March 4, 1958 P. A. MARZILLIER 2,825,219

DOOR LATCH AND RECESSED OPERATOR

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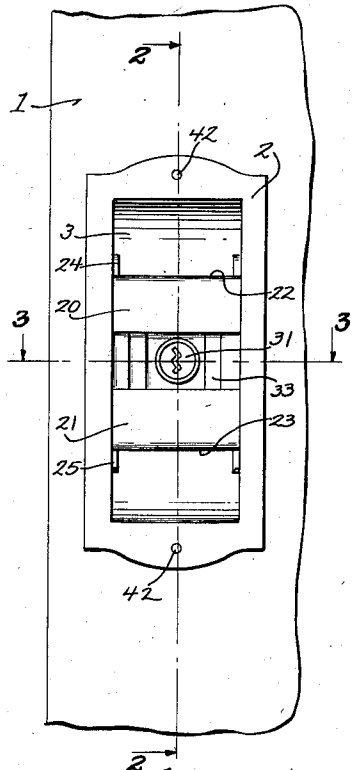


Fig. 1

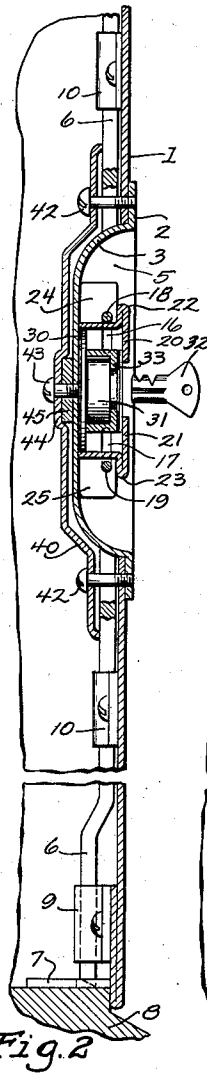


Fig. 2

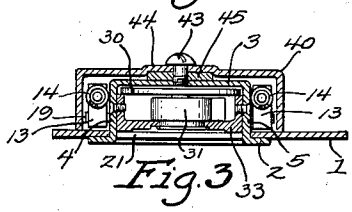


Fig. 3

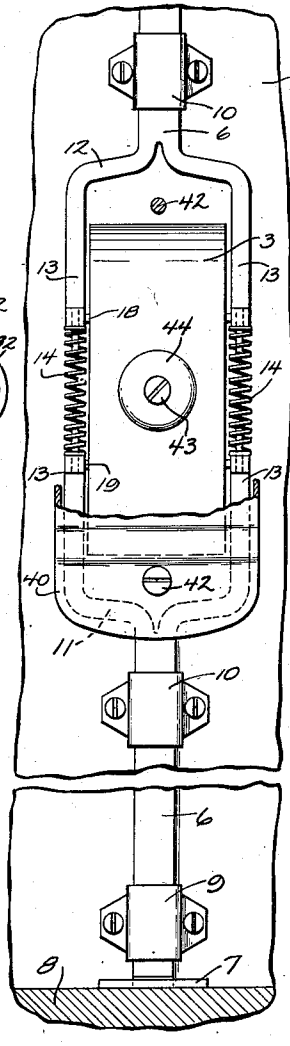


Fig. 4

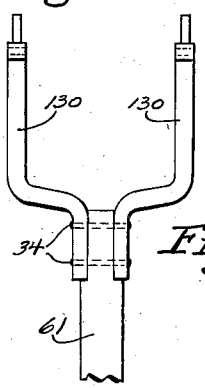


Fig. 5

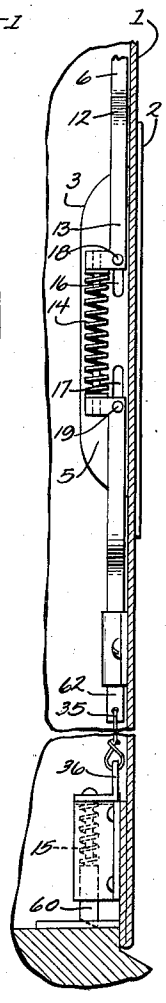


Fig. 6

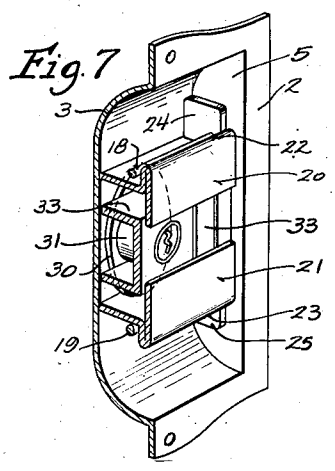


Fig. 7

INVENTOR.
PAUL A. MARZILLIER
BY
Wheeler, Wheeler & Wheeler
ATTORNEYS

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DOOR LATCH AND RECESSED OPERATOR

Paul A. Marzillier, Milwaukee, Wis.

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9 Claims. (Cl. 70—146)

This invention relates to a recessed door latch operator. It is particularly adapted for use on flush face doors, such, for example, as locker doors where it is desirable to avoid having any projecting handle or lock mechanism.

In the instant device, one or more bolts engageable with the door jamb at opposite sides of the door opening (usually at top and bottom) are slidably mounted on the interior of the door face and connected with manually operable slides disposed in a recessed fitting mounted on the door face. The bolts are normally engaged with strike plates on the jamb and are retractable when the slides are manually urged toward each other within the recess.

The arrangement makes possible an extremely simple and effective lock which includes a key-operated stop member of elongated form which, in one position, precludes the approach of the slides for retraction of the bolts and, in another position, permits the slides to have the relative movement required for bolt retraction.

In the preferred construction, the slides carry cross pins which project through the side walls of the recessed fitting on the face of the door to engage yokes having arms laterally adjacent the fitting within the door, the yokes being biased apart toward positions in which the bolts respectively engaged therewith are extended to door locking positions.

In the drawing:

Fig. 1 is a fragmentary front elevation of a door face provided with a latch operator embodying the invention.

Fig. 2 is a view on an enlarged scale taken in section on line 2—2 of Fig. 1.

Fig. 3 is a view on an enlarged scale taken on line 3—3 of Fig. 1.

Fig. 4 is a view on an enlarged scale showing in rear elevation the latch operator of Fig. 1.

Fig. 5 is a fragmentary detail view in rear elevation showing a slightly modified type of connection between the yoke elements and the latch bolt.

Fig. 6 is a fragmentary detail view showing a further modified connection between a yoke element and latch bolt.

Fig. 7 is a fragmentary detail view in perspective and section showing the slide and lock.

It is broadly immaterial whether the door face 1 constitutes the whole door, as in a locker, or whether it is merely the front ply of a door of greater thickness. The recessed fitting 2 comprises an escutcheon plate applied to the panel 1 around an opening therein into which the inwardly embossed wall 3 extends in the manner best shown in Fig. 2 and Fig. 3. By comparing Fig. 2 and Fig. 3, it will be noted that the fitting comprises parallel side wall portions 4 and 5, the rear wall 3 curving outwardly to the escutcheon plate 2 at its ends.

The door is provided with one or more latch bolts 6 normally engaged in apertured striker plates 7 at opposite sides of the door jamb 8, usually at the top and

bottom of the door opening. The bolt or bolts may be guided for reciprocation in bearing housings 9 and 10 mounted on the rear face of the door panel 1. It will be understood that the structure at the top of the door may substantially duplicate that shown at the bottom of the door in Figs. 2 and 4.

Beyond the bearing housings 10, the bolt operators are bifurcated to comprise yokes 11 and 12 respectively, the arms 13 of which extend at opposite sides of the embossed portion of the recessed fitting 2 in the manner clearly shown in rear elevation in Fig. 4. In any desired manner, the bolts are biased to seat in their respective latch or striker plates 7. Compression springs 14 may be incorporated between the ends of the arms 13 as shown in Fig. 4 or the bolts may be individually provided with biasing springs as indicated at 15 for the bolt 60 in Fig. 6.

The side walls 4 and 5 of the embossed pocket of recessed fitting 2 have slots 16, 17 in which there are disposed pins 18 and 19 spanning the fitting and projecting laterally therefrom. The ends of these pins are connected, as shown in Figs. 4 and 6, with the respective arms 13 of yokes 11 and 12. Within the recess of fitting 2 are slides 20 and 21 respectively having overhanging finger grip portions 22 and 23 and lateral bearing plates 24 and 25 through which the pins 18 and 19 extend for movement with the slides. The bearing plates 24 and 25 of the respective slides bear on the side wall portions 4 and 5 of the recess embossed in the fitting 2.

Engagement of the grip portions 22 and 23 of the respective slides between the thumb and finger of the operator's hand, and exertion of pressure on the slides tending to effect relative movement of the slides toward each other, will serve to retract the respective latch bolts from their striker plates or keepers to permit the door to be open. The overhang of the manually engageable lips 22 and 23 of the respective slides gives the operator a sufficient control of the door so that the slides are used as handles to pull the door open when the latch bolts have been retracted.

Between the slides is a lock for controlling their movement. While the lock may take any desired form, the mechanism is such as to permit of the use of an extremely simple locking cam 30 which, in the preferred construction illustrated, has elongated elliptical form and is disposed between the two manually operable slides 20 and 21. When its greatest length is interposed between the slides, as indicated in Figs. 2 and 7, it precludes relative movement of either slide toward the other thereby maintaining the door locked. When turned to a position in which its greater dimension is transverse, the shorter dimension of the cam is presented to the slides, leaving ample clearance for the movement of both of them to retract their respective latch bolts. In the very simple device illustrated, the cam is pivoted for oscillation by mounting it to a lock cylinder 31 slotted to receive the key 32 and rotatably guided in the aperture of a channel member 33 as clearly shown in Figs. 3 and 7. Lock housing member 33 transversely spans the recess of fitting 2 and is screwed to side wall portions 4 and 5 thereof as shown in Fig. 3. It will be understood that the present invention is not concerned with locks per se. Consequently, any other type of lock may be substituted where greater protection is desired. In any case, the lock will preferably include a cylinder connected with stop means such as cam 30, which, upon rotation of the cylinder, will limit the movement of one or both of the bolt actuating slides.

If desired, the yoke arms 130 may be made separately from the bolt actuator 61 and connected thereto by cross pins 34, as suggested in Fig. 5, this being particularly

desirable where the latch bolt is at a considerable distance from the recessed fitting in which the slides operate.

Another arrangement suitable for remote actuation of the latch bolt is suggested in Fig. 6, wherein I have disclosed a flexible cable **35** extending from the actuator **62** to an angle **36** connected with the upper end of the bolt for retracting it against the bias of its individual spring **15**.

The operating mechanism of the lock may, if desired, be enclosed within housing **40** connected at the rear of panel **1**, its use being optional. In the instant device, the housing **40** is connected through the door panel **1** to the escutcheon plate of fitting **2** by means of screws **42** and it may also be connected by a central screw at 43 to the back wall **3** of recessed fitting **2** immediately at the rear of cam **30**. The boss **44** surrounding screw 43 accommodates a washer **45** as shown in Fig. 2 and Fig. 3 to rigidify structure behind the cam.

I claim:

1. The combination with a door panel having an apertured face wall and a rearwardly offset wall behind said aperture and forming a recess in said face wall, opposed finger grips in said recess, at least one of which constitutes a slide moveable to and from the other, of a latch bolt for the door connected with said slide for movement therewith between door locking and unlocking positions and means for guiding said bolt, said latch bolt having yoke arms connected with it and disposed on opposite sides of the recess, the finger grip constituting a slide having means projecting laterally beyond the recess and connected with said yoke arms as a means of transmitting motion from the slide to the latch bolt, said yoke arms being disposed between the plane of the panel face and the plane of the offset wall whereby substantially the full depth of the recess is available for finger grip manipulation and the yoke arms are offset laterally from the recess.

2. In a locker door having a retractable latch bolt provided with means biasing said bolt toward a normally advanced door locking position, a recessed fitting having an escutcheon plate substantially flush with the face of the door, a wall defining a rearwardly recessed pocket within the door face, a pair of grip elements disposed within the pocket and manually engageable to constitute a handle for opening the door, at least one of said grips comprising a slide movable to and from the other of said grip elements and having yoke means comprising arms laterally embracing said pocket, the latch bolt having an actuator comprising a transverse bar behind the door face having its ends projecting laterally through the fitting, the fitting being provided with slots in which the bar ends are movable, said ends being connected with said yoke arms whereby the actuator is adapted to receive motion from said movable grip element for the retraction of said bolt in the relative approach of said grip elements; said wall constituting the rearmost element of the bolt actuator whereby substantially the entire depth of the pocket is available for grip manipulation and none of the moving mechanism protrudes behind said wall to interfere with locker contents.

3. The device of claim 2 in further combination with a key-operated detent rotatably mounted on the door and having a radially projecting part movable into and from the path of the movable grip element for the locking and release of said latch bolt.

4. In a door having oppositely movable latch bolts and means biasing said bolts toward normally extended door-locking positions, said door having a face panel provided with an opening between said bolts, a recess fitting including an escutcheon plate attached to said panel about the opening, a wall rearwardly offset from said plate to define a recessed pocket extending into the opening and spaced side walls laterally defining said pocket, slides disposed within the pocket and having means projecting laterally through the side walls thereof, arms engaged by said laterally projecting means and disposed along said side walls substantially between the planes occupied by the door panel and rearwardly offset wall, said arms being respectively connected with said latch bolts, and means guiding said arms for movement in bolt retracting and advancing directions, the approach of said slides relatively to each other being adapted to retract the respective bolts for the unlocking of the door and the separation of said slides permitting the advance of said bolts for the latching of the door.

5. The device of claim 4 in which each of said slides comprises an overhanging lip spaced from the back of said pocket and substantially at a right angle to said slides to accommodate the operator's fingers, whereby said slides may serve as a handle for pulling the door open when the respective bolts are retracted.

6. The device of claim 4 in further combination with a locking cam elongated in one direction and means mounting said cam for oscillation between said slides, said cam having key controlled means for its oscillation, the cam being adapted, when positioned with its greatest length extending toward said slides, to arrest relative movement of the slides toward each other in bolt retracting directions.

7. A device of the character described comprising the combination with an escutcheon plate and means providing a latch operator housing affording a recess opening to the front of the plate and having laterally spaced side walls and a rear wall, of slides reciprocably mounted within the housing along said side walls, pins connected with the respective slides and for which said side walls are provided with slots accommodating movement of the slides to and from each other, yokes mounted at the rear of the plate and bifurcated to provide spaced arms disposed at opposite sides of the housing and engaged with said pins, said yokes comprising latch bolt operators, said yoke arms being disposed between the planes occupied by said plate and said rear wall whereby substantially the full depth of said housing is available for slide manipulation and none of the moving mechanism projects behind said rear wall to increase the depth of the device.

8. The device of claim 7 in further combination with a cam mounted for oscillation between said slides and having terminal portions movable in the course of such oscillation to and from the paths of movement of the slides toward each other.

9. The device of claim 8 in further combination with a web spanning the opening of said housing and provided with a key-receiving opening, said cam having a key-receiving portion whereby it can be oscillated by a key inserted through said opening.

References Cited in the file of this patent

UNITED STATES PATENTS

907,493	Gunther	Dec. 22, 1908
972,949	Vanderveld	Oct. 18, 1910
981,843	Davis	Jan. 17, 1911

FOREIGN PATENTS

340,815	France	July 29, 1904