

A. ARENS.
ASYLUM LOCK.
APPLICATION FILED NOV. 16, 1909.

962,875.

Patented June 28, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

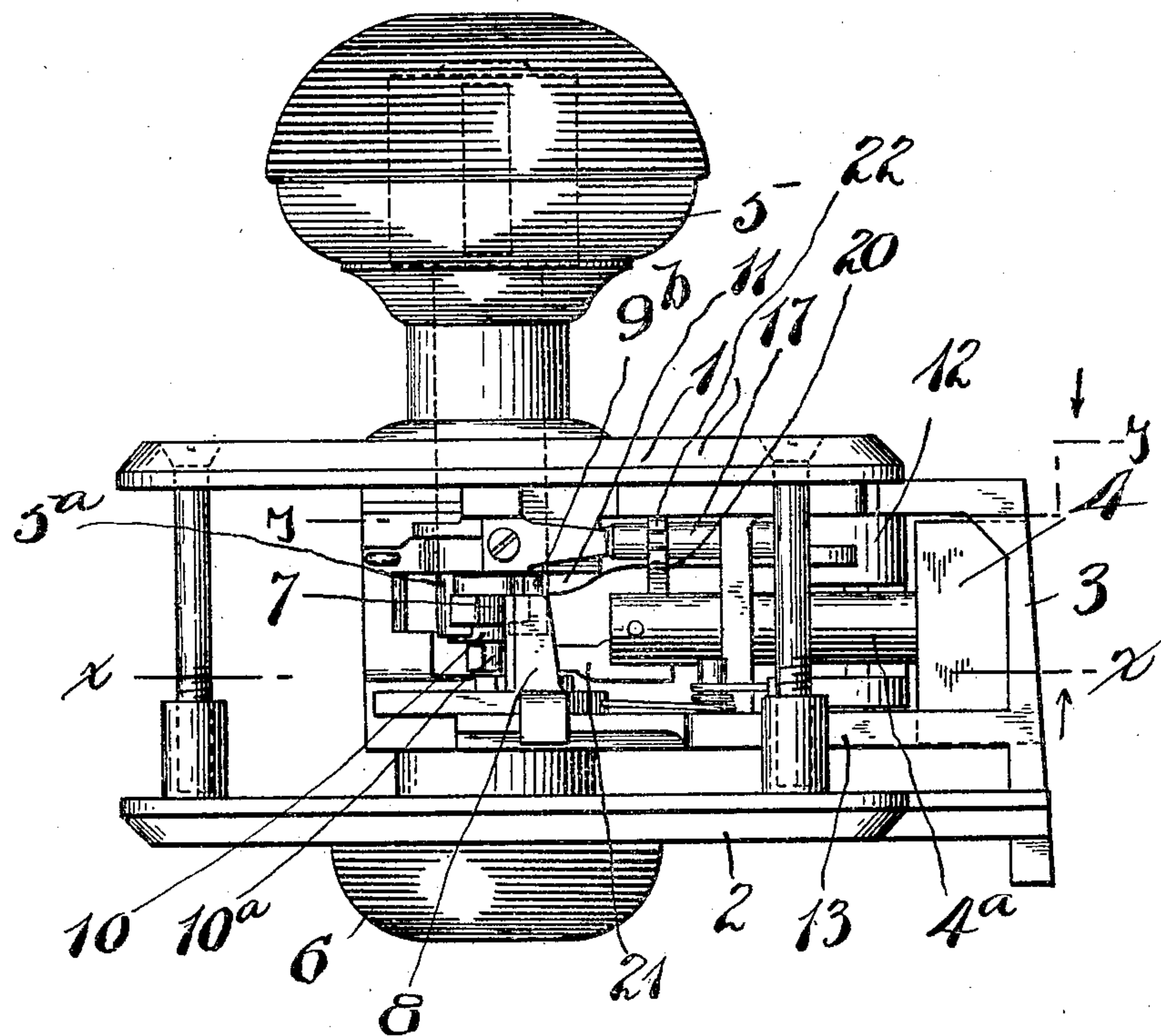
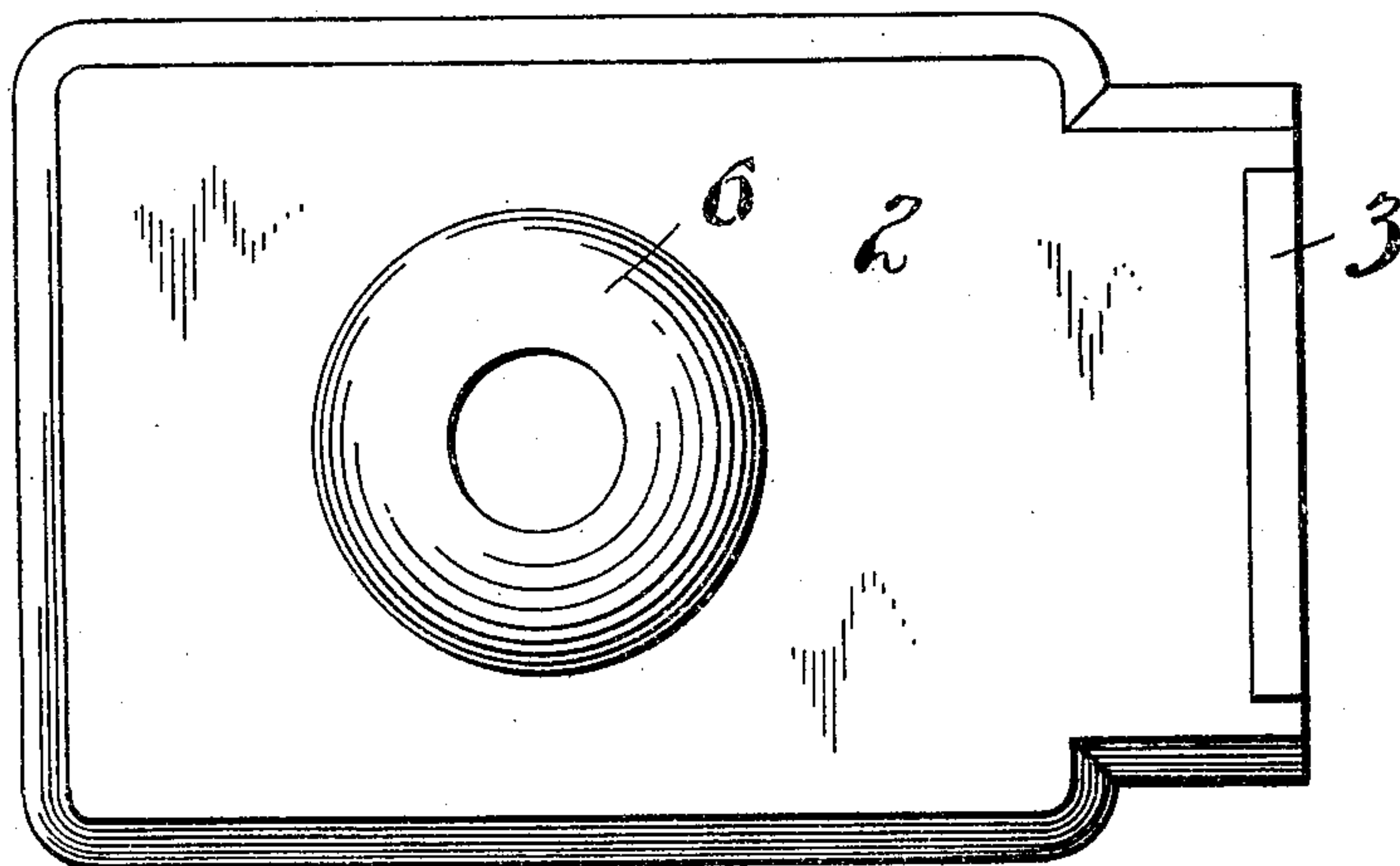


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

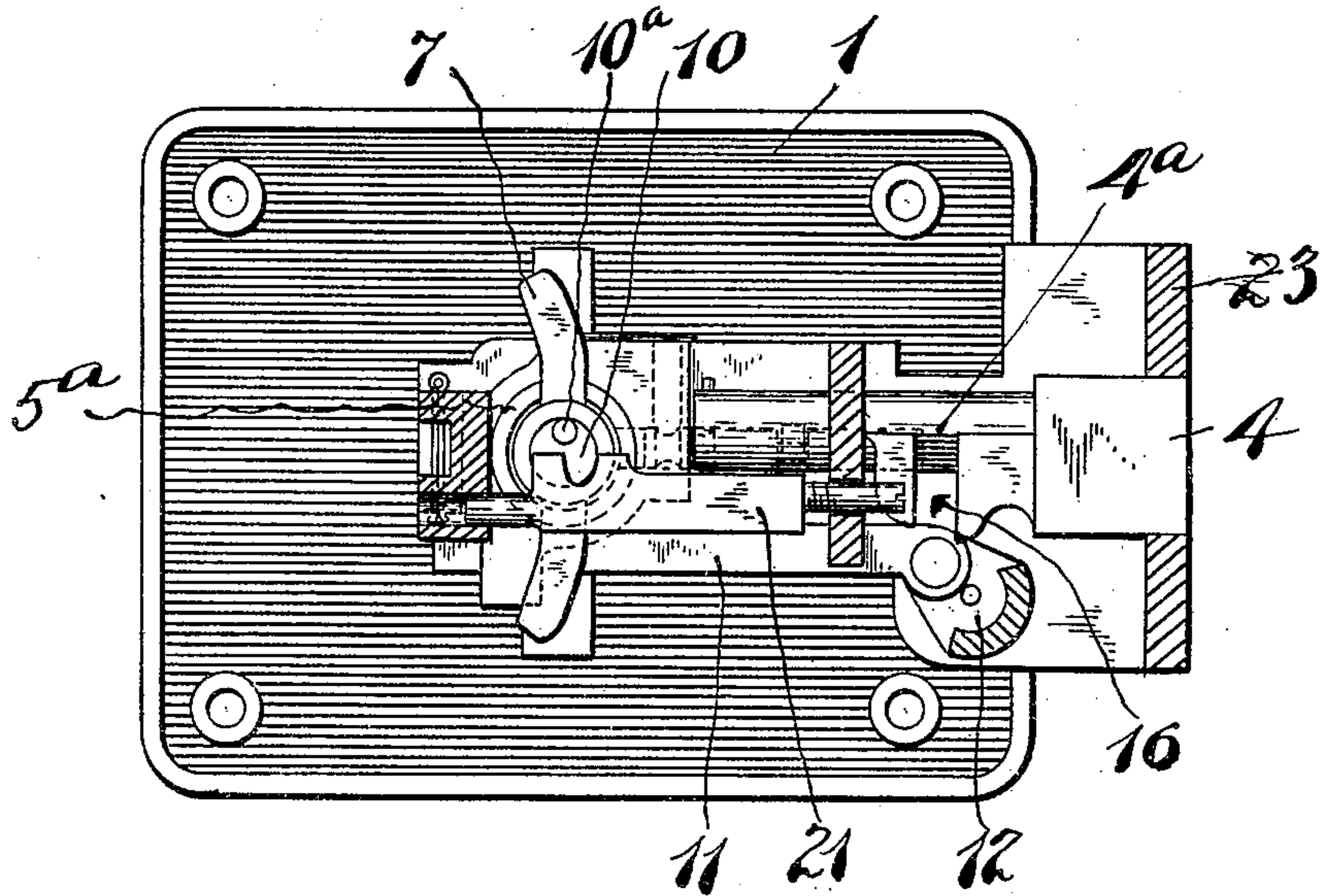


Fig. 4.

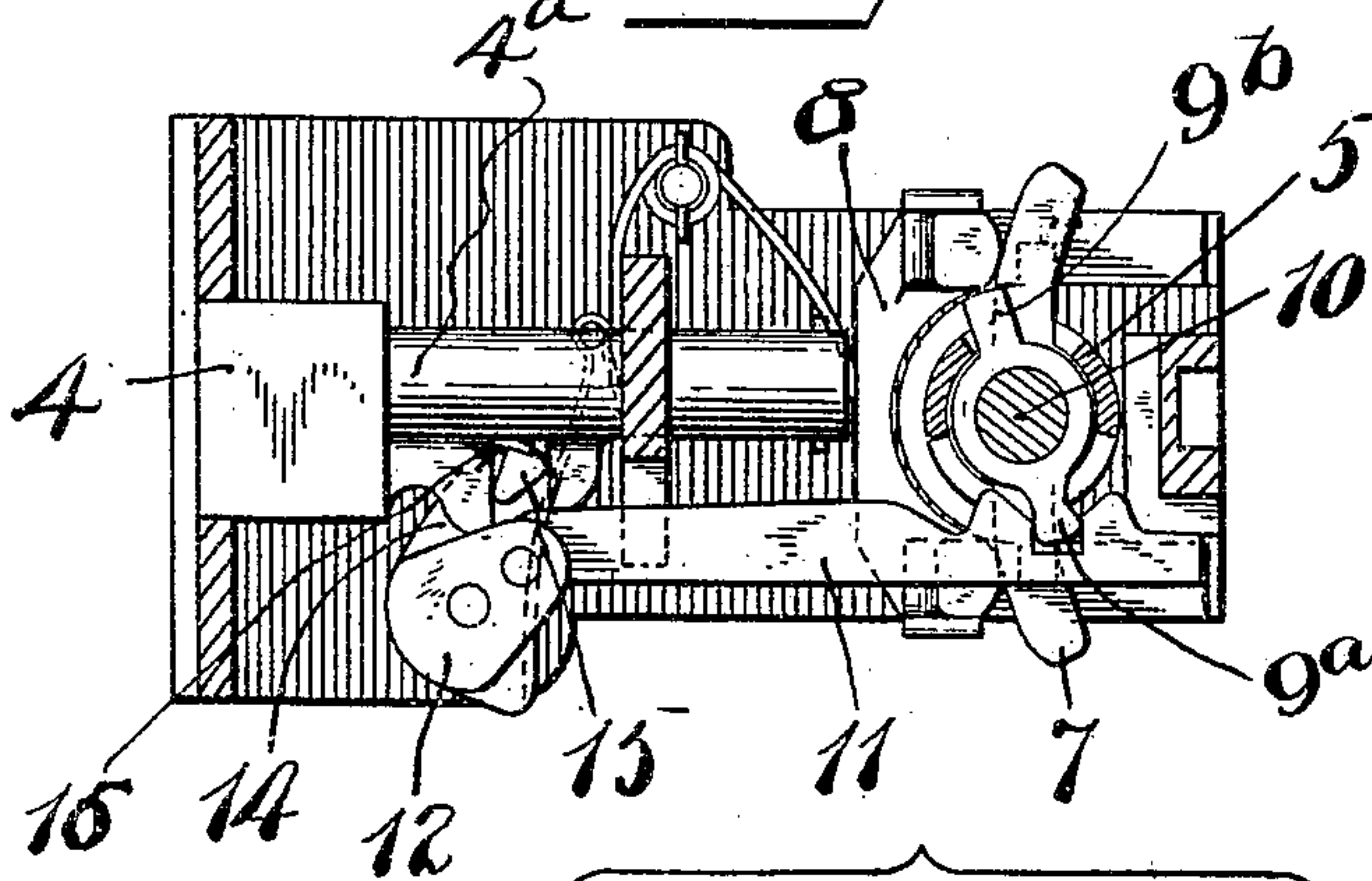


Fig. 5.

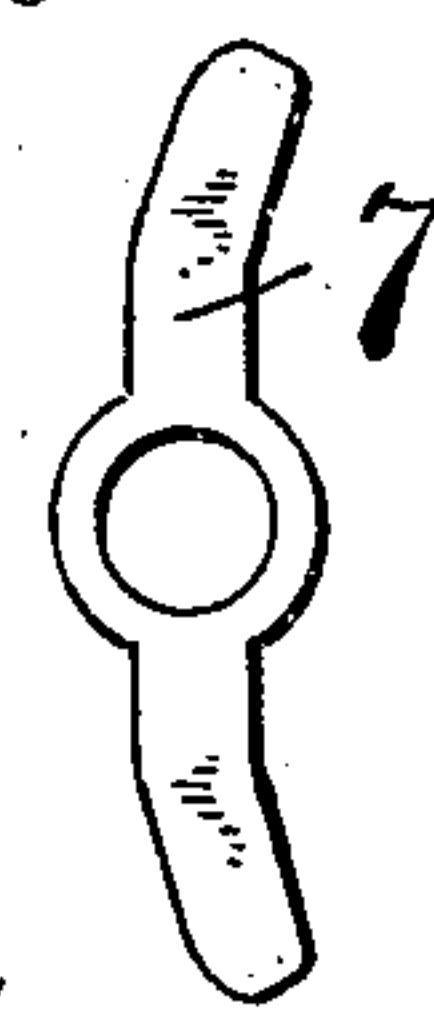
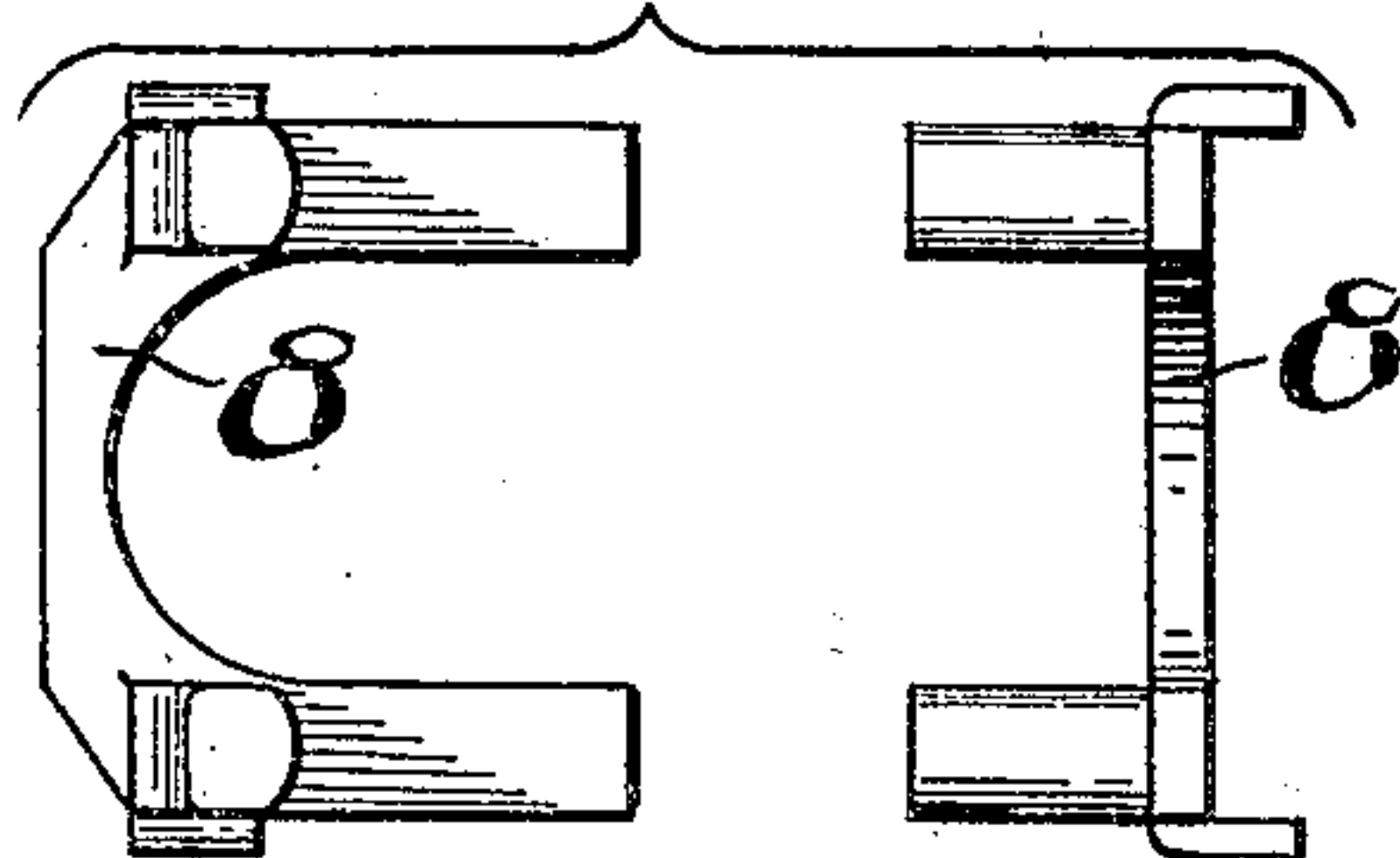


Fig. 6.



Fig. 7.



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3 SHEETS—SHEET 3.

Fig. 10.



Fig. 11.

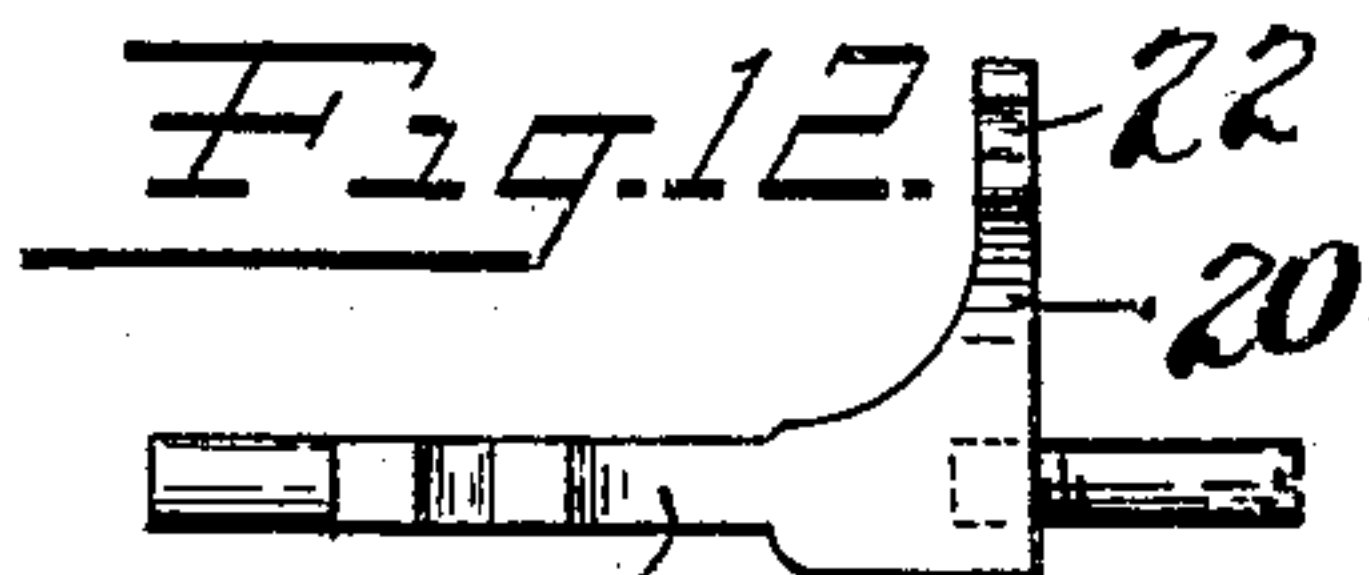


Fig. 13.



Fig. 14.



Fig. 15. 5a



Fig. 8.

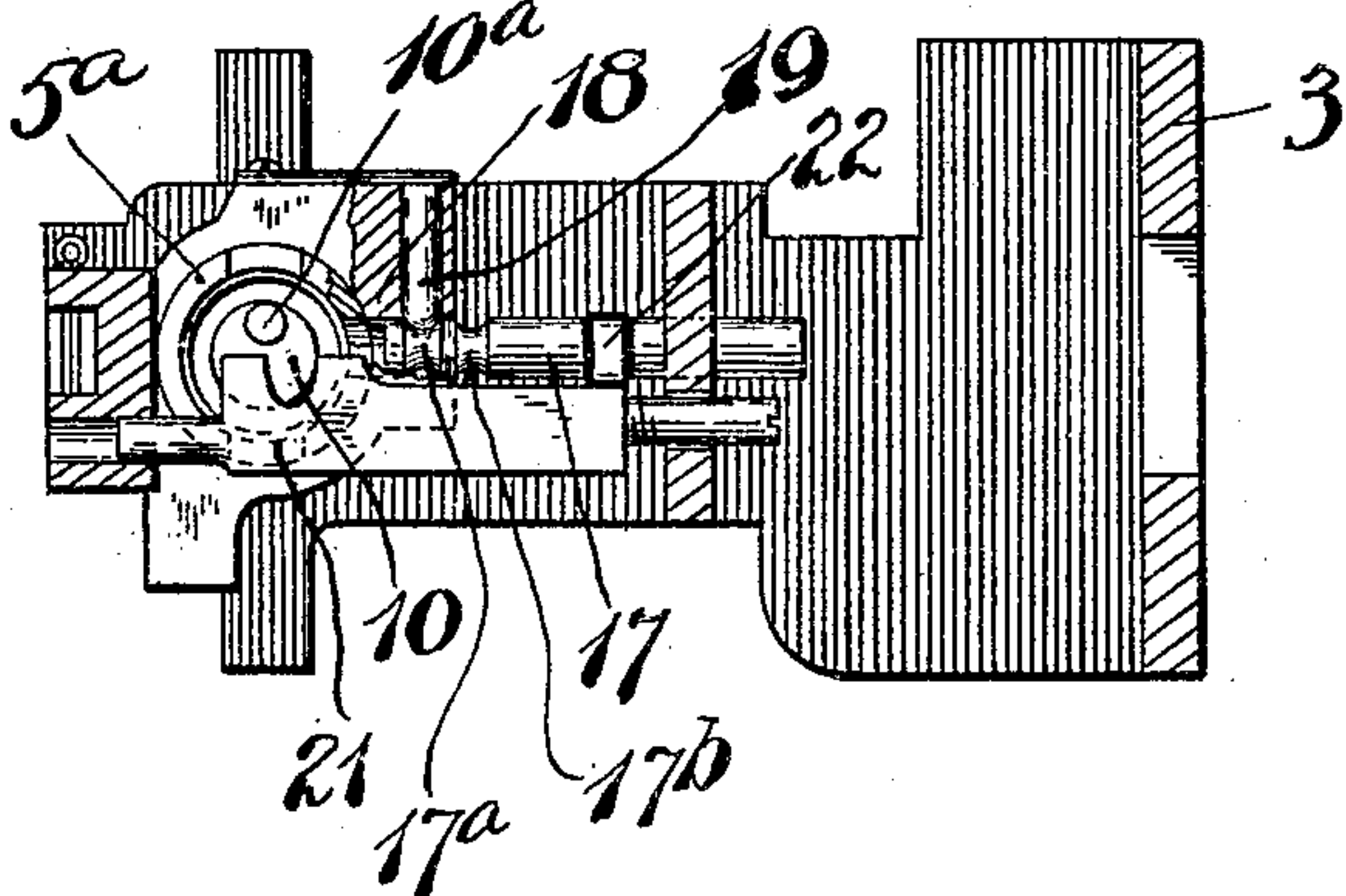
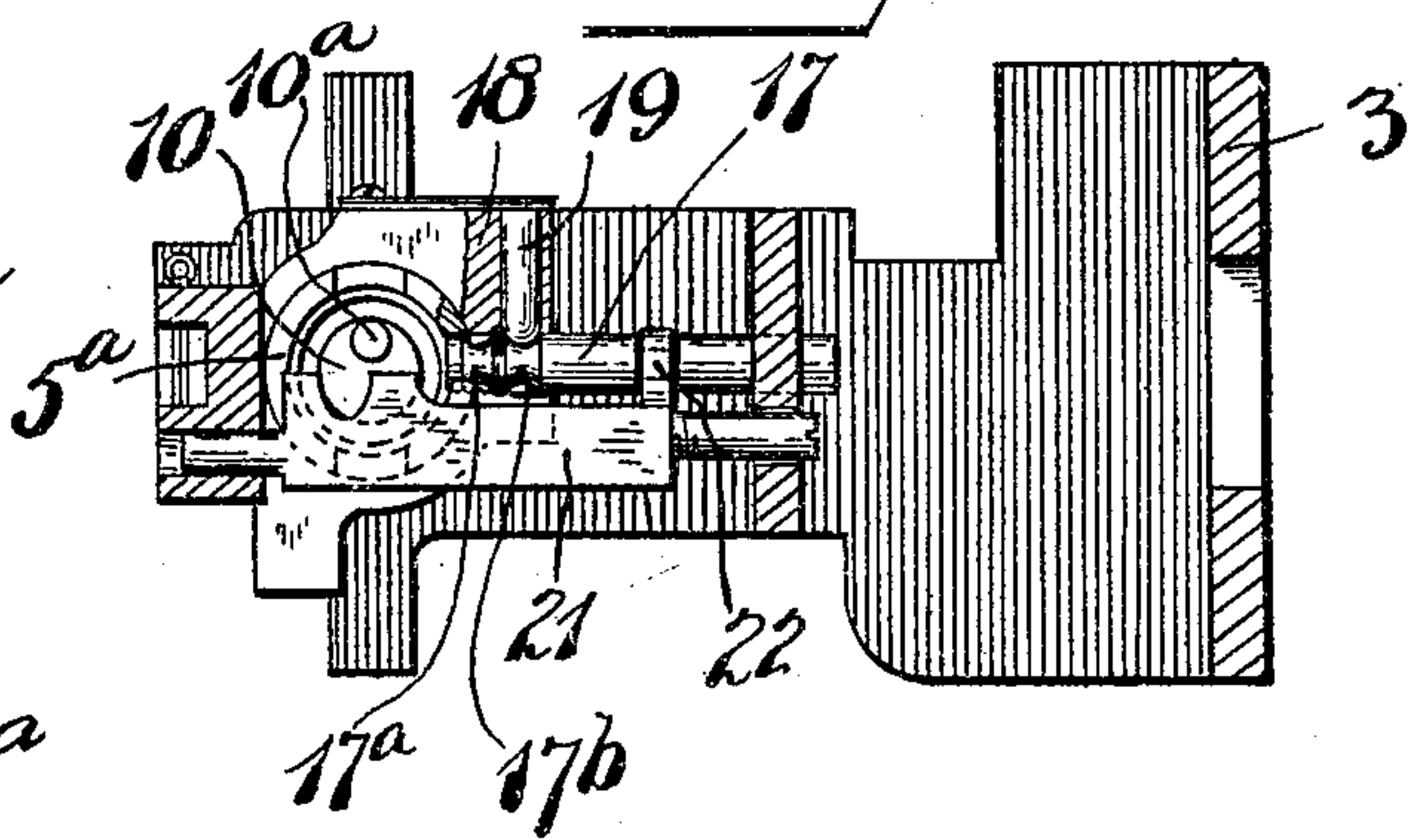


Fig. 9.



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UNITED STATES PATENT OFFICE.

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ASYLUM-LOCK.

962,875.

Specification of Letters Patent. Patented June 28, 1910.

Application filed November 16, 1909. Serial No. 528,356.

To all whom it may concern:

Be it known that I, AUGUST ARENS, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Asylum-Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks of a construction particularly useful in connection with asylums for the insane.

The object of the invention is to provide a superior construction for this particular use, as will be seen from the following description.

In the accompanying drawings Figure 1 is a plan view of the lock assembled. Fig. 2 is a view of the inner side of the lock shown in Fig. 1. Fig. 3 is a section on the line $x-x$ Fig. 1, looking in the direction of the arrow. Fig. 4 is a section on approximately the line $y-y$ Fig. 1, looking in the direction of the arrow. Figs. 5 and 6 are side elevations of different details. Fig. 7 is a side and end elevation of another detail. Fig. 8 is a section similar to the section of Fig. 3, with certain parts removed. Fig. 9 is a view similar to Fig. 8, with the parts in a different position. Figs. 10, 11 and 12 are elevations of different details. Fig. 13 is a top plan view of the inner end of the knob shank. Fig. 14 is a lower plan of said knob shank. Fig. 15 is a side elevation of the knob shank and key-controlled spindle.

The frame of the lock may be made in any desirable manner, but is preferably constructed of two plates 1 and 2 arranged to stand upon opposite sides of the door, the same being connected at the end by an end plate 3, through which a dead-bolt 4 projects. In the particular form shown, the side plate 1 is adapted to the outer side of the door, while the side plate 2 is adapted to the inner side of the door. These plates are secured together or clamped against opposite sides of the door by suitable machine screws, as shown, which are entered through the outer plate and are arranged to take into threaded lugs on the inner plate, as shown in the drawings, thus preventing the success of any attempt to remove the inner plate, the purpose of this invention being to securely lock the inmate of a room therein. 5 is a knob suitably mounted on the outer side plate 1. 6 is a finger piece suitably

mounted upon the inner side plate 2 and suitably constructed to permit any one at the inner side of the door to engage with his finger the said lock and pull the door open when the dead-bolt is withdrawn. The preferred form of this finger piece 6 is such that it cannot be easily injured or broken, and I have found the form shown in the drawings to be very satisfactory, said finger piece as shown comprising a cupped plate having a central opening to receive the tip of the finger, said cupped plate being secured to the inside plate 2 in any suitable manner. By making the finger piece 6 of heavy stock, contoured as shown, it will resist severe usage, which in a lock of this type is of very great importance.

The lock is so constructed that the dead-bolt may be advanced and retracted by the turning of the knob 5, and it is also so constructed that said knob may be dogged against being turned, thereby rendering the lock secure against unauthorized or unlawful operation by any one at the outer side of the door.

I will now proceed to describe the preferred method of connecting the knob with the dead-bolt and of the dogging means for the knob.

5^a is a tubular or hollow knob shank, the same being peculiarly slotted at the inner end. When viewed from above, these slots are T-shaped.

7 is a centering beam mounted in the outer end of the knob shank in that part of the slotted portion which extends longitudinally of said shank. Bearing against this centering beam is a spring-actuated centering slide 8, of any suitable construction. The function of this centering beam and centering slide is to restore the knob to a normal central position after it has been turned for the purpose of advancing or retracting the dead-bolt 4.

9 is a roll-back provided with two arms 9^a—9^b. This roll-back is mounted centrally with relation to the knob shank 5^a and is centrally supported on a key-actuated spindle 10, the main function of which will later be explained. The two arms 9^a—9^b of the roll-back line up with the top portion of the T-shaped slots in the end of the knob shank 5^a. One arm, 9^a, of the roll-back coöperates with a link 11 suitably connected with the dead-bolt 4, so that when said roll-back is moved

in one direction it will advance said dead-bolt, and when moved in an opposite direction will retract said dead-bolt. In the particular form shown, the link 11 is connected
5 with the rocker 12, pivoted in the frame of the lock between the side plate 1 and the abutment 13, lying between the plates 1 and 2.

14 is a laterally offset arm having a lug 15, which engages in a transverse slot 16 in the tail 4^a of the dead-bolt. When the rocker is rotated to the position where the dead-bolt is advanced, the lug 15 lines up with the direction of movement of the bolt so as to
15 block the latter from being pushed back, said parts being on substantially a "dead center." The other arm 9^b of the roll-back which, as before indicated, stands in the upper part of the T-shaped slot on the opposite side of the knob shank, operates as a
20 stop shoulder which is engaged alternately by the end walls of the upper part of the slot in which it stands, the length of said slot being sufficient to provide the necessary
25 lost motion incidental to the operation of the dead-bolt by the turning of the knob. As shown, when the bolt is advanced, it requires the turning of the knob in one direction away from the center. The centering
30 slide then restores the knob to its original position, but this movement of the knob does not disturb the roll-back and consequently the dead-bolt stands projected. When the knob has been centered, it will be
35 seen that the stop arm 9^b will stand in the opposite end of the slot, so that a reverse rotation of the knob will impart to said roll-back a corresponding movement and will result in the withdrawing of the dead-bolt.
40 When the knob is restored to its neutral position, the stop arm 9^b will stand in the opposite end of the slot ready to receive the rotary impulse of the knob when it is desired to again advance the dead-bolt and so on.

45 The construction of the means for dogging the knob, in the particular form of the lock which I have shown in the drawings, comprises a longitudinally movable bolt 17 mounted radially relatively to the knob
50 shank 5^a, the nose of said bolt standing close to said knob shank, said knob shank having a perforation in line with said dog bolt 17 when the knob stands in its neutral or centered position. It follows that if this bolt
55 17 is projected into said knob or opening, the knob shank will be held against rotation, and consequently the dead-bolt cannot be withdrawn by the knob, and at such times the door will be absolutely locked from unauthorized opening. The nose of the bolt 17
60 slides in a rigid bearing 18 adjacent to the side of the knob shank, and mounted in said bearing is a spring-pressed detent 19, which is arranged to enter either one of two notches
65 17^a—17^b in the dog bolt 17, the function of

said detent being to frictionally hold said dog bolt in its locking or non-locking position.

The means for moving the knob dogging bolt to and fro, as shown, comprises in its
70 preferred form an eccentric pin 10^a at the inner end of the key-actuated spindle 10. This eccentric pin coacts with the cross-head 20 of a slide 21, which partakes of reciprocal motion upon a suitable mounting, and
75 which is provided with a yoke 22 which engages in an annular groove in the knob dogging bolt 17, so that by rotating the key-actuated spindle in the proper direction the cross-head slide and its associated parts may
80 be moved to and fro to impart a corresponding movement to the knob dogging bolt.

Within the knob 5 is located a lock, which in the preferred form is of the pin tumbler type, the plug of said lock being
85 suitably connected with the key-actuated spindle 10, so that by inserting a key in the outer end of the cylinder lock (which is exposed at the outer end of the knob) the operator or one in authority may lock or dog
90 the knob against rotation when the bolt is advanced, or, indeed, if desired, when the bolt is retracted.

It will be observed that the foregoing construction affords the greatest degree of
95 security and furnishes at once a lock which, for the particular use intended, possesses many conspicuous advantages. By this construction it is practically impossible for the insane occupant of the room to which the
100 lock is applied to injure the lock in any way, the inner plate 2 being solid. In doors which open inwardly, no stop is provided to prevent access to the bolt by means of a thin tool inserted between the door and the
105 door casing at the inner side of said door. The use of the usual latch-bolt would, therefore, be dangerous in the extreme, since it might be manipulated by the occupant of the room and escape might be possible. By
110 providing only a single bolt, as shown, and that of the dead-bolt type, namely, with opposite square walls presenting no incline against which a tool can be effectively applied, this method of manipulation is absolutely
115 prevented. By providing means for dead-locking the knob at the outer side, unauthorized intrusion is likewise prevented. By providing means for dead-locking the knob when the bolt is retracted, as might
120 be the condition when the keeper of the unfortunate occupant is within the room, it is impossible for any one on the outside to lock the door and prevent said keeper from making his escape or passing out through
125 the door to secure assistance, in case of emergency. While such institutions as are equipped with locks of this type furnish attendants who at all times are supposed to watch the corridors and the various rooms, 130

it sometimes happens that an attendant of necessity is obliged to devote his attention in another direction and leave one or more rooms unguarded for a short time. If during such a period it were possible to lock the doors from the outside by the mere turning of the knob, it would be impossible for any one within the room to make his escape during such a period, and in the event the one desiring to escape happened to be one of the attendants or physicians, serious results might follow. By this improved construction this danger is avoided.

What I claim is:

1. In an asylum lock, a frame including two plates arranged to overlie the opposite sides of a door, a dead-bolt, a knob operatively connected with said bolt for advancing and retracting the same, a shank for said knob and a key-operated device for directly dogging said knob shank.

2. In an asylum lock, a frame including two plates arranged to overlie the opposite sides of a door, a dead-bolt, a knob operatively connected with said bolt for advancing and retracting the same, a shank for said knob and a key-operated device for directly dogging said knob shank whether said bolt is advanced or retracted.

3. In an asylum lock, a frame including two plates arranged to overlie the opposite sides of a door, a dead-bolt, a knob operatively connected with said bolt for advancing and retracting the same, and a key-operated device for dogging said knob, said key-operated device comprising a key-operated spindle concentric with the knob.

4. In an asylum lock, a frame including two plates arranged to overlie the opposite sides of a door, a dead-bolt, a knob operatively connected with said bolt for advancing and retracting the same, a key-operated device for dogging said knob, said key-operated device comprising a key-operated spindle concentric with the knob and a bolt arranged to engage a part of said knob, and means of connection between said key spindle and said bolt whereby by turning said spindle independently of the knob said knob dogging bolt may be advanced or retracted.

5. In a lock of the character described, a

frame arranged to be secured to a door, a dead-bolt carried by said frame, a knob on one side of said frame only, knob centering means, said knob being arranged to turn in either direction away from its centered position, a roll-back carried by said knob, and a lost motion connection between said roll-back and said knob, and connecting means between said roll-back and dead-bolt whereby when said roll-back is turned in one direction said dead-bolt will be advanced and when turned in the opposite direction said dead-bolt will be retracted.

6. In a lock of the character described, a frame arranged to be secured to a door, a dead-bolt carried by said frame, a knob on one side of said frame only, knob centering means, said knob being arranged to turn in either direction away from its centered position, a roll-back carried by said knob, a lost motion connection between said roll-back and said knob, connecting means between said roll-back and dead-bolt whereby when said roll-back is turned in one direction said dead-bolt will be advanced and when turned in the opposite direction said dead-bolt will be retracted, and means for dogging said knob in its centered position.

7. In a lock of the character described, a frame arranged to be secured to a door, a dead-bolt carried by said frame, a knob at one side of said frame only, a knob shank on said knob entering said frame, and two oppositely arranged T-shaped notches at the inner end of said knob shank.

8. In a lock of the character described, a frame arranged to be secured to a door, a dead-bolt carried by said frame, a knob at one side of said frame only, a knob shank on said knob entering said frame, two oppositely arranged T-shaped notches at the inner end of said knob shank, a knob centering device standing in the upright part of said notches, and a dead-bolt operating roll-back standing in the upper laterally extended portion of said notches.

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