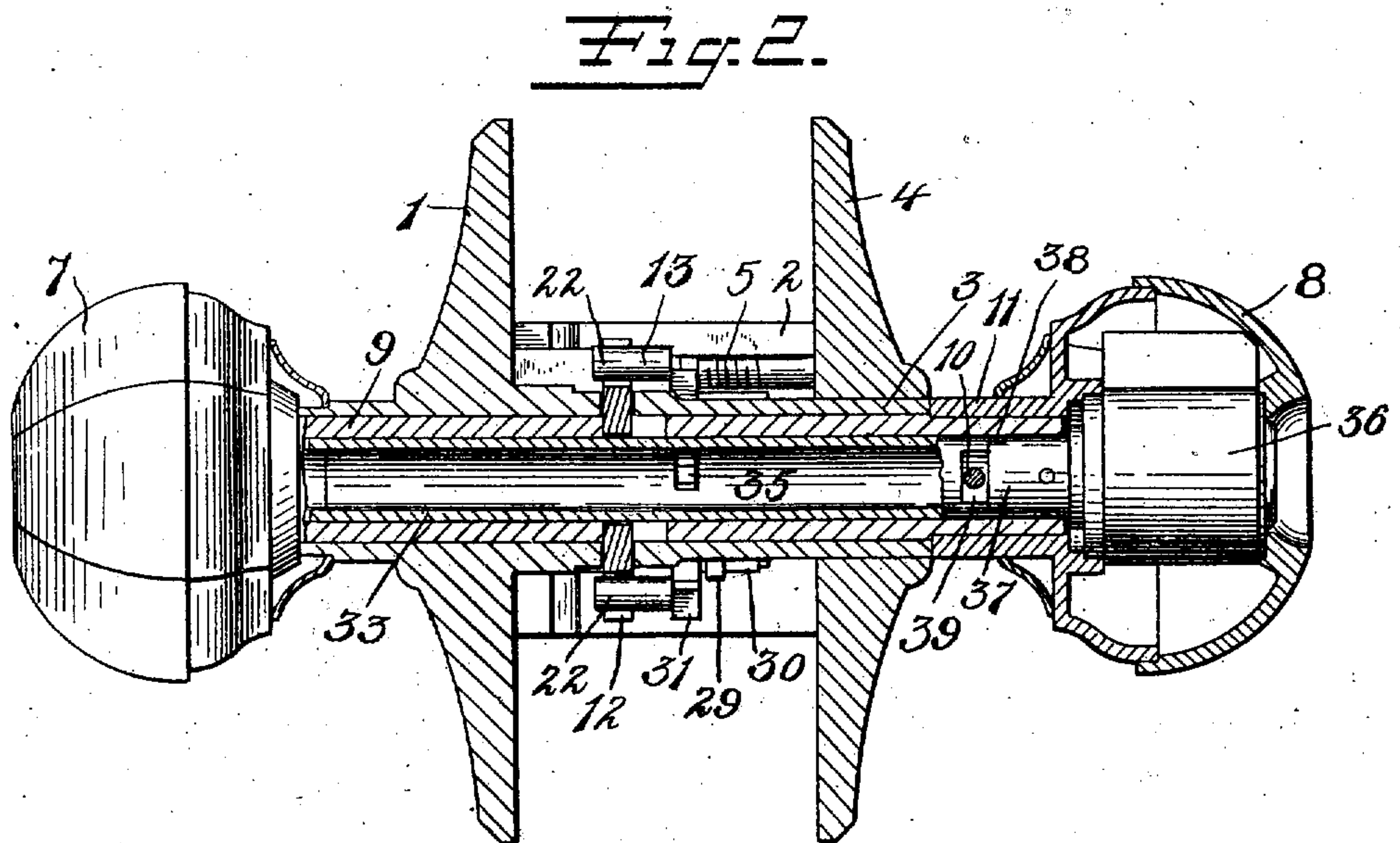
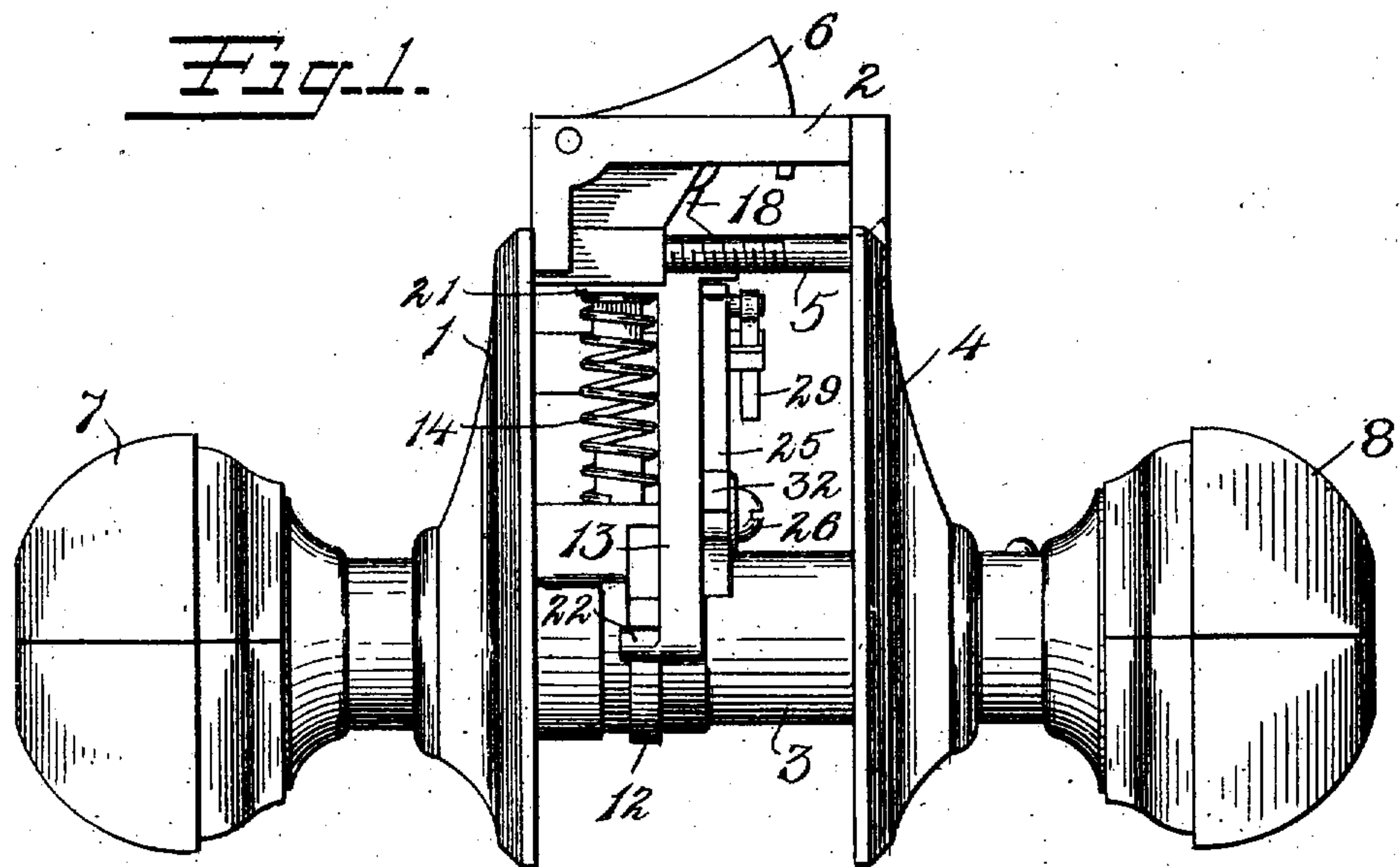


No. 850,179.

PATENTED APR. 16, 1907.

B. PHELPS.  
LOCK AND LATCH.  
APPLICATION FILED APR. 13, 1906.

2 SHEETS—SHEET 1.



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B. PHELPS.  
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2 SHEETS—SHEET 2.

Fig. 3.

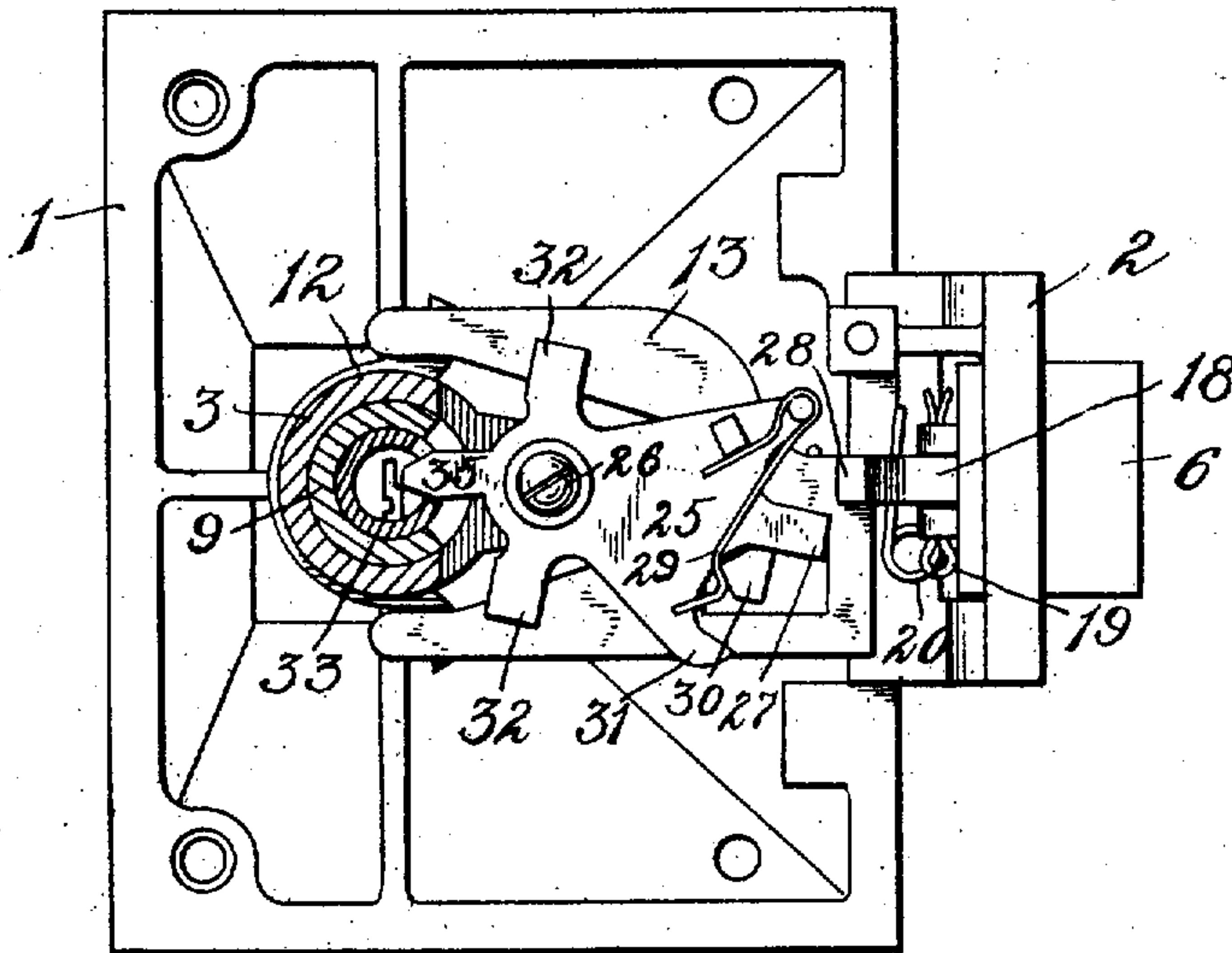


Fig. 8.

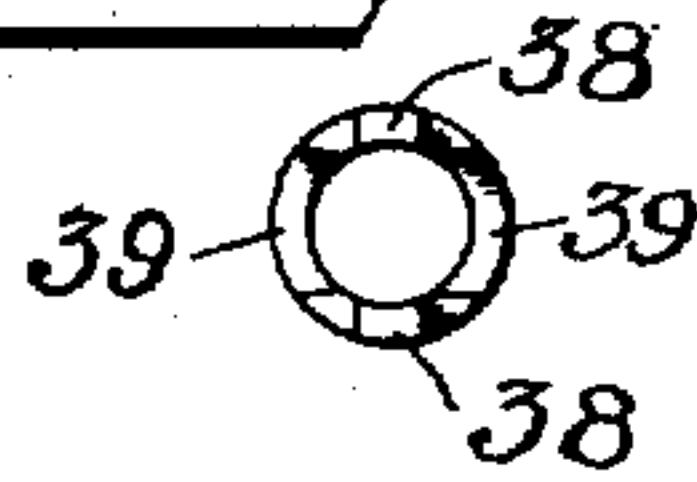


Fig. 7.

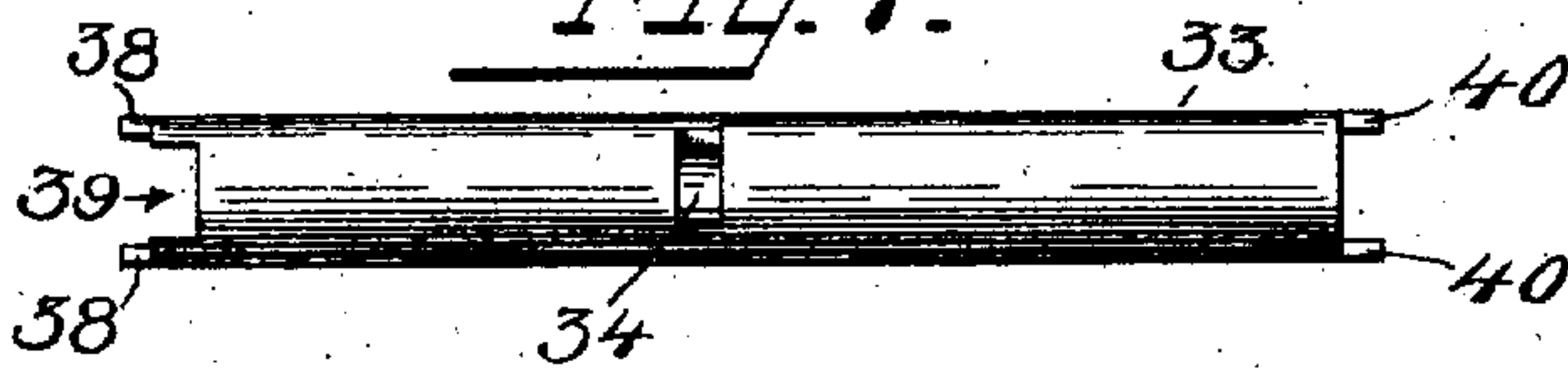


Fig. 5.

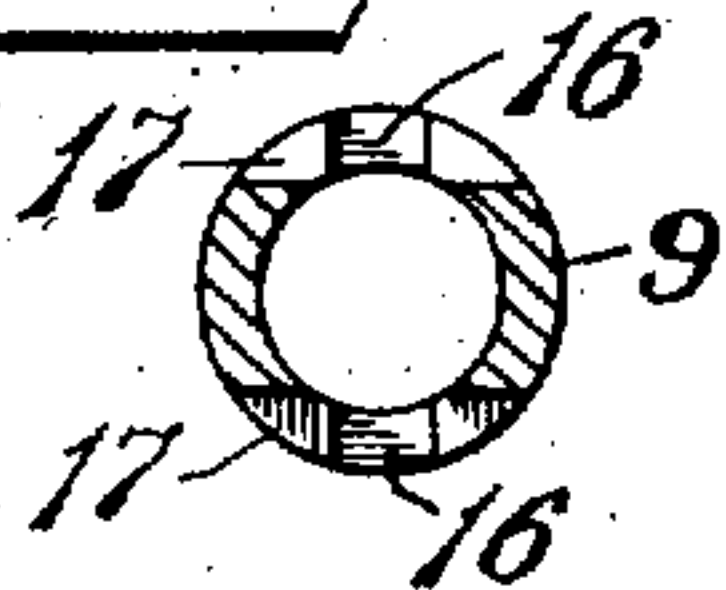


Fig. 4.

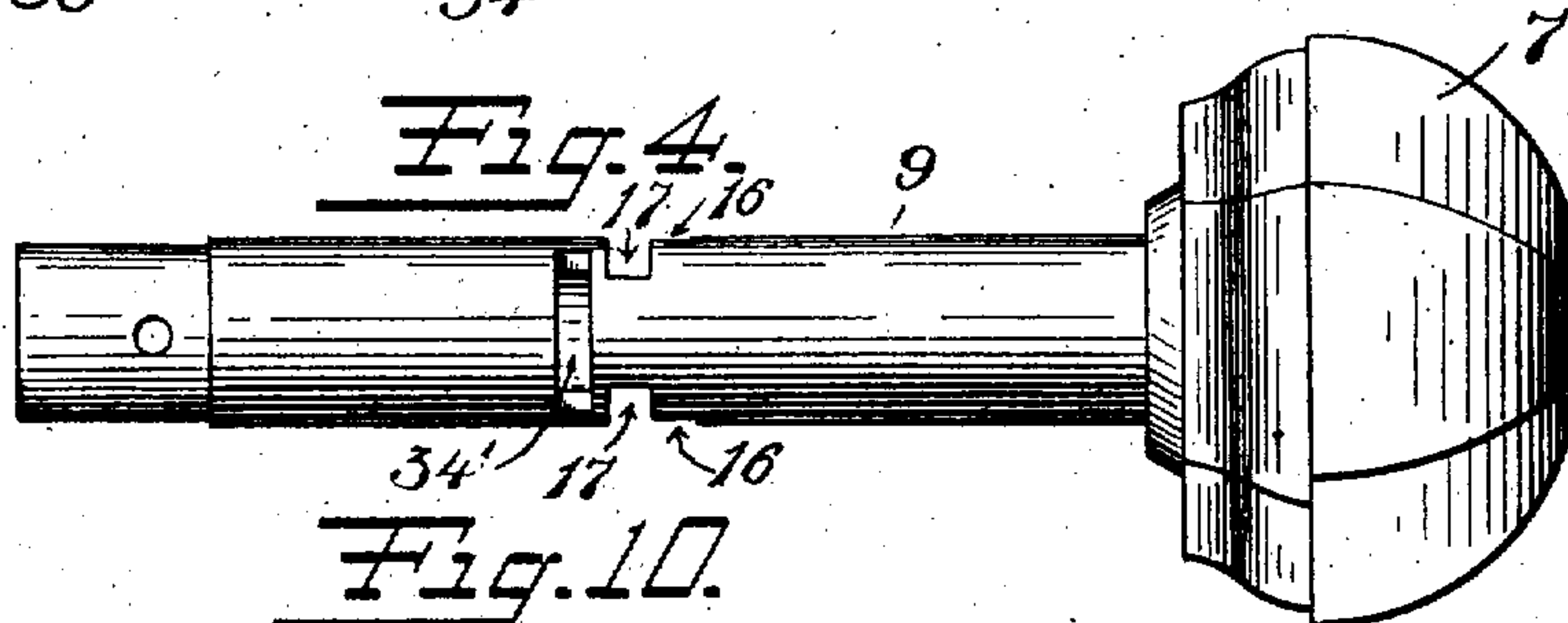


Fig. 9.

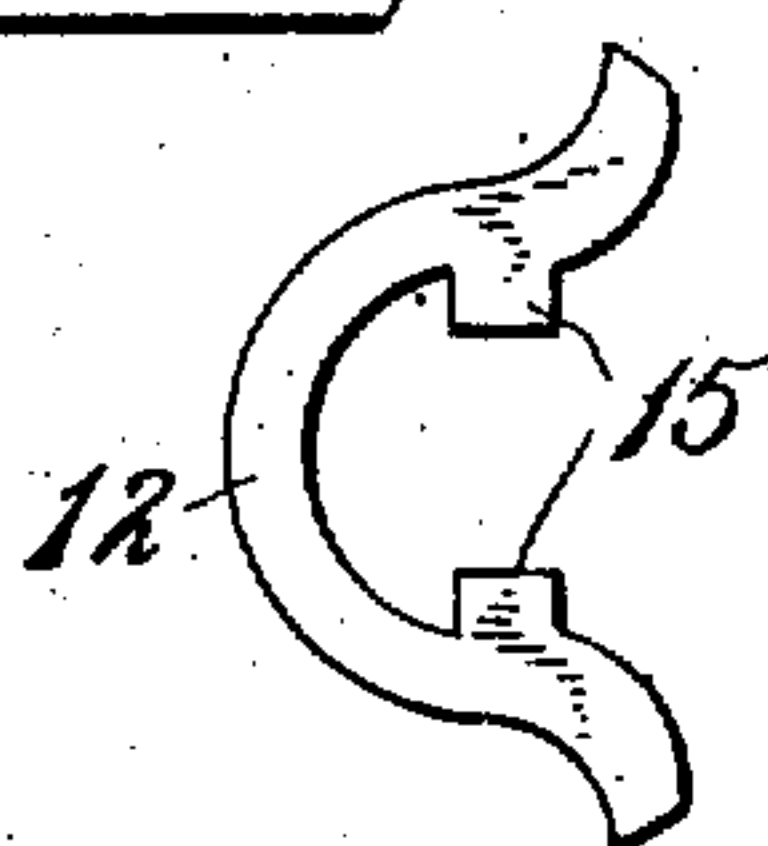


Fig. 10.

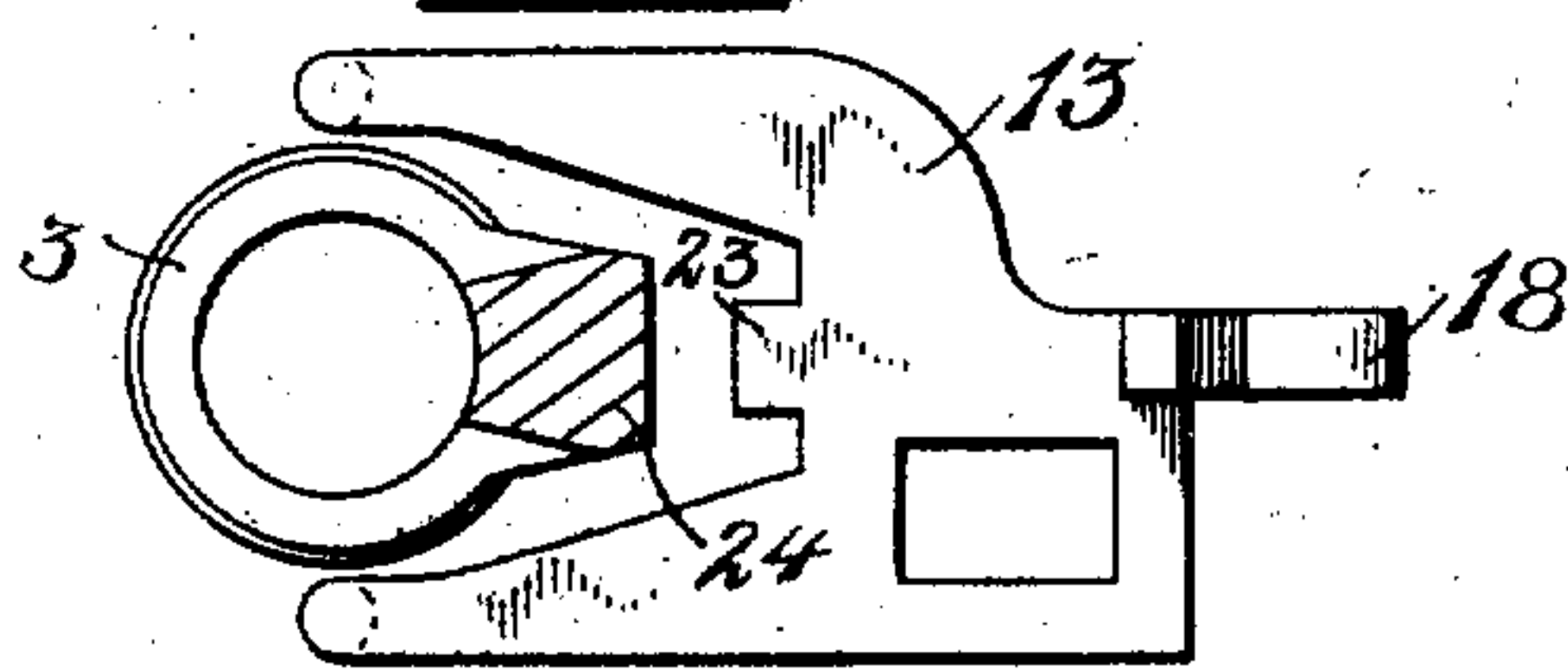


Fig. 6.

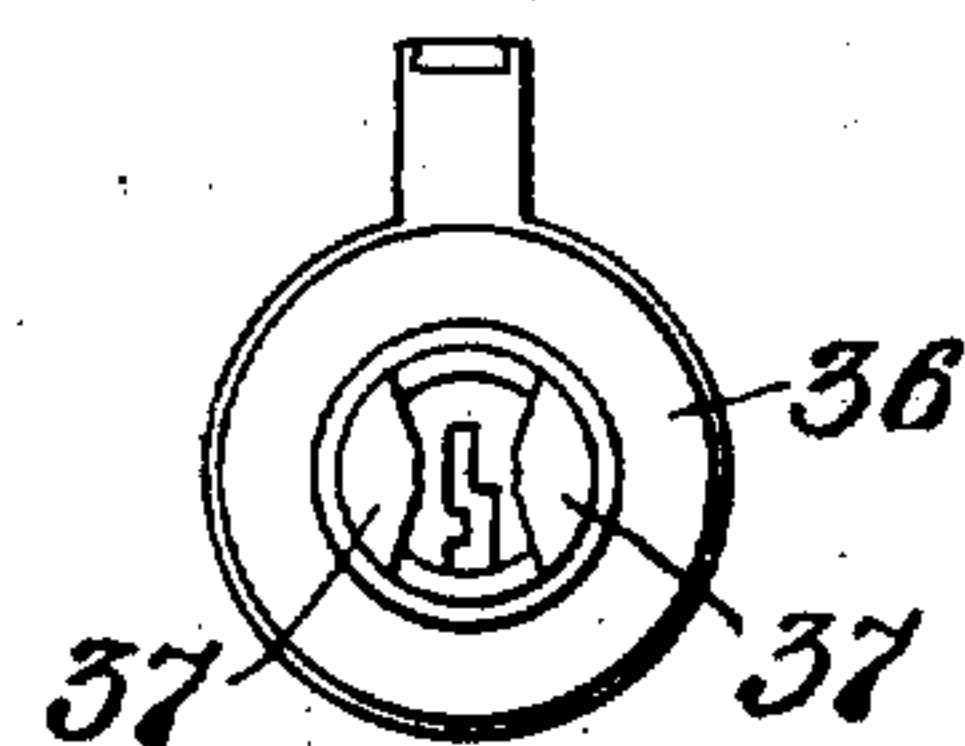
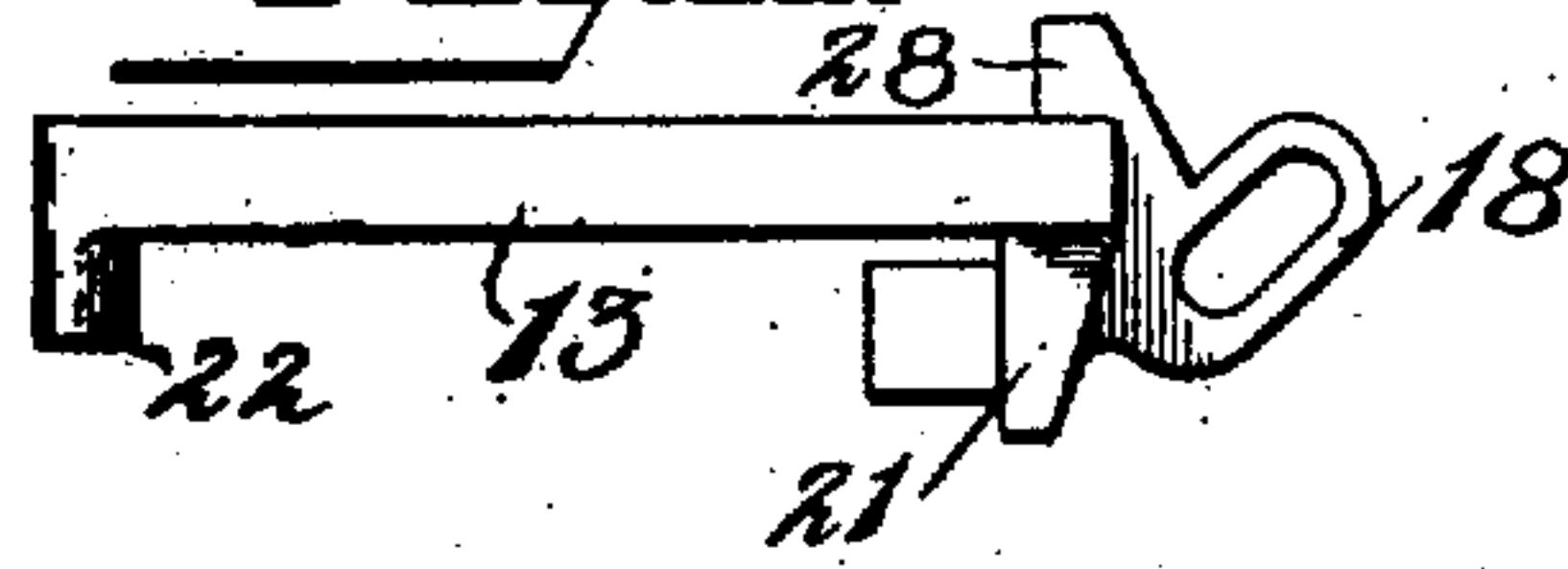


Fig. 11.



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# UNITED STATES PATENT OFFICE.

BYRON PHELPS, OF SEATTLE, WASHINGTON.

## LOCK AND LATCH.

No. 850,179.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed April 13, 1906. Serial No. 311,621.

*To all whom it may concern:*

Be it known that I, BYRON PHELPS, a citizen of the United States, residing at Seattle, county of King, Washington, have invented certain new and useful Improvements in Locks and Latches, of which the following is a full, clear, and exact description.

My invention relates to locks and latches, and particularly to a mechanism for railroad-car doors. It will be obvious, however, that the invention is not limited to such use.

The object is to provide a simple mechanism having great durability and which may be locked or unlocked from either side or serve as a latch mechanism operable from either side.

Details of the preferred form will be found illustrated in the accompanying two sheets of drawings.

Figure 1 is a plan view of the mechanism. Fig. 2 is a transverse vertical sectional view looking from the rear. Fig. 3 is a vertical sectional view showing the interior construction. Fig. 4 is a detail view of the knob-spindle and attached knob. Fig. 5 is a sectional view of the knob-spindle. Fig. 6 is an end view of a cylinder-lock. Fig. 7 is a detail view of the lock-spindle. Fig. 8 is an end view of the lock-spindle. Fig. 9 is a detail view of the knob-spindle roll-back. Fig. 10 is a view of the bolt-retracting yoke, shoe, or slide, and fragmentary section of the frame at the point in which the roll-back is mounted. Fig. 11 is a view of the under side of the shoe.

The main frame is composed of the side plate 1, end plate 2, and sleeve 3. The other side plate 4 is adjustable on sleeve 3 and may be clamped in place by screw 5. The bolt 6 is pivoted and projects through the end plate.

The knobs 7 and 8 are rigidly secured to the opposite ends of the spindle 9, which is rotatively mounted in the frame-sleeve 3. The knob 7 is permanently attached to the spindle 9, while knob 8 is removably secured by means of pin 10, which passes through the knob-shank 11.

The roll-back 12 is mounted on the knob-spindle 9 in a slot in sleeve 3 and is adapted to retract the shoe 13 against the opposition of the spring 14. The roll-back is G-shaped and has projections 15, which afford an operative connection with the knob-spindle 9 in the notches 16 16. The slots 17 17 afford entrance-passages to the notches 16 16.

The shoe 13 has a slotted portion 18 through which the cotter-pin 19 passes.

20 is the easy spring for the bolt. The angle at which the slot is cut permits the bolt and its pin 19 to swing back without affecting the shoe. 21 is a shoulder against which the spring 14 presses.

22 22 are the hooks of the shoe, which engage the arms of the roll-back 12. The tendency of the spring 14 therefore is to push the outer end of the shoe to the right, since its rear end is supported by the roll-back.

23 is a shoulder which acts as a stop in conjunction with the abutment 24.

25 is the dog pivoted on the screw 26 to the abutment and has a nose adapted to be interposed back of the shoulder 28 of the shoe in line with the axis of the knob-spindle.

29 is a spring coacting with post 30 on the casing for holding the dog yieldingly in its active or inactive position. The post 30 stands between the nose 27 and shoulder 31, so as to limit the throw of the dog in both directions. The dog serves to hold the shoe 13 in position laterally and is provided with arms 32 32 at the rear for additional security.

33 is the lock-spindle having a slot 34, into which extends the dog-tail 35.

The knob-spindle 9 has a slot 34', registering with slot 34. In each knob is a cylinder lock like 36, whose movable member or plug has a pair of extension shoulders or projections 37 37. The spindle projections 38 38 stand between the plug projections 37 37 in the lock of knob 8. The spindle is cut away at 39 39 to allow for the pin 10. The opposite end of the spindle has projections 40 40, which engage between the projections of the plug of the lock in knob 7.

Normally the bolt may be retracted by either knob. The continuous spindle 9 affords great strength and rigidity, and in conjunction with the frame-sleeve 3 absolutely prevents binding of the parts. When a key is inserted in either knob and turned, the lock plug communicates its action to the lock-spindle 33 and operates the dog. Since the movement of the dog is limited by the shoulders 27 or 31 striking against the stationary post 30, the movement of a lock-plug and key is also limited and does not rotate either knob. As in all locks the key is inserted in a vertical slot. The locking action of the dog is effected by turning the key a partial rotation



in one direction from the center or entering position and the unlocking by turning it in the opposite direction from the center. The projections 38 and 40 being of less width than the space between the projections 37 on the lock-plug, the spindle is permitted to be turned in either direction by one lock-plug without affecting the other. When the shoe 13 is blocked or dogged, both knobs are dogged through the medium of the roll-back connection.

The lock may be taken apart after knocking out pin 10. Then knob 8 comes off and side plate 4. When dog 25 is removed, the lock-spindle 33 may be taken out, and the shoe 13 may be disengaged from the roll-back 12. The knob-spindle must then be slid through the sleeve far enough for the lugs 15 to be brought into line with the slots 17 17. The roll-back then comes out and the knob-spindle may be removed. The parts may be assembled in reverse order.

What I claim is—

1. In a lock-and-latch mechanism, a bolt, a pair of knobs, a continuous spindle connecting said knobs, a lock in each knob, a continuous lock-spindle in said knob-spindle, operative means of connection between said knob-spindle and said bolt, an oscillating latch-dogging device operable by said locking-spindle and a pivot for said dogging device, said pivot being mounted at one side of both spindles.

2. In a lock-and-latch mechanism, a frame including a sleeve, a side plate and an end plate, a bolt adapted to protrude through the end plate, a knob-spindle rotatable in said sleeve, a lock-spindle rotatable in said knob-spindle and independently thereof, means of connection between said knob-spindle and said bolt, and an oscillating pivotally-mounted dogging device operatively connected at one end with said lock-spindle.

3. In a lock-and-latch mechanism, a bolt, a knob-spindle, a roll-back thereon, a shoe connecting said roll-back and said bolt, and dogging mechanism including a detachable oscillating plate removably holding said shoe in its operative position.

4. In a lock-and-latch mechanism, a knob-spindle, a lock-spindle mounted therein, a bolt, a shoe connecting said bolt and knob-spindle, an oscillating latch-dogging plate engaged by said lock-spindle, and stops for limiting the swinging movement of said dogging-plate in both directions.

5. In a lock-and-latch mechanism, a bolt, a pair of knobs, means of connection between said knobs and said bolt including a knob-spindle, a locking-spindle mounted in said knob-spindle, and a pivoted dogging device directly connected to said lock-spindle and having a limited oscillating movement.

6. In a lock-and-latch mechanism, a bolt,

a pair of knobs, a knob-shank, a pivoted dogging device preventing the rotation of said knobs, a lock mounted in each knob, a lock-spindle directly connected to said dogging device, said dogging device being operable by turning a key inserted in a lock in one direction for retracting the dogging device and in the opposite direction for setting said dogging device.

7. In a latch mechanism, a frame including a sleeve, a bolt carried by said frame, a knob-spindle rotatable in said sleeve and having oppositely-arranged notches, and a roll-back having lugs adapted to be seated in said notches clearance-slots in said shank communicating with said notches to permit said roll-back to be assembled with the said shank.

8. In a latch mechanism, a frame including a sleeve, a bolt, a knob-shank rotatably mounted in said sleeve, said sleeve having a slot, a roll-back mounted in said slot and having lugs engaging in notches in said knob-shank, said knob-shank having slots at right angles to said notches and out of line with the normal position of the roll-back whereby said roll-back may be removed laterally after a limited longitudinal movement thereof on said knob-shank.

9. In a lock-and-latch mechanism, a bolt, a continuous knob-spindle, a knob permanently secured to one end and a knob removably secured to the other end, a continuous lock-spindle mounted in said knob-spindle, operative means of connection between said knob-spindle and said bolt, and a dogging device pivoted externally of both of said spindles and operable by said lock-spindle.

10. In a lock-and-latch mechanism, a bolt, a knob-spindle, a lock-spindle, operative means of connection between said knob-spindle and said bolt, and a dogging device pivoted externally of both spindles and having a portion extending through said knob-spindle and engaging said lock-spindle.

11. In a lock-and-latch mechanism, a bolt, a hollow knob-spindle, a roll-back carried thereby, means of connection between said roll-back and said bolt, a lock-spindle mounted in said knob-spindle, and rotatable independently thereof, and a dogging device pivoted externally of both spindles and operable by said lock-spindle.

12. In a lock-and-latch mechanism, a bolt, an easy spring therefor, a knob-spindle, a roll-back therefor, a shoe, a spring for said shoe, and means of connection between said shoe and said bolt including a portion carried by said shoe having an inclined slot and a pin carried by the bolt operating in said slot.

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