

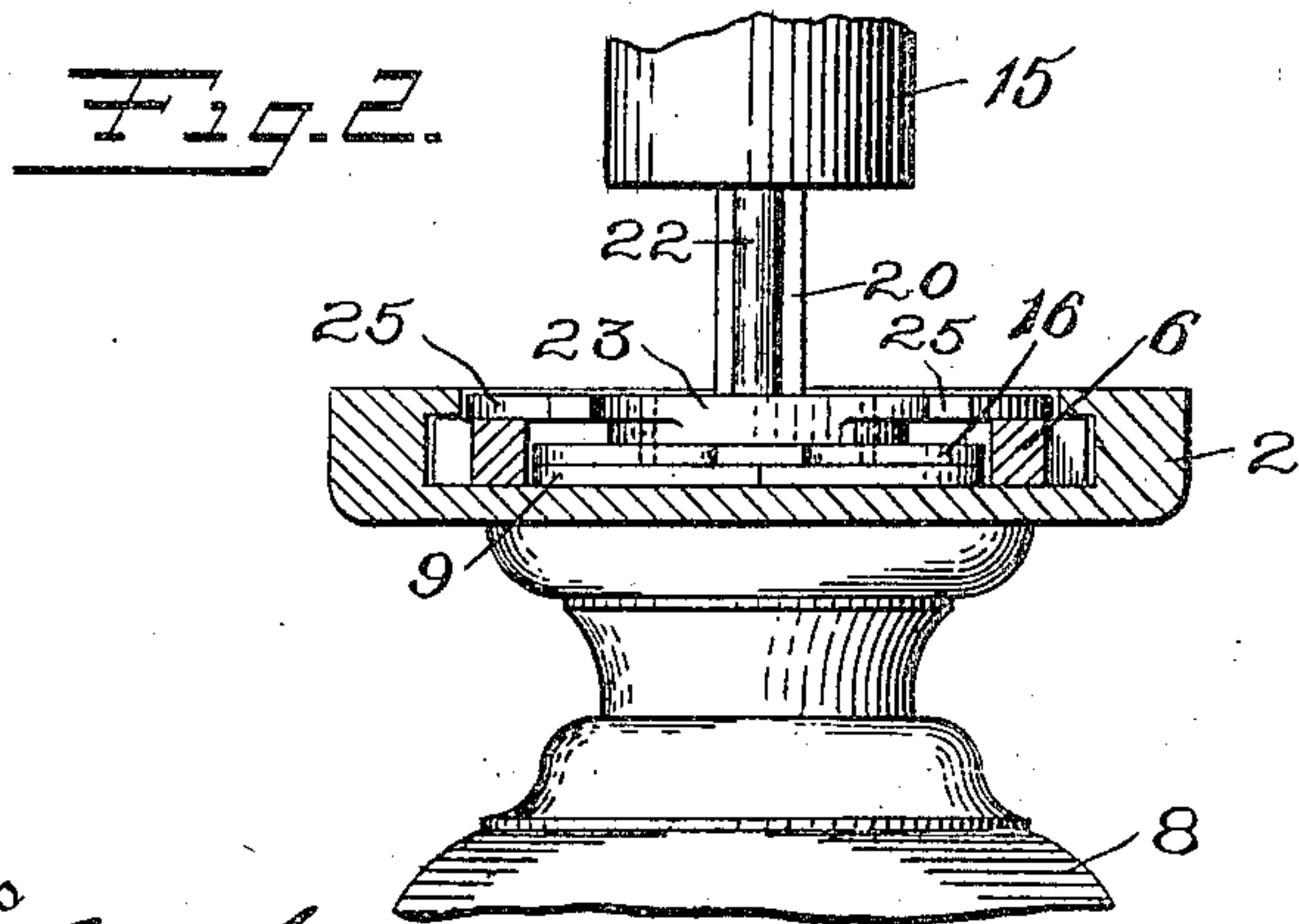
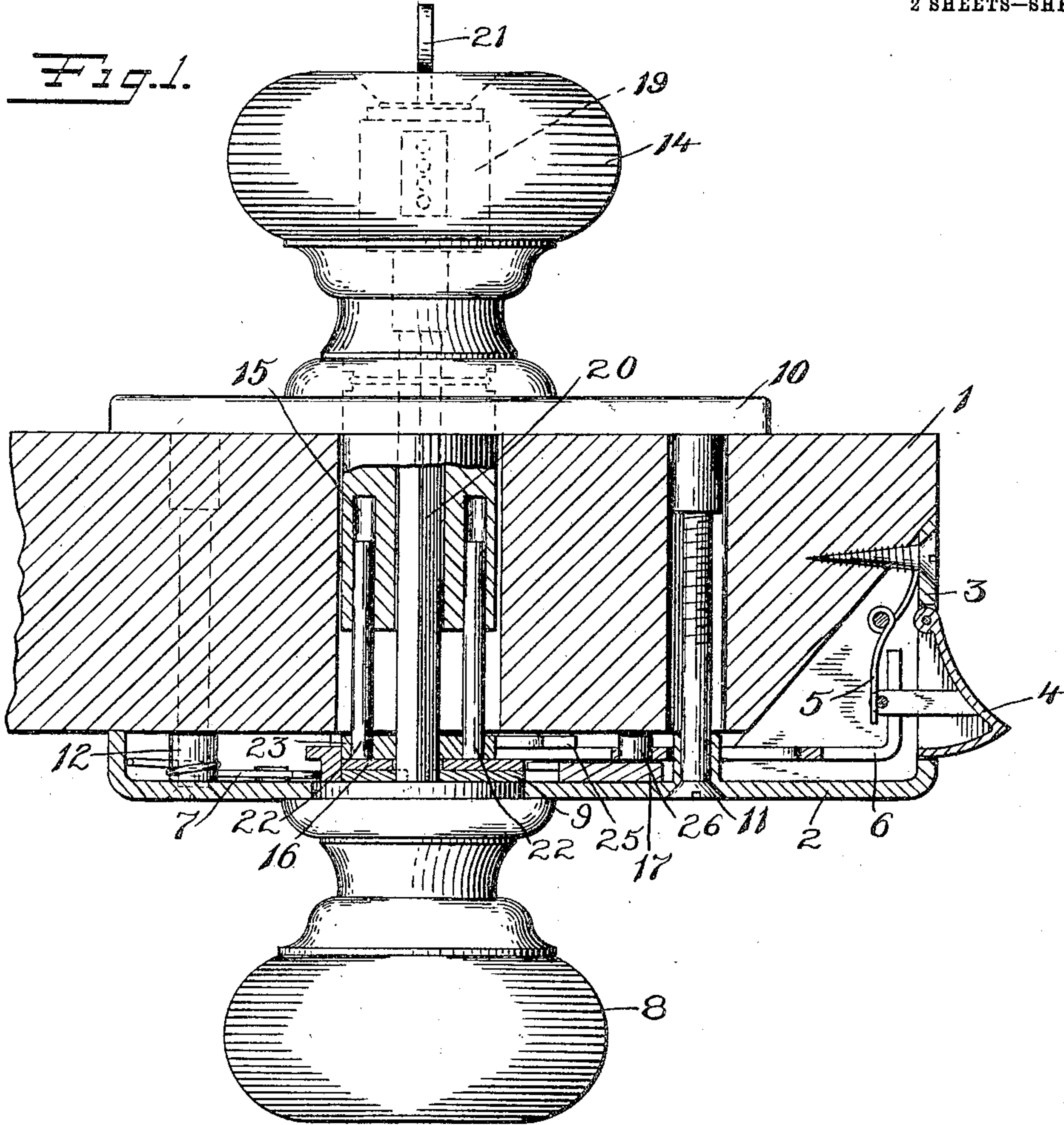
No. 812,905.

PATENTED FEB. 20, 1906.

H. G. VOIGHT.
LOCK AND LATCH MECHANISM.

APPLICATION FILED JUNE 6, 1905.

2 SHEETS—SHEET 1.



Witnesses

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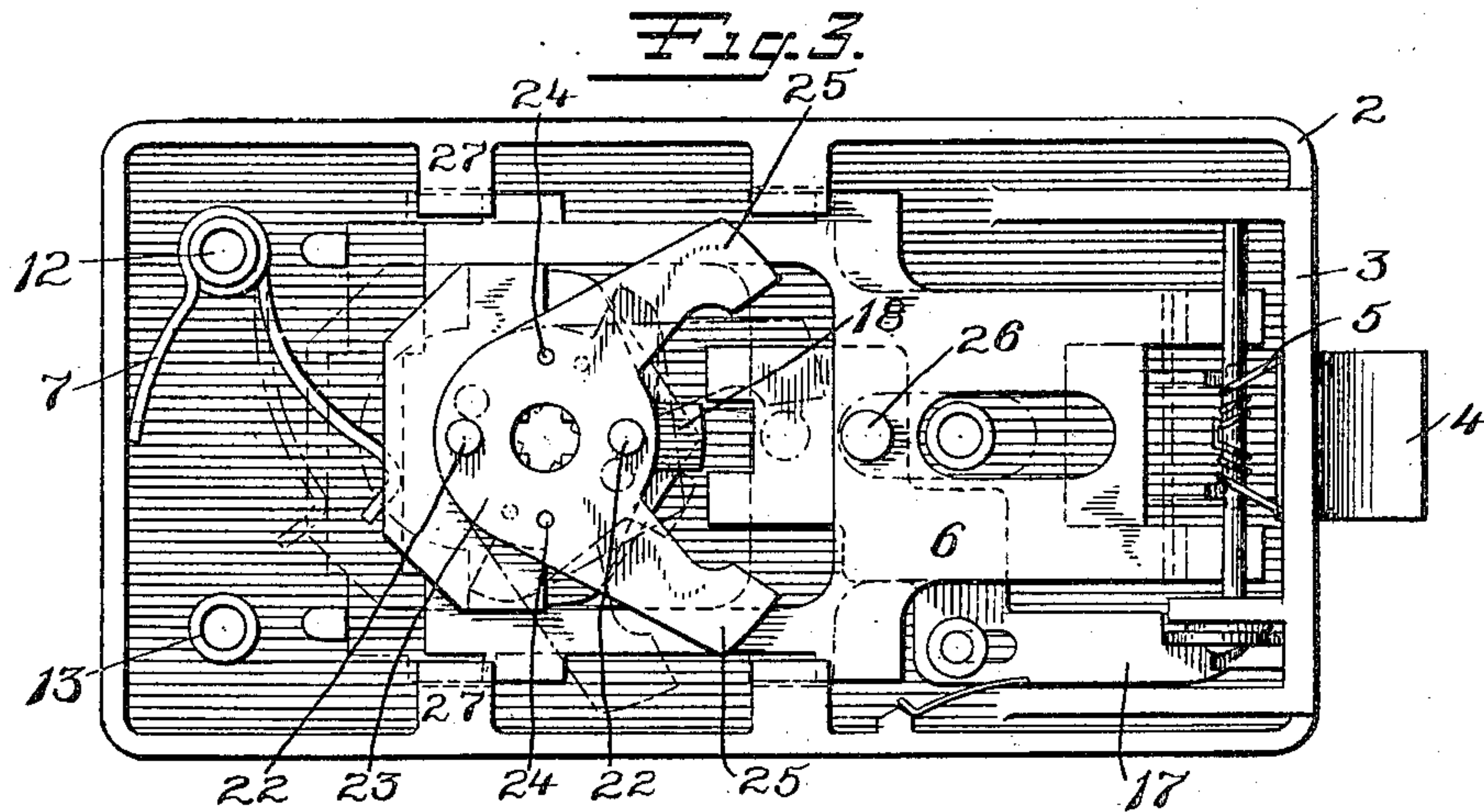


Fig. 5.

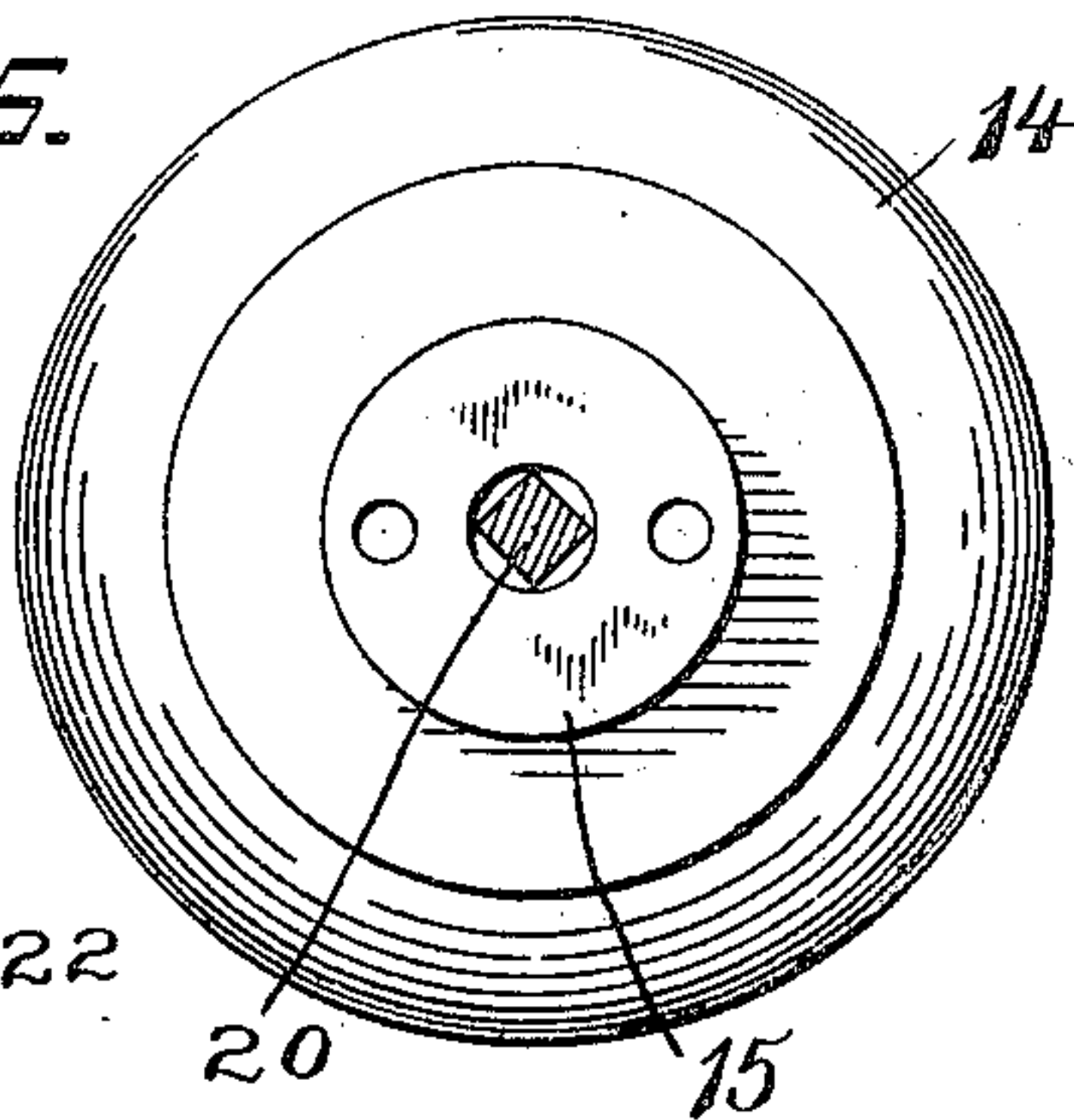


Fig. 7.

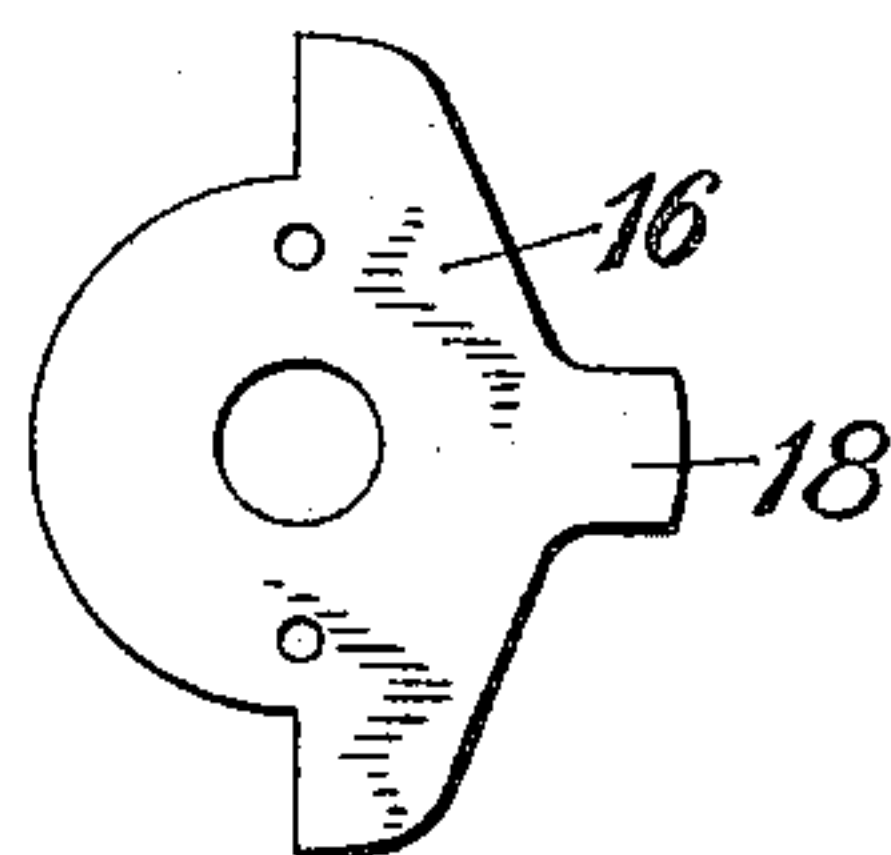


Fig. 6.

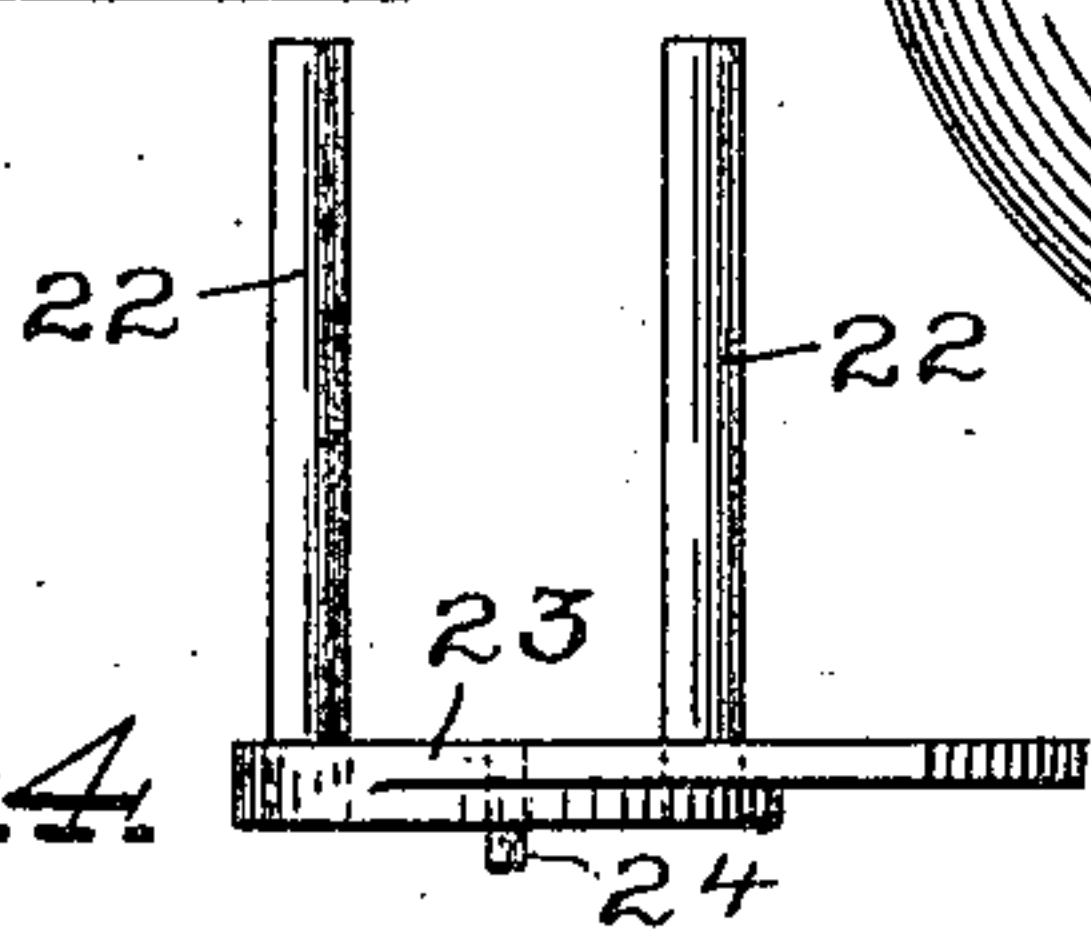


Fig. 4.

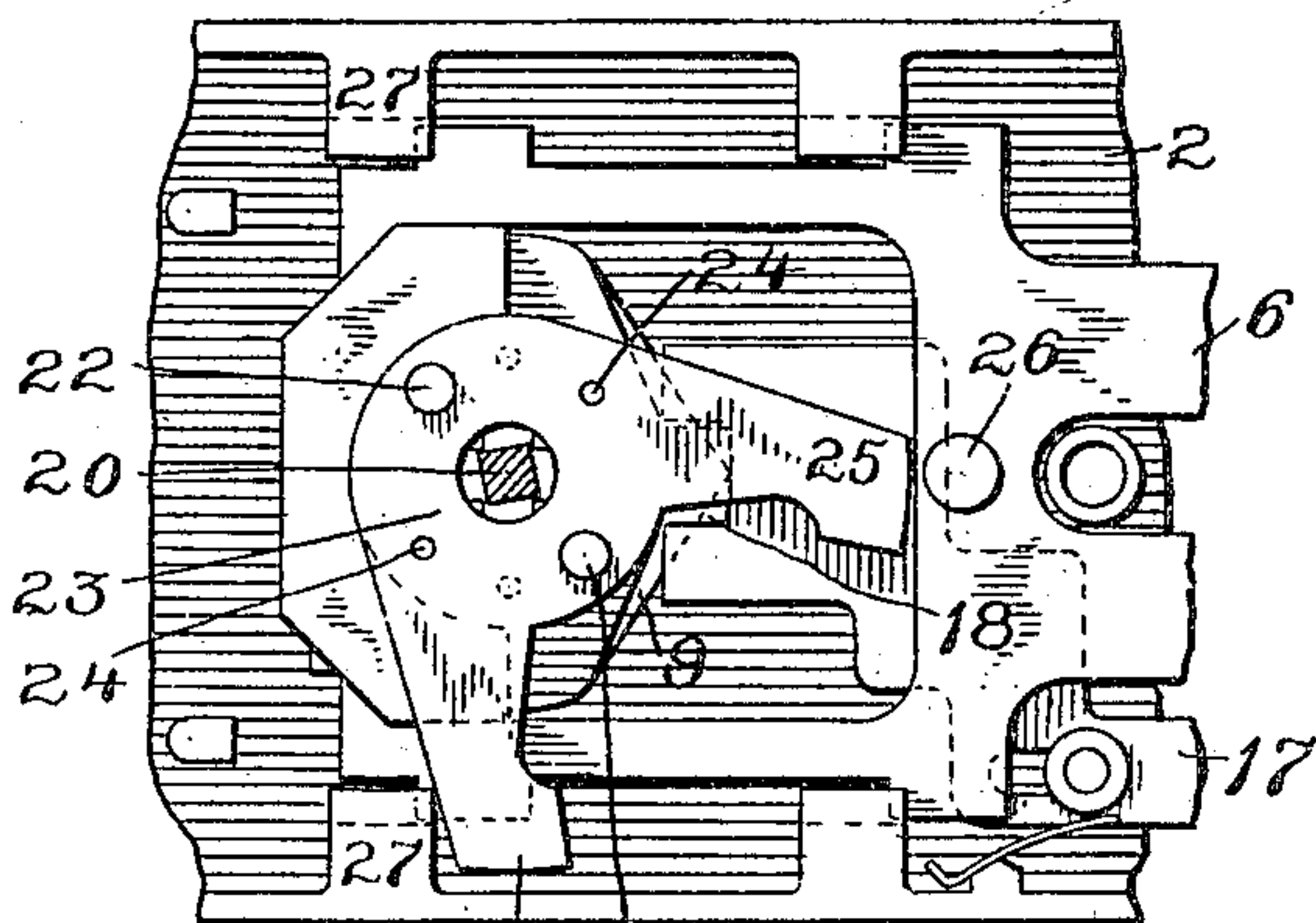
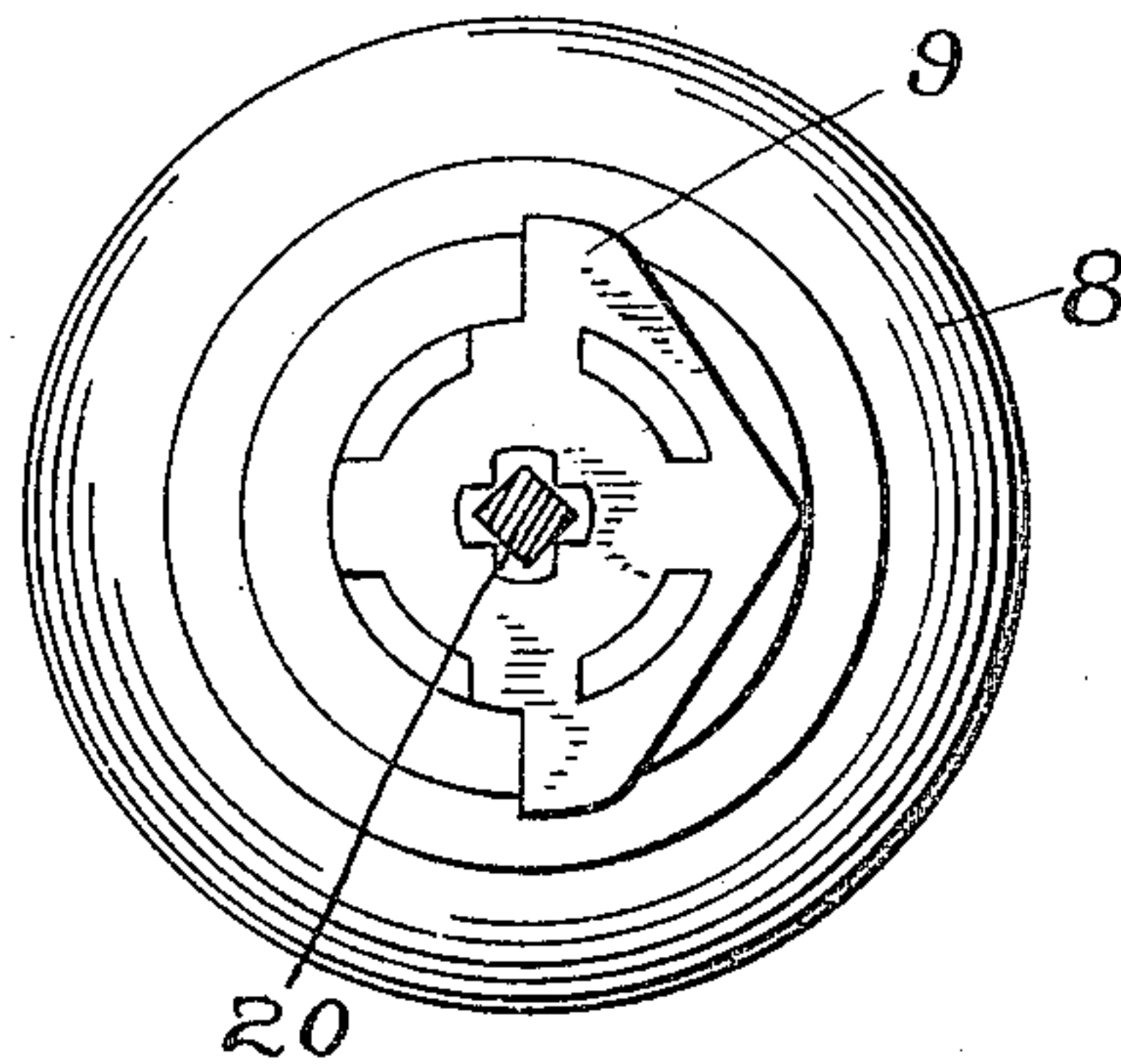


Fig. 8.



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UNITED STATES PATENT OFFICE.

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LOCK AND LATCH MECHANISM.

No. 812,905.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed June 6, 1905. Serial No. 283,917.

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, Connecticut, have invented certain new and useful Improvements in Lock and Latch Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in lock and latch mechanism.

10 The object is to provide a construction which cannot be tampered with from the outside. It is customary to provide mechanism for locking a door so that it may be opened readily from the interior, but only by means
15 of a key from the exterior.

My invention is particularly directed to that type of lock in which the lock mechanism proper is located on the inner side of the door and the key-tumblers at the outside of the door. In the form shown the key-tumblers are located within a knob and are of the so-called "cylinder" type.

The invention consists in the application of principles illustrated in the accompanying
25 two sheets of drawings. The lock or latch bolt may be opened from either side of the door by rotating the knob. A dog is provided for the outer roll-back, so as to block the outer knob. At such time, however, the
30 latch-bolt may be retracted by means of a key inserted in a lock within the outer knob.

My invention particularly comprises a means of connection between the outer knob and its roll-back, which may be broken if an attempt is made to twist the outer knob and shank. Such a twisting will prevent the operation of the roll-back absolutely. I have also provided further means in case the outer knob is violently twisted to greater extent,
40 whereby the latch-slide is dogged by an additional device which prevents the retraction of the slide.

Figure 1 is a plan view of a horizontal section of lock mechanism of my invention as
45 applied to the edge of a door. Fig. 2 is a fragmentary vertical section of the inner parts of the lock, showing roll-backs. Fig. 3 is a side view of the latch or lock actuating mechanism, showing the parts also dotted in the retracted position. Fig. 4 is a fragmentary view of a portion of the parts shown in Fig. 3 in a position which they would assume
50 if the outer knob were twisted violently while

the outer roll-back was dogged, as it would be in case the night-latch was set. Fig. 5 is a
55 end view of the outer knob, shank, and spindle. Fig. 6 is a plan view of parts for connecting the outer knob-shank with the roll-back, which latter is shown in Fig. 7. Fig. 8 is a view of the inner knob, shank, and roll-
60 back, together with a section of the spindle.

1 represents a fragment of a door which has a portion cut away on one edge to allow for the latch-bolt and passages for the knob-spindle and shank and the connecting-
65 screws.

2 is a frame-plate adapted to the inner edge of a door. 3 is a projection therefrom adapted to stand over a part of the edge of the door and having a passage for the latch or
70 locking-bolt 4.

5 is a spring normally pressing the latch-bolt outward.

6 is the latch-operating slide. 7 is a spring normally pressing it outward. 75

8 is the inner knob suitably mounted in the inner frame-plate 2.

9 is a roll-back secured to the shank of the inner knob 8 and adapted to rotate therewith and coact with the actuating-slide 6 to
80 retract the same when rotated in either direction.

10 is the plate adapted to the outer side of the door and secured in place by a screw 11 and by two screws inserted through the pas-
85 sages 12 and 13, as shown in Fig. 3.

14 is the outer knob secured in place in the outer frame-plate 10 in suitable manner.

15 is the shank of the knob. 16 is the roll-back connected thereto indirectly by mech-
90 anism hereinafter described. This roll-back is adapted to retract the latch-actuating slide by rotation in either direction

17 is a dogging-slide actuated in a suitable manner for the purpose of a so-called "night-
95 latch." This dogging-slide 17 has a forked end adapted to engage a projection 18, carried by the outer roll-back 16, and block the rotation of the same in either direction. At such time, however, the latch-bolt 4 may be
100 retracted by the operation of the inner roll-back 9. It may also be retracted from the outside.

19 represents the body of a so-called "cylinder-lock," containing the usual pin-tum-
105 blers.

20 is a spindle carried by the plug of the cylinder-lock and passing freely through an opening in the shank 15 of the outer knob and through the outer roll-back 16 and having a limited rotative movement relative to the inner roll-back 9, the opening in the inner roll-back being shaped so as to permit such limited movement. This limited movement permits the necessary oscillation of the inner roll-back by the inner knob.

21 is a key which may be inserted in the outer knob for releasing the pin-tumblers and rotating the spindle 20, and thus retracting the latch-bolt 4 through the medium of the inner roll-back.

In the ordinary construction the application of a great twisting strain to the outer knob when the roll-back is blocked by the dog will have a tendency to bend or break or in some way dislocate the connection between the outer roll-back and the dog, so as to permit the knob to rotate and retract the latch-slide. To prevent this, I have provided an intermediate mechanism for connecting the shank of the outer knob with the outer roll-back. 22 22 are posts or telescopic members eccentrically mounted with respect to the axis of the outer knob-shank. 23 is a plate in which these posts 22 22 are mounted. 24 24 are small pins connecting the plate 23 with the outer roll-back 16. In the ordinary operation of the lock the rotation of the outer knob is transmitted to the outer roll-back through the posts 22 22, plate 23, and pins 24 24. The size and shearing strength of these pins 24 24 are such that they will shear or break off, when the outer roll-back 16 is dogged by the slide 17, if an excessive twisting strain is applied to the outer knob before the connection between the outer roll-back and the dog will be dislocated. The continued rotation of the outer knob after the connection between the plate 23 and roll-back 16 is broken would, if unhindered, bring the knob-spindle 20 into cooperation with the inner roll-back 9. I have provided further means for preventing this. 25 25 are arms projecting from the plate 23, spaced apart a sufficient distance so that the projection 26, carried by the slide 6, will not be interfered with when the slide is retracted in the ordinary proper manner. When the connection between the plate 23 and roll-back 16 is broken, however, the continued rotation of the outer knob in one direction or the other will bring one of the arms 25 into a stopping engagement with one of the projections 27 27, carried by the inner frame-plate 2. This position is reached just before the spindle 20 attains an operative connection with the inner roll-back 9, so that the continued rotation of the outer knob can only twist the spindle 20, the slide 6 being blocked at this time by the interposition of one of the arms 25 back of the projection 26. The rotation of the outer knob in the opposite di-

rection from that shown in Fig. 4 would simply rotate the plate 23 anticlockwise until the upper arm 25 is stopped by the upper projection 27, at which time the lower arm 25 will stand back of the projection 26 on the latch-slide before the spindle 20 again takes up an operative connection with the inner roll-back 9. Of course the breaking of the connection between the plate 23 and the roll-back 16 disables the lock, but the object sought—namely, to prevent the opening of the door—is accomplished.

What I claim is—

1. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, operative means of connection between said knobs and said slide, means for dogging the operative connection between one of said knobs and said latch-slide, and means for permitting the connection to be broken when the knob is forcibly rotated before the dogging connection is dislocated.

2. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, means of operative connection between said knobs and said latch-bolt, means for dogging the operative connection between one of said knobs and said latch-bolt, a lock carried by said knob, a spindle connection therefrom to the other knob, and means for preventing the retraction of said bolt when the operative connection between said outer knob and said dogging device is broken.

3. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, independent roll-backs therefor with operative means of connection to said latch-bolt, means for dogging one of said roll-backs, and breakable means of connection between said roll-back and its knob.

4. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, independent roll-backs therefor with operative means of connection to said latch-bolt, means for dogging one of said roll-backs, breakable means of connection between said roll-back and its knob, and means for stopping the rotation of said outer knob when said connection is broken.

5. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, operative means of connection between said knobs and said latch-bolt, a lock carried by one of said knobs, means for dogging the operation of said knob, means of connection between said lock and said latch-bolt for retracting said latch-bolt when said knob is dogged, means for permitting the connection between said knob and said latch-bolt to be broken when said dogging device is in operation, and means for preventing the retraction of said bolt by the continued rotation of said knob and lock connection.

6. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer

knobs, operative means of connection between said knobs and said latch-bolt, a lock carried by one of said knobs, means for dogging the operation of said knob, means of connection between said lock and said latch-bolt for retracting said latch-bolt when said knob is dogged, means for permitting the connection between said knob and said latch-bolt to be broken when said dogging device is in operation, and means for preventing the retraction of said bolt by the continued rotation of said knob and lock connection comprising a plate having two arms rotatable with said knob, stationary stops for said arms, and a projection normally retractable with said latch-bolt, but prevented from movement by one of said arms.

7. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, roll-backs therefor, a lock carried by one of said knobs having means of connection with the roll-back of the other knob, a plate rotatable with said lock-carrying knob, means of connection between said plate and the roll-back of said knob, means for dogging

said roll-back, said knob and plate being rotatable independently of said roll-back by the application of considerable force when said roll-back is dogged.

8. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, roll-backs therefor, a lock carried by one of said knobs having means of connection with the roll-back of the other knob, a plate rotatable with said lock-carrying knob, means of connection between said plate and the roll-back of said knob, means for dogging said roll-back, said knob and plate being rotatable independently of said roll-back by the application of considerable force when said roll-back is dogged, and means for preventing the retraction of said slide by the continued rotation of said knob and lock connection.

Signed at New Britain, Connecticut, this 31st day of May, 1905.

HENRY G. VOIGHT.

Witnesses:

M. S. WIARD,

C. E. RUSSELL.