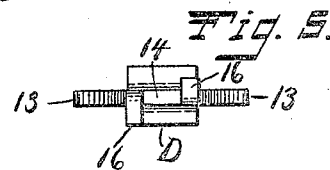
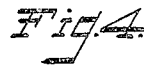
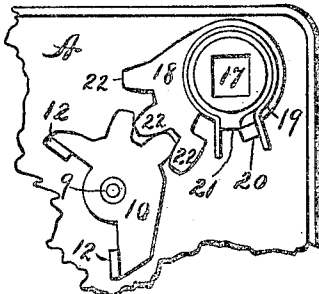
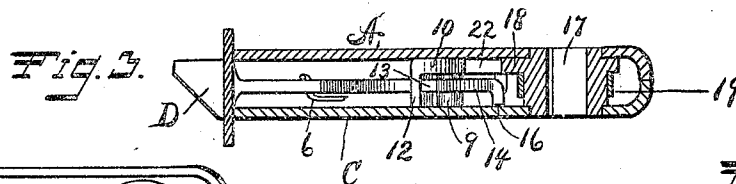
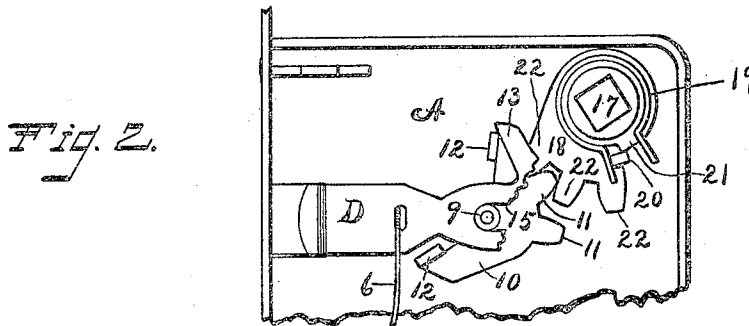
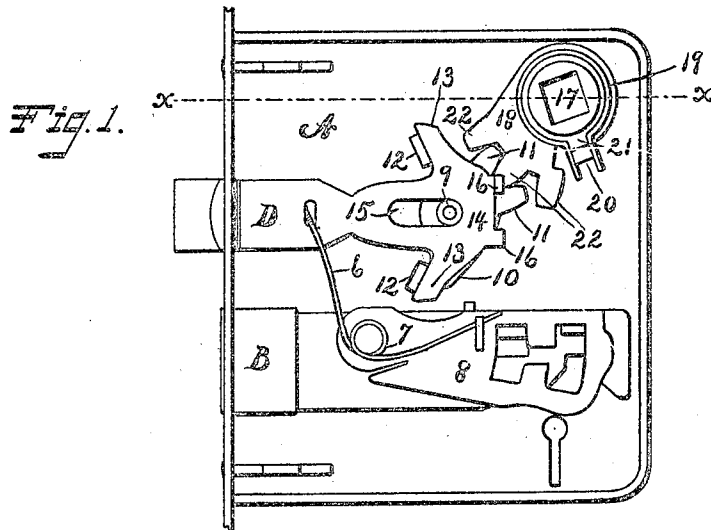


No. 817,878.

PATENTED APR. 17, 1906.

A. SHEPARD.
LATCH.

APPLICATION FILED JULY 13, 1905.



Witnesses.
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AMOS SHEPARD, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO RUSSELL AND ERWIN MFG. CO., OF NEW BRITAIN, CONNECTICUT, A CORPORATION.

LATCH.

No. 817,878.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed July 13, 1905. Serial No. 269,490.

To all whom it may concern:

Be it known that I, AMOS SHEPARD, a citizen of the United States, residing at Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Latches, of which the following is a specification.

My invention relates to improvements in latches; and the objects of my improvements are simplicity and economy in construction and convenience and efficiency in operation, particularly with reference to working smoothly and easily when the hub for the knob-spindle is in the upper part of the case remote from the lock-bolt and with reference to the action of the spring that returns the latch-bolt-operating mechanism.

In the accompanying drawings, Figure 1 is a front elevation of my latch with the cap-plate removed. Fig. 2 is a like view with parts broken away and the latch-bolt drawn in by a left-hand turn of the knob-spindle hub. Fig. 3 is a sectional plan view on the line *xx* of Fig. 1, the cap-plate of the case being in place. Fig. 4 is a front elevation of parts with the latch-bolt removed and the knob-spindle hub turned its full extent in the right-hand direction. Fig. 5 is an end view of the inner end of the latch-bolt.

The case A in its general form, the lock-bolt B, and parts connected therewith may be of any ordinary construction. I prefer, however, to form the easy spring 6 for the latch-bolt as one arm of the spring 7 for the tumblers 8 of the lock.

The cap-screw post 9, which is bored and threaded in the ordinary manner to receive the screw that holds on the cap C of the lock-case is secured to the back or body of the case near the middle point from side to side and only a short distance above the middle of the case, measuring vertically, whereby the said post is nearly enough to a central position to effectually hold the cap by means of a single screw in the said post. Upon this cap-screw post I pivot my new form of double-acting roll-back 10. The said roll-back is formed of sheet metal having a plate-like body, by which it is pivoted on the post 9 and the edge of which body has two projections 11 with a space or recess between, the same constituting a segment of a gear. The front

of the roll-back has two latch-bolt-engaging lugs 12, that are bent up from the metal of the body of the roll-back and act upon the two wings 13 of the latch-bolt D substantially the same as an ordinary roll-back, excepting that the said lugs are inclined forwardly from the axis of the roll-back in two different planes instead of standing vertically in one plane. By having the body of the roll-back in a plate-like form and pivoting it upon a fixed post or stud I am enabled to extend the tail 14 of the latch to one side of this roll-back (the front) and beyond the post 9, the said latch-bolt tail being provided with a slot 15 to receive the said post, the outer or front end of the said slot in connection with the said post serving as a stop to limit the inward movement of the latch-bolt, as shown in Fig. 2. This post and slot also serve as guides for that end of the reversible latch-bolt to keep it from moving up or down, while the end lugs 16, bent in reverse directions, bear upon the front and rear plates of the case to keep that end of the latch-bolt from moving from front to rear.

The knob-spindle hub 17 has the ordinary opening for the spindle and tenons by which to mount the said hub in the two plates of the case. It is also provided with the extension 18 in the plane of the body of the roll-back 10 and with projections 22 with spaces between in the outer edge of the said extension that constitute a segmental gear for engaging and operating the segmental gear of the said roll-back, whereby the roll-back may be operated in either direction and draw in the latch-bolt. In order to return the latch-bolt-operating parts to their normal position, I employ the double spring 19, which is applied directly to the hub itself instead of to the parts that are actuated by the hub. In the particular form shown and the best-known form the spring in edge view is substantially a split ring encircling the body of the hub. A stud or projection 20 is formed on or affixed to the case in position to act as stops for the ends of the spring to bear upon, and the hub is provided with a projection 21 between the said ends of the spring for acting upon one or the other of the said ends, according to which way the hub is turned. When the hub is in its normal position, the stop on the case and the

projection on the hub both lie between the ends of the spring, as shown in Fig. 1. Which-
 ever way the hub is turned the projection on
 the hub moves away from the stud and car-
 5 ries with it one end of the spring, while the
 other end is held by the stud, thereby sepa-
 rating the ends of the spring and putting the
 spring under greater tension. As soon as the
 parts are released the spring returns the
 10 parts to their normal position, as shown in
 Fig. 1. Figs. 2 and 4 show the position of the
 spring as put under increased tension by
 turning the hub in opposite directions.

By placing the spring directly on the hub
 15 the other parts are free from strain and con-
 sequent friction. By the split-ring form of
 spring there is no pressure on the case that
 has a tendency to force the hub to one side
 when at rest. By the employment of a hub
 20 and a separate double-acting roll-back the
 construction is simple and the action is
 smooth and easy. It may also be noted that
 the stud 20 is the only part on the latch-case
 which is designed especially for the latch-
 25 bolt-operating mechanism.

It is apparent that some changes from the
 specific construction herein disclosed may be
 made, and therefore I do not wish to be un-
 derstood as limiting myself to the precise
 30 form of construction shown and described,
 but desire the liberty to make such changes
 in working my invention as may fairly come
 within the spirit and scope of the same.

I claim as my invention—

35 1. The combination of a latch-bolt having
 two wings, with a double-acting roll-back
 having two latch-bolt-engaging lugs, a knob-
 spindle hub separate from the said roll-back,
 and connecting devices between the said hub
 40 and roll-back whereby a motion of the hub in
 either direction will operate the said roll-back
 to withdraw the latch-bolt.

2. The combination of a latch-bolt having
 two wings with a double-acting roll-back hav-
 45 ing two latch-bolt-engaging lugs, a knob-
 spindle hub separate from the said roll-back
 and interlocking projections and recesses on
 the confronting edges of the said roll-back
 and hub for communicating the motion of the
 50 said hub to the said roll-back.

3. The combination of a latch-bolt having
 two wings with a double-acting roll-back
 having two latch-bolt-engaging lugs, a knob-
 spindle hub separate from the said roll-back

and segmental gears on the confronting edges 55
 of the said roll-back and hub.

4. The combination of a latch-case with a
 fixed stud or post on said case, a latch-bolt
 having two wings and a slot that receives the
 said post, a roll-back having two latch-bolt- 60
 engaging lugs, the said roll-back being piv-
 otated on the said post, and operating devices
 for imparting a motion in either direction to
 the said roll-back.

5. The combination of a latch-case with a 65
 fixed stud or post on the said case, a slotted
 and reversible latch-bolt with its rear end
 mounted on and guided in the edgewise di-
 rection by the said post, the said latch-bolt
 also having two wings and oppositely-pro- 70
 jecting lugs 16 for acting on the front and
 rear walls of the case for guiding that end of
 the latch in the flatwise direction, a roll-back
 pivoted on the said post and having two
 latch-bolt-engaging lugs, and mechanism for 75
 operating the said roll-back in reverse direc-
 tions.

6. The combination of a latch-case with a
 fixed stud or post on the said case, a slotted
 latch-bolt having its rear end mounted on 80
 and guided by the said post, and also pro-
 vided with two wings, a double-acting roll-
 back for engaging the said latch-bolt, an easy
 spring for projecting the said latch-bolt,
 mechanism for operating the said roll-back 85
 in either direction and a double-acting spring
 for returning the said mechanism and roll-
 back.

7. The combination of a latch-bolt, with a
 knob-spindle hub, mechanism for opera- 90
 tively connecting the said hub and latch-bolt,
 and a split-ring spring encircling the said hub
 and in connection with a stop on the case act-
 ing to return the said hub when turned in
 either direction.

8. The combination of a latch-bolt with a 95
 knob-spindle hub, mechanism for opera-
 tively connecting the said hub and latch-bolt,
 a double-acting spring mounted directly on
 the said hub, and a stop on the case for the 100
 ends of the said spring to engage for return-
 ing the said hub when turned in either direc-
 tion.

AMOS SHEPARD.

Witnesses:

THOMAS F. WELCH,
 EDWIN G. LEWIS.