Jan. 14, 1958 A. LEVINE 2,819,602

LOCKABLE LATCHING DEVICE

Filed Sept. 29, 1955 2 Sheets-Sheet 1

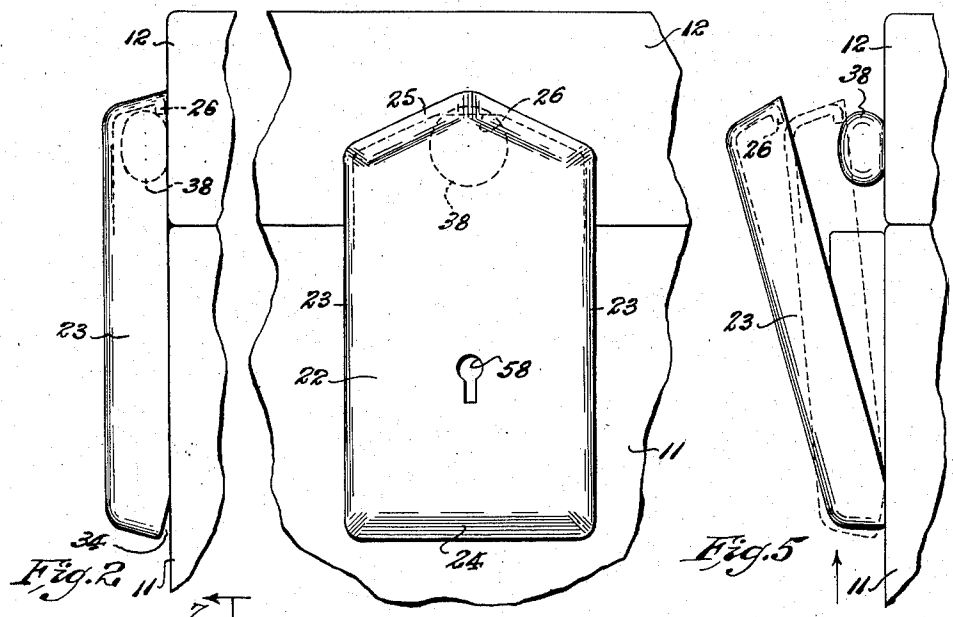


Fig. 2

Fig. 1

Fig. 5

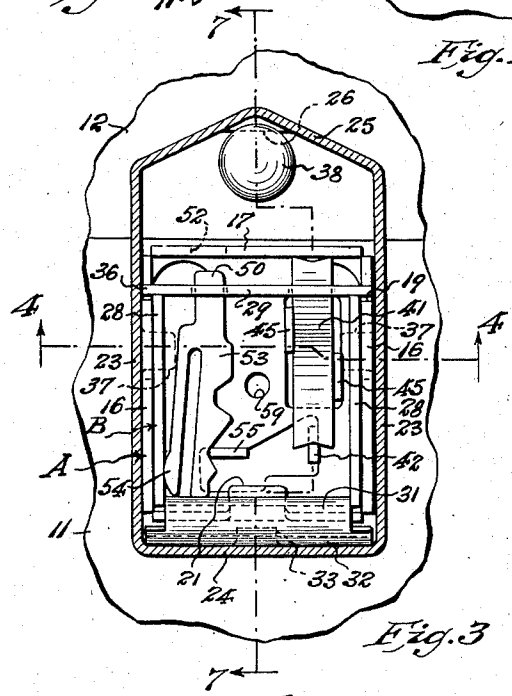


Fig. 3

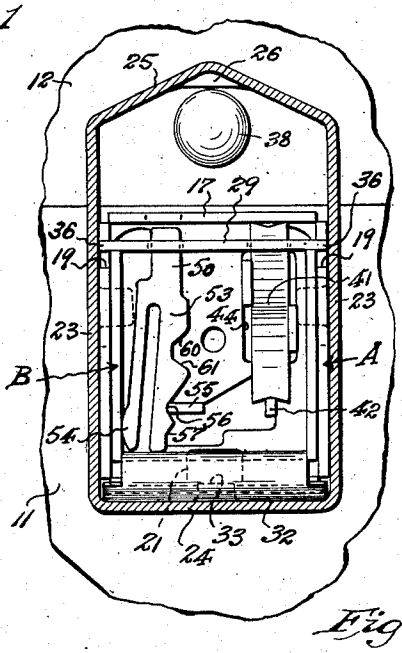


Fig. 6

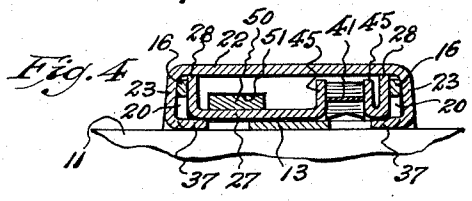


Fig. 4

INVENTOR.
Abraham Levine,
BY George D. Richards
Attorney

Jan. 14, 1958 A. LEVINE 2,819,602

LOCKABLE LATCHING DEVICE

Filed Sept. 29, 1955 2 Sheets-Sheet 2

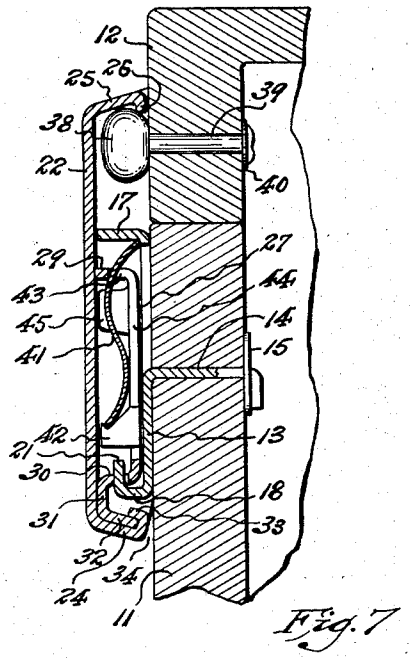


Fig. 7

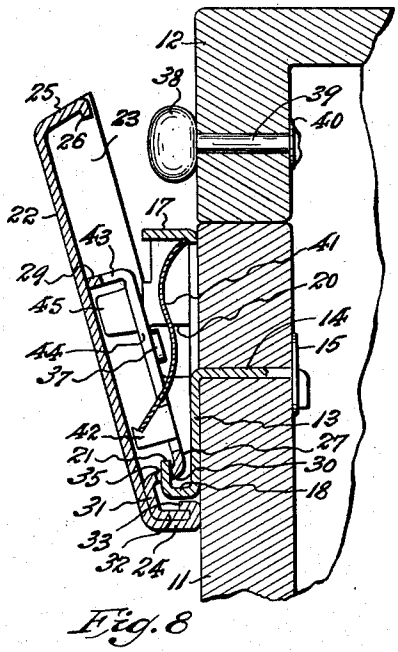


Fig. 8

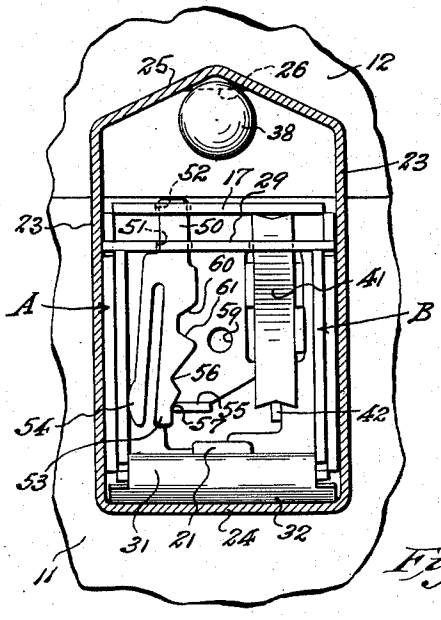


Fig. 9

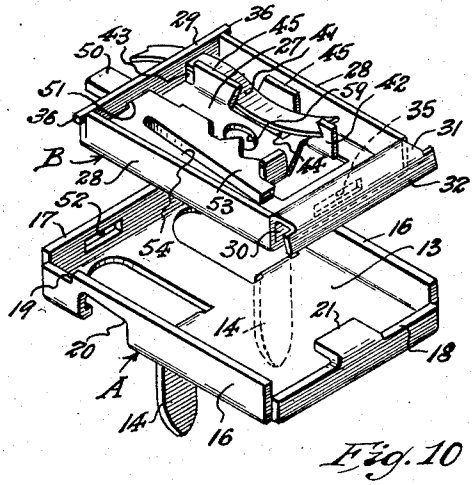


Fig. 10

INVENTOR.
Abraham Levine,
BY
George S. Richards
Attorney

United States Patent Office 2,819,602 Patented Jan. 14, 1958

2,819,602

LOCKABLE LATCHING DEVICE

Abraham Levine, Mendham, N. J.

Application September 29, 1955, Serial No. 537,475

4 Claims. (Cl. 70—74)

This invention relates to a novel construction of latching device, including means to lock the same against releasing manipulation, and adapted for application to a receptacle of the type having a cover or lid cooperative with its body section for closing the latter.

The invention has for an object to provide a latching device adapted to be affixed to the front wall of a receptacle so as to lap the front wall of the cover member of said receptacle in releasable engagement with an externally projecting keeper member with which the latter is provided; said latching device having a body section which is yieldably urged downward by spring means to its latching engagement with said keeper member, but is manually shiftable upwardly against the down thrust of said spring means, whereby to disengage the same from the keeper member; the spring means being additionally operative to outswing the upwardly shifted body section so as to externally clear the keeper member, and then, upon return of the body section to a down thrust position, to dispose the keeper member engaging end of the latter in externally abutting relation to said keeper member, subject to being inwardly snapped thereover into latched engagement therewith, when manually applied inswinging pressure is exerted against said body section.

The invention has for a further object to provide the latching device, characterized as above stated, with key actuatable bolt means operative to lock the body section of the device against releasing manipulation.

The above and other objects will be understood from a reading of the following detailed description of my invention in connection with the accompanying drawings, in which:

Fig. 1 is a front face view of the latching device according to this invention as disposed in its latching relation to a keeper member; Fig. 2 is a side elevational view of the same; Fig. 3 is a front face view of the same with its body shell in section so as to show the internal structure of the device; and Fig. 4 is a cross-sectional view, taken on line 4—4 in Fig. 3.

Fig. 5 is a side elevational view of the latching device showing by full lines its body section upwardly moved and outstrung to engage the keeper member, and by broken lines in downwardly moved position externally of the keeper member in released relation thereto; and Fig. 6 is a front face view of the latching device with its body shell in section and its body section upwardly shifted to disengage the keeper member.

Fig. 7 is a longitudinal sectional view taken on line 7—7 in Fig. 3, showing the latching device in latched relation to the keeper member; and Fig. 8 is a similar view, showing the latching device in released relation to the keeper member.

Fig. 9 is a view similar to that of Fig. 3, but showing the key actuated bolt moved to the locking position which prevents releasing manipulation of the device.

Fig. 10 is a perspective view of the supporting frame and the mechanical housing box of the body section, these parts being superposed in position for assembly.

Referring to the drawings, in which like characters of reference are applied to indicate corresponding parts, the reference character 11 indicates the front wall of a receptacle to be served by the latching device of this invention, and 12 the front wall of a separable cover member with which the receptacle is provided.

Adapted to be affixed to the outer face of the front wall 11 of the receptacle is the base frame A of the latching device. This base frame comprises a base plate 13, struck out from the body of which are anchoring prongs 14 which project rearwardly therefrom at a right angle to the plane thereof. These anchoring prongs 14 are adapted to pierce the receptacle front wall 11, so that their free ends can be clinched over against the inner face of said wall 11, thereby to affix the base frame to said wall. Preferably, said anchoring prongs 14 are passed through a washer 15, which overlies the inner face of said wall 11, before being clinched over in their base frame fastening relation to said wall. Although said prongs 14 provide a convenient and perhaps preferable means for fastening the base frame to the receptacle wall, it will be understood that any other suitable means may be utilized for such purpose. The base plate 13 is provided along its opposite longitudinal sides with upstanding side walls 16, at its upper end with an upstanding top end wall 17, and at its lower end with an upstanding bottom end wall 18 of reduced height. Adjacent to their upper ends, the outer edge portions of the side walls 16 are indented to provide stop shoulders 19, spaced downwardly from the top end wall 17. Said side walls 16 and the base plate 13 are cut away to provide suitably located clearance openings 20 for purposes subsequently herein explained. The bottom end wall 18 is provided with an angular hinging lug or tongue 21, which projects inwardly from the free edge thereof intermediate its ends.

The body section of the latching device comprises a rearwardly open body shell formed by a front face wall 22, side walls 23, a bottom end wall 24 and a top end wall 25. The top end wall 25 is provided with a centrally disposed catch lip 26 dependent therefrom in the plane of the open rear face of the body shell. Mounted within the lower interior of the body shell, with its open front opposed to the front face wall 22 of said body shell, is a hollow housing box B, within which operative parts of the latching device and the locking means therefor are contained, as will be later herein described. This housing box comprises a back plate 27 provided along its opposite longitudinal margins with upstanding side walls 28, at its upper end with an upstanding top end wall 29, and at its lower end with an upstanding bottom end wall 30. Extending downwardly from the bottom end wall 30 is an extension portion 31 which is disposed to lie in the plane of the open front of said housing box B. From the free edge of this extension portion 31 depends a coupling flange 32 which is disposed contiguous to the bottom end wall 24 of the body shell, and which is secured to the latter by a retainer lip 33 that projects from the margin of said bottom end wall 24 of the body shell over and around the free marginal edge of said coupling flange, thus affixing said housing box in coupled relation to the body shell so as to form a unitary part of the body section of the latching device. The bottom end wall 24 of the body shell is of reduced rearward extent, and the side walls 23 of said body shell, at the junctures thereof with said bottom end wall 24, are angularly cut back to provide clearance space 34 between the same and the receptacle front wall 11, whereby to accommodate outswinging movement of the body section of the latching device during operative manipulation thereof as subsequently herein described.

The external width of the housing box B substantially corresponds to the internal width of the base frame A,

so that the former is capable of being telescopically received within the latter. Said housing box B is also of less length than the length of the base frame A, so that the former is capable of limited longitudinal movement within the latter when assembled therewith. The bottom end wall 30 of the housing box B is provided with an opening or slot 35 which is engaged by the hinging lug or tongue 21 of the base frame A, when said housing box is assembled with the latter, whereby to provide a hinging connection between the bottom portion of body section of the latching device and the base frame, and which also allows longitudinal shift of the latching device relative to said base frame. The top end wall 29 of the housing B is preferably provided, at the ends thereof, with laterally projecting stop ears 36 for cooperation with the stop shoulder 19 of the base frame A, whereby to limit downwardly shifting movement of the body section of the latching device relative to the base frame A.

The external width of the base frame A substantially corresponds to the internal width of the body shell of the latching device, so that the latter can receive the former when the body shell is closed over the same. The base frame A is of substantially less length than the length of the body shell of the latching device, whereby the upper end portion of the latter extends freely beyond the upper end of the base frame A, so that the open rear face of said upper end portion of the body shell can lap the front wall 12 of the receptacle cover.

To further assure the connected unitary relation of the housing box B to the body shell of the latching device, the side walls 23 of said body shell are provided with clenching lugs 37, which are inturned to extend through the openings 20 of the base frame side walls 16, and beneath the back plate 27 of the housing box B, so as to embrace said housing box. Said openings 20 are so shaped as to provide clearance space between their margins and said clenching lugs 37 adapted to accommodate operative longitudinal and swinging movements of the latching device relative to the stationary base frame A.

Affixed to the front wall 12 of the receptacle cover, for external projection therefrom, is a keeper member 38 that is subject to engagement by the catch lip 26 of the body shell of the latching device, when the latter is moved to its latching position. Preferably said keeper member comprises a knob-like element of substantially spherical shape, the same having a rearwardly extending shank 39 to pierce the receptacle cover wall; the inner end of said shank being riveted over the latter, or an interposed washer 40, whereby to hold the keeper member in place.

Means is provided for yieldably exerting both a downward thrust against the latching device, whereby to releaseably hold the body shell thereof in latched relation to the keeper member 38, and an outswinging thrust against said latching device to move the same outwardly of the keeper member, when the body shell of the latching device is manually upwardly shifted to engage the catch-lip 26 from said keeper member. The means for such purposes comprises a reversely curved or S-shaped leaf spring 41 which is mounted in the housing box B. The lower or rearward end of said leaf spring is purchased against an upstanding thrust tongue 42 that is struck up out of the back plate 27 of the housing box B. The upper or forward end portion of said leaf spring 41 extends outwardly of the housing box B through an opening 43 in the top end wall 29 of the latter, which opening communicates with a clearance opening 44 formed in the back plate 27 of the housing box B beneath said spring. Struck up from opposite side margins of said clearance opening 44 are respective upstanding guard tongues 45 which border opposite sides of the spring 41, whereby to guard the same against lateral displacement from its operative assembled relation to the housing box B. The upper or forward end of said spring 41 is purchased against the upper end of the housing frame A, within the angle of the top end wall 17 and the base plate 13 of the latter.

When the latching device is swung inwardly against the front walls 11—12 of the receptacle, the catch-lip 26 will override the keeper member 38 so as to lap the rear side thereof in latched relation thereto (see Figs. 1, 2, 3 and 7). The spring 41, in such case, exerts a downwardly shifting longitudinal thrust against the latching device, which holds the latter in its downwardly moved position relative to the stationary base frame A.

To release the latching device from its above described latched engagement with the keeper member 38, manually exerted upward pressure is applied to the lower end of the latching device, whereby to bodily shift said latching device upwardly, whereby the catch-lip 26 is raised above the keeper member 38, and at the same time the housing box B is upwardly moved within the base frame A, thereby longitudinally contracting the spring 41 to increase its tension. Under these conditions, the spring exerts outswinging thrust against the latching device, which moves the latter to its outswung released relation to the keeper member 38 (see Figs. 5 and 8). After being so released, when manually applied upward pressure against the latching device is withdrawn, the down thrusting component of the tensional force of the spring will move the outswung latching device downward, thereby disposing its catch-lip 26 in externally opposed relation to the keeper member 38, thus freeing the receptacle cover for separation from the receptacle body.

When the receptacle cover is again closed upon the receptacle body, so as to oppose the keeper member 38 to the outswung latching device, the latter can be manually inswung to engage its catch-lip 26 with the front of the keeper member (see broken line showing in Fig. 5), whereafter continued application of inswinging pressure against the latching device will cause the catch-lip 26 to ride over the top and then behind the keeper member 38 into its latched engagement therewith; the latching device, as tensioned by its spring 41, readily yielding to such operation.

A key actuatable means is provided, which is operable to lock the latching device against releasing manipulation. This locking means comprises a longitudinal bolt 50 that is slidably supported within the housing box B to extend through an opening 51 in the top end wall 29 of the latter, and in opposition to a bolt engageable opening 52 with which the top end wall 17 of the base frame A is provided. The bolt 50 is provided with a tail-piece 53, including a spring arm 54 adapted to thrust against an adjacent side wall 28 of the housing box B, whereby to yieldably urge said tail-piece laterally into engagement with an upstanding stop post 55 that is struck up out of the back plate 27 of said housing box B. Provided in the margin of the tail-piece 53, which opposes said stop post 55, is an upper notch 56 and a lower notch 57, the former being operative to be engaged by the stop post 55, whereby to hold the bolt 50 in retracted, non-locking position, and the latter being operative to be engaged by the stop post 55, whereby to hold the bolt 50 in projected locking position, in engagement through the opening 52 of the top end wall 17 of the base frame 17.

The front face wall 22 of the body shell of the latching device is provided with a key hole 58 for admission of a bolt actuating key (not shown), and the back wall 27 of the housing box B is provided with a bearing opening 59 to receive and fulcrum the inserted end of a key. The tail-piece 53 is provided in its inner margin with a key reception notch shaped to form a key engageable shoulder 60 to receive turning thrust of an inserted key in direction to slide the bolt 50 to its locking position, and another key engageable shoulder 61 to receive turning thrust of an inserted key in direction to retract the bolt 50 to its non-locking or normal released position.

It will be understood that, when the bolt 50 is projected

to engage through the opening 52 in the end wall 17 of the base frame A (see Fig. 9), if the latching device is manually upwardly shifted, the same will be restrained by the bolt against outswinging movement into disengaged relation to the keeper member 38.

Although the provision of the lock bolt means will be found desirable in most cases, the same may be omitted in an embodiment of this invention desired to provide latching effect only.

Having now described my invention, I claim:

1. A latching device for a receptacle of the type having a body and a separable cover, said latching device comprising an outwardly open hollow base frame including a top end wall and a bottom end wall, said base frame being adapted to be affixed to the front wall of the receptacle below its cover, a keeper member adapted to be affixed to the front wall of the receptacle cover to project externally therefrom, a latching member including a rearwardly open body shell of greater length than the base frame, whereby the rearwardly open upper end portion of said body shell can lap the receptacle cover and its keeper member, the upper end of said body shell having an internal keeper member engageable catch-lip disposed substantially in the plane of its open rear face, a hollow housing box affixed to and within the lower end portion of said body shell, said housing box being of less length than the base frame so as to be longitudinally movable relative thereto, means to connect the lower end of the latching member to the lower end of the base frame for both longitudinal shifting movement and pivotal swinging movement relative to said base frame, said connecting means comprising a hinging tongue extending from the bottom end wall of the base frame, and said housing box having a bottom end wall provided with a slot through which said hinging tongue projects, and a longitudinally extending reversely curved spring having a rearwardly directed upper end to engage the upper end of the base frame and a forwardly directed lower end to engage the latching member at a point spaced longitudinally downward and laterally outward from the point of engagement of said spring with the base frame, whereby said spring is operative to yieldably down thrust the latching member relative to the base frame when the former is in swung to engage the keeper member, and is further operative to out swing said latching member to disengaged relation to the keeper member when said latching member is manually upwardly shifted relative to said base frame.

2. A latching device for a receptacle of the type having a body and a separable cover, said latching device comprising an outwardly open hollow base frame including a top end wall and a bottom end wall, said base frame being adapted to be affixed to the front wall of the receptacle below its cover, a keeper member adapted to be affixed to the front wall of the receptacle cover to project externally therefrom, a latching member including a rearwardly open body shell of greater length than the base frame, whereby the rearwardly open upper end portion of said body shell can lap the receptacle cover and its keeper member, the upper end of said body shell having an internal keeper member engageable catch-lip disposed substantially in the plane of its open rear face, a hollow housing box affixed to and within the lower end portion of said body shell, said housing box being adapted to normally nest within the base frame being of less length than the base frame so as to be longitudinally movable relative thereto, means to connect the lower end of the latching member to the lower end of the base frame for both longitudinal shifting movement and pivotal swinging movement relative to said base frame, said connecting means comprising a hinging tongue extending from the bottom end wall of the base frame, and said housing box having a bottom end wall provided with a slot through

which said hinging tongue projects, and a longitudinally extending reversely curved leaf spring mounted within the housing box, said spring having a rearwardly directed upper end and a forwardly directed lower end, said housing box having an upstanding thrust tongue engaged by said lower end of said spring, the upper end portion of said spring extending exteriorly from the housing box into purchased engagement with the top end wall of said base frame, so that said spring yieldably exerts both longitudinally downward and laterally forward thrust between the base frame and the latching member, whereby said spring is operative to yieldably down thrust the latching member relative to the base frame when the former is in swung to engage the keeper member, and is further operative to out swing said latching member to disengaged relation to the keeper member when said latching member is manually upwardly shifted relative to said base frame.

3. A latching device according to claim 2, including a key actuatable lock bolt slidably mounted in the housing box of the latching member for projection therefrom toward the top end wall of the base frame, said top end wall of the base frame having a bolt receiving opening engageable by the lock bolt when the same is shifted to a locking position which prevents out swinging keeper member disengaging movement of the latching member relative to the base frame, the lock bolt having key engageable means for shifting the same to and from its locking position; and said body shell of the latching member having a key hole to give an actuating key access to the lock bolt for operation thereof.

4. A latching device for a receptacle of the type having a body and a separable cover, said latching device comprising a base frame adapted to be affixed to the front wall of the receptacle body below its cover, a keeper member adapted to be affixed to the front wall of the receptacle cover to project externally therefrom, a latching member including a rearwardly open body shell of greater length than the base frame, whereby the rearwardly open upper end portion of said body shell can lap the receptacle cover and its keeper member, the upper end of said body shell having an internal keeper member engageable catch-lip disposed substantially in the plane of its open rear face, means to connect the lower end of said latching member to the lower end of the base frame for both longitudinal shifting movement and pivotal swinging movement relative to the base frame, a longitudinally extending reversely curved spring having a rearwardly directed upper end to engage the upper end of the base frame and a forwardly directed lower end to engage the latching member at a point spaced longitudinally downward and laterally outward from the point of engagement of said spring with the base frame, whereby said spring is operative to yieldably down thrust said latching member relative to the base frame when the former is in swung to engage the keeper member, and is further operative to out swing said latching member to disengaged relation to the keeper member when said latching member is manually upwardly shifted relative to said base frame, a key actuatable lock bolt slidably supported within the latching member, said lock bolt having key engageable means for shifting the same to and from its locking position, said base frame having means engageable by said lock bolt when the latter is moved to a locking position which prevents out swinging keeper member disengaging movement of the latching member relative to the base frame, and said body shell of the latching member having a key hole to give an actuating key access to the lock bolt for operation thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

1,122,211	Mann	Dec. 22, 1914
1,411,314	Thompson	Apr. 4, 1922
1,603,418	Scheider	Oct. 19, 1926