No. 641,965. Patented Jan. 23, 1900.

W. S. HOUSER.

LOCK.

(Application filed May 16, 1899.)

(No Model.)

Fig. 1.

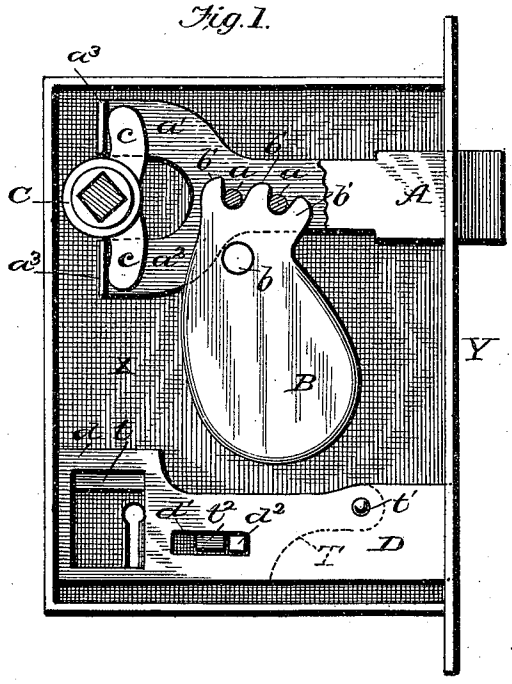


Fig. 2.

Fig. 3.

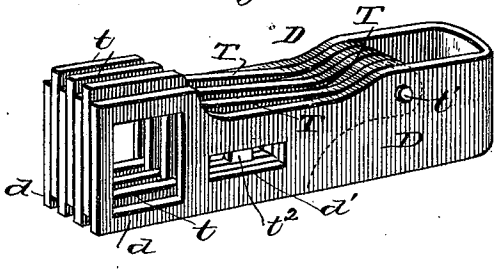
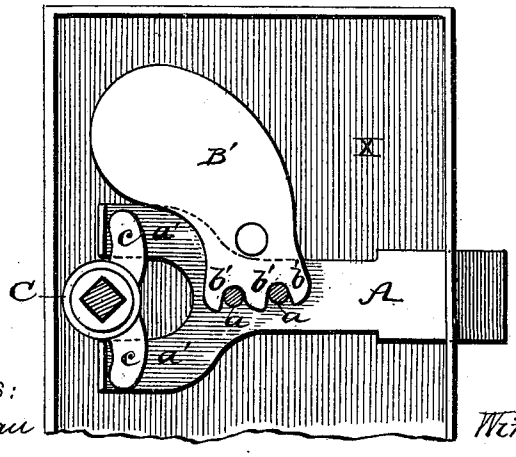


Fig. 4.



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LOCK.

SPECIFICATION forming part of Letters Patent No. 641,965, dated January 23, 1900.

Application filed May 16, 1899. Serial No. 717,032. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD SCOTT HOUSER, of Bellefonte, in the county of Centre and State of Pennsylvania, have invented a new and useful Improvement in Locks, of which the following is a specification.

The object of my invention is to provide a springless lock in which the latch-bolt is operated from gravity and which shall be of very simple construction, very compact, not liable to get out of order, capable of being used for either right or left hand doors, and applicable either as a mortise-lock or rim-lock.

To these ends it consists in the peculiar construction and arrangement of the parts, which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is an inner view of the lock-case with the face-plate removed. Fig. 2 is a top plan view of the latch-bolt. Fig. 3 is a perspective view of the key-bolt, and Fig. 4 is a modification of the arrangement of the latch-bolt.

In the drawings, X represents the lock-case, and Y the edge plate.

A is the latch-bolt; B, its actuating-weight; C, the sleeve on the knob-shaft, and D the key-bolt. The latch-bolt has a beveled end, as usual, and a hollow shank portion with pins a extending transversely across from one side to the other of the shank and forming cogs, and at its rear end the latch-bolt has one side extended in the form of two branches a' a^2, which at their ends are turned up at right angles at a^8 and form bearings for the two tappet-arms c c of the knob-shaft sleeve C. This latter has a square hole through it to receive the knob-shaft, and when the latter is turned either one way or the other the tappet-arms c c strike against the outturned ends a^3 of the latch-bolt to withdraw it, no matter which way the knob is turned. To project the latch outwardly into the keeper of the door-jamb, a weight B is pivoted upon a stud b, projecting from the lock-case, and is formed on its upper end with cog-teeth b', meshing with the pin-cogs a of the latch-bolt. Whenever the latch-bolt is forced back, either by the knob or by striking against the keeper on the door-jamb in closing the door, the cog-teeth a' of the bolt meshing with the cog-teeth of the weight raises the weight, and the latter in falling from gravity again shoots out the bolt. The latch-bolt may be made of a relative thin piece of steel bent around to form a hollow shank, as shown in Fig. 2, or it may be cast in one piece with its cog-teeth a. In either case it may be adapted for either right or left hand doors by simply turning it over, so as to reverse the bevel on its striking end. As a modification of this arrangement of the latch-bolt I may in some cases pivot the weight above the latch-bolt, as in Fig. 4, instead of below it, as in Fig. 1. The key-bolt D (see Fig. 3) is made also of sheet-steel or is cast hollow and has at its rear end rectangular yokes d d, in which the key plays, and between the two side pieces of this bolt there are pivoted any number of tumbler-plates T, which also have rectangular yoke-shaped ends t, registering with the ends d of the bolt. These tumblers are pivoted at t' between the two sides of the bolt, and the two sides of the bolt have slots d', that are guided over a fixed stud d^2 on the lock-case, while the tumblers have corresponding slots with lugs t^2, that are arranged to drop on one side or other of the stud to lock the bolt in either of its two positions. It will be seen that by having yoke ends on the bolt and tumblers they are actuated positively in both directions and all springs are dispensed with.

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

1. A lock having a latch-bolt formed with a hollow shank portion with transverse studs a extending across from one side to the other of the bolt in the middle longitudinal line, and a pivoted weight with teeth meshing with said studs as described.

2. A lock having a latch-bolt formed of a piece of steel bent on itself and having its two sides connected by a series of studs or rivets, and a pivoted weight with teeth arranged between the two sides of the bolt, and meshing with said studs substantially as and for the purpose described.

3. A lock having a key-bolt formed with two parallel sides spaced apart and having a lon-

gitudinal slot through both sides and yokes at its ends inclosed on all sides to receive the key, a pivot passing transversely through the two sides of the bolt and one or more tumblers pivoted between the two sides of the bolt on said pivot and lying in parallel plane to the bolt and also having longitudinal slots and inclosed yoke ends registering with the yoke ends of the bolt substantially as and for the purpose described.

WINFIELD SCOTT HOUSER.

Witnesses:
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