No. 708,862. Patented Sept. 9, 1902.

O. H. BURDEN.

LATCH.

(Application filed Jan. 3, 1902.)

(No Model.)

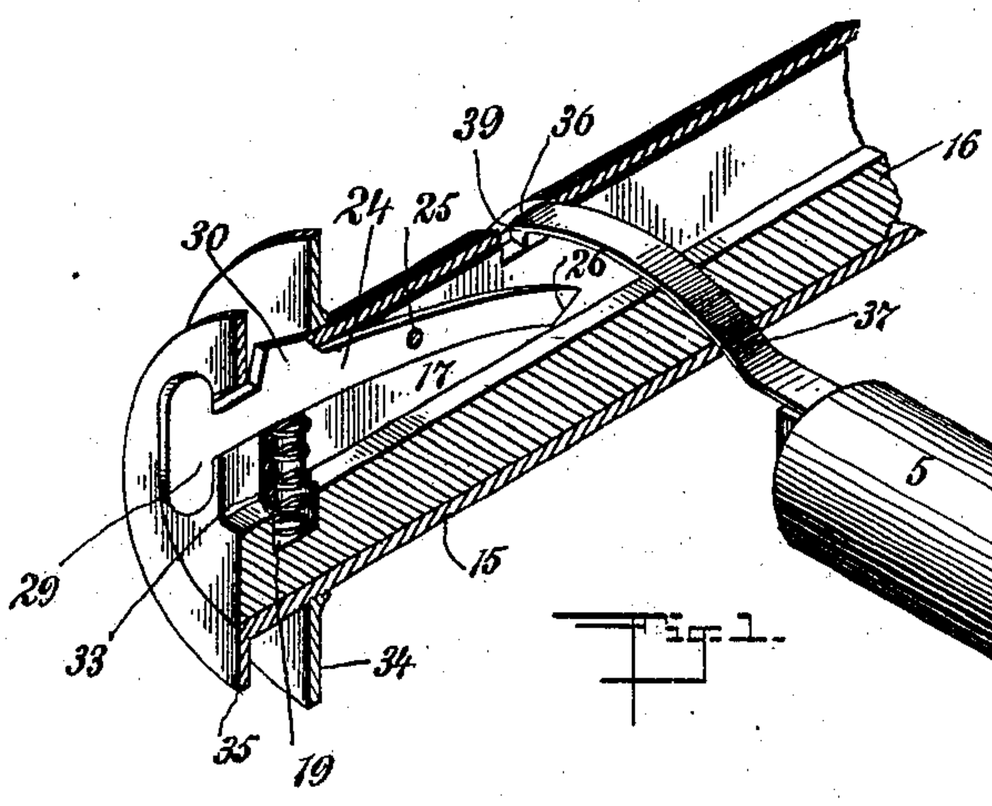

Fig. 1.

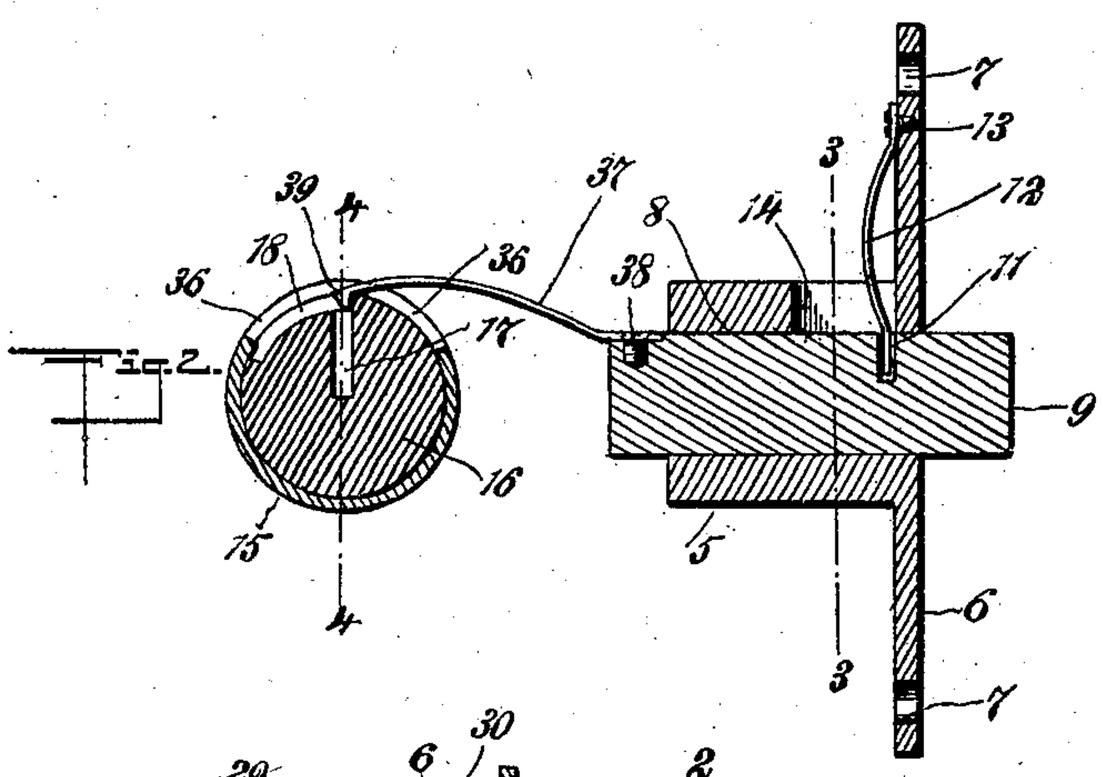

Fig. 2.

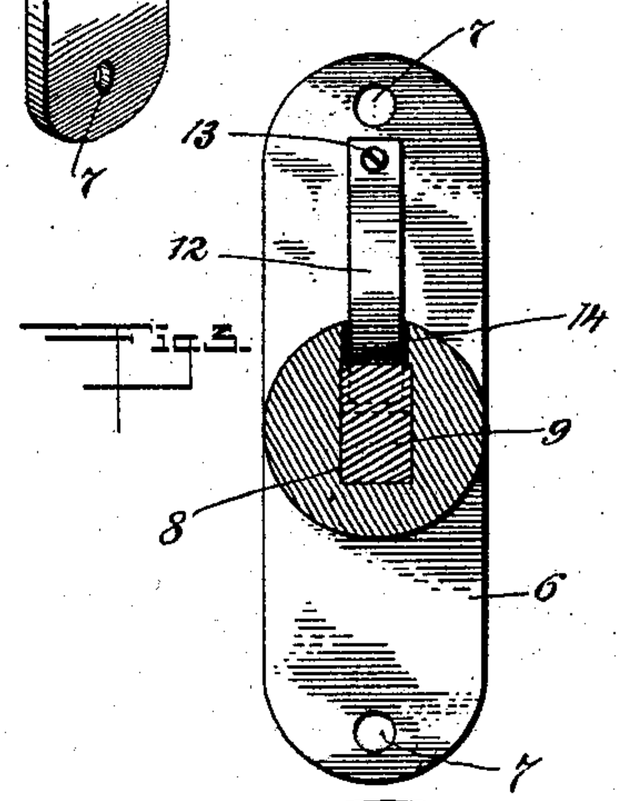

Fig. 3.

Fig. 4.

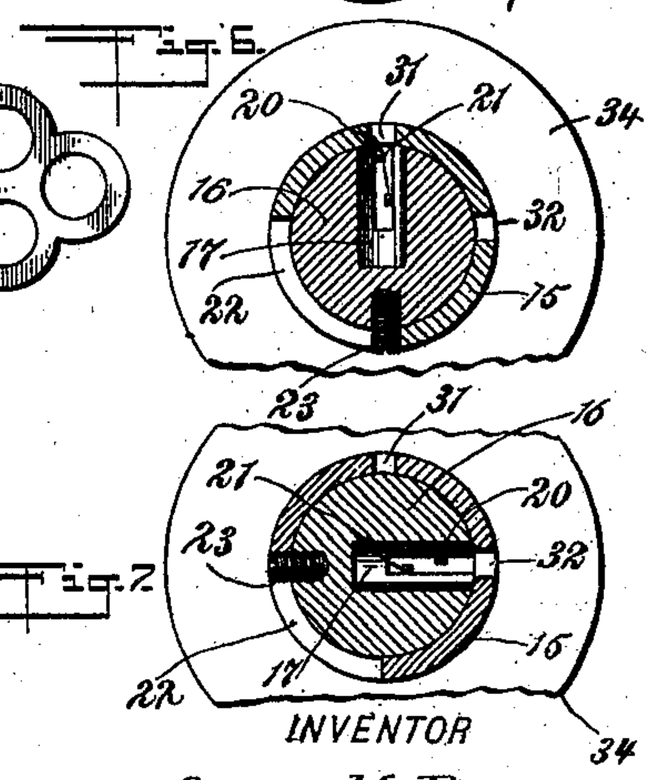

Fig. 6.

Fig. 7.

Fig. 5.

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LATCH.

SPECIFICATION forming part of Letters Patent No. 708,862, dated September 9, 1902.

Application filed January 3, 1902. Serial No. 88,286. (No model.)

To all whom it may concern:

Be it known that I, OSCAR HERBITS BURDEN, a subject of the King of Great Britain, and a resident of Kaslo, in the Province of British Columbia and Dominion of Canada, have invented new and useful Improvements in Latches, of which the following is a full, clear, and exact description.

My invention relates to improvements in door-latches; and the object that I have in view is the provision of a simple and effective construction which may be easily applied to any door, which can be opened from the outside only by the use of a proper key, which may be quickly opened from the inside, and is capable of adjustment from the inside to a confined inoperative position wherein the latch-bolt is held retracted and flush with the outside face-plate.

With these ends in view the invention consists in the combination and construction and arrangement of parts, which will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view illustrating a part of the improved latch in section. Fig. 2 is a vertical section taken longitudinally through the latch-bolt and transversely through the tumbler mechanism on the line 2 2 of Fig. 4. Fig. 3 is a vertical cross-section in the plane of the dotted line 3 3 of Fig. 2. Fig. 4 is a longitudinal section in the plane of the dotted line 4 4 of Fig. 2. Fig. 5 is a detail plan view of the tumbler-cylinder. Fig. 6 is a cross-section on the line 6 6 of Fig. 4, omitting the tumbler and showing the tumbler-cylinder in one position; and Fig. 7 is a sectional view similar to Fig. 6, but with the tumbler-cylinder adjusted to a reversed position.

5 designates a shell which is integral with or secured firmly to a vertically-disposed face-plate 6, the latter having openings 7, whereby it may receive screws to fasten said face-plate and the casing firmly in place on a door. The shell 5 is provided with a longitudinal passage-way 8, in which is slidably confined the latch-bolt 9, the front end of which is beveled or inclined at 10. The heel or rear end of the latch-bolt extends through the open rear end of the shell, and said latch-bolt is provided in its upper side with a notch 11, that is adapted to receive the lower end of a leaf-spring 12. Said leaf-spring is fastened to the face-plate 6 by a screw 13, and the lower portion of said leaf-spring passes through and is adapted to play in a slot 14, provided in the upper front portion of the shell 5. (See Fig. 2.)

15 designates a cylindrical casing which is arranged to extend through the door in a direction at right angles to the shell 5 and the latch-bolt 9. This cylindrical casing receives and serves as a bearing for a cylinder 16, the latter extending through said casing, as clearly shown by Figs. 1 and 4. Said cylinder is provided with a longitudinal slot or kerf 17, which opens through one side of the cylinder throughout its length and also opens through the end portions of said cylinder. The cylinder is furthermore provided with an arcuate groove 18, which is situated at or about the middle portion thereof, (see Figs. 2 and 5,) and at its rear end the cylinder is furthermore provided with a cavity 19, that forms a socket for the tumbler-actuating spring. The cylinder supports or carries the projections or studs 20 21, which are attached to the cylinder and extend into the slot or kerf 17 thereof from opposite sides. (See Figs. 5, 6, and 7.) Near its rear end the cylindrical casing 15 is provided with a slot 22, the same extending one-fourth of the distance around said casing, and into this slot projects a stop screw or stud 23, the same being fastened to the cylinder 16 and adapted to impinge on the end walls of the quadrantal slot 22, whereby the cylinder is limited to turning movement through an arc of ninety degrees.

24 designates a tumbler which is disposed lengthwise in the rear portion of the longitudinal slot 17 of the cylinder, and this tumbler is pivoted at a point intermediate of its length by a pin 25, which is secured in the cylinder so as to extend across the slot 17 thereof. (See Fig. 5.) The tumbler is provided at its front end with a beveled nose 26, adapted for the

impingement of the beveled end of a key 27. Said key must be provided with grooves 28, so arranged as to receive the studs 20 21, thus allowing the key to be introduced through the front end of the slot 17 in the cylinder and to extend thereinto far enough to engage with the beveled nose of said tumbler. The rear end of the tumbler extends beyond the cylinder and its casing, and it is formed with the finger-piece 29. Said tumbler is furthermore provided with an offstanding lip or shoulder 30, which is adapted to engage with one or the other of the notches 31 32, which are formed in the cylindrical casing 15 at the points indicated very clearly by Figs. 6 and 7. The projecting end portion of the tumbler 24 and the exposed finger-piece 29 of said tumbler provide a convenient means accessible at all times from the inside of the door for the purpose of withdrawing the shoulder 30 from engagement with the opening of the casing and for the additional purpose of turning the slotted cylinder by means of the tumbler. It will be understood that the tumbler is fitted snugly into the slot of the cylinder and that it is pivoted to said cylinder by the pin 25, whereby the thumb-piece and the tumbler can easily be manipulated by hand to turn the cylinder in one direction or the other, and thus enable the retraction of the locking-bolt to be effected by means other than by the key. The tumbler 24 is normally acted on by a spring 33, which occupies the socket 19 and engages with said tumbler at a point opposite to the lip or shoulder 30 thereof, whereby the tumbler will be held in a position for its shoulder to normally engage one of the locking-notches 31 or 32.

34 designates the inside escutcheon, which may be attached to the cylindrical casing 15 in any suitable way—as, for example, by the screw-threaded joint shown in Fig. 4. The cylindrical casing 15 is furthermore provided at its inner end with the annular flange or head 35, beyond which the finger-piece 29 of the tumbler is adapted to extend. The cylindrical casing 15 is provided at a point intermediate of its length with a transverse slot 36, (see Figs. 1, 2, and 4,) said slot being adapted to register or coincide with the slot 18 of the cylinder 16.

The operative connection between the latch-bolt 9 and the axially-turning cylinder 16 is obtained by a yieldable finger 37, adapted to span the space between the latch-bolt and said cylinder. The finger is firmly secured at one end by a screw 38 to the heel of the latch-bolt, and the other end of said finger is provided with a hook or beak 39, the same being adapted to pass through the slot 36 of the casing and to fit into the slot 18 of the cylinder, whereby said hook may engage with one or the other of the shoulders which are formed in the cylinder by said slot 18.

In the position of the parts shown by Fig. 2 the latch-bolt 9 is in advanced or shot position and the cylinder 16 occupies a position for the beak 39 of the yieldable finger to engage with one shoulder of the arcuate groove 18, while the tumbler 24 is pressed by the spring 33 into a position for the locking-shoulder 30 to enter the locking-notch 31. The cylinder 16 can be turned on its axis from the outside only by the insertion of the proper key into the slot 17, because the tumbler 24 holds the cylinder in a locked position; but it is evident that the person on the inside may depress the tumbler by manipulating the finger-piece 29, thus withdrawing the shoulder 30 from the notch 31 until the tumbler is housed within the slot of the cylinder, after which the cylinder and the tumbler can be turned until the stud or screw 23 arrests the motion of the cylinder, at which time the shoulder 30 of the cylinder is opposite to the notch 32. This turning movement of the cylinder may also be effected by thrusting the proper key into engagement with the nose 26 of the tumbler, thereby withdrawing the shoulder 30 from the notch 31 and allowing the key to turn the cylinder. This axial movement of the cylinder either by the tumbler or by the key makes one shoulder of the arcuate groove 18 act against the beak of the finger 37 and withdraw the latch-bolt 9 from engagement with the keeper on the door-jamb; but when the cylinder is returned to its normal position the spring 12 again impels the latch-bolt to its projected position.

From the foregoing description it will be seen that the cylinder and the tumbler may be adjusted by hand to hold the latch-bolt retracted, and in this position of the parts the cylinder will be held in a locked position by the shoulder 30 of the tumbler engaging with the notch 32 of the casing.

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

1. A latch comprising an open-ended cylindrical casing provided near one end with a locking-aperture, an axially-adjustable cylinder fitted in the casing and provided with a longitudinal key-slot, a tumbler fitted in said slot at the rear part of the cylinder and pivoted to the latter, said tumbler extending beyond the rear end of the cylinder and the casing and provided with a locking projection arranged to enter the locking-aperture, and a spring acting against said tumbler.

2. A latch comprising a casing having locking-apertures, a slotted cylinder therein, a tumbler pivoted in the slotted part of the cylinder and having its rear portion provided with a thumb-piece which extends rearwardly beyond the casing and the cylinder, the front end of the tumbler having a key-engaging nose and said tumbler provided with a locking projection arranged to enter either aperture in the casing, means for limiting the turning movement of the cylinder within the casing, and a spring acting against the tumbler.

3. A latch comprising a slotted bolt-casing

having a face-plate, a notched bolt slidable in the casing, a leaf-spring attached to the face-plate and passing through the slot in the bolt-casing and entering the notch of the bolt, a cylindrical casing having a slot 36, a cylinder in said cylindrical casing and provided with an arcuate groove 18 terminating in two shoulders, a finger attached to the slidable bolt and having a beak arranged to move in the casing-slot and to engage either shoulder of the cylinder, and a tumbler mounted in the cylinder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR HERBITS BURDEN.

Witnesses:
CHARLES W. MCANN,
NEIL G. MACKAY.