

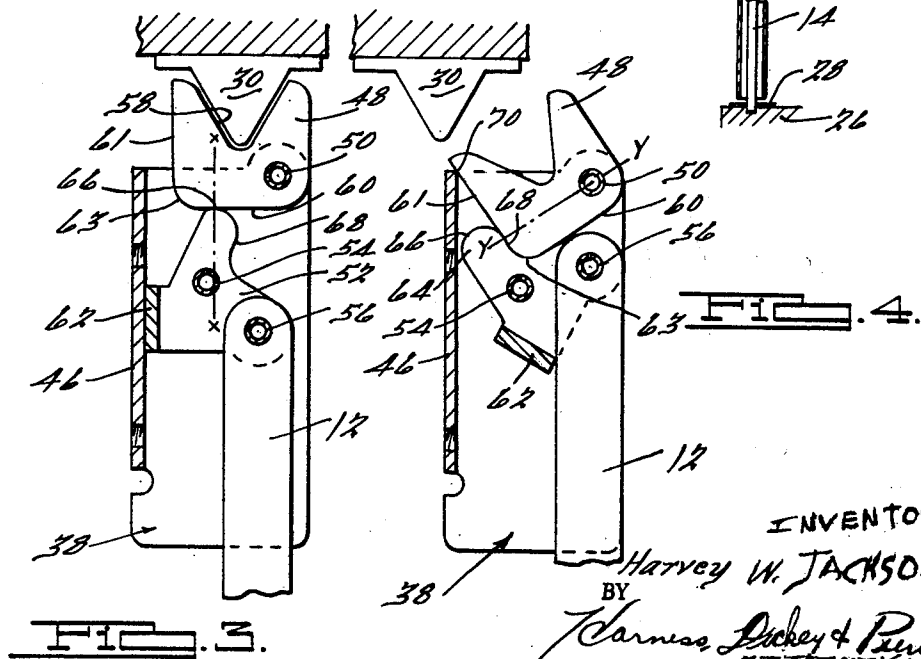
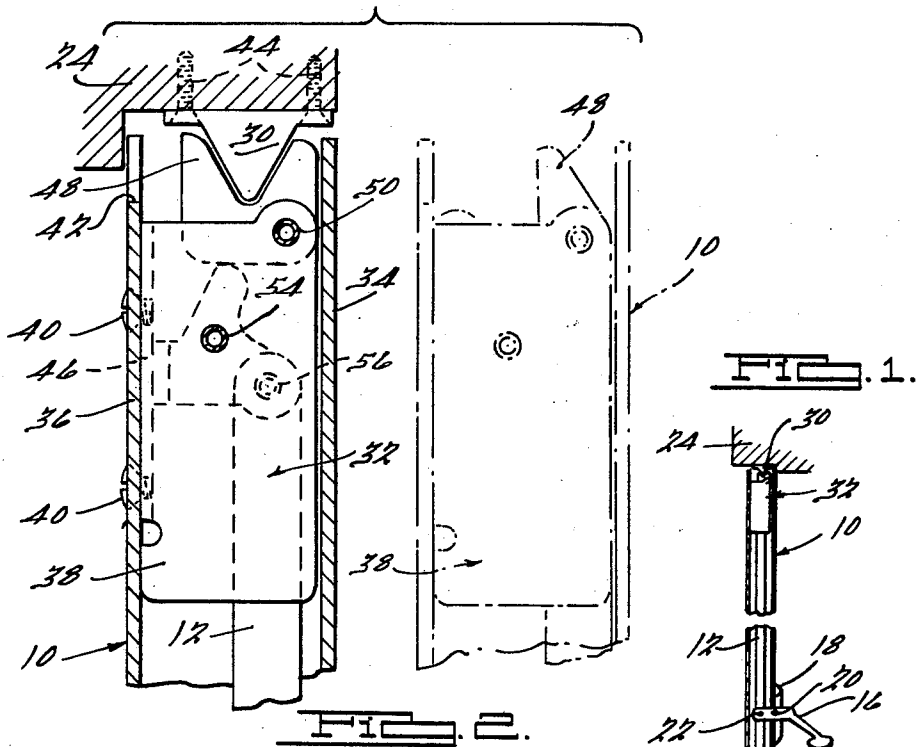
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3,124,378

LATCH DEVICE FOR DOORS

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3,124,378
LATCH DEVICE FOR DOORS
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The present invention relates generally to door latches and more particularly to a latch device adapted to be mounted adjacent the top of a door for operation in conjunction with a strike located at the top of the door frame.

It is a primary object of the present invention to provide a novel latch device which is of extremely simple and functional construction, utilizing a minimum number of parts and no springs, whereby there may be obtained minimum operating friction, low manufacturing and assembling costs, the increased service life which is possible with a device comprising but a few rugged parts, and the compactness necessary for use on modern narrow stile and frame doors. A related object concerns the provision of such a device, which is capable of deadlock operation for pickproof protection, as well as "hold-back" operation whereby all the bolts operated by the latch device will be maintained in a retracted or nonlatching position during the time the door is open.

Another object concerns the provision of a unique latch device which is fully gravity operated, whereby the need for return springs, and the problems, frictional loads and costs associated therewith, are eliminated.

A further object lies in the provision of a novel latch device readily adapted for use on either swinging or sliding doors or the like, in either an exposed or concealed mounting, even in the thinnest of modern doors.

Yet another object resides in the provision of a unique top latch device adapted to be used in conjunction with a standard crossbar and bottom rod bolt assembly which is so arranged that when the crossbar is manually operated to release the top and bottom bolts the top latch assembly will operate to maintain both bolts in their retracted positions until the door is fully reclosed, at which time both bolts will automatically relatch. A related object concerns the provision of a latch device of the immediately aforementioned type which, through the reduction of operating friction, easily meets the strict requirements of Underwriters Laboratory for panic latch devices.

These and other objects of the present invention will become apparent from consideration of the specification taken in conjunction with the accompanying drawings in which there is illustrated an embodiment of the present invention, and wherein:

FIGURE 1 is a diagrammatic vertical sectional view of a door frame and a door provided with latch means embodying the principles of the present invention;

FIGURE 2 is an enlarged vertical sectional view of the top of the door illustrating an embodiment of the novel latch device of the present invention showing it in a latched position in solid lines and in a released position in phantom lines;

FIGURE 3 is a view similar to FIGURE 2 illustrating the details of construction of the latch device in a latched position; and

FIGURE 4 is a view similar to FIGURE 3 illustrating the latch device in a released position.

Although the latch device of the present invention is ideally suited for both concealed and nonconcealed mounting on either swinging or sliding doors, for either panic or nonpanic applications, it is illustrated herein for exemplary purposes concealed within a swinging-type door to be used as a panic latch device.

Referring to the drawings, there is illustrated in FIGURE 1 a concealed panic latch system which in its overall

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arrangement is conventional, comprising a hollow door 10 having reciprocally mounted therein in the usual manner an upper rod 12 and a lower rod 14, both of which may be interconnected and operated by means of a manually operable crossbar lever 16 secured to the door by means of a crossbar housing 18 and adapted for pivotal movement about a pivot point 20. Crossbar lever 16 may be of conventional construction, supporting the usual crossbar which when depressed will cause the lever to pivot about point 20 to raise both of the rods 12 and 14, both of which may be pivotally secured to lever 16 by means of a pivotal connection 22. Both of the rods are normally maintained in their lowered positions by the action of gravity.

Door 10 may be mounted in a conventional door frame having an upper portion 24 and a lower portion or mullion 26, the door being illustrated in FIGURE 1 in a closed and latched position. Lower frame portion 26 may be provided with a latch plate 28 through which projects the lower end of rod 14 which acts as a bottom bolt, and the upper portion 24 of the frame is provided with a downwardly projecting strike 30 which is latchingly engaged by means of a latch device 32 positioned within the door adjacent the top thereof and adapted to be controlled by upper rod 12. Thus, door 10 is illustrated as being fully latched at both its top and bottom. The door may be opened, to the left as illustrated in FIGURE 1, by applying a force against crossbar lever 16 which will cause lower rod 14 to rise against the influence of gravity out of latching engagement with latch plate 28 and latch device 32 to release strike 30, in a manner to be described in detail hereinbelow.

Although the general arrangement of FIGURE 1 is conventional, the details of construction of latch device 32 are unique, as will be more fully appreciated upon consideration of its construction, as illustrated in the remaining figures. As can be seen in FIGURE 2, door 10 comprises an outer panel 34 and an inner panel 36, and latch device 32 is contained within a latch housing 38 tightly secured to the inner panel of the door by means of a plurality of screws 40. The upper edge of panel 36 in the vicinity of latch device 32 is notched, as at 42, to provide for passage of strike 30 therethrough when the door is opened and closed. Although strike 30 may be of any suitable construction, it is illustrated as being generally triangular in cross section and affixed to the upper portion of the door frame by means of a pair of screws 44.

Latch housing 32 may be of any configuration but is illustrated as being U-shaped or channel-shaped in cross-section, the vertically extending bight portion of which is indicated at 46. In addition to upper rod 12 there are only two moving parts constituting the latch device of the present invention, namely a bolt 48 pivotally secured between the sides of housing 38, such as by means of a roll pin 50, and a lever 52 pivotally secured between the sides of housing 38, such as by means of a roll pin 54. Lever 52 is also pivotally secured to the upper end of upper rod 12 by means of a suitable pin 56, which in the illustrated embodiment must be inserted before the lever and rod are inserted between the sides of housing 38. As can thus be seen, the latch of the present invention is of the utmost in simplicity, utilizing in essence only two ruggedly constructed moving parts.

As can be best seen in FIGURES 3 and 4, bolt 48, which is of solid construction for maximum theft protection, is provided with a strike-receiving recess 58 having a configuration substantially the same as the outline of strike 30. In addition, the bolt is substantially symmetrical about a center vertical plane, with its pivotal axis, which is horizontal, located offset from the center

of gravity thereof. Thus, in the absence of other forces, bolt 48 will tend to gravitate about pivot 59 in a counterclockwise direction as illustrated, to a released position such as shown in FIGURE 4. As can be seen, the bolt is so arranged that as the door is opened the engagement of strike 30 with one side of recess 58 will swing the bolt to its released position, shown in FIGURE 4, where it will be maintained by gravity. Conversely, when the door is closed strike 30 will engage the opposite side of recess 58 to swing the bolt back into its latched position, as illustrated in FIGURE 3. Thus, bolt 48 is moved both to and from its latched position by means of strike 30. Bolt 48 is also provided with a relatively flat lower surface 60 which is substantially horizontal when the bolt is in its latched position, a relatively flat side surface 61 which is substantially horizontal when the bolt is in its latched position, and a gently contoured surface 63 extending between surfaces 60 and 61, all for reasons as will become apparent.

Considering in greater detail the configuration of lever 52, as best illustrated in FIGURES 3 and 4, it may be seen that it is mounted for rotation between two positions, as dictated by the position of upper rod 12. Thus, when rod 12 is in its lowered position (where it is normally maintained by the influence of gravity) lever 52 is in the position illustrated in FIGURE 3, and when rod 12 is moved to its upper position, by means of crossbar lever 16, lever 52 is pivoted to the position illustrated in FIGURE 4.

Lever 52 is illustrated as being U-shaped in configuration having a vertically extending bight portion 62 which is adapted to abut bight portion 46 of the latch housing to limit the movement of the lever when rod 12 is in its lowered position. For purposes that will become apparent, lever 52 is provided with a projection 64 having a first surface 66 and a second surface 68 thereon. Surfaces 66 and 68 are so arranged that when lever 52 is in the position illustrated in FIGURE 3 surface 66 engages the lower surface 60 of bolt 48 to lock it in its latched position. In other words, rotation of bolt 48, such as would otherwise tend to occur by the action of strike 30 if the door were pushed open, is prevented by the engagement of surface 66 against surface 60. Lever 52, in turn, cannot be rotated by any force exerted against surface 66 by the bolt, since the point of contact between the lever and the bolt lies along an axis $x-x$ which includes or is slightly to the right of the axis of pivot pin 54. Thus, any forces transmitted to the lever from the bolt will only tend to move bight 62 of the lever harder against bight 46 of the latch housing, with the result that very strong latching action is obtained. Axis $x-x$ is preferably maintained as close to pivot point 54 as possible, so as to minimize the amount of force necessary to raise rod 12 against the force applied to the lever by the bolt when it is desired to unlatch the door. Thus, even if a very large force is being applied to the door to force it open, such as the crush of people in a panic situation, only a small force applied to crossbar lever 16 will cause projection 64 and surface 66 to move out of engagement with the bolt to release it.

When rod 12 is moved to its raised position to release the bolt, as the door is opened, the action of strike 30 pivots the bolt to its released position, as shown in FIGURE 4. Such movement of the bolt is limited by the engagement of one corner thereof with the upper edge of bight portion 46 of the latch housing as indicated at 70. Since the pivotal axis of bolt 48 is offset from the center of gravity thereof it will be maintained in the position illustrated in FIGURE 4 solely by the influence of gravity. It has been found that no amount of shaking of the open door will cause the bolt to swing up to its latched position. As a result, the gravitational force upon rods 12 and 14 tending to return them to their lowered positions will not so act to return them to their lowered positions because of the engagement of surface 68 with surface 61

of the bolt. Thus, both of the rods are locked in their raised positions when the door is open, so that the lower end of rod 14 will not project beneath the bottom of the door so as to interfere with the door jam when the door is subsequently closed. Surface 68 is so positioned with respect to bolt 48 that when the latter is in its released position surface 68 engages surface 61 of the bolt along an axis $y-y$ which includes the pivotal axis of the bolt. Thus, no matter how great the force exerted against the bolt by surface 68 it will not tend to rotate the bolt in either direction about its pivotal axis. In addition, surface 72 is provided so that when the strike engages the bolt to pivot it to its latched position surface 72 will slide relatively freely over projection 64 on the lever. To facilitate this, as well as rotation in the opposite direction, the latter is also contoured somewhat. The maximum degree to which lever 52 can rotate in the counterclockwise direction as illustrated in FIGURE 4, is limited by the engagement of bight 62 with the side of rod 12.

When the door is subsequently closed, engagement of strike 30 with bolt 48 will cause the latter to pivot to its latched position, thereby allowing rods 12 and 14 to drop under the influence of gravity to their lowered positions to swing surface 66 on lever 52 into locking engagement with the lower surface of bolt 48.

In addition to the environment disclosed, the latch device of the present invention is readily adapted for practically any latch application where it is desired to utilize a top bolt. For example, it may be used in a three-point latch system, such as that now required by many burglary insurance underwriters. Such a system would be essentially the same as that disclosed in FIGURE 1, except that a rim latch would be added and instead of a panic bar and associated lever bar, a simple door knob on the inside of the door would be utilized. The present invention is particularly advantageous in such a system since it has heretofore been impractical to use spring loaded latches in a three-point latch system in view of the excessive resistance to closing created by the three-spring biased latches. The top latch of the present invention is extremely easy to actuate since there are no resisting springs and all the other loads on the bolt are acting through its pivot point. Also the pivotal axis of the bolt is perpendicular to the direction of movement of the end of the door, to further reduce friction when the bolt is moved to its latched position by the strike. Furthermore, the lower bolt in the herein disclosed system is maintained in a retracted position until the door is fully closed and the upper bolt latched, by virtue of the "hold back" feature, so there is no spring resistance to closing introduced by the lower bolt either.

In addition to the construction illustrated, it will be appreciated that other strike and bolt arrangements may be utilized, such as one wherein the configurations are interchanged in the sense that the bolt may be formed as a projection and the strike provided with a suitable recess. Of course, it would still be necessary to provide the important abutting surfaces disclosed, and the bolt and strike configurations would have to be such that the strike would readily pivot the bolt to and from its retracted position as the door is closed and opened. In addition, an arrangement such as that disclosed herein, except with the strike formed as a sphere or horizontally disposed cylindrical section, could also be readily utilized, based on an understanding of the principles of the present invention.

Thus there is disclosed in the above description and in the drawings an exemplary embodiment of the present invention which fully and effectively accomplishes the objects thereof. However, it will be apparent that variations in the details of the construction may be indulged in without departing from the sphere of the invention herein described or the scope of the appended claims.

What is claimed is:

1. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: latch housing means positioned adjacent the top edge of a door; a bolt mounted on said means for movement between a latched position and a released position; means defining strike-engaging means on said bolt so arranged that when said door is closed engagement of the strike with said bolt will cause the latter to move from its released position to its latched position; lever means for locking said bolt in its latched position when the door is closed and for releasing said bolt when said door is to be opened; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and means on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt.

2. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining strike-engaging means on said bolt so arranged that when said door is closed engagement of the strike with said bolt will cause the latter to move from its released position to its latched position; lever means for locking said bolt in its latched position when the door is closed and for releasing said bolt when said door is to be opened; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and means on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position, the pivotal axis of said bolt being offset from the center of gravity thereof so that gravity will maintain it in its released position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt.

3. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a triangularly-shaped strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between an upright latched position and a canted released position; means defining a triangularly-shaped strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its upright latched position; lever means for locking said bolt in its latched position when the door is closed and for releasing said bolt when said door is to be opened; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and means on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position, the pivotal axis of said bolt being disposed perpendicular to the direction of movement of the door and offset from the center

of gravity of the bolt so that gravity will maintain it in its released position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt.

4. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining a strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its latched position; lever means having a first surface thereon adapted to move into engagement with said bolt to lock it in its latched position when the door is closed and to release said bolt when said door is to be opened; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and a second surface on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt, said second surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line substantially passing through the pivotal axis of said bolt.

5. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining a strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its latched position; lever means having a first surface thereon adapted to move into engagement with said bolt to lock it in its latched position when the door is closed and to release said bolt when said door is to be opened; actuating means pivotally secured to said lever means at a point thereon spaced horizontally from a first vertical line through the pivotal axis of said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt, said first surface being adapted to engage said bolt at a point lying on a second vertical line positioned between said first vertical line and said pivotal axis of said lever means and closely adjacent the latter; and a second surface on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt.

6. A device as claimed in claim 5, wherein stop means are provided on said lever means adapted to engage said latch housing to limit further movement of said lever means when it reaches its latched position.

7. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be

secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining a strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its latched position; lever means having a first surface thereon adapted to move into engagement with said bolt to lock it in its latched position when the door is closed and to release said bolt when said door is to be opened; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and a second surface on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position, the pivotal axis of said bolt being offset from the center of gravity thereof so that gravity will maintain it in its released position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt.

8. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining a strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its latched position; lever means having a first surface thereon adapted to move into engagement with said bolt to lock it in its latched position when the door is closed and to release said bolt when said door is to be opened, said first surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line passing approximately through the pivotal axis of said lever means; means for actuating said lever means, said actuating means being manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and a second surface on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position until the door is again closed and the strike moves said bolt to its latched position to release said lever means; whereupon the influence of gravity on said actuating means will actuate said lever means to its door locking position to lock said bolt, said second surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line substantially passing through the pivotal axis of said bolt.

9. A latch device adapted to be mounted adjacent the top edge of a door and to operate in conjunction with a strike projecting downwardly from the door frame above said device, comprising: a latch housing adapted to be secured to a door adjacent the top edge thereof; a bolt pivotally mounted on said housing for movement between a latched position and a released position; means defining a strike-receiving recess in said bolt which is so arranged that when said door is closed the strike will engage said recess to pivot said bolt from its released position to its latched position; lever means having a first surface thereon adapted to move into engagement with said bolt to lock it in its latched position when the door is closed and to release said bolt when said door is to be opened, said first surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line passing approximately through the pivotal axis of said lever means; means for actuating said lever means, said actuating means being

manually operable to actuate said lever means to release said bolt and operable by gravity to actuate said lever means to lock said bolt; and a second surface on said lever means adapted to be engaged by said bolt when the latter is in its released position to lock said lever means in its bolt releasing position, the pivotal axis of said bolt being offset from the center of gravity thereof so that gravity will maintain it in its released position until the door is again closed and the strike moves said bolt to its latched position to release said lever means, whereupon the influence of gravity on said actuating means will actuate its door locking position to lock said bolt, said second surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line substantially passing through the pivotal axis of said bolt.

10. Means for latching a door movably mounted in a frame having a downwardly projecting strike at the top thereof and bolt receiving means at the bottom thereof, comprising: rod means reciprocally mounted on the door and having at the lower end thereof a bottom bolt adapted to latchingly engage the bolt receiving means when said rod means is in a lowered position and the door is closed, the upper end of said rod means terminating in the vicinity of the strike when the door is closed; manually operable means for raising said rod means when the door is to be opened, said rod means being normally maintained in its lowered position by the influence of gravity; a latch housing secured to the door adjacent the top thereof in the vicinity of said strike when the door is closed; a top bolt movably mounted on said housing; means on said top bolt operable by the strike for latchingly engaging the latter when said door is closed; lever means movably mounted on said housing and operatively connected to the upper end of said rod means, said lever means being operable by said rod means when in its lowered position to lock said top bolt in its latched position and when in its raised position to release said top bolt and allow it to move from said latched position as the door is opened; and means on said lever means adapted to be engaged by said top bolt when said rod means is raised and said top bolt moves from said latched position to lock said rod means in its raised position until said door is again closed and said top bolt is moved to said latched position by said strike, whereupon said rod means will gravitate to its lowered position to lock said top and bottom bolts.

11. Means as claimed in claim 10 wherein said top bolt is mounted for pivotal movement about an axis offset from the center of gravity thereof so that it will normally gravitate away from its latched position to lock said rod means in its raised position.

12. Means for latching a door movably mounted in a frame having a downwardly projecting strike at the top thereof and bolt receiving means at the bottom thereof, comprising: rod means reciprocally mounted on the door and having at the lower end thereof a bottom bolt adapted to latchingly engage the bolt receiving means when said rod means is in a lowered position and the door is closed, the upper end of said rod means terminating in the vicinity of the strike when the door is closed; manually operable means for raising said rod means when the door is to be opened, said rod means being normally maintained in its lowered position by the influence of gravity; a latch housing secured to the door adjacent the top thereof in the vicinity of said strike when the door is closed; a top bolt pivotally mounted on said housing; means on said top bolt operable by the strike for latchingly engaging the latter when said door is closed; lever means pivotally mounted on said housing and operatively connected to the upper end of said rod means, said lever means having a first surface thereon and being operable by said rod means when in its lowered position to move said first surface into engagement with said top bolt to lock it in its latched position and

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when in its raised position to release said top bolt and allow it to move from said latched position as the door is opened, said first surface being positioned so that the reactive forces between it and said bolt during said engagement lie along a line passing approximately through the pivotal axis of said lever means; and a second surface on said lever means adapted to be engaged by said top bolt when said rod means is raised and said top bolt moves from said latched position to lock said rod means in its raised position until said door is again closed and said top bolt is moved to said latched position by said strike, whereupon said rod means will gravitate to its lowered position to lock said top and bottom bolts, said second surface being positioned so that the reactive forces between it and said bolt during said engagement lie along

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a line substantially passing through the pivotal axis of said bolt.

13. Means as claimed in claim 12, wherein said top bolt is pivoted about an axis offset from the center of gravity thereof so that it will normally gravitate away from its latched position to lock said rod means in its raised position.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,124,378

March 10, 1964

Harvey W. Jackson

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, lines 22 and 23, for "position" read
-- positions --; column 5, line 6, after "said" insert
-- housing --; column 6, line 41, for "movemtnt" read
-- movement --; line 66, for "level" read -- lever --.

Signed and sealed this 7th day of July 1964.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents

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