly as claimed in claim 1 in which said bracket arm has a squared end engaging a wall of said bolt housing to limit projection of said bolt.

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