July 22, 1958 C. J. SLOWER 2,843,873

BUTT HINGE LATCH FOR CLOSURE DEVICES

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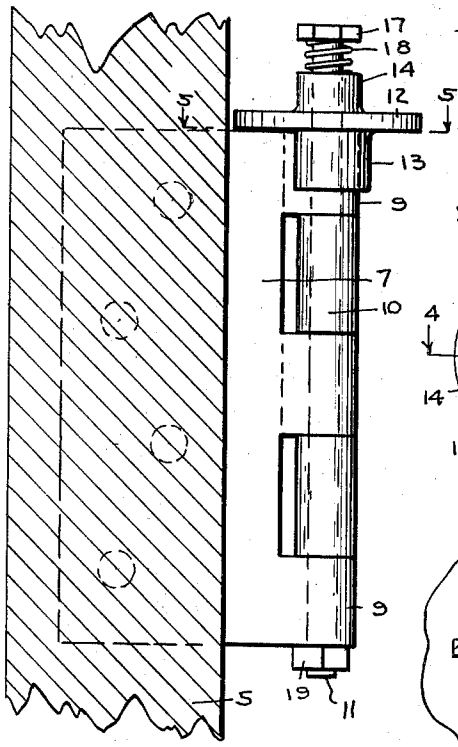


Fig. 1.

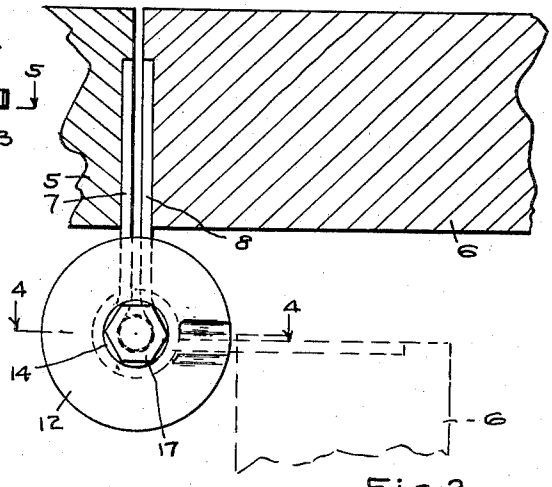


Fig. 2.

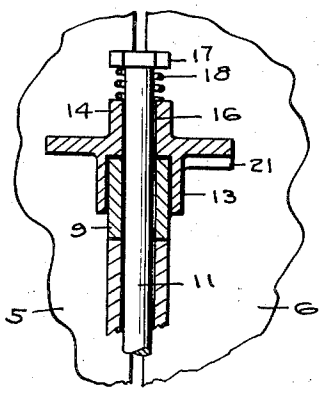


Fig. 4.

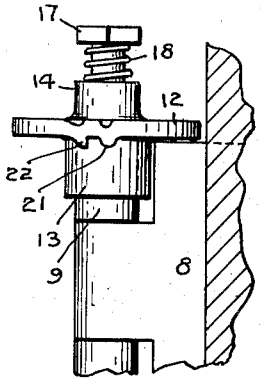


Fig. 3.

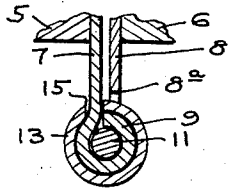


Fig. 5.

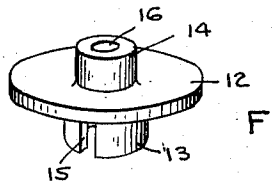


Fig. 6.

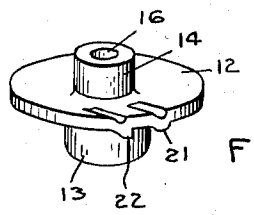


Fig. 7.

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BUTT HINGE LATCH FOR CLOSURE DEVICES

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2 Claims. (Cl. 16—144)

This invention relates to latch means for controlling the swinging movement of a closure device, such as closure doors or the like and has for its object means to limit the outer swinging movement of the door and means to yieldably retain the door in an open position, or a position substantially at a right angle to its normally closed position.

The invention contemplates a latch device that is associated with the conventional but hinges of closure doors and with the device being held against movement with respect to one fixed leaf of the hinge while the opposite leaf of the hinge that normally supports the door may be limited in its swinging movement and yieldably latched in the open position of the door whereby the door may be held against accidental closing.

The invention further contemplates a latch device that is engaged with at least one butt hinge of the door in a manner whereby the device has straddled relation to the fixed leaf of the hinge that is normally held by the door frame while the opposite leaf of the hinge that is normally employed to support the door is freely swingable with the door to a maximum open position and, in such open position is yieldably held under the influence of the latch device through the medium of a detent carried by the latch device and that is normally engaged by the swinging hinge leaf as the door is shifted to the maximum desired open position.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings, wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a side elevation of a butt hinge showing the invention applied thereto,

Figure 2 is a top plan view of the device with a closure door and a door frame being shown in section,

Figure 3 is a fragmentary opposite side elevation of the butt hinge and associated closure door, showing the invention applied thereto,

Figure 4 is a fragmentary section taken substantially on line 4—4 of Figure 2,

Figure 5 is a horizontal section taken substantially on line 5—5 of Figure 1,

Figure 6 is a perspective view of one element of the latch device and,

Figure 7 is a perspective view of the element of Figure 6 taken from the opposite side.

Referring specifically to the drawings, the numeral 5 designates a conventional door frame, while the numeral 6 illustrates a conventional closure door. The door 6 is swingably supported upon the frame 5 by a conventional butt hinge, having a fixed leaf 7 and a swinging leaf 8. The leaf 7 is provided with the usual tubular sleeves 9, while the leaf 8 is provided with the usual sleeves 10 that interengage for the reception of a hinge pin 11 and whereby the hinge 8 may swing with respect to the leaf 7.

Disposed upon the upper end of the hinge, is a disk 12 having a lower concentric tubular hub 13 and an upper tubular hub 14. The hub 13, as clearly shown in Figure 4 is dimensioned to have a relatively close telescopic engagement with the uppermost sleeve 9 of the hinge. For purpose of such engagement, the hub 13 has been slotted at 15 and with the slot being dimensioned to snugly engage the web portion extending between the sleeve 9 and the leaf 7 and whereby the disk is held against turning movement with respect to the hinge element 7. As is clearly shown, the hub 13 is relatively long and engages the major height of the sleeve 9 whereby the disk 12 and its hubs may rise and fall without becoming disengage from the leaf 7. As will be apparent, and as clearly shown in Figure 5, there is adequate clearance between the upper forward edge 8*a* of the hinge leaf 8 and the hub 13 that permits of the leaf 8 and its associated door to swing on a vertical axis without interference with the hub. The hub 14 is concentrically and cylindrically apertured at 16 for the passage of the pin 11. The pin 11 has been extended upwardly to terminate in a non-circular head 17 that forms a stop for a spring 18 that also bears against the upper surface of the hub 14. The pin 11 also projects below the lowermost hinge sleeve 9, where it is threaded for the reception of a nut 19, whereby to adjust the pin for varying the tension of the spring against the top of the hub 14 and thus to control the yieldability of the disk 12 in an upper direction.

The disk 12 at one side has been stamped to form a rounded rib 21 and a stop shoulder 22. The spacing between the rib 21 and the shoulder 22 is adequate to receive the upper edge of the leaf 8. The rib 21 and the shoulder 22 are so disposed as to receive the upper edge of the leaf 8 when the door has been swung to a position that is substantially at right angle to its fully closed position. The disk and its hubs 13 and 14 may be stamped, molded or otherwise formed of a metal having wear resisting qualities and may be plated or otherwise treated to resist corrosion. The opening 16 of the hub 14 may be provided with a bushing not shown, should it be found desirable from the standpoint of wear by the possible rotation of the pin 11 with the hinge.

In the use of the device, it is contemplated that but one latch device shall be employed for a single closure door, although it will be apparent that two or more may be employed in accordance with the particular closure and the variable wind pressures that frequently cause the door to swing closed accidentally. It is also contemplated that the latch devices shall be constructed for both right and left handed opening doors. When the device is to be installed, the conventional hinge pin is removed, after which the disk is engaged over the upper end of the hinge so that its hub 13 has telescopic engagement with the upper sleeve 9 through the medium of the slot 15. In this position, it is clearly apparent that the disk and its hubs are held against rotation with respect to the fixed hinged leaf 7. The hinge pin 11 then receives the spring 18 and the pin is inserted downwardly through the hub 14 to extend through the several sleeves 9 and 10 and pressed downwardly against the tension of the spring 18 to permit the engagement of the nut 19 at the lower end. The tension may be increased or decreased in accordance with the various wind pressures or the like that cause a door to swing closed. Now, when the operator wishes the door to remain open, he swings the door outwardly in the usual manner, with the upper edge of the leaf 8 slidably underriding the lower face of the disk 12, to a point where it engages the rib 21. Additional pressure is then exerted against the door, causing

the edge of the hinge leaf to underride the rib **21**, and in so doing, the disk **12** is caused to rise against the tension of the spring **18** and, after the leaf has underridden the rib **21**, it permits the disk **12** to snap downwardly, supporting the leaf in the space between the rib and the stop **22**, whereby the door will be held in the open position against accidental swinging movement. When the door is to be closed, a corresponding amount of pressure is exerted thereagainst to cause the leaf **8** to again underride the rib **21**, again causing the disk **12** to rise against the spring **18** and after the hinge has passed beyond the rib **21**, the disk will be shifted downwardly to its normal operating position. Throughout the swinging movement of the door, the disk and its associated hub **13** cannot become disengaged from the fixed hinge leaf **7** and due to its telescopic engagement over the upper sleeve **9** the disk and the hub will always rise and fall in a true vertical plane that will not permit of any binding action against the pin **11**.

It will be apparent from the foregoing that a very simple and novel form of latch has been provided and is constructed in a manner that permits of its engagement with the conventional and well known butt hinges presently in common use and permits of its installation and operation without it in any way altering the construction of the hinge other than the replacement of the hinge pin by the pin **11**. The device is quickly and easily installed, requiring no tools possibly other than a pair of pliers and presents a very desirable latch that may be most economically manufactured, that is ornamental in appearance and that will very effectively latch the door in an open position.

It is to be understood that the invention is not limited to the precise construction shown but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A latch for a door or the like comprising a pair of complementary hinge plates each having a leaf, the leaf on one plate being adapted to be secured on a door frame and the leaf on the other plate being adapted to be secured on the door, each of the plates having a tubular sleeve on its edge, a pin extending thru the sleeves to provide a hinge on which the door may swing, a disk having upper and lower hub portions, the lower hub portion telescoping over the sleeve on the fixed plate and having a slot receiving the leaf on said plate to lock the disk against rotation, the under side of the disk having a downwardly extending rounded rib and a stop shoulder spaced circumferentially from the rib, the pin having a polygonal head on one end and an adjusting nut on the other end and a spring positioned around the pin between the head of the pin and the top of the hub on the upper side of the disk.

2. A latch for a door or the like comprising a pair of complementary hinge plates each having a leaf, the leaf on one plate being adapted to be secured to a door frame and the leaf on the other plate being adapted to be secured on a door, each of the plates having a tubular sleeve on its edge, a pin extending thru the sleeves to provide a hinge on which the door may swing, a disk having upper and lower hub portions, the lower hub portion extending over the sleeve on the fixed plate, means on the lower hub portion to prevent relative rotation between the hub and the fixed plate, the under side of the disk having a downwardly extending rib and a stop shoulder spaced circumferentially from the rib and adjacent thereto, the pin having a head on one end and an adjusting nut screw-threaded on the other end and a spring positioned around the pin between the head of the pin and the top of the hub on the upper side of the disk.

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