

No. 876,323.

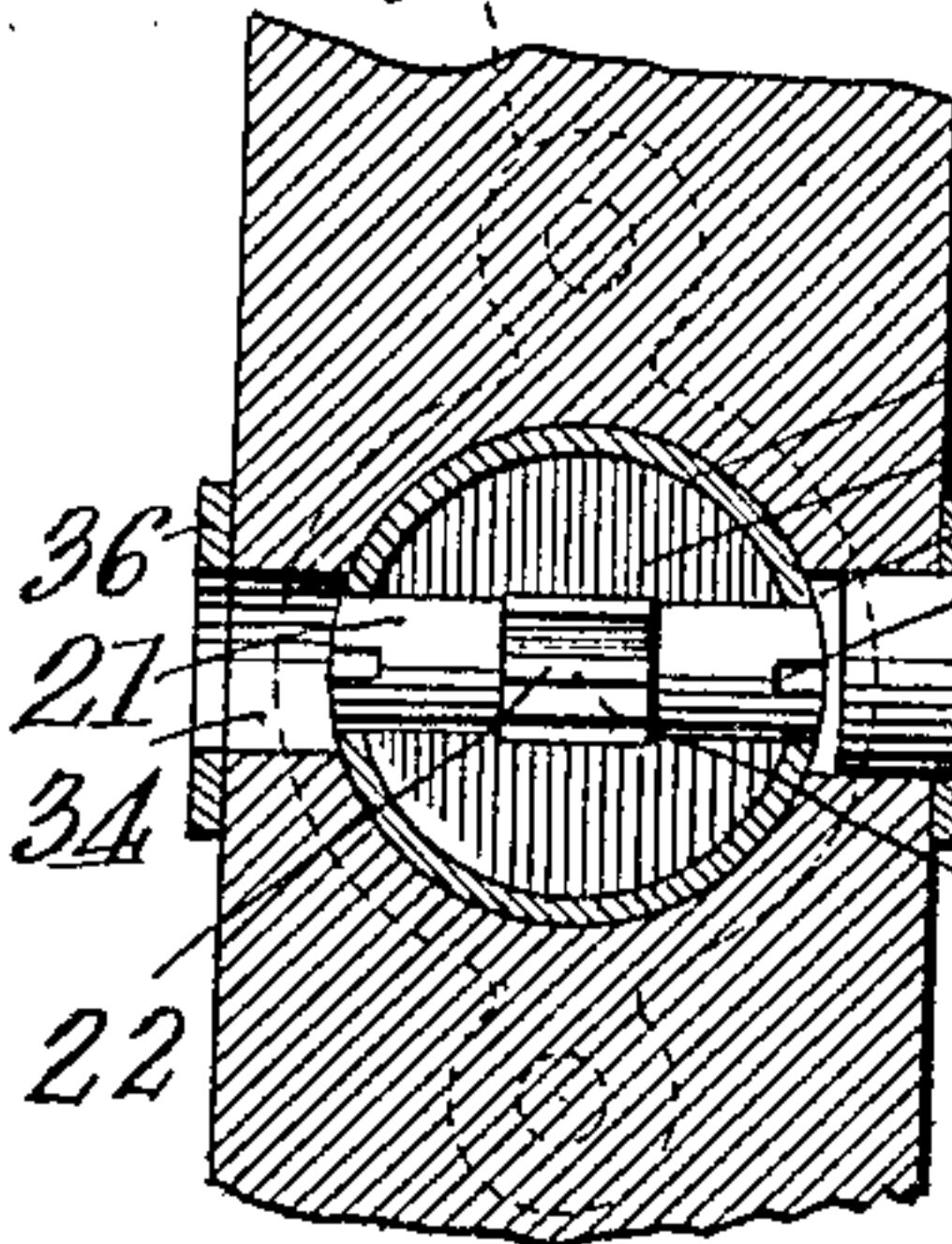
PATENTED JAN. 14, 1908.

W. V. BROWN.

LOCK OR LATCH.

APPLICATION FILED MAR. 27, 1907.

2 SHEETS—SHEET 1.



William V. Brown,
INVENTOR.

WITNESSES:
E. H. Howard
J. J. Chapman

By *Chas. Snow & Co.*
ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 4

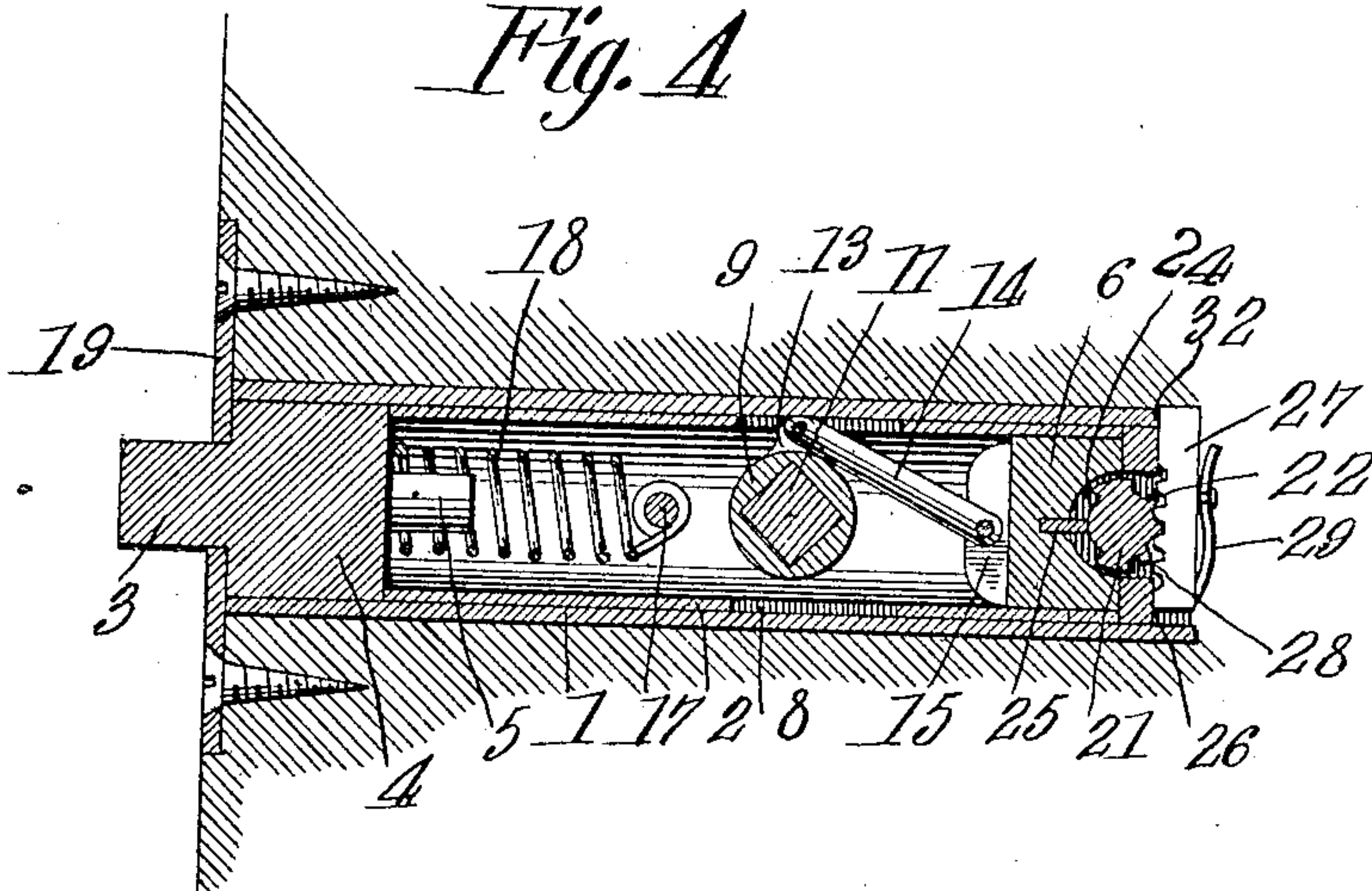


Fig. 5.

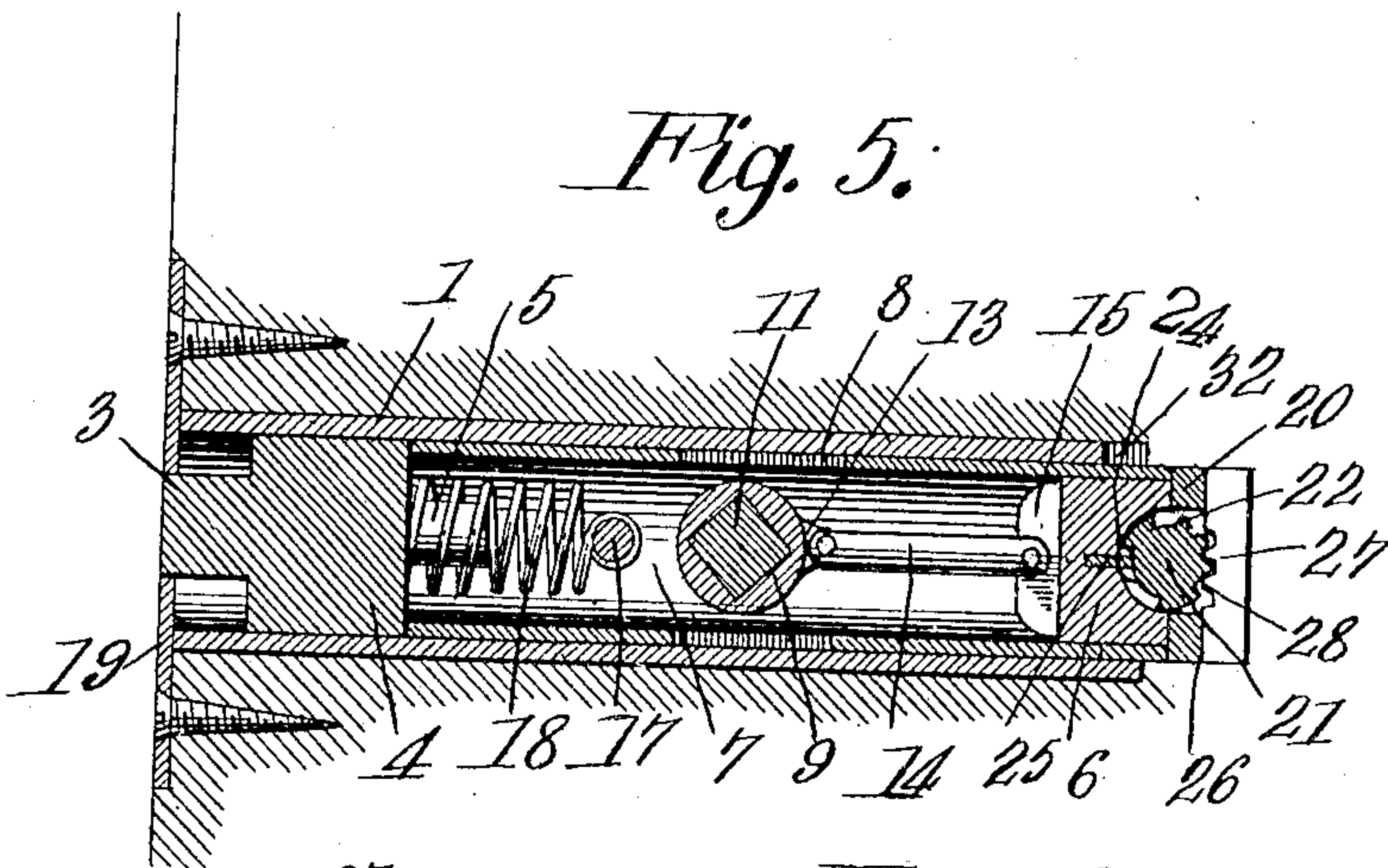
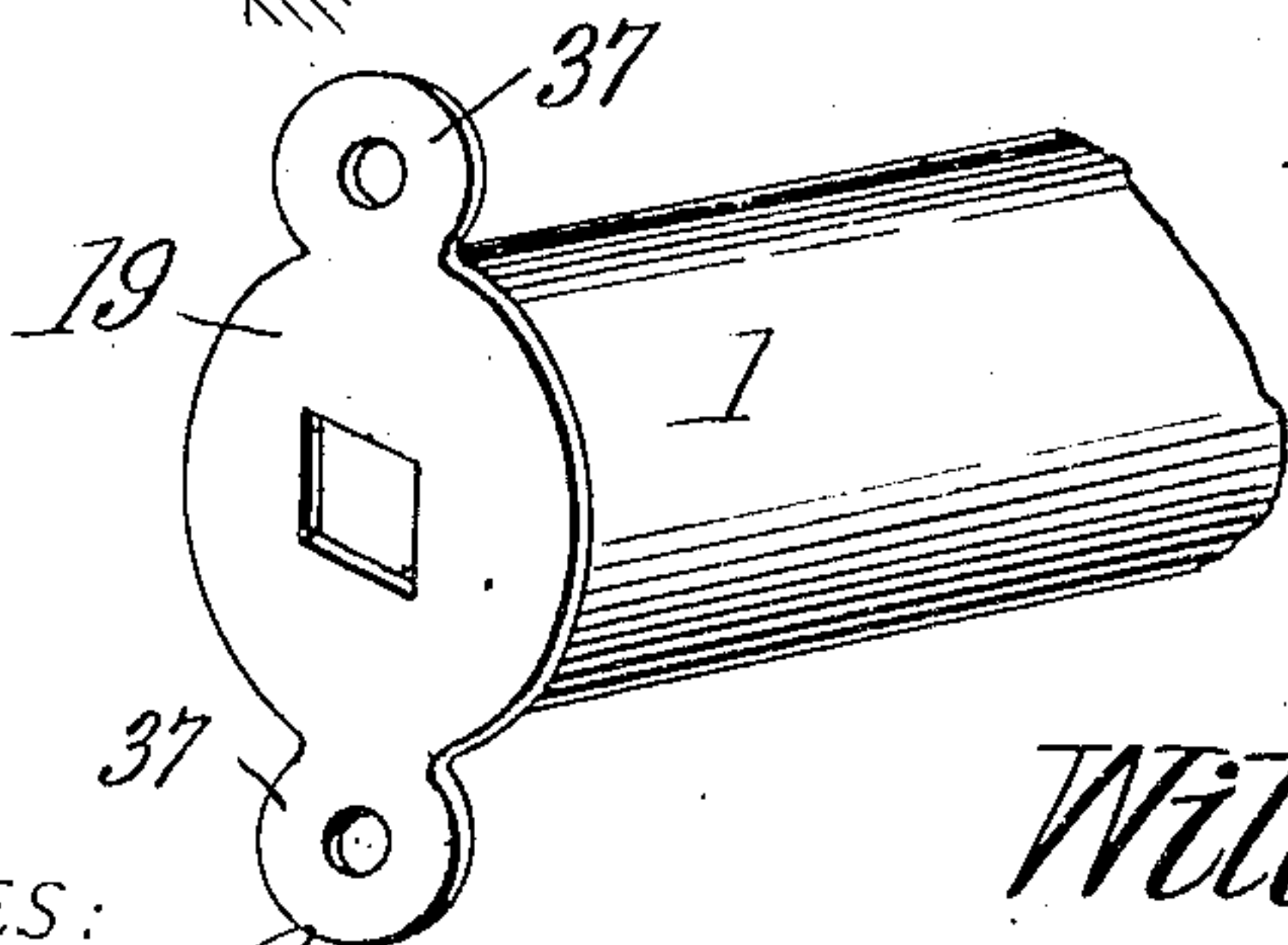


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM V. BROWN, OF BERWICK, NOVA SCOTIA, CANADA.

LOCK OR LATCH.

No. 876,323.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed March 27, 1907. Serial No. 364,881.

To all whom it may concern:

Be it known that I, WILLIAM V. BROWN, a subject of the King of England, residing at Berwick, in the Province of Nova Scotia and Dominion of Canada, have invented a new and useful Lock or Latch, of which the following is a specification.

This invention has reference to improvements in locks, and its object is to produce a lock of extreme simplicity and ease of manufacture and low cost but which at the same time will have the efficiency and certainty of operation of locks of much greater cost and complexity.

The invention consists primarily of a sliding bolt of general cylindrical contour inclosed in a cylindrical casing. The sliding bolt is spring-controlled and the roll-back carried by the knob spindle is directly connected to the sliding bolt so as to move the same positively in either direction against the action of the spring, and this sliding bolt is provided with a simple form of key-controlled lock whereby the bolt may be secured against movement under the action of the knobs when desired.

The invention will be fully understood from the following detailed description taken in connection with the accompanying drawing forming part of this specification, in which,—

Figure 1 is a central section through a portion of a door with the lock in place, and showing the knobs in elevation; Fig. 2 is a perspective view of the latch bolt and roll-back of the lock removed from the casing and with the spring omitted; Fig. 3 is a section on the line $x-x$ of Fig. 1; Figs. 4 and 5 are longitudinal sections of the lock taken on a plane at right angles to that shown in Fig. 1 and illustrating different phases of the operation of the lock; and Fig. 6 is a perspective view of the front end of the casing.

Referring to the drawings, there is shown a cylindrical casing 1 which may be fitted to a cylindrical mortise bored in the edge of a door at the appropriate location. Fitting this cylindrical casing there is a cylindrical latch bolt 2 having formed on one end, or, if desired, secured to that end, a bevel latch head 3 which may be projected from the casing 1 beyond the edge of the door or retracted into the casing as is usual in locks or latches. The latch bolt adjacent to the bevel 3 is

formed with a cylindrical block or head 4 having a rearwardly-extended, axially-located pin or lug 5, and near the rear end the latch bolt is formed with another cylindrical head 6. These two heads 4 and 6 are joined from diametrically opposite sides by longitudinal, segmental junction strips 7—7, each provided about midway of its length with a slot 8 to be hereinafter referred to. The heads 4 and 6 and the junction strips 7 may all be formed in one piece if so desired or they may be separately formed and appropriately joined.

Between the strips 7 there is located a cylindrical roll-back 9 provided with the usual square, axial passage 10 for the knob spindle 11, extending laterally through the sliding bolt 4 between the connecting strips 7 and through the sides of the door and ultimately receiving the manipulating knobs 12, which may be of the ordinary or any approved pattern. The roll-back 9 is formed on one side with a pair of ears 13 between which is pivotally connected one end of a link 14, the other end of which is pivotally connected to a pair of ears 15 formed on the front face of the rear head 6 of the latch bolt.

The casing 1 is provided with two diametrically opposite perforations 16 for the passage of the spindle 11 and adjacent thereto the casing carries a pin or screw 17 extending through the longitudinal spaces between the connecting strips 7 and receiving one end of a helical spring 18, the other end of which surrounds the lug 5 and is seated against the rear face of the head 4 of the latch bolt. The tendency of the spring is to force the latch bolt forward to project the latch bevel 3 beyond the edge of the door through the usual square hole formed in a face plate 19 which, in the present instance, is made fast to or forms part of the front end of the cylindrical casing 1. When either knob is turned the spindle 11 acting on the roll-back 9 will turn the latter and the turning of this roll-back acting through the link 14 will force the latch bolt toward the rear against the action of the spring 18 and thus withdraw the bevel latch or head 3 into the casing through the opening in the face plate 19. When the knob is released the spring will force the bevel head again outward through the face plate 19 in the usual manner.

It will be observed that the roll-back 9

extends practically entirely across the space between the connecting strips 7 at the particular point where the roll-back is located and when the parts are in normal position the ears 13 project into one or the other of the slots 8 and when the latch bolt is moved into the casing either by the direct action of the knobs or when the bevel head engages the door casing or the guard thereon these lugs are moved out of the slots 8 and the latch bolt is therefore free to move longitudinally with relation to the roll-back, which is held against any movement but a rotary movement by the knob spindle 11 passing therethrough.

Back of the head 6 of the latch bolt and attached thereto is a supplemental head 20 and through the two heads at the meeting faces there is formed a lateral perforation for the reception of a short cylindrical shaft 21 having about midway of its length a number of radially projecting gear teeth 22 cut in an annular collar 23 formed integral with the shaft 21. Diametrically opposite the gear teeth this collar is cut away, as shown at 24, and seated in the head 6 and projecting into this cut-away portion of the collar is a fin 25 acting as a stop limiting the rotation of the shaft 21 on its longitudinal axis to a movement equal to the length of the cut-away portion 24. At the rear end of the head 20 there is formed diametrically across this head a seat 26 for a bolt 27 having gear teeth 28 formed thereon and engaged by the gear teeth 22 on the shaft 21. This bolt 27 is held in place by springs 29 extending from each side of a plate 30 wide enough to engage the rear face of the head 20 on each side of the seat 26 and to be secured thereto by pins or screws 31.

The casing 1 is provided near its rear end with a perforation 32 to receive the end of the latch bolt 27 and the shaft 21 has each end provided with a slot 33 extending diametrically across the same. The sides of the door coincident with the shaft 21 are bored out, as shown at 34, to receive a cylindrical block 35 having a radial slot of sufficient size to receive the end of a key adapted to fit the slot 33 in the shaft 21, and this block 35 is mounted for axial movement in an escutcheon plate 36 arranged to be fastened to the sides of the door.

When it is desired to lock the door, it is only necessary to insert the key through the block 35 until it engages the slot 33 and then by turning the shaft 21 on its axis the bolt may be moved radially beyond the edge of the cylindrical surface of the latch bolt and engage the perforation 32 in the casing, where it will be held against accidental displacement by the springs 29. This will lock the bolt in the projected position and when the door is shut will, therefore, lock the door against being opened by the manipulation of the knobs 12. Since the lock is cylindrical, it may be used on either right or left-hand

doors, and this without the necessity of reversing the latch bolt.

This lock may be attached to the door by first boring a small countersink to take the major portion of the face plate 19 and two smaller countersinks on opposite sides thereof to receive the extensions 37 thereon designed to receive the fastening screws, all as indicated by dotted lines in Fig. 3, and then by boring into the edge of the door in line with the center of the major portion of the face plate a hole of sufficient size and depth to receive the casing 1 and to permit the movement of the latch bolt to the rear thereof. Two other holes are bored laterally through the door intersecting the hole in the casing 1. One of these holes is for the spindle 11 and the other for the key blocks 35. It will be seen that the door is left, except for the longitudinal hole for the casing 1, of its original thickness, and, therefore, abundant body remains for the fastening of the plates forming the seats for the knob shanks.

It will also be seen that the longitudinally-movable latch bolt structure is generally cylindrical in shape and practically fills the interior of the cylindrical casing. Therefore, no mounting devices or guiding devices of any character are needed over and above the roll-back and the aperture for the passage of the bevel head which in normal operation projects through the face plate 19. The latch bolt may therefore be removed and reversed with the greatest facility, and the number of parts necessary for the construction and operation of the latch or lock is reduced to a minimum.

I claim:—

1. In a latch or lock, a cylindrical casing, a cylindrical latch-bolt comprising two cylindrical blocks, one of which has a bevel latch head formed on one face and an axial stud on the other face, segmental connecting strips on diametrically opposite sides of the axis of the latch bolt, a roll-back within the latch-bolt, a knob spindle extending through the roll-back and through the spaces between the connecting strips, a link connection between the roll-back and the rear block of the latch bolt, and a spring surrounding the axial stud on the front block of the latch bolt and having its other end in fixed relation to the casing.

2. In a lock or latch, a cylindrical casing, a cylindrical latch bolt longitudinally movable in and fitted to the casing, a lock bolt movable diametrically across the latch bolt and carried thereby, a key-operated rock shaft for moving the lock bolt, and springs fast on the latch bolt and engaging the lock bolt to retain it in place.

3. In a lock or latch, a cylindrical casing, a cylindrical latch bolt movable longitudinally therein, a spring contained within the latch bolt and tending to move the latter

toward the front of the casing, a roll-back within the latch bolt, a link connection between the roll-back and the latch bolt, a lock bolt carried by the latch bolt and movable diametrically across the same, a spring retaining device for the lock bolt, and a key-operated rock shaft engaging the lock bolt.

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

WILLIAM V. BROWN.

Witnesses:

LEWIS A. FORREST,
S. J. NICHOLS.