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PATENTED JAN. 26, 1904.

B. SCHACHT.
COMBINED LOCK AND LATCH.
APPLICATION FILED SEPT. 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

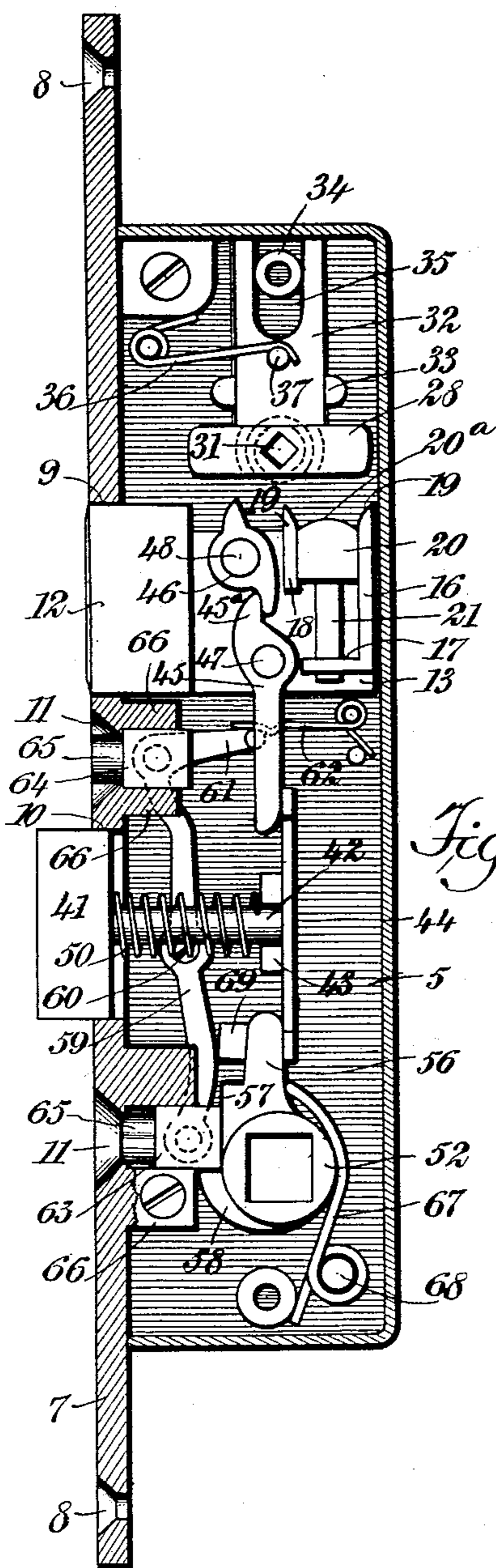


Fig. 1.

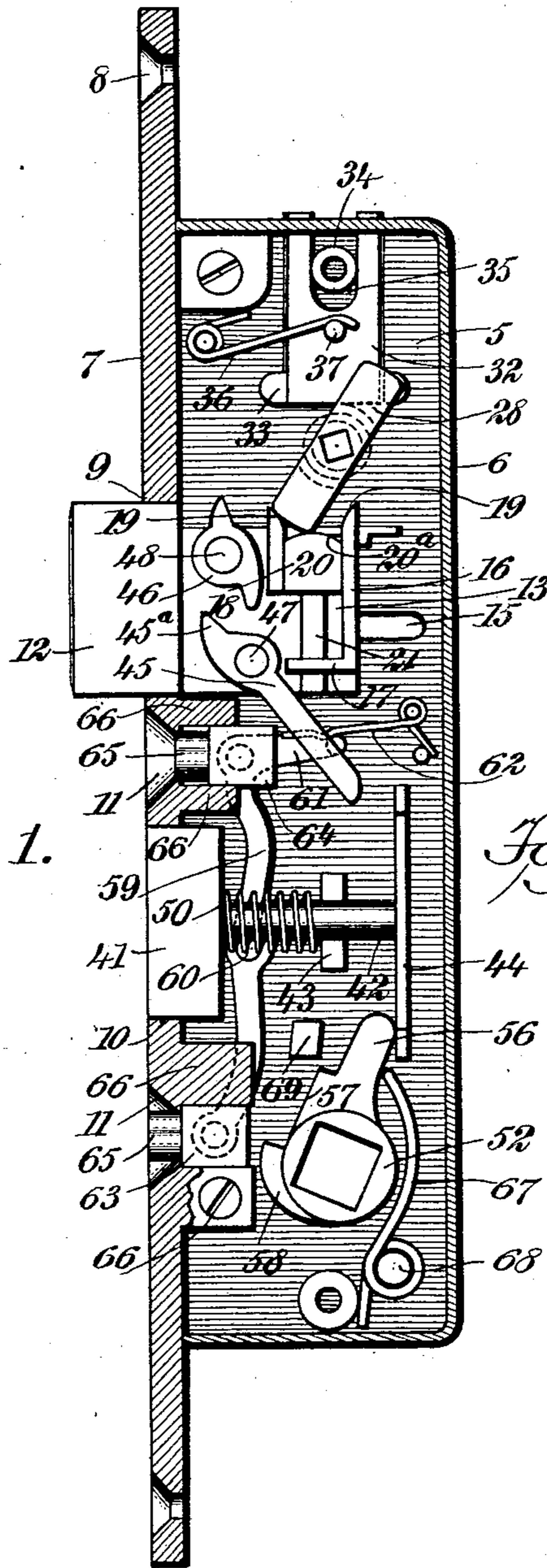


Fig. 2.

WITNESSES:

A. R. Appelman
H. J. Beruhof

INVENTOR

Barnet Schacht

BY

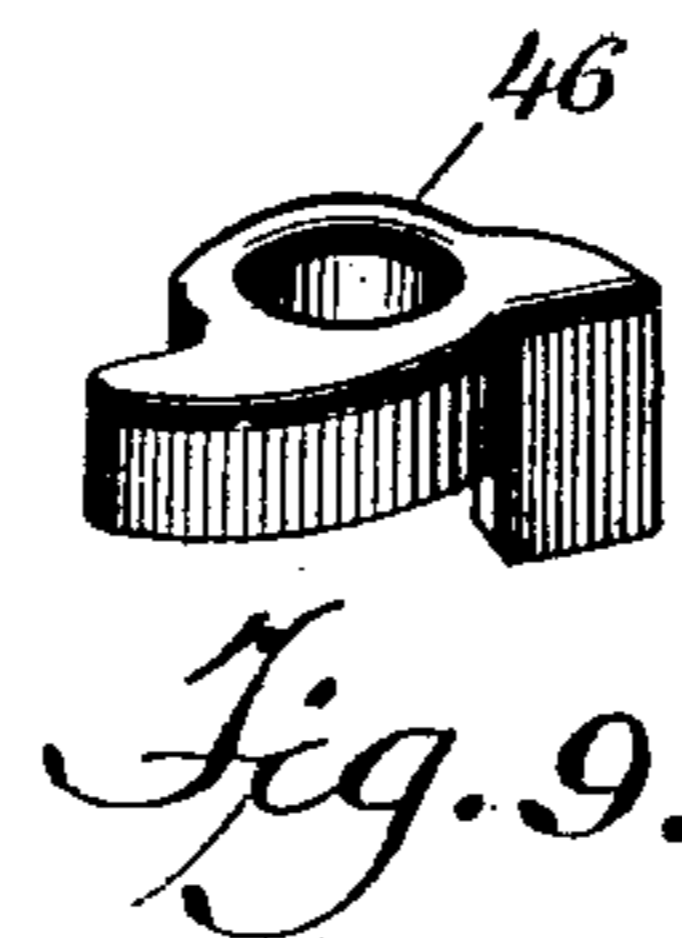
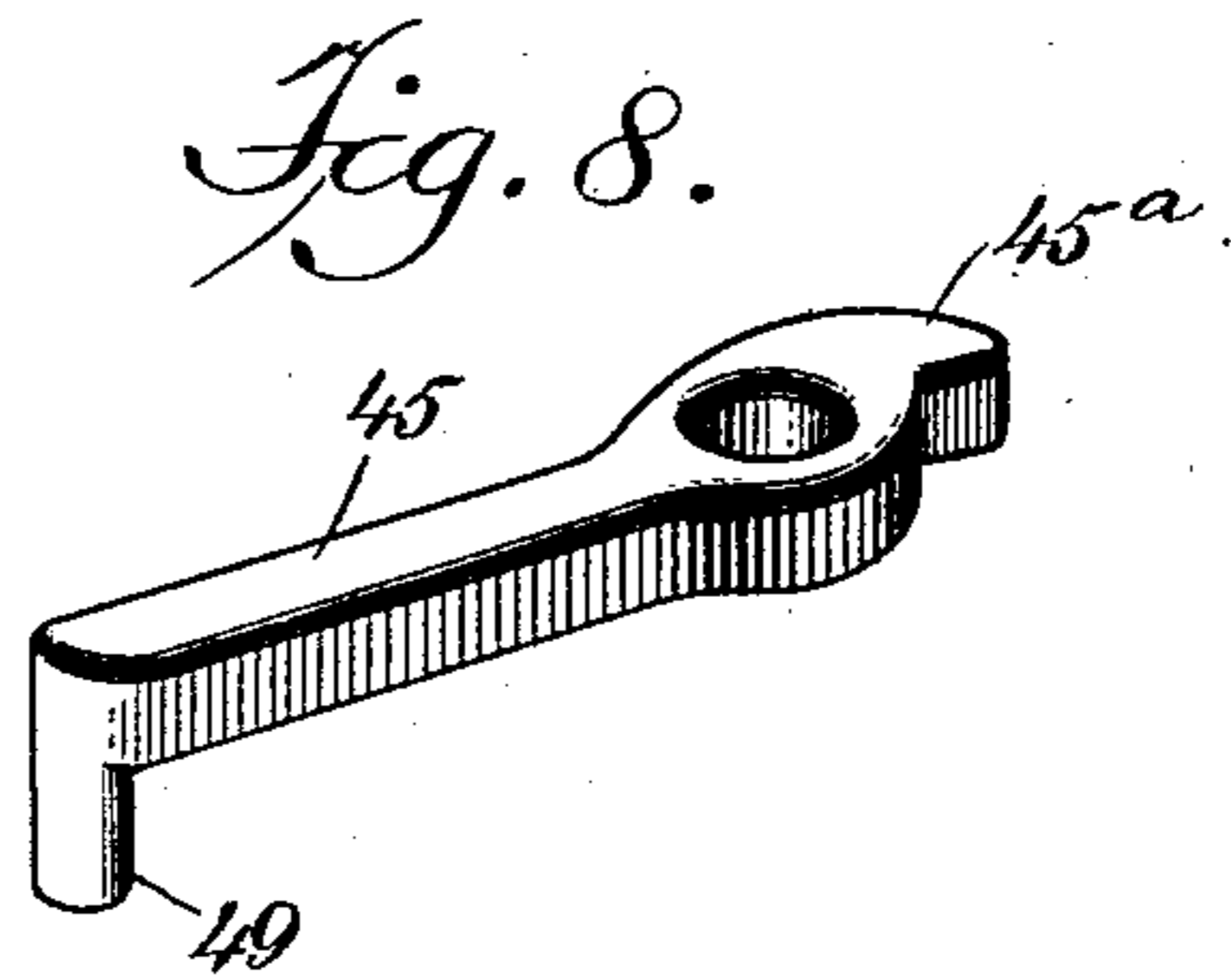
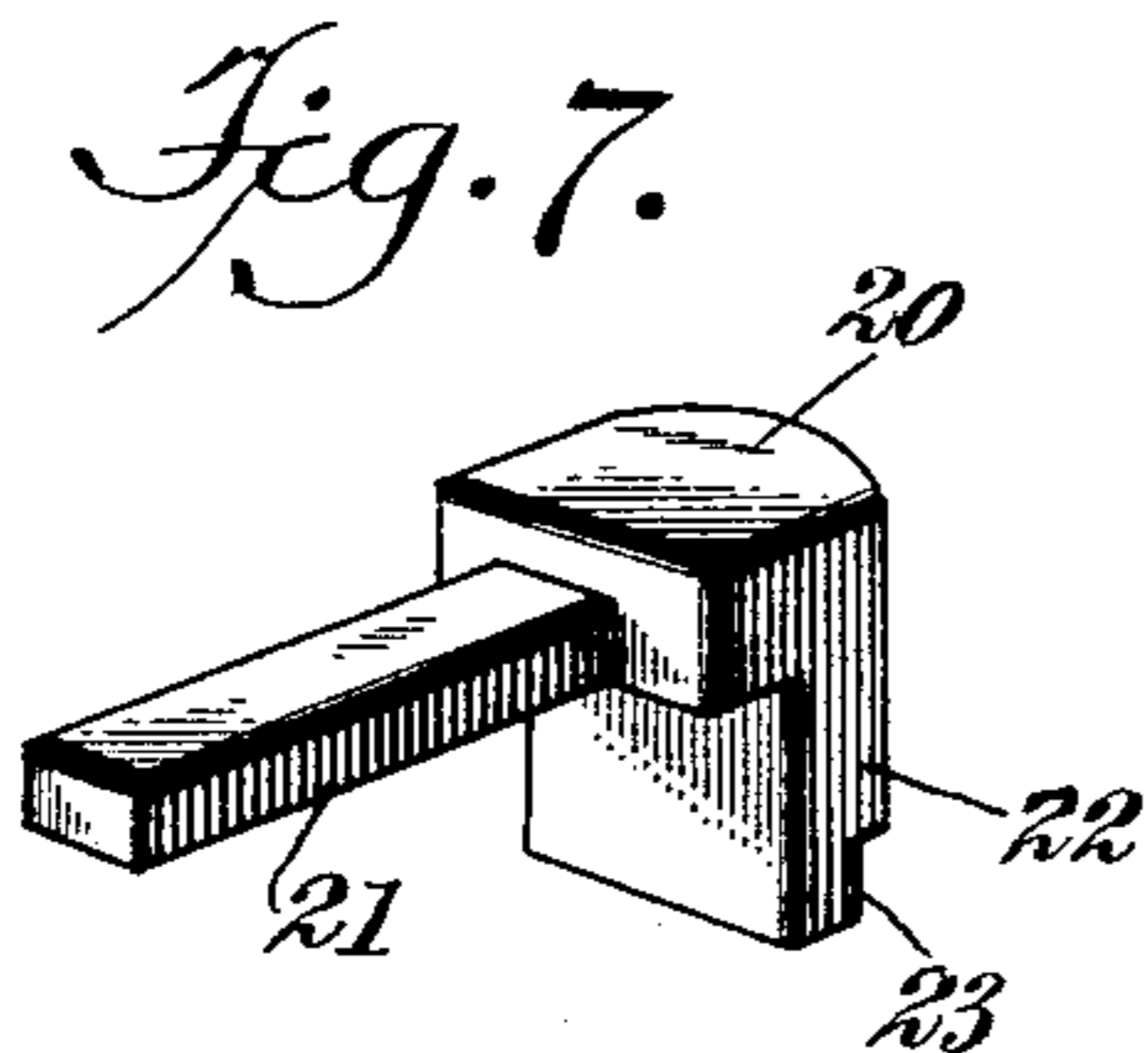
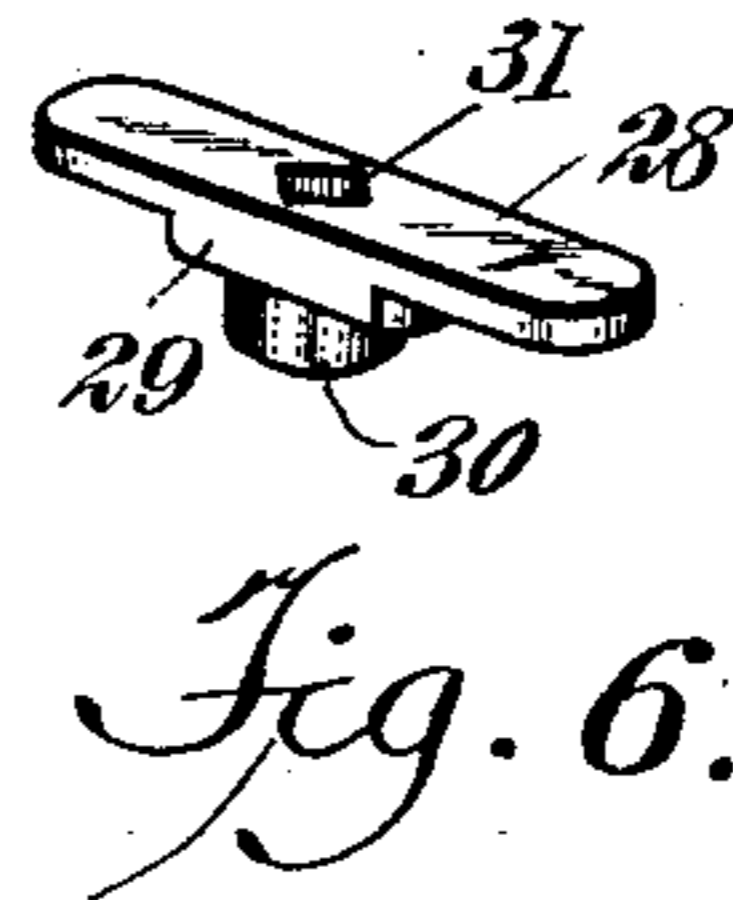
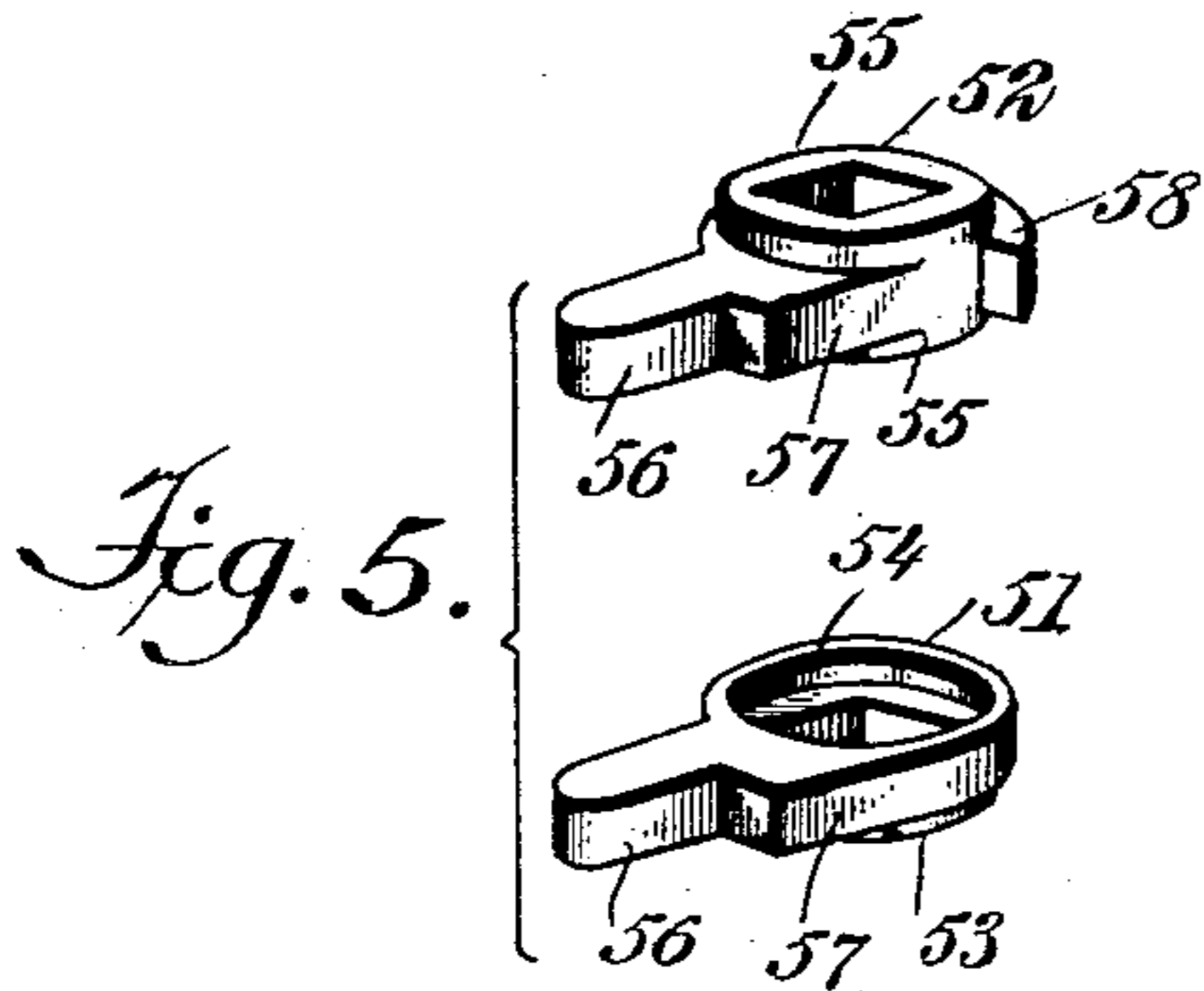
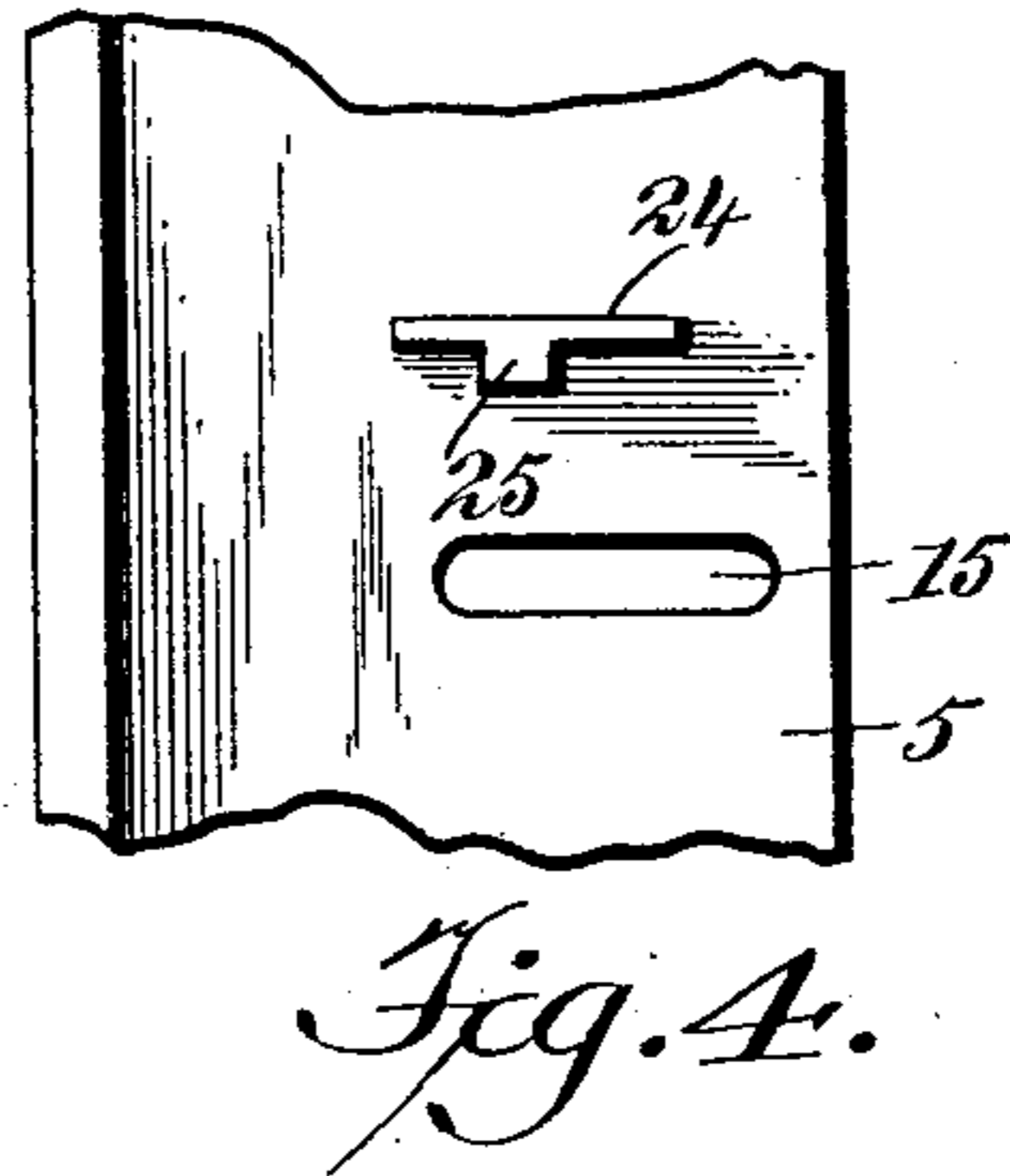
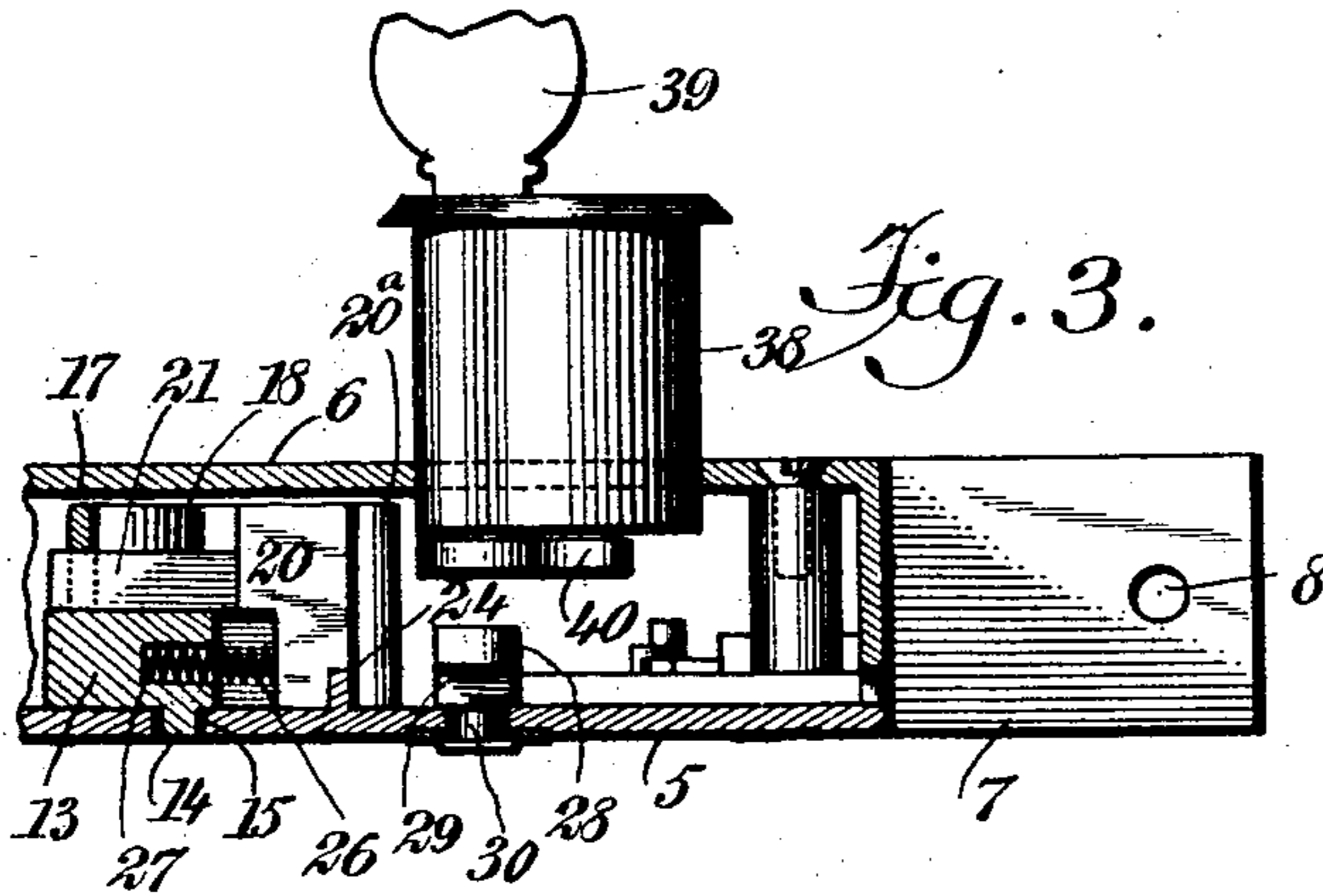
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ATTORNEYS

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COMBINED LOCK AND LATCH.
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2 SHEETS—SHEET 2.



WITNESSES:
A. Appleman
H. J. Berthoff

INVENTOR
Barnet Schacht
BY *Mumme*
ATTORNEYS

UNITED STATES PATENT OFFICE.

BARNET SCHACHT, OF NEW YORK, N. Y.

COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 750,707, dated January 26, 1904.

Application filed September 15, 1903. Serial No. 173,275. (No model.)

To all whom it may concern:

Be it known that I, BARNET SCHACHT, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Combined Lock and Latch, of which the following is a full, clear, and exact description.

My invention relates to improvements in combined locks and latches of that class wherein there is united a lock-bolt adapted to be operated by a key and a latch-bolt normally under control of a knob-spindle and adapted by a push-button-controlled dog mechanism to be locked in a projected or shot position.

The objects and advantages of the invention will appear in the subjoined description, and the actual scope thereof will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a combined lock and latch constructed in accordance with my invention and showing the lock-bolt in its retracted position and the latch-bolt in a normally projected position. Fig. 2 is a similar sectional elevation with the lock-bolt and the latch-bolt in positions the reverse of those shown by Fig. 1. Fig. 3 is a vertical transverse sectional elevation taken through the upper part of the lock to show the position of the key-controlled pin or cylinder member which is adapted to actuate the latch-bolt and the lock-bolt under certain conditions. Fig. 4 is a fragmentary detail view of a part of the casing, showing one element of the dog mechanism for the lock-bolt, to be presently described. Figs. 5 to 9, inclusive, are detail perspective views of various parts, which will also be hereinafter described.

The operating parts of my improved lock and latch are housed or contained within a casing, which is constructed in two parts, (indicated at 5 6,) the same being separably fastened by suitable means, and one of said casing members having a face-plate 7, the latter being furnished with the usual screw-holes 8 and with the slots 9 10 for the lock-bolt and

the latch-bolt, respectively. This face-plate is also provided with holes 11 for the accommodation of the push-buttons which are associated with the dog mechanism for the latch-bolt, said holes 11 being provided in the face-plate on opposite sides of the latch-bolt slot 10. A lock-bolt 12 is slidably fitted within the casing to play in the slot 9 of the face-plate thereof, said lock-bolt being provided with an integral shank 13. The shank of the lock-bolt is provided with a stud 14, arranged to play in a guide-slot 15, which is provided in the member 5 of the lock-casing, said stud and slot coöperating to limit the lock-bolt to slidable movement transversely within the casing. At its heel the shank 13 of the lock-bolt is provided with an upstanding guide-flange 16, having a right-angular extension 17, and parallel to the guide-flange 16 is another guide-flange 18, also provided on the shank 13 of the lock-bolt, said guide-flanges 16 18 having curved or beveled faces 19. (See Figs. 1 and 2.)

Between the guide-flanges 16 18 of the lock-bolt is arranged a lock-bolt dog 20. (See Figs. 1, 2, and 7.) This lock-bolt dog is arranged to slide between said flanges 16 18 in a direction at right angles to the path of movement of the lock-bolt 12, on which the dog is mounted and with which it is movable, and said dog is also provided with a stem 21, which is arranged to play in a recess or opening provided in the extension 17 of the guide-flange 16. The dog is provided with a depending lug 22, having a notch 23 in one face thereof, (see Figs. 3 and 7,) and the notched face of this dog is presented in opposing relation to a flange 24, which is made integral with the member 5 of the lock-casing, said flange 24 being adjacent and parallel to the slot 15 of the casing, as shown by Fig. 4. This flange 24 is also provided with a locking projection 25, which lies in the path of the lug 22 of the lock-bolt dog 20. The dog is normally projected by a spring 26, which is housed in a cavity 27, provided in one side portion of the lock-bolt, (see Fig. 3,) and when the bolt is projected or retracted this spring 26 impels the dog to a position wherein its lug 22 will lie on one side or the other of the locking pro-

jection 25, whereby the dog and the projection cooperate in holding the lock-bolt in its retracted or projected positions.

The dog 20 is provided with a curved face 20^a, which lies in the path of a lock-bolt actuator 28. (See Figs. 1, 2, 3, and 6.) This actuator is in the form of a plate, having an offset 29 and a hub 30, and through the plate and its hub is provided a square opening 31, in which is fitted and secured a knob-spindle, the sole function of which is to turn the actuator 28 from the inside of the door. The hub 30 of the actuator 28 is mounted in the member 5 of the lock-casing to turn freely therein; but the spindle which is attached to the actuator does not extend through the lock-casing nor is it exposed on the outside of said casing. This actuator 28 is free to turn on a horizontal axis, so as to make one end or the other impinge the curved face 20^a of the lock-bolt dog and one of the curved faces 19 of a guide-lug 16 or 18, whereby the dog 20 is adapted to be repressed against the energy of the spring 26 before the actuator 28 will engage with the curved face 19 of the guide-flange for the purpose of projecting or retracting the lock-bolt 12. With the lock-bolt in the retracted position (shown by Fig. 1) the actuator 28 is adapted to be turned by its knob toward the left, thus shoving back the dog 20, so as to clear the locking projection 25 and making the actuator engage with the flange 18, so as to project said bolt 12. When it is desired to retract the lock-bolt from the position of Fig. 2 to that of Fig. 1, the actuator should be turned in an opposite direction or toward the right in Fig. 2, whereupon the dog 20 is repressed out of the path of the projection 25 and the actuator will engage with the flange 16 for the purpose of moving the lock-bolt inwardly, the spring 26 serving to project the dog 20 into engagement with the projection 25 when the actuator is withdrawn from engagement with the lock-bolt. The actuator is held normally in the position of Fig. 1 by the impingement thereon of a slide 32. This slide is limited to endwise movement within the upper part of the casing by suitable guide-lugs 33 and by a post 34, which fits in a slot 35 of the slide. This slide is normally projected into engagement with the offset 29 of the lock-bolt actuator by a spring 36, which is mounted within the casing and engages with a stud 37, provided on the slide, as shown by Figs. 1 and 2.

38 designates the key-controlled member of the improved lock and latch. This member is constructed similar to the well-known style of pin-and-cylinder locks, and in the present invention the shell or casing of this lock is mounted in a fixed way on the member 6 of the casing of my improved lock and latch, as shown by Fig. 3. The plug of this pin-and-cylinder lock has the usual slot to receive a key 39, and this plug is provided at its inner

end with a tailpiece 40, the latter being disposed inside of the casing 5, that is directly opposite to the lock-bolt actuator 28, and in a position to operate on the curved face of the lock-bolt dog 20 and the faces 19 of the lugs 16 18 of the lock-bolt. This tailpiece 40 and the actuator 28 both operate on the dog 20 and the flanges 16 18 of the lock-bolt, so that this lock-bolt may be projected or retracted by the tailpiece of the cylinder member 38 or the spindle-controlled actuator 28. If it is desired to retract the lock-bolt by the operation of the cylinder member 38, the key-controlled plug and the tailpiece 40 are turned in one direction, so as to repress the dog 20 and to engage with the flange 16 of the bolt 12, whereby the rotation of the cylinder member in one direction will withdraw the lock-bolt. The rotation of the tailpiece 40 of the cylinder member 38 in the opposite direction, however, will actuate a train of devices whereby the latch-bolt 41 may be withdrawn, as I will now proceed to describe. This latch-bolt 41 is arranged to slide in the slot 10 of the face-plate 7, said bolt having a guide-stem 42, which is limited to slidable movement by a fixed guide-post 43 within the casing. The stem of the latch-bolt is provided at its inner end with a cross-head 44, the same being long enough to lie in the path of a latch-bolt actuator, and of means controlled by the tailpiece of the cylinder member 38, as shown by Figs. 1 and 2. Said means, adapted to be actuated by the tailpiece of the cylinder member, consist of a lever 45 and a double-armed piece 46, both of which are mounted on separate studs 47 48, which are provided on the shank 13 of the lock-bolt, whereby the lever and the double-armed piece are movable or shiftable with the lock-bolt. One arm of the piece 46 lies in the path of the tailpiece 40 of the cylinder member 38 when the lock-bolt 12 is retracted to the position shown by Fig. 1, whereas the other arm of this piece 46 is disposed in the path of a nose 45^a, the latter constituting an integral part of the lever 45. The long arm of said lever 45 is provided with a depending lug 49, which lug is disposed for engagement with an end portion of the latch-bolt head 44, as shown by Fig. 1. When the lock-bolt 12 is in the retracted position (shown by Fig. 1) and the tailpiece 40 of the cylinder member 38 is turned toward the right, said tailpiece is adapted to impinge against one arm of the piece 46, so as to move its other arm against the nose of the lever 45, thereby turning said lever on its fulcrum and moving the long arm thereof inwardly, whereupon the stud 49 of said lever 45 will act on the head 44 and withdraw the latch-bolt 41. Said latch-bolt is projected normally by the action of a spring 50, which is preferably coiled around the guide-stem 42 and is seated at its respective ends against the post 43 and the latch-bolt itself.

The latch-bolt actuator is adapted to be operated by any suitable form of knob-spindle, and this actuator consists of the members 51 52. (See Figs. 1, 2, and 5 of the drawings.)

5 The member 51 is provided on one side with a cylindrical boss 53 and on its other side with a circular recess 54, whereas the other member 52 is provided on its respective sides with circular bosses 55, one of which is fitted in the
10 recess 54 of the member 51, so as to turn freely therein. The members 51 52 are fitted laterally together into registering relation, and the exposed bosses 53 55 of these members are mounted in the respective sides of
15 the casing, so that the actuator will turn freely when the knob-spindle is operated in the usual way. The complementary members of the latch-bolt actuator are provided with arms 56, which normally lap one another, and said
20 members are also provided with flat faces 57, and finally the member 52 is provided with a locking-lug 58, the member 51 being free from this lug. The knob-spindle is constructed in any ordinary way, so that when turned in one
25 direction both members 51 52 of the actuator will be operated for the arms 56 thereof to impinge the latch-bolt cross-head 44 in a way to retract the latter; but with this actuator and the latch-bolt I have associated a dog
30 mechanism by which the latch-bolt is prevented from moving when the knob-spindle is turned in an opposite direction. This dog mechanism includes a lever 59, which is fulcrumed at 60 within the casing, one end of
35 said lever being provided with an offstanding arm 61, with which engages a spring 62, that serves to hold the latter in a normal position. The end portions of the lever 59 have connected pivotally thereto the slidable blocks
40 63 64, each block being provided with a push-button 65 and each block being arranged to slide between certain guide-lugs 66, which are provided within the casing. (See Figs. 1 and
45 2.) The push-buttons are arranged to play in the openings 11 of the face-plate 7, and the blocks 63 of the push-buttons have pivotal connection with the respective ends of said lever, so that the position of the latter may be reversed as desired. One block 63 of the
50 dog mechanism is arranged to engage with the flat faces 57 of the members forming the latch-bolt actuator, and this block is adapted to lie in the path of the shoulder formed by the locking-stud 58 of the member 52 of said
55 actuator, whereby this member 52 is adapted to be held from movement when the knob-spindle is turned from the outside of the door.

The members of the bolt-actuator are forced to a normal position by a spring 67, which is
60 fitted to a post 68 and arranged to bear against the arms 56 of said actuator members. A stop 69 is arranged in the path of said arms 56 for the purpose of limiting the movement of the bolt-actuator members 51 52 under the
65 pressure of the spring 67. With the parts of

the dog mechanism in the positions shown by Fig. 2 the bolt-actuator is adapted to be turned by the knob-spindle for the purpose of pressing the arms 56 against the head 44 and retracting the latch-bolt 41. The knob-
70 spindle may be operated from either side of the door when the dog mechanism is in the position of Fig. 2; but when the button 65 of the block 63 is pressed inwardly in the position shown by Fig. 1 the lug 58 of the actu-
75 ator member 52 engages with said block 63, so as to prevent the actuator from being operated from the outside of the door, thus locking the latch-bolt against manipulation by
80 the knob-spindle from the outside of the door, although the knob-spindle may be operated from within, so as to control the member 53 of the bolt-actuator in a way to operate the latch without hindrance.

Having thus described my invention, I claim
85 as new and desire to secure by Letters Patent—

1. A combined lock and latch having a lock-bolt, an independent latch-bolt, a spring-pressed lock-bolt dog mounted to slide on the lock-bolt in a direction at right angles to the
90 path of movement of the bolt, a fixed locking projection for engagement by said dog, a lock-bolt actuator for operating the lock-bolt from one side of the door, the said actuator being
95 arranged to first engage and depress the lock-bolt dog and then to engage and move the lock-bolt, a cylinder member having a tailpiece arranged to engage and depress the lock-bolt dog and operate the lock-bolt independ-
100 ently of the said lock-bolt actuator, and devices controllable by the said tailpiece for operating the latch-bolt.

2. A combined lock and latch having a lock-bolt, an independent latch-bolt, a lock-bolt
105 dog mounted to slide on the lock-bolt in a direction at right angles to the path of movement of said lock-bolt, a fixed locking projection for engagement by said dog, a cylinder member having means adapted when turned
110 in one direction to depress said lock-bolt dog to release the same from the locking projection and to move the lock-bolt, and a train of connections controllable by the said cylinder member when the latter is turned in an oppo-
115 site direction for actuating the latch-bolt.

3. A combined lock and latch having a lock-bolt, an independent latch-bolt, a cylinder member having a tailpiece adapted to actuate
120 the lock-bolt, devices controllable by said tailpiece for actuating the latch-bolt, a separate bolt-actuator cooperating with the lock-bolt, another bolt-actuator in operative relation to the latch-bolt, the said latch-bolt actuator comprising two members provided with arms for
125 engaging the latch-bolt, one of said members being mounted to turn freely on the other and provided with a locking-lug, and a dog mechanism operatively related to the latch-bolt and its actuator.

4. A combined lock and latch having a lock-
130

bolt formed with an integral shank, parallel guide-flanges on said shank, a dog mounted to slide between said guide-flanges in a direction at right angles to the path of movement of the lock-bolt, a cylinder member having a rotary tailpiece arranged to act on the upper end of said dog to depress the same and also to act on the lock-bolt, and an independent bolt-actuator also arranged to depress the said dog and act on the lock-bolt.

5. A combined lock and latch, having a casing formed with a slot and provided with a flange adjacent to and parallel with said slot, the flange having a locking projection, a slidable lock-bolt having a stud engaging said slot, a spring-pressed dog slidably mounted on said lock-bolt and movable therewith, the said dog being provided with a lug having a notch therein, the projection on the casing cooperating with said dog for holding the bolt in its retracted and projected positions, and means whereby the dog may be moved from engagement with the projection and the lock-bolt may be moved endwise.

6. A combined lock and latch having a slidable lock-bolt, a spring-pressed dog slidably mounted on said lock-bolt and movable therewith, the dog being mounted to slide in a direction at right angles to the path of movement of the lock-bolt, a fixed projection cooperating with said dog for holding the bolt in its retracted and projected positions, and means whereby the dog may be moved against the tension of its spring to disengage said dog from the projection and the lock-bolt may be moved endwise.

7. A combined lock and latch having a lock-bolt, an independent latch-bolt, a bolt-actuator comprising two members mounted to turn one on the other, and each member provided with an arm cooperating with said latch-bolt, a dog-lever provided at one end with an arm engaged by a spring, slidable blocks pivoted to said

dog-lever and each provided with a push-button, one of said blocks being in cooperative relation with a locking-lug on one of the members of the bolt-actuator, a cylinder member having a tailpiece disposed to actuate the lock-bolt, and a train of connections between the path of the tailpiece and the latch-bolt for actuating the latter when the bolt-actuator is locked by the dog mechanism against movement.

8. A combined lock and latch having a lock-bolt, an independent latch-bolt having a guide-stem provided at its inner end with a cross-head, a latch-bolt actuator comprising two members having arms adapted to engage one end of said cross-head, a dog mechanism for the latch-bolt actuator, a lever pivoted on the lock-bolt and adapted to engage the other end of said cross-head, a cylinder member for actuating the lock-bolt, and connections between the cylinder member and the lever engaging the cross-head of the latch-bolt, for actuating the latch-bolt when the latch-bolt actuator is locked by the dog mechanism.

9. A combined lock and latch having a casing, a lock-bolt slidable in said casing and provided with a shank, parallel guide-flanges on the shank one of said guide-flanges having a right-angular extension, a lock-bolt dog arranged to slide between the guide-flanges and having a stem engaging an opening in the said angular extension, a projection on the casing cooperating with said dog for holding the bolt in its retracted and projected positions, and means for disengaging the dog from said projection and moving the lock-bolt.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BARNET SCHACHT.

Witnesses:

MARY SCHACHT,
JOSEPH EISENBERG.