Jan. 24, 1956 W. A. SCHEIDLER 2,732,241

FIRE-EXIT LOCK

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FIG. 1.

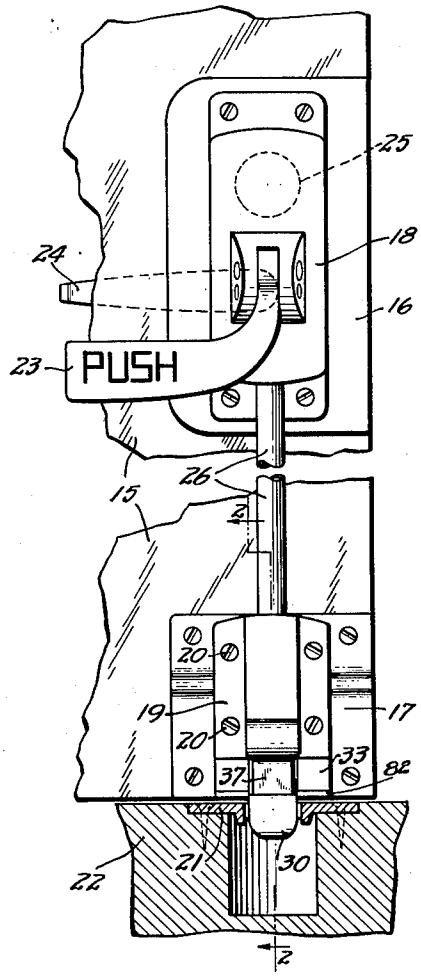


FIG. 2.

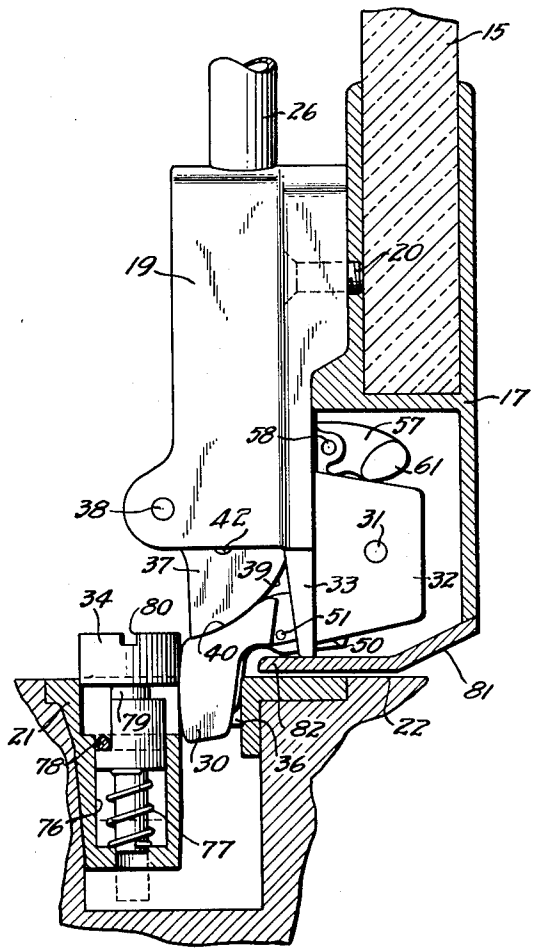


FIG. 7.

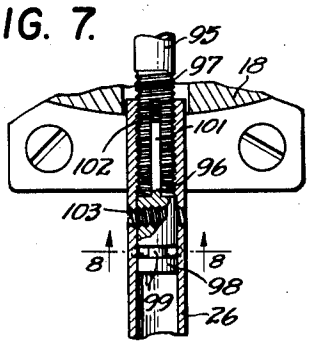
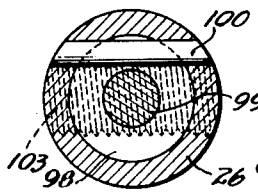


FIG. 8.



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FIG. 6.

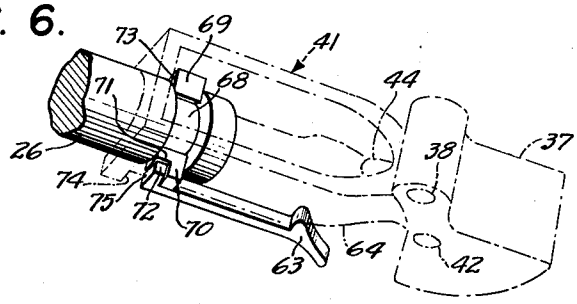


FIG. 3.

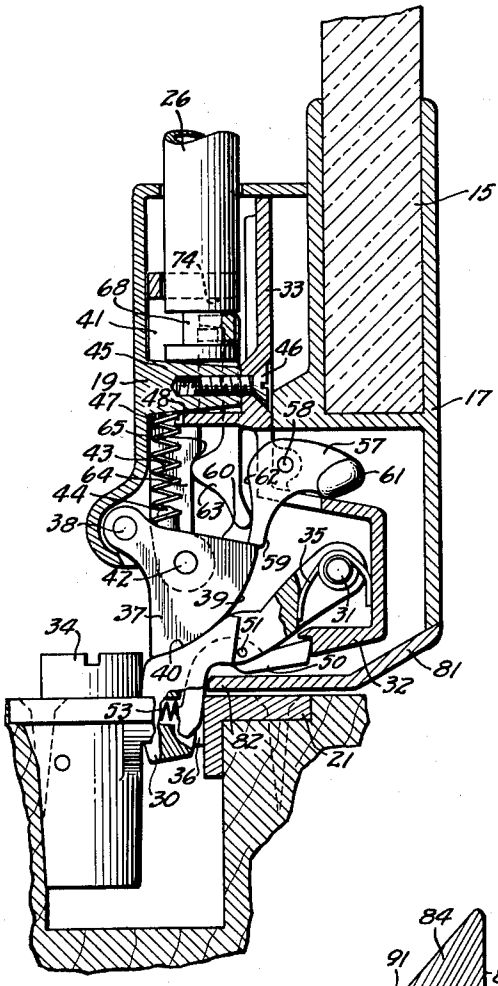


FIG. 4.

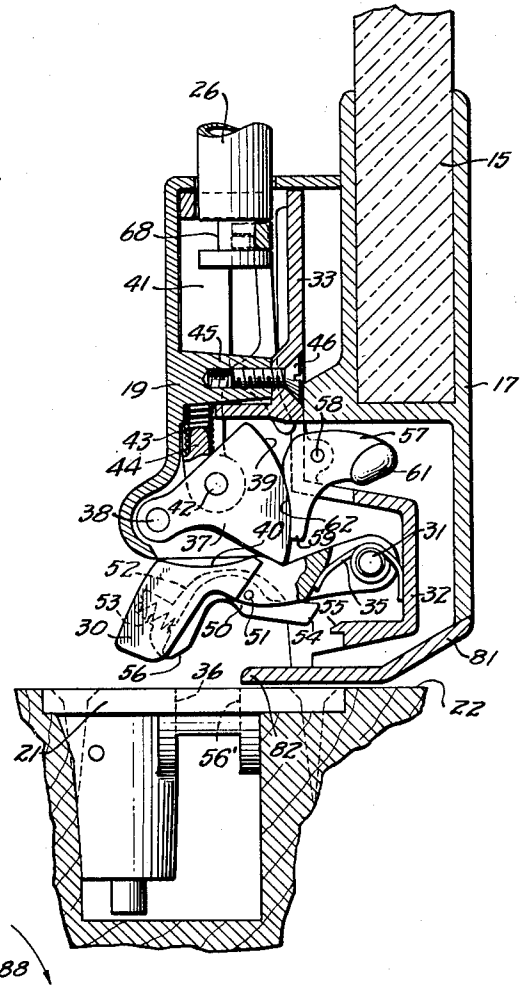
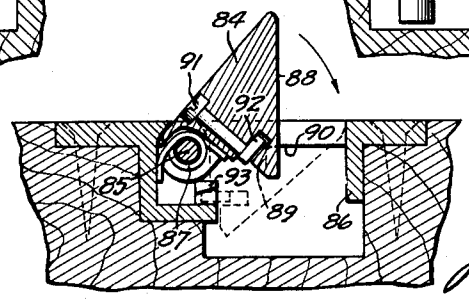


FIG. 5.



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FIG. 10.

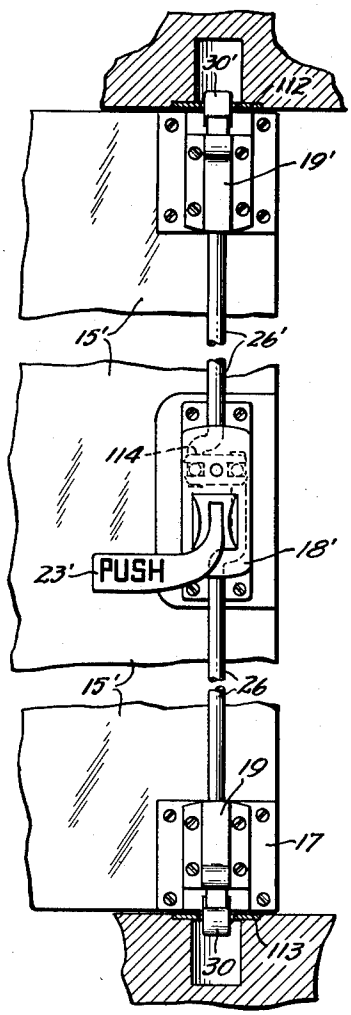


FIG. 11.

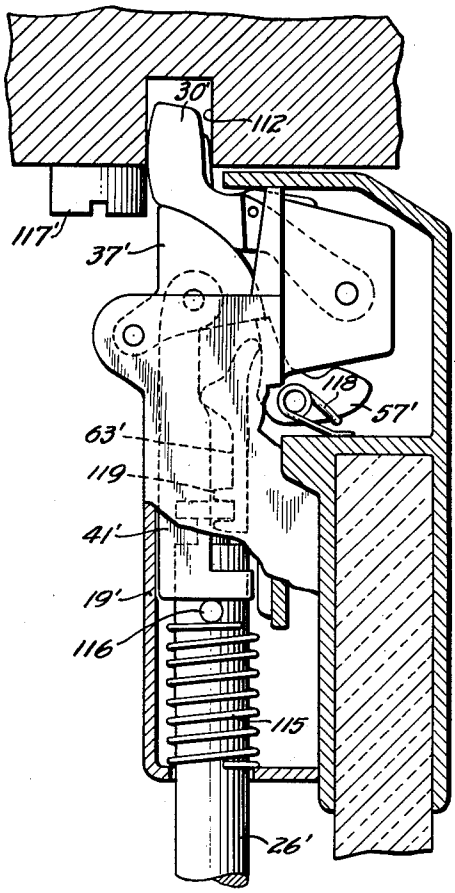
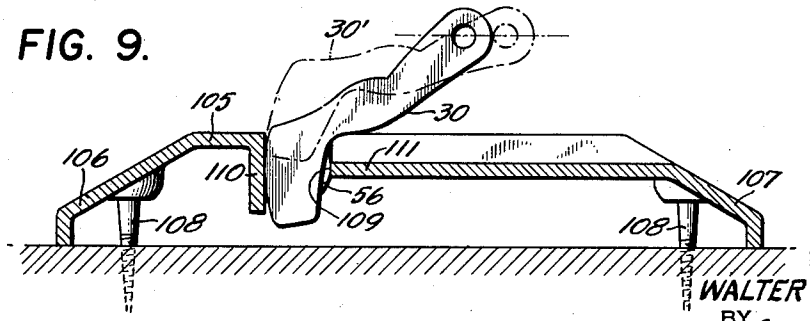


FIG. 9.



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2,732,241

FIRE-EXIT LOCK

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Application February 25, 1950, Serial No. 146,227

10 Claims. (Cl. 292—198)

My invention relates to latch mechanisms and in particular to a latch for an automatic exit fixture.

It is an object to provide an improved device of the character indicated.

It is another object to provide an improved latch construction which may be adapted to double-action swinging doors.

It is also an object to provide an improved latch construction which will not involve an extension of the bolt except when the door is substantially at the precise bolting location.

It is a further object to provide an improved strike mechanism for latch devices of the character indicated.

Also, it is an object to provide a suitable latch-and-strike combination which when applied to each door of a double-action double-door construction may provide automatic regulation of traffic through the respective doors for both directions of traffic flow.

It is a specific object to meet the above objects with a latch construction which may be adapted to top and bottom mountings and which, when thus mounted in tandem, may be actuated by a single retraction mechanism.

It is another specific object to provide an improved bolt-rod adjustment means for a latch of the character indicated.

Other objects and various further features of novelty and invention will be pointed out or will occur to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, preferred forms of the invention:

Fig. 1 is a fragmentary partially sectionalized inside-elevation view of a latch mechanism incorporating features of the invention, the latch being shown mounted upon a so-called right-hand door, that is, a door hinged to the left of the fragmentary showing of Fig. 1;

Fig. 2 is an enlarged side view in partial section of the latch mechanism of Fig. 1, certain bracket and strike parts being shown in section in the plane 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but with the latch parts shown in section in the plane 2—2 of Fig. 1;

Fig. 4 is a sectional view similar to Fig. 3 but with the parts in a different relationship;

Fig. 5 is a fragmentary sectional view of a modified strike for use with the latch mechanism of Fig. 1;

Fig. 6 is an enlarged fragmentary perspective view of certain internal retractor parts in the latch mechanism;

Fig. 7 is an enlarged fragmentary longitudinal sectional view of bolt-rod adjustment means incorporating features of the invention;

Fig. 8 is a sectional view in the plane 8—8 of Fig. 7;

Fig. 9 is a sectional view through a saddle or threshold to which novel features of the strike of the invention have been applied;

Fig. 10 is a fragmentary inside elevational view of another door to which latch means of the invention have been applied for both top and bottom latching functions; and

Fig. 11 is a partly sectionalized right-end view of the upper latch mechanism of Fig. 10.

Briefly stated, my invention contemplates a latch mechanism to be carried by a door and incorporating a first latch to be used as a bolt and normally held in a retracted position for engagement with a raised part of a strike. Upon engagement with such raised part, the latch may be moved to an extended or bolting position and a second latch may then be effective to move to a position dogging or holding the first latch in the extended or bolting position. Dogging means may be provided to assure that the first latch will not be moved down to the fully extended or bolting position unless the bolt is in proper located relation with the strike. Further dogging means may also be provided to dog the second latch in its dogging position, for security reasons.

In one arrangement to be described, the raised strike member may itself be retractable so that, when retracted, the normally retracted latch bolt will not be intercepted by any part of the strike, and the door may then have free and unimpeded double action. The latch bolt may be arranged for displacement into bolting position only upon a door-swing approach to the strike from one direction, and means cooperating between the door and the strike may assure a non-fouling relation between the latch mechanism and the strike (and between the door and the strike) upon a door-swing approach to the strike from the other direction. In another strike arrangement, the raised strike member and the strike opening may both be formed integrally with a threshold so that there may never be an elevated projection to trip a pedestrian. In a further arrangement, my latch means may be adapted in tandem to both top and bottom mountings on the same door, and common actuating or retraction means may be employed for both latches; either or both latches may be caused to bolt to upper and lower strikes as desired, and the action of one latch mechanism may not interfere with action of the other latch mechanism, even though common actuating means may be employed for both latches.

Referring to Fig. 1 of the drawings, my invention is shown in application to a swinging door **15** having a double action, that is, a door which may be swung to the inside or to the outside, as desired. The door **15** may be of glass, and the locking and latching means may be mounted on brackets **16—17** attached to the edges of the door **15**. A lever-operated latch-actuating mechanism **18** may be carried by the bracket **16**, which may be positioned at a convenient height between the top and the bottom of the door; the case **19** for the latch mechanism may be secured, as by mounting screws **20**, to the lower bracket **17** in proper alignment with a strike **21** recessed in the floor or in a threshold **22**. The latch-actuating mechanism **18** may include an inside-mounted push lever **23** and an outside-mounted handle or crank lever **24**. Also, a cylinder lock, designated generally **25**, may be carried on the outside for securing against operation of the handle or lever **24** from the outside.

Mechanisms such as the latch-actuating mechanism **18** are well known and, therefore, need not be described in detail in the present case. It is sufficient to understand that an operation of the push lever **23** or a cranked operation of the handle **24** (as permitted by an unlocked condition of cylinder lock **25**) may cause an actuating movement of the bolt rod **26**, which may form part of the retraction mechanism. In the arrangements to be described, a push of the push lever **23** will be understood to be accompanied by a raised displacement of the bolt rod **26**.

Referring to Figs. 2, 3, 4, and 6, my novel latch mechanism will be seen to include a first latch or latch bolt **30** movable between a retracted position and an extended or bolting position, and in the form shown the latch or bolt member **30** is pivoted on a pin **31** set in a pocket **32**

of a back plate 33 for the latch case 19. The first latch 30 is preferably normally urged into a retracted position (as shown in Fig. 4) removed from or in clearance relation with the surface of the threshold or floor 22, but nevertheless poised for interception by an elevated strike part 34, to be later described. In a gravity-operated system, suitably formed counterbalancing weights or the like might be employed to urge the latch or bolt member 30 into the desired normally retracted position, but in the form shown I have employed a spring 35 for this purpose.

The raised part 34 of the strike 21 is preferably adjacent one side of the strike opening 36, and the relationship between the bolt or latch 30 and the raised strike part 34 is preferably such that, as the door 15 is swung toward the strike in the direction from which latching is to be effected, the latch bolt 30 is cammed by the raised part 34 downwardly into the strike opening 36 so that the latch bolt 30 may then be in an extended or bolting position, as shown in Figs. 1, 2 and 3. In order to hold the bolting position I have employed another latch 37 which may be a so-called Pullman-type latch, pivoted at 38 in the latch case 19, and having a surface 39 cylindrically arcuate about the pivot 38, so as to slide over a correspondingly arcuate surface 40 of the bolt 30 when and only when the bolt 30 is in the extended or bolting position, as shown in Figs. 2 and 3.

It will be appreciated that in the retracted position of the second or Pullman latch 37, as shown in Fig. 4, the latch-bolt member 30 may be self-retracting and that, once member 30 has retracted itself, it will also hold the second latch 37 retracted. However, in the extended positions of both latches 30—37, as shown in Figs. 2 and 3, the Pullman latch 37 may serve to dog the bolt latch 30 in the extended or bolting position.

A more or less conventional retractor slide 41 may be employed to translate motion of bolt rod 26 into a retracting movement of the second latch 37, and for this purpose the lower end of the retractor slide 41 may be pinned at 42 in cranking relation with the latch 37. I prefer that the latch 37 be normally urged into the extended position; for this purpose, gravity operation may be sufficient, but I prefer to employ spring means 43 to assure positive operation. The spring means 43 may be located at one end by a projection 44 formed in the retractor slide 41, and at the other end the spring 43 may compressionally abut a boss 45 formed inside the case 19. The boss 45 may be drilled and tapped to receive a securing screw 46 for holding the back plate 33 assembled to the cover or case 19. In order to locate the upper end of the spring 43, I have employed cooperating arcuate recesses 47—48 (see Fig. 3) on the case and plate members 19—33 respectively, as will be clear.

For safety purposes, I prefer that my latch bolt 30 shall not be extended or extendable as far as the bolting position unless proper engagement has been achieved with the raised strike member 34. I have in mind installations in which for at least one swing of the door, as over a descending step, there may be sufficient clearance between the bottom of the latch assembly and the floor or step to permit full extension of the latch bolt 30. Of course, if the latch bolt 30 should be latched down without engaging the strike, damage to the bolt 30 or to the door frame might result upon door-closure. In order to avoid such difficulty, I have provided dogging means which will prevent retention of an extended position of the latch bolt until such time as a proper engagement with the strike 21 shall have been achieved. Such dogging means may include a member positioned to prevent the descent of the Pullman latch until proper placement with respect to the strike, but in the form shown I have employed a dogging lever 50 pivotally carried on the latch bolt 30, as by the pin 51. The lever 50 may have freedom for relatively small angular movements within a recess 52 on the underside of the latch bolt 30, and recessed spring means 53 may normally urge the lever 50 counterclockwise (in the sense of the drawing) so as to poise one end thereof for dogging abutment with a part 55 of the pocket 32 in the back plate 33.

It will be appreciated that as long as the spring 53 urges the dogging lever 50 into the position shown in Fig. 4, the abutment 55 will serve to prevent a full downward displacement or projection of the bolt latch 30. However, upon engagement of the retracted bolt 30 with the raised part 34 of the strike, as when the door is being closed, the bolt 30 will be cammed downwardly into the strike opening 36, and a suitably formed cam surface 56 (see Fig. 4) on the other end of the lever 50 may so engage the lower side 56' of the strike opening 36 that the dogging lever 50 will be retracted from possible dogging relation with the abutment 55, as the bolt 30 is being projected into the strike opening 36. Full bolting extension of the latch 30 is then automatically possible, and the pivoted or Pullman latch 37 may drop into bolt-securing position.

For security purposes, I prefer that another dogging means shall be effective to hold the latch mechanism when in the projected or latching position, and I have employed a dogging member 57 pivoted at 58 to the back plate 33 of the case. The dogging member may include a projection 59 to engage the back generally radial surface 60 of the Pullman latch 37 when the latter is in the extended or down position shown in Fig. 3. The dog 57 may automatically seek this dogging position by employment of means, such as a spring, urging the dog 57 clockwise in the sense of the drawings, but in the form shown I have employed an enlargement 61 serving to weight the lever 57 for automatic gravity operation. For retracted positions of the latches 30—37, the dog member 57 may include an arcuate surface 62 suitably formed to ride upon the arcuate surface 39 of the Pullman latch 37, as shown in Fig. 4.

In order that a movement of the bolt rod 26 may achieve latch retraction it is first necessary that the setting of the dog 57 be removed, and for such removal a lost-motion connection may be utilized in the retraction mechanism, as between the bolt rod 26 and the retractor slide 41. The extent of this lost motion need be only sufficient to achieve the desired dog retraction. The dog 57 may be retracted from dogging position during the lost-motion period by means of a cam-follower member 63, which is shown to include a toe riding the arcuate surface 62 of the dog member 57 and a heel riding one arm 64 of the retractor slide. The arm 64 may be formed with a wedge or cam step 65, and the cam-follower member 63 may be directly connected to the bolt rod 26 so that during the initial lost motion of the bolt rod 26 (with respect to the retractor slide) the heel of cam follower 63 will ride the step 65. It will be seen that in riding the step 65, cam follower 63 is angularly displaced to provide a counterclockwise or retracting displacement of the dogging member 57 during the lost-motion period and before a direct retracting engagement is made between the bolt rod 26 and the retractor slide 41. Further retracting displacement of the bolt rod 26 may then be effective to retract the Pullman latch 37 and to permit self-retraction of the latch bolt 30 after the Pullman latch 37 rides off the end of the arcuate surface 40 of the latch bolt 30.

The described connections or relationships between the bolt rod 26 and the cam follower 63 and the retractor slide 41 may be achieved through a novel relation of parts. Even though the bolt rod may be tubular for substantially its entire length, the latch-actuating end thereof may be effectively solid, as by use of a plug, and such plug may be circumferentially grooved, as at 68, for axial engagement with the cam-follower means 63 and to permit free-swiveling of the bolt rod for adjustment purposes, as will later be clear. A small yoke member (see Fig. 6) may fit in a substantial part of the groove 68 and may include two spaced legs 69—70 straddling the groove 68.

One of these legs (70) may be formed with a suitable notch or recess or opening 71 to receive a lug or transversely projecting part 72 of the cam follower 63. It will be clear that, upon a rising actuating movement of the bolt rod 26, the cam follower 63 will then be directly and immediately also raised so as to achieve the dog-freeing function which has been described.

The legs 69—70 preferably include parts such as the ledge 73 of leg 69 extending radially outside the bolt rod 26, and such projection or ledge 73 may be utilized for driving engagement with the back lug 74 (Fig. 3) on the retractor slide, once the lost motion has taken place. It will be understood that, with a suitably formed projection 72 in cooperation with the recess 71, the upper surface 75 of projection 72 may in effect provide a ledge on leg 70 resembling the ledge 73 on leg 69. The surface 75 may, therefore, also engage the back lug 74 on the retractor slide, and the retracting forces may be applied symmetrically to the retractor slide, as will be clear.

As indicated generally above, a door upon which my latch mechanism is mounted may be free-swinging or latched, as desired. In order to achieve a latching, the raised part 34 of the strike must be in position to intercept the retracted latch bolt 30; for free double action, the strike part 34 may be retracted, as into a position flush with the floor surface or threshold 22, as will be clear. In the form shown, the strike part 34 is a vertically slidable bolt (see Fig. 2), guided in a bore 76 in the strike housing and resiliently urged by a compression spring 77 into the raised position. Means, such as an offset pin 78 engageable with a circumferential groove 79, may be employed for holding the strike part 34 in retracted or recessed position, and a screw-driver slot 80 in the head or face of the strike bolt 34 may provide a means for manually setting the bolt 34 in the retracted position, and for releasing the bolt 34 for upward projection.

It is appreciated that it may be possible through carelessness or through vibration that the strike bolt 34 will be projected to the raised position sometime when the door has been swung inside, that is, with the door to the left of the strike in the sense of Figs. 2, 3, and 4. In order not to cause damage to the door or to the strike bolt 34 when the door next swings to the closed position, I have provided cam means in the form of a wedge slope 81 of maximum height to assure interception and downward camming displacement of the strike element 34. The cam means 81 may be on the bottom of the latch case, but in the form shown it is a separate plate carried by the latch-mounting bracket 17. This plate includes a portion 82 extending generally parallel with the floor and beneath the latch bolt 30 to such an extent that, even for the raised or retracted position of the latch bolt 30, it will never be possible for the strike bolt 34 to jam between the end of plate 82 and the underside of the latch bolt 30; stated in other words, the width or diameter of the latch bolt 34 is preferably of sufficient extent to prevent this circumstance.

In a modified strike arrangement as shown in Fig. 5, I employ a strike member 84 which may be termed a strike latch. The strike latch 84 may be pivoted, as at 85, in the strike case or housing 86, and a spring 87 may normally resiliently urge the strike latch 84 into the raised or elevated position shown. In this position, it will be appreciated that the then-upstanding surface 88 of the latch 84 may be poised for actuating interception of the latch bolt 30 and that functioning of the mechanism may be as described for the arrangement of Figs. 1 to 4. Lugs or other means 89 may be formed integrally with the strike latch 84 to engage the underside of lateral wall 90 of the strike opening, so as to retain the up-position of the latch 84.

For free-double action swinging of the door, the strike latch 84 may be retracted, as by pushing the same downward against the action of the spring 87, and the retracted position may be held by a screw-driver actuated twist of the head 91 of an eccentric cam member 92. The eccentric cam or lug 92 may ride on the underside of a fixed lug 93 in the strike housing 86, and by suitably sloping one of these members 92—93 a wedging effect may be derived for a secure holding of the retracted strike-latch position. When fully retracted, the latch 84 may completely close off the strike opening 90, so that dirt may not accumulate within the strike mechanism to foul the operation thereof. For the assumed eventuality of inadvertent strike-latch extension while the door is swung to the inside, it will be appreciated that the described strike latch 84 may be readily retracted by the door itself as the door swings to the closed position, and that no harm to the mechanism or to the door can result therefrom.

Because of the described desired lost-motion during which the cam-follower means 63 is effective to dislocate dog member 57, it will be appreciated that it may be difficult, in a particular installation, to cut the bolt rod 26 exactly to the correct length, because of slight variations in positioning the actuating means on the bracket 16 relatively to the positioning of the latch case 19 on the lower bracket 17. I desire, therefore, to provide a means for fine adjustment of the effective length of the bolt rod 26, such adjustment being made after the parts of the assembly 18 and the parts of the assembly 19 have been mounted upon their respective brackets on the door. For appearance's sake, I prefer that such adjustment shall be effected by a mechanism which may have the least noticeable outward appearance and in the form shown I have provided the adjustment means at the lower end of the latch-actuating case 18.

The exact construction of the preferred embodiment of the adjustment mechanism is shown in Figs. 7 and 8. As will be seen, the bolt rod 26 is preferably tubular or at least bored in the end on which the adjustable attachment is to be made to an actuating member 95 contained within the actuating case 18. This bored end is preferably internally threaded, as at 96, to receive the threaded end 97 of the actuating member 95. Rotatably supported within the bore of the bolt rod 26 may be a swivel member 98 locked against axial movement within the bore; for this purpose, the swivel member 98 may be peripherally grooved at 99, and an offset transverse locating pin 100 may axially retain the swivel member 98. The swivel member 98 is preferably axially slidably but non-rotatively related to the actuating member 95, and I have shown a flat longitudinally extending tongue 101 on member 98 extending into a suitable longitudinal groove 102 in the actuating member 95. Suitable key means, such as a transverse set-screw 103 passing through the bolt rod 26 and through the swivel member 98, may secure the assembly once an adjustment has been effected.

In making a longitudinal adjustment with the described structure, the set-screw 103 should first be removed. The bolt rod 26 may then be freely rotated for shortening or lengthening, as desired; and, when a desired length adjustment has been achieved, only a fraction of a turn of the bolt rod 26 may be necessary in order to align the transverse holes for insertion of the set-screw 103. Once the set-screw 103 has been driven into place, the adjustment cannot be disturbed, and the entire mechanism may have a uniformly neat appearance.

In Fig. 9, I show how a threshold plate 105 may be formed in order to present a strike suitable for actuating the described latch mechanism, without presenting any projections above the general level of the top surface of the threshold. As is customary, the threshold plate 105 may include tapering or bevelled edges 106—107, which may be formed with screw recesses or the like for the accommodation of the securing means 108 to be anchored to the floor. The strike itself may be formed in a simple punching and pressing operation upon standard extruded threshold, and, in accordance with the preferred strike relation, the elevated side of the strike opening 109 may

be defined by a downwardly bent lug **110**. The lower side of the strike opening may be defined by a depressed channel or recess **111**, which preferably extends from the strike opening **109** continuously to the sloping edge **107** and in general alignment with the expected path of the latch member **30**.

The phantom outline **30'** shows the normally retracted position of the latch bolt **30** as the door is moved towards the closing position. It will be appreciated that in this retracted position the latch bolt **30** may adequately clear the bottom of the channel **111** and that only upon interception by the elevated end **110** of the strike will the latch bolt **30** be cammed or actuated downwardly into the extended or bolting position. Latch-functioning may, therefore, be exactly the same as in the previously described arrangements, with the exception that, since the elevated end of the strike opening is fixed in an elevated position, the door may only be single-acting, that is, the door may only have freedom to swing to one side of the latching position.

In Figs. 10 and 11, I show how a latch mechanism of the invention may be applied essentially in duplicate to the upper and lower edges of a door **15'** for latching against upper and lower strikes **112—113** in a door frame. Common actuating means **18'**, generally resembling that described in connection with Fig. 1, may be employed for the movement of bolt rods **26** (for the lower latch case **19**) and **26'** (for the upper latch case **19'**). Both bolt rods **26—26'** may be actuated in the same direction upon depression of the push lever **23'**, and in such event a beam or other reversing mechanism may be incorporated in a known manner in the upper latch mechanism **19'**; however, in the form shown, for purposes of simplicity of description, the necessary reversal of actuation is achieved within the actuating housing **18'**, and it will be clear that a rocking beam **114** pivoted within the case **18'** and engaging the rods **26—26'** at opposite ends thereof may effect reversal of the actuating movements. Thus, for a push of the lever **23'** the bolt rod **26** may be drawn upwardly to raise the latch **30** from within the lower strike **113**, and the bolt rod **26'** may be pulled downwardly to retract the upper latch bolt **30'** from within the upper strike **112**.

Because of the inversion of parts involved in applying a latch case to the upper position, it may be necessary or desirable to provide added means for urging the various latch and dog parts in the desired directions. For example, an added compression spring **115** may be seated against the inside of the upper case **19'** and urged against an abutment, such as a pin **116**, carried by the upper bolt rod **26'**. The position of the pin **116** should be such as to allow for the desired lost-motion connection to the upper retractor slide **41'**.

With such an arrangement of parts, it will be understood that, once an upper strike member **117** has been moved to the down or projected position shown, the upper retracted latch bolt **30'** may be readily intercepted and actuated into the projected or bolting position shown. Once fully projected into the bolting position shown, the Pullman latch **37'** may be urged by spring **115** into a projected position for dogging retention of the projected position of the latch bolt **30'**. In like manner, the movement of the dog member **57'** may be rendered positive and automatic so as to dog the Pullman latch **37'** when the latter has been propelled into the projected position shown; spring means **118** may clearly serve this purpose. In order that the cam-follower member **63'** may be sufficiently projected upwardly when the latches **30'—37'** have attained their bolting positions shown, further auxiliary spring means may be employed axially to hold the cam-follower means **63'** against movement relative to the bolt rod **26'**; but I have shown an added lug **119** on the cam-follower means **63'**, so that said means **63'** may have no lost motion with respect to the bolt rod **26'**. Thus, in an unbolting of the upper latch **30'**, that is, upon a push of the lever **23'** and upon a downward movement of the bolt rod **26'**, there may be a sufficient lost motion to enable a dislocation of the dog member **57'** from dogging position, prior to a positive downward displacement of the Pullman latch **37'**. When the Pullman latch **37'** has been sufficiently retracted, the latch **30'** may be self-retracting, as will be understood.

As a feature of the construction described in connection with Figs. 10 and 11, it will be appreciated that a retractable strike element associated with either one of the upper and lower strikes **112—113** may be elevated into latch-intercepting position, and yet the particular latch intercepted thereby may independently operate with complete effectiveness, to the exclusion of, or at least to the point of not interfering with, and to the point of not being interfered with by, the other latch mechanism. At the same time, both or either of the latch mechanisms may be retracted upon the same push of the push lever **23'**.

Take, for example, the case in which the upper strike element **117'** has been lowered to latch-intercepting position and in which the lower retractable strike element has been left retracted. The bolts **30—30'** of both latch mechanisms will be retracted until the door is closed, but, upon closing the door, only the upper latch bolt **30'** will be caused to project into a strike opening. Spring **115** will be effective to project the Pullman latch **37'** into a position to retain the bolted position of the latch member **30'**, and dogging member **57'** will also be automatically effective. Necessarily, a displacement will occur in the position of the bolt rod **26'** and this displacement will be reflected in an opposite, but like, displacement in the lower bolt rod **26**. However, due to the fact that the lower bolt rod **26** is related to the retractor slide **41** by a lost-motion connection, a wasted motion will take place, and no part of the lower latch mechanism will in any way interfere with the described displacement of rod **26** accompanying operation of the upper latch mechanism. In like manner, it may be shown that a failure to operate the upper latch mechanism will not interfere with a latching operation of the lower latch mechanism. Of course, if the retractable members of both strikes are projected into latch-intercepting position, each latch may be independently effective to bolt the door, thereby securing the door at the top and bottom positions.

It will be seen that I have described ingenious latch constructions cooperating with novel strike means. The combination of elements is such that free double-action door-swinging may be achieved as long as desired and that, when it is desired to secure the door, a closure of the door from one direction will result in latch bolting. Furthermore, a closure of the door from the other direction need result in no fouling of the parts. My mechanism incorporates novel adjustment features and may be readily incorporated in installations wherein it is desired to provide a latching operation at both the top and bottom edges of the door.

In double-door arrangements where it may be desired to regulate traffic flow, that is, to permit pedestrian entrance only through one of the doors, say, through the right-hand door (as seen from the outside), the retractable strike element for the left-hand door (as seen from the outside) may be elevated and the cylinder lock for the left-hand door may be set. Pedestrians will then be barred from entrance via the left-hand door and may only enter via the right-hand door. For safety purposes, outgoing flow may be via both the doors, inasmuch as the left-hand door (as viewed from the inside looking out) will be double-acting and free-swinging, and the right-hand door may be opened upon actuation of the push lever **23** for that door.

Although shown and described in connection with selectively holding a door in a closed position, it will be

appreciated that my strike, whether a bolt or a latch or a fitting analogous to the threshold plate of Fig. 9, may be utilized to selectively hold a door in an open position. In such case, the same sort of strike mechanism could be additionally employed at the closed position and at the inside-open position; and, merely by projecting or elevating the appropriate strike element, the same single latch means **30** could serve to hold the door open or to hold the door closed. If, when thus held in a door-open position, the push lever **23** were to be manually inaccessible, as by employment of a suitable building-wall construction, then the door **15** may be protected against tampering and may be closed (as by operation of cylinder lock **25**) only by authorized personnel.

While I have described my invention in detail for the preferred forms shown, it will be understood that modifications may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a latch device of the character indicated, a latch movable to an extended position and to a retracted position and formed to move from the retracted position to the extended position upon engagement with a strike, means urging said latch normally into the retracted position, a second latch movable into a position to dog said first latch upon movement of said first latch to the extended position, whereby upon engagement with a strike said first latch will be moved to and automatically dogged in the extended position, dogging means normally urged in the direction of dogging said second latch and engageable with said second latch when the latter is in dogging relation with said first latch, and manual actuating means including a single member connected in common to said second latch and to said dogging means for breaking the dogging relation and for actuating said second latch in a single manual operation of said actuating means.

2. In a latch device of the character indicated, a latch movable to an extended position and to a retracted position and formed to move from the retracted position to the extended position upon engagement with a strike, a second latch movable into a position to dog said first latch upon movement of said first latch to the extended position, dog means movable to dog said second latch when said second latch is in the position in which it holds said first latch in the extended position, means normally urging said dog means into dogging relation with said second latch, and manual actuating means for said second latch and including a connection in common to said dog means and to said second latch.

3. In a latch device of the character indicated, latch means including a first latch movable to an extended position and to a retracted position and formed to move from the retracted position to the extended position upon engagement with a strike, means normally urging said latch toward the retracted position, said latch means including a second latch with means urging the same into a position to dog said first latch upon movement of said first latch to the extended position, dog means movable and normally urged to dog said second latch when said second latch is in position to hold said first latch in the extended position, and retractor means for said latch means and including a single manually movable actuating means common to said second latch and to said dog means for removing both the dogged engagements with a single actuating movement, whereby said first latch may be retracted and urged to hold its retracted position.

4. In a latch device of the character indicated, a latch movable upon engagement with a strike, a second latch movable to dog said first latch upon a strike-actuated movement of said first latch, dog means including means normally urging the same to dog said second latch when said second latch is in position to dog said first latch, retractor means, and common actuating means for said dog and for one of said latches and including a lost-motion connection to said one of said latches, said last-defined means including dog-actuating means actuable during the lost movement of said connection for effectively removing said dog means from dogging engagement with said second latch.

5. In a latch device of the character indicated, a case, a first latch pivoted in said case and formed for movement into an extended position upon engagement with a strike, means normally urging said latch toward a retracted position, a second latch pivoted in said case and doggingly engageable with said first latch when said first latch is in the extended position, said second latch being extended when dogging said first latch, means normally urging said second latch toward the extended position thereof, dogging means including means normally urging the same into dogging relation with said second latch when said second latch is in dogging position, and retractor means in common for said second latch and for said dogging means and including a lost-motion connection to said second latch, said lost-motion being sufficient to permit retraction of said dogging means out of dogging position before retraction of said second latch, whereby upon retraction of said dogging means said second latch may be retracted by said lost-motion connection and said first latch may be self-retracting, said first latch being arranged to hold said second latch retracted when the latter has been retracted by said retractor.

6. In a latch device of the character indicated, a latch movable to latching position and to an unlatching position and formed to move from the unlatching position to the latching position upon engagement of one side of said latch with a strike, a second latch movable into a position to dog said first latch upon movement of said first latch to the latching position, dog means for one of said latches and having a projecting part exposed on the other side of said first-mentioned latch and engageable with a strike, and means normally urging said dog means to prevent a retention of latching position of one of said latches in the absence of engagement with a strike, said dogging means being movable out of dogging position upon engagement with a strike.

7. In a latch device of the character indicated, a latch movable to latching position and to an unlatching position and formed to move from the unlatching position to the latching position upon engagement of one side of said latch with a strike, a second latch movable into a position to dog said first latch upon movement of said first latch to the latching position, dog means including a projection on the other side of said first latch and engageable with a strike, said dog means including means normally urging the same to dog said first latch against a full movement of said first latch to latching position, whereby said dog means may permit retention of said first latch in latching position only when engaged to a strike.

8. A latch device according to claim 7, in which said dog means is pivotally carried by said first latch.

9. In combination, a door including a case with a latch bolt exposed through an opening on one side of said case, a door frame including a strike engageable with said bolt, whereby said bolt faces said strike for a first direction of door-closing movement and the other side of said case faces said strike for the other direction of door-closing movement, means normally urging said bolt to a retracted position, said strike including a strike latch projectable into and retractable out of possible engagement with said retracted bolt and case and normally urged in the projecting position, stop means limiting movement of said strike latch at said projecting position, said strike latch being retractable out of intercepting relation with said bolt upon engagement by said case in said other direction of door movement and being opposed by said stop means and therefore non-retractable for said one direction of door movement, said bolt being movable to an extended latching position upon engagement with said strike latch

for door movement in said one direction, and a second latch on said door poised to dog said latch bolt when actuated by said strike latch; whereby, for a full swing of the door in said other direction, door movement may be unopposed by said strike latch and yet upon subsequent movement in said one direction said strike latch may actuate said bolt and retain the door in bolted position.

10. In combination, a door including a latch bolt pivoted thereon, a stop and means normally urging said bolt to a retracted position against said stop, said bolt being exposed when retracted, a strike including a strike latch projectable into and retractable out of possible engagement with said retracted bolt and normally urged in the projecting position, stop means limiting movement of said strike latch at said projecting position; said bolt being so mounted with respect to said strike that, for a first direction of door-closing movement, said bolt will retract said strike latch away from said stop means, with said bolt backed against said stop; and said bolt being also so mounted with respect to said strike that in the other direction of door-closing movement said stop means will hold said strike latch to retain the projected position thereof so that, upon interception of said bolt, said bolt will be driven to extended latching position; and a second latch on said door poised to dog said latch bolt when actuated by said strike latch, whereby for a full swing of the door in said other direction door movement may be unopposed by said strike latch and yet upon subsequent movement in said one direction said strike latch may actuate said bolt and retain the door in bolted position.

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