

L. ROMINES.

LATCH.

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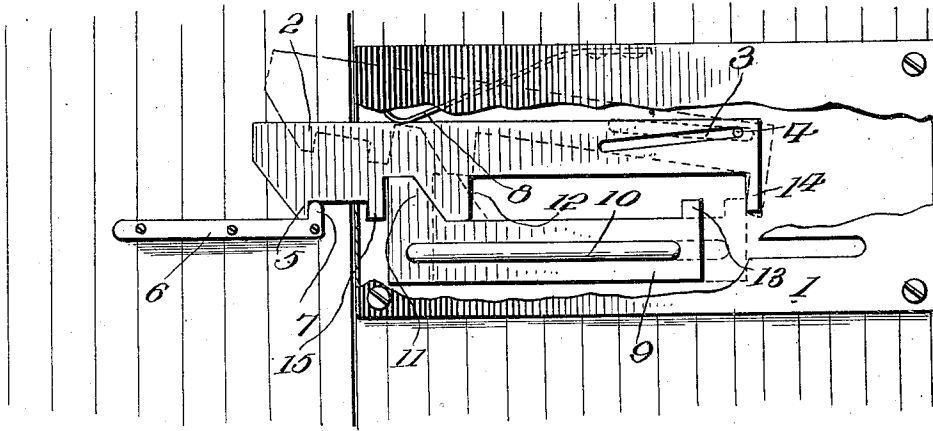


Fig. 1.

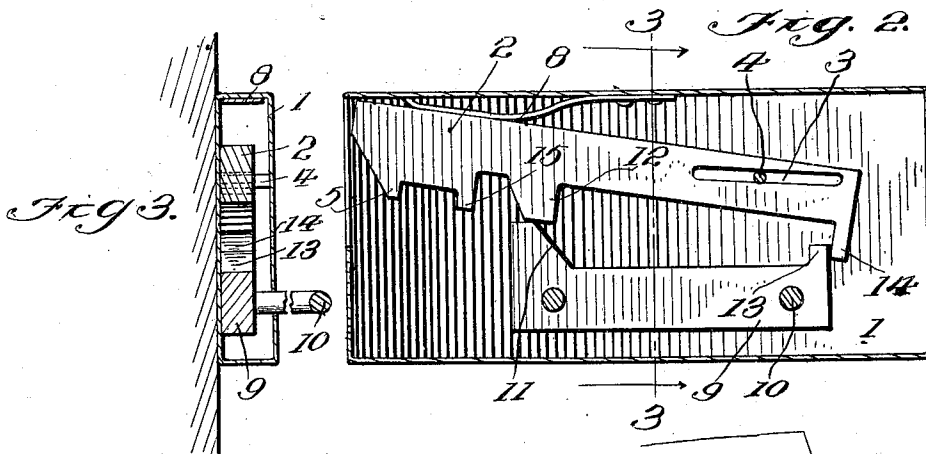


Fig. 3.

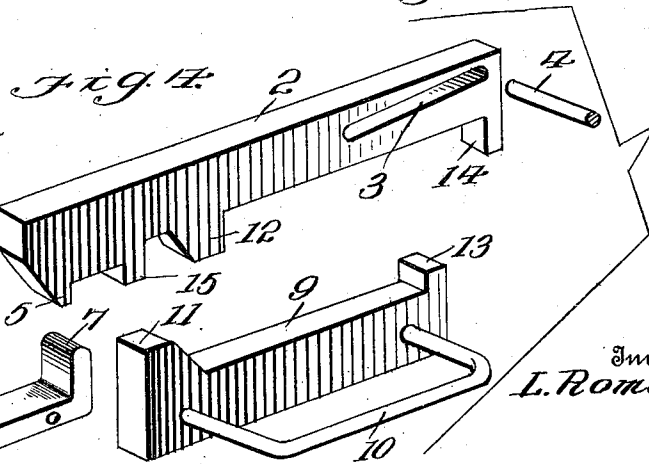


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

LEROY ROMINES, OF MARTINSVILLE, ILLINOIS.

LATCH.

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To all whom it may concern:

Be it known that I, LEROY ROMINES, citizen of the United States, residing at Martinsville, in the county of Clark and State of Illinois, have invented certain new and useful Improvements in Latches, of which the following is a specification.

This invention comprehends certain new and useful improvements in latches, particularly designed for sliding barn doors, although applicable for other uses generally, and the invention has for its primary object a simple, durable and efficient construction of latch, whereby a movement tending to open the door will automatically disengage the latch-bolt from the keeper, and will also move the latch-bolt back into the casing so that it will be out of the way while the door is open, and whereby also, a movement tending to close the door will project the latch-bolt from the casing into an operative position ready for engagement with the keeper when the door is fully closed.

With this and other objects in view, as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:—

Figure 1 is a side elevation of a latch constructed in accordance with my invention, a part of the casing being broken away; Fig. 2 is a side elevation of the device with the casing in section, and illustrating the parts in their relative positions after the bolt has been retracted within the casing; Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2; and, Fig. 4 is a detail perspective view of some of the parts detached and in juxtaposition to each other.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

My improved latch may embody a casing 1 of any desired construction or design to receive the latch-bolt 2. The latch-bolt is supported at its rear end by being formed with a longitudinal and preferably oblique side-opening slot 3 which accommodates a pin 4 secured to the casing, thereby admitting of a longitudinal sliding movement of the latch-

bolt, as well as a tilting movement thereof. The bolt 2 is formed at its forward end with a hook 5 designed to engage a keeper 6 of any desired construction or design, said keeper in the present instance being formed with a lug 7, as shown.

A spring 8 which in the present instance is a leaf or plate spring is secured at one end within the casing 1, and bears downwardly upon the upper edge of the bolt 2 and holds the same in proper engagement with a supporting slide 9, which is mounted for a back and forth movement in the casing. A handle 10 of any desired type is connected to the slide. The slide 9 is formed at its forward end with an upwardly projecting tongue 11 preferably beveled on its rear edge and designed to co-act with a lip 12 which extends downwardly from the lower edge of the latch-bolt 2 in the rear of the hooked finger 5 thereof. This lip is beveled on its front edge, as shown. In the retracted and inoperative position of the latch-bolt 2, it will rest with the lip 12 directly upon the tongue 11 of the slide 9, as illustrated in Fig. 2 whereas in the projected and operative position of the bolt, the tongue 11 will extend in front of the lip to support the bolt in a lowered position, ready for engagement with the keeper, as illustrated in Fig. 1. The slide 9 is formed at its rear end with an upwardly projecting lug 13 designed to engage with a downwardly projecting lug 14 formed on the latch-bolt 2 at the rear end of the latter.

From the foregoing description in connection with the accompanying drawing, the operation of my improved latch will be apparent. In the practical use of the device, it being now assumed that the door is closed, that the slide 9 is at the forward limit of its movement with its tongue 11 extending in front of the lip 12 and with the latch-bolt 2 in projected and lowered position, a movement of the slide 9 as the handle 10 thereof is grasped to open the door will obviously tilt or move the latch-bolt 2 upwardly, and automatically effect the disengagement of the bolt with the keeper, the two beveled surfaces of the tongue and lip riding one upon the other in evident manner. A continued independent movement of the slide 9 as the door is pulled open will cause the lug 13 of the slide to engage with the lug 14 of the latch-bolt, and thereby cause the bolt to be retracted into the

casing where it will be entirely out of the way so long as the door is open. To again close the door, it is only necessary to grasp the handle 10 and pull the same in the required direction, whereupon it is obvious that the tongue 11 will move forwardly from underneath the lip 12 and permit the latch to lower, the continued forward movement of the slide causing the bolt to be projected in a lowered position (as the slide will engage with the lug 15 formed on the bolt), and the latch-bolt will thereby be held in proper position for engagement with the keeper 6. The beveled front edge of the latch-bolt will, of course, engage with the lug 7 of the keeper and the spring 8 will yield, and the latch-bolt will ride upwardly and then drop into locked position.

Having thus described the invention, what is claimed as new is:

1. The combination with a door, of a sliding and tilting latch bolt carried thereby, a slide also carried by the door and engaging the latch bolt, the slide and latch bolt being provided with coacting means whereby a movement of the slide in one direction will first release the latch bolt and then move the same inwardly and whereby the first movement of the slide in the opposite direction will permit the latch bolt to drop and then positively move the same bodily in a direction opposite to the first named bodily movement.

2. The combination with a door of a latch bolt carried thereby and mounted to tilt and slide, a slide also carried by the door, means for supporting the rear end of the latch bolt, the slide being provided with an upwardly projecting lip adapted to support the front end of the latch bolt and the latter being formed with a depending tongue designed to ride on said lip in the movement of the slide in one direction whereby to raise the front end of the latch bolt, the latch bolt and slide being also provided with coacting lugs designed to contact whereby to move the latch bolt bodily in a rearward direction.

3. The combination with a door of a latch bolt carried thereby and mounted to tilt and slide, a slide also carried by the door, means for supporting the rear end of the latch bolt, the slide being provided with an upwardly projecting lip adapted to support the front end of the latch bolt, and the latter being formed with a depending tongue designed to ride on said lip in the movement of the slide in one direction whereby to raise the

front end of the latch bolt, the latch bolt and slide being also provided with coacting lugs designed to contact whereby to move the latch bolt bodily in a rearward direction, and the latch bolt being provided near its front end with a lug adapted to be engaged by the tongue to move the latch bolt bodily in a forward direction.

4. A latch, comprising a casing, a pin extending across the same, a latch bolt formed with a longitudinally extending side opening slot receiving said pin, the latch bolt being mounted to tilt and slide thereon, a slide mounted in said casing, a handle connected to the slide, the slide being formed at its forward end with an upwardly projecting tongue having a beveled rear edge and the latch bolt being formed with a depending lip formed with a beveled front edge, the lip being adapted to ride upon the tongue upon the movement of the slide in one direction, the latch bolt being formed with a depending lug spaced from and in front of the lip, and being provided at its rear end with a depending lug, the slide being formed at its rear end with a lug adapted to engage the just mentioned lug.

5. The combination with a door and an abutment provided with a keeper, of a sliding and tilting latch bolt carried by the door and adapted to engage the keeper, means independent of the latch bolt and carried by the door, whereby the door may be opened and closed, and a connection between such means and the latch bolt whereby a movement tending to open the door will first automatically tilt the latch bolt out of engagement with the keeper and slide the latch bolt rearwardly.

6. The combination with a door and an abutment provided with a keeper, of a sliding and tilting latch bolt carried by the door and adapted to engage the keeper, means carried by the door whereby it may be opened and closed, said means being movable in a horizontal plane and arranged to engage the latch bolt in the movement of such means to open the door, the engagement of said means with the latch bolt automatically tilting the latch bolt out of engagement with the keeper and sliding the latch bolt rearwardly.

In testimony whereof I affix my signature in presence of two witnesses.

LEROY ROMINES. [L. S.]

Witnesses:

EDGAR SUMMERS,
J. O. MILLER.