D. W. WEED.

MORTISE DOOR LOCK.

APPLICATION FILED MAR. 10, 1910.

966,970. Patented Aug. 9, 1910.

Fig. 1

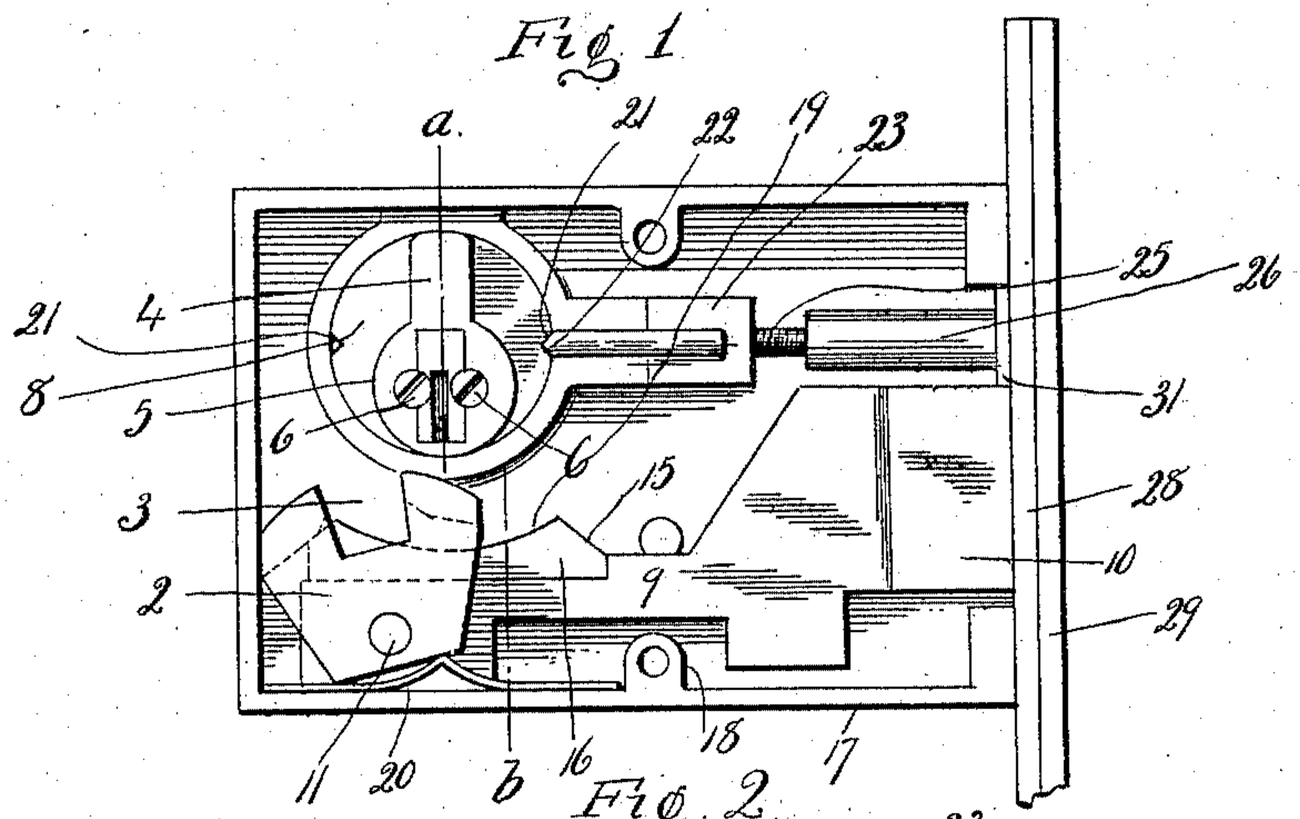


Fig. 2

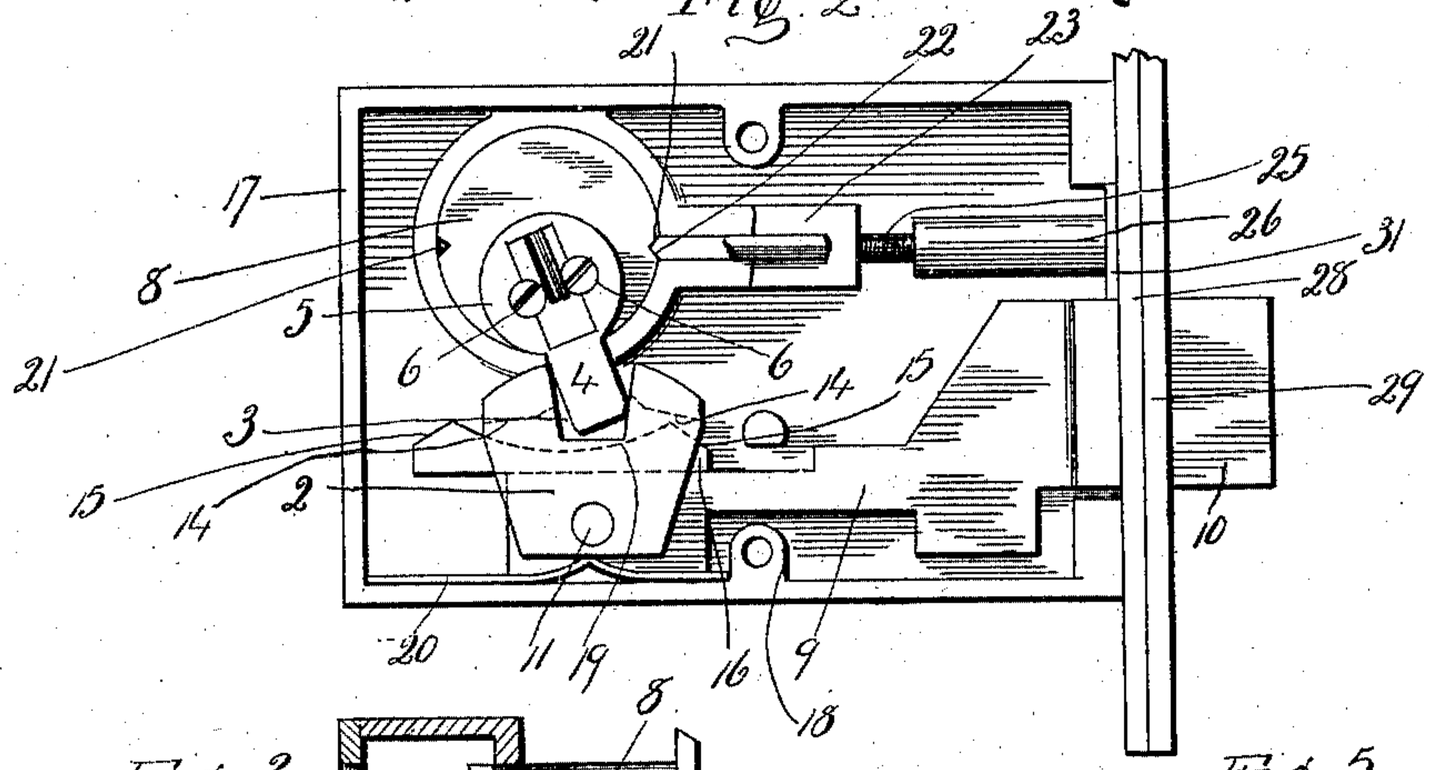


Fig. 3

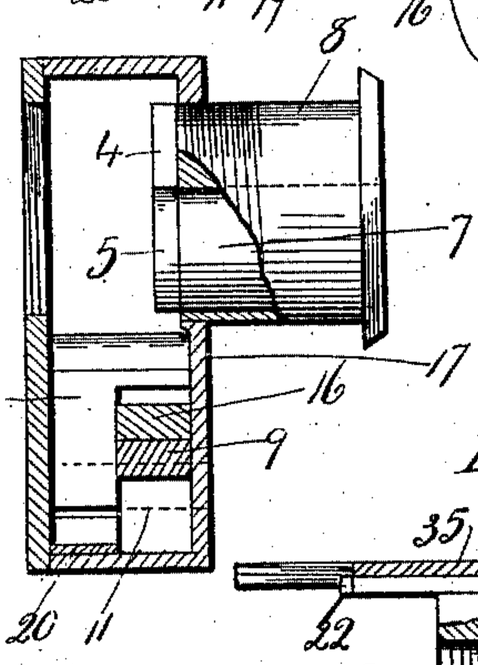


Fig. 6.

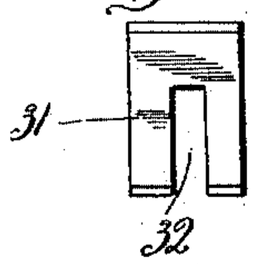


Fig. 5

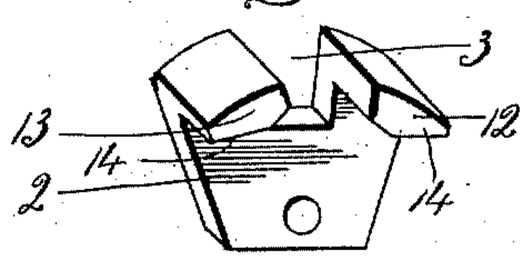
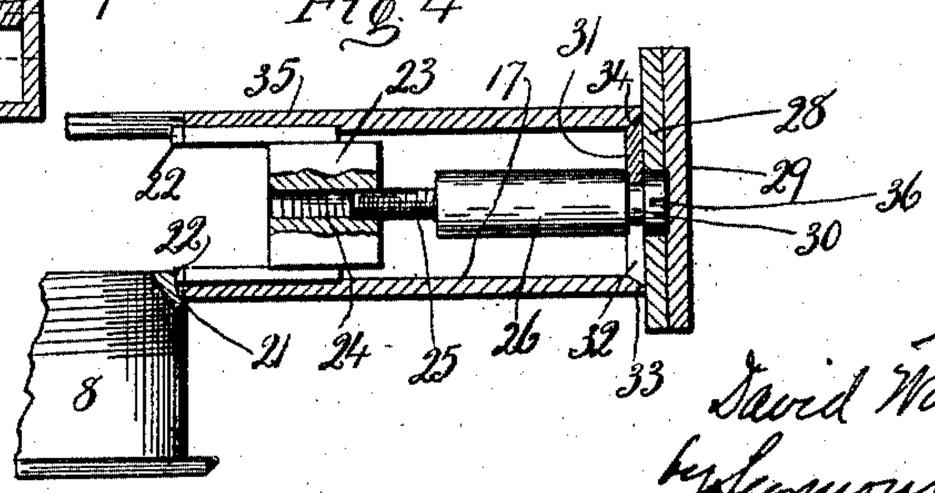


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID WALTER WEED, OF STAMFORD, CONNECTICUT, ASSIGNOR TO EAGLE LOCK CO., OF TERRYVILLE, CONNECTICUT, A CORPORATION.

MORTISE DOOR-LOCK.

966,970. Specification of Letters Patent. **Patented Aug. 9, 1910.**

Application filed March 10, 1910. Serial No. 548,460.

To all whom it may concern:

Be it known that I, DAVID WALTER WEED, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Mortise Door-Locks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view in elevation of a mortise door-lock constructed in accordance with my invention, with the bolt in its retracted or unlocked position. Fig. 2 a corresponding view showing the cam at the rear end of the plug in the act of throwing the bolt. Fig. 3 a view of the lock in vertical transverse section on the line *a*—*b* of Fig. 1. Fig. 4 a broken view in horizontal section on the line *c*—*d* of Fig. 1. Fig. 5 an inside perspective view of the talon. Fig. 6 a detached view in side elevation of the thrust-plate.

My invention relates to an improvement in mortise door-locks, the object being to reduce the cost and increase the convenience of making locks of this description by providing a construction requiring less fitting of the parts.

With these ends in view, my invention consists in a mortise door-lock having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, I employ a one-piece pivotal, wedge-shaped talon 2 having a centrally arranged relatively wide cam-slot 3 which receives the tongue 4 of a cam 5 fastened by screws 6 to the inner end of the plug 7 of a pin-tumbler lock the cylinder 8 of which has the said plug 7 mounted in it in the usual manner. The said talon 2 is arranged at virtually a right-angle to the longitudinal axis of the shank 9 of the bolt 10, the said shank 9 carrying a heavy stud 11 upon which the said talon 2 is swung by the engagement of the opposite walls of its slot 3 by the opposite edges of the tongue 4 of the cam 5. The outer end of the talon 2 is curved in contour for clearance and formed on opposite sides of its cam-slot 3 with inwardly extending locking-arms 12 and 13 formed upon their inner faces with locking bevels 14 respectively coacting with corresponding locking-bevels 15 formed at the ends of a long, narrow fixed bracket 16 extending parallel with the lock-case 17 and forming a guide for the inner end of the bolt-shank 9 the outer edge of which is cut away to clear the boss 18 formed within the case 17. The inner face of the said bracket 16 is concaved as at 19 for the clearance of the tongue 4 of the cam 5.

A spring 20 interposed between the heel of the talon 2 and the adjacent wall of the case 17 co-acts with the inner corner of the talon and provides for completing the throw of the talon in either direction, or in other words, for carrying the talon into its ultimate positions in either direction after the tongue 4 of the cam 5 has left either one or the other, as the case may be, of the opposite walls of its cam-slot 3. When the talon reaches the limit of its swinging movement, one or the other of its arms 12 and 13 is hooked over one end or the other of the bracket 16 by the action of the said spring 20, whereby the bolt is locked and prevented from "kicking back." As the talon is not carried into either of its two ultimate positions by the cam itself, but as the spring 20 is relied upon for this purpose, it is apparent that the parts of the lock do not need to be adjusted with anything like the closeness required of the parts of those locks in which the final movement of the talon is positively effected as by key-sweeps or other driving surfaces. In other words, the use of the spring 20 to complete the final movement of the talon gives a certain leeway or range of natural adjustment, and also takes up any play which may result from the construction of the parts. The use of a spring to complete the throw of the talon in each direction, as described, prevents the occurrence of what is known as "kicking back," by which is meant the failure of the cam 5, or whatever corresponds to it, to throw the bolt 10 into its fully projected position, since if the bolt is allowed to stop short of that position, it may, upon the application of pressure to it, be pushed back to the limit of its retracted position.

For holding the cylinder 8 against rotation and to enable the lock to be converted from a lock for a right-hand door to a lock for a left-hand door, and vice versa, as well

as to permit two cylinders, if desired, to be used with one lock, the cylinders are formed at opposite points in their inner ends with positioning-notches 21 receiving one or the other of the two fingers or points 22 of a movable block or shoe 23 threaded as at 24 for the reception of the threaded stem 25 of a screw-shank 26 the outer end of which passes through a hole 27 in the selvage 28 covered by the brass scalp 29. The screw-shank 26 is formed near its outer end with an annular groove 30 receiving a thrust-plate 31 having a slot 32 adapting it to be slid over the said screw-shank 26 so as to enter the annular groove 30 thereof, the inner end of the plate 31 being entered into a notch 33 in the case 17, while the outer end of the plate enters a notch 34 in the cover 35 of the case. By inserting a screw-driver into the notch 36 of the shank 26, the stem 25 may be turned so as to advance the block 23 toward the cylinder 8 so as to lock the same in place. When the screw is turned in the opposite direction it will draw the head 23 away from the cylinder 8 and permit the same to be turned, the plate 31 acting as a thrust-plate for the screw. Under this construction, the liability of breaking the screw in making the adjustments required in setting the cylinder is reduced to the minimum.

The device above described for holding the cylinder against rotation and to enable the lock to be converted from a lock for a right hand to a lock for a left hand door, and vice versa, has been made the subject of a divisional application filed June 20, 1910, Serial No. 567,885, and is therefore not claimed herein.

I claim:—

1. In a mortise door-lock, the combination with the bolt thereof, of a one-piece talon pivotally mounted upon the shank of the said bolt so as to extend at a right-angle thereto, and formed with a cam-slot, a cam entering the said slot for swinging the said bolt, a spring for completing the throw of the talon in either direction, and means co-acting with the said talon for locking the same and hence the bolt in its locked and its unlocked positions.

2. In a mortise door-lock, the combination with the bolt thereof, of a one-piece pivotal talon carried by the said bolt and having a centrally arranged cam-slot and two locking-arms extending inward from opposite sides of the said slot, a fixed bracket located within the lock-case and having at its ends locking bevels coacting with the respective arms of the talon, and a spring coacting with the talon to swing the same to the limit of its movement in either direction.

3. In a mortise door-lock, the combination with the case thereof, of a cylinder lock mounted in the said case and having its plug provided at its inner end with a cam, of a bolt, a one-piece talon pivotally mounted upon the said bolt and having a centrally arranged cam-slot for the reception of the said cam, and formed with two inwardly extending arms having locking bevels, a bracket fixed in the lock-case and formed at its ends with locking-bevels with which the locking-bevels of the respective arms of the talon coact to lock the bolt in its locked and unlocked positions, and a spring coacting with the talon to swing the same into its ultimate position in either direction.

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

DAVID WALTER WEED.

Witnesses:

H. C. Clow,

Otis B. Hough.