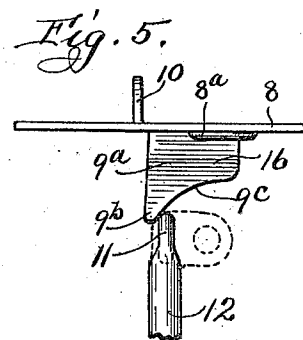
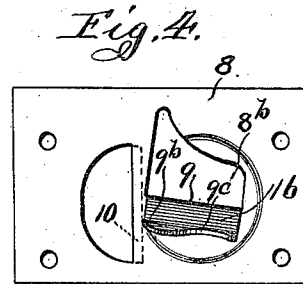
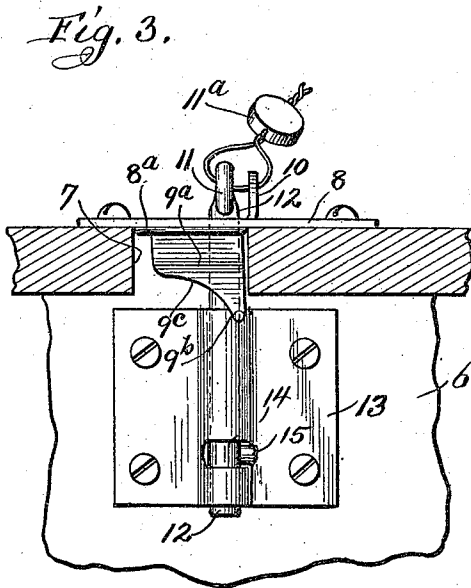
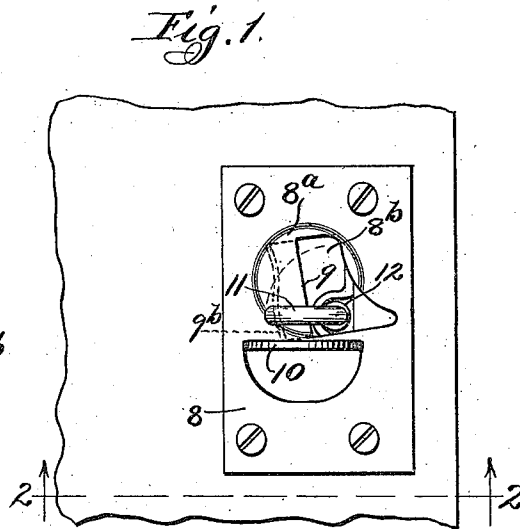
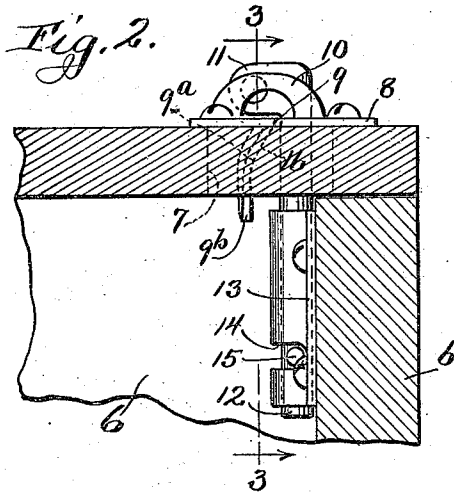


F. B. WILLIAMS.
BOX FASTENER.
APPLICATION FILED JAN. 3, 1911.

987,783.

Patented Mar. 28, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

FITZALLAN B. WILLIAMS, OF CHICAGO, ILLINOIS.

BOX-FASTENER.

987,783.

Specification of Letters Patent.

Patented Mar. 28, 1911.

Application filed January 3, 1911. Serial No. 600,588.

To all whom it may concern:

Be it known that I, FITZALLAN B. WILLIAMS, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Box-Fasteners, of which the following is a specification.

My invention relates to box-fasteners in which a vertical turn-bolt provided with a horizontally-extended head is employed, in conjunction with a slot in the box lid for fastening the lid closed by entering the head in the slot as the lid is let down and then turning it with the hand over the lid at an angle to the slot so as to engage the upper side of the lid and prevent its being raised until the head is turned back into position where it can pass through the slot as the lid is being raised.

The object of my improvement is to provide an efficient means for automatically turning the head of the bolt into position to pass through the slot by throwing the lid down upon it. I attain this object by the device illustrated in the accompanying drawings in which—

Figure 1 is a top plan view representing a fragment of a perforated box lid with the upper surface of a slotted fastening-plate attached thereto, the bolt-head being in the position it occupies when holding the lid closed. Fig. 2 is a section taken on the line 2 2 Fig. 1 showing some of the parts in section and others in elevation. Fig. 3 is a section on the line 3 3 of Fig. 2 looking in the direction of the arrows and shows some of the parts, standing at or near the plane of the section, in elevation. Fig. 4 is a bottom plan and shows the slotted fastening-plate inverted and looked down upon. Fig. 5 is a detail showing an edge view of the slotted fastening-plate and a depending cam in working relation with head of the turn-bolt, the dotted lines showing the position of said head after it has passed the cam.

Similar signs marked on the drawings refer to similar parts throughout the several views.

The box 6 is of usual construction and the lid is assumed to be hinged to the rear side piece. The lid near its front edge is provided with preferably a bored hole 7.

The slotted fastening-plate 8 is preferably stamped of sheet metal and has a depressed circular part 8^a adapted to sit down into said hole for readily adjusting said plate in position on the lid. The slot 8^b is formed

by cutting the plate around three sides of the opening and then bending the uncut side down along the line 9 Fig. 1, so that the cut-out part 9^a will depend from the edge of the slot at an obtuse angle of about 135 degrees more or less to the plane of said plate 8, said angle being on that side of said cut-out part which faces toward said slot. The cut-out part near the tip end 9^b is bent back, as shown by dotted lines Fig. 2, to a position nearly perpendicular to said plate. The lower edge of the depending part 9^a is formed on an upwardly-inclined curve 9^c extending nearly its entire length, said curve becoming slightly more acute as it approaches said bent back portion. Said curve 9^c and the bending back near tip end 9^b form a helical curve along the lower edge of said depending part. The plate 8 is also provided with a perforated lug 10 cut from the plate and bent up at right angle thereto for attaching a seal 11^a to the bolt-head 11, which is also perforated.

The turn-bolt 12 is secured to the inside of the front piece of the box by a plate 13 which has a central raised part provided with a horizontal slot 14 in which a lug 15 of said bolt works to hold the bolt in and permit it to be turned a quarter of a revolution.

The cam for automatically turning the bolt-head as desired consists of the depending part 9^a having a curved lower edge 9^c in connection with a concave surface 16 depending from the edge of the slot 8^b, and having a backward bend near its tip end 9^b forming a helical curve. The curved edge 9^c is arranged to fall across the bolt-head at its tip end as shown by dotted lines (Fig. 1). When said cam falls upon the bolt-head as described the action is that the bolt-head will pass from the tip end 9^b along the steep incline of the helical curve through about one-eighth of a revolution of the bolt, the head then passing from the curved edge 9^c onto the concave surface 16 by means of which it is turned further through another one-eighth of a revolution and caused to pass smoothly into the slot. During the entire one-fourth revolution the contact of the cam with the bolt-head remains at the tip end of said bolt-head. By this means friction is reduced to a minimum or to almost nothing, and the action of said cam in causing the bolt-head to turn into the slot is rendered entirely certain. No battering, or

pounding, or wearing action, such as would result if the head should come to a stop or rest on a falling cam, can occur.

What I claim is—

- 5 In a box-fastener of the class described, the combination with the vertical turn-bolt having a laterally-extended head, of a slot-
ted fastening-plate and a cam depending therefrom provided with a concave surface

16 facing toward the slot of said fastening-
plate and a lower edge 9° having a helical
curve, said curve being adapted to fall upon
said laterally-extended head near its tip end,
as and for the purpose specified.

FITZALLAN B. WILLIAMS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
