Oct. 7, 1958 J. R. FOSTER 2,854,838

PANIC LATCH AND LOCK MECHANISM

Original Filed Feb. 14, 1955 3 Sheets-Sheet 1

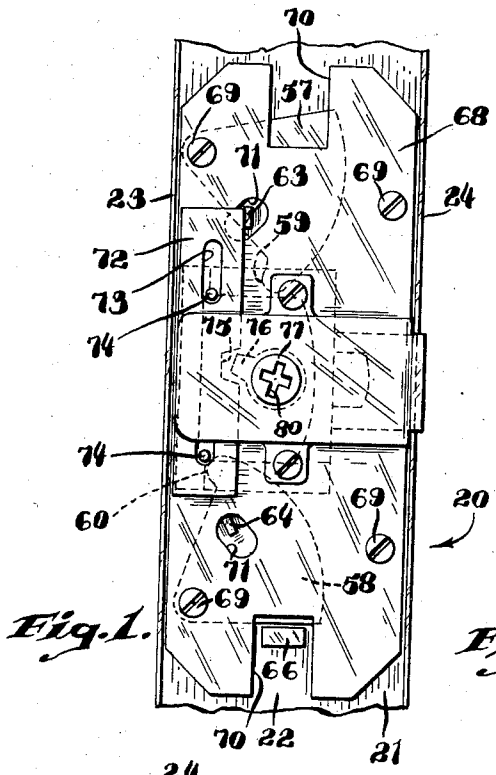


Fig. 1.

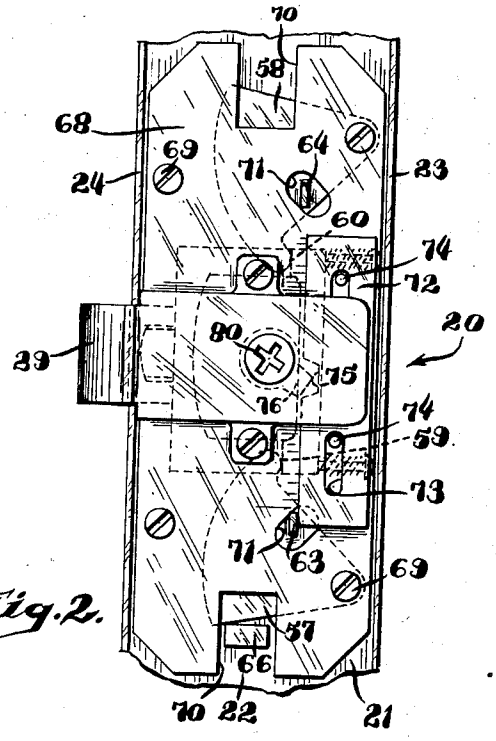


Fig. 2.

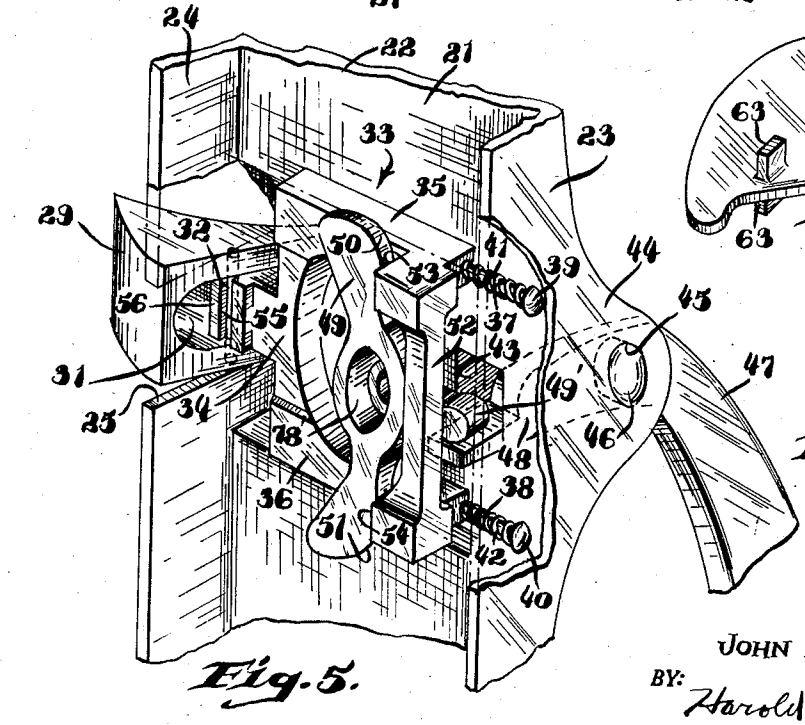


Fig. 5.

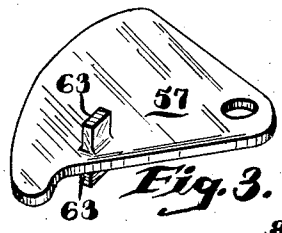


Fig. 3.

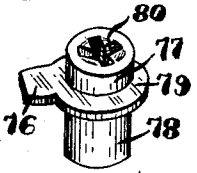


Fig. 4.

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PANIC LATCH AND LOCK MECHANISM

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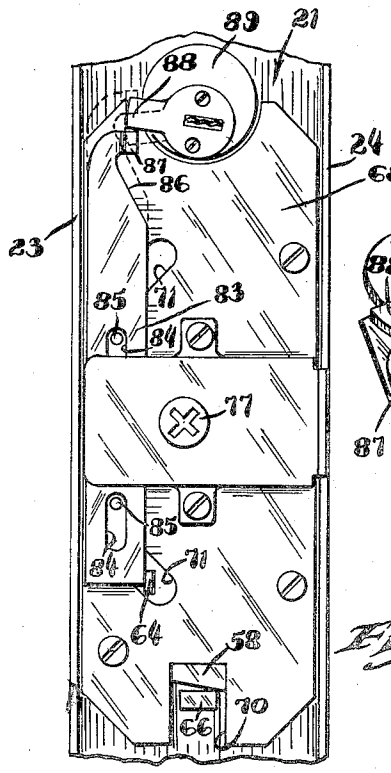


Fig. 6.

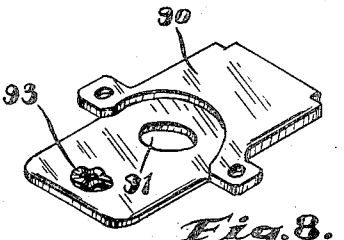


Fig. 8.

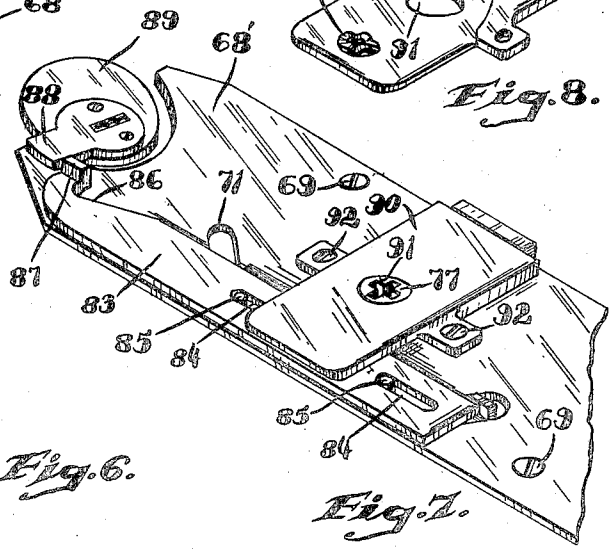


Fig. 7.

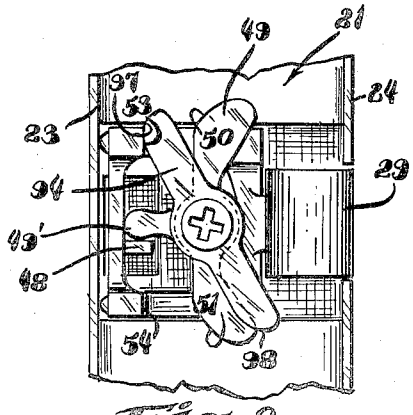


Fig. 9.

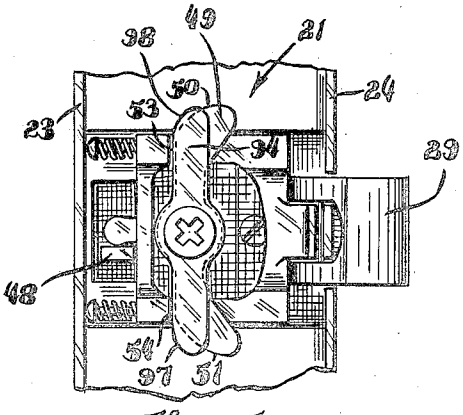


Fig. 10.

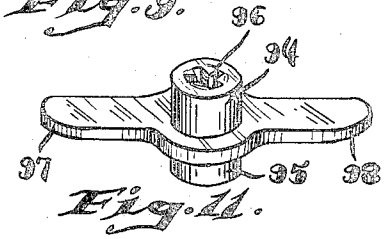


Fig. 11.

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PANIC LATCH AND LOCK MECHANISM

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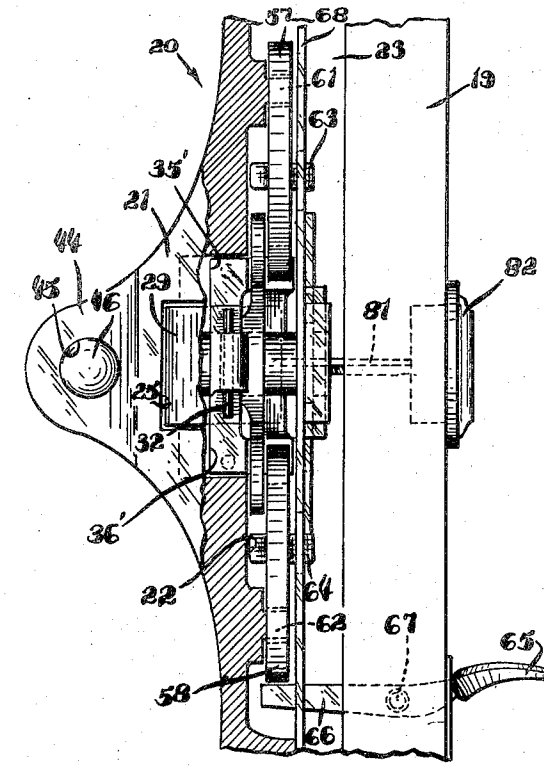


Fig. 12.

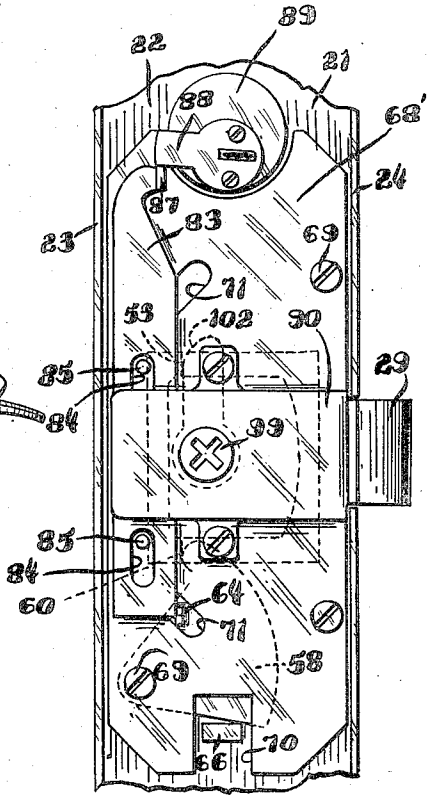


Fig. 13.

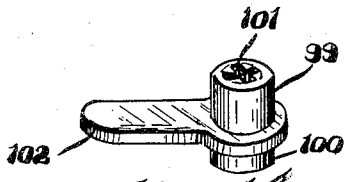


Fig. 14.

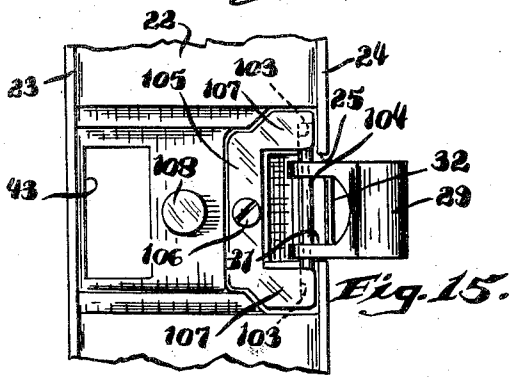


Fig. 15.

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United States Patent Office 2,854,838
Patented Oct. 7, 1958

2,854,838

PANIC LATCH AND LOCK MECHANISM

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Continuation of application Serial No. 487,746, February 14, 1955. This application June 23, 1958, Serial No. 744,632

24 Claims. (Cl. 70—92)

This is a continuation of my copending application Serial No. 487,746, filed February 14, 1955, for Panic Latch and Lock Mechanism, now abandoned.

The present invention relates to an improved latch mechanism.

An object of the invention is to provide a sub-assembly for a latch mechanism including a latch bolt retractor, such sub-assembly when combined with certain supplemental actuating means for the latch bolt retractor providing a latch mechanism which is symmetrical on opposite sides of a median, transverse plane so that it may be mounted on a left-hand door or, by end-to-end reversal, on a right-hand door.

Another object of the invention is to provide a sub-assembly for a latch mechanism including a latch bolt retractor and a latch bolt, such sub-assembly being capable of being combined with supplemental means operable from one side of the door on which the latch mechanism is mounted for retracting the latch bolt, and supplemental means operable independently of said first-mentioned supplemental means for retracting the latch bolt by actuation of a panic bar from the other side of the door.

A further object of the invention is to provide a sub-assembly for a latch mechanism including a latch bolt retractor, such sub-assembly being combined with one or more of a number of supplemental actuating means for the latch bolt retractor depending on the desired functions of the latch mechanism.

A further object of my invention is to provide a latch mechanism which may readily be built up, with a casing and a proper arrangement of selectively-usable parts, either at a factory or in a wholesale or retail store, whereby the inventory of parts which must be maintained by an outlet may be substantially reduced.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is an elevation of one form of latch mechanism embodying my invention, viewed from the open side of the casing, which embodiment includes means to actuate the bolt retractor by an external thumb piece or by a panic bar, and means to block actuation of the bolt retractor by the thumb piece;

Fig. 2 is a view similar to Fig. 1 but showing the latch mechanism in inverted end-for-end position;

Fig. 3 is a perspective view of one of the side latch cam members;

Fig. 4 is a perspective view of a lock cam member;

Fig. 5 is a fragmentary perspective view of a portion of the latch mechanism embodying my invention;

Fig. 6 is an elevation of another form of latch mechanism embodying my invention, viewed from the open side of the casing, and showing means to actuate the bolt retractor by a thumb piece or by a panic bar, and a key-actuated lock for blocking actuation of the bolt retractor by the thumb piece;

Fig. 7 is a perspective view of certain of the parts shown in Fig. 6;

Fig. 8 is a perspective view of the lock slide retainer shown in Figs. 6 and 7, with the retainer in inverted position;

Fig. 9 is a fragmentary elevation of still another form of latch mechanism embodying my invention, showing means to actuate the bolt retractor by a panic bar or by a key-actuated lock;

Fig. 10 is a view similar to Fig. 9 and showing the parts in their at rest position;

Fig. 11 is a perspective view of the top latch cam member;

Fig. 12 is a side elevation of the form of latch mechanism illustrated in Fig. 1, parts of the casing being broken away for clarity of illustration;

Fig. 13 is an elevation of still another form of latch mechanism embodying my invention, showing means for actuating the bolt retractor by a thumb piece, by a key-actuated lock, or by a panic bar, and a key-actuated lock for blocking actuation of the bolt retractor by the thumb piece;

Fig. 14 is a perspective view of a modified lock cam member; and

Fig. 15 is a fragmentary view showing the manner in which I prefer to mount the latch bolt in the casing.

Referring more particularly to the form of invention illustrated in Figs. 1, 2 and 12 it will be seen that I have illustrated a door **19** with which the latch mechanism **20** of the present invention is associated. Such mechanism comprises a casing **21** including a front wall **22**, side walls **23** and **24** and end walls (not shown) defining a cavity with an open face, the parts being so constructed and arranged that side wall **24** may be flush with the outer rim of the door **19** and the side walls and end walls terminate in a common plane adapted to coincide with the inner surface of the door **19**. Conventional means are provided for securing the casing **21** to such door surface.

As the description of this embodiment of my invention proceeds, it will become apparent that all of the structure of the latch mechanism contained wholly within the casing **21** is symmetrical about the median, transverse plane of the latch mechanism. Due to this relationship of the parts, this latch mechanism can be mounted either on a left hand swinging door or, by end-to-end reversal of the casing and the parts housed therein, on a right hand swinging door, without altering the relative arrangement or making substitutions for any of the parts wholly within the casing.

Midway between its ends, the side wall 24 is formed with an opening **25**, through which a pivotally mounted latch bolt swings. Opening **25** is symmetrical with respect to the median transverse plane of the casing; and it is to be understood that the entire casing is likewise symmetrical on opposite sides of said plane.

The inner surface of the wall **22** is suitably formed to define a pair of spaced depressions or sockets **103, 103** (Fig. 15), coaxial with each other, and parallel with the inner end of the opening **25**; and each of said sockets receives an end portion of a journal pin **104**. The journal pin is held in sockets **103, 103** by means of journal pin retainer **105** which is secured to the casing by means of a screw **106** threadedly engaging a threaded socket in the wall **22**. Arms **107, 107** of the journal pin retainer **105** overlie the end portions of pin **104** to hold the pin in place. A latch bolt **29** is provided which is formed

with a socket 31 opening through its inner face. Adjacent the inner end of latch bolt 29, its side walls which define socket 31 are each provided with a cylindrical aperture, which apertures rotatably receive journal pin 104. To assemble the latch bolt with the casing 20, pin 104 is inserted into these cylindrical apertures in the latch bolt 29, the end portions of pin 104 are placed in sockets 103, 103, journal pin retainer 105 is positioned in the casing with arms 107, 107 overlying the end portions of the pin, and screw 106 is driven to clamp the assembly in place. A bar 32 traverses socket 31 in the bolt 29 between the ends thereof for a purpose which will later become apparent. Preferably, the retainer 105 will be formed of spring metal in order to obviate the necessity for close machining of the cooperating parts.

A bolt retractor slide mechanism, indicated generally by the reference numeral 33, is loosely received in the casing. The slide 33 includes a bar 34 which is symmetrical with respect to the above-mentioned plane, and parallel legs 35 and 36 which are, respectively, slidably mounted on surfaces 35' and 36' of the casing. Parallel pins 37 and 38 formed with terminal heads 39 and 40 bear against the inner surface of the wall 23 at one end and penetrate guide bores in the legs 35 and 36. Coiled springs 41 and 42 are sleeved on the respective pins 37 and 38 and are confined between the heads 39 and 40 and the adjacent ends of the legs 35 and 36, whereby the slide comprising the bar 34 and the legs 35 and 36 is resiliently urged toward the wall 24.

Near the wall 23, the wall 22 is formed with a longitudinally-extending opening 43 which is symmetrical with respect to the above-mentioned plane. On the outer surface, the wall 22 is formed to provide a pair of ears 44, 44, and said ears are pierced by perforations 45, whose common axis is disposed in the above-mentioned median plane. A trunnion element 46 is supported in the perforations 45 and pivotally supports a rocker arm 47, whose free end (not shown) supports one end of a conventional panic bar, and which carries a finger 48 entering the casing through the opening 43.

Mounted for pivotal movement on a cylindrical journal pin 108 (Fig. 15) which is integral with front wall 22 of the casing, is bottom latch cam member 49 (see Fig. 5). Cam member 49 is symmetrical with respect to its median transverse plane and is provided with oppositely disposed cam surfaces 50 and 51 for coaction with cam-following surfaces 53 and 54 on cam-following member 52. Cam-following member 52 is integral with legs 35 and 36 of the bolt retractor slide and projects laterally therefrom. Cam member 49 is further provided with a toe 49' which extends laterally from the pivotal mounting of member 49 and lies along the said median, transverse plane of cam member 49. The toe 49' of member 49 is engageable with, and actuated by, finger 48. Cam member 49 will pivot either clockwise or counter-clockwise depending on the location of finger 48 relative to toe 49'.

Provided at the forward end of bar 34 is a nose 56 which has a transverse groove 55 receiving bar 32 to provide a drive connection between said slide 33 and said latch bolt 29. Upon actuation of cam member 49 by the panic bar, one of cam surfaces 50 and 51 (depending on which side of toe 49' is currently engaged by finger 48) will be moved across and in engagement with one of cam-following surfaces 53 and 54, respectively, to retract the slide and thereby retract the latch bolt 29.

The latch mechanism of this embodiment is further provided with side latch cam members 57 and 58 which have cam surfaces 59 and 60, respectively, integral therewith. These cam members are pivotally mounted on internally threaded, cylindrical journal pins 61, 62. These cam members are also provided with lugs 63, 63, and 64, 64, respectively. These cam members are alternatively actuable by finger 66 which is pivoted at 67 within the door 19 and provided with a thumb piece at 65. With reference to Figs. 1 and 12, depression of thumb piece 65 will elevate finger 66 and thereby pivot cam member 58 to move cam surface 60 against cam following surface 54, to retract the mechanism 33 and thereby retract latch bolt 29 independently of finger 48 which is actuable by the conventional panic bar.

The latch mechanism of this embodiment is further provided with means to block the movement of side cam members 57 and 58. This means takes the form of a blocking slide 72 which is symmetrical with respect to the median transverse plane of the casing when in non-blocking position. Interposed between the blocking slide and cam members 57 and 58, is a plate 68 which is provided with open areas 70, 70 to permit access of finger 66 alternatively to these cam members. Integral with plate 68 are guide and stop members 74, 74 which project laterally therefrom and ride in slots 73 in the blocking slide. Plate 68 is further provided with slots 71, 71 through which lugs 63 and 64 project. Upon movement of blocking slide 72 into engagement with lug 63 as shown in Fig. 2, the blocking slide will interfere with pivotal movement of side cam member 57 to latch bolt retracting position and thereby block actuation of the bolt retractor mechanism by depression of the thumb piece.

Blocking slide 72 is moved in opposite directions in this embodiment by means of lock cam member 77 (see Fig. 4). Lock cam member 77 has a downwardly-extending tubular portion 78 which fits rotatably within cylindrical socket 78' of cam member 49. Flange 79 rests upon plate 68, and lock cam member 77 is actuated by means of a key inserted from outside the door into lock 82 and rotated to rotate bar 81 which extends into socket 80. Upon rotation of bar 81, cam 76 of the lock cam member will be swung against either side of recess 75 to move blocking slide 72 into and out of blocking engagement with either of lugs 63 and 64.

Thus, the latch mechanism of this embodiment is locked and unlocked with a door key inserted from outside the door, when unlocked can be unlatched by the thumb piece, and whether locked or not can be unlatched by the panic bar from the inside of the door.

By a comparison of Figs. 1 and 2 it will be apparent that the latch mechanism of this embodiment can be mounted for use on either a right-hand swinging door or a left-hand swinging door. In Fig. 1 the latch mechanism is shown in position for mounting on a left-hand door (that is, the door will pivot about its left-hand side). In order to mount the latch mechanism on a right-hand door, the mechanism will merely be inverted end-to-end from its position as shown in Fig. 1 to that shown in Fig. 2. In Fig. 2, finger 66 engages and actuates side cam member 57, whereas in Fig. 1, finger 66 engages and actuates side cam member 58. This reversible characteristic is made possible by the fact that all of the structure of the latch mechanism, except for the panic bar means and thumb piece means, is symmetrical on opposite sides of the median, transverse plane which passes through the latch mechanism. When the mechanism is in the position of Fig. 2, of course the rocker arm 47 will be replaced by the rocker arm of opposite hand (not shown) whose finger 48 will engage the opposite side of toe 49'.

Another embodiment of my invention is illustrated in Figs. 6 and 7. In this embodiment, lock cam member 77, side latch cam member 58, and bottom latch cam member 49 function in the same manner as in the previous embodiment. However, in the embodiment shown in Figs. 6 and 7, side latch cam member 57 is dispensed with and blocking slide 83 is substituted for slide 72. Blocking slide 83 in this embodiment is actuated by a means in addition to lock cam member 77. In this embodiment block slide 83 is provided with slots 84, 84 in which guide and stop pins 85, 85, integral with plate 68', ride. Plate 68' is identical with plate 68, except for the

shape of its upper end; and pins **85**, **85** are identical with pins **74**, **74** and identically spaced. Blocking slide **83** is provided with off-set portion **86** and laterally projecting lug **87**. A conventional lock barrel **89** is rotatable in casing **21** and rotated by means of a key inserted from inside the door to bring lever **88** into engagement with lug **87**. It is apparent from Figs. 6 and 7 that counter-clockwise rotation of lock barrel **89** will move finger **88** into operative engagement with the top of lug **87**, thereby to move blocking slide **83** downwardly into blocking engagement with lug **64** on side latch cam member **58**. Clockwise rotation of lock barrel **89** will bring finger **88** into engagement with the bottom edge of lug **87** and thereby move blocking slide **83** upwardly out of blocking engagement with lug **64**. Slide **83** is retained against plate **68'** by slide retainer **90**. This retainer is fixed to plate **68'** by means of headed screws **92** which engage threaded apertures in the plate. Circular aperture **91** accommodates the upper portion of lock cam member **77**. At the under surface of retainer **90** there is provided a spring washer **93** to provide a controlled frictional retention of slide **83** in any position of adjustment. A similar retainer is clearly shown in Figs. 1, 2 and 12.

In the embodiment shown in Figs. 6 and 7, then, the latch mechanism can be locked and unlocked with a key inserted from outside the door or with the same or a different key inserted from inside the door, when unlocked can be unlatched from outside the door by the thumb piece, and whether locked or not can be unlatched by the panic bar from inside the door.

A third embodiment of my invention is shown in Figs. 9 through 11. In this embodiment, bottom latch cam member **49** performs the same function as in both previous embodiments. In this embodiment, however, in addition to the bottom latch cam member **49**, a top latch cam member **94** is provided. The latch mechanism of this embodiment can be mounted on either a left-hand swinging door or a right-hand swinging door without altering the relative arrangement or making substitutions for any of the parts which are located wholly within the confines of the casing. This is made possible by the fact that, as in the embodiment shown in Figs. 1, 2 and 12, all of the structure of the latch mechanism contained wholly within the casing **21** is symmetrical about the median, transverse plane of the latch mechanism. Cam member **94** is symmetrical about its median, transverse plane and is provided with hollow tubular portion **95** which is rotatably received in socket **78'** of cam member **49**. Cam member **94** is provided with symmetrical cam surfaces **97** and **98** which move across and in engagement with cam-following surfaces **53** and **54**, respectively, to retract latch bolt **29**. Socket **96** of cam member **94** is actuated in the same manner as was socket **80** of lock cam member **77** in the preceding embodiments. That is, rotation of conventional lock barrel **82** by means of a key, rotates bar **81** which is in operative engagement with socket **96**, and thereby rotates cam member **94**.

In the embodiment of Figs. 9 through 11, therefore, the latch mechanism can be unlatched by means of a key from outside the door and unlatched from inside the door by means of the panic bar.

It will be noted that since the latch mechanism of this embodiment is symmetrical with respect to its median, transverse plane, it is also capable of use on either a left-hand swinging door or a right-hand swinging door. Whereas the latch mechanism of this embodiment is shown in position for mounting on a left-hand swinging door, it would merely be necessary to invert the latch mechanism end-to-end from this position to mount it in operative position on a right-hand swinging door.

When cam member **94** is used in the assembly, side cam members **57** and **58** are not used; and therefore neither slide **72** nor slide **83** will be required.

Figs. 13 and 14 illustrate still another embodiment of my invention. In this embodiment, blocking slide **83** is actuated by lock barrel **89** as in Fig. 6, cam member **58** is actuated by finger **66** of the thumb piece mechanism as in Figs. 1 and 6, and bottom cam member **49** (not shown in Fig. 13) is actuated by a panic bar as in Figs. 1, 6 and 9. In this embodiment the latch bolt retractor mechanism can be actuated by a bottom cam member **49** (not shown in Fig. 13), cam member **58** or top latch cam member **99** (see Fig. 14). Top latch cam member **99** has a single cam surface **102** which moves across and in engagement with cam following surface **53** on the bolt retractor mechanism. Hollow tubular portion **100** fits rotatably within the socket **78'** in cam member **49** and top latch cam member **99** is actuated by bar **81** projecting into socket **101**, said bar, in turn, being actuated by rotation of a key inserted from outside the door.

It is apparent therefore that in the embodiment shown in Figs. 13 and 14, the latch mechanism can be locked and unlocked with a key inserted from inside the door, when unlocked can be unlatched from outside the door by the thumb piece, and whether locked or unlocked, can be unlatched from inside the door by the panic bar or from outside the door by a key.

In each of the embodiments disclosed herein, it is apparent that the latch bolt retractor mechanism can be retracted by means of the panic bar independently of any supplemental latch bolt retractor mechanism. It will also be apparent that the several illustrated combinations may readily be build up, with a common casing (with or without the opening for lock barrel **89**) and a proper arrangement of selectively-usable parts, either at the factory or in a wholesale or retail store, whereby the inventory which must be maintained by an outlet may be substantially reduced.

I claim as my invention:

1. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt-projected position, a latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, a toe on said cam member extending laterally from said pivotal mounting means and lying along said median transverse plane, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said toe, said cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

2. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said

cam member on said casing for oscillation about an axis disposed in said median plane of said casing, a toe on said cam member extending laterally from said pivotal mounting means and lying along said median, transverse plane of said cam member, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said toe, said cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

3. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt-projected position, a first latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, a toe on said first cam member extending laterally from said pivotal mounting means and lying along said median, transverse plane, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said toe, said first cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said two cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, at least one second latch cam member with a third cam surface thereon, said second cam member being mounted in said casing for pivotal movement and for coactive engagement of said third cam surface with said cam-following member, and a thumb piece mounted outside said casing for oscillation about a transversely-extending axis and having a finger projecting into said casing and into coactive association with said second cam member to actuate said retractor independently of said panic bar.

4. The mechanism of claim 3 including a blocking slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, and means to move the slide longitudinally into blocking relation with said lug such that the latch bolt retractor cannot be retracted by actuation of the thumb piece.

5. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a first latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, a toe on said cam member extending laterally from said pivotal mounting means and lying along said median, transverse plane, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said toe, said first cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, a second latch cam member with a third cam surface thereon, said second cam member being mounted in said casing for pivotal movement and for coactive engagement of said third cam surface with said cam-following member, a thumb piece mounted outside said casing for oscillation about a transversely-extending axis and having a finger projecting into said casing and into coactive association with said second cam member to actuate said bolt retractor independently of said panic bar, a blocking slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, a lock lever pivotally mounted on a transverse axis which lies in said transverse plane, a key-actuated lock penetrating such door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said lock lever, said lock lever being in operative association with said blocking slide to move the slide longitudinally into blocking relation with said lug upon actuation of said element by a door key from outside the door, such that the latch bolt retractor cannot be retracted by actuation of the thumb piece until reverse rotation of the door key from outside the door.

6. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a first latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, a toe on said cam member extending laterally from said pivotal mounting means and lying along said median, transverse plane, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said toe, said first cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, a second latch cam member with a third cam surface thereon, said second cam member being mounted in said casing for pivotal movement and for coactive engagement of said third cam surface with said cam-following member, a thumb piece mounted outside said casing for oscillation about a transversely-extending axis and having a finger projecting into said casing and into coactive association with said second cam member to actuate said bolt retractor independently of said panic bar, a blocking slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, a lock lever pivotally mounted on a transverse axis which is spaced from said transverse plane, a key-actuated lock penetrating a wall of said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said lock lever, said lock lever being in operative association with said blocking slide to move the slide longitudinally into blocking

relation with said lug upon actuation of said element by a door key from inside the door, to prevent retraction of the latch bolt retractor by actuation of the thumb piece.

7. The mechanism of claim 6 including a third latch cam member with a fourth cam surface thereon, said third cam member being mounted for pivotal movement about a transverse axis which lies in said transverse plane, a key-actuated lock penetrating such door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said last-named element and said third cam member, said fourth cam surface being engageable with said cam-following member such that upon actuation of said last-named element by a door key from outside the door, the latch bolt retractor will be retracted whether the blocking slide is in blocking position or not.

8. The mechanism of claim 1 including a second latch cam member oscillably mounted in said casing and having a third cam surface thereon, a key-actuated lock penetrating said door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said second cam member, said second cam member being so proportioned and arranged that, upon actuation of said element by a door key from outside the door, said third cam surface will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

9. The mechanism of claim 2 including a second latch cam member symmetrical with respect to its transverse, median plane and having a third cam surface thereon, means pivotally mounting said second cam member on said casing for oscillation about an axis disposed in said median, transverse plane of said casing, a key-actuated lock penetrating such door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said second cam member, said second cam member being so proportioned and arranged that, upon actuation of said element by a door key from outside the door, said third cam surface will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

10. The mechanism of claim 1 including a second latch cam member oscillably mounted in said casing and having a third cam surface thereon, a key-actuated lock penetrating said door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said second cam member, said second cam member being so proportioned and arranged that, upon actuation of said element by a door key from outside the door, said third cam surface will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, said first latch cam member and said second latch cam member being coaxially mounted on a common, pivotal axis.

11. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door in either of two relatively-inverted positions with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a latch cam member with a cam surface thereon, said cam member being mounted in said casing for pivotal movement about a point spaced to one side of said

median plane and for coactive engagement of said cam surface with said cam-following member, a second latch cam member mounted in said casing for pivotal movement about a point equally spaced to the opposite side of said median plane and having a cam surface thereon for coactive engagement with said cam-following member, and a thumb piece mounted outside said casing for oscillation about a transversely-extending axis and having a finger projecting into said casing and into coactive association with either of said cam members selectively, depending upon the selected mounting position of said casing, to actuate said bolt retractor.

12. The mechanism of claim 11 including a blocking slide mounted for longitudinal movement in said casing, a lug integral with each of said cam members, and means to move the slide longitudinally into blocking relation with said lug of the selected one of said cam members such that the latch bolt retractor cannot be retracted by actuation of the thumb piece.

13. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, conicides with said transverse plane, a latch cam member with a cam surface thereon, said cam member being mounted in said casing for pivotal movement about a point spaced to one side of said median plane and for coactive engagement with said cam-following member, a second latch cam member having a second cam surface thereon and which is identical in shape to the other cam member and is pivotally mounted in said casing, allochirally with respect to the other cam member, all of the latch mechanism heretofore recited being symmetrical with respect to said first mentioned median plane and said second cam member being mounted for coactive engagement of said second cam surface with said cam-following member, each of said cam members being adapted for engagement selectively by a finger of a thumb piece actuated mechanism to actuate said retractor.

14. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt projected position, a first latch cam member pivotally mounted in said casing and having two cam surfaces thereon, a toe on said cam member adapted for actuation by a panic latch bar, said first cam member being so proportioned and arranged that when actuated, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, two side latch cam members adapted for actuation selectively by a thumb piece and pivotally mounted allochirally with respect to each other in said casing, each of said side latch cam members having a cam surface for coactive engagement with said cam-following member to retract said latch bolt from bolt projected position independently of said first latch cam member, this latch mechanism being symmetrical with respect to its median transverse plane thus rendering it alternatively, reversibly

mountable for operation on either a left-hand swinging door or a right-hand swinging door.

15. The mechanism of claim 14 including a blocking slide mounted for longitudinal movement in said casing, a lug carried by each of said side latch cam members, and means to move the slide longitudinally into blocking relation alternatively with each of said lugs such that the latch bolt retractor cannot be retracted by actuation of the blocked side latch cam member, said blocking slide, lugs, and means to move the slide comprising an arrangement which is symmetrical with respect to said median, transverse plane thus rendering the entire latch mechanism alternatively, reversibly mountable for operation on either a left-hand swinging door or a right-hand swinging door.

16. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt projected position, a first latch cam member pivotally mounted in said casing and having two cam surfaces thereon, a toe on said cam member adapted for actuation by a panic latch bar, said first cam member being so proportioned and arranged that when actuated, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, a top latch cam member adapted for actuation by a door key, said top latch cam member being coaxially mounted on said first latch cam member, said top latch cam member having two cam surfaces for coactive, alternative engagement with said cam-following member to retract said latch bolt from bolt projected position independently of said first latch cam member, this latch mechanism being symmetrical with respect to its median transverse plane thus rendering it alternatively, reversibly mountable for operation on either a left-hand swinging door or a right-hand swinging door.

17. The mechanism of claim 6 including a lock cam member having a fourth cam surface thereon, a second key-actuated lock penetrating such door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said last-named element and said lock cam member, said lock cam member being mounted for pivotal movement about a transverse axis which lies in said transverse plane and for cooperative association of said fourth cam surface with said blocking slide to move the slide longitudinally into blocking relation with said lug upon actuation of said last-named element by a door key from outside the door to prevent retraction of the latch bolt retractor by actuation of the thumb piece.

18. The mechanism of claim 3 including a blocking slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, means to move the slide longitudinally into blocking relation with said lug such that the latch bolt retractor cannot be retracted by actuation of the thumb piece, a plate mounted in said casing, a blocking slide retainer mounted on said plate with the blocking slide interposed between adjacent portions of said plate and retainer, respectively, and spring means interposed between adjacent portions of the blocking slide and the retainer, respectively, to provide a controlled, frictional retention of the blocking slide in any position of adjustment.

19. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt-projected position, a latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said latch cam member, said cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

20. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing for oscillation about an axis disposed in said median plane of said casing, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said latch cam member, said cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

21. A latch mechanism comprising a casing having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means urging said bolt retractor toward bolt-projected position, a first latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said latch cam member, said first cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said two cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, at least one second latch cam member with a third cam surface thereon, said second cam member being mounted in said casing for pivotal movement and for coactive engagement of said third cam surface with said cam-following member, and a thumb piece mounted outside said casing for oscillation about a transversely-extending axis and having a finger projecting into said casing and into coactive association with said second cam member to actuate said retractor independently of said panic bar.

22. The mechanism of claim 21 including a blocking

slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, and means to move the slide longitudinally into blocking relation with said lug such that the latch bolt retractor cannot be retracted by actuation of the thumb piece.

23. A latch mechanism comprising a casing symmetrical with respect to its transverse median plane and having an open face, said casing being adapted for attachment to a door with its open face contiguous to the door, a latch bolt mounted in said casing and projectible therefrom through an opening in a side wall of said casing, a latch bolt retractor received in said casing and guided for transverse movement therein, said bolt retractor having a laterally-extending cam-following member thereon and an operative connection with said bolt, spring means resiliently urging said bolt retractor toward bolt-projected position, said latch bolt retractor being symmetrical with respect to a median plane which, when said bolt retractor is mounted in said casing, coincides with said transverse plane, a first latch cam member symmetrical with respect to its median, transverse plane and having two cam surfaces thereon, means pivotally mounting said cam member on said casing, and a panic bar supported adjacent said casing to swing about a fixed axis and having a finger projecting into said casing and into cooperative association with said latch cam member, said first cam member being so proportioned and arranged that, as said finger moves from one limit of its path to the other limit thereof, one of said cam surfaces will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position, a second latch cam member with a third cam surface thereon, said second cam member being mounted in said casing for pivotal movement and for coactive engagement of said third cam surface with said cam-following member, a thumb piece mounted outside said casing for oscillation about

a transversely-extending axis and having a finger projecting into said casing and into coactive association with said second cam member to actuate said bolt retractor independently of said panic bar, a blocking slide mounted for longitudinal movement in said casing, a lug integral with said second cam member, a lock lever pivotally mounted on a transverse axis which lies in said transverse plane, a key-actuated lock penetrating such door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said lock lever, said lock lever being in operative association with said blocking slide to move the slide longitudinally into blocking relation with said lug upon actuation of said element by a door key from outside the door, such that the latch bolt retractor cannot be retracted by actuation of the thumb piece until reverse rotation of the door key from outside the door.

24. The mechanism of claim 19 including a second latch cam member oscillably mounted in said casing and having a third cam surface thereon, a key-actuated lock penetrating said door in registry with said casing and including an element mounted for rotary movement, and means providing an operative connection between said element and said second cam member, said second cam member being so proportioned and arranged that, upon actuation of said element by a door key from outside the door, said third cam surface will be moved across and in engagement with said cam-following member to retract said latch bolt from bolt-projected position.

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