

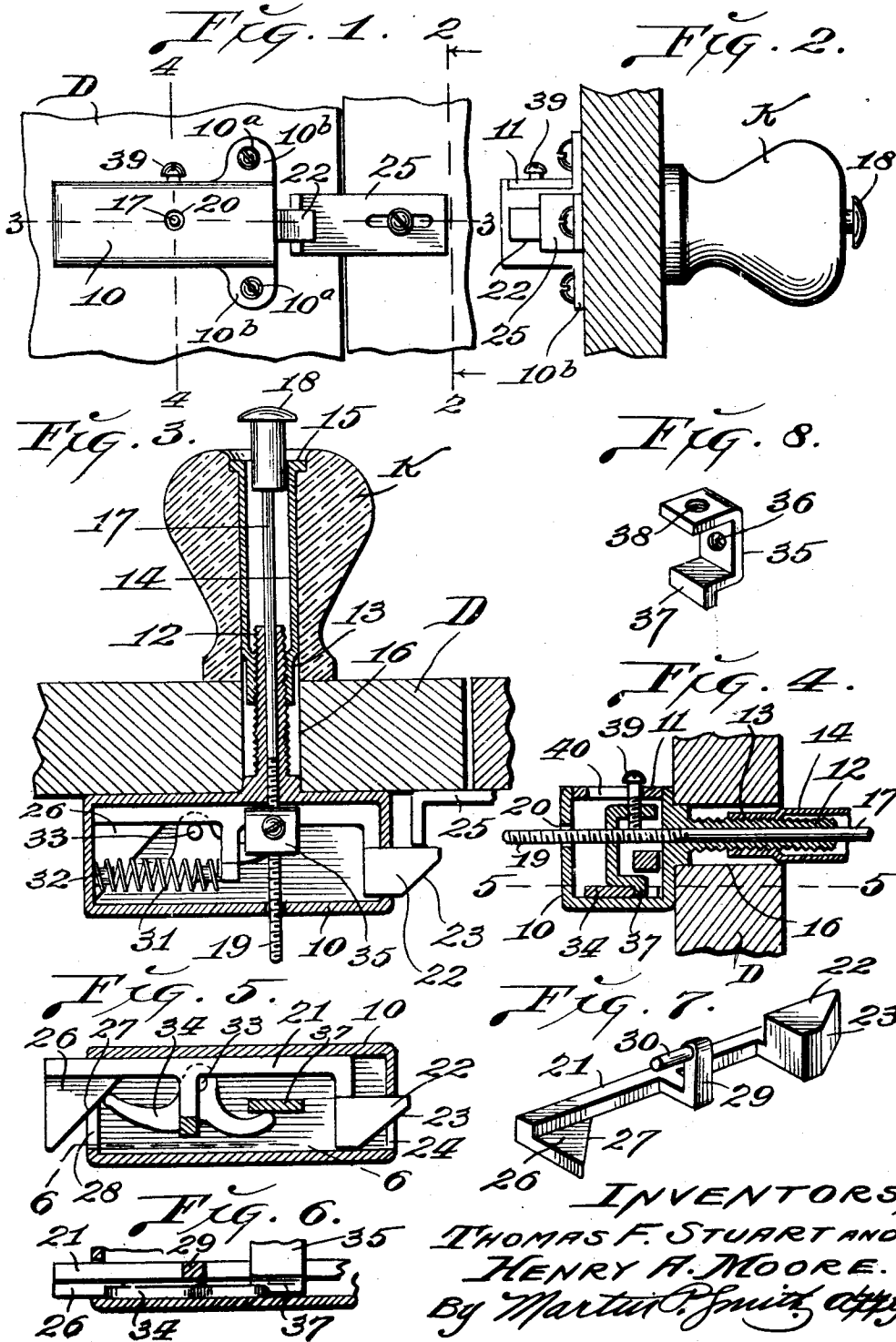
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PUSH CATCH FOR DOORS

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PUSH CATCH FOR DOORS.

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Our invention relates to a push catch for doors, hinged panels, windows and the like, and has for its principal objects the provision of a relatively simple, practical and easily installed latching device that automatically moves into latching position when the door or panel to which it is applied is closed and which latching device is released by the actuation of a push rod; to provide a latching device of the character referred to that may be advantageously used on single or double doors, either plain or rabbeted; and further, to provide a latch that may be applied to a door or the like so as to engage or catch either beneath or on top of a shelf behind the door or against the jamb or frame that surrounds the door or swinging structure.

Further objects of our invention are to provide a door latching device that may be readily adjustable in order that it may be easily and quickly installed on doors of different thicknesses; further, to provide a latch of the character referred to that may receive plain or ornamental knobs of wood, glass, metal, porcelain, or the like; and further, to provide a latch that requires the boring of only one small hole through the door or other swinging member to which the latch is applied.

With the foregoing and other objects in view, our invention consists in certain novel features of construction and arrangement of parts that will hereinafter be more fully described and claimed and illustrated in the accompanying drawing, in which—

Fig. 1 is an elevational view looking against the inner face of a door or swinging panel and showing our improved latch in position for use.

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged horizontal section taken on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged cross section taken on the line 4—4 of Fig. 1.

Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 4.

Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 5.

Fig. 7 is a perspective view of the spring pressed bolt that forms a part of our improved latch.

Fig. 8 is a perspective view of a member that is carried by the push rod of the latch and which is utilized for shifting the latching bolt actuating lever.

Referring by numerals to the accompanying drawings, which illustrate a practical embodiment of our invention, 10 designates a box like housing that is preferably stamped or pressed from suitable sheet metal and the top of said housing being closed by a removable plate 11. Formed integral with and projecting outwardly from the rear wall of housing 10, is a tubular stem 12 that is externally threaded in order to receive the internally threaded inner end portion 13 of a knob supporting tube 14 and which latter is provided at its outer end with a flange 15.

When the latch housing is applied to a door or swinging structure, such as D, the latter is provided with an aperture 16 that receives the threaded stem 12 and the inner portion of knob supporting member 14.

A knob K of glass, porcelain, wood, or metal, is carried by tubular member 15 and, when the latter is screwed onto the tubular stem 12, said knob is firmly clamped between flange 15 and the outer face of door D. Inasmuch as tubular member 14 may be screwed inwardly or outwardly upon stem 12, knobs of different lengths may be accommodated by said tubular member.

Extending through tubular member 14 and stem 12 is a push rod 17 provided on its outer end with a head or disk 18 and the inner end portion of said push rod, or that portion that passes through housing 10, is threaded as designated by 19. The front wall of housing 10 is provided with an aperture 20 for the accommodation of the inner end of the push rod.

Arranged for longitudinal sliding movement within housing 10, is a latching bolt comprising a straight body portion 21, with one end of which is formed integral a block 22 having a beveled outer face 23. This block 23 is arranged to slide freely through a rectangular opening 24 that is formed in one of the end walls of housing 10. When block 23 is in its normal position, that is, projecting from housing 10, and the door to which the latch is applied is closed, said block engages behind a keeper or latch plate 25 that is adjustably secured to the inner

face of the frame or jamb that surrounds the door or swinging structure, or, if the latch is applied to double doors, the plate 25 is secured to and projects slightly beyond the edge of one of the doors.

Formed integral with the end of bolt body 20 opposite the end that carries the block 22, is a plate 26 having an angularly disposed inner edge 27 and said plate 26 occupies a plane just below that occupied by the body of the bolt. Plate 26 and the end of the bolt to which it is connected are arranged to slide freely through an opening 28 that is formed in the corresponding end of housing 10.

Formed integral with the intermediate portion of bolt 21, is the lower portion of an L-shaped arm 29 and projecting from the upper end thereof toward the end of the housing that is provided with the opening 28, is a finger 30. Mounted on this finger, is one end of an expansive coil spring 31, the opposite end of which is supported by a pin 32 that projects from the end of housing 10 above opening 28. Under the influence of this spring 31, the latching bolt is normally held within the housing so that block 22 projects through opening 24 and beyond the corresponding end of the housing.

Seated in the bottom of housing 10 is a pin 33 and fulcrumed thereon is a short lever 34, one end of which bears against the angularly disposed edge 27 of plate 26, and the opposite end of said lever terminates at a point below that portion of push rod 17 that passes through housing 10. The lower horizontally disposed portion of arm 29 overlies the intermediate portion of the lever 34 and thus the latter is always retained in proper position upon the bottom of the housing 10.

The vertical web of a C-shaped plate 35 is provided with a threaded aperture 36 that receives the threaded portion 19 of the push rod and depending from the lower horizontal arm of said C-shaped plate, is a lip 37, against which the corresponding end of lever 34 engages. Formed in the upper horizontally disposed portion of plate 35, is a threaded aperture 38 that receives a set screw 39 and which latter, when tightened, bears against the threaded portion of the push rod and locks plate 35 in its adjusted position thereupon. The upper portion of the locking screw 39 projects through a transversely disposed slot 40 that is formed in top plate 11.

Housing 10 may be secured to the inner face of a door or swinging structure in any suitable manner, preferably by means of screws 10^a that pass through perforated ears 10^b that project from the walls of said housing.

When a door equipped with our improved latch is closed, the pressure of spring 31 re-

tains bolt 21 at its limit of movement in one direction within housing 10 and with block 22 projecting from said housing and positioned behind the catch plate 25, as illustrated in Figs. 1 and 3.

To release the catch and open the door, knob K is engaged and pressure of the thumb or finger is applied to head 18 of push rod 17. As the push rod is moved inward, the depending lip 37 on member 35 pushes outwardly against one end of lever 34, thereby swinging said lever on its fulcrum 33 and, as a result, the opposite end of said lever bears against the inclined edge 27 of plate 26, consequently moving bolt 21 lengthwise through the housing 10 against the resistance offered by spring 31. As bolt 21 is thus moved, block 22 is drawn into the housing 10 until the outer end of said block clears the end of catch plate 25 and the door may now be opened.

As soon as the pressure on head 18 is relieved, spring 31 will act to restore the actuating parts of the latch to their normal positions, as illustrated in Fig. 3, and when the door is again closed, the beveled face 23 on block 22 will strike against the latch plate 25, thus moving the locking bolt lengthwise through the housing 10 until the end of block 22 passes the latching plate, whereupon the pressure of spring 31 will move said bolt so that the block 22 is re-engaged behind the latching plate.

The latching bolt 21 is retained in proper position within the housing and is prevented from tilting or canting by the block 22 and plate 26, which occupy and move through apertures in the end walls of the housing and lever 34 is retained in proper operative position, due to the fact that it occupies a position beneath the latching bolt 21 and the lower portion of the L-shaped arm 29.

Thus it will be seen that we have provided a push catch for doors that is relatively simple in construction, inexpensive of manufacture, capable of being easily and quickly assembled and applied for use and which is very effective in performing the functions for which it is intended.

It will be understood that minor changes in the size, form and construction of the various parts of our improved push catch for doors may be made and substituted for those herein shown and described without departing from the spirit of our invention, the scope of which is set forth in the appended claims.

We claim as our invention:

1. A push catch for doors comprising a housing, a spring held latching bolt arranged for sliding movement therethrough, the outer end portion of which latching bolt projects through an opening in one end of said housing, the inner end portion of said latching bolt being provided with an in-

clined face, a lever fulcrumed within the housing with one end bearing against said inclined face, a push rod mounted for movement through the housing in a plane at right angles to the plane occupied by the latching bolt and a member adjustably mounted on said push rod and bearing on the end of said lever opposite the end that engages the inclined face on the latching bolt.

2. In a push catch for doors, a housing, a latching bolt arranged for sliding movement lengthwise within said housing, one end of which latching bolt normally projects from said housing, the opposite end of said latching bolt having an inclined face, a lever fulcrumed within the housing with one end normally bearing on the inclined face of the latching bolt, a push rod mounted to move through the housing at right angles to the plane occupied by said latching bolt, a member adjustably mounted on said push rod within said housing for engaging said lever when said push rod is actuated and means

for locking said last mentioned member in its adjusted position on said push rod.

3. In a push catch for doors, a housing adapted to be positioned on the inner face of a door, a spring held latching bolt arranged to slide lengthwise through said housing and provided on its inner end with an inclined face, a latching bolt actuating lever fulcrumed within said housing, one end of which lever bears on the inclined face of said latching bolt, a bracket on said bolt, a spring arranged between said bracket and the housing for yieldingly resisting inward movement of said bolt, a push rod arranged for operation in a plane at right angles to said housing and the latching bolt therein, which push rod passes through said housing and a member carried by said push rod for engaging said latching bolt actuating lever.

In testimony whereof we affix our signatures.

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