

Aug. 13, 1957

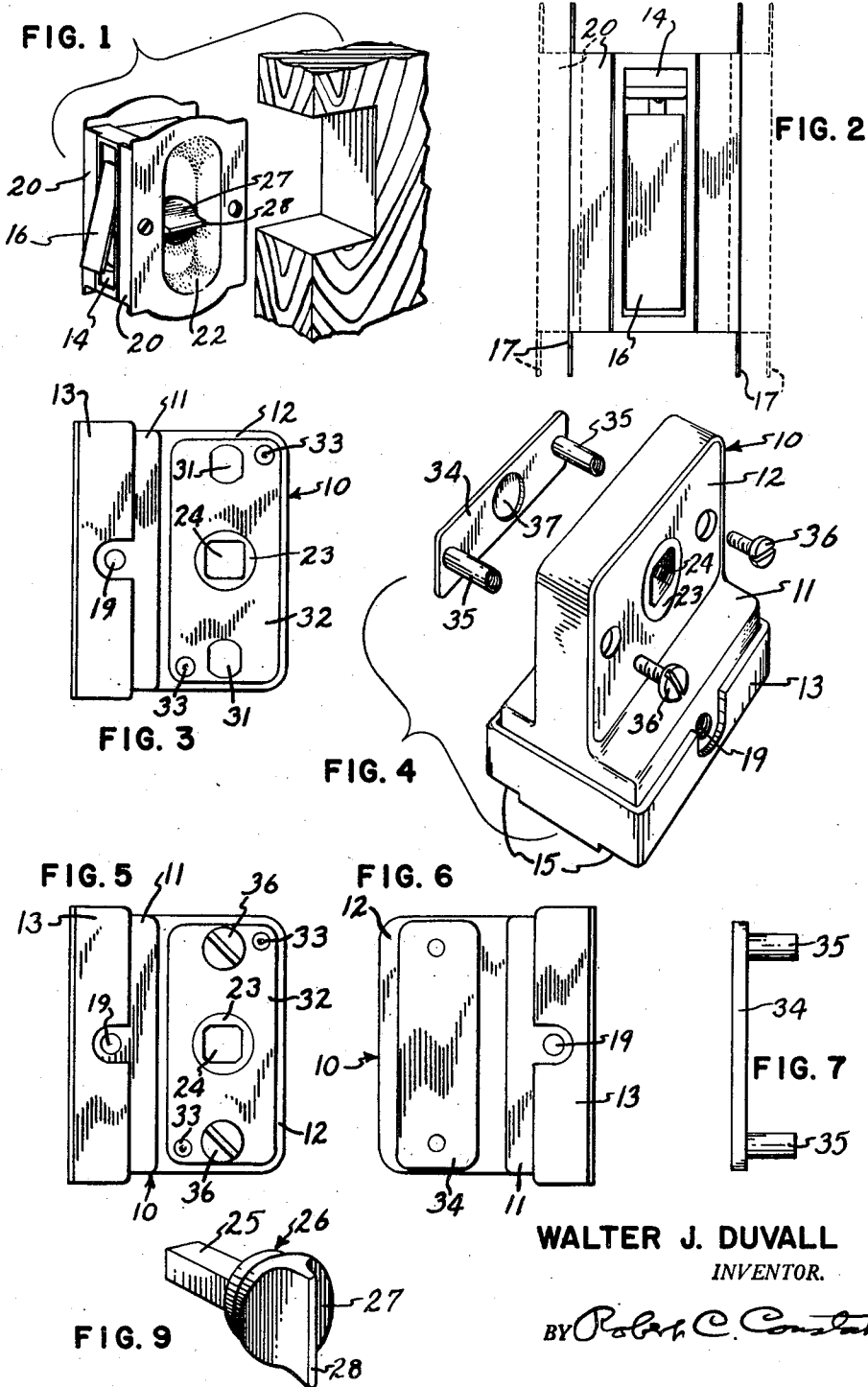
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2,802,685

CONVERTIBLE LOCK FOR SLIDING DOORS

Filed Nov. 23, 1954

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

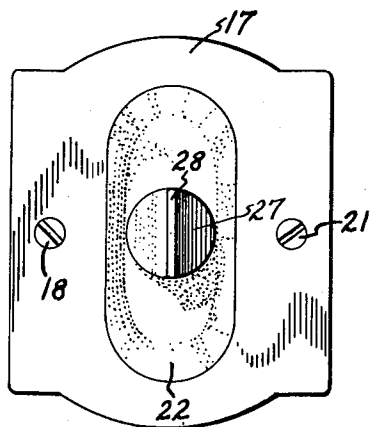


FIG. 8

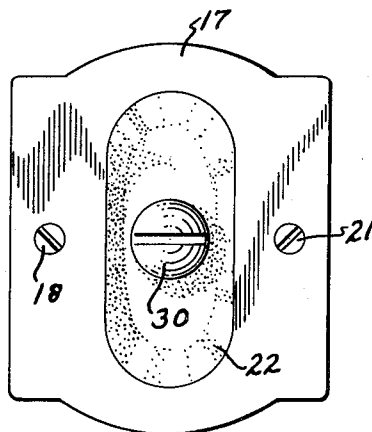


FIG. 10

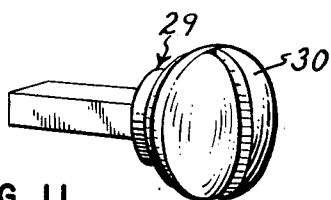


FIG. 11

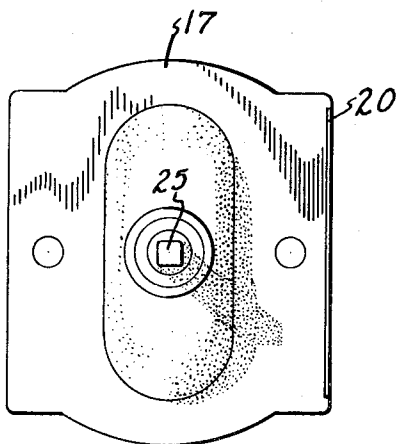


FIG. 13

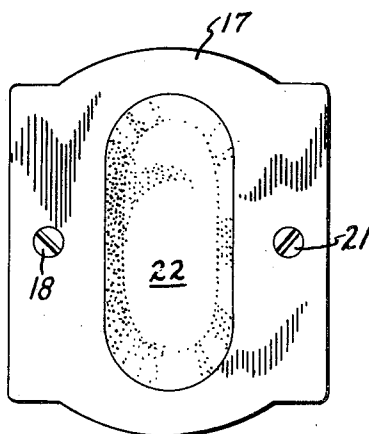


FIG. 12

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1

2,802,685

CONVERTIBLE LOCK FOR SLIDING DOORS

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Application November 23, 1954, Serial No. 470,758

5 Claims. (Cl. 292—337)

This invention relates to a convertible lock for sliding doors.

Since sliding doors are located in different parts of homes or apartments, the requirements regarding locks used upon them vary considerably. In some cases, it is desirable that a lock be provided which can be locked or unlocked from only one side of the door. In other cases, it is desirable that the lock be operated from both sides of the door. In still other uses, the lock should be manually operable from one side, with an emergency control available on the opposite side. A privacy lock for bathrooms is the best example of this type. In still other cases, it is desirable that the lock be operable from only one side and be tamper proof from the opposite side. This is necessary where one side of the door is exposed to the outside of the house or where the door divides two separately occupied rooms or apartments.

It is an object of my invention to provide a lock for sliding doors which is capable of satisfying all of these requirements, without any change whatsoever being made in the structure or functioning of the lock mechanism.

It is a further object of my invention to provide such a lock which is economical to manufacture and use, particularly because of its versatility and which therefore effects substantial economies for purchasers and users of locks.

Another object of my invention is to provide such a lock which can at any time either before or after installation be changed from any one of the foregoing types of locks to any one of the other types without difficulty and without replacement or change being made in the lock mechanism itself.

It is another object of my invention to provide a lock for sliding doors in which manually operable control means for the lock are disposed within one or both depressions which form a flush pull on the sides of the lock to provide a compact construction which will not interfere with normal use of the sliding door.

My invention also comprises such other objects, advantages and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawings a preferred embodiment of my invention, it should be understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawings, Fig. 1 is a perspective view of my lock and a notched door in which it is used;

Fig. 2 is a front elevational view of my lock, with the lateral movement of the side plates shown in dotted lines;

Fig. 3 is a side elevational view of the frame of my lock;

Fig. 4 is an exploded perspective view of the frame, theft plate and attaching screws;

Fig. 5 is a side view of the frame with theft plate installed;

Fig. 6 is an identical view taken from the opposite side;

Fig. 7 is a side view of the theft plate;

2

Fig. 8 is a side view of my lock with a manual control;

Fig. 9 is a perspective view of a manual control;

Fig. 10 is a side view of my lock with a privacy control;

Fig. 11 is a perspective view of a privacy control;

Fig. 12 is a side view of my lock with a plain side plate having no control;

Fig. 13 is an inside view of a side plate with a control installed.

A preferred embodiment which has been selected to illustrate my invention comprises a frame 10 having a wide front portion 11, a narrow rear portion 12 and a front cover 13. The front cover 13 and front portion 11 are provided with a centrally disposed opening 14, on each side of which is a flange 15. A pull arm 16 is pivotally mounted within the frame 10 so that it is normally held by gravity in a downswung position whereby it closes the lower part of opening 14. The pull arm 16 is adapted to be pivoted manually from the front edge of the door to a position wherein it projects outwardly from the door to provide an edge pull for removing the door from the wall.

A pair of side plates 17 are mounted on opposite sides of the frame 10 by a pair of screws 18 which extend through openings in side plates 17 into screw threaded openings 19 in the sides of the front portion 11 of frame 10. The sides of the front cover 13 are cut away to permit entry of the screws 18 into the openings 19.

Each of the side plates 17 is provided with an inwardly directed front flange 20, which overlies the corresponding flange 15 of the front cover 13 to a greater or less extent, depending upon the thickness of the door to which my lock is applied. Each of the side plates 17 is attached to the door by a screw 21 which extends through and opening in the plate into the door.

My lock is mounted in a notch which is cut in the front edge of a sliding door. The frame 10 is disposed within the notch, with the front of the cover 13 and the flanges 20 of side plates 17 being substantially flush with the front edge surface of the door. The screws 21 extend into the intact portion of the door rearwardly of the notch to attach the lock to the door. The side plates 17 overlap the top, bottom and rear edges of the notch to conceal the notch and frame.

Each of the side plates 17 is provided with a fingerhold depression 22 which extends longitudinally along the center thereof. The inwardly depressed portions of plate 17 forming depressions 22 extend into the notch adjacent the sides of the rear portion 12 of frame 10. The depressions 22 provide a pair of oppositely disposed flush pulls for controlling the movement of the sliding door after it has been partially moved out from the wall.

The upper part of opening 14 is adapted to receive a hook (not shown) which is mounted on the opposite side of the doorway from the door. The hook is adapted to be held by a locking mechanism which is disposed within frame 10. The locking mechanism is controlled by rotation of a circular shaft 23, which is rotatably mounted adjacent the center of the rear portion 12 of frame 10. The shaft 23 is provided with a square opening 24, which is adapted to receive the square shank of a control member.

The locking mechanism is so disposed that rotation of the shaft 23 one quarter turn will result in changing the lock from locked to unlocked condition or vice versa.

The side plates 17 are provided with a centrally disposed opening adjacent the center of the depressions 22 through which may extend the square shank 25 of a manually operable control 26. The shank 25 engages the square opening 24 so that rotation of the control 26 results in locking or unlocking the lock. The head 27 of the control 26 is disposed on the outside of the side plate 17. The head 27 is circular and includes a dia-

3

metrical ridge 28, with rounded portions on opposite sides thereof. In use, the finger and thumb of the user fit on the rounded portions on the opposite sides of ridge 28 and exert pressure upon the ridge 28 to rotate head 27 and thus rotate shank 25 to operate the lock. The position of the ridge 28 indicates to the user whether the door is locked or unlocked, the ridge being horizontal for one condition and vertical for the other. The user can thus tell the condition of the lock by merely glancing at the head 27.

It should be noted that the top of the ridge 28 is substantially flush with the normal surface of the side plates 17, the head 27 being disposed within the fingerhold depression 22. The depression 22 thus serves as a flush pull and also acts to house the control 26 so that it does not project from the side of the door and interfere with normal use of the door.

Instead of the control 26 described above, I may provide a privacy control 29 in which the head 30 simulates the head of a screw. Insertion of a screwdriver, coin or other object into the slot will operate the lock. The head 30 is again disposed within the fingerhold depression 22.

If no lock control is desired on one side of the door, a side plate 17 without an opening therein may be used. In cases where this blank side of the lock is exposed to outsiders, the lock must be made tamper proof. The rear portion 12 of frame 10 is provided with two round openings 31 which extend entirely through frame 10 and which are disposed above and below the shaft 23. Except for these three openings, the frame is closed on one side by an integral side portion and on the opposite side by a cover 32 which is held in place by a pair of pins 33.

My lock may be made tamper proof from either side by the installation of a rectangular theft plate, 34, which is provided adjacent its opposite ends with a pair of elongated shafts 35, which are adapted to extend through the openings 31, to a point just short of the opposite side of the rear portion 12 of frame 10. The shafts 35 are internally screw threaded to receive the shank of a pair of screws 36, which are mounted therein from the opposite side of rear portion 12. Theft plate 34 is provided with a centrally disposed circular depression 37 which faces the frame 10 and is adapted to permit the end of the shank 25 of control 26 to rotate without interference from theft plate 34.

If theft plate 34 is not used, the lock could easily be tampered with by merely removing the side plate 17 and inserting a screw driver or other object into the square opening 24 to operate the lock. Once theft plate 34 is installed, however, the person tampering encounters only the blank side of theft plate 34 and cannot gain access to or operate the lock mechanism. Since the screw heads are disposed on the opposite side of rear portion 12 of frame 10, they cannot be reached. It should also be noted that the theft plate 34 may be placed on either side of the lock, as desired.

It will be seen that I have thus provided an extremely versatile lock for sliding doors which may be easily installed, or after installation converted to a different style of operation without at any time changing the lock mechanism or the normal use of the door.

I claim:

1. A lock for sliding doors comprising a frame adapted to be mounted in a notch cut in the front edge portion of a slidable door, a locking mechanism disposed within said frame for holding the door in closed position, control means disposed within said frame for working said locking mechanism, said control means including a rotatable member having a non-circular opening extending transversely through said frame adjacent the mid-portion thereof, a pair of substantially circular openings extending through said frame on opposite sides of said non-circular opening, a theft plate substantially equal in size to the side of said locking mechanism, said theft plate

4

having a pair of elongated shafts adapted to fit within said circular openings from either side of said frame, said shafts having internal screw threading, a pair of screw threaded members adapted to fit within the screw threaded portions of said shafts from the opposite side of said frame to attach said theft plate to said frame, and a pair of side plates adapted to be attached to said frame and said door, said side plates being spaced outwardly from said frame a sufficient distance to permit said theft plate to be mounted between either of said side plates and said frame.

2. The subject matter of claim 1, each of said side plates having a fingerhold depression therein, a manually operable member disposed within the depression in the side plate opposite from said theft plate, said member having a non-circular shaft extending within the non-circular opening of the said locking mechanism so as to operate said mechanism, said manually operable member being disposed substantially entirely within said depression so as not to interfere with the operation of said door, the side plate adjacent said theft plate being blank.

3. A lock for sliding doors comprising a frame adapted to be mounted in the front edge portion of a slidable door, a locking mechanism disposed within said frame for holding the door in closed position, control means disposed within said frame for working said locking mechanism, said control means including a rotatable member having a control opening extending transversely through said frame, a pair of additional openings extending through said frame on opposite sides of said control opening, a theft plate substantially equal in size to the side of said locking mechanism, said theft plate having a pair of elongated shafts adapted to fit within said additional openings from either side of said frame, said shafts having internal screw threading, a pair of screw threaded members adapted to fit within the screw threaded portions of said shafts from the opposite side of said frame to attach said theft plate to said frame, and a pair of side plates adapted to be attached to said frame and said door, said side plates being spaced outwardly from said frame a sufficient distance to permit said theft plate to be mounted between either of said side plates and said frame.

4. A lock for sliding doors comprising a frame adapted to be mounted in the front edge portion of a slidable door, a locking mechanism disposed within said frame for holding the door in closed position, control means disposed within said frame for working said locking mechanism, said control means including an operating member having a control opening extending through said frame, a pair of additional openings extending through said frame on opposite sides of said control opening, a theft plate adapted to fit over said control opening, said theft plate having a pair of elongated shafts adapted to fit within said additional openings from either side of said frame, said shafts having internal screw threading, and a pair of screw threaded members adapted to fit within the screw threaded portions of said shafts from the opposite side of said frame to attach said theft plate to said frame.

5. A lock for sliding doors comprising a frame adapted to be mounted in the front edge portion of a slidable door, a locking mechanism disposed within said frame for holding the door in closed position, control means disposed within said frame for working said locking mechanism, a theft plate adapted to be attached to one side of said frame so as to fit over and prevent access to said control means, said frame having at least one opening extending through said frame and adjacent to said control means, said theft plate having at least one elongated shaft adapted to fit within said opening from either side of said frame, said shaft having internal screw threading, at least one screw threaded member adapted to fit within the screw threaded portion of said shaft from the opposite side of said frame to attach said theft plate to said frame, and a pair of side plates adapted to be attached to said frame and said door, said side plates being spaced out-

wardly from said frame a sufficient distance to permit said theft plate to be mounted between either of said side plates and said frame, each of said side plates having a fingerhold depression therein, a manually operable member disposed within the depression in the side plate opposite from said theft plate, said member having means connected with said locking mechanism so as to operate said mechanism, said manually operable member being disposed substantially entirely within said depression so as not to interfere with the operation of said door, the side plate adjacent said theft plate being blank.

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