

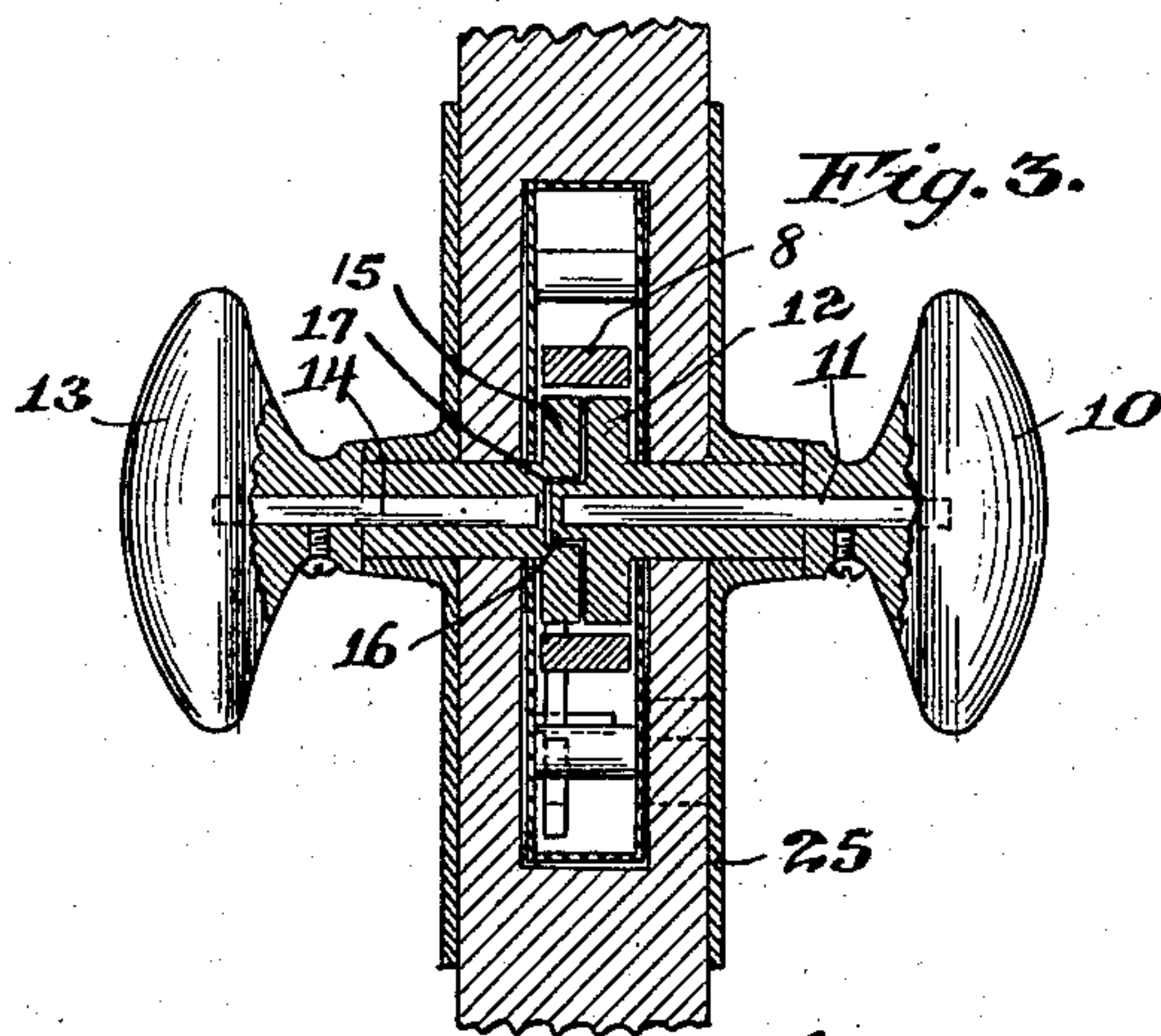
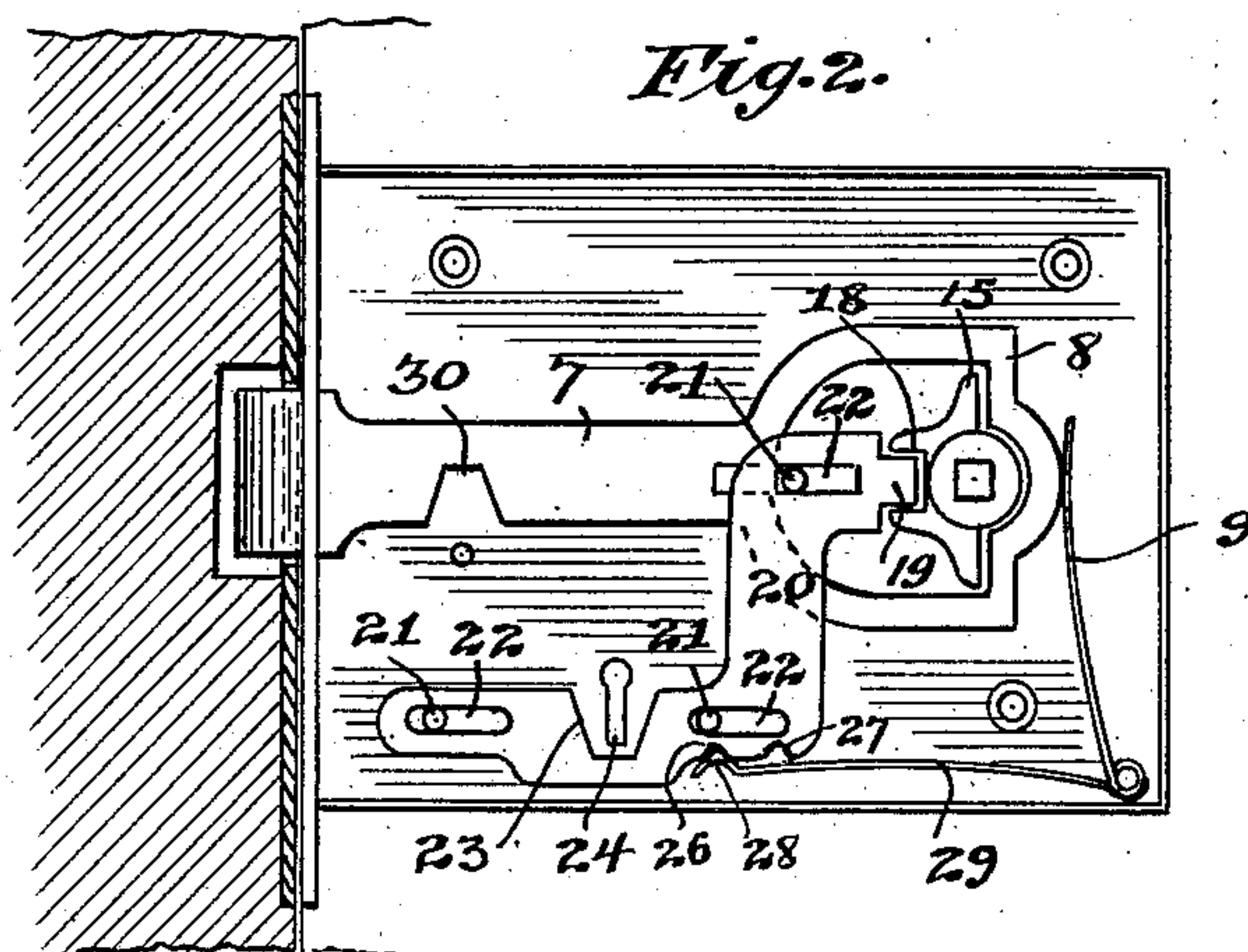
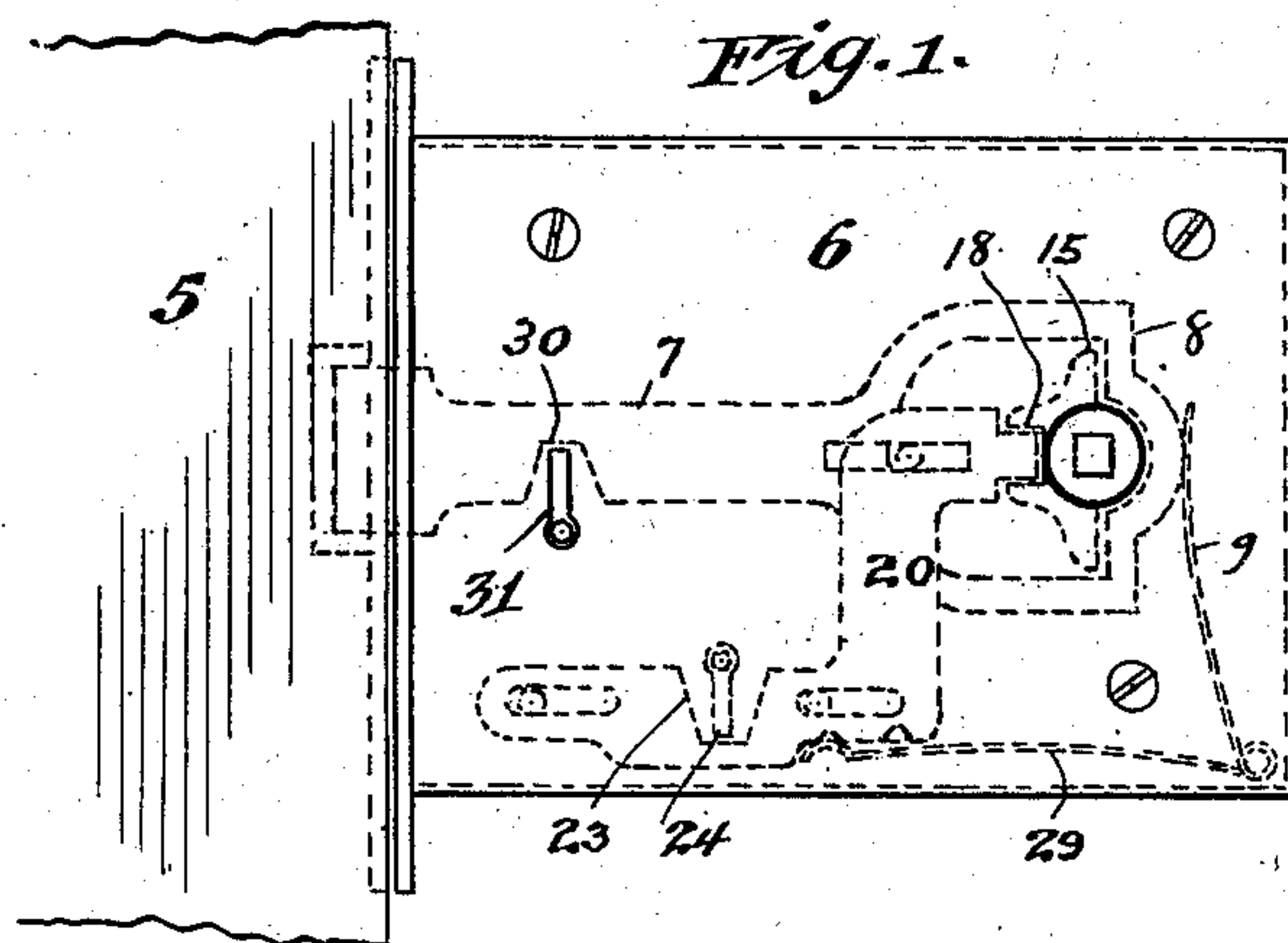
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DOOR LOCK.

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UNITED STATES PATENT OFFICE.

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DOOR-LOCK.

No. 891,562.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WARREN D. McPHERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification.

This invention pertains to door locks, and more specifically to that well known type of lock employing knobs on the inner and outer side of the door, respectively; the inner of which knobs is always "live" and the outer of which may be rendered either "live" or "dead," so as to render the latch-bolt always operative from the inside, but operative or inoperative through the outer knob at choice. Such locks are commonly provided with a pair of sliding thumb-bolts controlling a tumbler that renders operative or inoperative the latch-actuating device carried by the shank of the outer knob. This enables any one having access to the lock to adjust it so that the door will be locked or unlocked when closed from the outside, as desired. In some situations, such as on railway cars, for instance, this is an undesirable feature, since it is often found expedient for the safety of passengers and personal property to lock the door at one end of a car against entrance from the outside.

The purpose of the present invention is to provide a simple lock of this type wherein control of the latch-bolt from the outside can be had only by duly authorized persons possessing a key or other means of opening the same.

My invention, and the purpose and advantages thereof, will be more readily understood when considered in connection with the accompanying drawing showing a simple embodiment thereof sufficient to illustrate its operative principle.

Referring to the drawing,—Figure 1 is a side elevational view of the lock casing, with the internal parts shown in dotted lines; Fig. 2 is a similar view with the side plate on the outer side of the door removed, showing the internal mechanism in full lines; and Fig. 3 is a cross-sectional view substantially in the transverse plane of the knobs.

Referring to the drawings, 5 may designate a portion of the door casing, and 6 the usual rectangular lock housing or casing which, as is well understood, is usually set in a mortise in the free edge of the door.

7 designates the latch-bolt, the inner end of

which terminates in the yoke 8 designed to accommodate the latch-actuating device of the knobs.

9 designates a leaf spring normally tending to throw the latch into outward or fastening position.

10 designates the knob on the inner side of the door, the same being keyed to a square spindle 11, on the inner end of which latter is mounted a double-acting roll-back 12, this latter lying within the yoke 8 and operating to retract the latch-bar against the spring 9 when the knob 10 is turned in either direction.

13 designates the knob on the outer side of the door similarly keyed to the squared spindle 14 on the inner end of which latter is similarly mounted a companion roll-back 15, lying adjacent to the roll-back 12 within the yoke of the latch-bar. To preserve the alignment of the parts on the opposite sides of the lock, one of the roll-backs (12) is preferably provided with a round central boss 16 engaging a similar shaped socket or recess 17 in the companion roll-back (15).

The roll-back 15 has formed therein a notch 18 adapted to be engaged and disengaged by a dog 19 on the inner end of a reciprocable locking bar 20, this latter being conveniently supported and guided on a series of pins 21 secured in the lock casing engaging slots 22 in the lock-bar. The lock-bar is also provided, preferably in its lower horizontal limb, with a notch 23, opposite which in the inner side plate of the lock casing is formed a key-hole 24 registering with a corresponding key-hole formed through the surrounding stock of the door and the usual escutcheon plate 25. The lower edge of the lock-bar is also preferably provided with a pair of shallow notches 26 and 27 adapted to be engaged by a bent projection 28 on the end of a leaf spring 29, whereby the lock-bar is yieldingly retained in either locking or unlocking position.

The latch-bar 7 is provided with the notch 30 adapted to be engaged by a key entered through a key-hole 31 in the outer side plate of the casing.

The operation of the mechanism will be readily apparent from the foregoing description and drawing. When it is intended that the latch shall be operable through the knobs from the outside as well as the inside, the lock-bar 20 is retracted by the key inserted through the key-hole 24, and remains in such

position by virtue of the spring 29. When, however, it is desired to render the latch inoperable from the outside through the knob, the lock-bar 20 is thrown into locking position, as shown in Fig. 2, wherein the dog 19 engages the notch 18 of the roll-back 15, in which position it is impossible to turn the outer knob 13, and consequently impossible to retract the latch by said outer knob. The outer knob being thus locked, the door cannot be opened from the outside except by means of a key inserted through the key-hole 31 and directly engaging the latch-bar, and the mechanism cannot be re-set so as to release the outer knob except by means of a key, which will presumably be in the custody of the proper person or persons authorized to control the condition of the door.

I am aware that it is old broadly to provide key-actuated means for rendering a latch-bolt retractable or non-retractable by its usual operating knob or handle; but so far as I am aware my invention is new to the extent of providing key-controlled means for rendering operative or inoperative the outside knob of a door lock of the character described without affecting the operative condition of the inside knob.

I claim:

1. In a door lock of the character described, the combination with a lock-casing and a latch-bar slidably mounted therein, of an inner knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar, an outer knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar, and a horizontally slidable key-actuated locking bar, said last-named roll-back and locking bar being provided the one with a notch and the other with a dog adapted to engage and disengage said notch, substantially as described.

2. In a door lock of the character described, the combination with a lock-casing provided with a key-hole, and a latch-bar slidably mounted in said lock-casing, of an inner knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar, an outer knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar; a horizontally movable locking bar in said casing having a notch opposite said key-hole and horizontal slots on either side of said notch, and transverse pins mounted in the casing and extending through said slots whereby said locking bar is slidably supported, said last-named roll-back and locking bar being provided the one with a notch and the other with a dog adapted to engage and disengage said notch, substantially as described.

3. In a door lock of the character described, the combination with a lock-casing and a latch-bar slidably mounted therein, of an inner knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar, an outer knob and a roll-back fast on the shank thereof and operatively engaged with said latch-bar, a horizontally slidable key-actuated locking bar having a pair of notches formed in one edge thereof, said last-named roll-back and one end of said locking bar being provided the one with a notch and the other with a dog adapted to engage and disengage said notch, and a spring secured at one end to the casing and having a bent projection adapted to engage the marginal notches of said locking bar when the latter is in locked and unlocked position, substantially as described.

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