

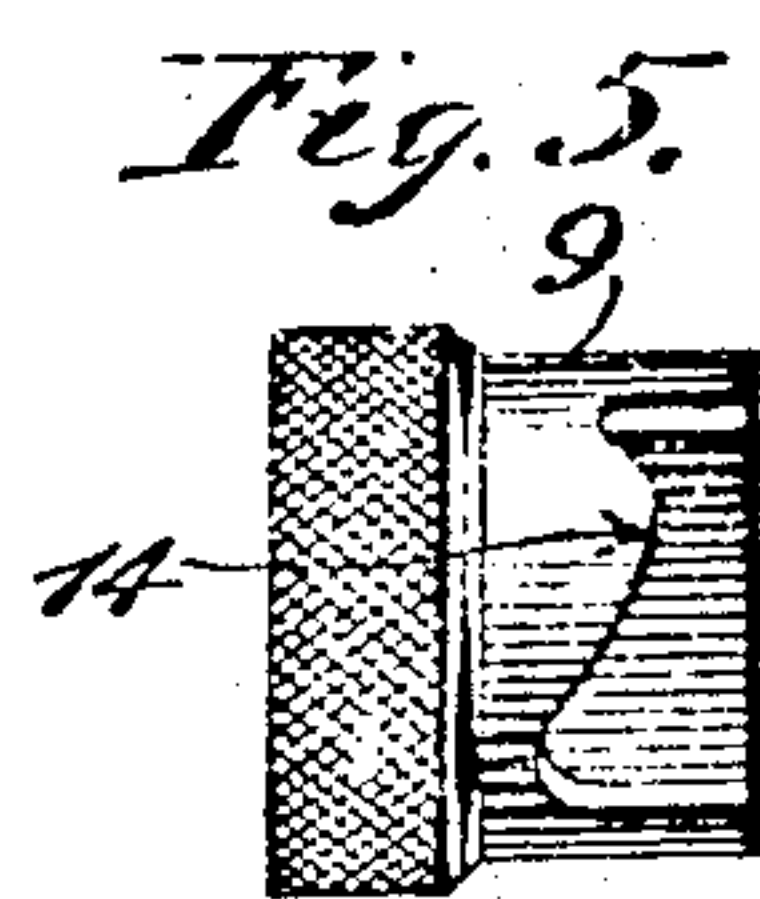
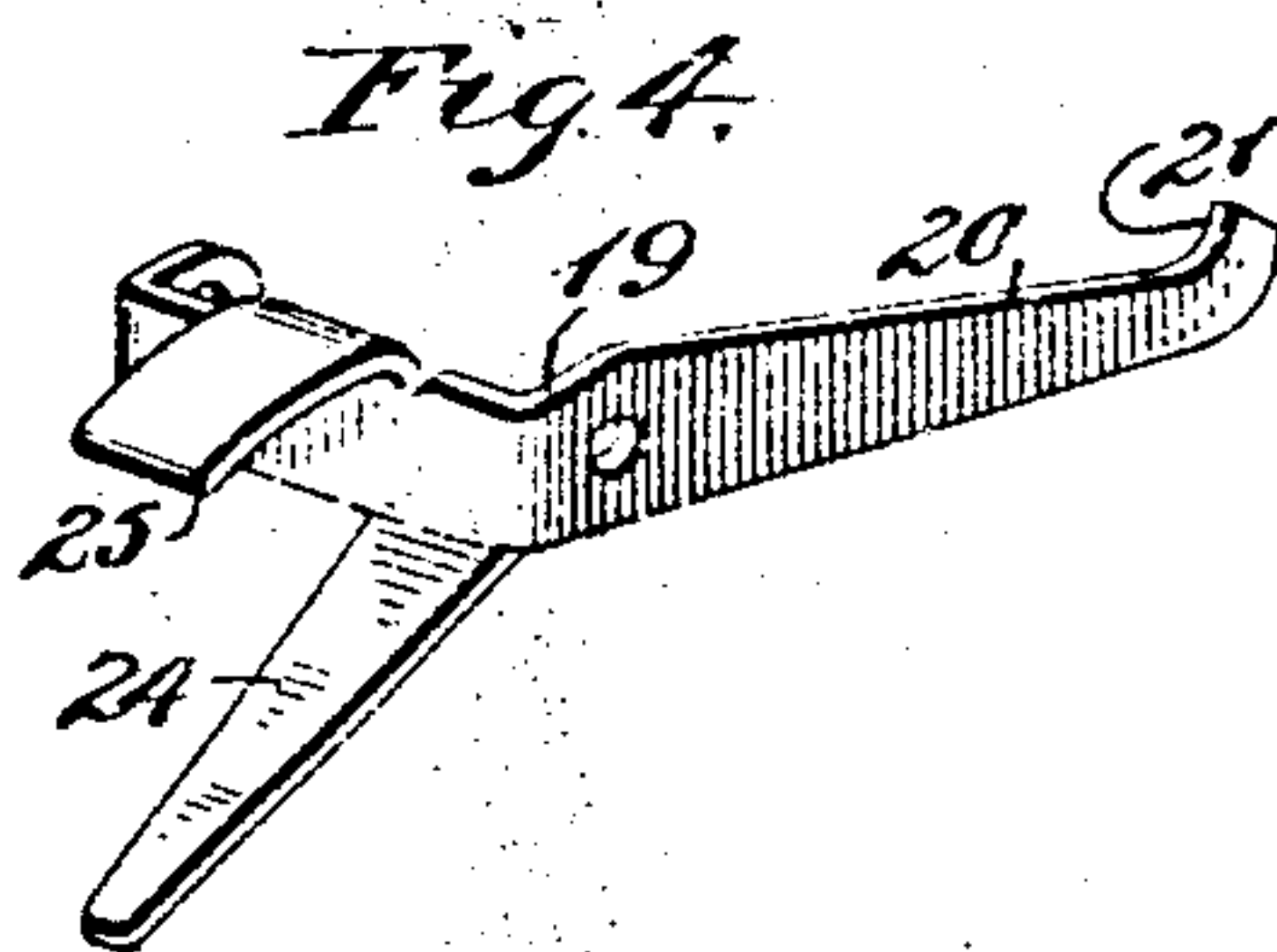
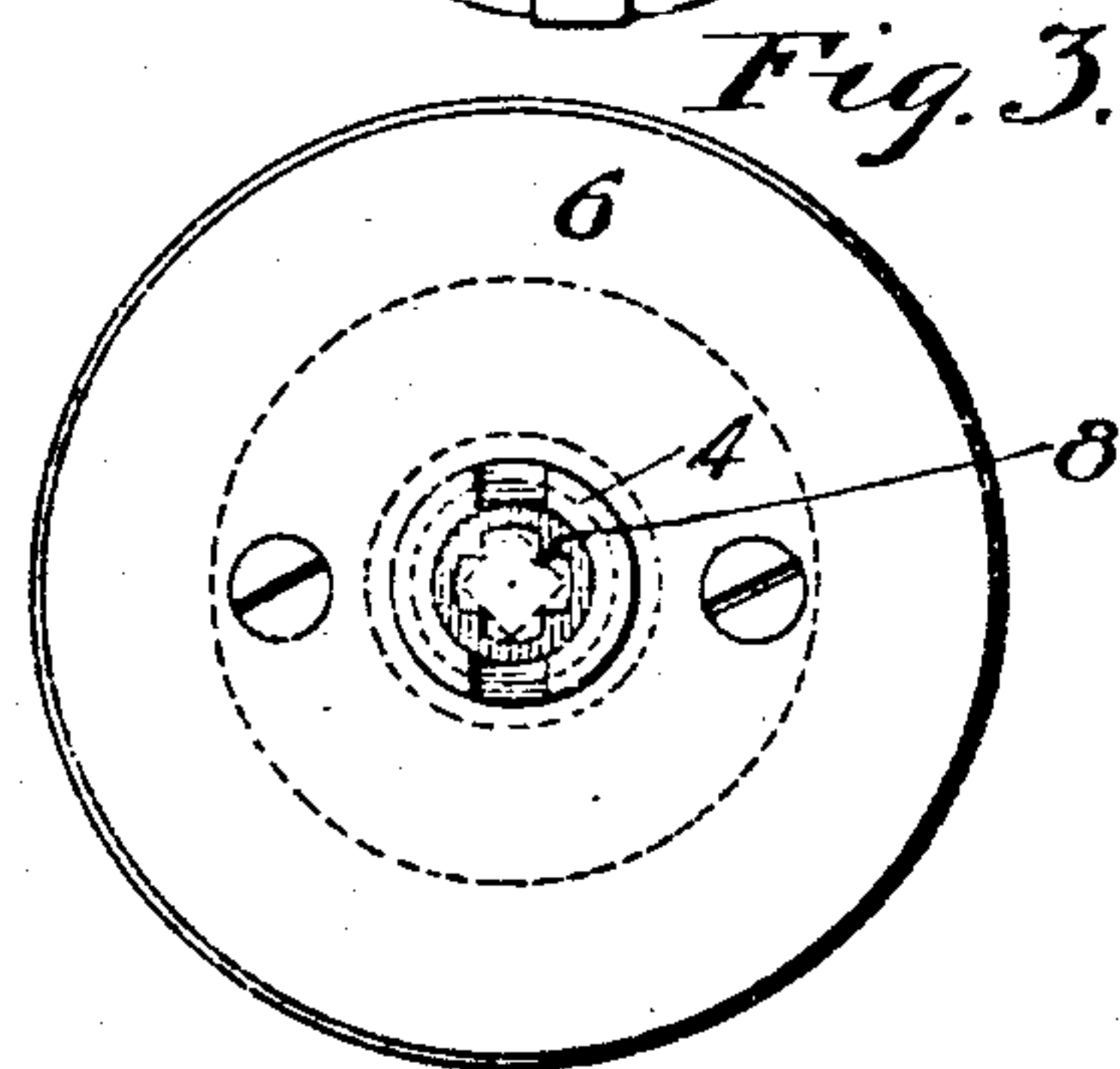
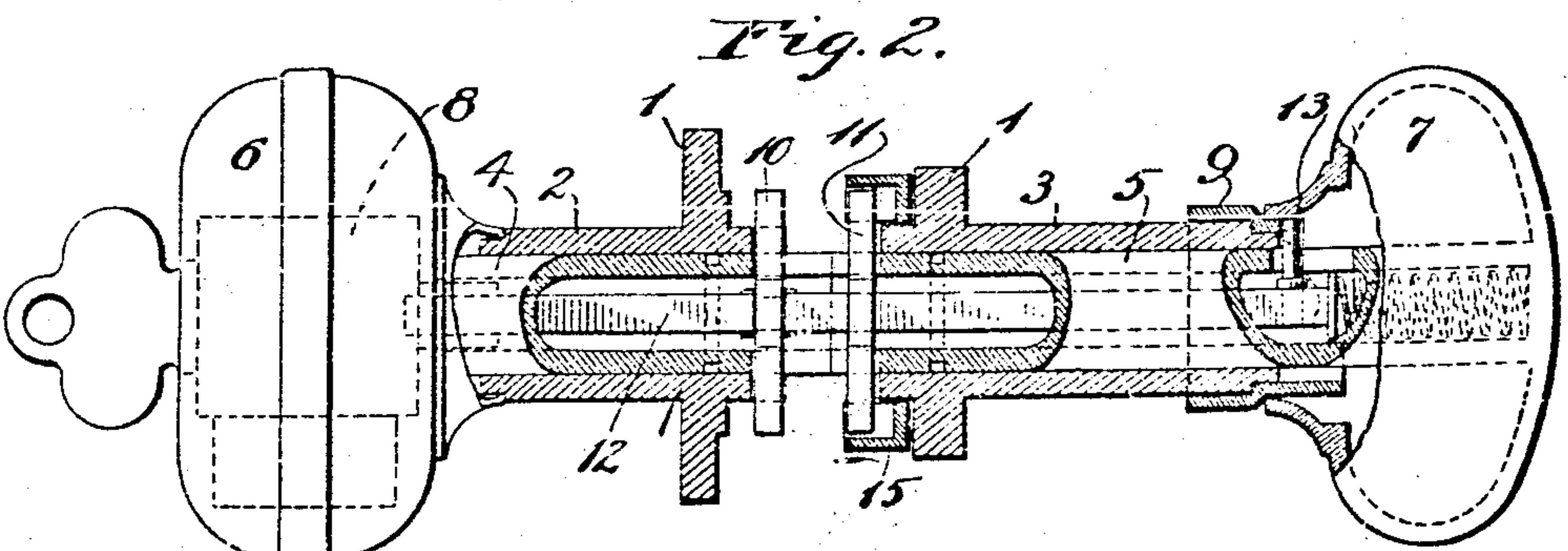
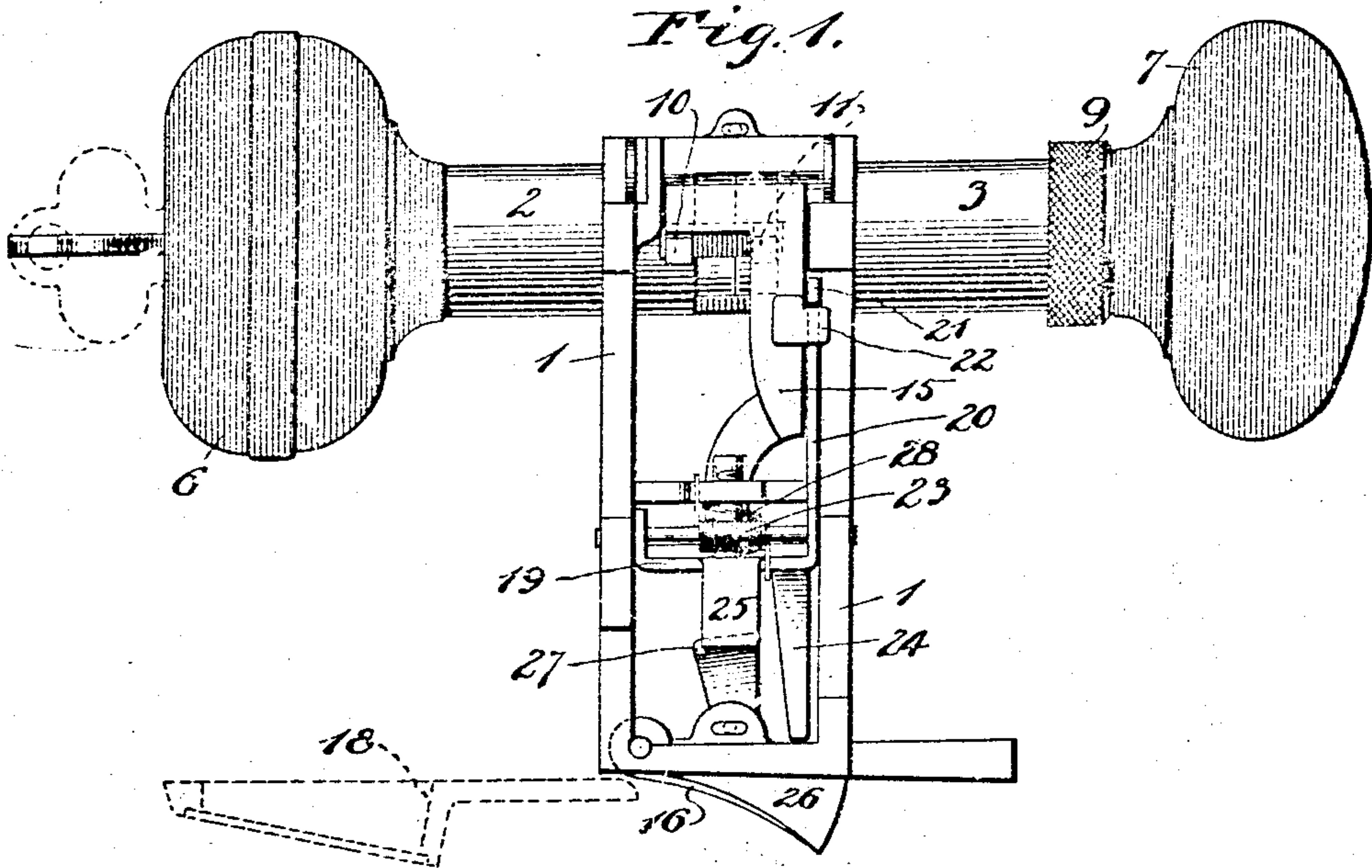
No. 834,994.

PATENTED NOV. 6, 1906.

B. PHELPS.
LOCK.

APPLICATION FILED FEB. 16, 1904.

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2.

Fig. 7.

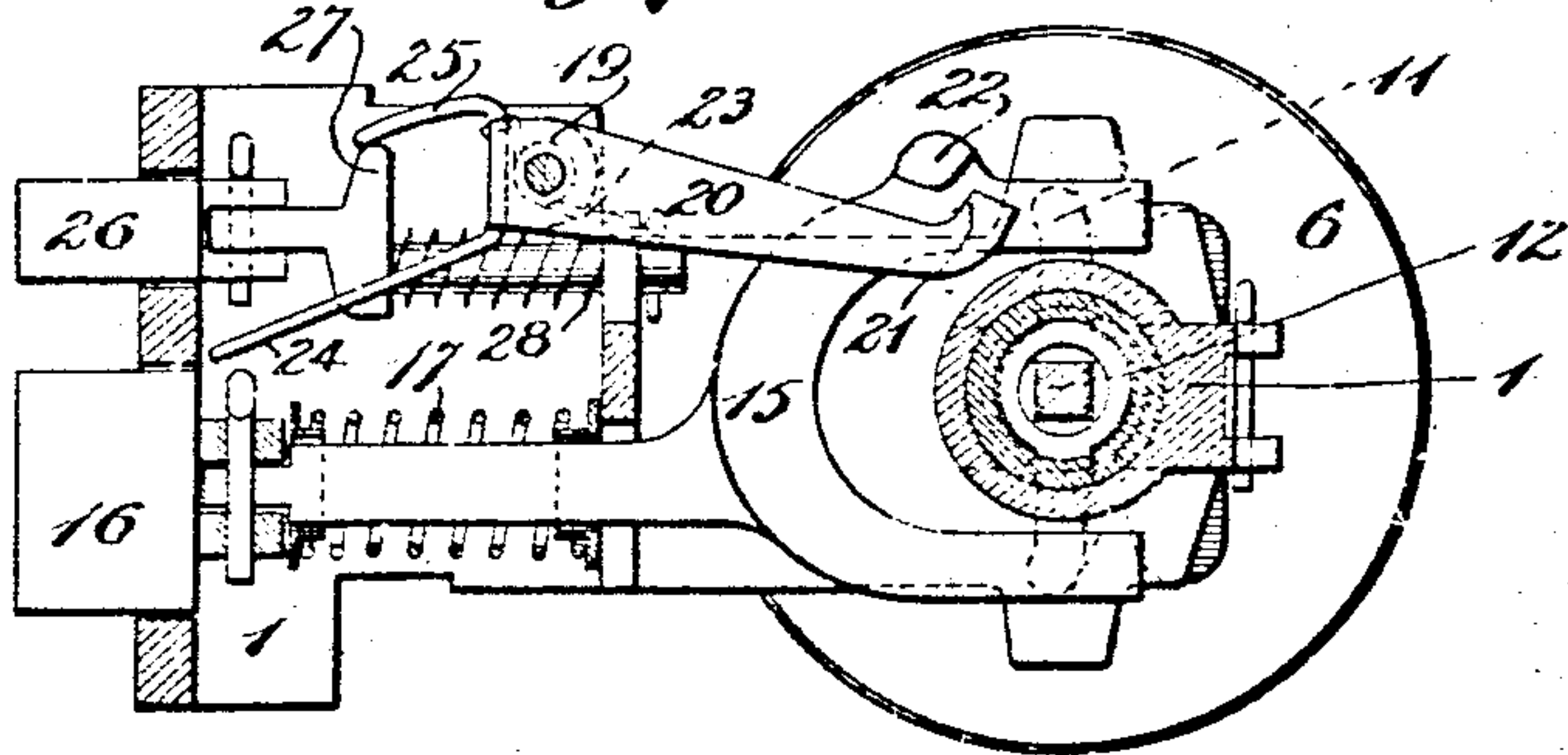


Fig. 8.

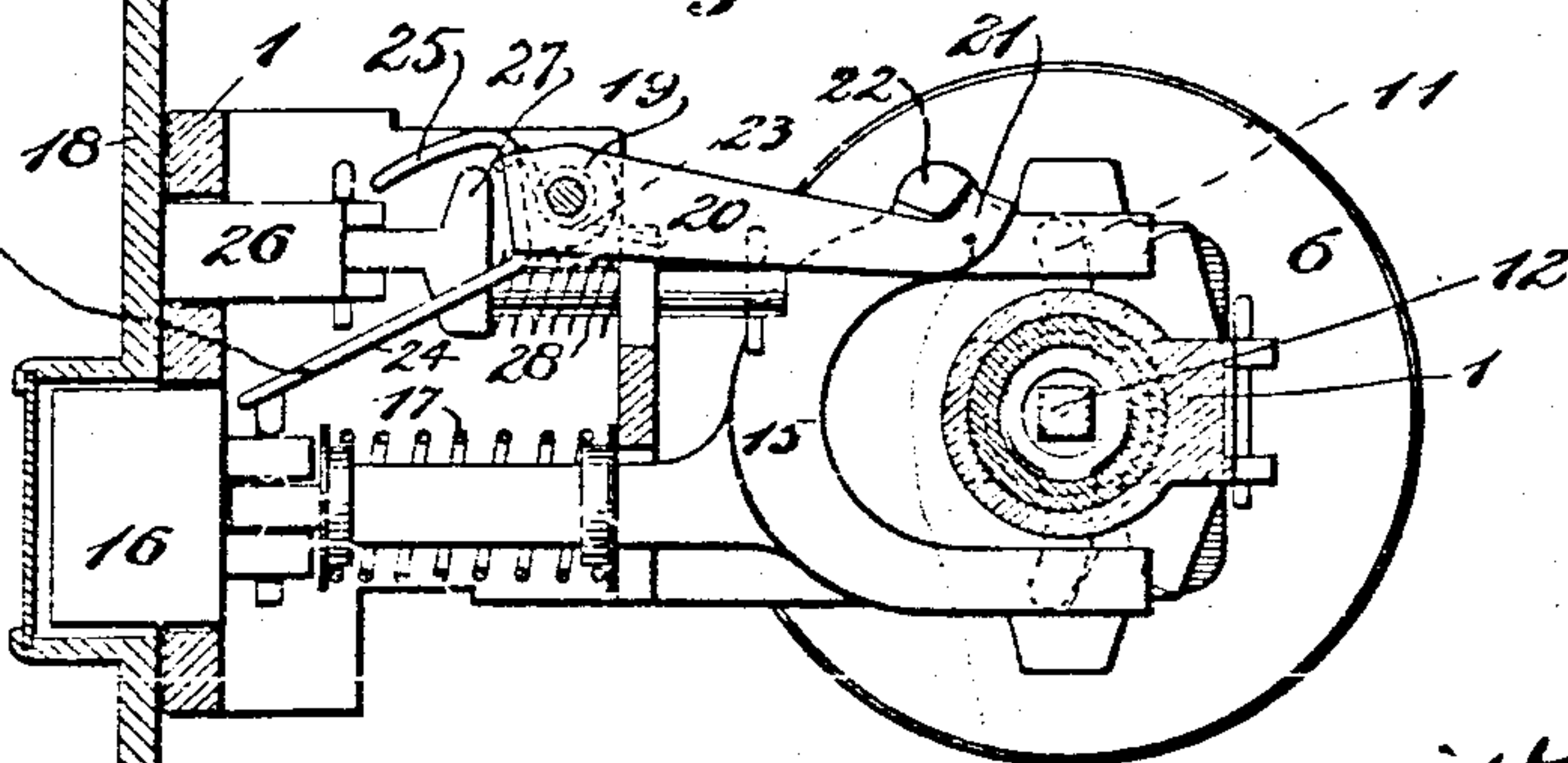
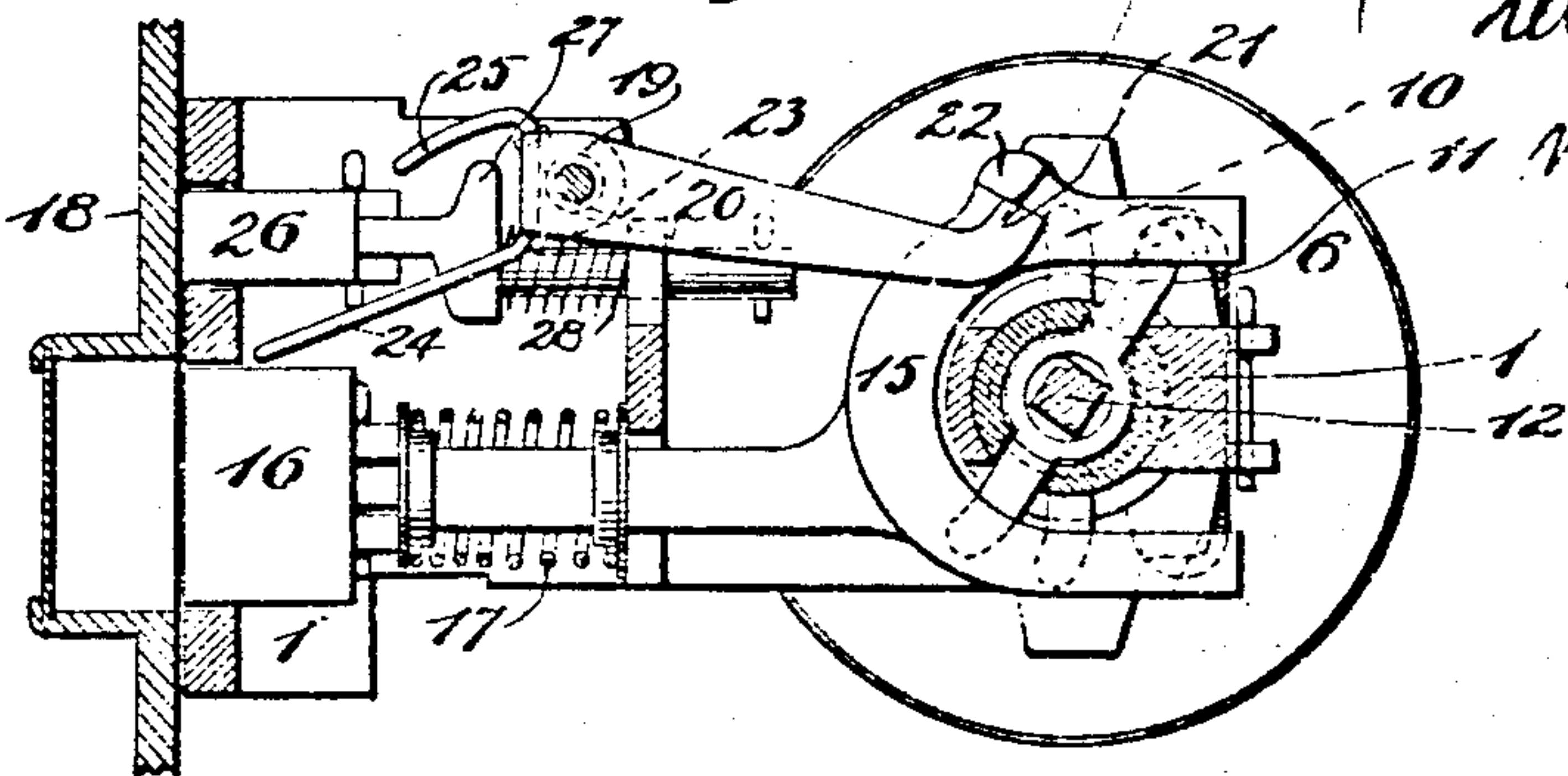


Fig. 9.



*Drops behind
bolt in this
position.*

*Tilted by
retraced movement
of slide upon
retraction by
rotation of
knob or
key.*

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UNITED STATES PATENT OFFICE.

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LOCK.

No. 834,994.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed February 16, 1904. Serial No. 193,832.

To all whom it may concern:

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

My invention relates to locks and latches, and particularly to that type of a lock in which the same bolt performs the locking and latching function. This type of a lock is shown in various patents already granted to me—for example, United States Letters Patent No. 626,340, dated June 6, 1899.

The object of my invention is to provide, particularly in this type of mechanism, a simple and effective means for automatically locking the bolt against retraction excepting by the proper operating means. In such locks where the bolt is either freely reciprocating or is pivoted an intruder might, by means of a suitable picking device inserted from the outside between the door and door-casing, gradually work the bolt back until it is freed from the keeper-plate, in which event the door might be opened. By this invention, however, such an entrance would be absolutely prevented.

It will be obvious that my invention is not limited to locks of the particular type shown.

In the accompanying drawings, Figure 1 is a plan view of mechanism of my improved construction. Fig. 2 is in the main a longitudinal section in the plane of the axis of rotation of the knobs. Fig. 3 is an inside end elevation of the outdoor knob removed. Fig. 4 is a perspective view of a detail of construction. Fig. 5 is a side elevation of another detail of construction. Fig. 6 is a perspective view of another detail of construction. Fig. 7 is a view of a portion of the mechanism in one position, said view being partly in section. Fig. 8 is a similar view showing parts of the mechanism in another position. Fig. 9 is a similar view showing parts of the mechanism in still another position.

In the drawings, 1 is the frame, preferably of one piece and of a construction substantially as shown in my former patent, No. 631,432.

2 3 are tubular extensions from opposite sides of the frame arranged to rotatably support hollow knob-spindles 4 and 5. The knob-spindle 4 is carried by the outdoor

knob 6, while the knob-spindle 5 is carried by the indoor knob 7.

3 conventionally illustrates a cylinder-lock mounted to rotate in the outdoor knob 6 and by which the bolt may be retracted in the manner hereinafter described, although said outdoor knob may be locked against rotation.

9 is a rotatable sleeve located on the inside of the door and constituting an operating device for the locking mechanism for locking the outdoor knob against rotation. This particular mechanism need not be described at length by me, because a detailed description thereof will be found in my former patent, No. 626,341.

10 and 11 are roll-backs. Roll-back 11 is mounted on the inner end of the knob-shank 5, while the roll-back 10 is mounted on the inner end of knob-shank 4. A spindle 12 passes through the knob-shanks 4 and 5 and both roll-backs. This spindle is spring-pressed to the left as viewed in Fig. 2, and one end of said spindle engages in the hub of the conventionally-shown cylinder-lock 8. The other end of the spindle 12 carries a pin 13, which bears against an incline or cam surface 14 on the sleeve 9, as best seen in Fig. 5. From the foregoing it will be seen that by rotating the sleeve 9 the spindle 12 may be moved longitudinally to the right, as shown in Figs. 1 and 2. The roll-back 10 stands in a deep notch at the inner end of the outdoor-knob shank 4, and there is a notch in the frame 1 adjacent thereto, so that when the spindle 12 is shifted to the left by the spring the roll-back 10 will move into the position shown in Figs. 1 and 2 and enter the notch or notches in the stationary frame 1, thus locking said roll-back 10 against rotation by the outdoor knob 6. It should be stated that while the spindle 12 is independently rotatable relatively to both roll-backs 10 and 11 I provide lugs on said spindle 12 on opposite sides of the roll-back 10, so as to cause the said roll-back to move longitudinally with the spindle 12. By this means I may move the roll-back 10 into a locked or an unlocked position.

15 is a slide which carries or is connected to the bolt or head 16.

17 is a spring arranged to the rear of the bolt or head 16 and exerting an outward pressure thereto. Incidentally this spring may move the slide 15 to its normal ad-

vanced position. (Seen in Figs. 1, 7, and 8.) When the outdoor knob is unlocked, the bolt may be retracted by rotating either knob. When the bolt is projected, it engages with a
 5 keeper-plate 18, one function of which is to hold the bolt when the door is closed.

Thus far described the mechanism does not differ in any substantial respect from mechanisms such as shown, described, and
 10 claimed in former patents granted to me.

Since, as I have indicated at the outset, in ordinary locks and latches it is possible to insert a thin instrument between the edge of the door and the door-casing, and thereby
 15 push the bolt 16 back, so as to free the door and allow it to be opened, I have devised simple and effective dogging mechanism where- by this is absolutely prevented.

19 is a tilting frame having a tailpiece 20 with an upturned nose 21, arranged to be engaged by a shoulder 22 on the slide 15 when the slide is retracted and for the purpose hereinafter described.

23 is a spring designed to normally tilt the
 25 frame 19 in a direction to cause the tailpiece 20 to be elevated. On the opposite side of the frame from the tailpiece 20 is what I shall term a "blocking-arm" 24 and also what I shall term a "cam-arm" 25.

30 26 is a member which corresponds generally to the bolt 16 in shape and method of connection to the frame 1; but in function it differs entirely. This member 26 may be termed the "controller," as its function is to
 35 control the tilting frame 19.

27 is an operating-shoulder formed on a block pivoted to 26 and movable to and fro as the controller moves to and fro. This operating-shoulder is located under the cam-
 40 arm 25. When the door to which the mechanism is applied is open, the controller 26 stands in its advanced position, it being normally advanced by means of a spring 28. When in this position, the shoulder 27 en-
 45 gages with the cam-arm 25 and tilts the frame 19 in opposition to the tendency of the spring 23, raising the blocking-arm 24 so that it will stand out of the backward path of movement of the bolt 16. When, however, the door is
 50 closed, the bolt 16 and controller 26 are pushed back by engagement with the striking edge of the keeper-plate 18. The end of the blocking-arm 24 stands so close to the rear of the bolt 16 that only a slight backward move-
 55 ment of said bolt will move it under the end of the blocking-arm 24 when the latter is elevated. Immediately after this the shoulder 27 will become freed of the cam-arm 25. When the door is shut, the bolt 16 will spring
 60 out into the opening in the keeper-plate; but the controller 26 will still be held retracted, because there is no opening in the keeper-plate to receive it. The moment the bolt ad-
 65 vances to its normal position and the rear side clears the blocking-arm 24 the frame 19

will tilt under the influence of spring 23, so that the end of the blocking-arm will stand directly to the rear of the locking-bolt 16. The consequence is that so long as the con-
 70 troller is retracted, which necessarily must be the case so long as the door is closed, the dogging-arm 24 will prevent any one from pushing the bolt back by means of a tool inserted between the edge of the door and the door-casing. The retraction of the bolt,
 75 however, by either knob or the key-controlled mechanism is not prevented, because the proper action of the mechanism will cause the slide to be retracted, and this retraction of the slide will cause the shoulder 22 to en-
 80 gage with the nose 21 on the tailpiece of the frame 19. This engagement will tilt the frame 19, raising the end of the blocking-arm 24 out of the path of the locking-bolt 16.

The operation just described will best be
 85 understood by referring to Figs. 6, 7, 8, and 9. Fig. 6 represents the keeper-plate having an opening to receive the locking-bolt 16 and a flat bearing-surface to stand in front of the controller 26. In Fig. 7 the parts are
 90 illustrated in their normal position, the bolt and controller being advanced. When the door is closed, the parts stand in the position shown in Fig. 8, with the blocking-arm stand-
 95 ing to the rear of the locking-bolt 16, due to the fact that the shoulder 27 has been removed from the cam-arm 25, allowing the frame to be tilted under the influence of spring 23 to bring the blocking-arm into the
 100 aforesaid position. When the slide is retracted, the parts will appear in the position indicated in Fig. 9, the frame 19 being tilted by the action of the shoulder 22 on the slide, so as to elevate the blocking-arm to permit the
 105 bolt to be retracted. This elevating of the blocking-arm 24 occurs at the first part of the rearward movement of the slide, so as to remove the blocking-arm from the path of the bolt before it has been retracted to any sub-
 110 stantial degree, otherwise the parts of course would interfere.

It is preferable that the face of the locking-bolt 16 should be slightly fuller than the face of the controller, because this will cause the locking-bolt to be pushed back when it hits
 115 the strike-plate slightly in advance of the controller and will insure the said locking-bolt riding under the blocking-arm before the frame carrying said blocking-arm is released, so as to allow it to descend. This is
 120 one convenient way of preventing interference of the parts when the door is being closed. In Fig. 1 the striking-face of the locking-bolt 16 is shown to be slightly fuller than the striking-face of the controller 26.
 125

I have shown and described the preferable form of my invention, which is obviously capable of modification without departing from the spirit and scope of my invention, the main purpose of which is to provide auto-
 130

matic means for dogging the locking-bolt against any attempt to push it back by the insertion of an instrument between the door and the door-casing when said door is closed, but permitting said bolt to be drawn back in the usual manner.

What I claim is—

1. In a mechanism of the character described, a pivoted bolt, a slide for retracting it, a dog, a pivoted controller therefor for bringing the dog into its operative position when the controller is retracted.

2. In a mechanism of the character described, a bolt, a slide therefor, a controller, a dogging mechanism comprising a tilting frame having an arm adapted to engage the bolt, a second arm coacting with said controller, and a third arm coacting with the slide, all whereby the dog may be set by the operation of the controller to prevent the incursion of the bolt and released by the operation of the slide in retracting the bolt.

3. In a lock and latch mechanism, a bolt, a pair of knobs, operative means of connection between said knobs and said bolt, manually-operative means for preventing the retraction of said bolt by one of said knobs, a lock in said knob, a dogging mechanism for said bolt, and means for retracting said dogging mechanism and said bolt by the operation of said knob-lock.

4. In a lock and latch mechanism, the combination of a bolt, knobs for retracting the same, a dog for the bolt, a controller for setting said dog when retracted, and key-operable means accessible through one of said knobs for releasing the dog and retracting the bolt.

5. In a lock and latch mechanism, a bolt, a slide therefor, knobs for manually retracting the slide and bolt, a controller, a dog set by the retraction of said controller for preventing the incursion of the bolt, and means for releasing the dog upon the operation of said slide.

6. In a mechanism of the character described, a bolt, a dog, a pivoted controller movable independently of the bolt but normally holding said dog, and a spring for setting said dog when said dog is released by the incursion of said controller.

7. In a lock and latch mechanism, a bolt, a pair of knobs, operative means of connection between said knobs and said bolt, means for preventing the retraction of said bolt by one of said knobs, key-controlled means for retracting said bolt when said preventing means is in operation, a dog for said bolt, an operator for setting said dog when retracted, and means of connection between said key-controlled means and said dog whereby said dog is adapted to be retracted by the operation of said key-operable means.

8. In a lock and latch mechanism, a bolt, a pair of knobs, operative means of connection between said knobs and said bolt, means for preventing the operation of one of said knobs, key-controlled means for retracting said bolt when said knob is prevented from operation, a dog for preventing said bolt being pushed inward, an operator for said dog, and means of connection between said dog and said key-operable means for retracting said dog when said bolt is retracted by said key-operable means.

9. In a lock and latch mechanism, a bolt, two knobs, a slide connected to said bolt, roll-backs for said knobs for retracting said slide, means for dogging the operation of one of said knobs, a dog for said bolt, a normally projecting operator for setting said dog when retracted and means whereby the retraction of the slide retracts said dog.

Signed at New York this 15th day of February, 1904.

BYRON PHELPS.

Witnesses:

R. C. MITCHELL,
L. VREELAND.