Jan. 31, 1961 D. C. MUESSEL 2,969,666

LOCK AND LATCH ASSEMBLY

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Fig. 1.

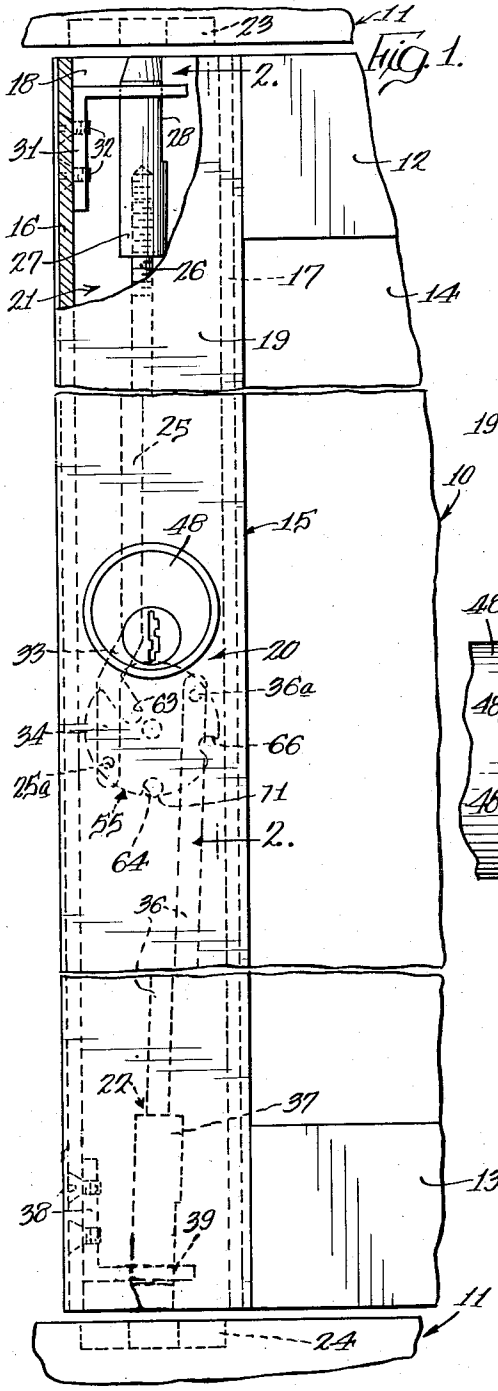
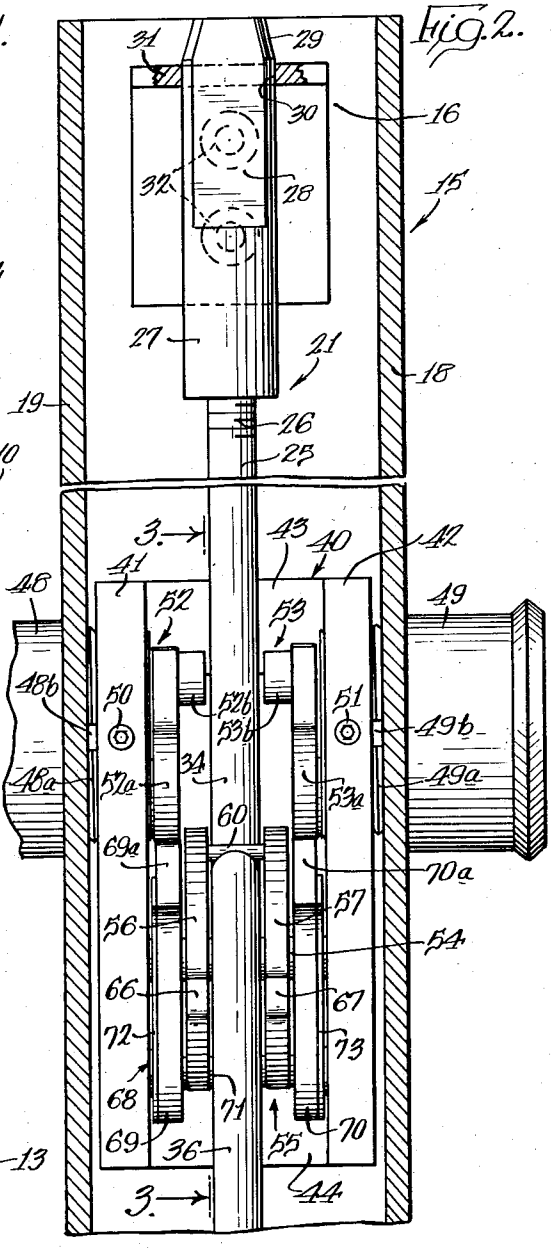


Fig. 2.



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Fig. 3.

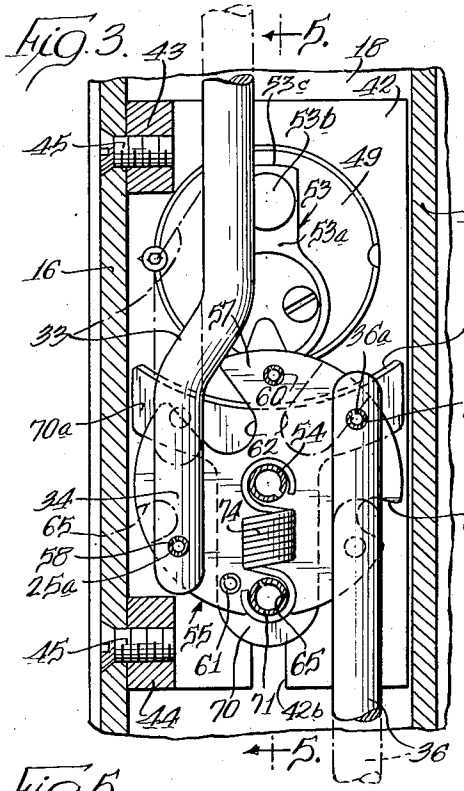


Fig. 4.

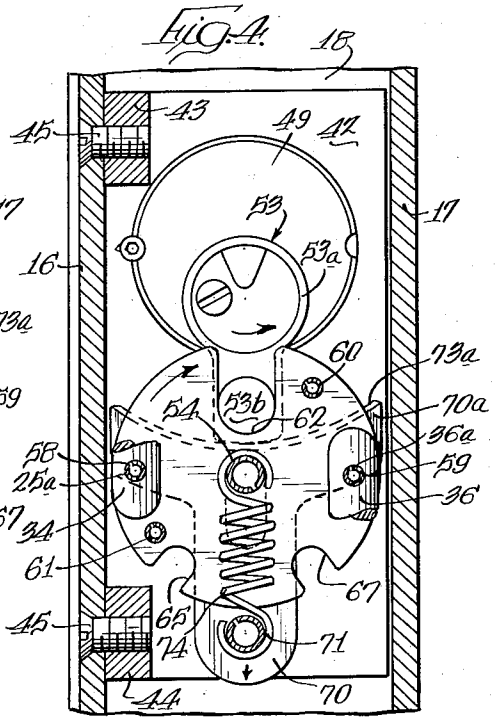


Fig. 5.

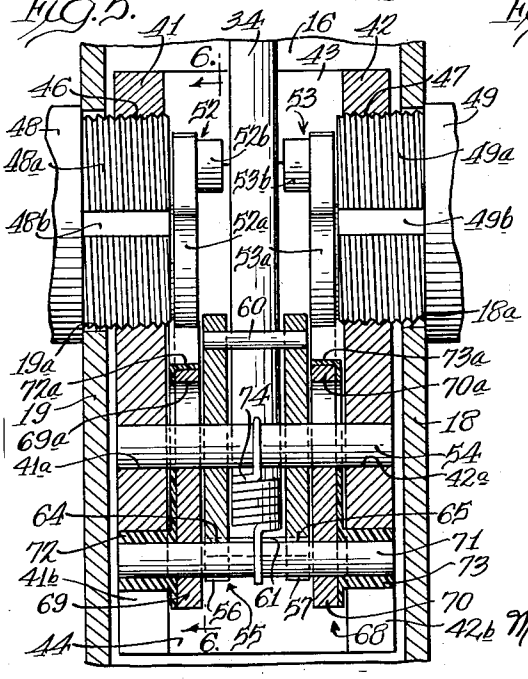
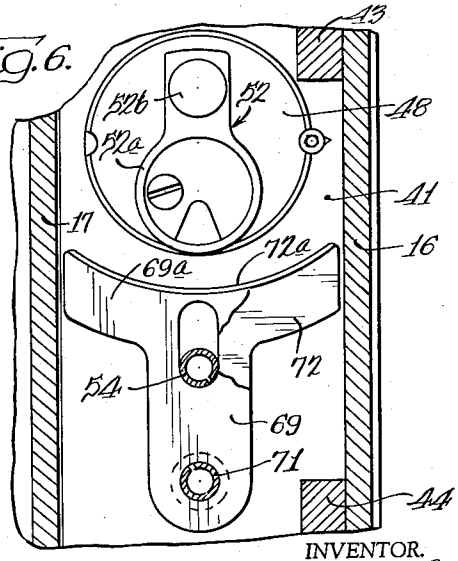


Fig. 6.



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LOCK AND LATCH ASSEMBLY

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Filed July 3, 1957, Ser. No. 669,781

8 Claims. (Cl. 70—116)

The present invention relates generally to locks and latches and more particularly to door locks of the type employing a plurality of locking bolts adapted to be simultaneously extended outwardly in order to lock the door in closed position.

A primary object of the present invention is to provide a new and improved lock of the above indicated character which will rigidly hold the door in locked position and the lock cannot be operated by application of force to the bolts.

Another object of the invention is to provide a lock of the character indicated above wherein novel locking means is provided for locking the bolts in their extended position, such locking means being rendered effective manually only by operation of a key or the like, thereby preventing picking of the lock and also preventing operation of the lock without the use of a proper key.

A still further object of the invention is the provision of a lock which will accomplish all of the foregoing objects but will at the same time be characterized by simplicity of construction and efficiency of operation.

It is also an object of the present invention to provide a lock of the type described above which may be operated from either side of the door, which can only be operated by a person possessing the proper key or the like and, hence, which cannot be operated by application of force to the bolts.

The foregoing and other objects are accomplished, in accordance with the present invention, by the provision of a door lock having a pair of bolts which are adapted to be projected outwardly of the door and into engagement with keepers located on the door frame in order to lock the door or, alternatively, which are adapted to be retracted within the door in order to permit the latter to be opened. The lock comprises an actuator assembly rotatively supporting the bolts and an operating means, which may be actuated by means of a key or the like, for rotating the actuator assembly to project the ends of the bolts outwardly of the door. A latching assembly is provided in engagement with the actuator assembly in order to prevent rotation of the latter assembly when the bolts are in either their fully extended position or in their fully retracted position. The latching assembly is released by the operating means for the actuator assembly with the result that a single operation results in the release of the latching action and the movement of the bolts.

Other objects and advantages of the present invention will become apparent from a consideration of the specification together with the following drawings wherein:

Fig. 1 is a fragmentary, front elevational view partly broken away showing a door equipped with the locking and latching assembly of the present invention together with a portion of the frame adjacent the door;

Fig. 2 is an enlarged, fragmentary, sectional view taken along a line substantially corresponding to the line 2—2 in Fig. 1 and showing the lock bolts in retracted position;

Fig. 3 is a sectional view showing particularly the lock- and latching assembly and taken along a line substantially corresponding to the line 3—3 in Fig. 2 assuming, of course, that the latter shows the entire structure;

Fig. 4 is a view similar to Fig. 3 but showing the locking and latching assembly with the lock bolts in a position intermediate their fully retracted and fully extended positions;

Fig. 5 is a sectional view taken along a line substantially corresponding to the line 5—5 in Fig. 3 assuming again that the latter shows the entire structure; and

Fig. 6 is a fragmentary, sectional view taken along a line substantially corresponding to the line 6—6 in Fig. 5 again assuming that the latter shows the entire locking and latching assembly.

Referring now to the drawings and more particularly to Fig. 1 thereof, the present invention is there illustrated as installed upon a door or other panel type closure member **10** which is adapted to be opened and closed with respect to a door frame indicated generally at **11**. The door **10** is illustrated in Fig. 1 as being a metal door, although it will be understood that this is not necessary since the door may be made of wood or other suitable material. The door may comprise the usual top and bottom rails **12** and **13**, side rails and a center panel identifield at **14** and assembled upon the rails in conventional manner. Only one of the side rails, namely the locking rail **15**, can be seen in Fig. 1 and this rail comprises a hollow channel formed between side walls **16** and **17** and rear and front walls respectively identified as **18** and **19**.

The locking and latching assembly of the present invention is generally indicated by the reference numeral **20** and is mounted within the channel defined in the side rail **15**. The assembly **20** functions to control the operation of a pair of locking bolts **21** and **22** which extend vertically within and longitudinally of the channel in the side rail **15** and which are adapted to be projected outwardly from the door into engagement with keepers **23** and **24**, respectively. The keeper **23** may be secured to the top of the door frame **11** while the keeper **24** is illustrated as being attached to the bottom or floor of the door frame although it should be understood that the present invention is also suitable for operation with keepers located in opposite sides of a frame for receiving horizontally projected bolts. The locking bolt **21** comprises an elongated rod **25** having an externally threaded end portion **26** fitting within an internally threaded axial bore in a lock bolt sleeve **27**. The rod **25** is preferably formed of steel while the sleeve may be formed of nylon or the like which is reinforced with a longitudinally extending steel dowel or pin (not shown) in order to prevent a burglar from severing the sleeve by means of a hacksaw or the like. The sleeve **27** is a generally cylindrical member having a flat portion indicated at **28** and a tapered end portion **29** which is adapted to be received within the keeper **23**. The flattened portion **28** provides a region of generally D-shaped cross section which is received within a similarly shaped opening **30** formed in a generally L-shaped guide bracket **31** attached on the wall **16** of the side rail as, for example, by means of machine screws **32**. The bracket **31** serves to guide the locking bolt **21** in its longitudinal movement and, to this end, is so dimensioned that the opening **30** is aligned with the opening in the keeper **23** when the door **10** is closed. As is best shown in Figs. 1 and 3 the elongated rod **25** includes an inclined portion **33** and an offset portion **34** at its inwardly disposed end. The portion **34** is provided with a transverse opening **25a** the purpose

of which will become apparent from the ensuing description.

The lock bolt 22 is generally similar to the lock bolt 21 in that it includes an elongated rod 36 and a sleeve 37 threaded onto the end of this rod. However, the rod 36 is straight and does not include inclined and offset portions of the type provided on the rod 25. The sleeve 37 is identical to the sleeve 27 and includes a portion having a flattened surface which portion is received within an opening in a guide bracket 38. The bracket 38 is identical to the bracket 31 previously described and it is secured on the wall 16 in such position that the opening 39 is aligned with the opening in the keeper 24 when the door is in closed position. It will be observed that the openings 30 and 39 respectively provided in the guide brackets 31 and 38 are vertically aligned with respect to each other and, hence, are oriented that the lock bolts 21 and 22 are directed into the keepers 23 and 24 respectively.

The amount of protrusion of the sleeves 27 and 37 beyond the top and bottom of the door may be adjusted by turning each sleeve upon its associated rod. To effect this adjustment the machine screws holding the brackets 31 and 38 may be loosened so that the brackets are free to rotate after which the sleeves may be turned. The brackets, of course, turn with the sleeves due to the coaction between the D-shaped openings therein and the sleeves. When the sleeves have been adjusted to their desired effective lengths the brackets 31 and 38 may again be secured to the wall 16 at which time the D-shaped openings prevent further rotation of the sleeves and, hence, prohibit a burglar from gaining access by threading the sleeves onto the rods until the sleeves are free from the keepers.

Turning now to a consideration of the mechanism 20 for operating the bolts 21 and 22 it will be observed that this mechanism includes a lock case 40 in the form of a somewhat channel shaped member preferably formed of aluminum and having a pair of spaced apart parallel extending walls 41 and 42 interconnected by upper and lower braces 43 and 44. As is best shown in Figs. 3 and 4, the braces 43 and 44 are provided with tapped openings for receiving machine screws 45 in order to secure the lock case 40 to the wall 16 of the side rail of the door. As is best shown in Fig. 5, the walls 41 and 42 are provided with horizontally aligned openings 41*a* and 42*a*, respectively, and with a pair of aligned, elongated slots 41*b* and 42*b* the purposes of which will become evident as the description proceeds. The walls 41 and 42 are further provided with aligned tapped bores 46 and 47, respectively, for accommodating lock cylinders 48 and 49 of conventional construction. Each of the lock cylinders includes an outer cylindrical housing and an inwardly and axially extending externally threaded portion which is adapted to be inserted through an opening in the side rail and into engagement with the lock case 40. Specifically, the outer cylindrical portion of the lock cylinder 48 is seated against the front wall 19 of the side rail and its externally threaded portion 48*a* extends through an opening 19*a* in the latter wall and into engagement with the tapped opening 46 in the wall 41. Similarly, the outer cylindrical portion of the lock cylinder 49 is seated against the rear wall 18 of the side rail and its externally threaded portion 49*a* extends through opening 18*a* in the latter wall and is accommodated within the opening 47 in the wall 42. Suitable set screws 50 and 51 (Fig. 2) are carried upon the walls 41 and 42, respectively, in order to secure the lock cylinders in position and prevent their rotation with respect to the lock case 40. Specifically, set screw 50 is adapted to project into a slot 48*b* in the lock cylinder 48 in order to prevent rotation of the latter with respect to the wall 41. In similar manner set screw 51 projects into slot 49*b* in the lock cylinder 49 to prevent rotation of the latter with respect to the wall 42. Each of the lock cylinders 48 and 49 houses a key operated tumbler of conventional construction, which, when operated, is adapted to rotate a cam member, the cam member for the tumbler rotated within cylinder 48 being identified by the reference numeral 52 and that associated with the lock cylinder 49 being identified by reference numeral 53. The cam members 52 and 53 are identical and each includes a rotatable arm and a cam pin mounted on the arm both of which may be formed of brass. The arm of the cam member 52 is identified by reference numeral 52*a* and the cam pin secured to this arm is designated by reference numeral 52*b*, while the arm of cam member 53 is designated as 53*a* and the cam pin secured to the latter arm bears reference numeral 53*b*. In view of the above description it will be recognized that the lock cylinder 48 is accessible from the front of the door so that when the proper key is inserted therein and rotated, the cam member 52 is turned. The lock cylinder 49 is, of course, accessible from the rear of the door and when the proper key is inserted therein and turned the cam member 53 is rotated. Thus, the locking and latching device of the present invention may be operated from either side of the door.

The locking bolts 21 and 22 are mounted upon a rotatable actuator assembly indicated generally by reference numeral 55. This assembly comprises a pair of spaced apart, parallel discs 56 and 57 which are secured to a shaft 54 having its opposed ends respectively supported within openings 41*a* and 42*a* respectively defined in the walls 41 and 42 of the lock case. The discs 56 and 57 are preferably formed of brass or other relatively wearfree material and are interconnected by a pair of spaced apart bolt supporting pins 58 and 59 and a pair of brace pins 60 and 61, all located at points spaced apart along an imaginary circle having its center at the longitudinal axis of the shaft 54. The pin 58 fits within the opening 25*a* in the rod 25 of the lock bolt 21 while the pin 59 fits within an opening 36*a* in the end of the rod 36 of the lock bolt 22 with the result that both of the lock bolts are pivotally mounted upon the actuator assembly 55.

The disc 56 is provided with a relatively large peripheral opening 63 for the purpose of receiving the cam pin 52*b* when the latter is rotated. In similar manner disc 57 is provided with a corresponding opening 62 horizontally aligned with the opening 63 for the purpose of receiving the cam pin 53*b*. The discs 56 and 57 are also provided with a first pair of aligned peripheral notches 64 and 65 and a second pair of aligned peripheral notches 66 and 67 for the purpose of accommodating a latching assembly which is generally indicated by the reference numeral 68 and which funtions in a manner described below to prevent rotation of the actuator assembly 55 when the bolts 21 and 22 are in either their fully extended position or their fully retracted position.

As is illustrated in Fig. 5, the latching assembly 68 comprises a pair of spaced apart deadlock locators 69 and 70 mounted upon a latching member 71. Locator washers 72 and 73 are respectively associated with the deadlock locators 69 and 70. These washers are identical, are preferably formed of nylon, and each includes a bushing portion encircling one end of the member 71 and a flat body portion extending along the side of its associated locator. The bushing of the washer 72 is inserted into the slot 41*b* in the wall 41 while the bushing of the washer 73 extends into slot 42*b* in the wall 42. The entire assembly 68 is, therefore, mounted for sliding movement with respect to the lock case 40 and this movement is confined to a vertical path by the cooperation between the slots 41*b* and 42*b* and the bushings accommodated therein. Each locator includes an elongated, longitudinally extending slot for receiving the shaft 54 and further includes a generally arcuate cam follower portion which is designated as 69*a* on the locator 69 and as 70*a* on the locator 70. The locators 69 and 70 may be made either of aluminum or brass. If they are made of alumi-

num, which is relatively susceptible to wear, the washer is preferably provided with a lip overlying the upper edge of the arcuate cam follower portion. This lip on the washer **72** is indicated by reference numeral **72***a* and is adapted to be engaged by cam arm **52***a* when the latter is rotated. Similarly, the lip on the washer **73** is indicated at **73***a* and is adapted to be engaged by the cam arm **53***a* when the cam member **53** is rotated. The lips **72***a* and **73***a* obviously take all of the wear produced by rotation of the cam members **52** and **53** and, hence, protect the follower portions **69***a* and **70***a*. If the deadlock locators **69** and **70** are made of brass, which is relatively free from wear problems, the lips **72***a* and **73***a* may be removed from the washers thus simplifying the construction of these washers to some extent.

A coil spring **74** having one end encircling the shaft **54** and its other end encircling the latching member **71** urges the latching assembly **68** into peripheral engagement with the disc **56** and **57** of the actuator assembly **55**. Thus, when the bolts are in their fully retracted position as illustrated in Fig. 3, the member **71** is urged by the coil spring **74** into the aligned notches **64** and **65** in the discs **56** and **57**, thereby locking the actuator assembly **55** against rotation and at the same time locking the bolts **21** and **22** in their retracted position. Similarly, when the bolts are in their fully extended position the member **71** engages the notches **66** and **67** to prevent rotation of the actuator assembly **55** and to prevent movement of the bolts **21** and **22**.

Turning now to the operation of the locking and latching assembly **20**, it will be recognized that rotation of either of the cam members **52** or **53** is effective to release the latching assembly **68** and to rotate the actuator assembly **55** in order to move the bolts. Considering first the operation of the mechanism when it is desired to lock the door **10** from the rear side of the door and assuming that the bolts are in their fully retracted position illustrated in solid lines Fig. 3, it will be observed that rotation of the cam member **53** in a counterclockwise direction as viewed in Figs. 3 and 4 causes the end **53***c* of the cam arm **53***a* to engage the lip **73***a* on the washer **73** and also causes the cam pin **53***b* to enter the opening **62** in the disc **57**. Rotation of the cam member **53** in a clockwise direction has no effect on the mechanism **20** because the cam pin **53***b* is confronted by the peripheral edge of the disc **57**, thereby limiting the clockwise rotation. However, rotation of the cam member **53** in a counterclockwise direction results in movement of the latching assembly **68** downwardly as viewed in Fig. 5 in order to move the member **71** out of engagement with the notches **64** and **65** thus releasing the actuator assembly **55** for rotation. As the cam member **53** continues to rotate, the cam pin **53***b* coacts with the opening **62** to rotate the actuator assembly **55** in a clockwise direction as viewed in Figs. 3 and 4. The member **71** rides upon the periphery of the discs **56** and **57** as illustrated in Fig. 4 until the member **71** is confronted by the aligned notches **66** and **67** at which time the bolts **21** and **22** have been fully extended into engagement with the keepers **23** and **24**. The bolt **21** then occupies the position shown in broken lines in Fig. 3. With the bolts in their fully extended position, the member **71** is seated within notches **66** and **67** and the actuator assembly **55** is locked against rotation and, as a result, movement of the bolts is prohibited. Thus, it is impossible for a burglar or other unauthorized person to actuate the mechanism **20** by applying force to the ends of the bolts **21** and **22**.

Obviously, in order to retract the bolts to unlock the door from the rear the cam member **53** may be rotated in the reverse direction, that is, in a clockwise direction as viewed in Figs. 3 and 4 in order to release the latching assembly **68** and rotate the actuator assembly **55** in a counterclockwise direction. When the bolts have reached their fully retracted position the latching member **71** is again seated within the notches **64** and **65**, thus preventing further rotation of the actuator assembly and locking the bolts in retracted position.

As previously mentioned, the door may also be locked or unlocked from the front by use of a proper key to turn the cam member **52**, in which case the latching assembly **68** is released by engagement of cam arm **52***a* with the locator **69** or the washer **72** associated therewith and the actuator assembly **55** is rotated by coaction between pin **52***b* and opening **63** in the disc **56**. Thus, the mechanism **20** may be selectively operated either to extend or retract the bolts and this operation may be effected from either side of the door by any person possessing the proper key.

It will be observed that the locking and latching assembly of the present invention is characterized by the use of relatively few external parts since only the lock cylinders, the extreme ends of the lock bolts and the screws for the lock case are visible from the exterior of the door. The described construction thus permits continuous weather stripping along all of the edges between the door and the door frame and it also allows the door and the locking mechanism to be assembled without requiring cutting of the door frame or the door rail except of course for the keeper holes and the described openings for the lock cylinders and the attaching screws. The assembly provides maximum protection because it cannot be jimmied or unlocked by application of force to the bolts. Moreover, due to the fact that the mechanism is latched when the bolts are retracted, the door can be locked only by use of the proper key.

While the present invention has been described in conjunction with an illustrative embodiment, it should be understood that many modifications will readily occur to those skilled in this art and it is therefore contemplated by the appended claims to cover any such modifications as fall within the true spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A panel type closure lock of the type in which first and second bolts are projected from a retracted position in said closure to a fully extended position in engagement with spaced apart keepers on a frame adjacent to the closure, said lock comprising a lock case secured to said closure; a shaft rotatably supported in said case; first and second spaced apart, parallel extending discs mounted upon said shaft; first and second spaced apart bolt supporting members extending between said discs at locations spaced from the axis of rotation of the discs and pivotally supporting said first and second bolts, respectively; first and second manual operating means respectively accessible from opposite sides of said closure and respectively associated with said first and second discs; each of said manual operating means including a cam member; each of said discs including means defining a cam receiving opening for receiving the cam member of its associated operating means so that both of said discs are rotated when either of said manual operating means is operated, thereby to move the bolts from one of said positions to the other; said discs also including first and second pairs of peripheral notches with the notches of each pair being aligned along a line extending parallel to the axis of rotation of the discs; first and second spaced apart followers extending parallel to and respectively adjacent said first and second discs; a latching member extending between said followers and in engagement with the periphery of said discs, said latching member being accommodated within the first pair of notches when the bolts are in fully extended position and being accommodated with the second pair of notches when the bolts are in retracted position, thereby to prevent rotation of the discs when the bolts are in either of said positions; said followers each including an elongated slot for accommodating said shaft in order to permit sliding movement of said followers within said case; said first and second followers each including a portion adapt-

ed to be engaged by the cam member of said first and second operating means, respectively, thereby to slide the follower members within the case and move the latching member out of engagement with the notches in order to permit rotation of the discs, and a spring connected between said latching member and said shaft and urging said latching member into peripheral engagement with said discs.

2. A panel type closure lock of the type in which a bolt is projected from a retracted position in said closure to a fully extended position in engagement with spaced apart keepers on a frame adjacent to the closure, said lock comprising a lock case secured to said closure; a shaft rotatably supported in said case; first and second spaced apart, parallel extending discs mounted upon said shaft; a bolt supporting member extending between said discs at a point spaced from the axis of rotation of the discs and pivotally supporting said bolt; first and second manual operating means respectively accessible from opposite sides of said closure and respectively associated with said first and second discs; each of said manual operating means including a cam member; each of said discs including means defining a cam receiving opening for receiving the cam member of its associated operating means so that both of said discs are rotated when either of said manual operating means is operated, thereby to move the bolt from one of said positions to the other; said discs also including first and second pairs of peripheral notches with the notches of each pair being aligned along a line extending parallel to the axis of rotation of the discs; first and second spaced apart followers extending parallel to and respectively adjacent said first and second discs; a latching member extending between said followers in engagement with the periphery of said discs, said latching member being accommodated within the first pair of notches when the bolt is in fully extended position and being accommodated within the second pair of notches when the bolt is in retracted position, thereby to prevent rotation of the discs when the bolt is in either of said position; said followers each including an elongated slot for accommodating said shaft in order to permit sliding movement of said follower members within said case, said first and second followers each including a portion adapted to be engaged by the cam member of said first and second operating means, respectively, thereby to slide the followers within the case and move the latching member out of engagement with the notches in order to permit rotation of the discs; and a spring connected between said latching member and said shaft and urging said latching member into peripheral engagement with said discs.

3. A panel type closure lock of the type in which a bolt is projected from a retracted position in said closure to a fully extended position in engagement with a keeper on a frame adjacent to the closure, said lock comprising a lock case secured to said closure, a shaft rotatably supported in said case, first and second spaced apart parallel extending discs mounted upon said shaft, a bolt supporting member extending between said discs at a point spaced from the axis of rotation of the discs and pivotally supporting said bolt, first and second manual operating means respectively accessible from opposite sides of said closure and respectively associated with said first and second discs, each of said manual operating means including a cam member, each of said discs including a slot for receiving the cam member of its associated operating means so that both of said discs are rotated when either of said manual operating means is operated, thereby to move the bolt from one of said positions to the other, said discs also including first and second pairs of peripheral notches with the notches of each pair being aligned along a line extending parallel to the axis of rotation of the discs, first and second spaced apart followers extending parallel to and respectively adjacent said first and second discs, each of said followers normally partially overlapping the slot in the adjacent disc, said followers being mounted for sliding movement within the case, a latching member extending between said followers and in engagement with the periphery of said discs, said latching member being accommodated within the first pair of notches when the bolt is in fully extended position and being accommodated within the second pair of notches when the bolt is in retracted position, thereby to prevent rotation of the discs when the bolt is in either of said positions, said first and second followers coacting with the cam member of said first and second operating means, respectively, to slide the followers in unison within the case and move the latching member out of engagement with the notches in order to permit rotation of the discs, and a spring connected between said latching member and said shaft and urging said latching member into peripheral engagement with said discs.

4. A panel type closure lock of the type in which first and second bolts are projected from a retracted position in said closure to a fully extended position in engagement with spaced apart keepers on a frame adjacent to the closure, said lock comprising a lock case secured to said closure; a shaft rotatably supported in said case; first and second spaced apart parallel extending discs mounted upon said shaft, first and second spaced apart bolt supporting members extending between said discs at positions spaced from the axis of rotation of the discs and pivotally supporting said first and second bolts, respectively; first and second manual operating means respectively accessible from opposite sides of said closure and respectively associated with said first and second discs; each of said manual operating means including a cam member; each of said discs including a slot for receiving the cam member of its associated operating means so that both of said discs are rotated when either of said manual operating means is operated, thereby to move the bolts from one of said positions to the other; said discs also including first and second pairs of peripheral notches with the notches of each pair being aligned along a line extending parallel to the axis of rotation of the discs; first and second spaced apart followers extending parallel to and respectively adjacent said first and second discs, each of said followers normally partially overlapping the slot in the adjacent disc, said followers being mounted for sliding movement in said case; a latching member extending between said followers and in engagement with the periphery of said discs, said latching member being accommodated within the first pair of notches when the bolts are in fully extended position and being accommodated within the second pair of notches when the bolts are in retracted position, thereby to prevent rotation of the discs when the bolts are in either of said positions, said first and second followers coacting with the cam member of said first and second operating means, respectively, to slide the followers in unison within the case and move the latching member out of engagement with the notches in order to permit rotation of the discs, and a spring connected between said latching member and said shaft and urging said latching member into peripheral engagement with said discs.

5. A panel type closure lock of the type in which first and second bolts are projected from a retracted position in said closure to a fully extended position in engagement with spaced apart keepers on a frame adjacent to the closure, said lock comprising a lock case secured to said closure, a shaft rotatably supported in said case, first and second spaced apart discs mounted upon said shaft and operatively engaged with said first and second bolts, first and second manually operated lock cylinders at least one of which is key operated, said cylinders being respectively accessible from opposite sides of said closure and respectively associated with said first and second discs, each of said lock cylinders including a cam member, each of said

discs including a slot for receiving the cam member of its associated lock cylinder so that both of said discs are rotated when either of said lock cylinders is turned, thereby to move the bolts from one of said positions to the other, said discs also including a pair of peripheral notches aligned along a line extending parallel to the axis of rotation of the discs, first and second spaced apart followers respectively disposed adjacent said first and second discs, each of said followers normally partially overlapping the slot in the adjacent disc, said followers being mounted for sliding movement within the case, a latching member extending between said followers and in engagement with the periphery of said discs, said latching member being accommodated within the pair of notches when the bolts are in fully extended position, thereby to prevent rotation of the discs when the bolts are in said extended position, said first and second followers coacting with the cam members of said first and second lock cylinders, respectively, to slide the followers in unison within the case and move the latching member out of engagement with the notches in order to permit rotation of the discs, and a spring urging said latching member into peripheral engagement with said discs.

6. A panel type closure lock of the type in which a bolt is projected from a retracted position in said closure to a fully extended position in engagement with a keeper on a frame adjacent to the closure, said lock comprising a lock case secured to said closure, a shaft rotatably supported in said case, first and second spaced apart discs mounted upon said shaft and operatively engaged with said first and second bolts, first and second manually operated lock cylinders at least one of which is key operated, said cylinders being respectively accessible from opposite sides of said closure and respectively associated with said first and second discs, each of said lock cylinders including a cam member, each of said discs including a slot for receiving the cam member of its associated lock cylinder so that both of said discs are rotated when either of said manually operated cylinders is turned, thereby to move the bolt from one of said positions to the other, first and second spaced apart followers respectively disposed adjacent said first and second discs, each of said followers normally partially overlapping the slot in the adjacent disc, said followers being mounted for sliding movement within the case, a latching member extending between said followers and in engagement with the periphery of said discs, said latching member and said discs including means coacting to prevent rotation of the discs when the bolt is in its extended position, said first and second followers coacting with the cam members of said first and second lock cylinders, respectively, to slide the followers in unison within the case and move the latching member in order to permit rotation of the discs, and a spring urging said latching member into peripheral engagement with said discs.

7. A panel type closure lock of the type in which a pair of bolts is projected outwardly of the closure and into engagement with keepers located on a frame adjacent to the closure, said lock comprising an actuator assembly including first and second spaced apart discs mounted for rotation for unitary rotation upon said closure and each including a peripheral slot therein, means pivotally connecting each of said bolts to said actuator assembly at points removed from the axis of rotation of said assembly, first and second manually operated lock cylinders respectively accessible from opposite sides of the closure and each including a cam operator respectively received within the slots formed in said first and second discs in order to rotate said assembly, the rotation of said assembly in one direction being effective to project said bolts outwardly of said closure and the rotation in the opposite direction being effective to retract said bolts, a latching assembly mounted for sliding movement with respect to said discs and including a member in engagement with both of said discs to prevent rotation of the latter when said bolts are in their fully extended position, said latching assembly including first and second followers respectively extending adjacent said first and second discs with each follower including a portion partially overlapping the slot in its adjacent disc, whereby one of the follower portions is engaged by the cam when one of the lock cylinders is turned, thereby to slide said latching assembly to disengage said member from the discs in order to release said actuator assembly for rotation, and a spring urging said member into peripheral engagement with the discs.

8. A panel type closure lock of the type in which a bolt is projected outwardly of the closure and into engagement with a keeper located on a frame adjacent to the closure, said lock comprising an actuator assembly including a disc mounted for rotation upon said closure about a fixed axis, said disc having formed in its periphery first, second and third slots, means pivotally connecting said bolt to said disc at a point removed from its axis of rotation, a manually operated lock cylinder including a cam received within the first slot in the disc when the cylinder is turned, thereby to rotate said disc in order to project said bolt outwardly of said closure when said lock cylinder is rotated in a first direction and to retract said bolt when the lock cylinder is rotated in a second and opposite direction, a latching assembly mounted for sliding movement with respect to said disc and including a member in engagement with the periphery of the disc, said member being seated within said second slot when the bolt is retracted in order to lock the disc against rotation and said member being seated within the third slot when the bolt is extended in order to prevent rotation of the disc when said bolt is in its fully extended position, said latching assembly including a follower portion normally overlapping said first slot so that said follower portion is engaged by the cam when the lock cylinder is turned in said first direction, thereby to slide said latching assembly in order to disengage said member from said second slot and, hence, to permit said disc to turn in order to extend said bolt, and a spring urging said member into engagement with the periphery of the disc, whereby when the bolt is extended the latching assembly again slides to permit said member to seat within said third slot and to permit said follower portion to again overlap said first slot, said follower portion being engaged by said cam when said lock cylinder is turned in the second direction, thereby to slide said actuator assembly and to move said member out of said third slot to permit the disc to rotate in a direction to retract the bolt.

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