W. C. BURGE.

LOCK.

APPLICATION FILED AUG. 25, 1909.

965,279.

Patented July 26, 1910.

Fig. 1.

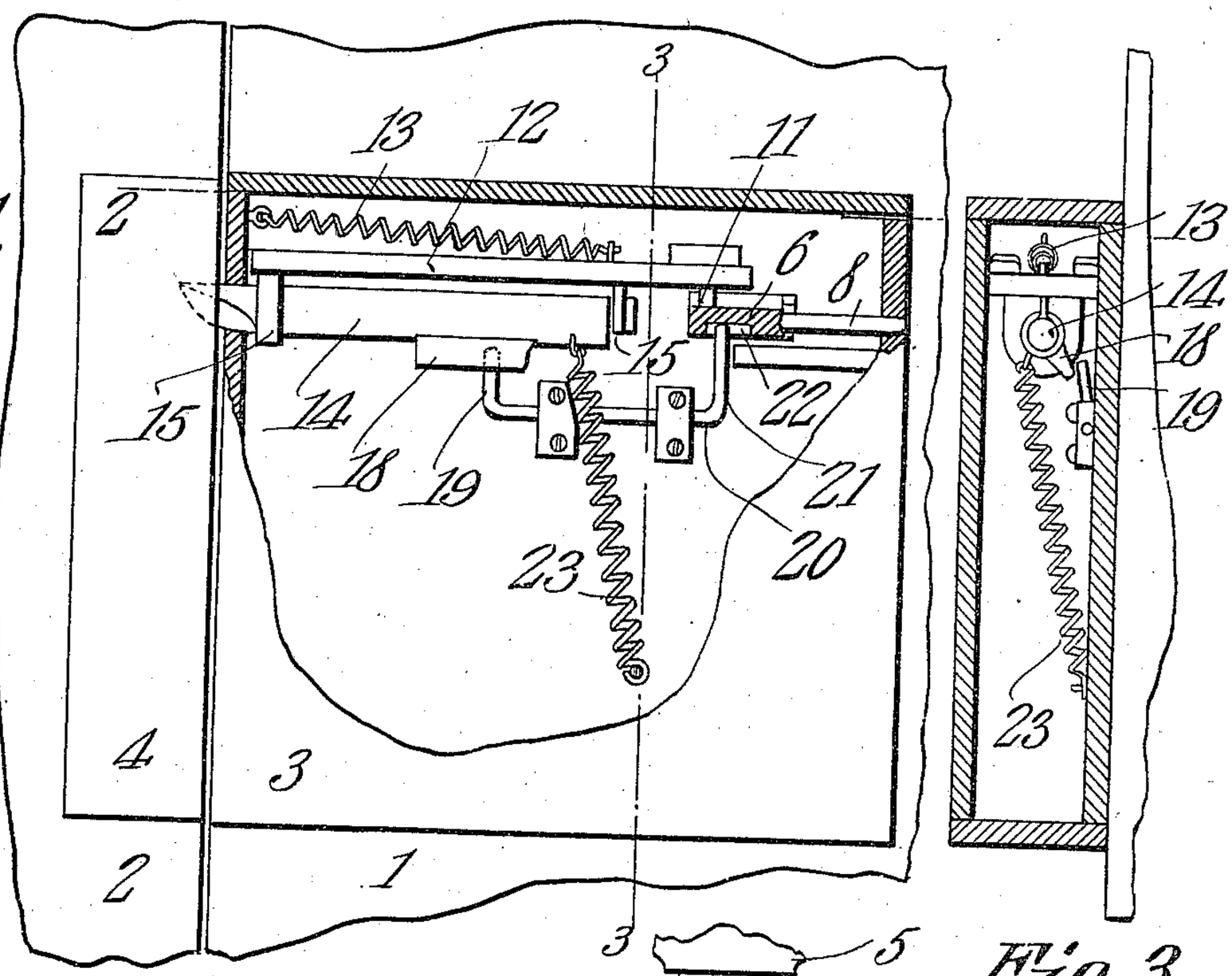

Fig. 3.

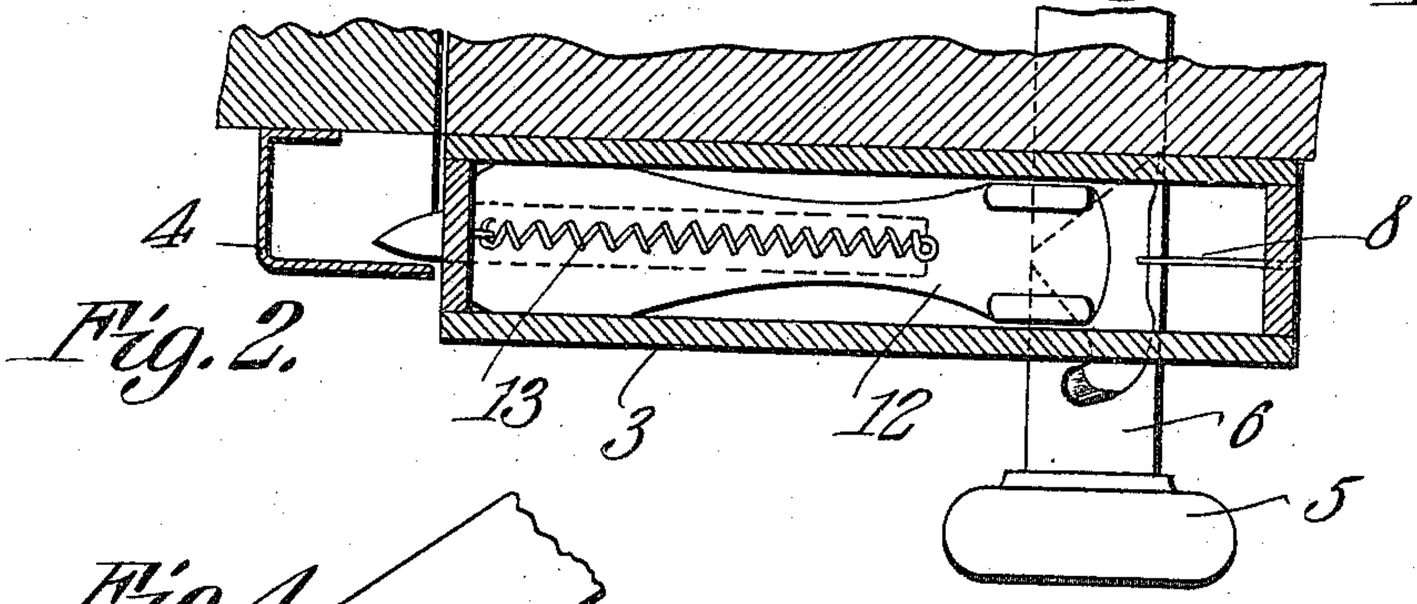

Fig. 2.

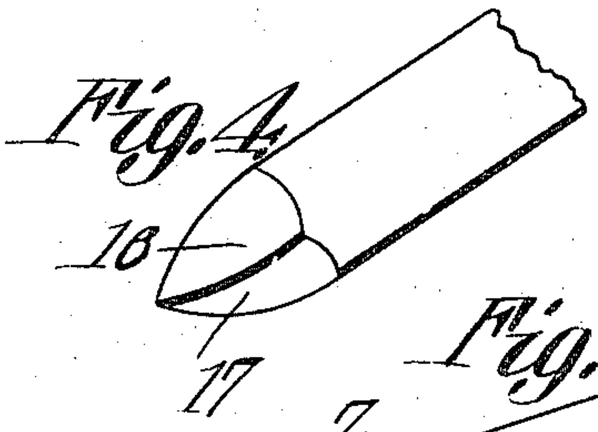

Fig. 4.

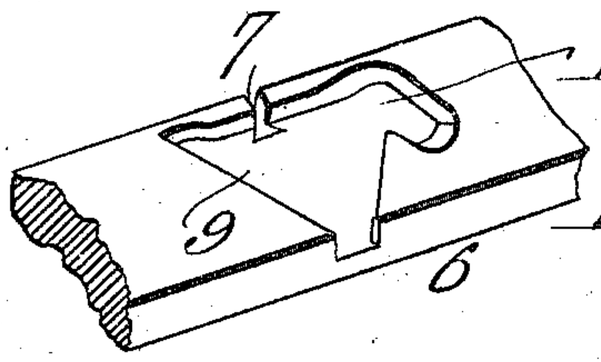

Fig. 5.

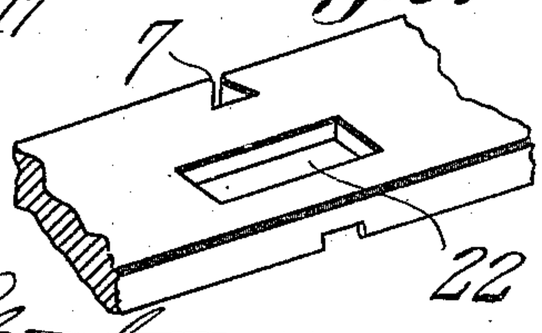

Fig. 6.

Witnesses

E. F. Hunt

R. W. Bishop

Inventor

William C. Burge.

By A. Snow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM CARTER BURGE, OF GREENSBORO, NORTH CAROLINA.

LOCK.

965,279. Specification of Letters Patent. **Patented July 26, 1910.**

Application filed August 25, 1909. Serial No. 514,617.

To all whom it may concern:

Be it known that I, WILLIAM C. BURGE, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented a new and useful Lock, of which the following is a specification.

This invention relates to improvements in door locks, and the object of the invention is to produce a device of simple construction by the use of which the latching and unlatching of the door may be performed by the same movement employed in opening or closing the door so that rotation of the knob spindle is rendered unnecessary and the hands are left free to carry bundles. This object is attained by the use of the device illustrated in the accompanying drawings, and the invention consists in certain novel features of the same, as will be hereinafter first fully described and then particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional elevation of a door lock embodying the invention. Fig. 2 is a horizontal section of the same, taken on the line 2—2 of Fig. 1. Fig. 3 is a vertical section thereof, taken on the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of the end of the latch, and Figs. 5 and 6 are detail perspective views of the top and bottom sides of the knob shank or spindle.

Referring to the drawings particularly by reference numerals, 1 designates the door, 2 the door frame, 3 a lock casing and 4 a keeper, all of which may be of the usual or any preferred construction and form no part of my present invention. The knobs 5 on opposite sides of the door are connected by a flat angular shank 6 which passes through the door and is slidably mounted in suitable openings in the sides of the casing so that the said shank may be moved transversely through the casing by pulling or pushing on the knobs, as will be readily understood. In the rear edge of the shank is a slot or notch 7 which is engaged by the end of a spring 8 secured in the inner end of the casing so that the said shank will normally lie with the apex of a V-shaped recess 9 in its upper side in the medial longitudinal line of the casing 3. This V-shaped recess 9 in the shank has one of its converging walls merged into a transverse recess 10, the outer wall of which is beveled so as to merge into the upper face of the shank and the said recess is engaged by a depending pin 11 on the inner end of the latch carrier 12 which is normally drawn outward by a spring 13 having its opposite ends attached to the upper side of the carrier and to the outer end of the casing, respectively. The latch carrier is in the form of a flat angular bar, the side edges of which bear against the side walls of the lock casing so that rotation of the said carrier is prevented by the walls of the casing, as shown most clearly in Fig. 3.

The latch 14 is supported on the underside of the carrier in bearings 15 depending from the carrier and is capable of rotating in the said bearings, the outer or working end of the latch being provided with two oppositely disposed beveled faces 16 and 17, one of which will engage the face of the keeper 4 in the opening of the door, and the other of which will engage the keeper when the door is closing. The latch is provided on its underside with a depending lug or rib 18 which is adapted to ride along a crank arm 19 at the outer end of a rock shaft 20 mounted in suitable bearings on the side of the casing and having its inner end provided with a longer crank arm 21 which enters a recess 22 formed in the underside of the shank 6. A spring 23 is secured at its opposite ends to the side of the casing and to the latch and acts on the said latch so as to hold the rib 18 against the crank arm 19 in the several positions of the parts and also to normally hold the latch in such a position that neither beveled face of the same will engage the face of the keeper and, consequently, the latch will hold the door closed.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the operation and advantages of the invention will be readily understood and appreciated. In the normal position of the parts, with the door in its closed position, the latch will engage the keeper, as shown in Fig. 2 and will be held in that position by the spring 13 drawing the said latch outward, in which position the pin 11 at the inner end of the latch carrier will be approximately at the apex of the V-shaped recess 9 in the upper side of the shank. Should it be desired to open the door, the shank 6 is pulled or pushed inward accordingly as it is operated from the inside or outside and the force thus applied

to the shank will carry the outer obliquely disposed face of the said recess 9 against the pin 11 so that the continued movement of the shank will cause the said pin to ride on the said face and thereby cause the latch carrier to slide inward in opposition to the tension of the spring 13, consequently drawing the latch inward and disengaging it from the keeper so that the door will then open under the force applied to the knob shank, it being understood, of course, that the bearings 15 on the underside of the latch carrier fit between annular shoulders on the latch so that the latch must necessarily follow the movement of the carrier. The continued movement of the shank will bring the end of the recess 22 against the crank arm 21 on the rock shaft 20 and will thereby oscillate the said shaft so that the crank arm 19 will impinge against the rib 18 and thereby rotate the latch so as to bring the beveled face of the latch into position to engage the edge of the keeper and thereby facilitate the opening of the door, as will be readily understood. In closing the door, the shank is, of course, moved in the opposite direction from that just described and the opposite inclined wall of the recess 9 will be brought against the pin 11 of the latch carrier and will act on the said pin so as to withdraw the bolt and hold it withdrawn until the door is closed when it may pass into its position in engagement with the keeper under the influence of the spring 13. In order to facilitate this operation of the latch, the recess 10 is provided, the outer wall of the said recess being beveled, so as to merge into the upper side of the shank so that when the latch has been fully withdrawn, the pin 11 will have cleared the shorter wall of the V-shaped recess 9, and will be within the recess 10, whereupon the spring 13 will at once cause the said pin to ride up the beveled face of the recess and carry the latch into position to fasten the door. This construction will be found advantageous when the door does not work easily, owing to shrinking of the door frame and consequent binding of the door.

It will be readily seen from the foregoing that it is not necessary to rotate the knob, as is the case in the usual door lock, so that the latch may be easily operated, even though the hands of the user be moist. If the person desiring to open the door is approaching from the outside and carrying bundles, it is necessary to apply pressure to the knob by leaning against the same, whereupon the latch will be operated in the described manner.

Having thus described my invention, what I claim is:—

1. The combination of a latch carrier, a latch rotatably mounted on the underside of the carrier, a shank slidable transversely of the latch, and means whereby the movement of the shank will slide the carrier and rotate the latch.

2. The combination of a latch provided with a plurality of beveled faces at its outer end, a knob shank mounted to slide transversely to the latch, and connections between the knob shank and the latch to rotate the same to present one of the said beveled faces to the keeper.

3. The combination of a latch carrier slidably mounted and provided with a depending pin at its inner end, a spring acting on the said carrier to hold the same normally projected, a latch mounted on the under side of said carrier, and a slidable shank disposed transversely to the latch carrier, and provided with a recess in its upper side having converging walls engaging the depending pin at the inner end of the carrier.

4. The combination of a slidable latch, a projection at the rear of the latch, and a slidable shank disposed transversely to the latch and provided with a V-shaped recess engaging the said projection, the shank being provided with a beveled face merging into the recess in its upper side adapted to engage the said projection and release the latch.

5. The combination of a rotary latch having a depending rib, a rock shaft having crank arms at its ends, one of said crank arms projecting against the said rib, a slidable shank disposed transversely to the latch and provided in its underside with a recess receiving the other crank arm, and a spring acting on the latch to hold the rib against the crank arm.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM CARTER BURGE.

Witnesses:

S. C. McIntosh,

B. Frank Page.