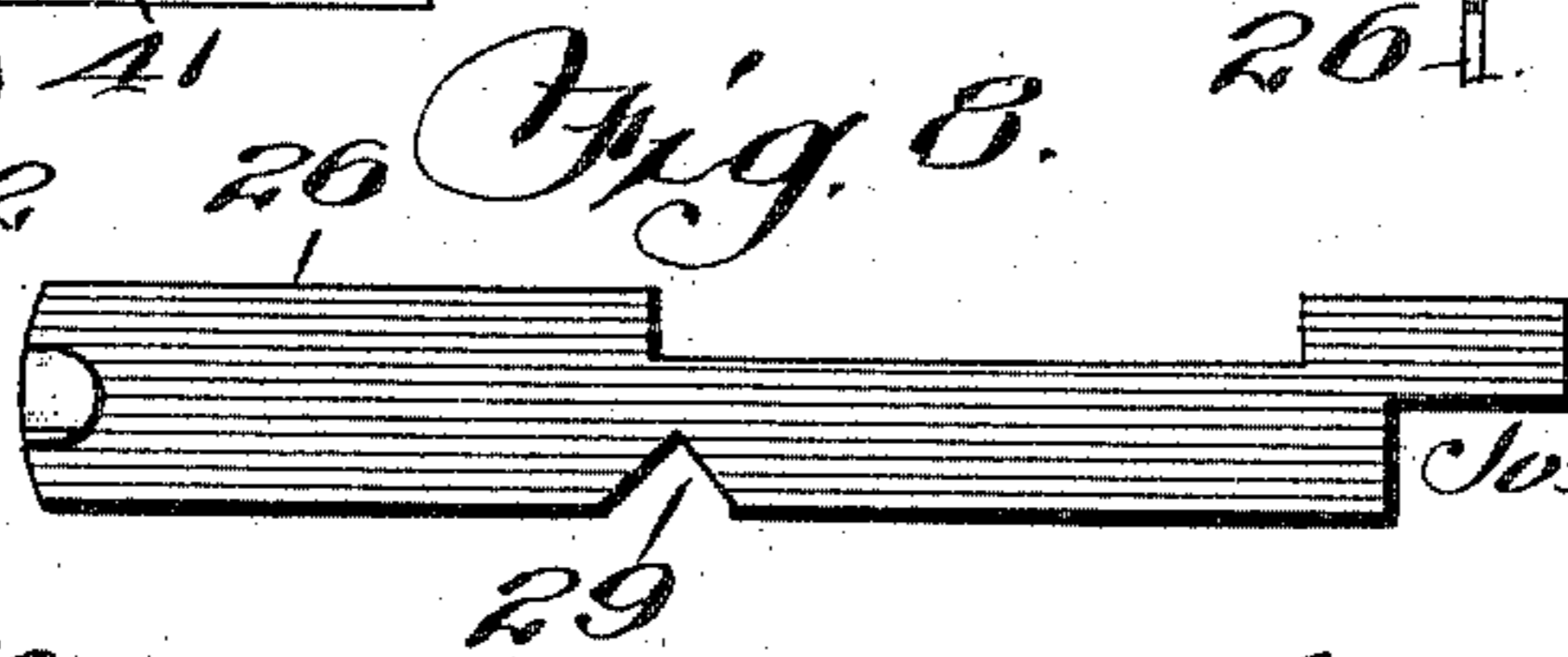
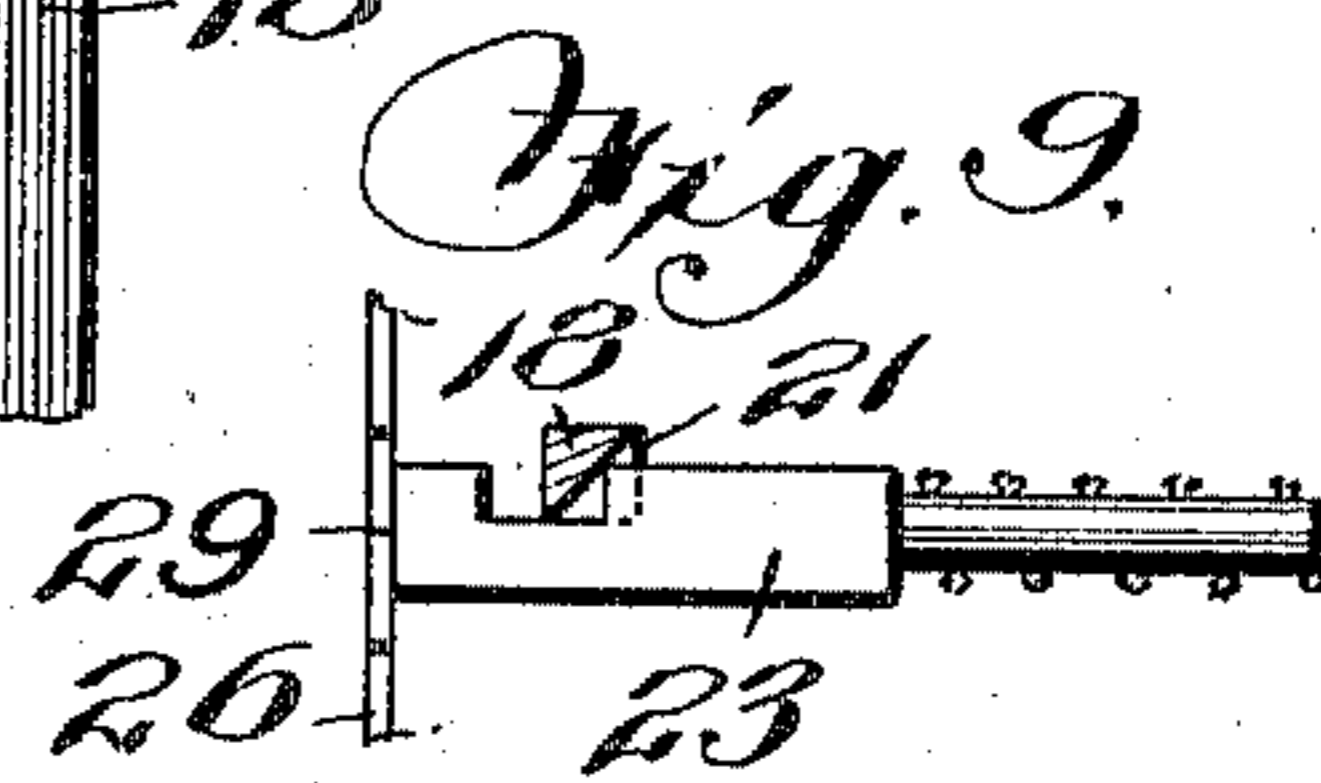
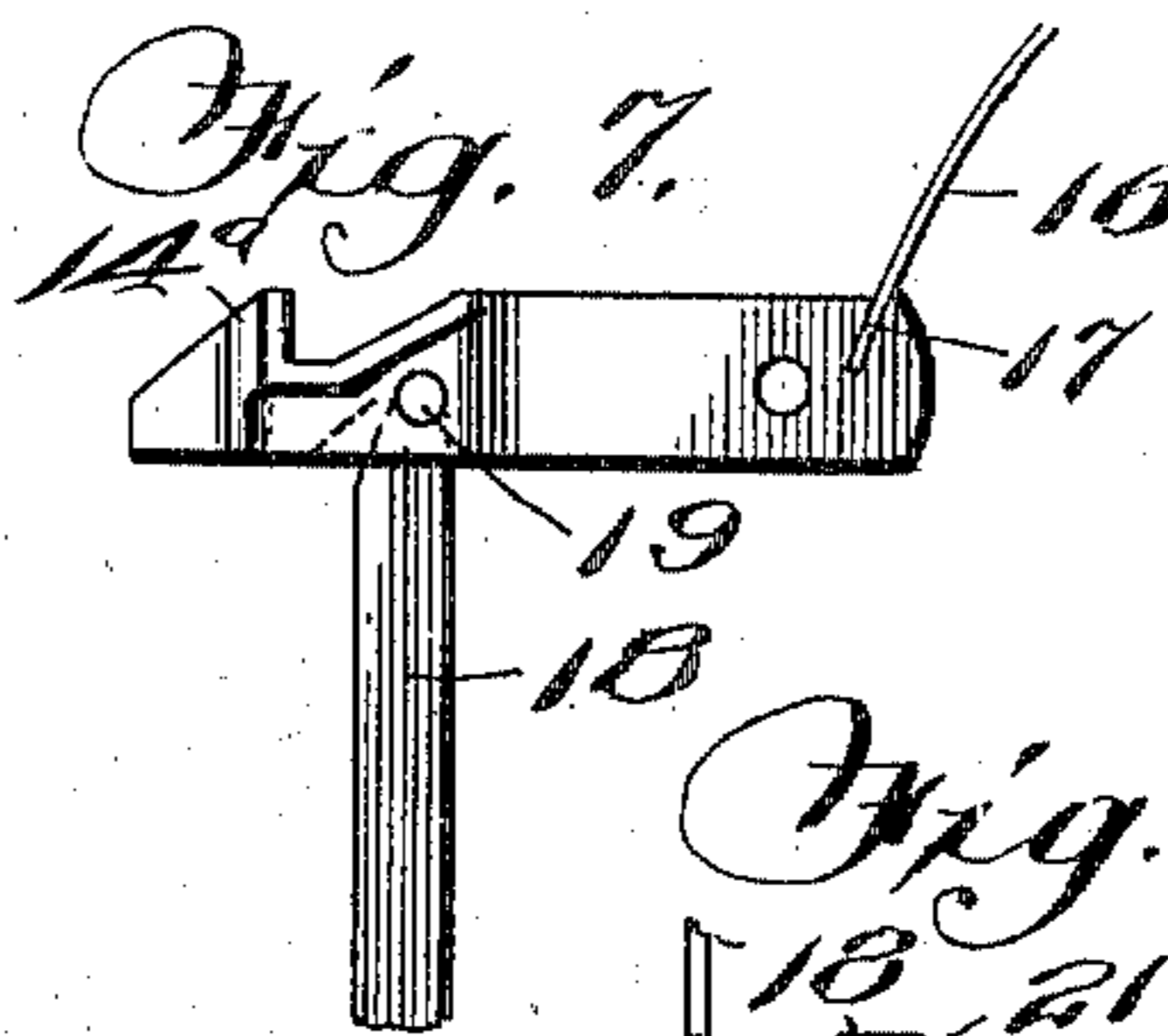
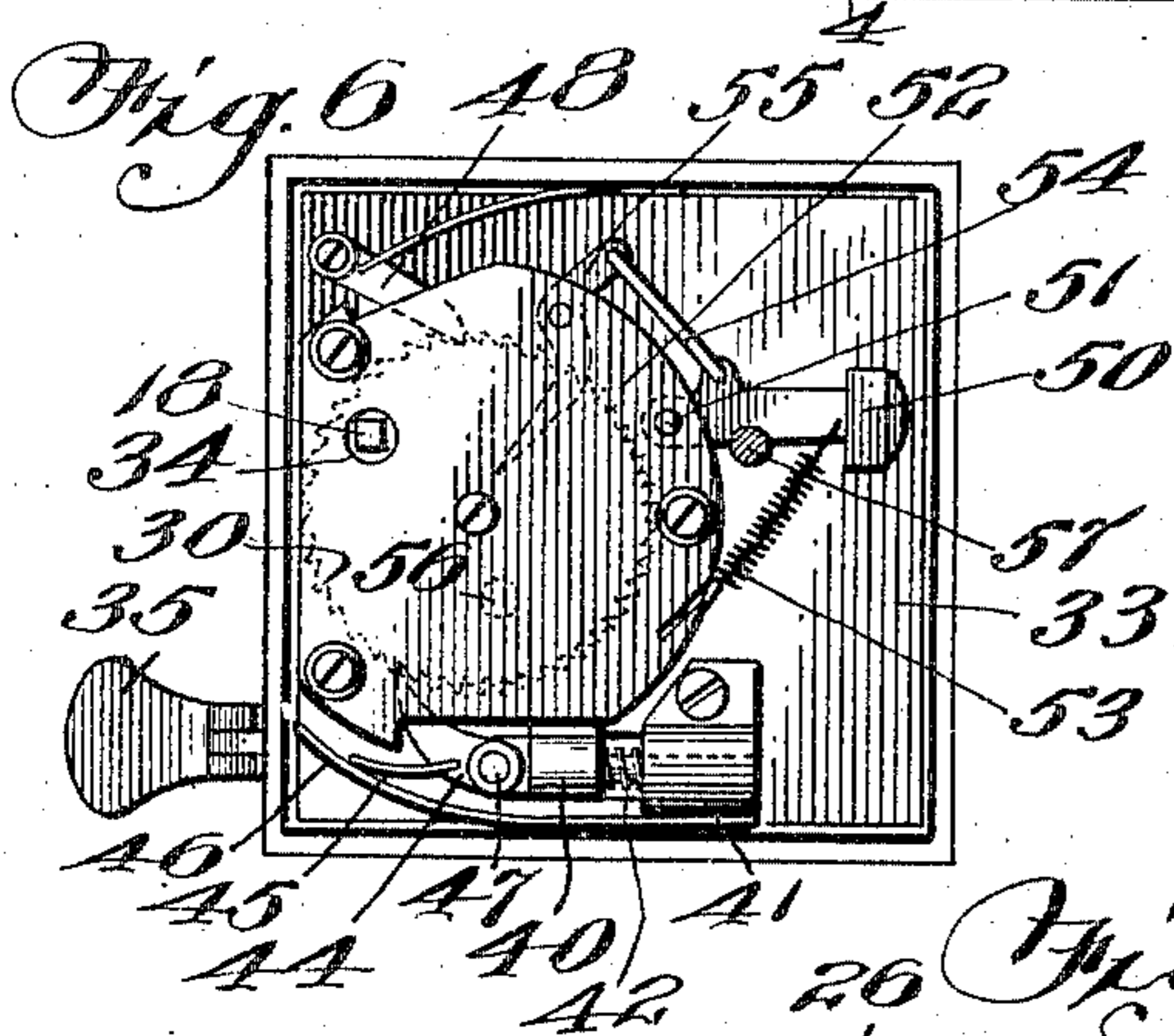
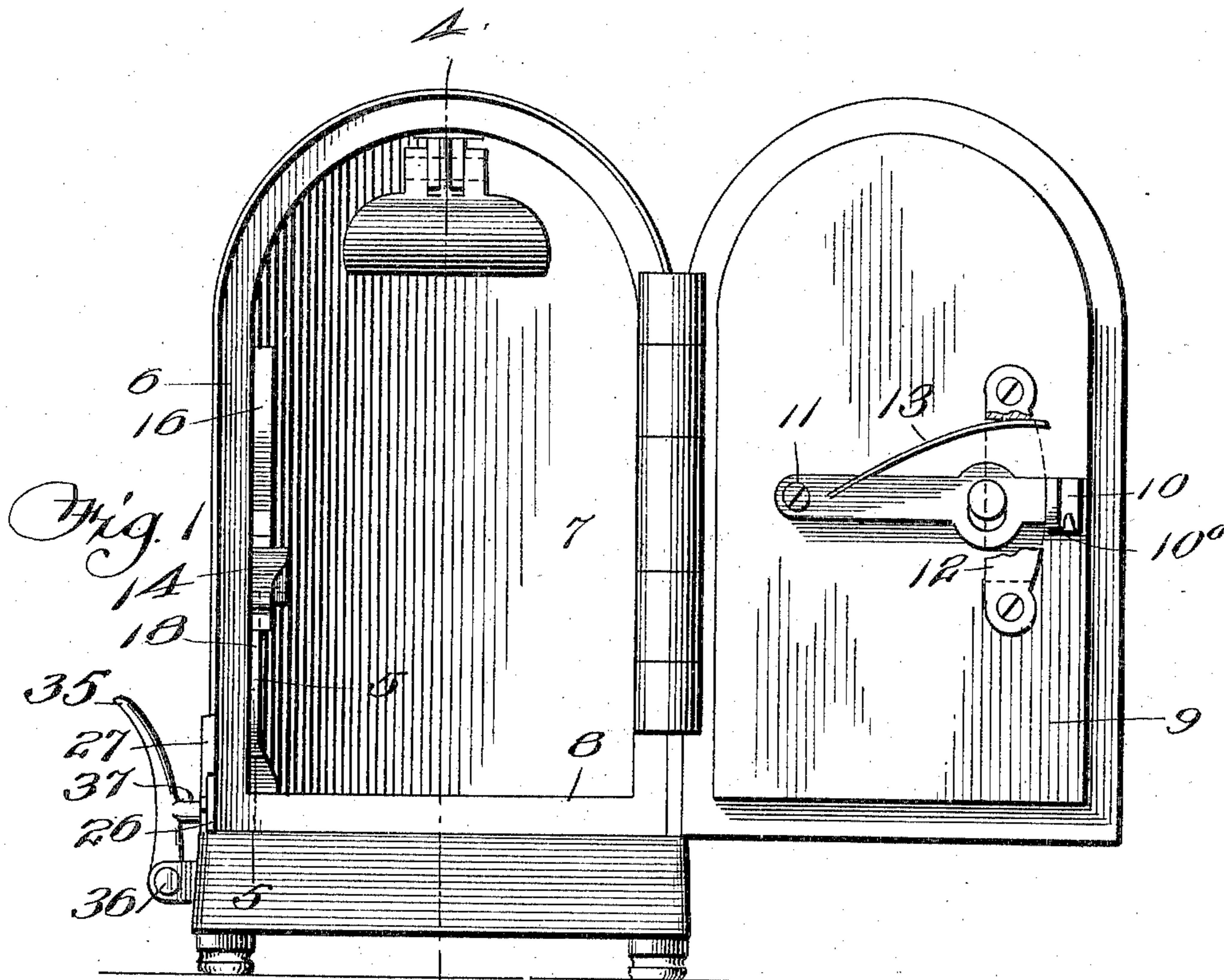


J. KLOSIENSKY.
 LOCK MECHANISM FOR SAFES.
 APPLICATION FILED DEC. 3, 1909.

965,586.

Patented July 26, 1910.

2 SHEETS—SHEET 1.



Witnesses
Frank Thomas
Edith L. Smith

By

Rev. E. Sew

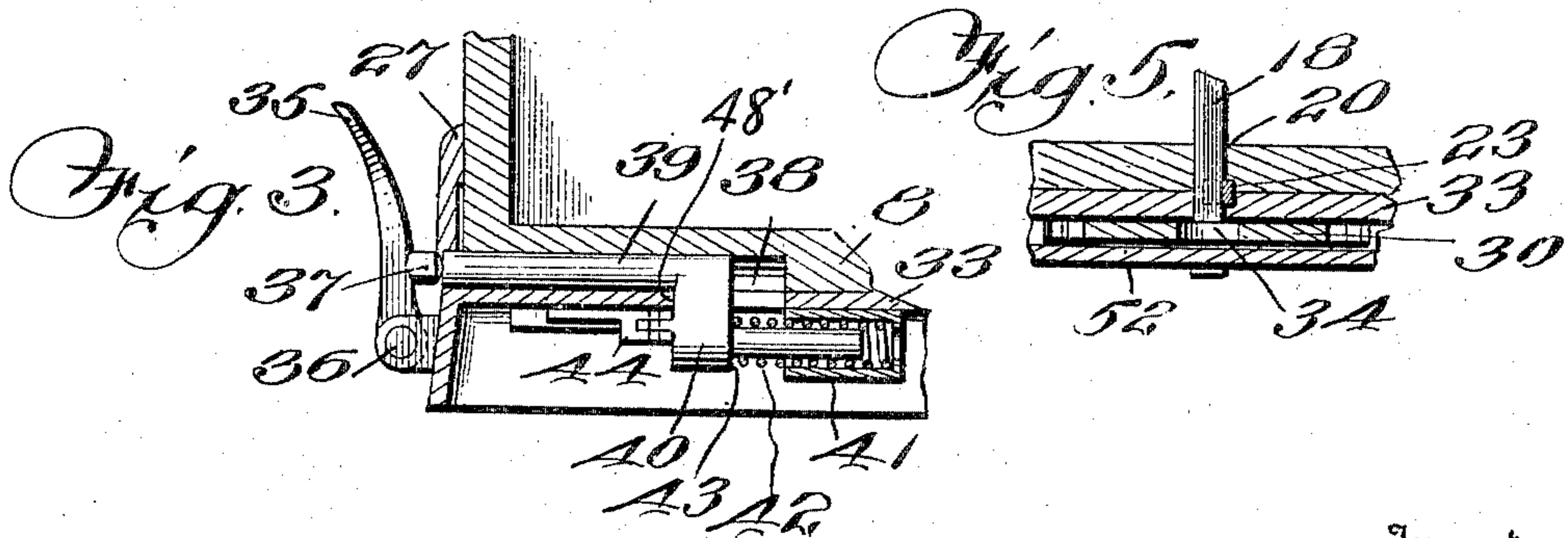
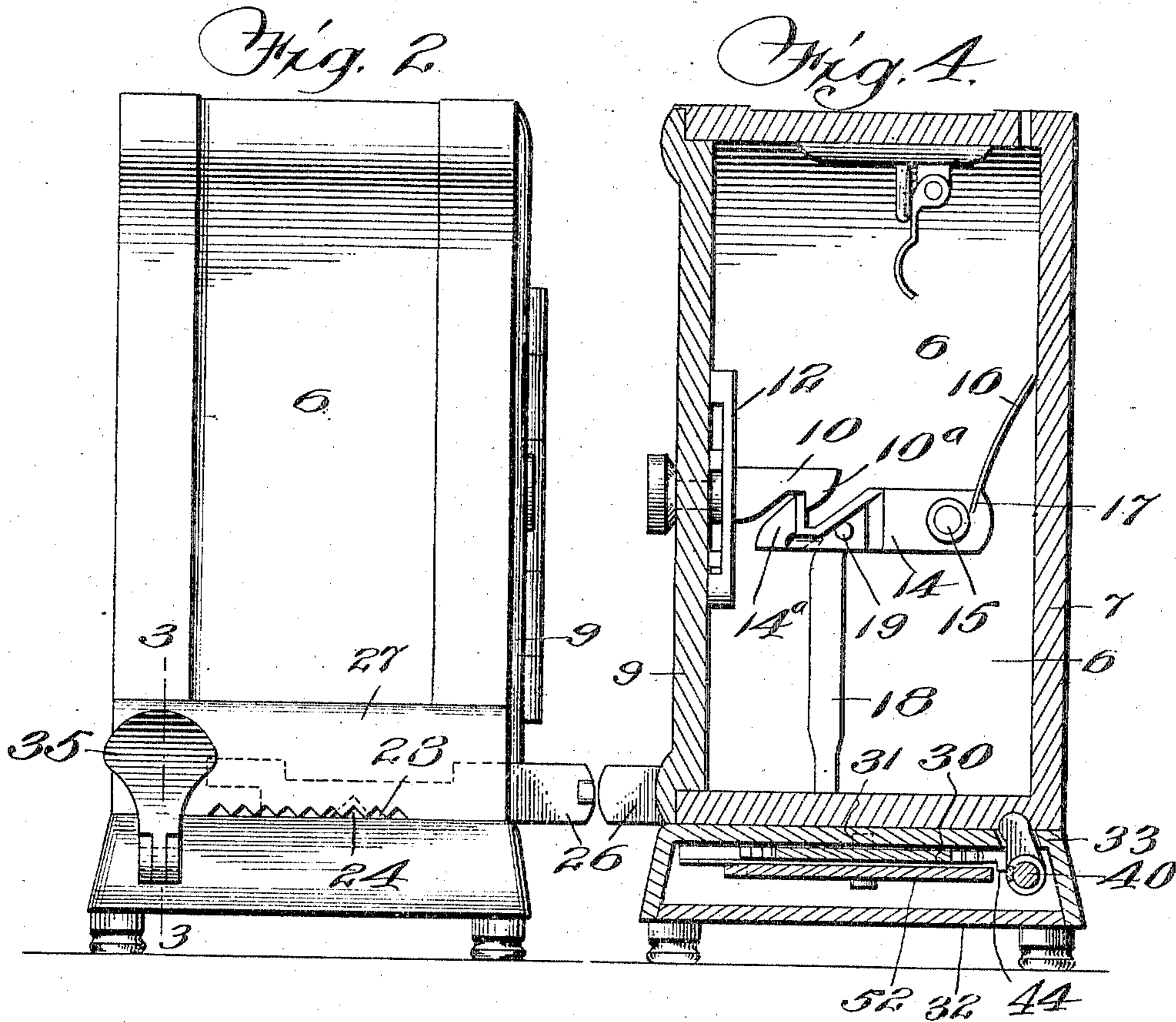
Attorney

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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH KLOSIENSKY, OF HICKSVILLE, NEW YORK.

LOCK MECHANISM FOR SAFES.

965,586.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed December 3, 1909. Serial No. 531,277.

To all whom it may concern:

Be it known that I, JOSEPH KLOSIENSKY, a subject of the Emperor of Russia, residing at Hicksville, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Lock Mechanisms for Safes, of which the following is a specification.

This invention relates to lock mechanisms for safes, and although particularly adapted for small toy banks, it may be applied and used in connection with large safes.

The lock is keyless, and has permutation features, so that it cannot be operated except by a person having knowledge of the combination or manipulation requisite for that purpose.

In the accompanying drawings the invention is shown applied to a small bank or safe, and Figure 1 is a front elevation of the device, with the door open. Fig. 2 is a side elevation. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a section on the line 5—5 of Fig. 1. Fig. 6 is a bottom plan view of the permutation mechanism, the bottom plate of the safe being removed, in order to expose said mechanism. Fig. 7 is a detail of the catch which engages the latch on the door. Fig. 8 is a plan of a slide which controls access to the catch-operating device. Fig. 9 is a detail in section.

The safe wall or body is made of metal in any suitable way, one side wall thereof being indicated at 6, the back at 7 and the bottom at 8. These parts may be cast in one piece. The hinged door is indicated at 9 and it carries a latch 10 pivoted to the door at 11, on the inner side thereof; and said latch works under a strap 12 and is normally pressed down by a spring 13.

When the safe is locked the latch is engaged by a catch 14, which is pivoted at 15 to the side wall 6 of the safe, the latch and catch being so arranged that the hooked head 10^a of the former will engage over the hooked end 14^a of the latter. The catch tends to drop, to release the latch, in consequence of the pressure of a flat spring 16 which is attached at 17 to a projection on the catch at the rear end thereof, and said flat spring bears against the back 7 of the safe.

A vertically sliding rod 18 is pivoted to the catch at 19, and said rod is arranged to work through a hole at 20 in the bottom 8

of the safe. On the rear edge thereof the rod is provided with a notch 21 which is properly located to be engaged by a small spring detent 23 when the rod 18 is raised and consequently when the catch 14 is engaged with the latch 10. The engagement of the detent 23 is such that it prevents drop of the catch under the influence of the spring 16, but when the detent 23 is disengaged, and the permutation mechanism is properly manipulated, the spring 16 will force down the catch 14 and the rod 18 thereby releasing the latch and allowing the door to be pulled open.

Disengagement of the detent 23 from the notch 21 may be effected by means of a pin or small rod, which has to be inserted through a hole 24 made in the side wall 6 of the safe, said hole being in line with the detent, and when a pin or the like is inserted through said hole the detent is forced out of engagement, allowing the rod 18 to slide down as above described. Access to the hole 24 is controlled by a slide 26, consisting of a thin strip of metal, which may be slid in and out between the side wall 6 of the safe and a cover plate 27 fastened to the outside of said wall. Said plate 27 has a series of notches 28, one of which registers with the hole 24, and the slide 26 has a single notch 29. When the slide 26 is pulled out so that the notch 29 is in line with one of the notches 28 and the hole 24, a pin may be inserted through said notches and hole to spring back the detent 23 as above described. Obviously a knowledge of the manipulation of the slide 26 is necessary in order to permit the operation just described.

The permutation mechanism includes a ratchet wheel 30 which is pivoted at 31 and located between the true bottom 8 of the safe and a false bottom 32 fastened in a base 33 which may be made integral with the bottom of the safe, or otherwise secured thereto. This ratchet wheel 30 is so located that in all positions except one it prevents drop of the rod 18, but the ratchet wheel has a hole 34 therein, and when the ratchet is turned to a predetermined position said hole will be in line with the rod 18, and consequently said rod can drop into the hole, when the detent 23 is released, and thus release the catch. When the hole is not in line with the rod the lower end of said rod will rest upon the upper face of the wheel, and so cannot drop. Therefore in order to release the lock it is

necessary to turn the wheel until the hole 34 is in line with the sliding rod 18, and then to release the detent 23 as above described.

The ratchet wheel is turned from the exterior of the safe by means of a finger piece 35 which is pivoted at 36 to lugs on the side of the base 33. Said finger piece has an inwardly projecting stud 37 which is located opposite a hole in the plate 27 and also opposite a recess 38 in the underside of the bottom 8. Located and working in this recess is the head or end 39 of a sliding rod 40 which works in a guide 41 fastened to the bottom of the safe, and is provided with a spring 42 which is in compression between the guide and a shoulder 43 on the rod and which tends to push the rod outwardly or toward the side wall of the safe. The rod 40 carries a pawl 44 which is pressed to engage with the ratchet wheel 30 by means of a flat spring 45 bearing against a curved piece 46 fixed adjacent thereto, the pawl being pivoted at 47 to the rod 40. A spring detent 48 prevents back slip of the ratchet wheel. When the finger piece 35 is pressed in its stud 37 pushes against the head 39 of the piece 40 and retracts the rod and the pawl 44 carried thereby, which pawl then engages the next tooth in the ratchet 30, and when the pressure on the finger piece 35 is relieved the spring 42 advances the rod and the pawl carried thereby and turns the ratchet wheel one notch or tooth, excessive movement of the rod being prevented by the shoulder 48' against which it stops. By this means, the ratchet wheel 30 may be turned step by step to locate the hole 34 under the sliding rod 18. In order that the operator may know when the ratchet reaches such position I provide an audible signal consisting of a hammer 50 which is pivoted at 51 to an under plate 52 fastened to the bottom of the safe, and said hammer is connected to a spring 53 on one side, and on the other side by a link 54 to a lever 55 one end of which projects into the path of a lug 56 on the underside of the ratchet wheel 30. Said lug is located a predetermined number of teeth from the hole 34. When the wheel is turned tooth by tooth in the manner above described said lug will come in contact with the lever 55 and will swing back the hammer 50 against the tension of the spring 53, and when the ratchet wheel is turned far enough the lever will slip off the lug and release the hammer which will then be pulled by the spring 53 to strike a stud 57 which may conveniently form one of the bolts by which the false bottom 32 is attached to the main bottom 8. When the hammer strikes this bolt a click will be heard, and the operator will then know that he must turn the wheel a predetermined number of teeth additional in order to bring the hole 34 in line with the rod 18.

To lock the safe, after it is opened, the catch 14 is pulled up by hand until the detent 23 engages in the notch in the rod 18. This sets the catch, and the door is then shut, whereupon the latch head 10^a will snap over the head 14^a and the safe will be locked. The slide 26 is then pushed in and the finger piece 35 pushed in one or more times to destroy the combination. Then, to open the safe, the finger piece must be pushed in repeatedly until the click is heard, and the pushes are repeated thereafter the predetermined number to bring the hole 34 under the rod 18. The slide 26 is then pulled out to register the notch 29 with the hole 24, after which a pin may be inserted to release the detent 23, allowing the rod 18 and catch 14 to drop in consequence of the pressure of the spring 16, thereby disengaging the head 14^a from the latch head 10^a, and permitting the door of the safe to be pulled open.

What I claim as new is:—

1. The combination with a safe or the like, of a latch on the door thereof, a catch engageable with the latch, a spring tending to disengage the catch, said catch and spring being located within the safe, a sliding rod connected to the catch, a permutation wheel against which the rod rests, said wheel having an opening into which the rod will enter when registered therewith, and means operated from the exterior of the safe to turn the wheel to register the opening with the rod.

2. The combination with a safe or the like, of a latch on the inner side of the door thereof, a catch within the safe, engageable with the latch when the door is closed, a spring tending to release the catch, a rod connected to the catch, an externally operated permutation device having a recess into which the rod will enter to permit disengagement of the catch when the recess is registered therewith, and an externally operated detent also engaging the rod to normally prevent retraction thereof.

3. The combination with a safe or the like, of a latch on the inner side of the door thereof, a pivoted catch within the safe and engageable with the latch when the door is closed, a spring tending to release the catch, a notched rod connected to the catch and slidable within the safe, and a detent engaging in the notch to prevent retraction of the rod, the wall of the safe having an opening through which an instrument may be inserted to disengage the detent.

4. The combination with a safe or the like, of a latch on the inner side of the door thereof, a pivoted catch within the safe and engageable with the latch when the door is closed, a spring tending to release the catch, a notched rod connected to the catch and slidable within the safe and a detent engaging in the notch to prevent retraction of

the rod, the wall of the safe having an opening through which an instrument may be inserted to disengage the detent, and a slide in the wall of the safe, movable in and out to cover or uncover said opening.

5 5. The combination with a safe having a hollow base, of a latch on the safe door, a catch within the safe, engageable with said latch, a sliding rod connected to said catch,
10 and extending downwardly therefrom into said hollow base, a spring tending to depress the rod and disengage the catch, and an ex-

ternally operated wheel located in said base and on which the lower end of the rod rests to prevent depression thereof, said wheel 15 having an opening into which the lower end of the rod may drop when registered therewith, to permit release of the catch.

In testimony whereof, I affix my signature in presence of two witnesses.

JOSEPH KLOSIENSKY.

Witnesses:

ARNOLD G. HEILZ,
WILLIAM SOVINSKY.