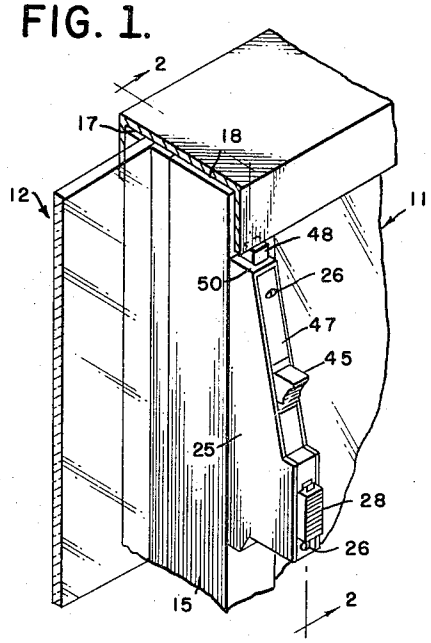
Oct. 31, 1967 N. C. WALBERG ET AL 3,350,126

LOCK FOR SLIDING DOORS

Filed Dec. 8, 1965

FIG. 1.



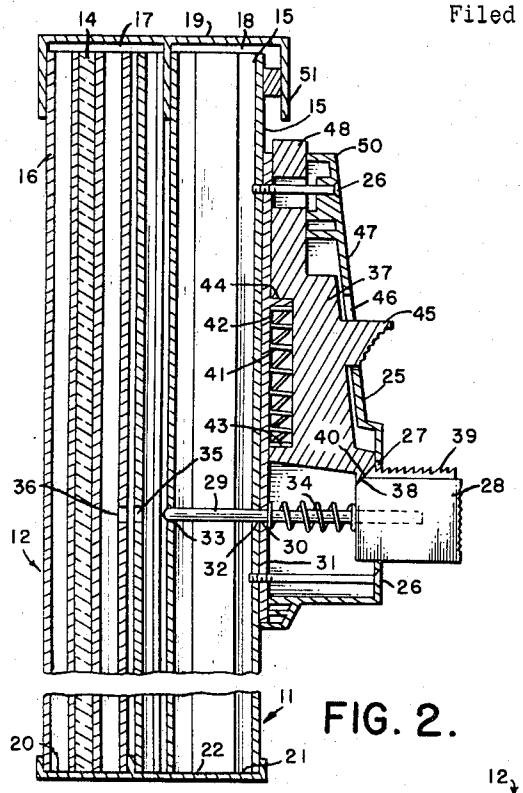


FIG. 2.

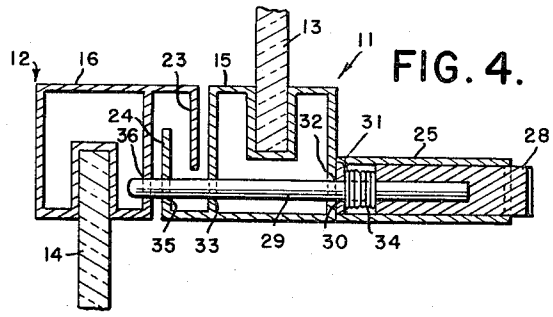


FIG. 4.

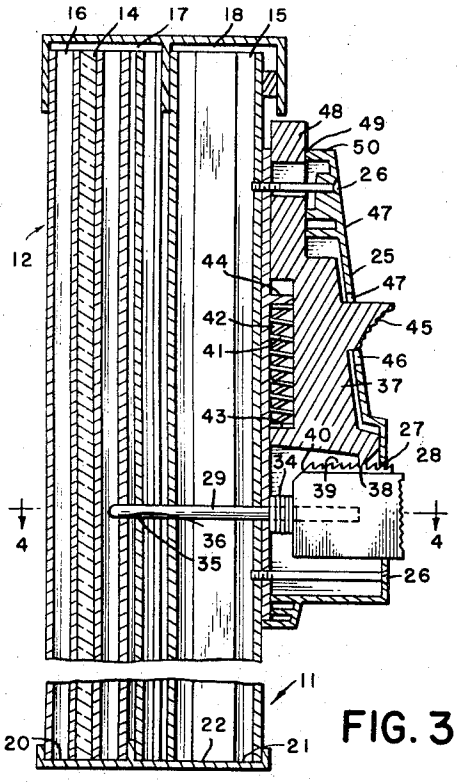


FIG. 3.

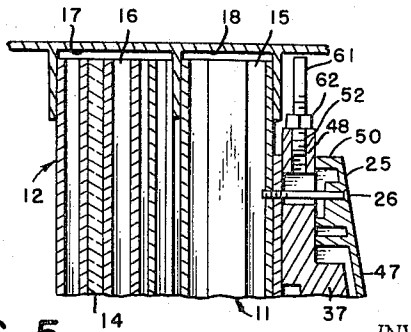


FIG. 5.

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LOCK FOR SLIDING DOORS

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ABSTRACT OF THE DISCLOSURE

The invention provides the combination of a locking device and a pair of overlapping panel members of the type that slides on parallel tracks. The locking device has a hollow body attached to one of the panels with an opening through its front wall. A slide block is mounted in the opening for horizontal slidable movement. A rigid pin is secured to the inner side of the block and it is adapted to project through a first aperture in the adjacent portion of the panel to which the block is attached. A spring urges the block to a retracted position in the aperture. The other panel also has an aperture alignable with the first aperture into which the pin can be protracted against the action of the spring. Releasable spring biased pawl and ratchet means are provided for holding the block in its protracted position.

This invention relates to locks, and it is more particularly concerned with devices for securing sliding doors, especially metal framed doors, such as aluminum framed glass doors, sometimes referred to as patio doors, in a closed position.

An object of the invention is the provision of such a locking device which is especially adapted to sliding patio doors and is effective to lock adjacent door panels together so that neither can be opened from the exterior side.

Another object is the provision of means for securing sliding door panels in a position to resist unauthorized entry by prying the doors away from the channels in which they are slidably mounted.

A further object is the provision of a lock of the type mentioned which is relatively simple in construction but sturdy and reliable in use and which is not difficult to manufacture.

These and still further objects, advantages and features of the invention will appear more fully from the following description considered with the accompanying drawing.

In the drawing:

FIG. 1 is an isometric view of an embodiment of the invention in its open position shown attached to a patio-type sliding door, the door and pertinent members being shown fragmentarily.

FIG. 2 is a sectional view along the line 2—2, FIG. 1, partly broken away, with the lock in its open position.

FIG. 3 is a view similar to FIG. 2 with the lock in its closed position.

FIG. 4 is a sectional view along the line 4—4 of FIG. 3.

FIG. 5 is a fragmentary view of the upper part of a modified form of the embodiment.

Referring to the drawing with more particularity, the embodiment is illustrated in relation to a conventional form of sliding door having an inner sliding panel **11** and an outer sliding panel **12**. Each panel comprises a sheet of glass **13** and **14** mounted in a metal frame **15** and **16**, respectively. The panels are slidably mounted in inverted channel tracks **17** and **18**, respectively, of an

upper frame head **19** and in corresponding channel tracks **20** and **21** of a lower frame base **22**.

Integrally associated with the inner edges of the door frames are interlocking stiles **23** and **24** which provide a form of closure for the door panels in the closed position of this door.

The locking device comprises a housing in the form of a hollow body **25** which is attached by means of bolts or screws **26** to the door frame **15** of the inner door panel **11** adjacent to its inner edge, substantially as shown.

The body **25** has an opening **27** through its front side in which a block member **28** is mounted for horizontal slidable movement. Firmly secured to the inner side of the block is a steel pin **29** which projects horizontally through an aperture **30** in the rear wall **31** of the body **25** and then in aligned apertures **32** and **33** in adjacent parts of the door frame **15**.

A tensioned coil spring **34** is carried by the pin **28** between the back side of the block **28** and the inner face of the rear wall **31**, the purpose of which is to urge the block to a retracted position in the opening **27**.

Aligned with the longitudinal axis of the pin **29** is an aperture **35** in the stile **24** and aperture **36** in the door frame **16** of the outer door panel **12** when the panels are in their closed positions.

When the block **28** is moved from its retracted position, as shown in FIG. 2, to a protracted position shown in FIGS. 3 and 4, the pin **29** enters the aperture **35** and then the aperture **36** to lock the two panels together. Moving thus from the retracted to the protracted positions causes the coil spring **34** to become compressed so that the block in its protracted position is biased to its retracted position by the spring. Accordingly, to retain the block and pin in the locked positions against the resilient action of the spring, a detent in the form of a member **37** is mounted for limited vertical slidable movement on the inside of the hollow body **25** above the block **28**. The lower end of the member **37** is fashioned with a downwardly projecting pawl **38** which is adapted to engage the teeth of a rack **39** along the top side of the block.

The forward upper corner of the block is shaped to provide a camming surface **40** for engaging a shoulder on one side of the pawl **38** when the block is in its retracted position as shown in FIG. 2.

The member **37** is biased to its downward position by a tensioned vertical coil spring **41** mounted in a recess **42** at the rear of the block. The lower end of the spring **41** abuts the bottom **43** of the recess and the upper end abuts a shelf **44** integral with the back wall of the housing and projects inside the recess **42** as shown.

Integral with the member **37** is a finger **45** which projects through an opening **46** in the front wall **47** and by means of which the member **36** can be moved manually up and down.

The upper end of the member **36** has an extension **48** which projects through an opening **49** in the top wall **50** of the housing. This extension is adapted to abut, or nearly abut, an overhanging member **51** of the frame head **19** so as to hold the door frames in vertical position relative to the frame head and thereby resist entry should one attempt to do so by prying upward with a tool, such as a crow bar.

In the modified form of FIG. 5, the extension **48** is provided with a vertical threaded aperture **52** in which an abutment pin **61** is mounted and held in selected positions of adjustment by a nut **62**. This provides a form of adjustable extension for special constructions,

as shown, such as where no overhanging member **51** is provided on the frame head.

The lock is actuated to its locked position simply by pushing the block **28** from the position shown in FIG. 2 to the position shown in FIG. 3. The lock is released by simply moving the finger **45** upward to disengage the pawl **38** from the rack, whereupon the spring **34** moves the block **28** to its retracted position.

We claim:

1. A locking device for a pair of adjacent overlapping slide track panels comprising a vertically elongated housing, means for securing the housing to one of the panels, said housing having an opening through its outer wall, a block member mounted in the bottom of the housing and projecting through said opening for horizontal movement between open and closed positions of the locking device, a rigid pin secured to the block and projecting through an aperture of the inner side of the housing, a spring within the housing urging the block and pin to a retracted position, a vertical slide within the housing having an undercut slant edge in contact with a corresponding parallel slant edge of the block in the retracted position of the block, spring means urging the slide downwardly to a position of engagement with the block, rack teeth carried by the block, a pawl secured to said vertical slide for engaging the rack in an elevated position of the vertical slide, a finger integral with and projecting outwardly from said vertical slide, said housing having a vertically enlarged opening through which the finger projects and in which it is movable to permit manual engagement and vertical actuation thereof, said vertical slide having an extension at its upper end passing through an opening in the top of the housing, said extension being sufficiently long to be juxtaposed in relation to a downwardly facing stationary member when the vertical slide is in its uppermost position.

2. A locking device as defined by claim **1** in which the length of the vertical extension is adjustable.

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