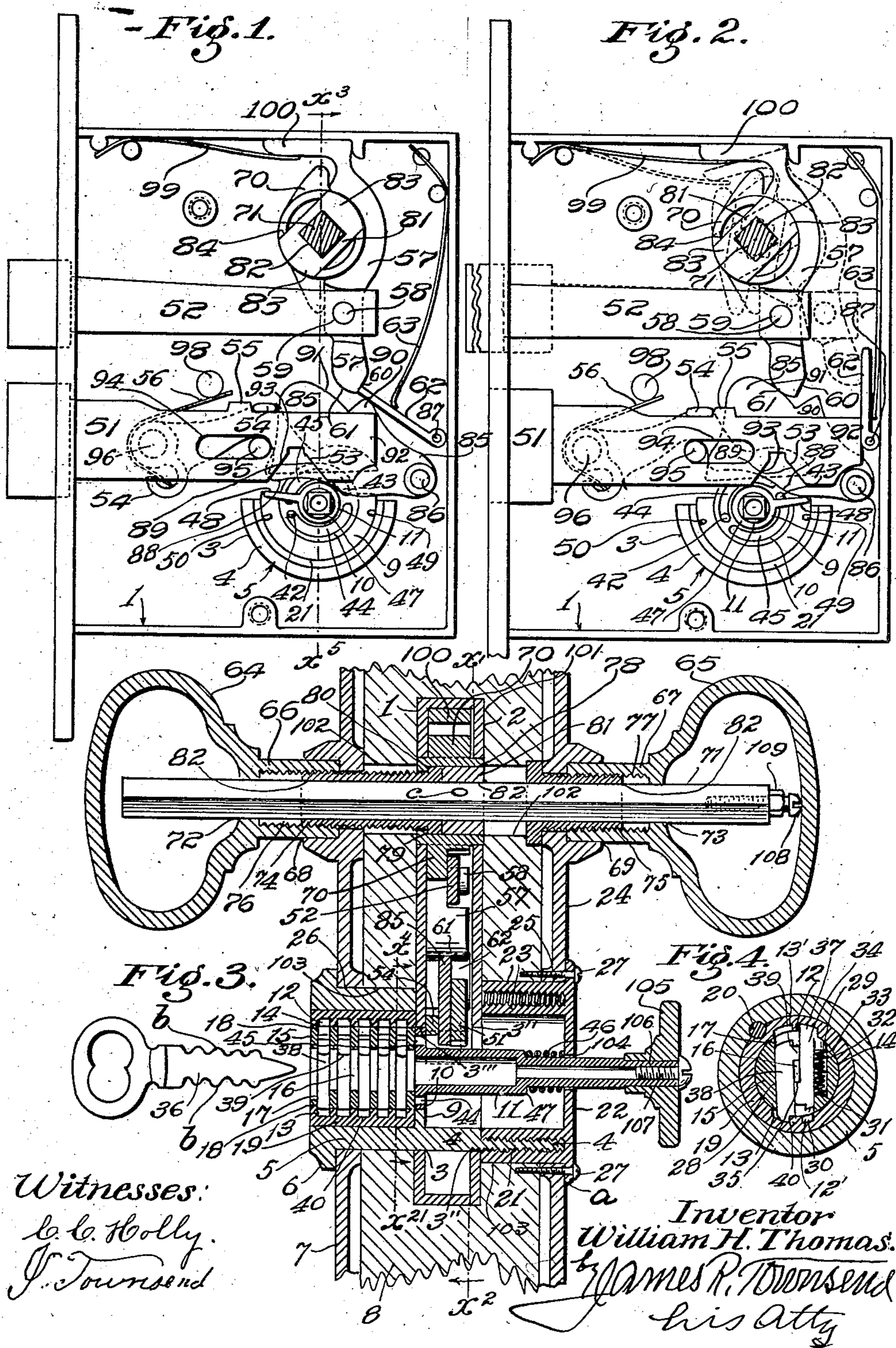


COMBINED CYLINDER AND MORTISE LOCK.

APPLICATION FILED JUNE 28, 1907.

Patented Mar. 16, 1909.

4 SHEETS—SHEET 1.

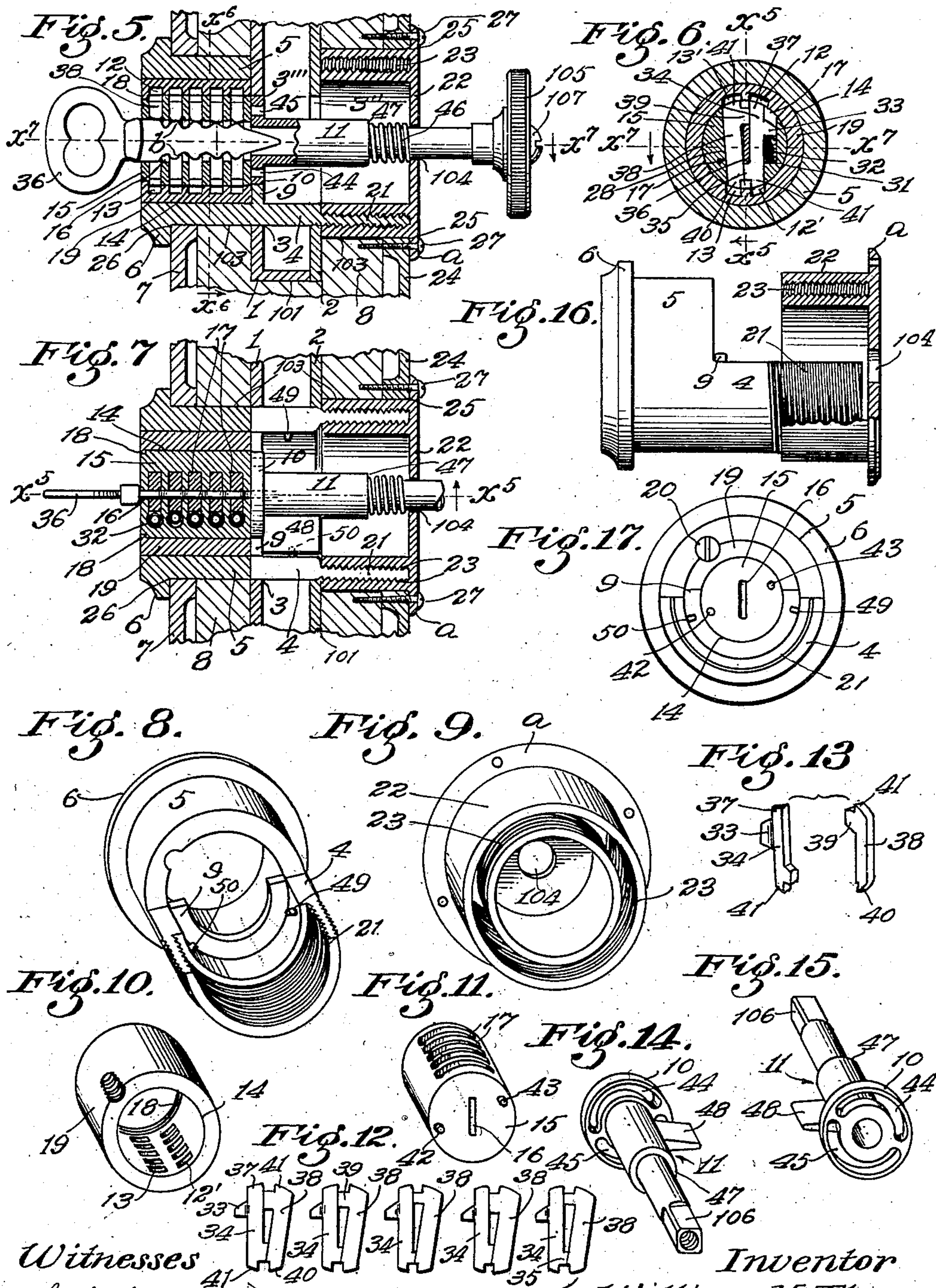


W. H. THOMAS.
COMBINED CYLINDER AND MORTISE LOCK.
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915,317.

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4 SHEETS—SHEET 2.



Witnesses
C. C. Holly.
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4 SHEETS—SHEET 3.

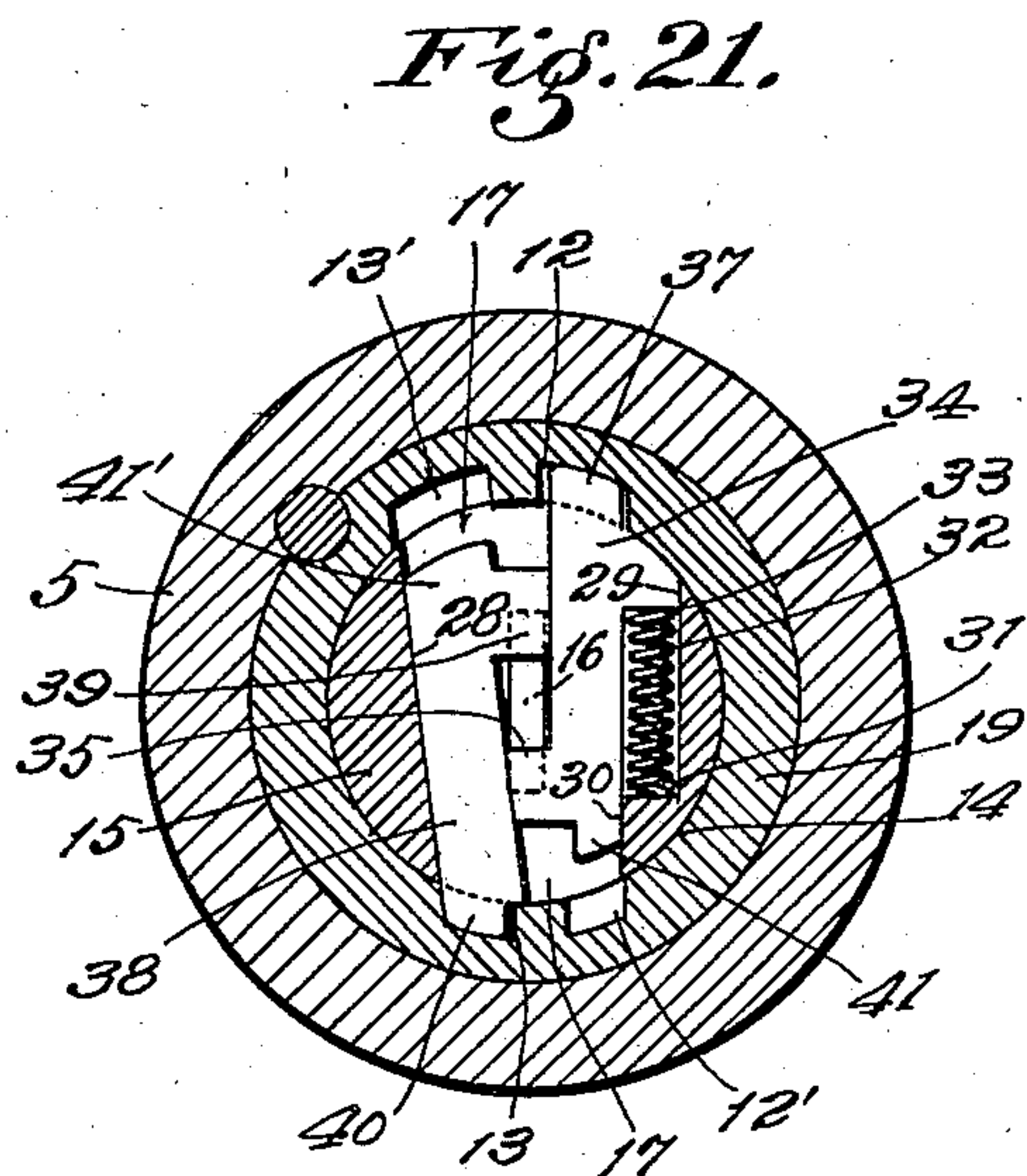
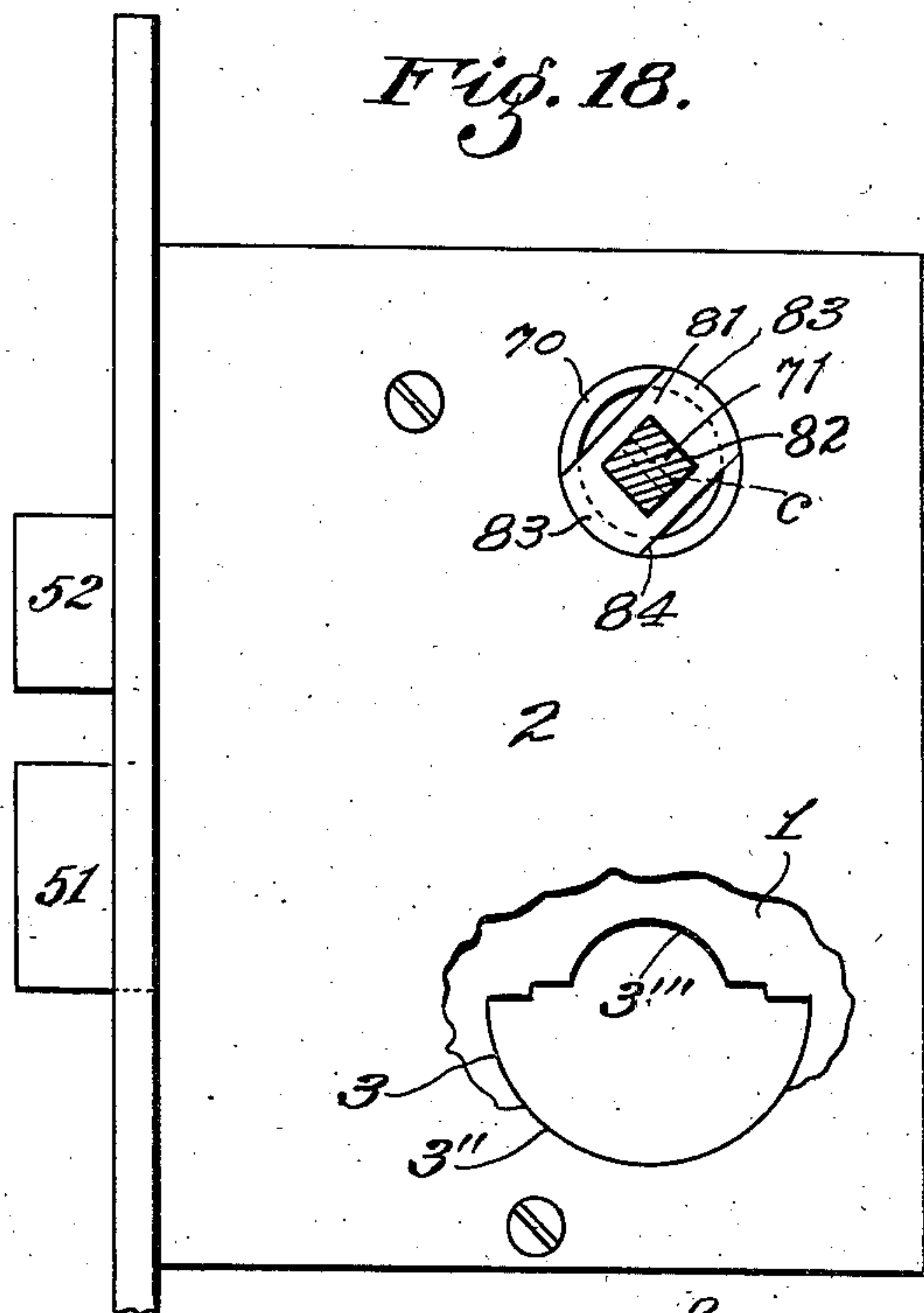
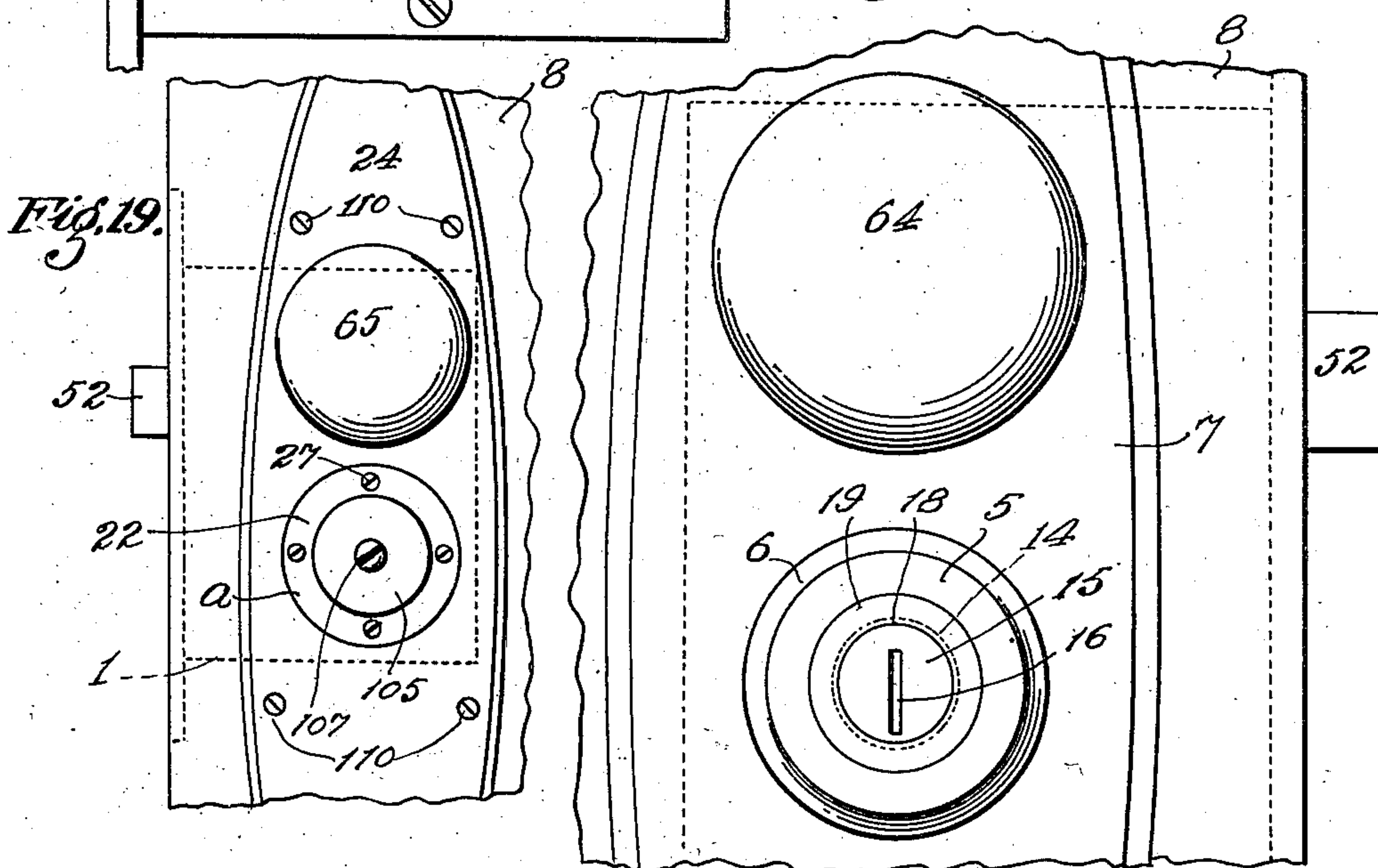


Fig. 20.



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4 SHEETS—SHEET 4.

Fig. 22.

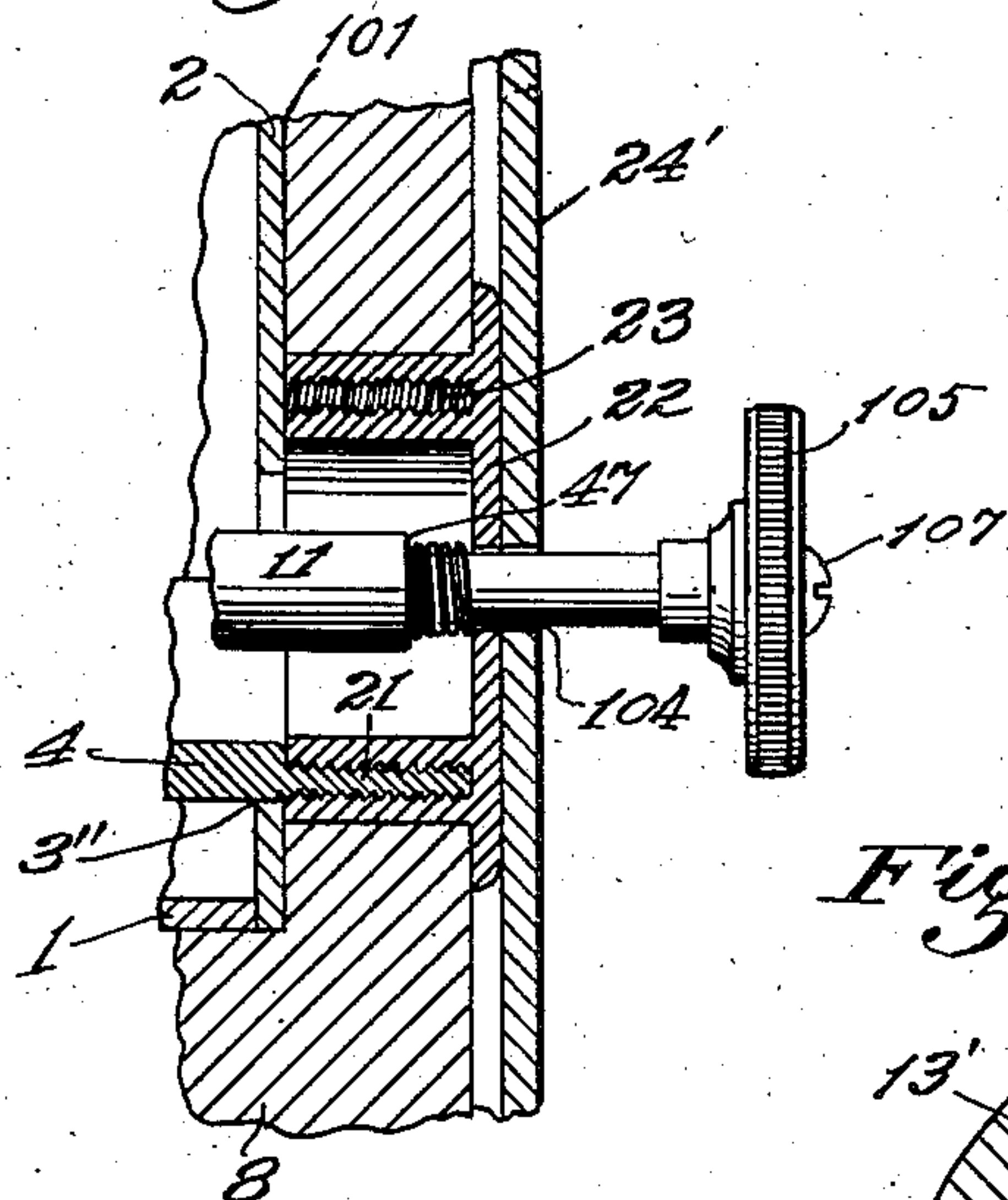


Fig. 24.

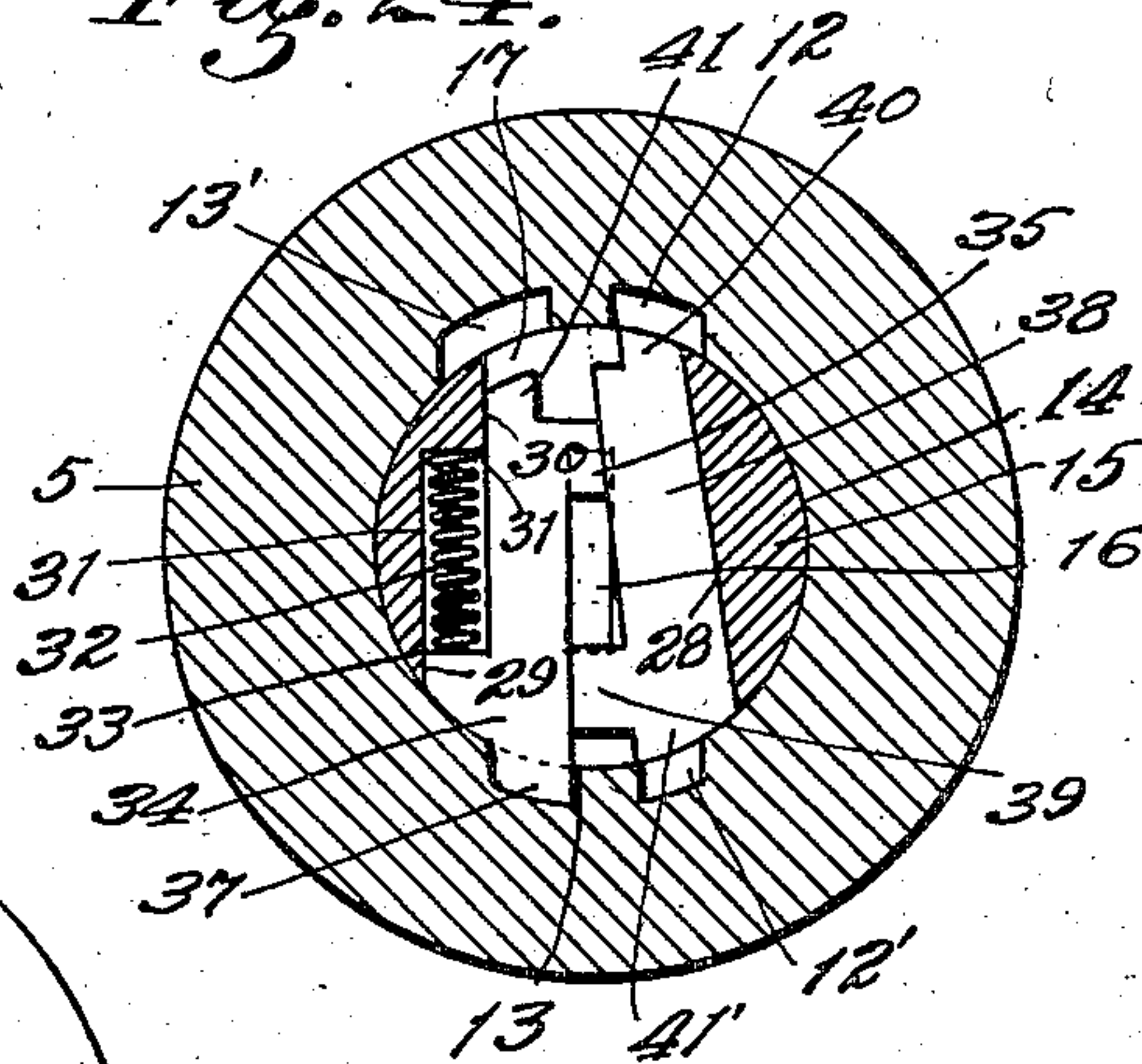
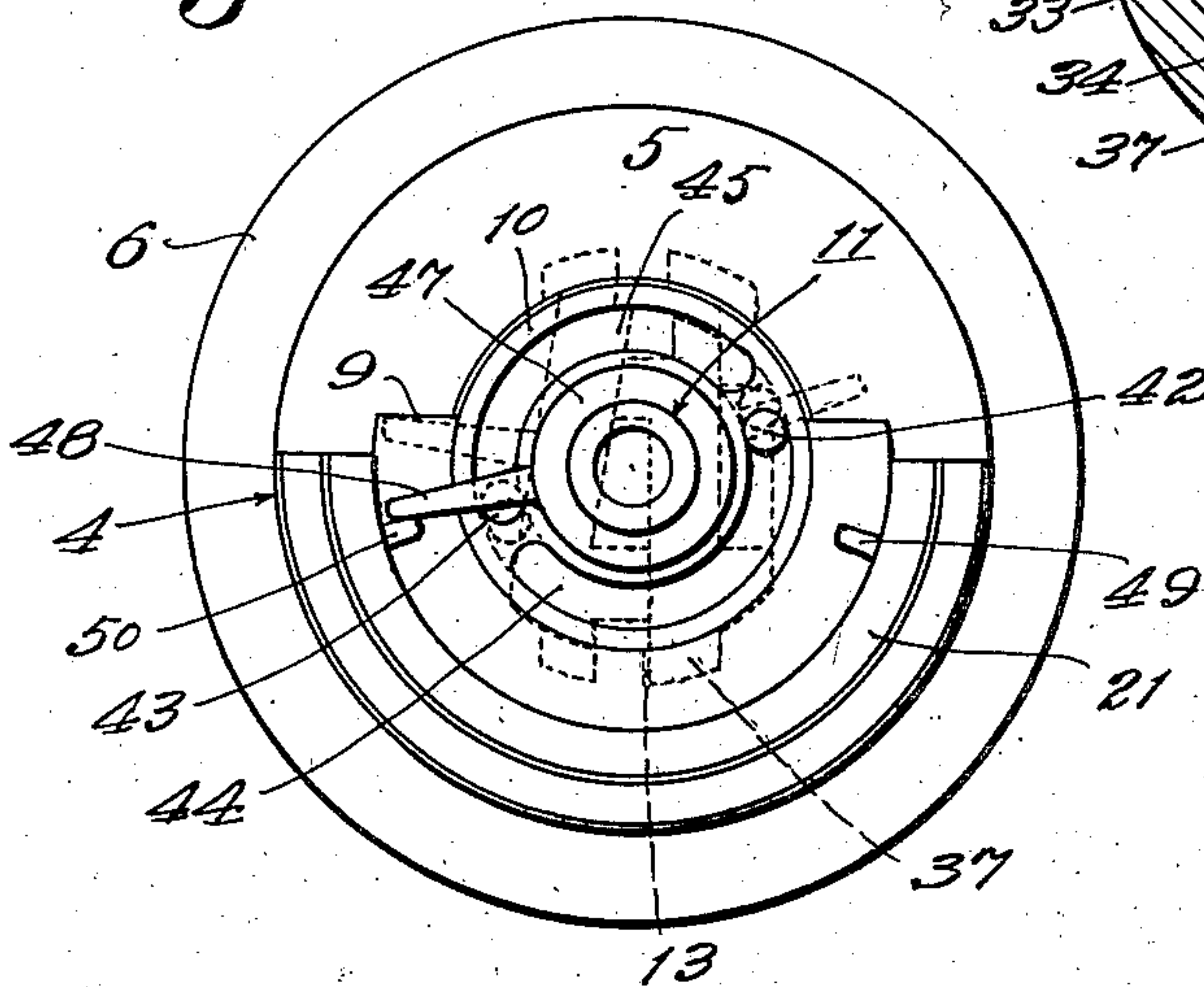


Fig. 23.



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UNITED STATES PATENT OFFICE.

WILLIAM H. THOMAS, OF WHITTIER, CALIFORNIA.

COMBINED CYLINDER AND MORTISE LOCK.

No. 915,317.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed June 28, 1907. Serial No. 381,350.

To all whom it may concern:

Be it known that I, WILLIAM H. THOMAS, a citizen of the United States, residing at Whittier, in the county of Los Angeles and State of California, have invented a new and useful Combined Cylinder and Mortise Lock, of which the following is a specification.

An object of the invention is to provide a lock of simple construction which can be applied to doors of any thickness, by an ordinary mechanic, and can be readily assembled and disassembled by a novice but which cannot be removed from the door when closed without destroying the same.

15 An object of the invention is to provide a lock which can be locked with a removable key on one side of the door, so as to prevent the unlocking of the lock by any means from the other side of the door, thus to fit the lock for the security of one room of a suite between the rooms of which the door having this lock is located, and also to enable the householder to lock his outside door from the outside in such manner as to prevent any person from opening the door from the inside of the house.

Other objects and advantages may appear from the subjoined detailed description.

The accompanying drawings illustrate the invention.

Figure 1 is a view of the internal mechanism of the lock, the cap plate of the lock being removed, and parts of the lock being shown in section on line indicated by x^1-x^2 , Fig. 3. The internal mechanism is shown in locked position. Fig. 2 is a view from the same plane as Fig. 1, showing the parts in unlocked position. The position of parts when the latch-bolt is drawn is indicated by dotted lines. Fig. 3 is a section on line indicated by x^3-x^5 , Fig. 1, showing the key removed from the lock, which is here shown installed in a door and locked. Fig. 4 is a section on line indicated by x^4-x^{21} , Fig. 3. Fig. 5 is a fragmental view showing the cylinder-lock unlocked and in vertical mid-section on line indicated by x^3-x^5 , Fig. 1, and line x^5-x^5 , Fig. 6. The key and gravity tumblers are shown intact and the mortise lock mechanism is omitted. Fig. 6 is a cross-section on line indicated by x^6-x^6 , Fig. 5. Fig. 7 is an axial section on line indicated by x^7-x^7 , Figs. 5 and 6, looking in the direction of the arrow. Fig. 8 is a detached perspective view of the cylinder which contains

the key-barrel and case of the cylinder-lock. Fig. 9 is a detached perspective view of the cap for said cylinder. Fig. 10 is a detached perspective view of the key-barrel-case. Fig. 11 is a detached perspective view of the key-barrel. Fig. 12 is a view of the five pairs of tumblers removed from the barrel shown in Fig. 11. Fig. 13 is a detached perspective view of one of the pairs of tumblers. Fig. 14 is a detached perspective view of the key for operating the dead and latch-bolt mechanism in connection with the cylinder. Fig. 15 is a detached perspective view looking at the opposite end of the key shown in Fig. 14. Fig. 16 is a side elevation of the cylinder and cap therefor screwed together and detached from the lock case. The cap is broken for clearness of illustration, and screwed only part way home. Fig. 17 is a view of the cylinder from the right of Fig. 16, omitting the cap and showing the barrel and its case in place. Fig. 18 is a broken view of one side of the lock showing the case before the inside knob, the cylinder and its barrel are installed. A portion of the case cap, the dead bolt and lock tumblers are broken away to expose the bearing for the base of the inside or permanent key. Fig. 19 is a fragmental view of the inner side of a door with this lock installed. Fig. 20 is a fragmental view from the outer side of such door, on larger scale than Fig. 19. Fig. 21 is an exaggerated cross-sectional view on the plane indicated by line x^4-x^{21} , Fig. 3, showing the wedging tumblers more clearly. In this view the barrel is shown turned into ordinary locking position. Fig. 22 is a fragmental sectional view of a form in which the cylinder-cap is held in place by the inside escutcheon. Fig. 23 is a detail view showing the end of the cylinder lock shown in Figs. 1 and 2 with the parts in position for locking the inside key. In this view the cylinder is shown integral throughout, the parts thereof which are shown as separate pieces in Figs. 8 and 10, being cast in one piece in this view. Fig. 24 is a transverse section of the same on a plane corresponding to that of Fig. 21.

1 is a mortise lock case and 2 a cap therefor.

3, 3'', indicate segmental holes in the case and cap respectively, to receive a segmental part or section 4 of the hollow cylinder 5 of a cylinder-lock.

6 is an external flange on the cylinder to engage the escutcheon 7 on the outside of the door 8.

9 is an internal segmental ledge in the cylinder to form in conjunction with a corresponding face 3''' on the case, a bearing for the inner circular portion 10 of the inner key 11, which operates the mortise portion of the lock.

10 The cylinder 5 may be formed of one or more annular members including an internal case 19, and is provided internally with tumbler recesses 12 and 13 oppositely arranged in said case; the former above and the latter below a barrel way 14 in which a barrel 15 having a key-way 16 and tumbler-ways 17, is revolvably secured in the cylinder which is provided with an inwardly-projecting barrel stop formed as a flange or ledge 18 to prevent the barrel from being withdrawn outwardly.

In Fig. 21 of the drawing, the cylinder is shown constructed with a separate internal case 19 for the barrel, and the tumbler recesses 12 and 13 are formed in this portion of the cylinder, while said casing and cylinder are secured together by a screw 20 screwed into the joint between them, as shown in Fig. 4, thus practically making the cylinder unitary, as it may be cast in one piece if desired, in practical manufacture, as indicated by Fig. 24.

21 designates an externally and internally screw-threaded section or part of the segmental portion 4 of the cylinder 5, and 22 is a cylinder-cap provided with a cylindrical socket 23 both of the walls of which are threaded, to screw onto the screw-threaded part 21.

24 is the inside escutcheon of the lock the same being provided with a circular hole 25 through which the cylindrical portion of the cap 22 may be inserted to screw onto the part 21 of the cylinder when the same, is inserted through the circular hole 26 in the outside escutcheon 7 and brought against the lock-case with its segmental portion 4 inserted through the semicircular holes 3 and 3'' in said case and its cap. When the cylinder is thus inserted it cannot be rotated on account of the segmental portion extending through the segmental holes of the case and the case-cap, and when the cylinder-cap 22 is screwed into place, the cylinder is strongly secured in the door and is proof against withdrawal from the outside until the cap has again been unscrewed. The cap may be secured in place by means of screws 27 inserted through a flange *a* of the cap, through the escutcheon and into the door 8. It is to be understood, however, that the cap may be variously fastened in place. In Fig. 22 it is shown secured in place by the escutcheon overlapping the same.

The threads of the cap 22 may be made of any desired pitch, and there may be pro-

vided in a flange of the cap a number of holes for cap fastening screws 27 arranged at equal distances apart so that the screws may be withdrawn and the cap screwed home against the escutcheon until the holes in the cap register with those in the escutcheon and door whereupon the screws may again be inserted in the holes and screwed home.

The tumbler-ways 17 of the barrel 15, extend clear through the barrel from side to side, and preferably have downwardly-converging walls, one of said walls 28 being aslant and the other wall approximately vertical. Said other wall may be formed in two planes, as indicated at the upper and lower vertical faces 29 and 30, and may be provided with a seat 31 for a tumbler spring 32 to engage a shoulder 33 of a spring actuated tumbler 34 which is provided at one end on the edge opposite the shoulder 33 with a lug 35 to be engaged by a key 36 for the purpose of withdrawing the tip 37 of said tumbler from its upper tumbler-seating-recess 12 for the purpose of unlocking the lock. The spring 32 tends to normally hold the tip 37 of the spring-actuated tumbler 34 outward to enter the recess 12 or 13, as the case may be, as indicated in Figs. 4 and 21 respectively. 38 is a gravity companion tumbler for the tumbler 34, the same preferably having a wedge shape, as clearly seen in Fig. 21, to fit between the tumbler 34 and the slanting wall 28 of the tumbler-way in the barrel, thus to prevent the spring-actuated tumbler 34 from being lowered by pressure of an instrument or otherwise, when the lock is in the normal locking position shown in Figs. 4 and 21, except as the tumbler 38 is raised.

By providing oppositely projecting tumblers arranged in pairs, a pair for each tumbler-way, it is made necessary that the tumblers of each pair be drawn inward, one in one and the other in the other direction, until entirely inside the barrel in order to allow the barrel to be turned. The key 36 is provided on its edges with oppositely arranged projections *b* to act on both tumblers of each pair. The tumbler 38 is provided with a lug 39 corresponding to the lug 35 for the key 36 to engage, so that when the key is inserted in key-way 16 it will operate upon both of the tumblers at approximately the same time, and will withdraw them into the barrel at nearly the same time. In the form in which the opposite edges of the key are duplicates the space between the face of the lug 39 and the lower cylinder engaging tip 40 of the gravity-tumbler 38, is slightly less than the space between the key face of the lug 35 and the tip 37 of the spring-actuated tumbler 34, so that the key faces of the gravity tumblers stand at rest nearer the mid-line of the key space than do the key faces of the spring-actuated tumblers when at rest, so that when a key is inserted the

slanting tumbler-engaging projections *b* on the upper edge will engage the key faces of the gravity tumblers before the like projections of the other edge will engage the key faces of the spring-actuated tumblers, the purpose of this being to allow the key to move the gravity-tumbler 38 from its full locking position just before it moves the spring-actuated tumbler 37, from its full locking position, so that as the key is inserted it withdraws the wedge-shaped gravity-tumbler out of the way of the spring-pressed tumbler. In any case the key of the lock is constructed to move the gravity tumbler in advance of the spring pressed tumbler.

The key may be provided on its opposite edges with corresponding projections *b* so that the key can be used either edge up, but the lock and key may be so constructed that each tumbler can be moved into unlocking position only by a single projection of the key. If the opposite edges of the key do not correspond with each other the key can only unlock the lock when inserted with a certain edge up. The security ordinarily required for a lock may be attained by constructing the lock of the form in which the opposite edges of the key are duplicates. The number of combinations with a given number of tumblers is much greater in the latter than in the former construction of lock.

To prevent measurements for duplicating the key while the lock is locked, clearance recesses 12' and 13' are provided in the cylinder, and each tumbler may be provided with a reduced portion or tip 41 to enter a clearance recess prepared therefor. By this construction each tumbler is capable of moving freely beyond the unlocking position so that there is nothing to indicate to a person attempting to take measurements, where any particular tumbler should be held in the operation of unlocking, and consequently it is not possible to determine by separately manipulating the tumblers what position thereof is the unlocking position. The key 11 is permanently secured in the lock to prevent children from removing the same. Its body is tubular, and the bore of the tube is cylindrical, and of a diameter greater than that of the key-way 16 of the barrel so that the permanent key cannot be rotated by means of any instrument inserted through the locking-barrel.

Interlocking means are provided between the inside or permanent key 11 and the barrel 15, the same being constructed to allow said key to rotate throughout a considerable arc in one and another direction, thus to lock the mortise lock while the cylinder lock is locked. For this purpose two key pins 42, 43, are arranged projecting from the inner end of the barrel 15, and the permanent key 11 is provided with two segmental slots 44, 45 for said pins, respectively. A spring 46 is

provided to engage between a shoulder 47 and the end of the cylinder cap 22 to yieldingly hold the key 11 against the end of the barrel in position to engage the bearing 9 and the pins 42, 43. Said spring is condensed so as to form a positive stop to prevent withdrawal of the key base 10 from the pins 42, 43.

48 is the web of the key by which the same is adapted to operate the mechanism of the mortise portion of the lock.

49 and 50 designate two stops for said key web, the same having a space of over 180° between them in which the web 48 is free to revolve, so as to operate the mortise lock and to free itself from the tumbler that holds the dead bolt. These stops are provided to avoid lost motion of the key that operates the mortise lock mechanism and also to effect the positive locking of the stationed or permanent inner key. They are located at such points as to permit the barrel 15 to turn the stationed key more than half way around.

51 is the dead bolt and 52 the latch bolt of the mortise portion of the lock.

53 is the usual key notch in the dead bolt for the web 48 of the mortise lock key.

54 is a dead-bolt holding tumbler usually used for contacting with the dead bolt and holding it in its locked and unlocked position.

55 is the usual lug on the dead bolt to engage the tumbler 54; said tumbler being normally held in engaging position by the usual spring 56.

57 is the hub lever provided with a pin 58 which carries the latch bolt 52 that is provided with a hole 59 in which said pin 58 fits. The end of the hub lever 57 is provided with two faces 60 and 61.

62 is the hub lever dog pivoted to the lock case and adapted to engage the face 60 when the latch bolt and dead bolt are both in locked position.

63 is a spring to yieldingly hold the dog 62 in position to lock the hub lever 57, thereby locking the latch bolt 52 and the knobs 64, 65 which are provided with internally threaded shanks 66, 67 rotatively seated in seats 68, 69 in the escutcheons 7 and 24 and are non-rotatably connected with the usual hub 70 by an angular spindle 71 that extends through angular seats 72 and 73 in said knobs and through threaded shouldered sleeves 74, 75, which extend through the escutcheons 7 and 24, respectively, and are screwed into screwthreaded sockets 76, 77 in the shanks of the knobs. The hub 70 is provided with a cylindrical seat 78 to receive the flange 79 on the threaded sleeve 74, and is provided with an offset or shoulder 80 which engages the flange 79 to prevent its withdrawal from the hub and at the same time allow the sleeve to rotate freely in the hub.

81 is a block for connecting the spindle 71 and the hub 70, so that the hub will rotate

with said spindle. Said block and the sleeves 74, 75 are each provided with an angular axial perforation as at 82 through which the spindle passes and the block is also provided with arms 83 to enter seats 84 in the hub so that when the spindle is rotated the motion will be transmitted through the block to the hub and by it to the hub lever 57, thus to operate the latch bolt 52 when the dog 62 is not in locking engagement therewith.

c is a pin to fasten the block on the spindle.

85 is a tumbler to release the spring pressed dog 62 from hub lever 57 thereby to release the knobs from locked position and also to move the hub lever and thereby withdraw the latch bolt 52 from its locking position. The tumbler 85 is pivoted by a pivot 86 at the same side of the key 11 as the pivot 87 of the dog 62 and is provided with a key-receiving face 88 to be engaged by the web 48 of the key 11, before said web engages the face 89 in the key-receiving notch 53 in the dead bolt. Said tumbler 85 is provided on its edge opposite the key-receiving face 88 with a dog-engaging portion 90 to engage the dog 62 and is also provided with a hub-lever-engaging portion 91 to engage the face 61 of the hub-lever 57, so that when the tumbler 85 is thrown by the web 48, the portion 90 will first move the dog 62 out of contact with the face 60 and then the face 91 will engage the face 61 of the hub lever, and as the tumbler swings farther it moves the dog 62 and the hub lever 57 into the position in which the dog is shown in solid lines, and the hub lever in dotted lines in Fig. 2. As the key web 48 turns farther it engages the face 89 of the key-receiving notch 53 in the dead bolt, thus moving the dead bolt out of locked position into the position shown in Fig. 2.

The inner end 92 of the dead bolt is constructed to contact with the dog 62 and hold said dog out of commission as indicated in Fig. 2, so long as the dead bolt is unlocked, thus leaving the hub lever 57 free to be operated by the knobs whenever the dead bolt is in unlocked position. When the web 48 of the key is turned in the reverse direction, that is, reverse to the hands of a watch, in Figs. 1 and 2, it will engage the key contacting face 93 of the dead bolt, thus throwing the dead bolt into locked position and withdrawing the inner end 92 thereof from dog 62, whereupon the spring 63 throws the dog into position to lock the hub lever and consequently the latch bolt and the knobs. This locking of the dead bolt, latch bolt and knobs is all accomplished by one movement, a partial rotation, of the key. A reverse movement accomplishes the unlocking of the same parts. 94 is a slot in the dead bolt and 95 a pin fixed to the case and extending into said slot whereby the inner end of the dead bolt is held and guided in true position.

When the lock is constructed with a duplicate edged key, as shown, it is not only possible to insert the key into the lock with either edge up to lock and unlock the lock, but it is also possible to withdraw the key from the lock at almost every position of the barrel. Consequently the key can be inserted into the barrel and the barrel turned half way around and the key may then be withdrawn.

In the drawings 96 designates the pivot of the dead bolt holding tumbler 54, and 98 the post for holding the spring 56. 99 is the usual spring acting on the heel 100 of the hub lever to normally hold the same and the latch bolt 52 in latching position.

The door 8 is provided with a mortise 101 to receive the lock case and cap 1, 2, and is also provided with holes 102, 103 to receive the knob sleeves 74, 75 and the cylinder and cylinder cap 5 and 22. To install the lock the lock case and cap 1 and 2 with the mortise lock mechanism, except the sleeves and hub block, assembled therein may be inserted into mortise 101 and brought into place with the perforation of hub 70 in line with the hole 102, and the segmental holes 3 and 3' in line with the hole 103. The outer escutcheon may be fastened in place in the usual way. Then the outer threaded sleeve 74 may be inserted through the hole 102 and through the hub and the escutcheon, and the other knob brought into place with its shank seated in the outer shank seat 68, whereupon the spindle 71 may be inserted through the hole 102 and into the threaded sleeve 74 sufficiently to turn the sleeve or to hold it from turning so that the outer knob 64 may be screwed home on the outer end of the sleeve 74. When the outer knob is screwed home, the spindle may be withdrawn, or may be inserted home into the position shown in Fig. 3 ready to receive the escutcheon 24. Before said escutcheon 24 is put into place the inner sleeve 75 will first be inserted therethrough and the shank 77 of the knob 65 will be screwed thereon. In each instance the knob will be screwed home to the required degree, leaving the knobs loose enough to turn freely in the escutcheons.

108 is a set screw screwed into one end of the spindle 71 and held by a jam-nut 109, to engage the inner knob 65 whereby the spindle and its block 81, which is secured thereto by pin c will be held in place when the inner escutcheon is fastened to the door. The extent to which the screw should be screwed out or in may be determined by measurement. The spindle is of sufficient length to extend into both the angular holes in the two knobs whenever both escutcheons with their knobs thereon are in place. The hollow knobs accommodate the ends of the spindle and are capable of considerable adjustment to fit doors of different thicknesses.

When the mortise lock, the outer escutcheon and the spindle and its block have been brought into position as above described, the inner key 11 without the detachable knob 105 may be then put into position in the cylinder lock with its base on the end of the barrel and the key pins 42 and 43 inserted into the segmental slots 44, 45, respectively. The key and cylinder may then be inserted through the escutcheon 7 and through the segmental holes in the mortise lock case and cap and into position with the key 11 projecting from the inner side of the door. The inner escutcheon 24 to which the inner knob has been previously secured by the shouldered and threaded sleeve 75 may be brought into position with the spindle 71 extending through such sleeve, and with the stem of the key 11 projecting through the hole in the escutcheon through which the cap is to be inserted. The inner escutcheon 24 may now be fastened in place by the usual screws 110. The spring 46 may now be placed on the stem of the key 11 and the cap 22 with its aperture 104 be brought over said stem and screwed onto the segmental screw-threaded extension 21 of the cylinder. When the cap is screwed home the fastening screws 27 may be inserted, and the knob 105 be placed on the angular portion 106 and secured in place by screw 107, whereupon the lock is installed ready for use.

The dead bolt 51 being in unlocked position, shown in Fig. 2, the knobs 64, 65 and 105 are free to turn to operate the latch bolt. The latch bolt will be operated by the knobs 64, 65 by simply turning the same, whereupon the arms of the hub 70 move the hub lever, thus actuating the latch bolt 52. When the knob 105 is rotated its web 48 engages the tumbler 85 and moves it upward, thereby causing it to contact with the end of the hub lever 57, thus to move the hub lever and withdraw the latch-bolt from locking position. When it is desired to lock the dead bolt, this may be done by turning the knob of the key 11 so as to cause the web 48 of said key to move the dead-bolt out into locking position, said web first engaging the tumbler 54 and thereby releasing the dead-bolt in the usual way and then engaging the dead-bolt and moving it outward. When the dead-bolt is thus moved into locking position the dog 62 is thrown down by the spring 63 to engage the face 60 of the hub lever, whereupon the hub lever, the latch bolt and the knobs are all locked. The key 36 may now be withdrawn and admission from the outside of the door is now impossible, except with the use of the key, but the door may readily be unlocked on the inside by simply turning the inner key 11. When so turned, the latch bolt and the knobs are released as indicated in Fig. 2.

If it is desired to lock the inside or per-

manent key, so that it cannot be turned to unlock the dead bolt and latch bolt, the operator will simply turn the key a full turn, thus bringing the parts into position shown in Fig. 24. Thereupon the pins 54, 55, prevent the permanent key from being turned in one direction and the stop against which the web 48 of the key engages prevents rotation in the other direction.

No claim is made herein to the lock and latch mechanism shown for the reason that the same is the subject matter of the copending application, Serial No. 407,870, filed Dec. 23, 1907.

What I claim is:—

1. A lock comprising a mortise lock case and cap provided with segmental holes, a lock cylinder provided with a segmental portion in said holes and having a segmental internally and externally threaded section, and a cylinder cap screwed onto said threaded section.

2. A lock provided with a tumbler way, a gravity tumbler and a spring-actuated tumbler in said way, and a spring for said spring-actuated tumbler, said tumblers being adapted to be moved in opposite directions by a key.

3. A mortise lock case and cap provided with segmental holes, a cylinder provided with a segmental portion extending through said holes and also provided with oppositely-arranged tumbler recesses, a cylinder cap screwed onto said segmental portion, a barrel in the cylinder provided with a tumbler-way extending entirely across said barrel, a pair of tumblers in said tumbler-way, each tumbler provided with a key-contacting face projecting toward the other tumbler with a key-way between them, said tumblers being respectively adapted to engage in the tumbler recesses, to be retracted by a key from said tumbler recesses.

4. A lock cylinder provided with a barrel way, a barrel stop, a segmental screw-threaded portion and tumbler recesses, a lock case having a hole in which said segmental portion is held, a barrel in the cylinder, tumblers in the barrel to engage the cylinder, and a cap screwed onto the segmental portion.

5. A lock case, a barrel cylinder having a segmental portion extending through and engaging said case, and a cap screwed onto the segmental portion.

6. A cylinder provided with a barrel way and on each side of said way with pairs of tumbler recesses; a barrel in said way provided with tumbler ways extending entirely through said barrel, a pair of tumblers in each of said tumbler ways, each of said tumblers being adapted to engage at its opposite ends with tumbler recesses in said cylinder, and each tumbler being also provided with key-contacting lugs.

7. A cylinder provided with a barrel way and with two oppositely-arranged pairs of tumbler recesses and a barrel in said way provided with a tumbler way extending entirely through the barrel, a pair of tumblers in said tumbler way provided with tips to engage said recesses, and also provided with key-contacting lugs for withdrawal of the tumblers into the barrel.
8. A cylinder provided with a barrel way and with oppositely - arranged tumbler recesses, a barrel provided with a tumbler way, a pair of tumblers in said tumbler way, one of said tumblers being operable by gravity to engage one of said recesses, and a spring to operate the other of said tumblers.
9. A cylinder provided with oppositely-arranged tumbler recesses, a barrel in said cylinder provided with a tumbler way having converging walls, and a pair of tumblers in said way adapted to wedge between said walls and to engage said recesses.
10. A cylinder provided with a barrel way and with oppositely-arranged tumbler recesses, a barrel in said way provided with a tumbler way extending entirely thereacross and having converging walls, one of which walls is formed in two planes and is stepped to form a seat for a spring, a pair of tumblers in said tumbler way provided with tips to enter said tumbler recesses, and with oppositely-arranged key-contacting faces to receive a key between them, one of said tumblers being provided with a shoulder facing said seat and a spring between said seat and shoulder.
11. A cylinder having a barrel way and tumbler recesses, a barrel in said way, and a pair of tumblers to engage the cylinder, one adapted to wedge the other in the barrel.
12. A cylinder provided with a barrel way and tumbler recesses, a barrel in said way provided with a tumbler way extending thereacross, a pair of tumblers adapted to wedge together in locking position in said tumbler way, and a spring for moving one of said tumblers into locking position.
13. A lock provided with a tumbler way, a pair of tumblers in said way, a spring to actuate one of said tumblers, and a key to extend between said tumblers to move both of said tumblers into unlocking position.
14. A lock provided with a tumbler way, a pair of tumblers in said way, a spring to throw one of said tumblers into locking position, and a key to move said tumblers in opposite directions to unlocking position.
- In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 20th day of June 1907.
- W. H. THOMAS.
- In presence of—
JAMES R. TOWNSEND,
LUELLA THOMAS.