

May 21, 1963

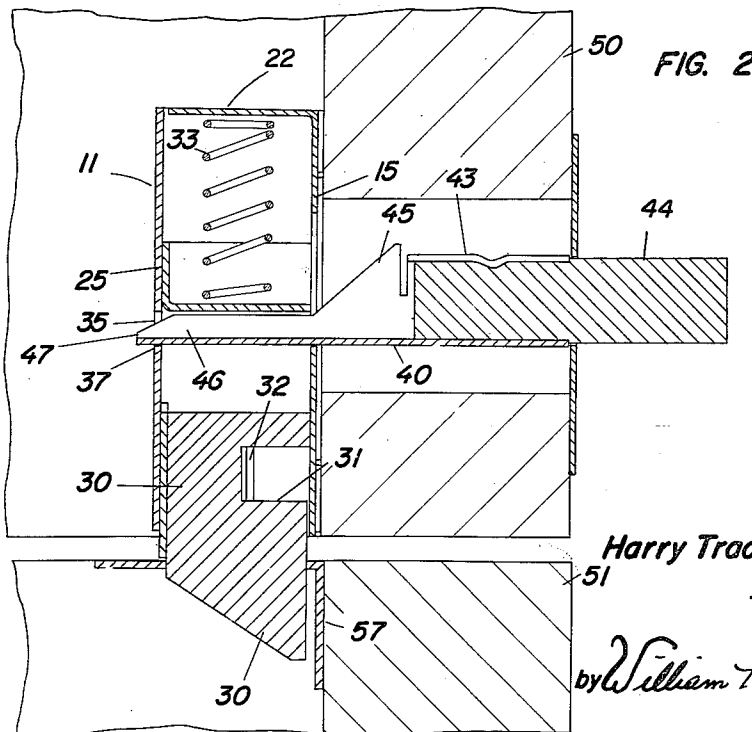
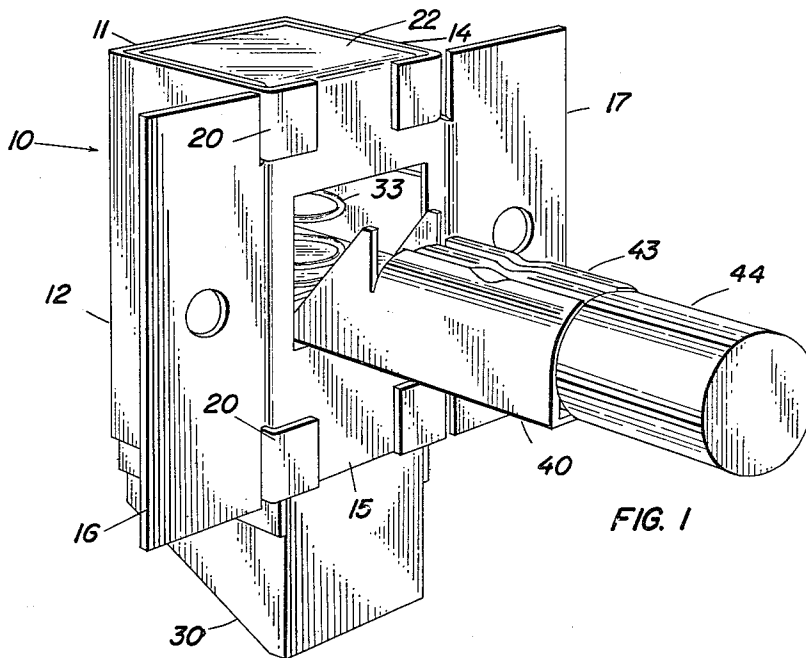
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3,090,643

LATCH

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2 Sheets-Sheet 1



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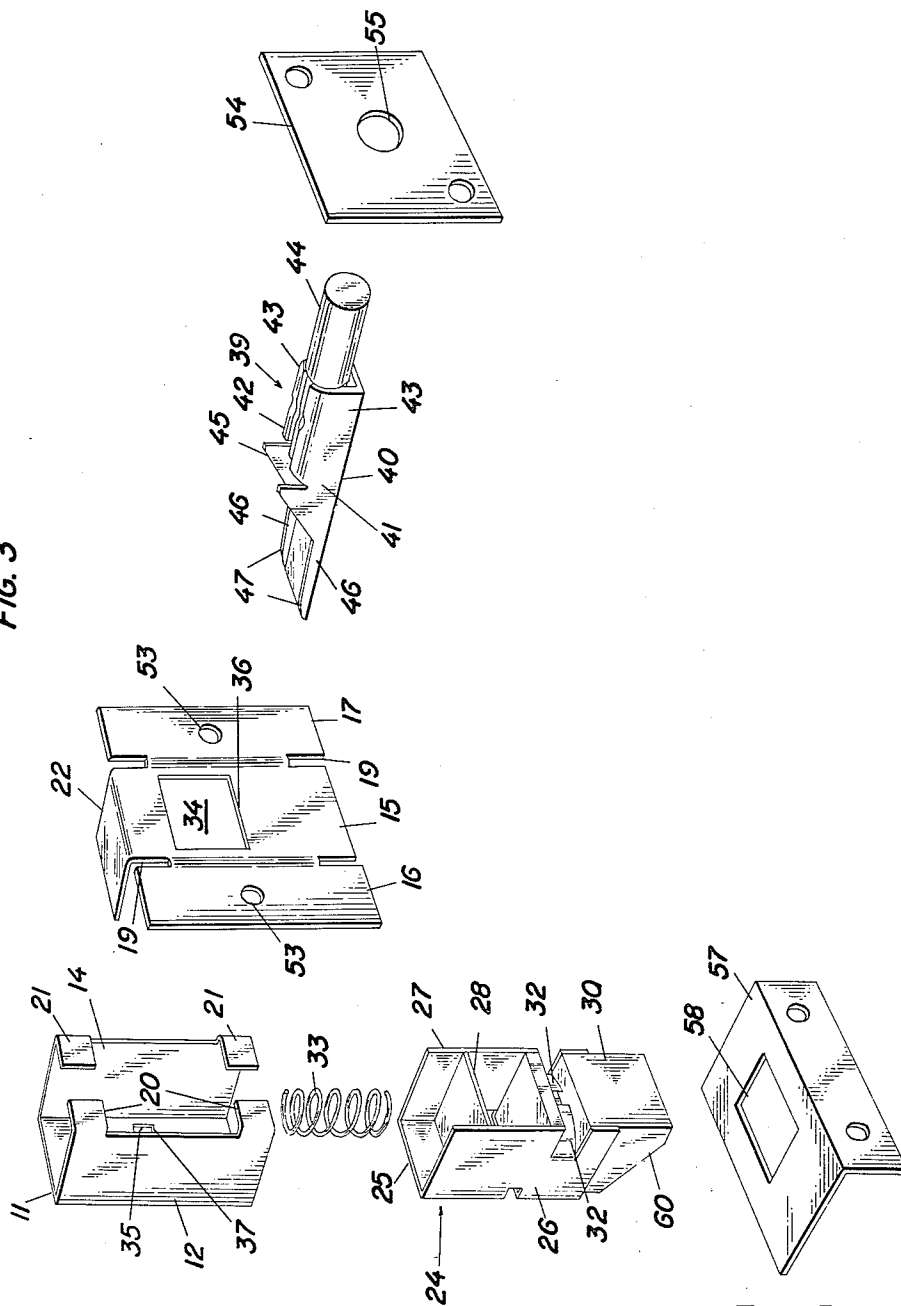
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FIG. 3



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This invention relates generally to latches or catches and more specifically to push button type of latches.

The latch or catch of the present invention is designed primarily for drawers in a cabinet or table wherein said drawers have associated therewith spring means for propelling a drawer outwardly when the latch or catch is released. The present latch is readily adaptable to use on doors or substantially any structure or device wherein it is desirable to secure one member to another in such a manner that they may be readily separated through the actuation of a push button spring actuated latch.

One of the objects of the present invention is to provide a latch structure having a casing or housing with a reciprocable tongue member therein which is adapted to be reversed for use as a right hand or left hand latch.

Another object is to provide a latch having a bolt with an aperture provided therein and a plunger configured to have a portion thereof extending through the aperture for insuring proper bolt action at all times.

Other objects are to provide a latch which is extremely simple and durable, which is economical of manufacture and is efficient and reliable in operation.

Other objects and advantages, more or less ancillary to the foregoing in the manner in which all of the various objects are realized will appear in the following description which when considered in connection with the accompanying drawings sets forth the preferred embodiment of the invention.

Referring to the drawings, wherein the preferred embodiment of the invention is illustrated:

FIGURE 1 is a perspective view of the latch constructed in accordance with the present invention;

FIGURE 2 is a vertical sectional view of the latch of the present invention;

FIGURE 3 is an exploded view of the latch of the present invention.

Referring to the drawings there is shown in FIGURE 3 a rectangularly shaped shell or housing 10 composed of a back wall 11 and side walls 12 and 14. A panel member 15 having laterally projecting flanges or wing portions 16 and 17 formed integrally therewith is mounted upon the housing in spaced parallel relation to the back wall 11. The panel member 15 at its lines of juncture with the flange members 16 and 17 is formed with slots 19 through which tongues 20 and 21 provided at the top and bottom edges of the side walls 12 and 14 are adapted to extend. The tongues 20 and 21 are bent over upon the panel member 15 in a plane parallel to said member for securing said panel member to the housing or shell 10. The panel member 15 is formed with an upwardly extending portion 22 that is bent in a plane normal to the panel member 15 and arranged to lie in a horizontal plane that is flush with the upper edges of the back wall 11 and side walls 12 and 14 respectively. Thus the portion or member 22 constitutes a top for the housing 10.

The housing 10 has slidably positioned therein a casing 24 which is composed of a back wall 25 and side walls 26 and 27. A portion of the back wall 25 is cut or slit at its juncture with the side walls 26 and 27 to define a segment 28 which is bent inwardly between said side walls to define a ledge or seat that is positioned below the top edge of the side and back walls of the casing 24. The lower end portion of the casing 24 has a tongue member 30 positioned therein which tongue member is formed with a

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recess 31, FIGURE 2, in one face thereof into which extend a pair of tangs 32 that are struck from the forward edge of the side walls 26 and 27 of the casing. The tangs 32 extend into and across a portion of the recess 31 to insure the retention of the tongue member within the casing 24 so that said casing and tongue member when in an assembled condition constitute a latch bolt that is slidably positioned within the housing 10.

The ledge or segment 28 formed in the casing 24 has one end of a coil spring 33 supported thereon with the other end of the spring engaging the top 22 of the housing 10 for continuously urging the casing 24 or latch bolt out of said housing. The panel member 15 of the housing 10 has a rectangularly shaped opening 34 formed therein with a smaller opening 35 provided in the back wall 11. The portion of the front panel 15 defining the bottom edge 36 of the opening 34 and the portion of the back wall 11 defining the bottom edge 37 of the opening 35 lie in a common horizontal plane. A plunger or latch bolt actuating member 39 is slidably supported upon the edges 36 and 37 of the openings 34 and 35, respectively.

The plunger 39 is composed of a channel shaped member having a bottom 40 with a pair of upstanding sides 41 and 42. The sides 41 and 42 about midway of their length are notched to provide a pair of segments 43 which engage and retain a tubular member 44 therebetween which tubular member acts as a push button for moving the latch bolt through the openings 34 and 35. The portion of the sides 41 and 42, adjacent the notches, are formed with downwardly and forwardly sloping cam surfaces 45 which surfaces terminate in reduced side edge portions 46 that in turn are formed with beveled or inclined ends 47.

In applying the latch of the instant invention to a suitable object, such as a drawer in a cabinet, wherein the part 50 may be latched to an adjoining part 51, FIGURE 2, the housing or shell 10 may be secured to a surface of the part 50 by means of suitable fasteners, not shown, which extend through the openings 53 provided in the wings 16 and 17. The part 50 is provided with a suitable bore or opening through which the plunger or actuating member 39 is adapted to extend with the inclined ends 47 extending through the opening 34 in the front panel 15. The latch bolt casing 24 and tongue member 30 are positioned as a single unit within the housing 10 with the coil spring 33 interposed between the top 22 and the seat 28. With the latch bolt so positioned within the casing 10 the plunger is then forced through the opening 34 with the bottom surface 40 of the channel member riding on the edge 36 and across the top of member 30 and beneath the ledge or spring seat 28 until the inclined ends 47 project through the opening 35 in the back wall FIGURE 2. The plunger thus retains or holds the latch bolt within the housing 10. A suitable face plate 54 may be secured to the part 50 and said face plate is provided with an opening 55 through which the tubular member 44 extends.

The part 51 has a keeper plate 57 secured thereto by suitable fasteners, not shown, and said plate is formed with an opening 58 through which the member 30 of the latch bolts extends for locking the part 50 to the part 51. The action of the coil spring 33 between the top 22 and the ledge 28 cause the latch bolt tongue member 30 to be projected through the opening 58 in the keeper plate as long as the plunger is in the position shown in FIGURE 2. Upon pressure being applied to the end of the tubular member 44 the inclined ends 47 of the plunger will be forced through the opening 35 in the back wall 11 of the housing 10 as the bottom 40 of the channel member 39 moves over the edges 36 and 37 of the openings 34 and 35 respectively. As the plunger is forced into the

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housing 10 the cam surfaces 45 engages the front bottom edge of the ledge or seat 28 and force this ledge and casing 24 with the tongue member 30 towards the top 22 of the housing. The latch bolt through the action of the plunger will therefore be withdrawn from the keeper plate 57 into the housing 10 so that the part 50 is free from the part 51. Upon the release of the pressure upon the tubular member 44 the latch bolt and plunger will return to their initial position, as shown in FIGURE 2, due to the action of the coil spring 33.

It is to be noted that the tongue member 30 is formed with an inclined or sloping surface 60 which facilitate its entry into the keeper plate 57 so that the forward face of the tongue member bears against the keeper plate to retain parts 50 and 51 in a latched position. The latch bolt is capable of being rotated 180° within the housing 10 to enable said latch to be used in various positions effectively.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be restored to without departing from the scope or spirit of the invention as herein claimed.

What is claimed as new is:

1. A push button latch comprising a housing having front, back, top and side walls, the front and back walls of said housing having aligned openings with the opening in the front wall being larger than the one in the back wall, a latch bolt positioned within said housing for slidable movement therein, said latch bolt comprising a casing having back and side walls and a rectangularly shaped tongue member secured between the back and side walls of said latch bolt casing and arranged to project therefrom, a ledge provided in said latch bolt casing and secured to the walls thereof, a coil spring interposed between said ledge and the top wall of said housing, the back wall of said latch bolt casing having an opening therein registerable with the opening in the back wall of said housing, an operating plunger engageable with said latch bolt, said plunger embodying a member having spaced cam surfaces thereon each of which terminate in a reduced end portion, each of said cam surfaces engaging said ledge at spaced points for compressing said spring between said ledge and top of said housing with the pressure being uniformly distributed over said ledge by said cam surfaces contemporaneous with the retraction of said latch bolt within said housing, the reduced end portion of said plunger moving through the opening in the back wall of said housing to retain said cam surfaces in

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proper engagement with said ledge for compressing said spring.

2. A push button latch comprising a housing having front, back, top and side walls, the front and back walls of said housing having aligned openings with the opening in the front wall being larger than the one in the back wall, the portion of the front wall defining the lowermost edge of the opening therein being in a common horizontal plane with the portion of the back wall defining the lowermost edge of the opening therein, a latch bolt comprising a casing having back and side walls and a rectangularly shaped tongue member secured between the back and side walls of said latch bolt casing, the lower end of said tongue member having a sloping surface provided thereon, said latch bolt and tongue member being interchangeably positioned within said housing for positioning the sloping surface adjacent the back of the housing in one position and adjacent the front wall of the housing in another position, said latch bolt and tongue member being slidably disposed within said housing with the tongue member projecting through the bottom of said housing, a portion of the back wall of said latch bolt casing bent inwardly between the side walls of said latch bolt casing to define a ledge and an opening in the back of the latch bolt casing, a coil spring interposed between the top of said housing and said ledge for forcing said tongue member through the bottom of and out of said housing, an operating plunger engageable with said latch bolt, said plunger including a channel shaped member having a pair of segments engageable with a tubular actuating member, said channel-shaped member adjacent said segments having spaced downwardly inclined cam surfaces formed thereon, said cam surfaces terminating in a channel-shaped portion of reduced size that is formed with a beveled end portion, the bottom surface of said channel shaped member slidably engaging the lowermost edges of the openings in the front and back walls of said housing for guiding the reduced end portion of said plunger through the openings in the back walls of the housing and latch bolt casing contemporaneous with the engagement of said cam surfaces with said ledge for compressing said spring against the top of said housing and withdrawing said tongue member into said housing.

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