

Sept. 26, 1939.

E. L. BOLAND

2,174,200

LOCKING MECHANISM

Filed Jan. 27, 1938

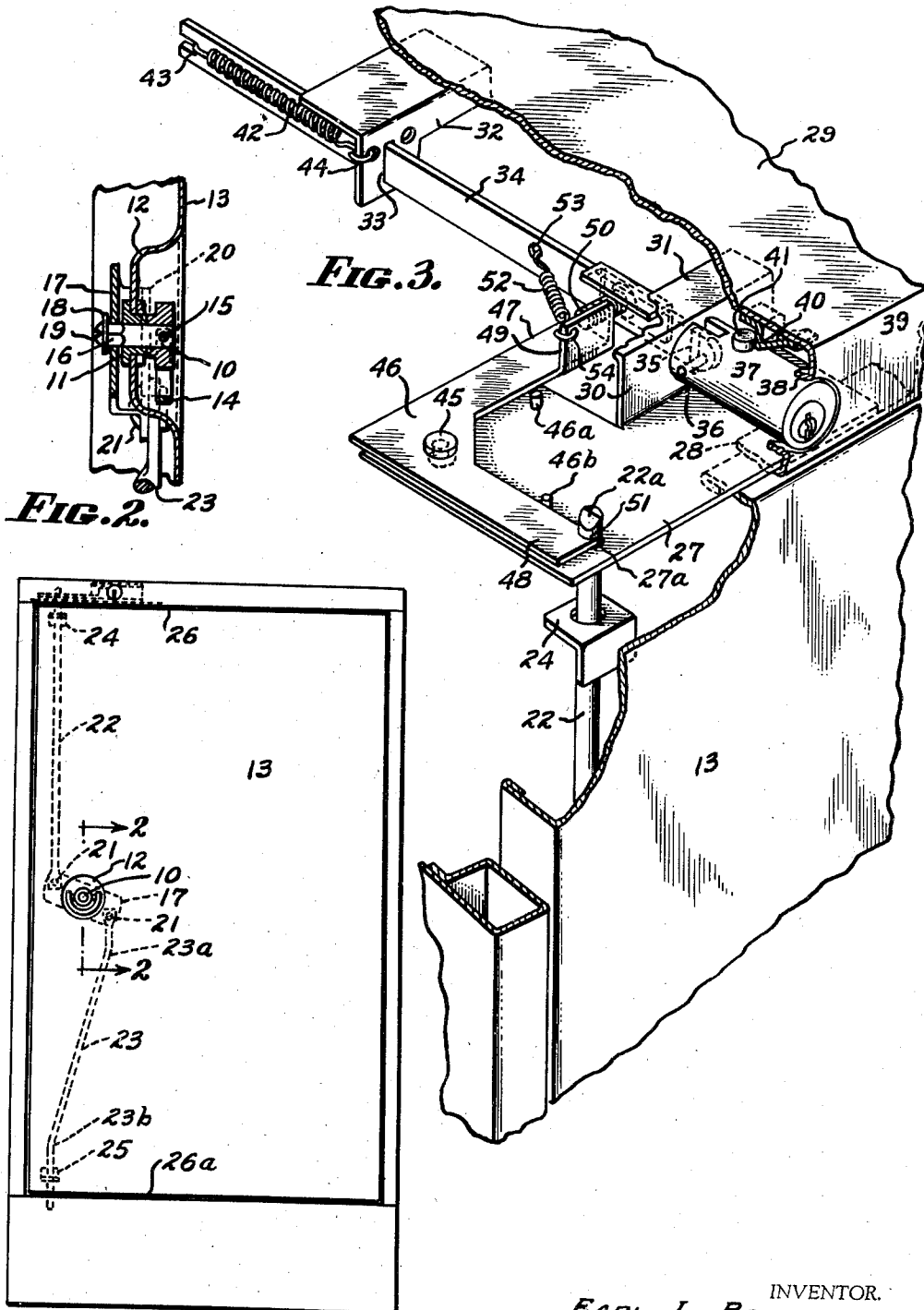


FIG. 1.

FIG. 3.

FIG. 2.

INVENTOR.
EARL L. BOLAND.

BY

Allen & Allen
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,174,200

LOCKING MECHANISM

Earl L. Boland, Terrace Park, Ohio, assignor to
The Globe-Wernicke Company, Norwood, Ohio,
a corporation of Ohio

Application January 27, 1938, Serial No. 187,237

5 Claims. (Cl. 70—82)

This invention relates to locking mechanisms for upright cabinets and more particularly to the location of the lock and the method of locking.

Conventional locking mechanisms for upright cabinets always involve parts protruding at the front of the cabinet which, for various reasons, are considered to be objectionable. It is, therefore, an object of my invention to provide a novel locking mechanism in which the operating handle is recessed in the front of the door so as to be flush with the front surface of the door. It is another object of my invention to provide a locking device in which the lock itself when locked is also flush with the front of the cabinet. Other objects of my invention include the provision of a locking mechanism as above outlined, which is simple in construction and operation and which may be cheaply manufactured, but which will yet be durable in use. These and other objects of my invention, I accomplish by that certain construction and arrangement of parts of which I shall now describe an exemplary embodiment.

Reference is now made to the drawing forming a part hereof and in which

Figure 1 is a front elevation of a cabinet provided with a locking mechanism according to my invention.

Fig. 2 is a cross sectional view taken on the line 2—2 of Figure 1.

Fig. 3 is a partial perspective view of the upper left hand corner of the cabinet of Figure 1, with parts broken away to show the construction of the hidden parts.

Briefly in the practice of my invention, I provide an operating shaft 10 mounted in a sleeve 11, which is fixed in an aperture in a recessed portion 12 of the door 13. Pinned to the front end of the shaft 10 is an operating handle 14 which, as shown in Figs. 1 and 2, swings to a vertical position within the recessed portion 12 so as not to protrude beyond the door 13. For use it will be understood that the handle member 14 may be swung outwardly about the pivot point 15.

The other end of the shaft 10 is provided with a squared portion 16, upon which is mounted a lever member 17. This member may be held in position by means of a washer 18 and screw 19 in the end of the shaft 10.

The member 17 is bent to fit behind the recessed portion 12, so that the end portions of the member 17 are in a plane forwardly of the recessed portion as indicated generally at 20 in

Fig. 2. To these forwardly extended portions 20 are pivoted at the point 21, the locking rods 22 and 23, which have upper and lower bearings respectively in brackets 24 and 25, which are fastened to the inside of the door 13 in any desired manner. It will be understood that the rod 23 may be bent as indicated at 23a and 23b so as to bring the operative end of the rod 23 opposite the operative end of the rod 22. The rods 22 and 23 respectively pass through apertures in upper and lower walls 26 and 26a respectively to maintain the door in closed position as indicated in Figure 1.

In Fig. 3 I have shown in more detail the mechanism for locking the rods 22 and 23 in closed position.

Referring now to Fig. 3, I have indicated at the upper corner of the cabinet a plate 27 which may be fastened in any desirable manner as for example, by welding, to an inturned flange 28 of the top member 29. A portion 30 of the plate 27 is bent upwardly and another portion 31 is bent parallel to the plane of the plate, whereby said plate may further be fastened to the member 29. To the rear of the member 30 there is provided a bracket 32 which is fastened in any desired manner to the member 29 and is provided with a slot 33 which forms a bearing for the bar 34. The bar 34 has a forward bearing in a corresponding slot 35 in the portion 30. The forward end of the bar 34 is pinned as at 36 to the rear end of a cylinder lock member 37, which has its front bearing in an annular flange 38 in the vertical portion 39 of the top member 29. Also fastened to the member 29 on the underside is a dog 40 which serves as an abutment for the bolt 41 of the lock. A spring member 42 fastened to the end of the bar 34 as at 43 and to the bracket 32 as at 44 serves to urge said bar, and therewith the lock member 37, in a forward direction. When locked, of course, the bolt 41 bearing against the dog 40 prevents the lock from springing outwardly. It will be noted that the front of the lock member 37 is flush with the portion 39. It will be understood that when the lock is unlocked, thereby withdrawing the bolt 41, the spring 42 will urge the entire assembly 34, 37 forwardly.

Pivoted to the member 27 as at 45, is a bell crank member 46 having arms 47 and 48. Stop pins 46a and 46b limit the motion of the member 46. The arm 47 is provided with an upturned flange portion 49 against which a pin or screw 50 in the member 34 is adapted to abut. The rod 22 is provided adjacent its upper end, with a slot

51 into which the arm 48 may enter when the rod 22 is in locking position. It will now be clear that when the lock is unlocked so that the rod 34 springs forwardly, the pin or screw 50 abutting against the flange 49 will cause the bell crank 46 to oscillate slightly in a clockwise direction (limited, of course, by the stop pin 46a), so that the arm 48 will be withdrawn from the slot 51 and the cabinet may be opened.

52 is a spring which is fastened as at 53 to the bar 34 and at 54 to the flange 49, so that when the lock is locked as by pushing in on the member 37 until the bolt 41 springs up behind the dog 40, the spring 52 will cause the bell crank 46 to be urged in a counter-clockwise direction against stop pin 46b, so that the arm 48 at least partially covers the aperture 27a through which the rod 22 is adapted to pass. It will be noted that the rod 22 at its upper end is provided with a beveled portion 22a, so that when the rod 22 is urged upwardly the portion 22a will act as a cam surface and cause the member 46 to be oscillated in a clockwise direction against the tension of the spring 52 until the member 48 may enter the slot 51.

It will thus be seen that I have provided a construction in which there are no protruding parts at the front of the cabinet in that the handle member 14 is recessed to leave a flush surface and the lock member 37 in locked position is also flush with the front of the cabinet. It will, of course, be understood that modifications may be made in my invention without departing from the spirit thereof, and I therefore do not intend to limit myself except as pointed out in the claims which follow.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a locking device for an article having a wall member and a door member and having a bolt slidably mounted on one of said members, said bolt being adapted to enter an opening in the other of said members for the purpose of latching said door to said wall, mechanism including a cylinder lock having a bolt, and slidably mounted in the said other member, means urging said lock forwardly, abutment means co-operating with the bolt of said lock and disposed to maintain the front end of said lock flush with the face of said other member when said lock bolt is in operative position, a lever adapted to have locking engagement with said first mentioned bolt and spring-urged to locking position, and abutment means for causing disengaging movement of said lever upon forward movement of said lock.

2. In a locking device for an article having a wall member and a door member and having a bolt slidably mounted on one of said members, said bolt being adapted to enter an opening in the other of said members for the purpose of latching said door to said wall, a pivoted member adapted in one position to have locking engagement with said bolt and in another position to clear said bolt, a key actuated element slidably mounted in the said other member and spring-urged to a forward position, said element when locked in its rear position being flush with the

face of said other member, and means operative upon forward movement of said element to cause oscillation of said pivoted member to clear position.

3. In a locking device for an article having a wall member and a door member, and having a bolt slidably mounted on one of said members, said bolt being adapted to enter an opening in the other of said members for the purpose of latching said door to said walls, a pivoted member adapted in one position to have locking engagement with said bolt and in another position to clear said bolt, a key actuated element slidably mounted in the said other member and spring-urged to a forward position, said element when locked in its rear position being flush with the face of said other member, connecting means between said element and said pivoted member for causing said pivoted member to move to clear position upon forward movement of said element, and resilient means for causing said pivoted member to move to locking position upon rearward movement of said element, and permitting clearing movement of said pivoted member when said element is in its rear position.

4. In a locking device for an article having a wall member and a door member, and having a bolt slidably mounted on one of said members, said bolt being adapted to enter an opening in the other of said members for the purpose of latching said door to said wall, a pivoted member adapted in one position to have locking engagement with said bolt and in another position to clear said bolt, a key actuated element slidably mounted in the said other member and spring-urged to a forward position, said element when locked in its rear position being flush with the face of said other member, positive means for causing clearing movement of said pivoted member upon forward movement of said element, and resilient means for causing locking movement of said pivoted member upon rearward movement of said element.

5. In a locking device for an article having a wall member and a door member, and having a bolt slidably mounted on one of said members, said bolt being adapted to enter an opening in the other of said members for the purpose of latching said door to said wall, a pivoted member adapted in one position to have locking engagement with said bolt and in another position to clear said bolt, a key actuated element slidably mounted in the said other member and spring-urged to a forward position, said element when locked in its rear position being flush with the face of said other member, an actuating member attached to said element, an abutment on said actuating member, an abutment on said pivoted member, said abutments arranged to produce clearing movement of said pivoted member upon forward movement of said element, and a resilient connection between said pivoted and actuating members for producing locking movement of said pivoted member upon rearward movement of said element, said resilient connection permitting clearing movement of said pivoted member independently of forward movement of said element.

EARL L. BOLAND.