

No. 860,055.

PATENTED JULY 16, 1907.

J. PHILLIPS.  
LOCK.

APPLICATION FILED MAR. 3, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

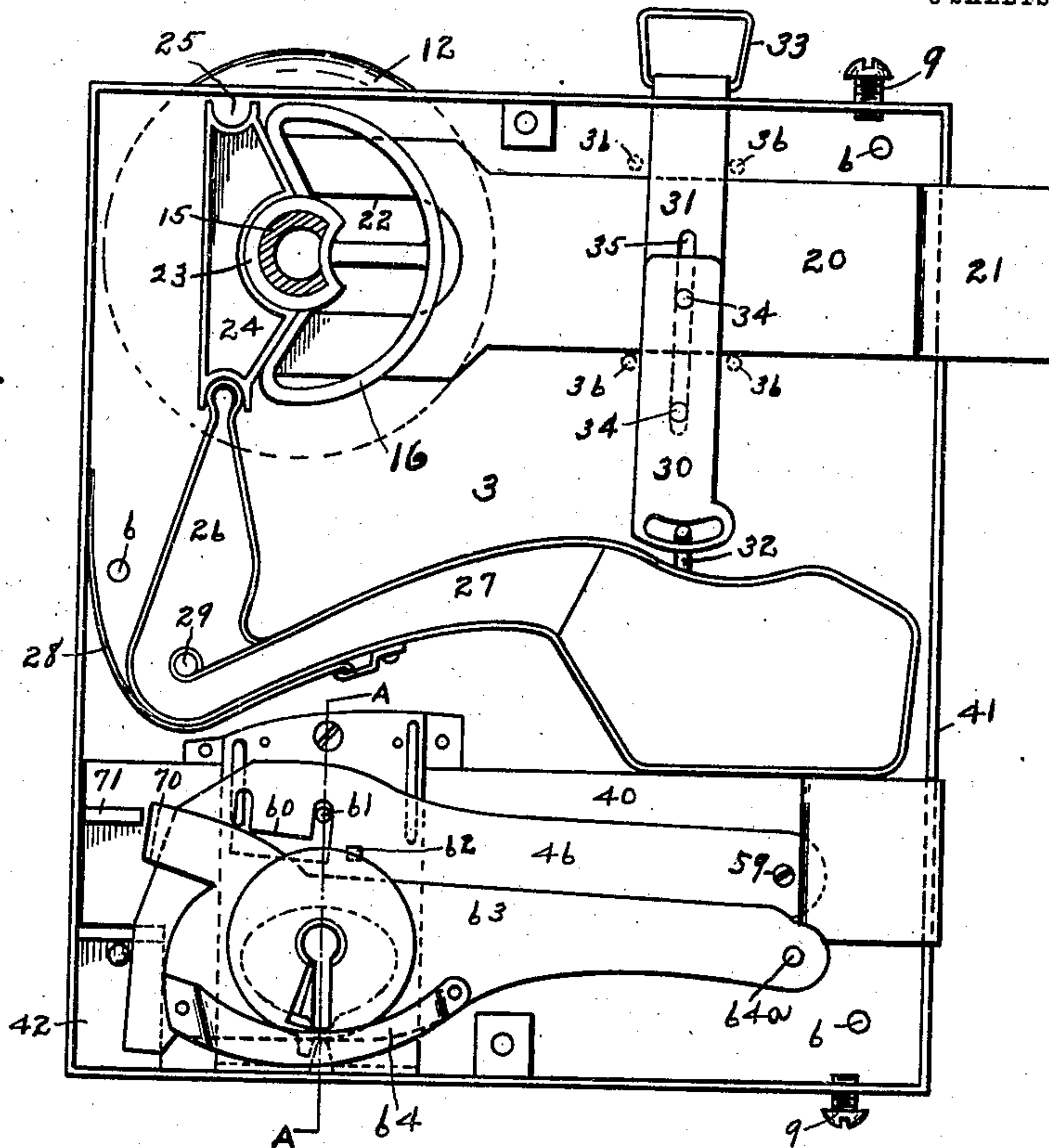


Fig. 2.

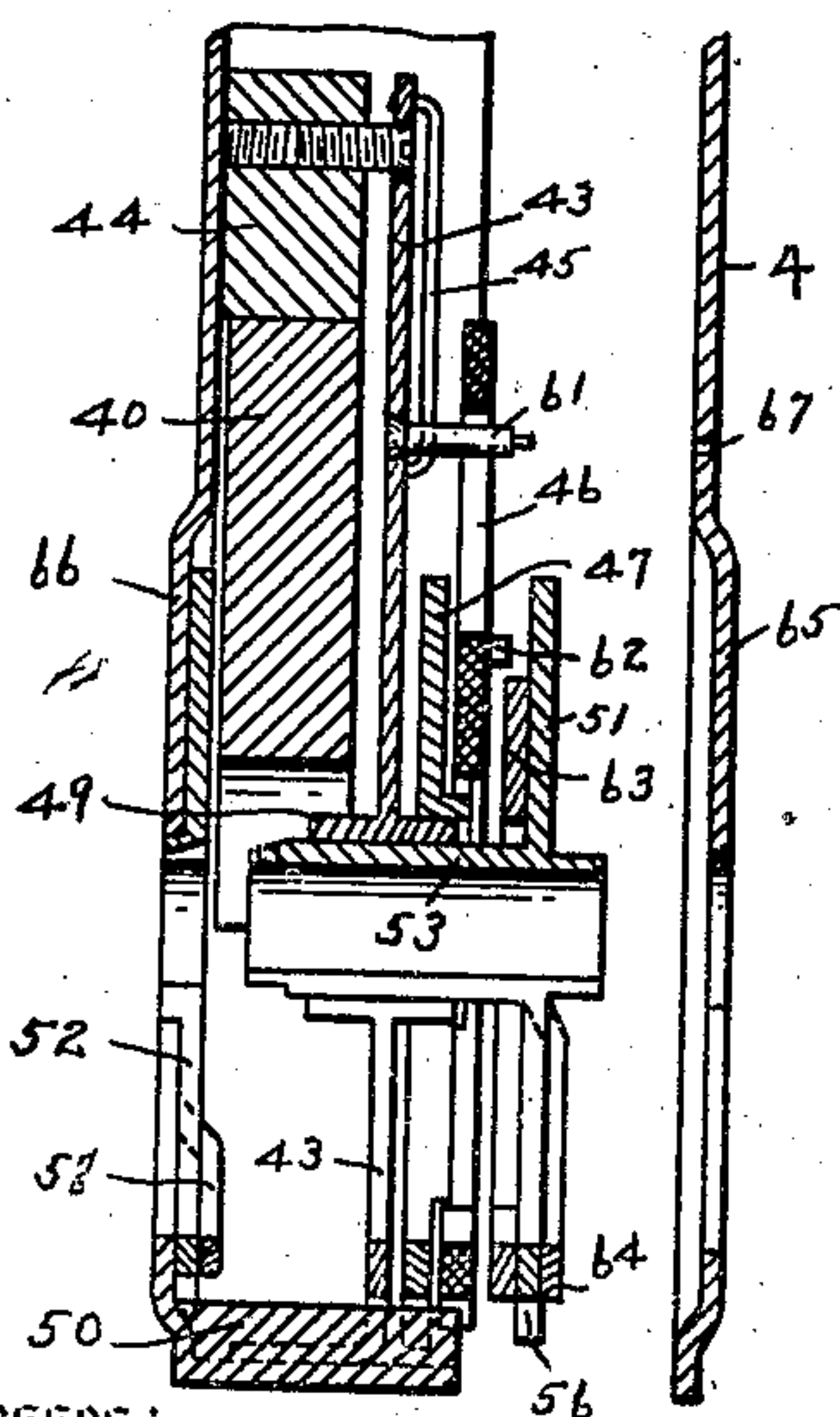


Fig. 3.

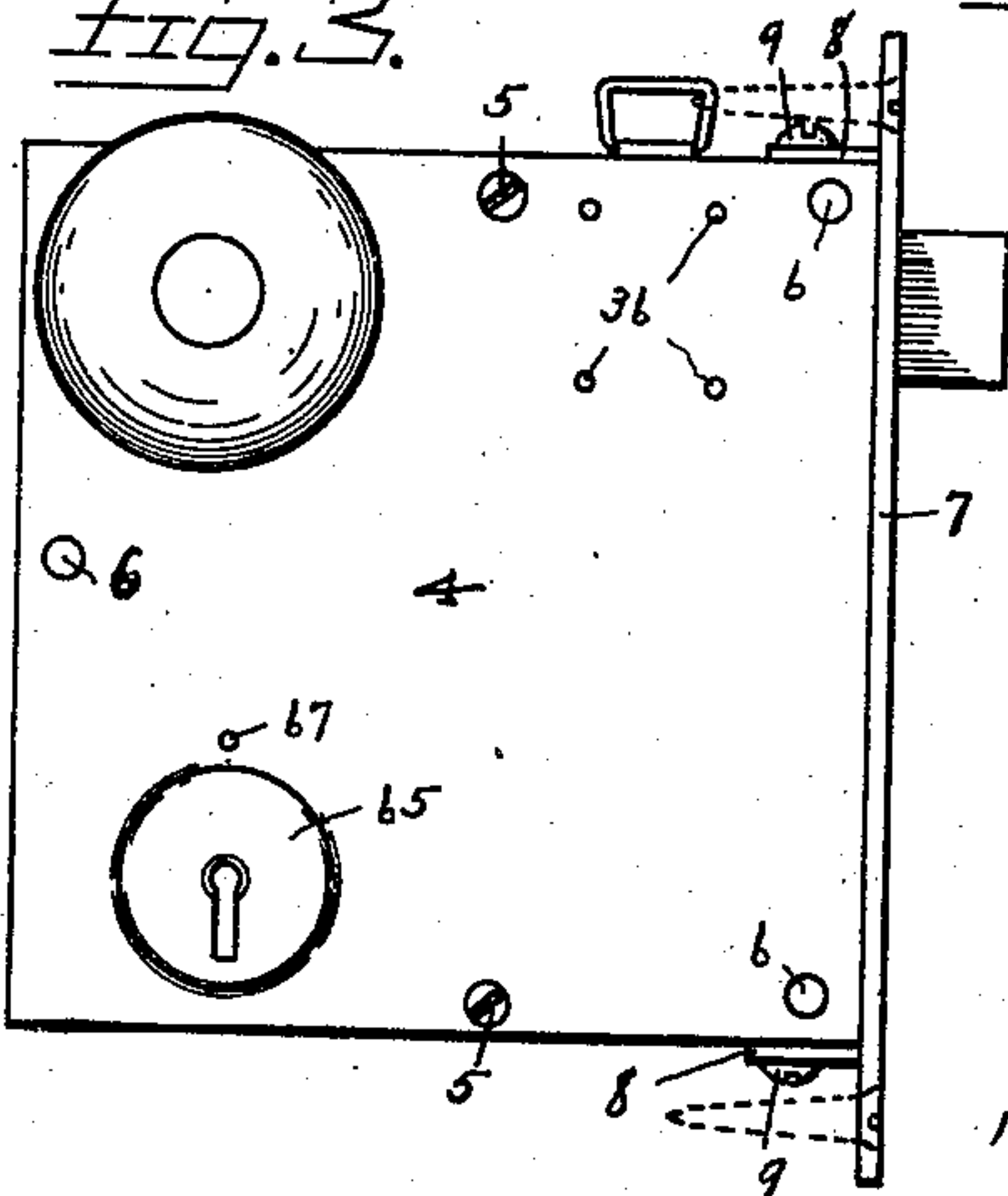
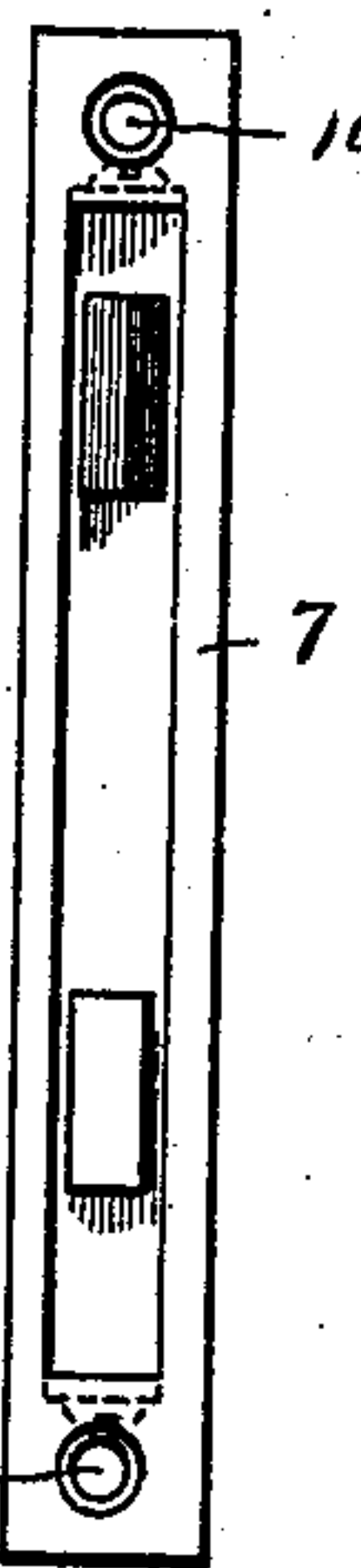


Fig. 4.



Witnesses:

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By his Attorney Joseph Phillips.  
Edward N. Pageau.

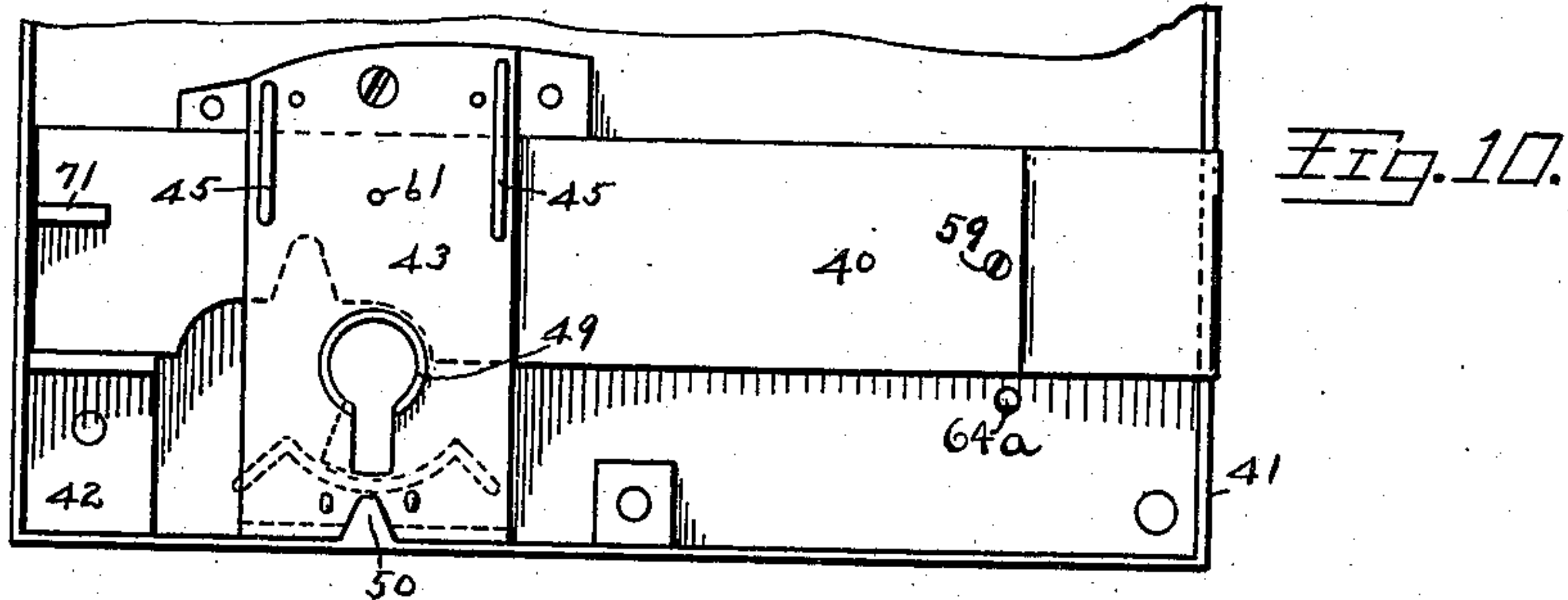
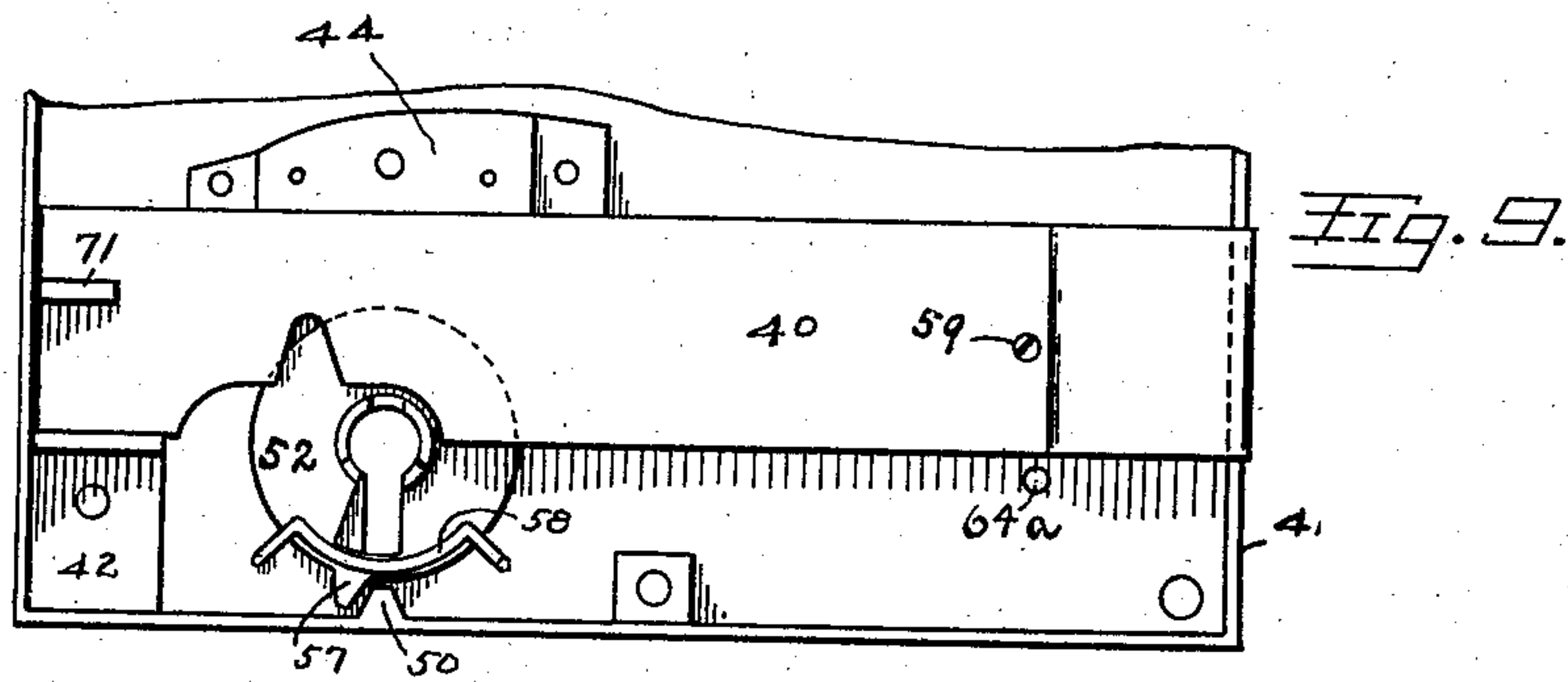
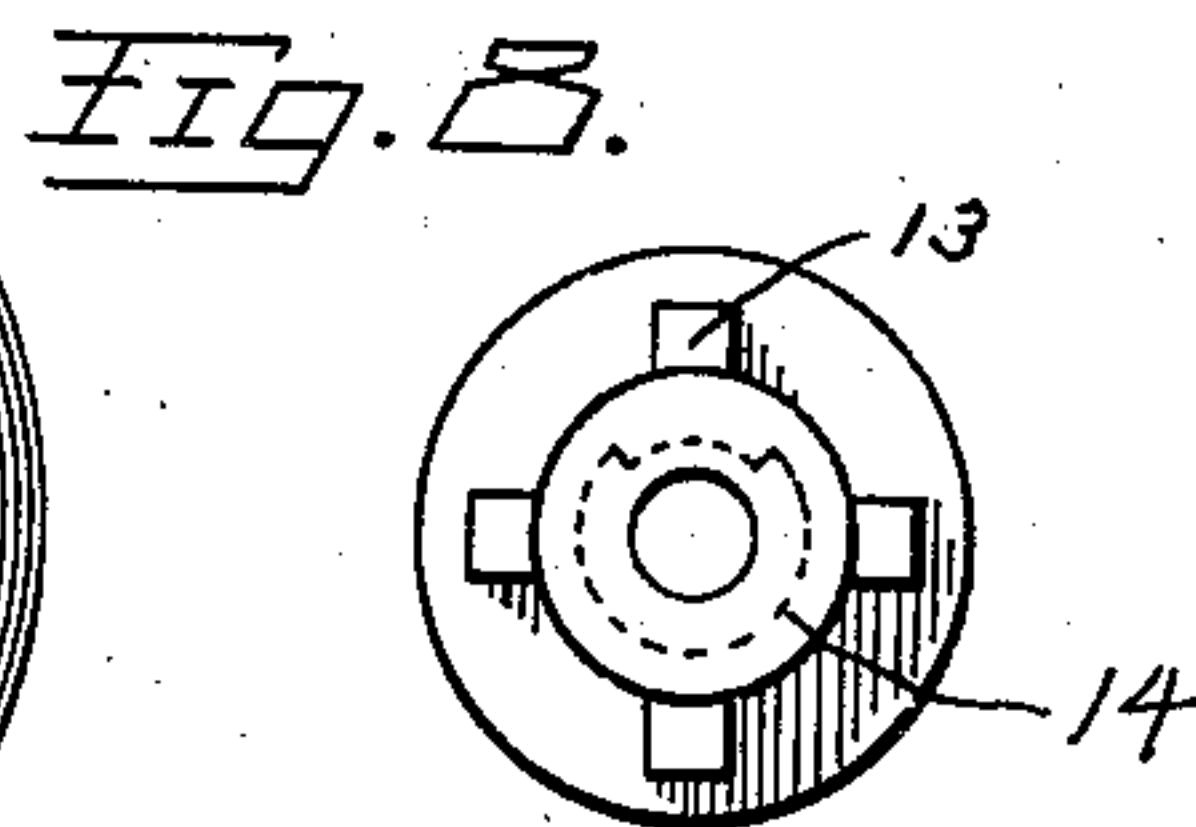
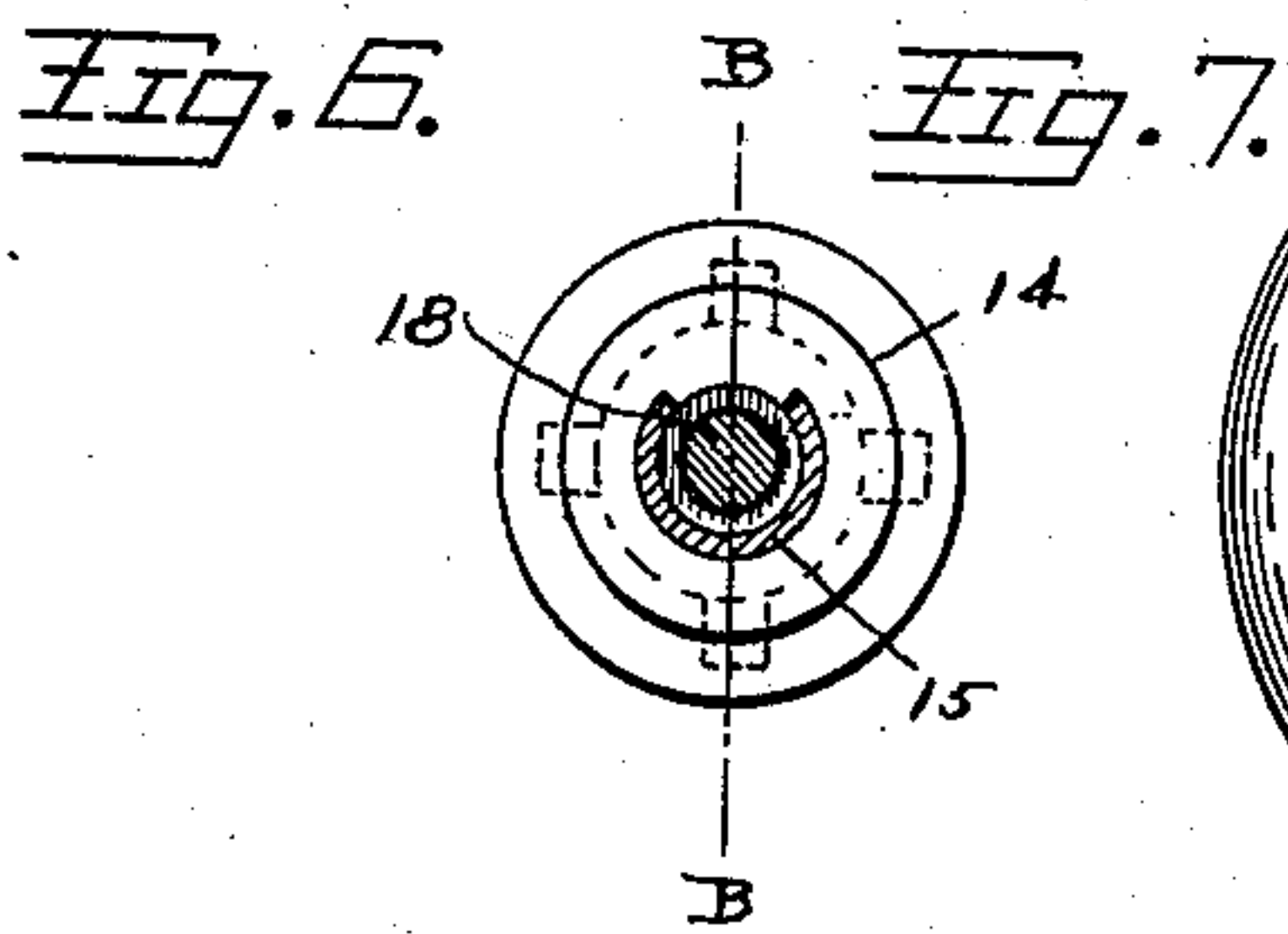
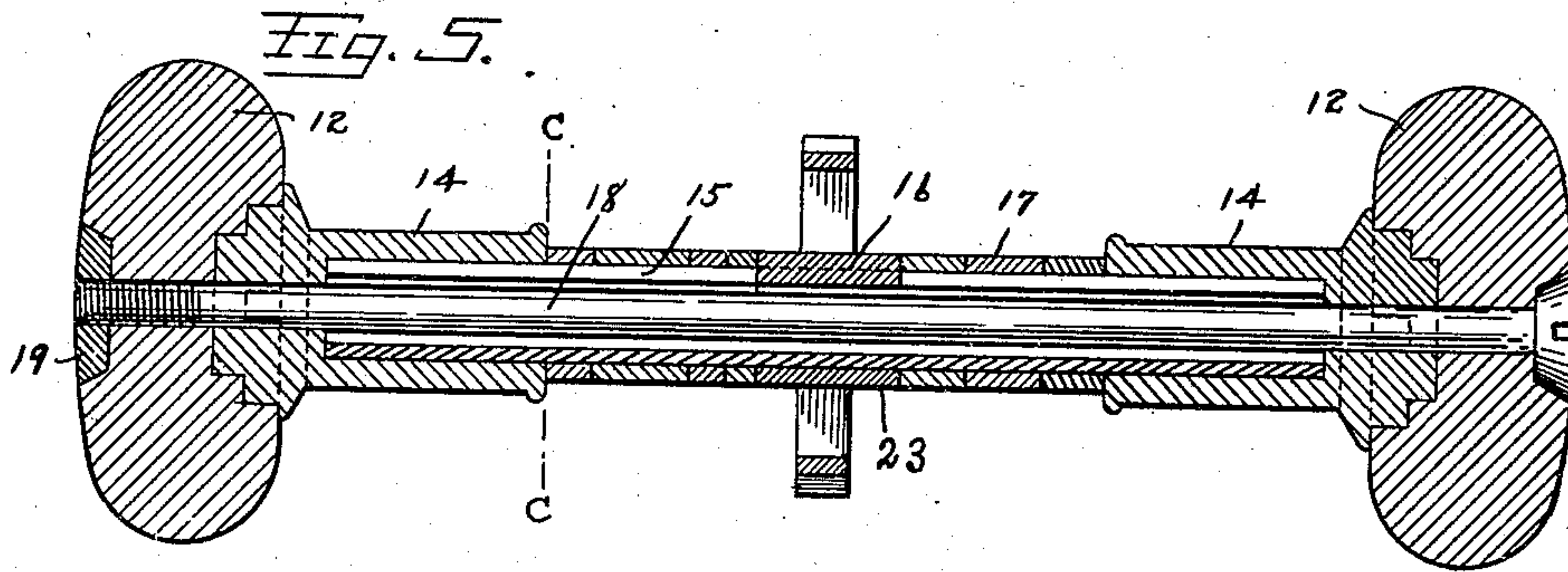
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3 SHEETS—SHEET 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOSEPH PHILLIPS, OF MIDLAND, ONTARIO, CANADA.

## LOCK.

No. 860,055.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed March 3, 1906. Serial No. 303,989.

*To all whom it may concern:*

Be it known that I, JOSEPH PHILLIPS, a subject of the King of Great Britain and Ireland, and a resident of Midland, in the county of Simcoe, Province of Ontario, and Dominion of Canada, gunsmith, have invented a new and Improved Lock, of which the following is a specification.

My invention relates to locks for doors, and the objects of my improvements are,—to provide a lock that may be operated by either a thumb latch or by a knob latch, or be arranged to be operated by both or either at will; to provide a lock, the bolt of which shall be slidable by one key while the admission of the key be determined by one or a plurality of keys; and to provide a lock of this type with interior shields which shall prevent the entrance of all instruments such as skeleton keys and lock picks. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a view of the interior of the lock with the face plate removed. Fig. 2 is a cross section on an enlarged scale taken on the line A—A of Fig. 1. Fig. 3 is a side view of the lock. Fig. 4 is an end view of the same. Fig. 5 is a longitudinal cross section of the bolt for the knobs on the line B—B of Fig. 6. Fig. 6 is a cross section of the bolt on the line C—C of Fig. 5. Figs. 7 and 8 are end views of the knob and knob hub respectively. Fig. 9 is a view of the lock with the tumblers and bolt guide removed. Fig. 10 is a view of the same with the guide in position. Fig. 11 is a view of the keys. Figs. 12 to 17 inclusive are views of details of the lock.

Similar reference characters refer to like parts throughout the several views.

The lock shown is composed of the case 3, to which the cover 4 is attached by means of the screws 5. When it is desired to use the lock as a side lock for either right or left hand doors, screws may be inserted through the holes 6. When the lock is to be used as a mortise lock, the face plate 7 is attached, which has two lips 8 that fit the top and bottom of the lock and are secured thereto by screws 9. Holes 10 provide for screws that are to hold the face plate to the edge of the door.

The latch portion of the lock will be described first, being distinct in its operation from the locking part. The knobs 12 are provided with recesses into which the lugs 13 on the ends of the hubs 14 engage. Into these hubs a tube 15, having a slot, engages, and on the tube are mounted the cam 16, the spacing rings 17, and through it passes the bolt 18 which engages the nut 19 at the outer face of one of the knobs. This construction is very strong, there being no small screws to be lost and all the stress coming on the strong

tube 15. The knobs may be of any desired material, and the space between the hubs may be regulated by the number and length of the rings 17.

The cam 16 is shown in Fig. 1, from which it will be seen that it will slide back the latch 20 when turned in either direction. The end 21 of the latch is beveled in the usual manner, and its body is in the form of a flat plate having a slot 22 for the hub 23 of the cam, and its inner end has a raised portion 24 which engages the cam 16. As this raised portion is on one side only, the latch can be turned over so that it will be adapted for either right or left hand doors.

The widened raised portion 24 of the latch is provided with recesses 25 at its upper and lower edges into which the rounded end of the short arm 26 of the bell crank lever 27 engages, according to the way the latch is turned. The free end of this lever is weighted and normally tends to hold the latch outward, but for quickness of movement the spring 28 may be added to assist the weight. The pivot 29 of this lever is secured in the back 3.

Passing through a slot in the upper part of the lock is a lift link to the upper end of which may be attached the mechanism of a thumb-latch or any desirable connection by which, especially when comprising a flexible connection, the latch can be withdrawn by a person at a distance. The lifter is in two parts, 30 and 31, the former provided with a slot to receive the hook 32 on the lever 27, the other having the ring 33, the two parts being slidably connected by the pins 34 and slot 35 so that the parts may be entirely contained within the lock when it is to be used as a mortise lock. The lifter is guided between pairs of pins 36 projecting from the cover 4.

The lock portion proper is located in the lower portion of the case and consists of the bolt 40, means for controlling its movements, and means for controlling access to the operating mechanism. The bolt is of uniform thickness except at the outer end and is supported at the enlarged end by the side wall 41 of the case and at the other end by the bracket 42 secured to the case. A flat plate 43 is secured at its upper edge to the block 44 attached to the case, while the lower end is bent backward and contacts with the back of the case so as to hold the plate at the proper distance from the case to guide the bolt. This bent end is indicated in dotted lines in Fig. 2.

Projecting from the plate 43 are two small rods 45 which serve to guide the tumbler 46 and prevents it from pressing against the safety disk 47. It will be noticed that the various elements in Fig. 2 are shown somewhat separated so they may be easily distinguished.

Extending across and secured to the bottom of the



lock case is a stop bar 50 which prevents the safety disk 47 and the guard plates 51 and 52 from turning around more than once. The guard plate 52 has a short hub which journals in the back plate of the case while the guard plate 51 has a short hub that journals in the cover 4, and a long hub 53 which extends through the movable parts and is provided with teeth 54 that enter notches 55 in the guard plate 52 as shown on an enlarged scale in Figs. 15, 16 and 17. By these means the guard plates turn together, the distance they can turn being limited by the fingers 56 and 57 contacting with the stop bar 50. A guide rod 58 secured to the back of the case holds the guard plate 52 in position. The hub 53 is journaled in the cylindrical ward 49 of the guide plate 43.

The tumbler 46 is pivoted on the pin 59 on the bolt 40 and is provided with a slot 60, as shown, through which passes the pin 61 secured to the guide plate 43. This pin is reduced at the free end to enter a hole 67 in the cover in order to stiffen it. The bit of the key 1 operates on the tumbler to lift it so that it may slide on the pin 61 in the usual manner.

63 is a safety latch which prevents the bolt 40 from being moved out or in unless the latch is first raised the proper distance. The latch has a rearwardly extending lip 70 which is adapted to project back either in front or in the rear of the ridge 71 on the bolt, according to the bolt's position.

The latch is provided with a guide bar 64 which extends in front of the lower edge of the guard plate 51, to hold it from falling out when the cover 4 is removed. The cover has a bulged out portion 65 to receive the guard plate 51 and bar 64, while the back of the case is bulged as at 66 to receive the guard plate 52.

The safety disk 47 is mounted on the ward 49 carried by the guide plate 43 and is provided with a finger 67 adapted to contact with the cross bar 50.

The operation of the lock is as follows;—Beginning with the parts of the lock as shown in Fig. 1, any one of the three keys may be introduced. Key 1 is the first to be used in locking, and its pin when introduced, fits in the tubular hub 53 of the guard plates. Upon being turned to the right, (Fig. 1) the ward 45 and guide plate 43 will fit the T slot of the key bit 48. The safety disk 47 and the guard plates 51 and 52 will turn with the key, the latch 63 and tumbler 46 will be raised until the pin 61 occupies one end of the horizontal part of the slot 60, and the lip 70 is above the ridge 71. Further turning of the key will shoot the bolt and finally the latch and tumbler will be lowered, the lip 70 falling back of the rib 71, thus holding the bolt from being pushed back. When the parts are thus positioned, key 1 can be immediately used for unlocking. To render this impossible, the key 2 is introduced and turned to the left. (Fig. 1). As the bit of this key is low, it will not effect the latch, tumbler, or bolt, but will turn the safety disk and guard plates to original position, that is, with the fingers 56, 57, and 67 at the left of the cross bar 50. If now key 1 is introduced, it cannot be turned, for it cannot be turned to the left to unlock, because the safety disk and guard plates cannot be turned on account of their fingers 56, 57, and 67 being against the cross bar 50. The key cannot be turned to the right

because the bit will contact with the bottom of the rear end of the bolt. The lock can thus be governed by a controlling key so that a number of persons holding keys are permitted or prevented from using the lock at the will of the person holding key 2, who at the same time, cannot himself open the door having this lock.

The guard plates alone may be turned in either direction by the third key 2<sup>a</sup>, whose bit is so low that it will not reach the safety disk, but will only fill the slot in the hub 53 of the guard plates. As the key can be withdrawn at any point, the guard plates can be turned part way around and left there, closing the key holes and effectually preventing the introduction of keys, lock picks or other instruments. If the guard plates are turned to the right until their fingers 56 and 57 are to the right of the cross bar 50, key 2 can be introduced but cannot be turned, neither to the right because of the fingers on the guard plates, nor to the left because of the finger on the safety disk. To unlock the bolt, key 2<sup>a</sup> must first be used to turn the guard plates to the left, then key 2 to turn the guard plates and safety disk to the right, and then key 1 to raise the latch and tumbler, turn the disk and plates to the left, and withdraw the bolt. Keys 2 and 2<sup>a</sup> can then be used to position the guard plates and safety disk so the bolt cannot be moved to locking position. This construction effectually prevents undesired manipulation of the parts by anyone not having the proper keys, the holder of one depending on the holders of the other two.

Having now explained my improvements, what I claim as my invention and desire to secure by Letters Patent, is—

1. In a lock, the combination of a case, a cover for said case, said case and cover having key openings, a central plate secured within the case, a key-ward on said plate, a tubular hub journaled in said ward, disks on said hub to cover the key openings and having means to prevent said disks making more than one turn in either direction, a safety disk mounted on said ward and adapted to be turned around once only in either direction, a bolt slidable within the lock, a tumbler mounted on said bolt, and a latch independently mounted in said case to control the operation of said bolt.

2. In a lock, the combination of a case, a bolt therein adapted to be moved in or out by a key, a safety disk mounted in said lock and adapted to be positioned by a second key to prevent the operation of the bolt by the first key, and a revoluble plate mounted in said lock and adapted to be positioned by a third key to prevent the operation of the safety disk by the second key and of the bolt by the first key.

3. In a lock, the combination of a case, a ward mounted therein, a safety disk mounted on the ward, and a bolt adapted to be moved in and out by a first key, the movement of said key being controlled by the position of the safety disk and that disk being positioned by a second key.

4. In a lock, the combination of a case, a bolt mounted therein and adapted for longitudinal movement by a first key, and means mounted in said lock and adapted to be positioned by a second key to control the operation of the first key.

5. In a lock, a case having key openings, a bolt, a guide plate for the same, a pin projecting from said guide plate, a tumbler mounted on said bolt and having an angular slot to receive said pin, a ward on said guide plate, a revoluble tubular hub mounted in said ward and adapted to position the key, and a latch mounted in said lock and having a rearwardly extending arm adapted to engage a rib on said bolt, said parts being so proportioned that



upon the introduction and turning of a proper key, the latch will be raised to permit the escape of the rib on the bolt, the tumbler will be raised to permit it to slide on the pin, the bolt will be moved to the desired position, and finally the tumbler and latch will be lowered to locking position.

6. In a lock, the combination of a case, a bolt slidable therein under the action of a key, and a plurality of safety mechanisms adapted to be positioned by successive

keys, each mechanism adapted when positioned to control the operation of the preceding key, said mechanism comprising a tube for the guidance of the key pins.

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

JOSEPH PHILLIPS.

Witnesses:

EDITH BATTRICK,  
W. FINLAYSON.