

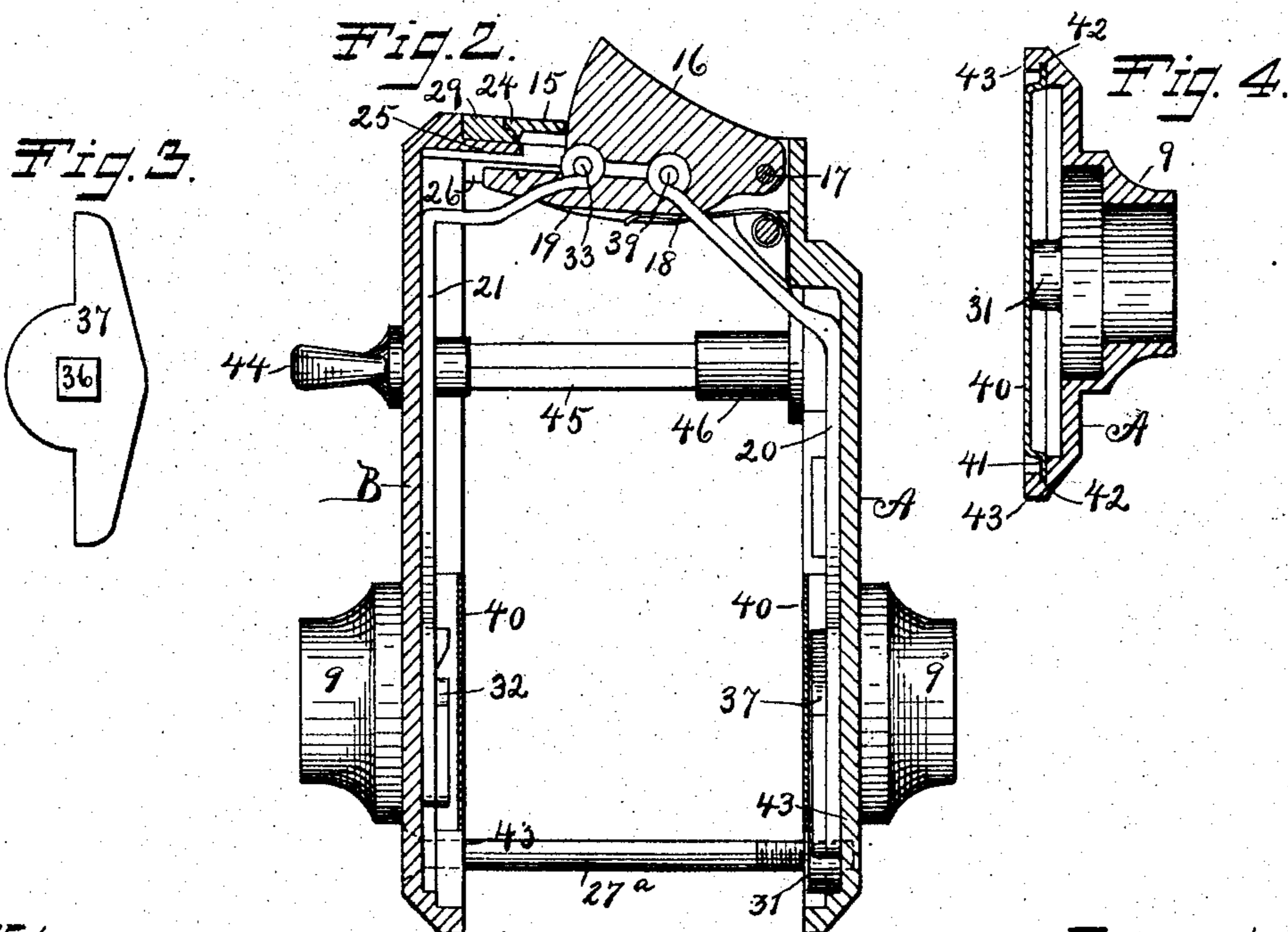
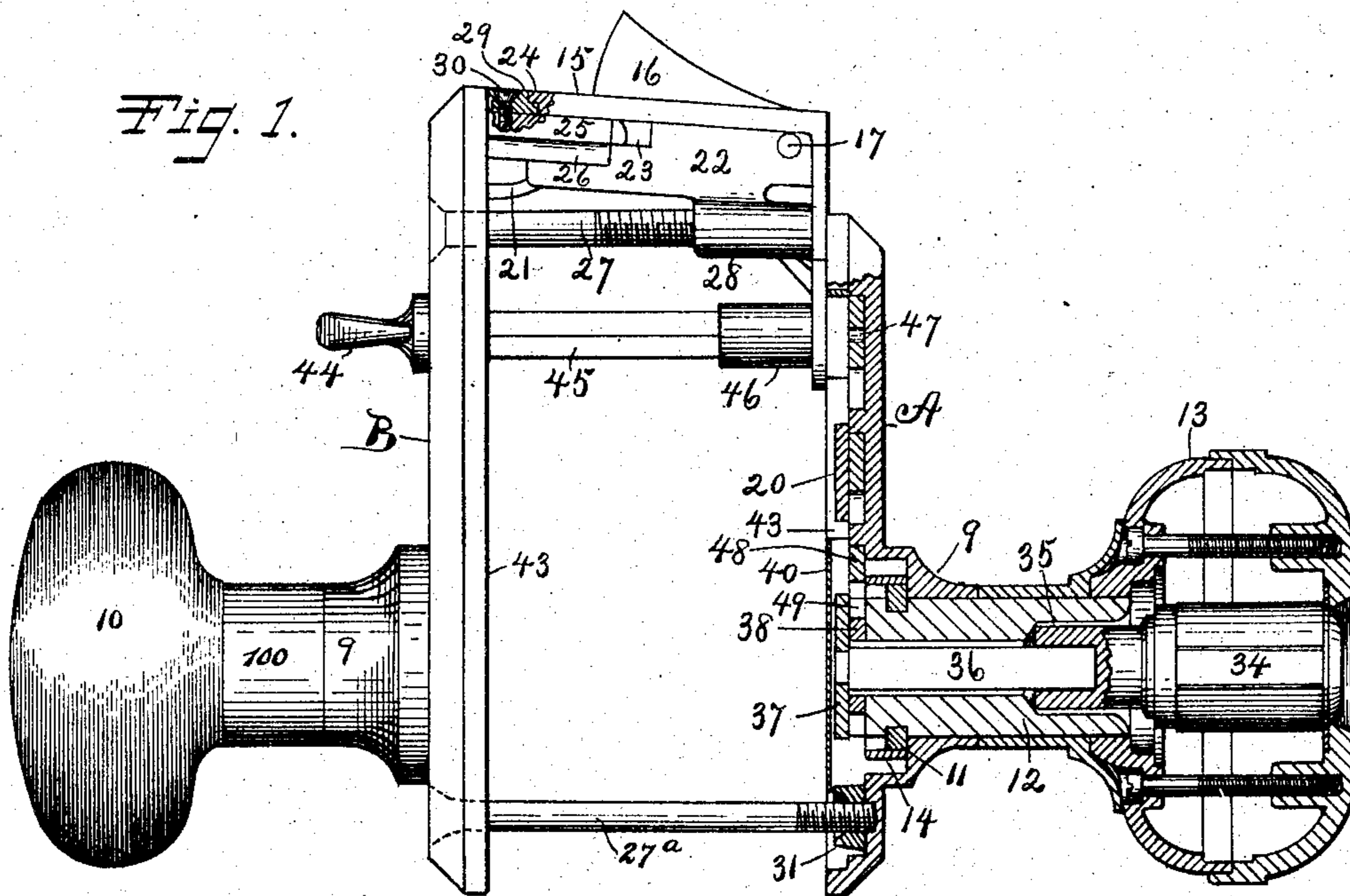
No. 790,092.

PATENTED MAY 16, 1905.

H. G. VOIGHT.
LOCK AND LATCH.

APPLICATION FILED FEB. 9, 1903.

2 SHEETS—SHEET 1.



Witnesses.

Geo. V. Rasmussen
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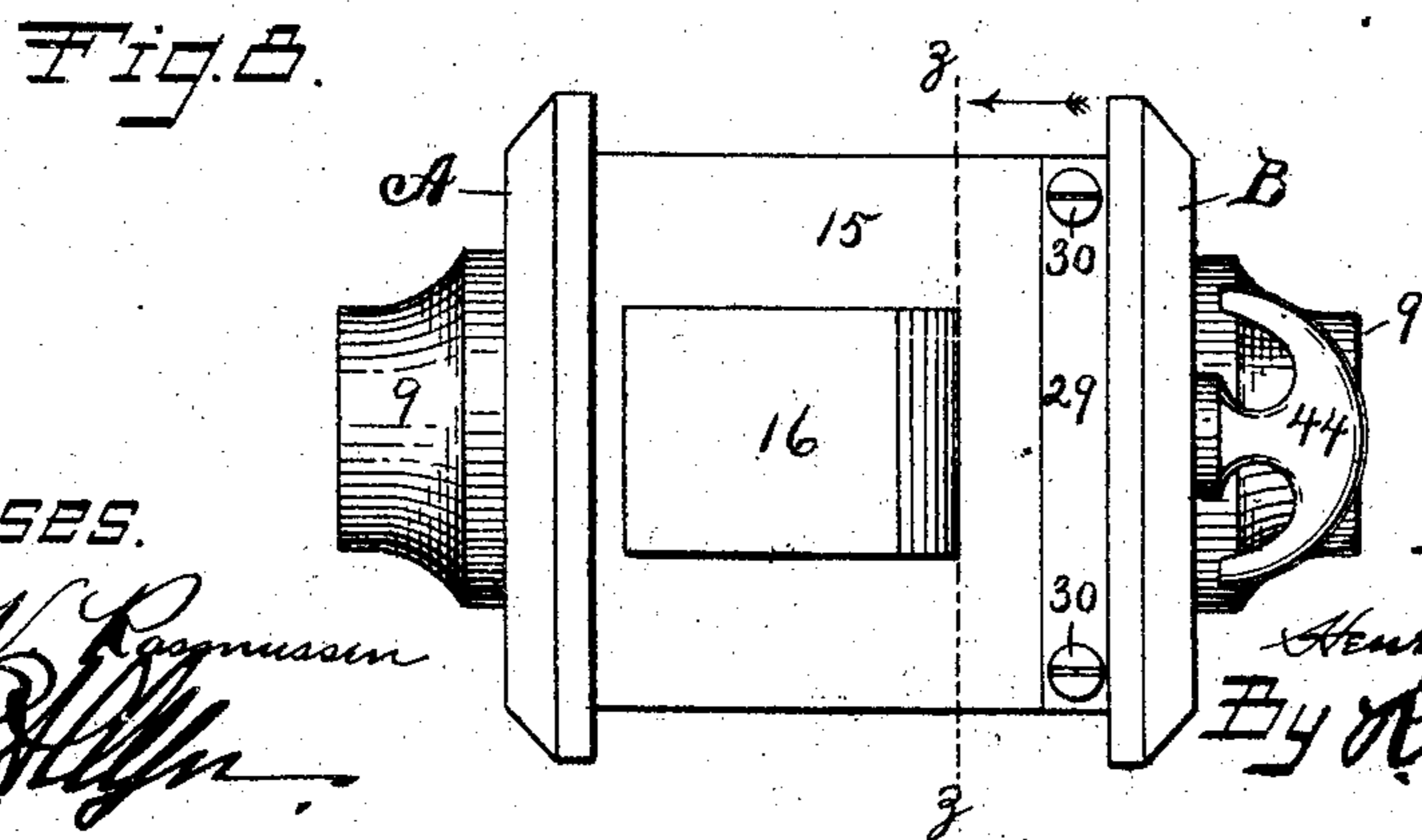
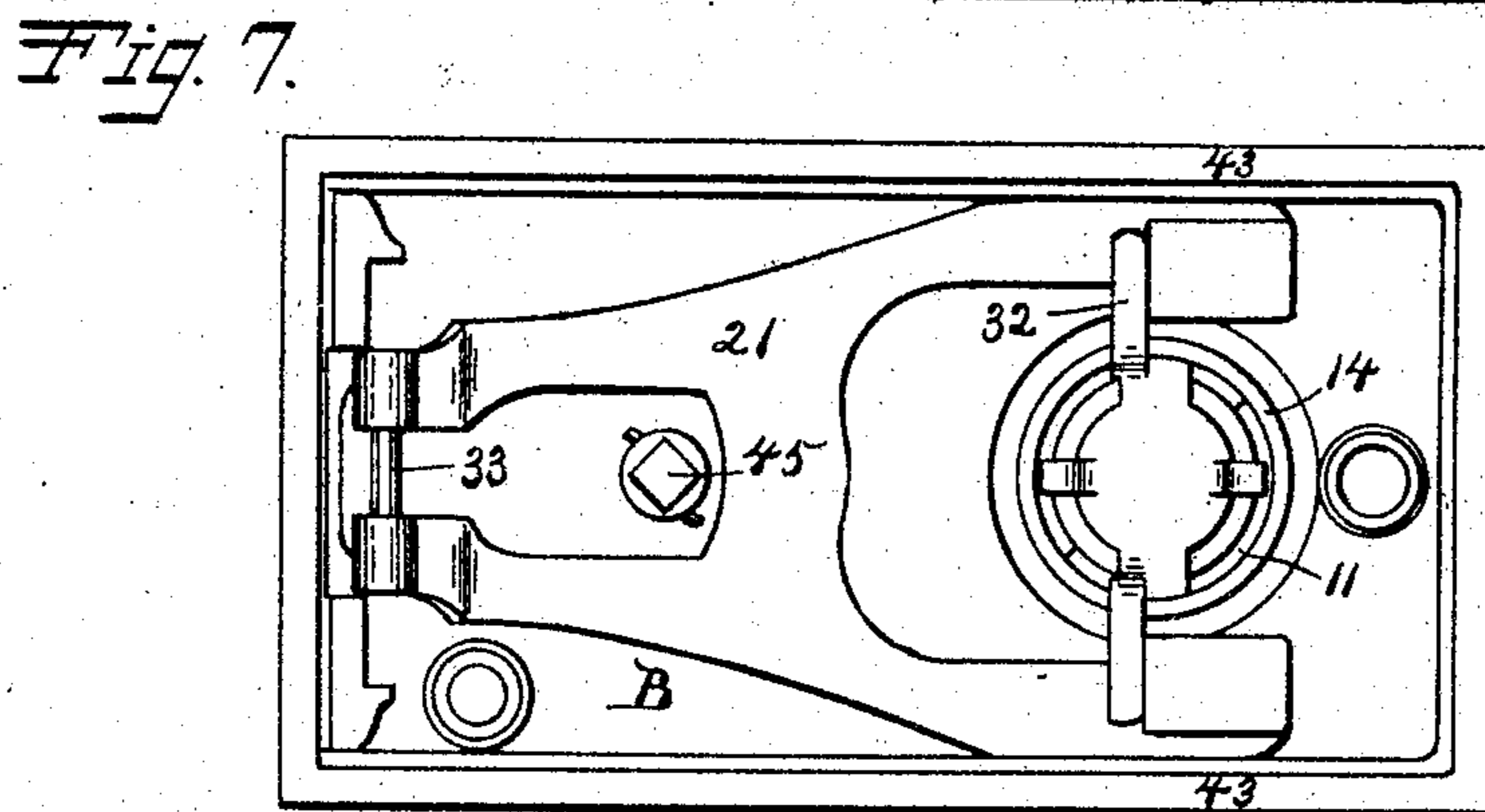
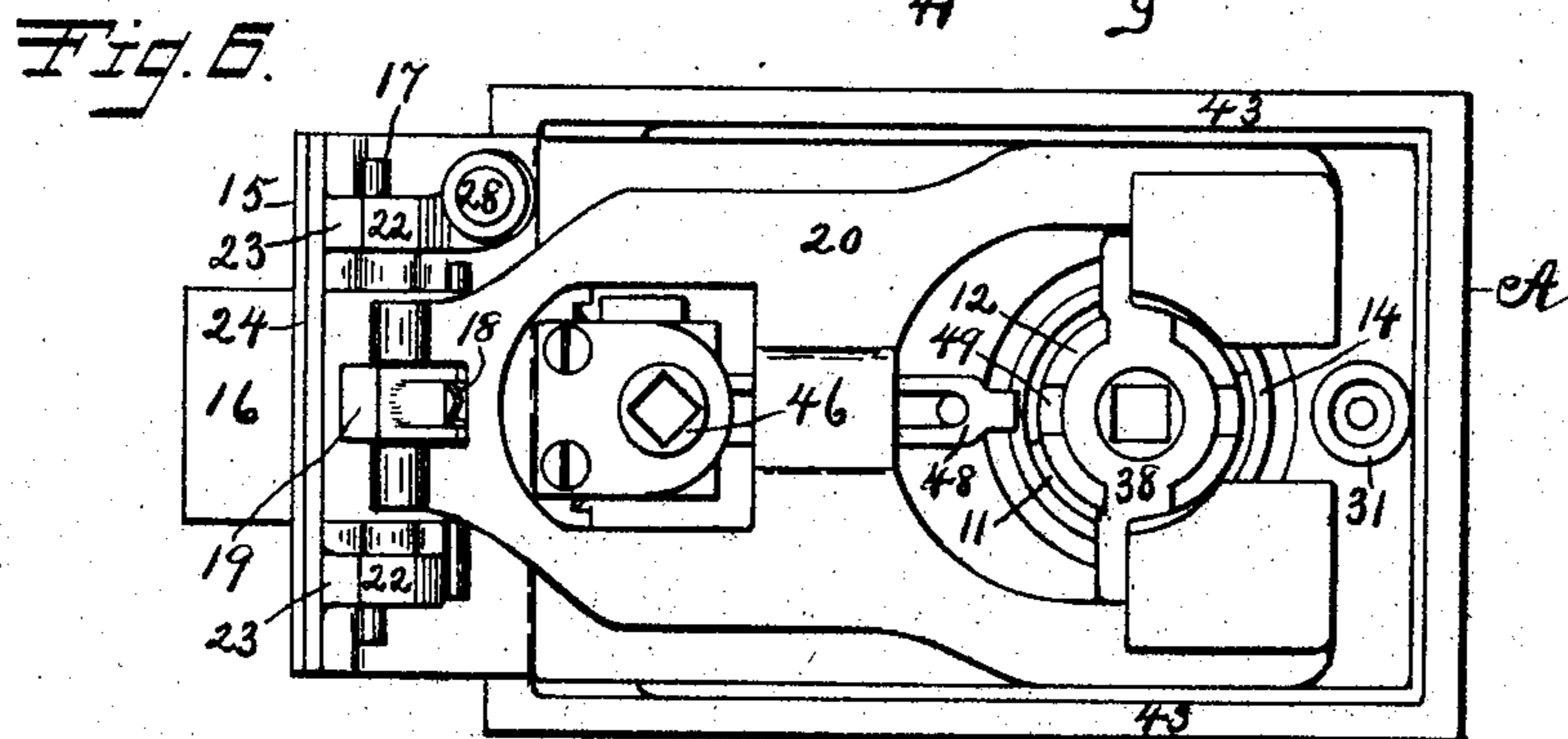
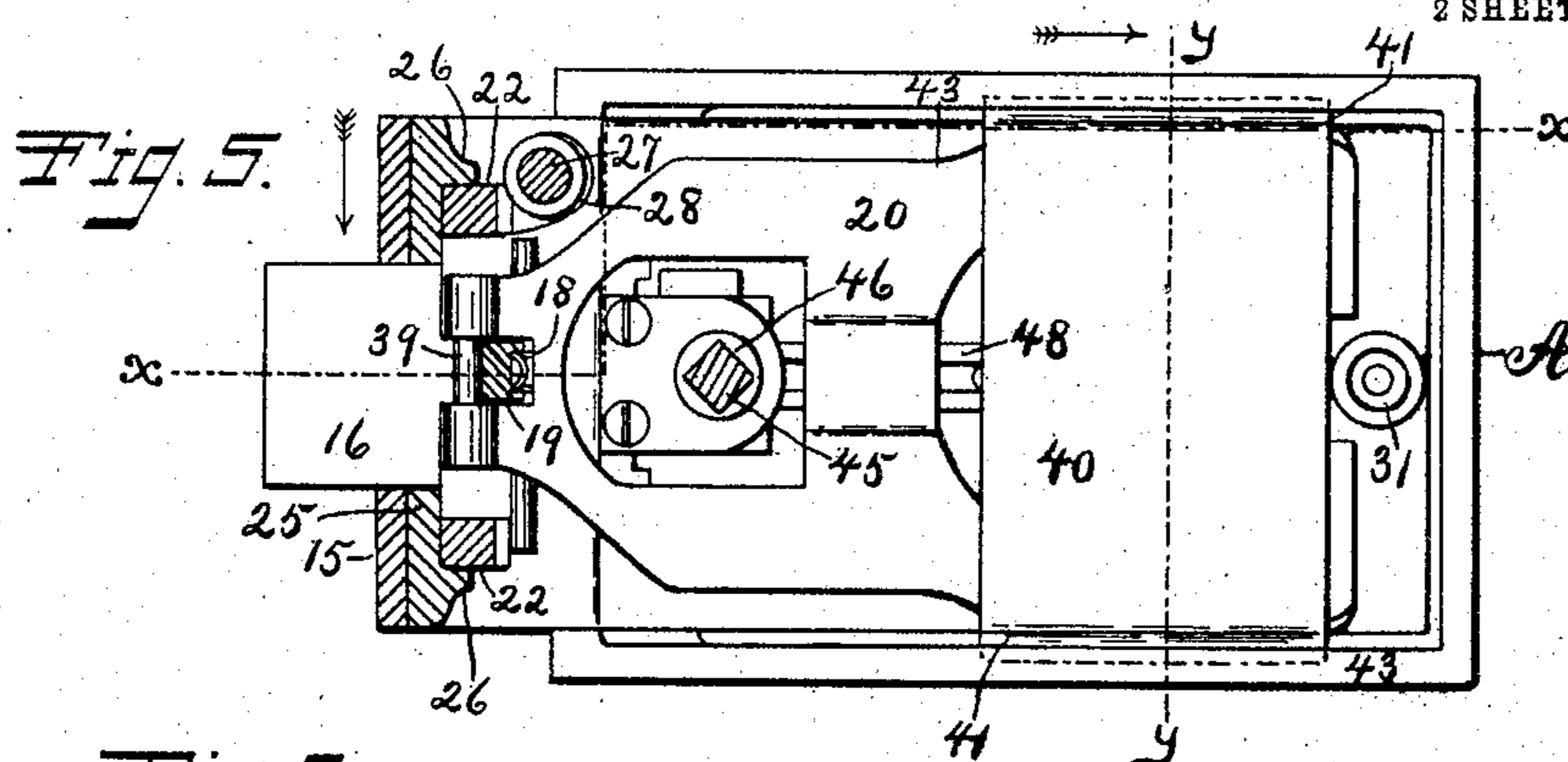
Inventor.

Henry G. Voight.
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By *R. C. Melcher*
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H. G. VOIGHT.
LOCK AND LATCH.

APPLICATION FILED FEB. 9, 1903.

2 SHEETS—SHEET 2.



Witnesses.

Geo. V. Rasmussen
[Signature]

Inventor

Henry G. Voight.
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By *[Signature]* Atty.

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO
RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRIT-
AIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 790,092, dated May 16, 1905.

Application filed February 9, 1903. Serial No. 142,585.

To all whom it may concern:

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

My invention relates to locks, and particularly to door-locks.

Among the main objects of my invention are to simplify and reduce in number and cost the parts necessary to make up a lock of that type which is inserted in a notch in the stile of a door. The simplicity and compactness of the parts avoids the necessity of cutting away but a very slight portion of the door. Other advantages will be apparent to the mechanic skilled in the art from a reading of the following specification.

In the accompanying drawings, Figure 1 is a sectional plan view of my lock, the plane of the sectioned portions extending through the axis of the knob. Fig. 2 is a horizontal section on the two planes indicated by the line XX of Fig. 5, the knobs being removed. Fig. 3 is a face view of the lock roll-back. Fig. 4 is a vertical section of one of the frame-plates and cap on the line *y y* of Fig. 5. Fig. 5 is a vertical section on the line *z z* of Fig. 8 looking toward the frame-plate which bears the cylinder-lock. Fig. 6 is a detached inner face view of the frame-plate and connected parts that bear the cylinder-lock with the lock roll-back removed. Fig. 7 is a like view of the companion frame-plate. Fig. 8 is an end view of my lock, the knobs being removed.

A designates what I shall term a "frame-plate" for the outer side of the door, and B is another and separate frame-plate for the inner side of the door. These plates each carry the latch-operating mechanism. Each plate is provided with a hollow boss 9, within which the shanks or spindles of the knobs 10 and 13 are journaled so as to rotate freely and yet at the same time are held against moving endwise. As shown in Fig. 1, I secure these knob-spindles against endwise movement by means of

a split ring or collar 11, which is let into a groove in the stem or spindle 12 of the knob 13, the said split collar being held in place by a ring 14.

15 is an end plate connected to the frame-plate A and preferably made integral therewith. The latch bolt or head 16, as shown, is an oscillating bolt and is pivoted to the end plate 15 by a pin 17. The latch 16 may be manually forced outwardly by means of the spring 18. In the particular form shown there is on the back or inner side of the latch 16 an extension-arm 19, by means of which the two separate and independent latch-slides 20 and 21 are operatively connected with the latch-bolt, while the said two slides may be moved without special adjustment toward or away from each other and still remain operatively connected with the latch-bolt. Upon the inner side of the end plate 15 there are two ribs 22, cut away toward one end to form the slots 23 between the said ribs and inner face of the said plate. That edge of the end plate 15 which faces the frame-plate B on the inner side of the door is provided with a rabbet 24, as shown in Figs. 1 and 2.

The frame-plate B for the inner side of the door is preferably provided with a short sub-end plate 25 and ways 26, that fit the ribs 22 and slots 23, as best shown in Fig. 5, whereby the plate 15 and subplate 25 may slide one upon the other to bring the two frame-plates nearer to or farther from each other to accommodate doors of different thickness. A screw 27, passing through a hole in the plate B into a long boss 28 on the plate A, aids in holding the two plates together when adjusted. After the lock is fitted to the door another screw, 27^a, of the proper length may be passed through a hole in the plate B and into a threaded screw-hole in boss 31 on the plate A, as indicated in Fig. 1. These plates may be drawn together until the rabbeted edge of the end plate 15 comes in contact with the inner face of the plate B. When thus adjusted, the lock will fit the thinnest door that it is designed for. For a thicker door a filling-piece 29 may be employed to build out the

end of the subend plate, the said piece having one rabbeted edge to fit the rabbeted edge of the end plate, while its other edge abuts against the inner face of the plate B. Screws 5 30, passing through this filling-piece into the subend plate, hold the filling-piece firmly in place, all as shown in Figs. 1, 2, and 3. For a still thicker door a wider filling-piece may be employed.

10 The knob 10 is or may be an ordinary door-knob, except that its spindle or stem is journaled in the boss of the plate B instead of being mounted upon any independent spindle. At the inner end of the knob-spindle 15 100 there is a knob roll-back 32 for acting on the slide 21, that lies in the rear side of the frame-plate B. The outer end of this slide is bent toward the latch 16 and carries a pin 33 for securing a sliding connection with the 20 extension-arm 19 of said latch.

The knob 13 is provided with a hollow spindle 12, which engages with a roll-back 38, which in turn engages with a latch-slide 20, guided in the frame-plate A, the end of which 25 slide 20 is bent toward the latch 16 and is connected with said latch by a pin 39, which slidably engages with the extension 19, as shown in Figs. 2, 5, and 6. The knob 13 may thus be employed to operate the latch 16 en- 30 tirely independent of the knob 10, as well as the latch-operating mechanism controlled thereby and carried by the frame-plate B. The knob 13 may support a cylinder-lock 34 of ordinary construction, which lock may have 35 a socket 35 adapted to receive a separate spindle 36, carrying a lock roll-back 37. The socket of the cylinder-lock is concentric with the hollow knob-spindle 12, and through the said spindle 12 passes the spindle 36, carry- 40 ing the lock roll-back. When the lock 34 is operated by a proper key, it rotates the spindle 36 and rocks the lock roll-back 37, and thus in a manner entirely independent of the knob roll-back actuates the latch-slide so as 45 to operate the latch, both roll-backs 37 and 38 being arranged to operate said slide. In this manner the latch 16 may be operated by either a suitable key or by the knob 13.

It will thus be seen that the independent 50 frame-plates each carry complete latch-operating mechanism capable of independent operation. These parts may be held in place by means of caps 40, which may be formed of thin resilient metal with offset flanges 41 at 55 opposite edges. The frame-plates A and B may be grooved at 42, Fig. 4, (also indicated by broken lines in Fig. 5,) the said grooves being cut in the horizontal walls of the rim 43 of the said plates. The ends of the flanges 60 41 may bear against the bottom of said grooves, so as to hold the caps in place friction-tight. These caps may be inserted in these grooves by first entering one edge in one groove and then bending the plate until the other edge 65 comes opposite the other groove, when it will

snap into place, as shown. The resiliency of the metal enables the caps to bend sufficiently to be thus inserted. In order to remove the cap, it is only necessary to insert a screw- 70 driver or other similar tool between one horizontal wall of the plate and the shoulder of the cap and, bearing on the said tool, force the flange out of the groove.

The frame-plate B has mounted therein a handle or knob 44. 75

45 is a spindle extending from knob 44.

The plate A has mounted thereon the socketed hub 46, carrying a crank-pin 47 for engaging a slot in the head of a sliding stop-bolt 48. By this means the bolt 48 may be 80 moved from the position shown in Fig. 6 toward the right to carry its end into the notch or recess 49 in the knob-spindle 12 to lock the knob 13 against rotation. This lock mechanism is made the subject of Letters Patent No. 85 744,134, granted November 17, 1903, on another application of even date herewith, Serial No. 142,586, and therefore is not claimed herein except in combination.

In putting the lock upon the door the edge 90 of the door is cut into only slightly to let in the thumb-turn spindle and to mortise in the end plate and the parts immediately to the rear thereof. The frame-plates rest on the surface of the door on the opposite sides 95 thereof. In adjusting the lock to doors of different thicknesses the end plate and subend plate slide one upon the other in their ways or guides. Since the two separate latch-operating slides are slidably connected to the 100 latch-bolt, the frames A and B may be moved toward or away from each other without specially adjusting said connection. The knobs 10 13 are mounted on the frame-plates inde- 105 pendently of any spindle passing through the door in the axial line of the said knobs and independently of any support other than the said frame-plates.

It should be understood that each of the escutcheon-plates A and B constitutes a sepa- 110 rate and independent frame in that they each support a complete latch-operating mechanism independently of the other.

The sliding connection which the latch-operating mechanism makes with the latch bolt 115 or head 16 may be made so as to have a range of action that will permit the frames A and B to be spaced apart to a sufficient extent to embrace doors of any thickness.

It is apparent that some changes from the 120 specific construction herein disclosed may be made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in work- 125 ing my invention as may fairly come within the spirit and scope of the same.

What I claim is—

1. In combination, two separate frame-plates, separate knobs, roll-backs and slides, 130

mounted on the said plates, and a latch-bolt operatively connected with the said slides, whereby the said frame-plates may be applied to doors of different thicknesses and the latch be operatively connected therewith.

2. In combination, two separate frame-plates, an end plate and subend plate connecting the outer ends of the said frame-plates, and ways or guides whereby the said end plate and subend plate are slidingly connected to adjust the said frame-plates to doors of different thicknesses.

3. The combination of two separate frame-plates, separate knobs, roll-backs and slides mounted on the said plates, a latch mounted on a part rigidly connected with one of the said frame-plates, and means for operatively and adjustably connecting the said two slides and latch whereby the frame-plates, bearing the said slides, may be applied to the opposite sides of doors of different thicknesses.

4. In combination, two separate frame-plates, an end plate rigid with one of said frame-plates, a subend plate rigid with the other one of the said frame-plates, the said end plate and subend plate having a sliding connection with each other, and a filling-piece to build out the subend plate when the parts are extended.

5. In combination, two separate frame-plates, separate slides and roll-backs mounted respectively in the said two frame-plates, a latch, and an extension-arm on the said latch by means of which the slides are connected thereto, one of the said slides being arranged to slide on the said extension-arm for adjusting the slides toward or from each other without disconnecting them from the latch.

6. In a lock, in combination, the frame-plate A, the knob 13, the hollow spindle 12 by means of which the knob is mounted directly on the said plate, a lock and its socket 35 mounted in the said knob and spindle, a knob roll-back mounted at the inner end of the said knob-spindle, a lock roll-back connected with the said socket of the said lock, a latch-slide mounted on and within the said frame-plate and in engagement with the said two roll-backs, and a latch connected with and controlled by the said slide.

7. In a lock, in combination, the frame-plate A, an end plate connected therewith, a latch-bolt mounted thereon, a latch-slide connected with said latch-bolt with its body arranged to slide on and within the said frame-plate, the latch-knob and hollow spindle mounted in the said frame-plate independently of any other frame, a lock and its socket mounted partly in the said knob and partly in said hollow spindle, and a lock roll-back connected with the said knob-socket and arranged for engagement with the said latch-slide, substantially as described.

8. In combination, a plate constituting in effect the case or frame of the lock, the said

plate having the grooved rims 43, with a cap having the offset flanges fitted to the said grooved rims, substantially as described.

9. In a lock in combination, lock mechanism embracing a latch bolt or head, a plurality of independent and independently-rotatable knob-spindles, independent bolt-actuating means connected with each of said spindles and operated thereby to move said bolt, and mechanism to lock one of the knob-spindles against rotation, said locking mechanism being operative from the opposite side of the lock only.

10. In a lock in combination, latch mechanism embracing a latch-bolt, a plurality of independent rotatable knob-spindles, a plurality of independent bolt-actuating means adapted to be operated by said spindles to move said bolt, mechanism to lock one of said knob-spindles against rotation but not the other, said spindle-locking mechanism being located out of alinement with said spindle and means for operating said locking device arranged on the opposite side of the lock from the spindle to be locked.

11. In a lock in combination, a latch, two independently-adjustable frame-plates arranged to be secured on opposite sides of a door, a plate adjacent to the edges of said frames and carrying a latch, complete latch-operating mechanism carried by each of said frame-plates, and an adjustable connection between each set of latch-operating mechanisms and the latch itself.

12. In a lock in combination, a latch bolt or head, a plate supporting the same and arranged to be secured at the edge of a door, a pair of frame-plates arranged laterally thereof, a knob supported by each of said plates said knobs being independent of each other, complete and independent latch-operating means carried by each of said laterally-extending plates and operated by the knobs thereon and a sliding connection between said latch-operating means and said latch bolt or head whereby when said frame-plates are moved toward or away from each other to be fitted to doors of different thicknesses the operative relation between the latch-operating means and the latch will still be maintained.

13. In a lock, a plate, a latch bolt or head carried thereby, a pair of plates arranged adjacent thereto each of said plates constituting an independent frame for supporting independent latch-operating mechanism, said latch-operating mechanism including a slide, a knob and a roll-back, each of said latch-operating mechanisms being adjustably connected with said latch.

14. In a lock, a pair of independent frame-plates, an end plate arranged to bridge the space between the ends of said frame-plates, a latch, complete latch-operating mechanism carried by each of the frame-plates, and independent of each other, each of said latch-

operating mechanisms being adjustably connected with said latch.

15. In a lock, a pair of independent frame-plates, an end plate arranged to adjustably
5 space said frame-plates apart to the desired distance, a latch bolt or head, complete latch-operating mechanism carried by each of the frame-plates and including separate knob-spindles, each of said latch-operating mechanisms being adjustably connected with said
10 latch, a supplemental key-controlled mechanism coacting with one of said latch mechanisms, said key-controlled mechanism being carried by one of the knobs, and means for locking said knob against rotation independently of the key-controlled mechanism, and
15 means to operate said locking mechanism located on the opposite side of the lock so as to be accessible only from the outside of any door
20 to which the lock is applied.

16. In a door-lock, a frame arranged to be located on the inside of a door and a separate frame arranged to be located on the outside of a door, means for connecting said frames
25 together said means extending across the edge of the door, a latch carried thereby and two separate and independent latch-operating mechanisms, one of each of which mechanisms is carried by each frame, each of said
30 mechanisms including a knob, each of said knobs being independent of the other.

17. In a door-lock, a frame arranged to be located on the inside of a door and a separate frame arranged to be located on the outside
35 of a door, means for adjustably connecting said frames together, said means extending across the edge of the door, a latch carried thereby and two independent latch-operating mechanisms, one of each of which mechanisms is carried by each frame, each of said
40 mechanisms including a knob, each of said knobs being independent of the other, each of said latch-operating mechanisms being adjustably connected with said latch.

18. In a door-lock, a frame arranged to be located on the inside of a door and a separate frame arranged to be located on the outside of a door, means for adjustably connecting said frames together, said means extending
50 across the edge of a door, a latch carried thereby and two complete independent latch-operating mechanisms one of each of which mechanisms is carried by each frame, each of said mechanisms including a knob, each of said
55 knobs being independent of the other, each of said latch-operating mechanisms being slidably connected with the latch or an extension thereof.

19. In a door-lock, a frame arranged to be
60 located on the inside of a door and a separate frame arranged to be located on the outside of a door, means for connecting said frames together said means extending across the edge of a door, a latch carried thereby, and two independent latch-operating mechanisms one of

each of which mechanisms is carried by each frame, each of said mechanisms including a knob-spindle, each of said spindles being independent of the other, each of said latch-operating mechanisms being slidably connected
70 with the latch or an extension thereof, means to lock the knob-spindle on the outside of the door, and means carried by the inside frame coacting with said locking means whereby the outside knob may be locked or unlocked from
75 the inside of the door.

20. In a lock, a plurality of frames one arranged to be secured to the outside and another to the inside of a door, a latch arranged to be carried at the edge of a door, complete
80 latch-operating means carried by each of said frames and adjustably connected with the latch so that said frames may be spaced apart at varying distances without interrupting the connection between either latch-operating
85 means and the latch, a knob carried by each frame and independently controlling the latch-operating mechanism carried by its respective frame, a supplemental key-operated means for moving the latch-operating means in one of
90 the frames and means to prevent the operation of the latch mechanism by one knob without interfering with the operation of said latch operating by the key.

21. In a lock, a frame arranged to be fitted
95 to the outside of a door, another frame arranged to be fitted to the inside of a door, each of said frames carrying complete latch-operating mechanism arranged respectively outside and inside of said door and covered by
100 said frames, a latch, said latch-operating mechanism being so secured thereto that the space between the frames may be varied without disconnecting either latch mechanism from the latch.
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22. A lock or latch comprising a frame arranged to extend over the outside and inside of a door and across the edge thereof, a latch bolt or head, two knobs, means of connection between said knobs and said latch-bolt, said
110 means being carried by said frame, and means of connection for those portions of the frame which are arranged to bear on the outer and inner sides of the door whereby said portions may be adjusted to and fro to fit doors of different thicknesses.
115

23. In a lock or latch a U-shaped frame, a latch bolt or head at one end thereof, knobs carried by each side plate of said frame, means of connection between said knobs and
120 said latch-bolt, and means of connection for the side plates of said frame whereby said plates and knobs may be moved to and fro to be fitted to doors of different thicknesses, and whereby said latch-bolt may be connected
125 with each knob in all of the varying adjustments thereof.

24. In a lock, two side plates, two separate knobs, one of said knobs being carried by each of said side plates, an end plate, a latch
130

movable through said end plate, adjustable means of connection between said knobs and said latch whereby said side plates and knobs may be moved to and fro and fitted to doors of different thicknesses.

25. In a lock, two side plates, two separate knobs, one of said knobs being carried by each of said side plates, an end plate, a latch movable through said end plate, adjustable means of connection between said knobs and said latch whereby said side plates and knobs may be moved to and fro and fitted to doors of different thicknesses, and a key-actuated means carried by one of said knobs and arranged to cooperate with said latch independently of the knob which supports said key-actuating means.

26. In combination, two separate frame-plates, separate knobs, a latch bolt or head, a slide, said slide being mounted on one of said plates and operatively connecting said bolt or head with one of said knobs, and means of connection between the other knob and said bolt or head, and means whereby said frame-plates may be adjusted to and fro to fit doors of different thicknesses.

27. In a lock or latch, a frame-plate, arranged to be fitted to the outside of a door, another frame-plate arranged to be fitted to

the inside of a door, one of said frame-plates carrying a latch-operating mechanism, a knob carried by each of said frame-plates and operatively connected with said latch-operating mechanism, said parts being so arranged that the space between the frame-plates may be varied without disconnecting either knob from said latch-operating mechanism.

28. In a lock or latch, a frame-plate arranged to be fitted to the outside of a door, another frame-plate arranged to be fitted to the inside of a door, an end plate adjustably connecting said frame-plates, said end plate being arranged to be fitted to the edge of a door, a latch bolt or head projecting through said end plate, a knob carried by each of said frame-plates, and adjustable means of connection between each of said knobs and said latch bolt or head whereby each of said knobs will be operatively connected with said latch bolt or head in the various positions of adjustment of said frame-plates.

Signed at New Britain, Connecticut, this 5th day of February, 1903.

HENRY G. VOIGHT.

Witnesses:

M. S. WIARD,
W. E. WIGHTMAN.