C. W. OBERT.

LOCKING BOLT.

APPLICATION FILED JAN. 27, 1909.

960,386. Patented June 7, 1910.

Fig: 1

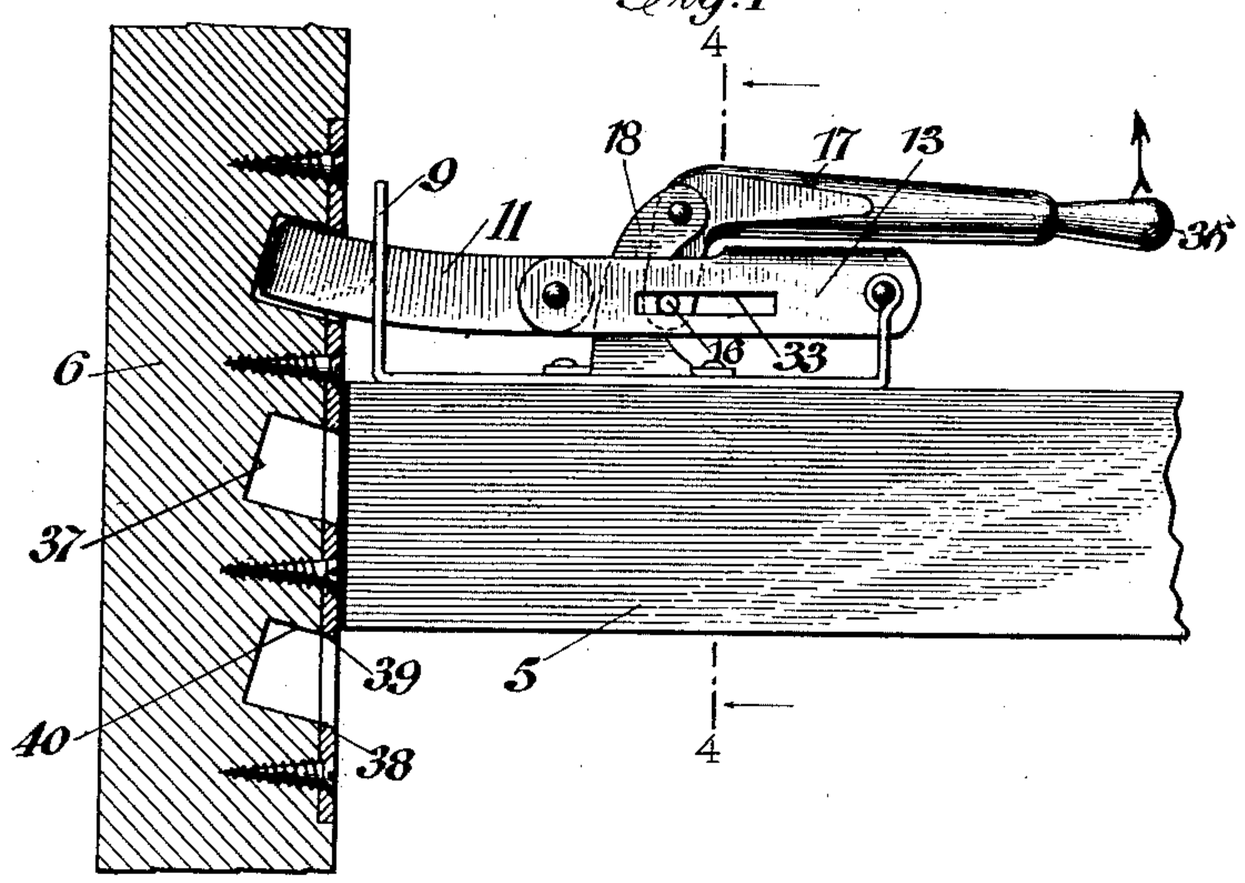



Fig: 2

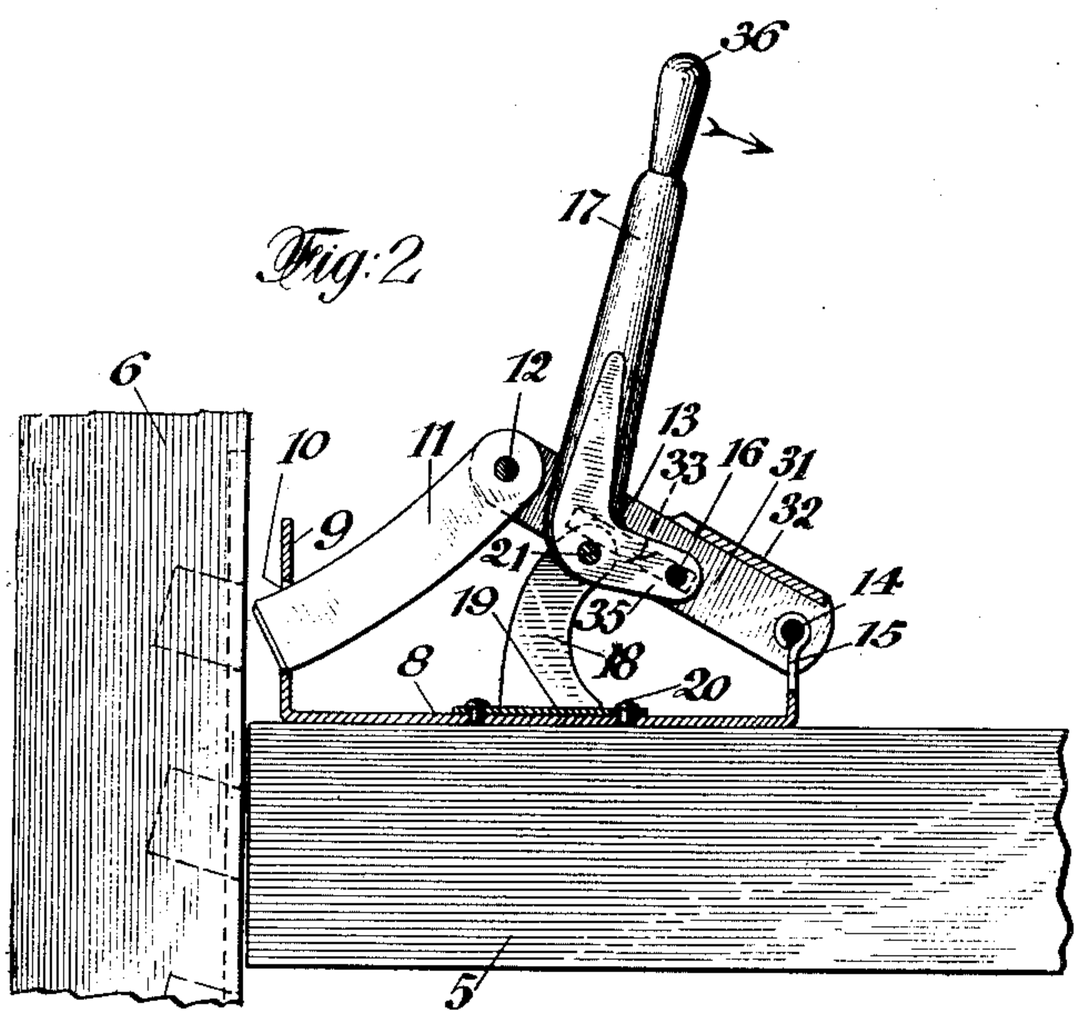



Fig: 4

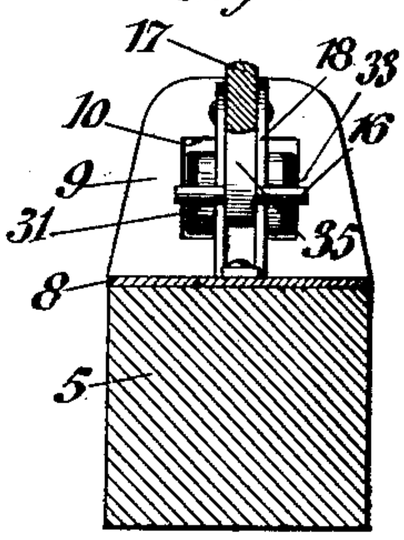
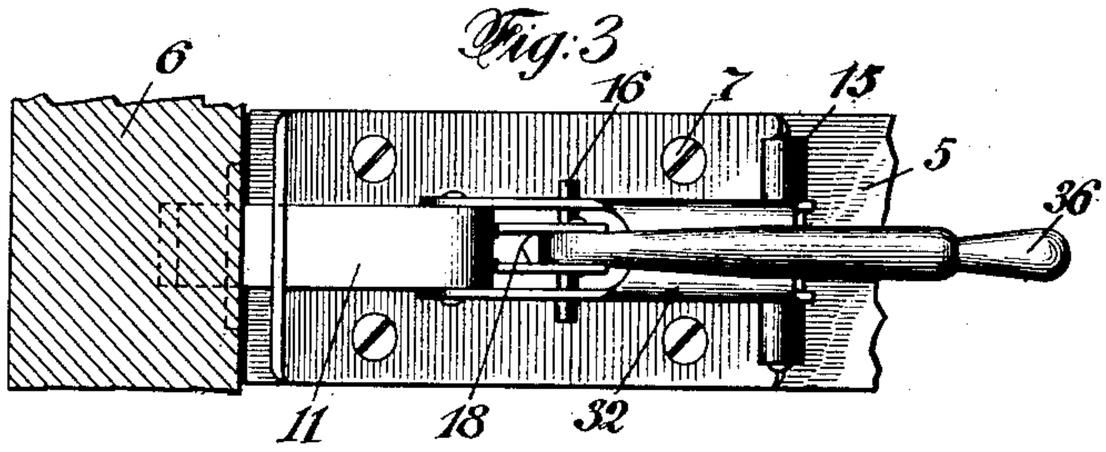



Fig: 3




Witnesses:
John J. Kittel
M. D. Avidon

Inventor
Casin W. Obert
By his Attorneys Goepel & Goepel.

# UNITED STATES PATENT OFFICE.

CASIN W. OBERT, OF NEW YORK, N. Y.

## LOCKING-BOLT.

960,386. Specification of Letters Patent. Patented June 7, 1910.

Application filed January 27, 1909. Serial No. 474,454.

*To all whom it may concern:*

Be it known that I, CASIN W. OBERT, a citizen of the United States of America, residing in New York, in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Locking-Bolts, of which the following is a specification.

This invention relates to locking-bolts, and has for its object to provide a locking-bolt which prevents the rattling of the parts to which it is applied, and which secures the parts against unauthorized tampering.

For this purpose, my invention consists of an improved locking-bolt which comprises a curved bolt and a toggle action means acting on the bolt, the curved bolt having the function of coöperating with a plate, the recesses of which it engages, so as to cause a clamping action therewith, and the toggle action has the function of preventing the unauthorized movement of the bolt after it has been placed in its locked position.

In the accompanying drawing forming part of this specification, in which the same reference characters denote the same parts throughout the views, Figure 1 is a side-elevation of a locking-bolt constructed according to the invention, the bolt being shown as applied to a supporting member and in locked position, Fig. 2 is a view similar to Fig. 1, but in unlocked position and partly in section with parts removed, so as to be able to see the manner of operation more clearly, Fig. 3 is a top plan-view of Fig. 1, and Fig. 4 is a vertical transverse-section taken on line 4—4 of Fig. 1.

Referring to the drawings, my improved locking-bolt consists of a curved bolt-head 11 and toggle action means, which coöperate therewith to lock it or unlock it in position. In the embodiment shown in the drawing, the improved locking-bolt is applied to one end of a member 5 movable with relation to another member 6. These members 5 and 6 may be window-sashes, or a door and its frame, or a drawer and its casing, none of which are shown in detail in the drawing since the use to which the invention is put forms no part thereof. One embodiment consists of an attaching or base-plate 8 secured by screws 7, or in any suitable manner, to the member 5, which plate 8 is bent up at one end to form an upstanding portion 9. This portion is provided with an opening 10, which serves as a guide for the bolt-head 11 which is pivoted at its rear-end by means of a cross-pin 12 to the forward end of a link 13. The rear-end of this link has side-plates 31 joined by a web 32, and is pivotally connected with a pin 14 supported by a bearing 15. Each side-plate 31 of the link 13 is provided intermediately of its pivot-pins 12 and 14 with a longitudinally-disposed slot 33, each of which is engaged by a pin 16 carried at the end of a bell-crank lever 17. The lever is pivoted or fulcrumed in a trunnion 18 on a pin 21 of the trunnion 18, which trunnion in the drawing is secured to the attaching or base-plate 8 at its intermediate portion by a connecting web 19 by means of rivets 20. This end 35 of the bell-crank lever 17 is arranged to move freely between the side-plate 31 and members of the trunnion 18, while the other end 36 is somewhat longer so as to form a suitable operating handle. The other member 6 is provided with a plate 38 having recesses, one side of which is inclined, which recesses register with notches 37 in the member 6 also having inclined portions 40.

Supposing the bolt to be in locked position, as shown in Fig. 1, when it is desired to release the same the handle 36 is thrown upwardly in the direction of the small arrow shown in Fig. 1. This movement of the handle causes the pin 16 to slide rearwardly in the slots 33 of the side-plates 31 of the link 13, during which said pin moves in an arc beginning at a point at one side of a vertical line passing through the pin 21, and ending at a point at the other side thereof, whereby the link 13 is moved into the position shown in Fig. 2. Simultaneously with this the bolt-head 11 is disengaged from the recess and notch of the member 6. The pin 16 acting in the slots 33 moves the link upwardly and draws the rear-end of the bolt-head along with it, the front-end acting on the portion 9, and the upper part of the opening 10 acting as a lever-point.

When it is desired to throw the bolt so as to secure the members, and cause the bolt-head's entry into one of the notches 37, the handle 36 of the bell-crank lever is moved downwardly in the direction of the arrow of Fig. 2 whereby the pin 16 engaging the slots 33 of the link 13 will force the latter downwardly and thereby the bolt-head outwardly

through the opening 10 of the portion 9. This will have been accomplished before the handle reaches the position shown in Fig. 1, the continuing downward movement of the handle causing the pin to pass from one side, the right-hand side of Fig. 2 to the other side of a vertical line passing through the pin 21. The movement of the pin which prior to this passage had the function of pressing the link 13 downwardly so as to move the bolt outwardly, now moves the link down slightly farther, which causes the rear-end of the bolt-head to be depressed, and thereby the other end to be raised, the portion 10 acting as a lever-pin. By reason of the curvature of the bolt-head, when it enters the notch it will move upwardly into said notch at a slight angle, and coöperating with the inclined recess 39 of the plate 38 and portion 40 of the notch 37 of the member 6 will bring about a clamping action by the final depression of the handle. The pin 16 being brought in a final position between the curved part of the trunnion 18 and the link 13, is wedged or locked, and in this way firmly held, so as to make it impossible for it to be withdrawn by any upward force acting on the base 8, but on the contrary, any such upward drive would force the bolt more securely into the locking recess or notch. By reason of the upward inclination of the notch, and the curved form of the bolt-head, the throwing in of the bolt is instrumental in clamping the two members 5 and 6 tightly together, so that they are firmly locked in place and secure a sufficiently tight connection to prevent thereby any rattling, or the ingress of cold air, rain or snow.

The throwing and releasing of the bolt-head is very easily accomplished by means of the arrangement described especially near the end of each movement, either downward or upward, in view of the compound lever-action, both the upper and lower edge of the opening 10 of the portion 9 acting in the nature of a toggle which is held securely in its locked position by means of the operating lever. This results in providing a bolt which cannot be released except by the proper manipulation of the operating lever, so that it is impossible to separate the members by simply pressing one upwardly by means of a jimmy or similar instrument.

I have shown one embodiment of my invention, but I do not wish to be limited to the specific embodiment shown and described for the purpose of the understanding of my invention, since changes and modifications may be made from the form shown, without departing from the spirit of my invention. Nor do I wish to be limited to the special application of my improved locking-bolt to any particular use as described since my invention may be put to many other uses.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a locking bolt the combination of a bolthead, a link pivotally supported and pivoted to the bolthead, and a lever co-acting with the link for moving the latter into substantial axial alinement with the bolthead and then positively holding said link in such position.

2. In a locking bolt, the combination of a bolthead, a link pivotally supported and pivoted to the bolthead, and a lever for positively holding the link against upward or downward movement when substantially in axial alinement with the bolthead.

3. In a locking-bolt, the combination of a bell-crank lever, a link pivoted at one end and having a sliding cam connection with said lever, and a sliding-bolt pivoted to the link.

4. In a locking-bolt, the combination of an attaching plate having a bent-up apertured end, a bolthead guided in said end, a link pivoted to the attaching-plate and also to the bolt-head, and means for operating the link.

5. In a locking-bolt, the combination of a bell-crank lever, a link pivoted at one end, and connected with said lever, and a sliding-bolt pivoted to the link.

6. In a locking-bolt, the combination of a bolt-head, a link pivoted to said bolt-head forming in connection therewith a toggle, and an operating lever having a cam-motion connection therewith.

7. In a locking-bolt, the combination of a bolthead, a link pivoted thereto, and a bell-crank lever carrying a pin in sliding cam engagement with said link, said pin having, when the bolt is thrown, a position at one side of the pivot of said lever, and when the bolt is released taking a position at the other side of said pivot.

8. In a locking-bolt, the combination with a member having a notch directed at an angle with respect to the face of said member, of a sliding, curved bolt-head forming one member of a toggle, a link forming the other member of the toggle, and operating means for the toggle.

9. In a locking-bolt, the combination of a pivoted bell-crank lever carrying a pin at one end, a pivoted link comprising side-plates between which said lever enters and having longitudinal slots through which said pin protrudes at its ends, and a sliding-bolt pivoted to said link.

10. In a locking-bolt, the combination of an operating-lever, a link raised and lowered thereby, a bolt-head pivoted to the forward-end of the link, and an attaching-plate one end of which pivotally supports the rear-end of the link while the other end serves as a guide for the bolt.

11. In combination, a locking-bolt having a bolt-head integral therewith and means co-operating with the bolt to form therewith a toggle connection for locking the bolt in position when in substantial alinement with said means.

12. In a locking-bolt having a link and a bolt-head, an attaching plate one end of which pivotally supports the rear-end of the link while the other end serves as a guide for the bolt-head.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

CASIN W. OBERT.

Witnesses:
C. P. GOEPEL,
M. D. AVIDON.