

(No Model.)

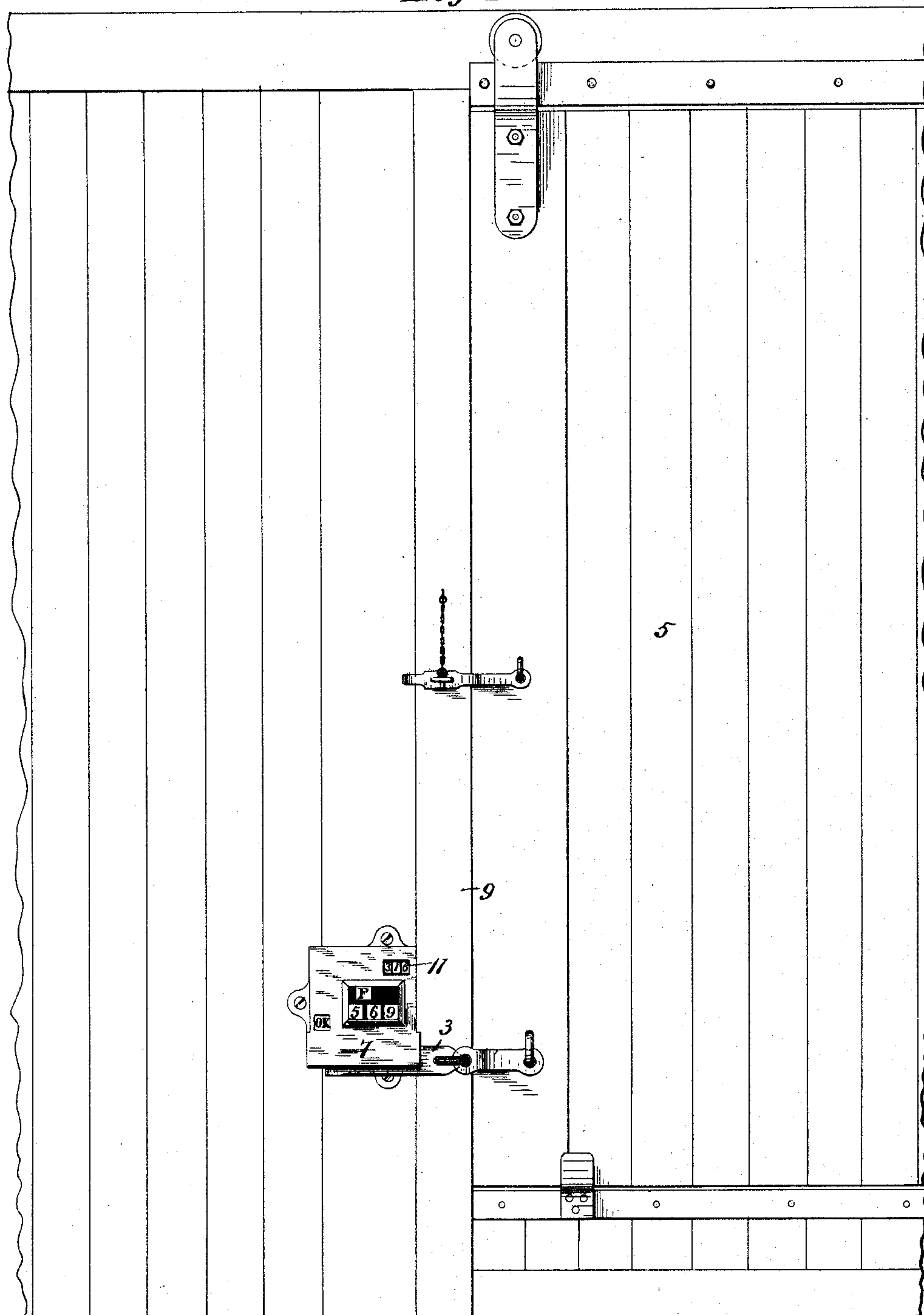
3 Sheets—Sheet 1.

J. C. BARR.
INDICATOR LOCK.

No. 428,710.

Patented May 27, 1890.

Fig. 1.



Witnesses.

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A.M. Gaskill

Inventor.

John C. Barr.
By Paul Merwin attys.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

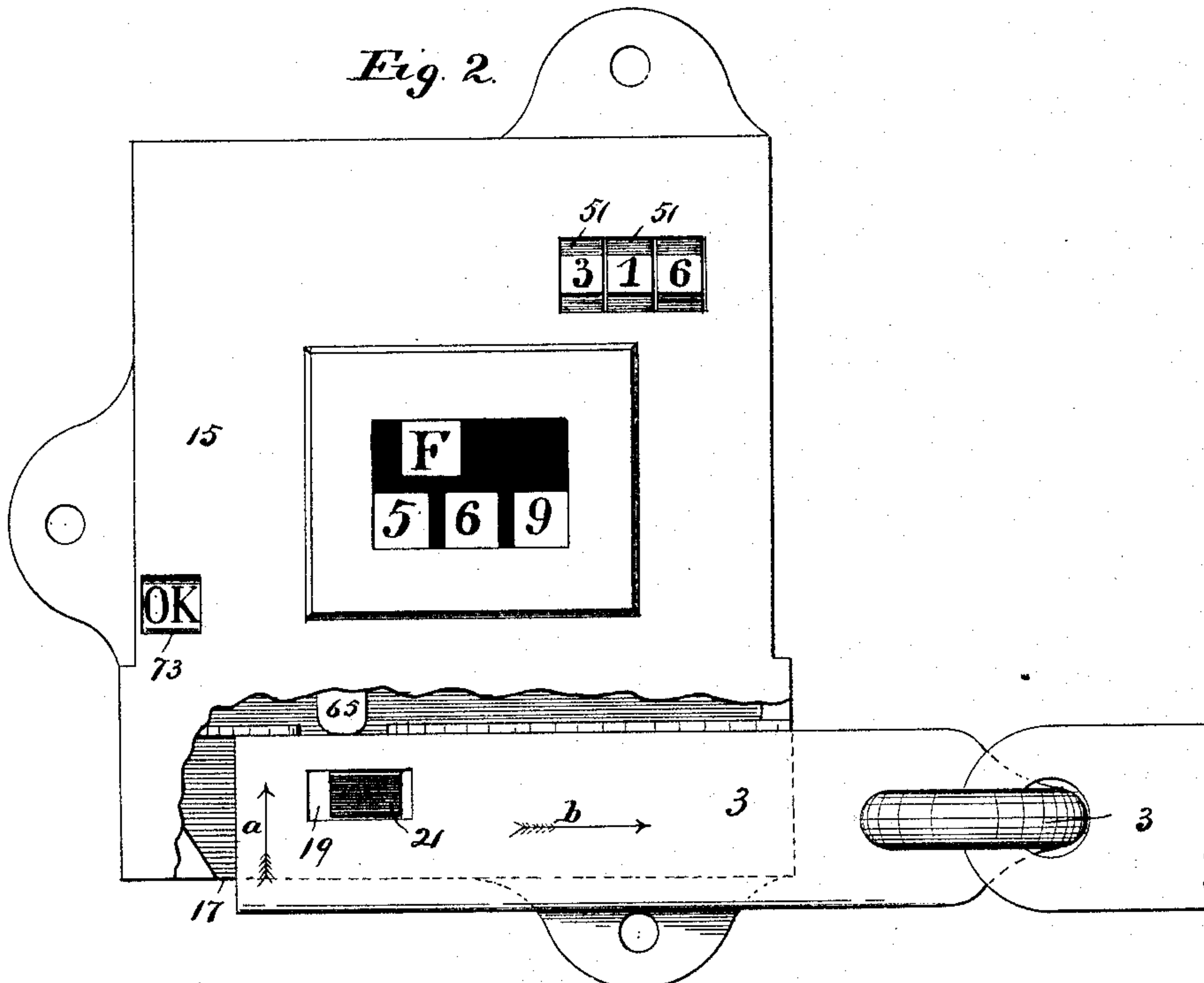


Fig. 3.

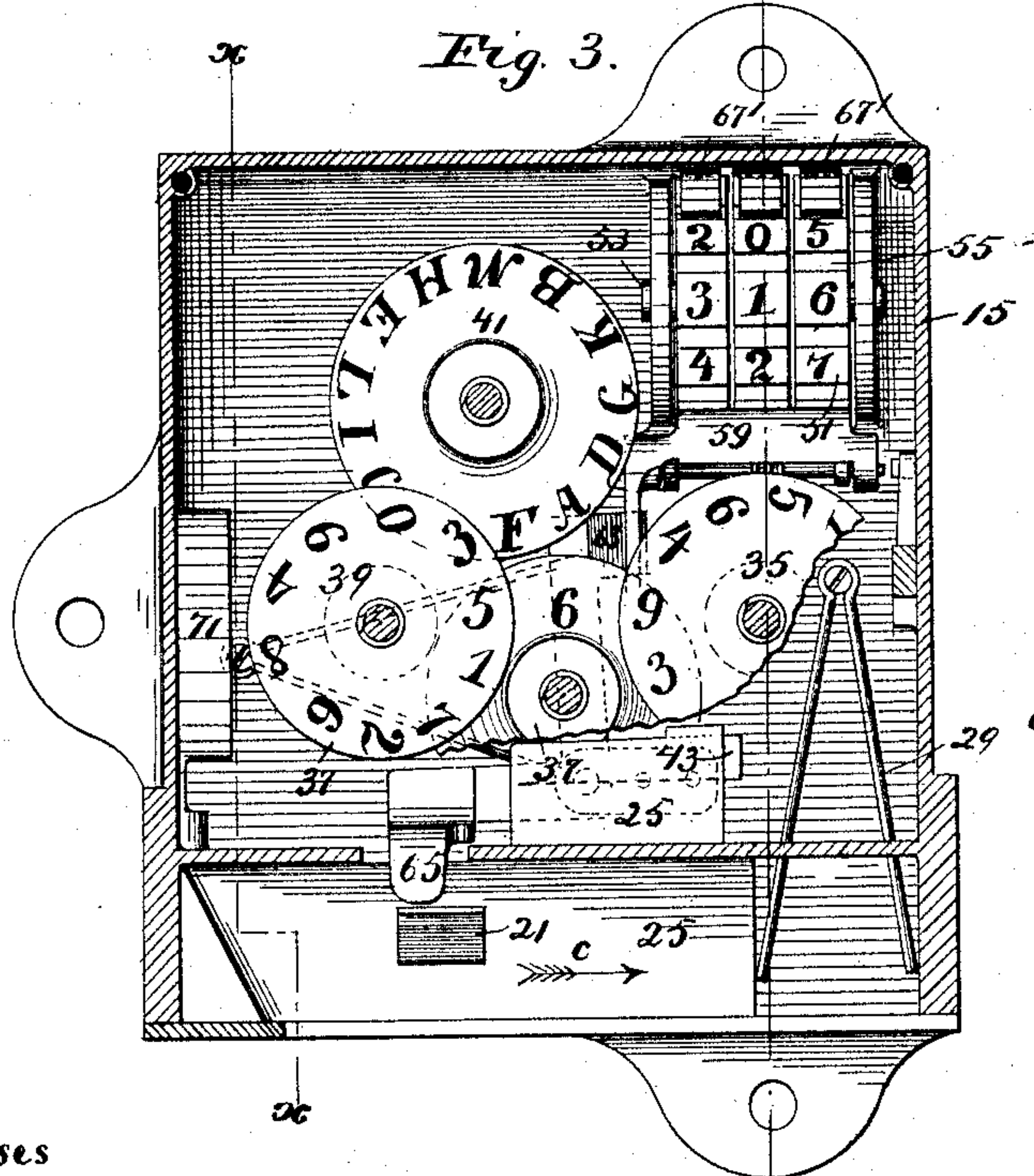
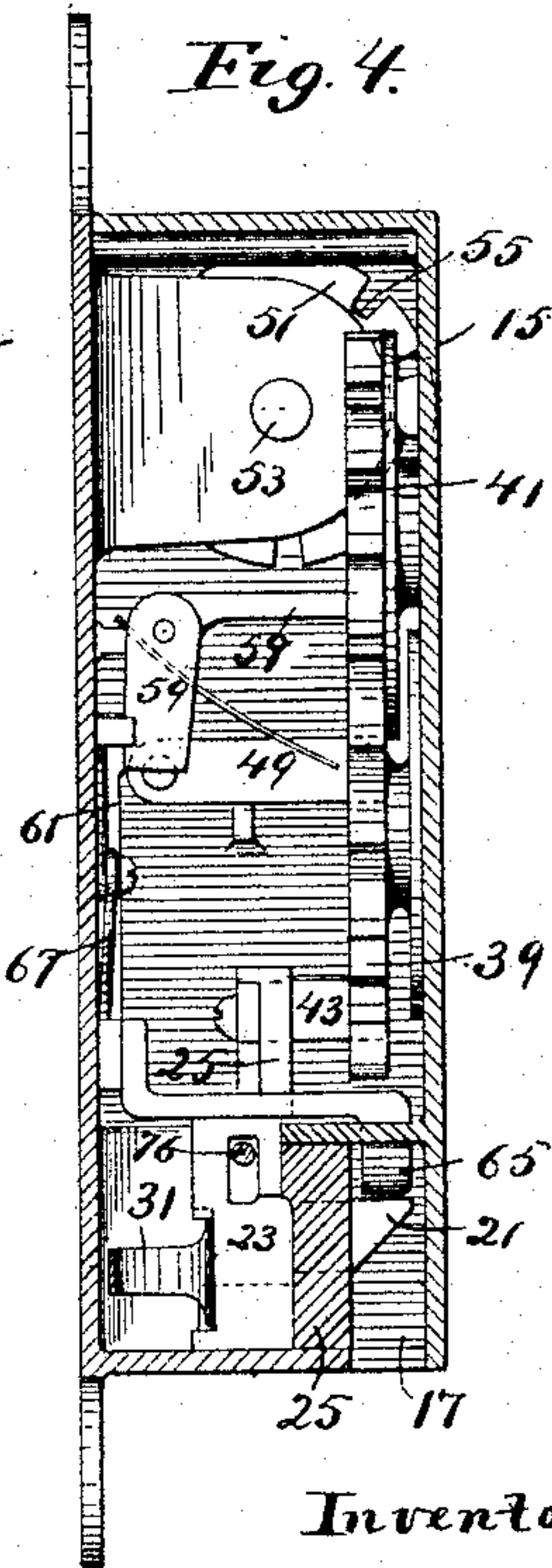


Fig. 4.



Witnesses
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Fig. 5.

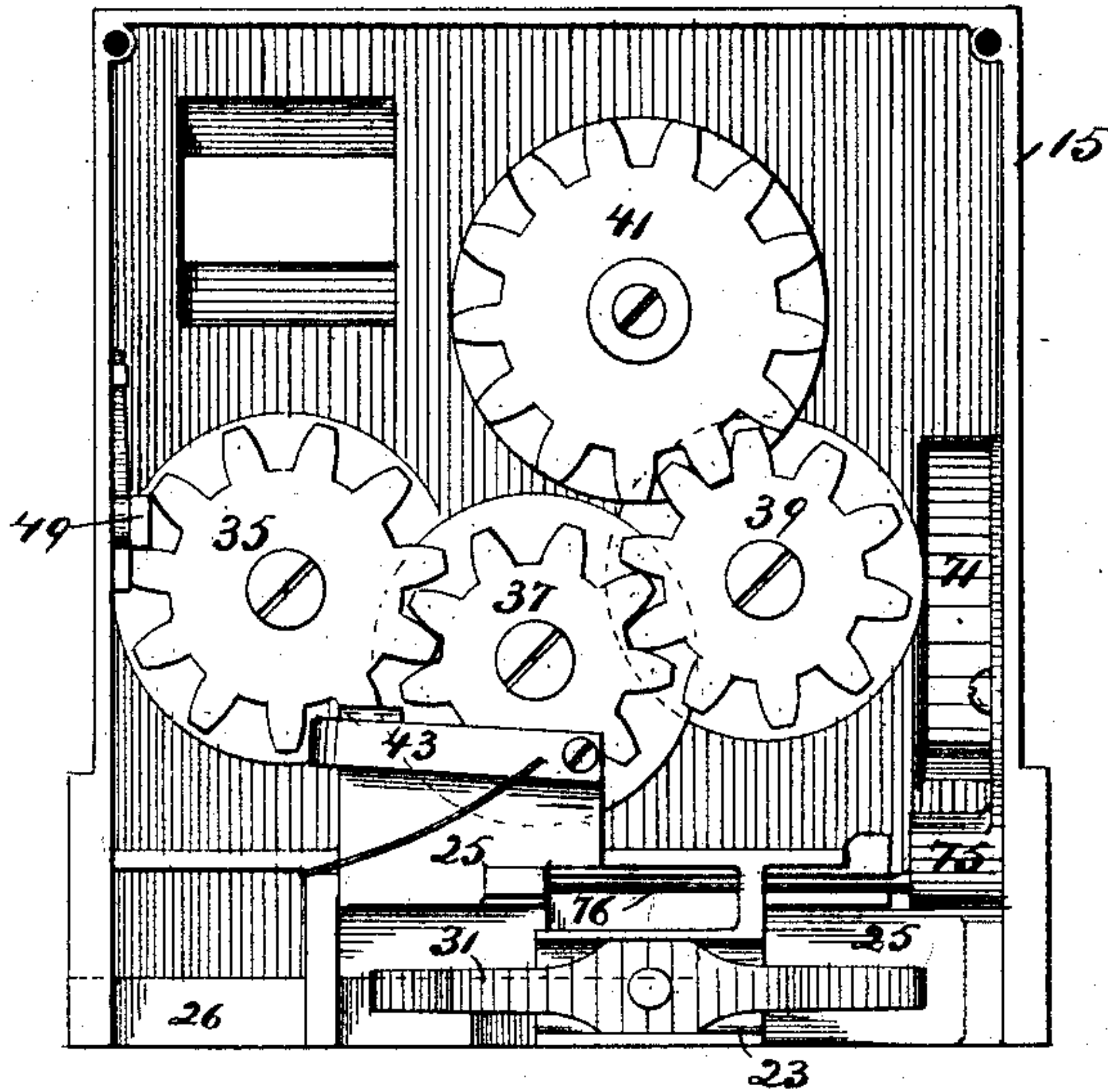


Fig. 6.

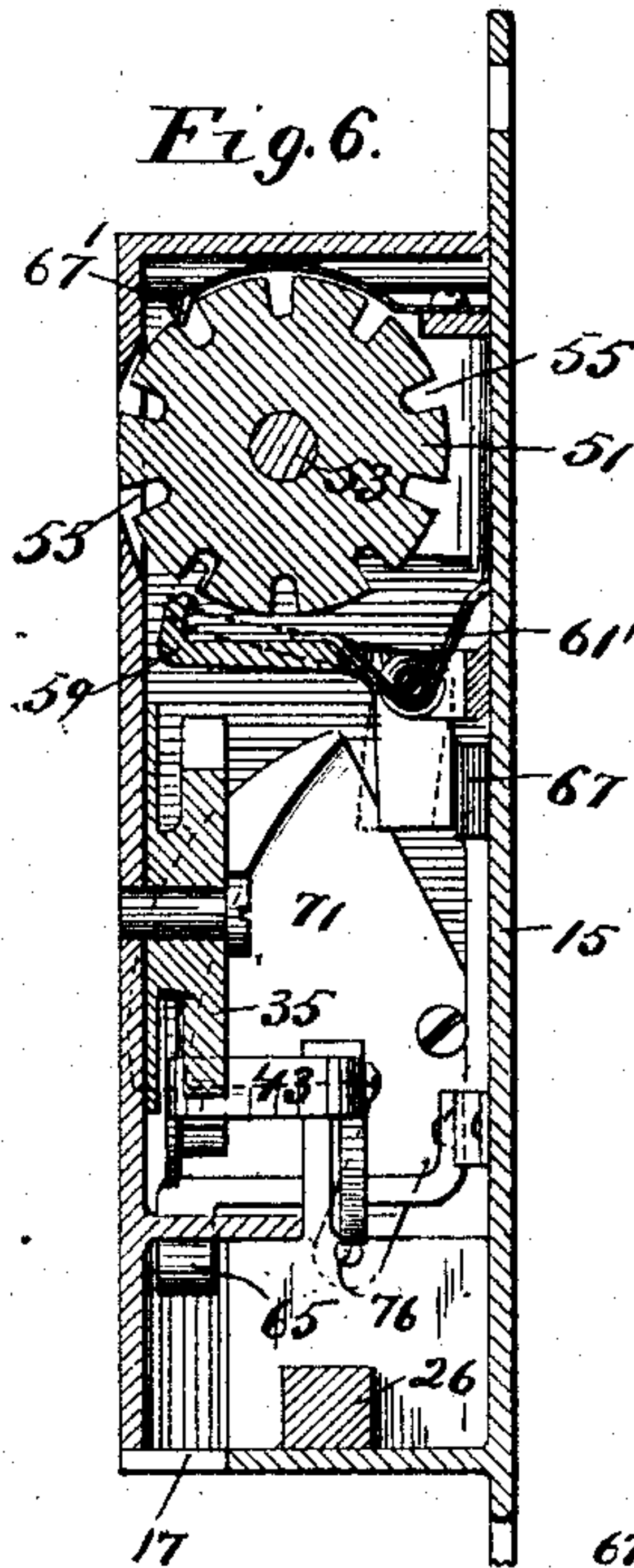


Fig. 7.

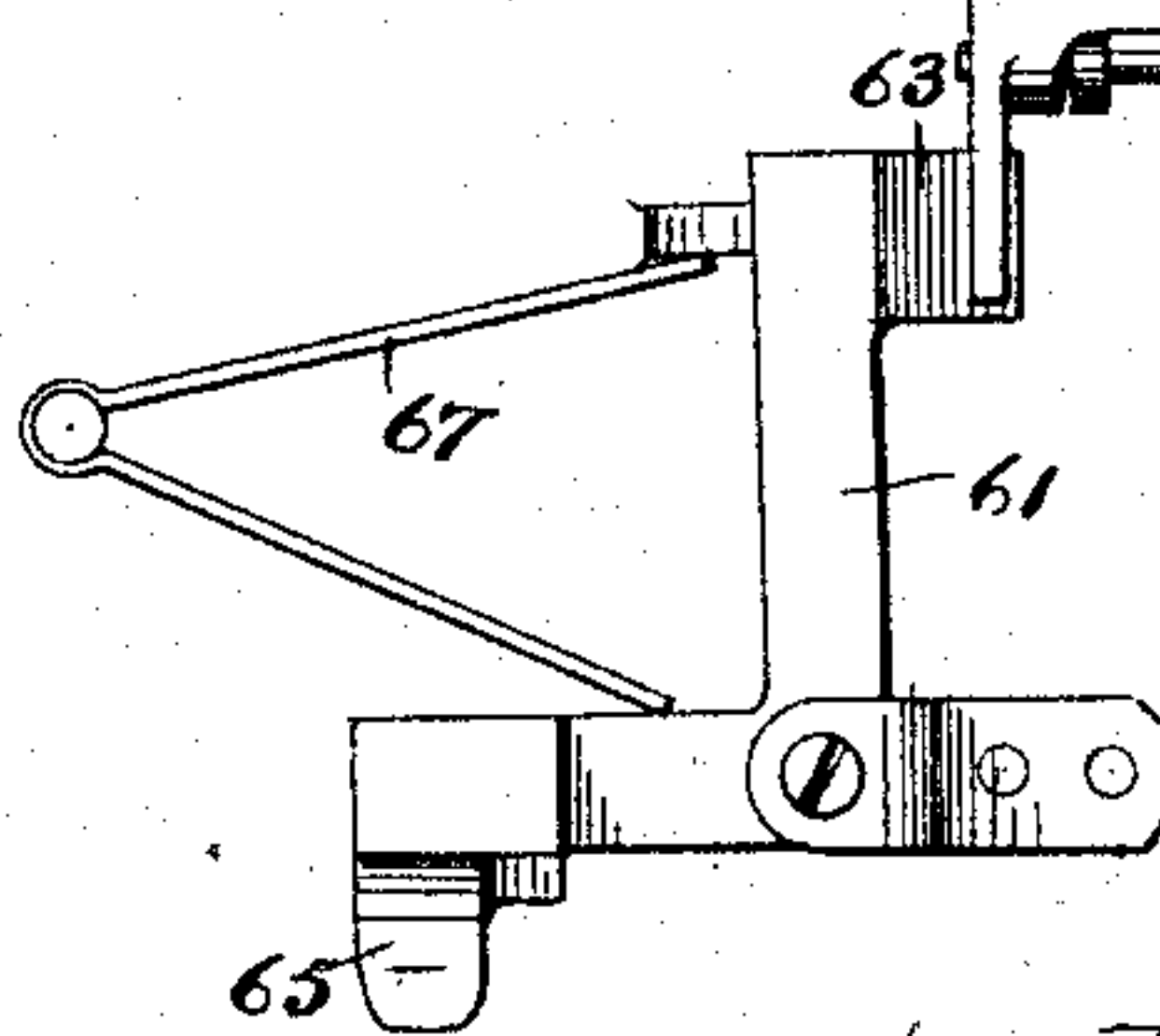
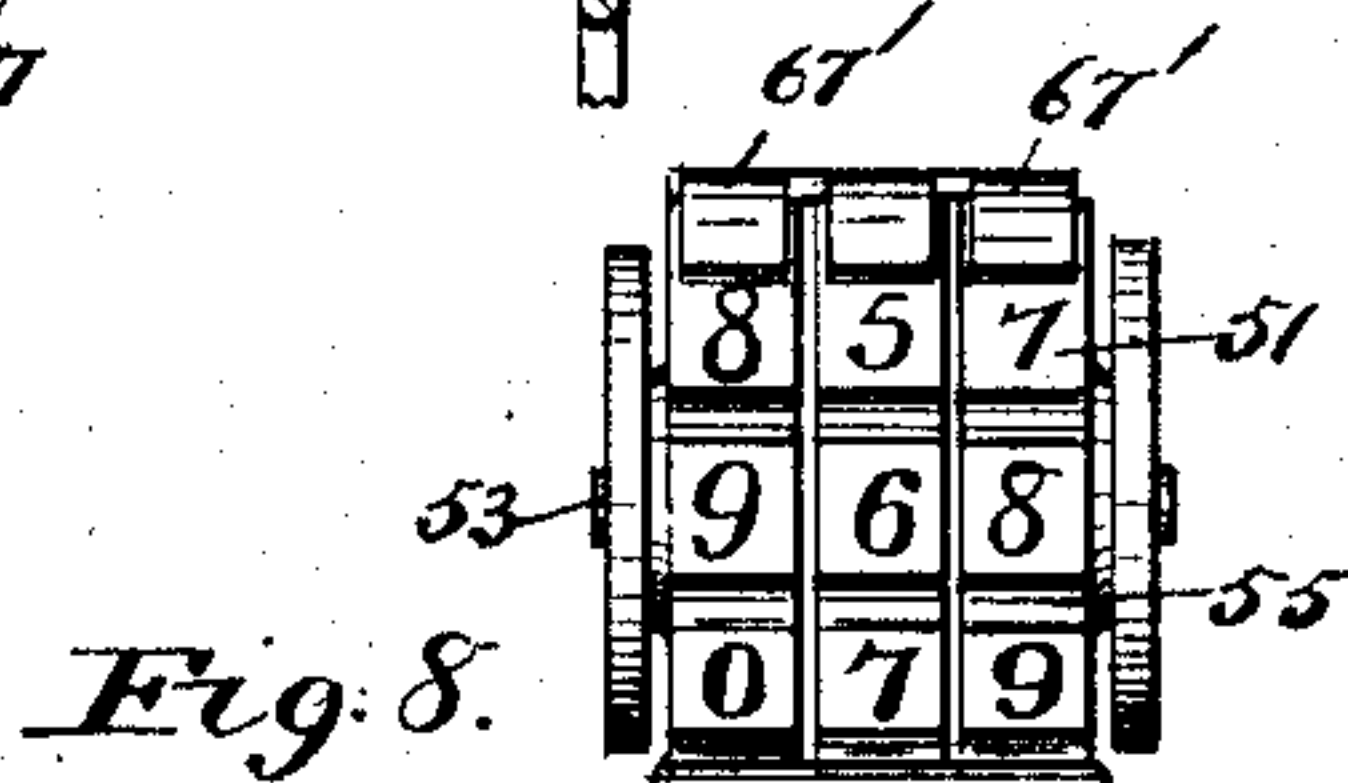
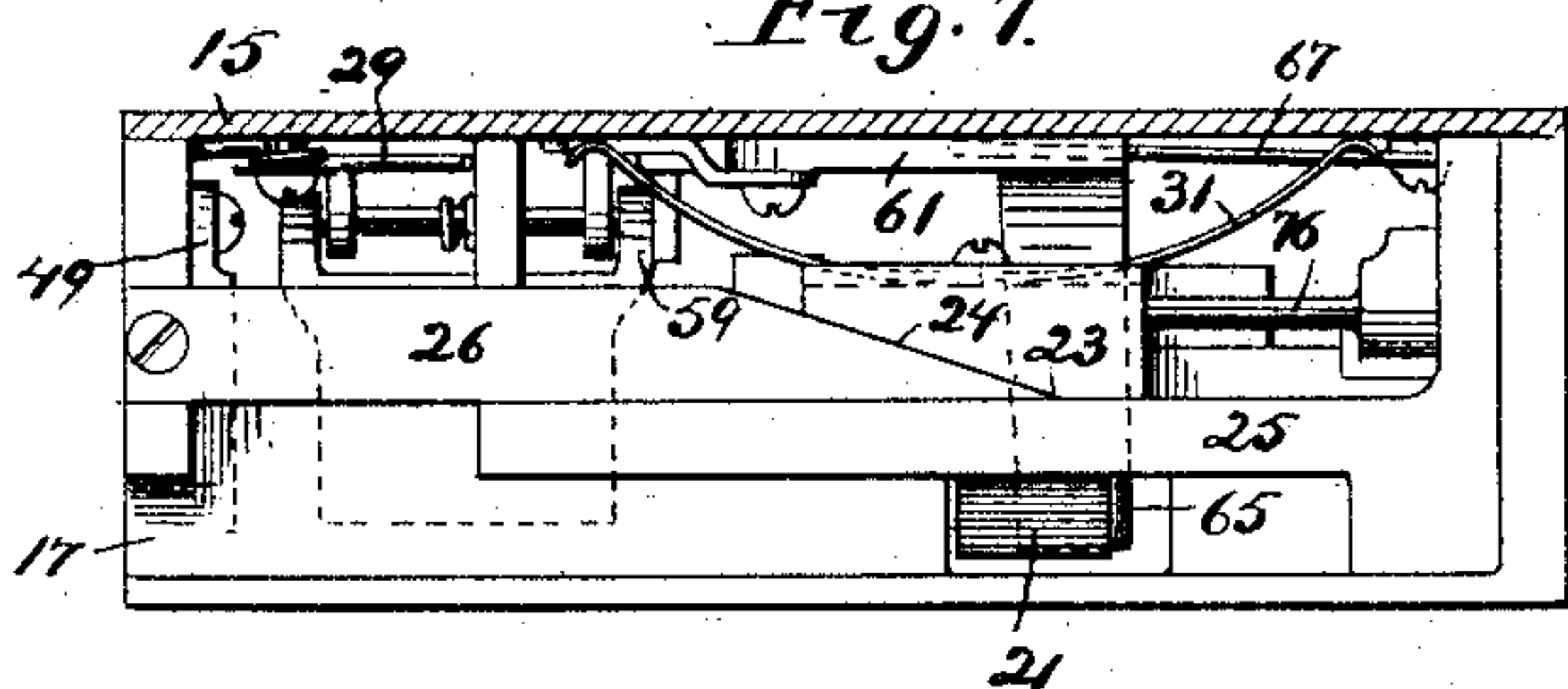


Fig. 10.

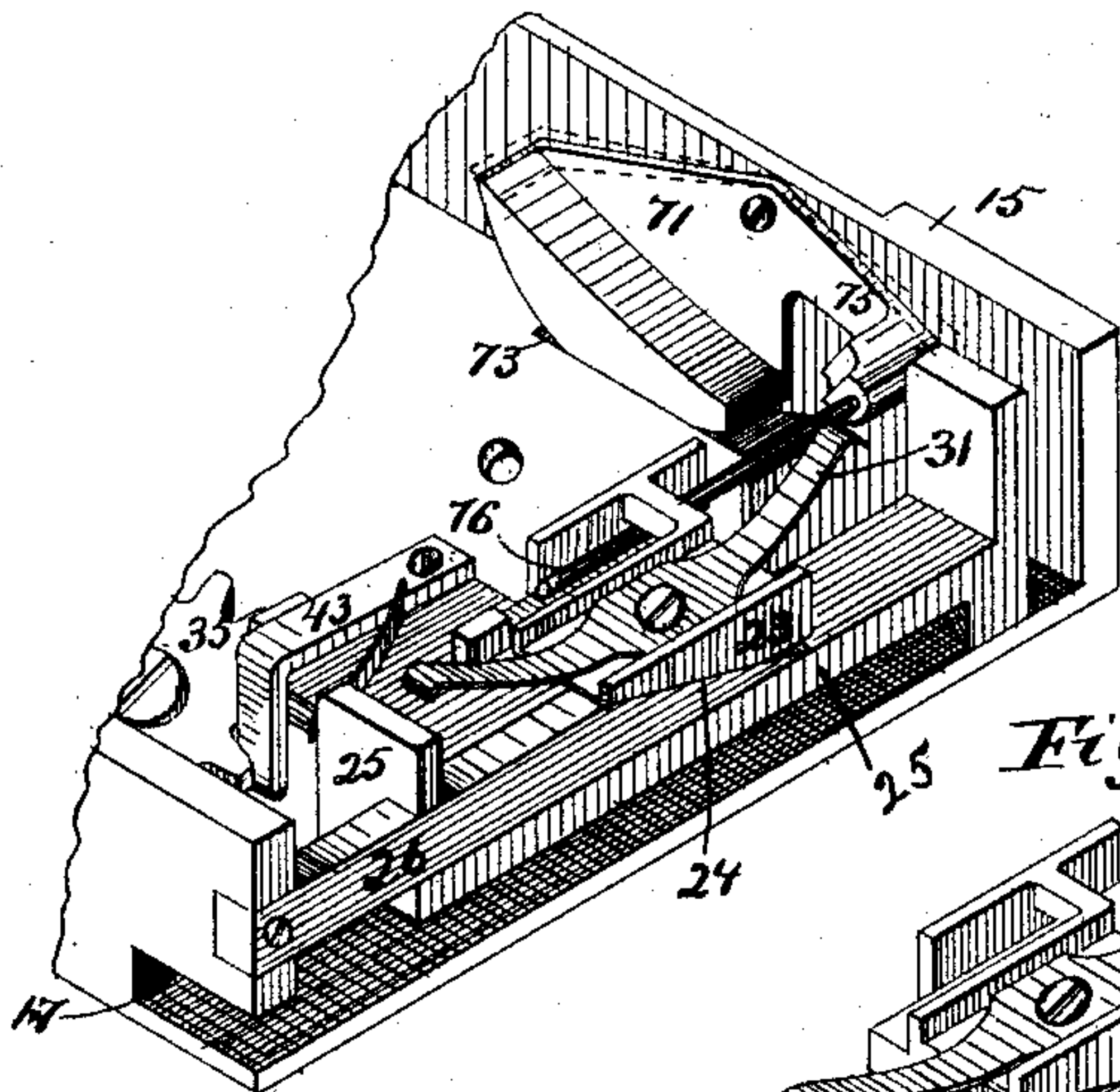
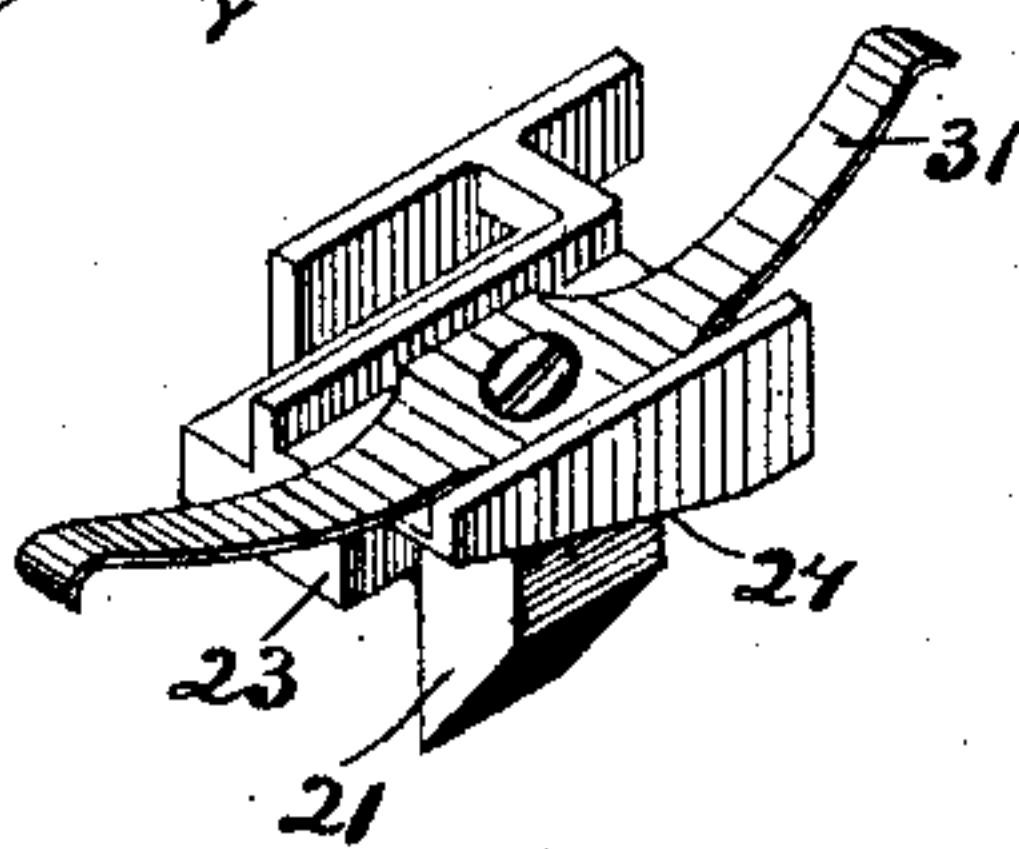
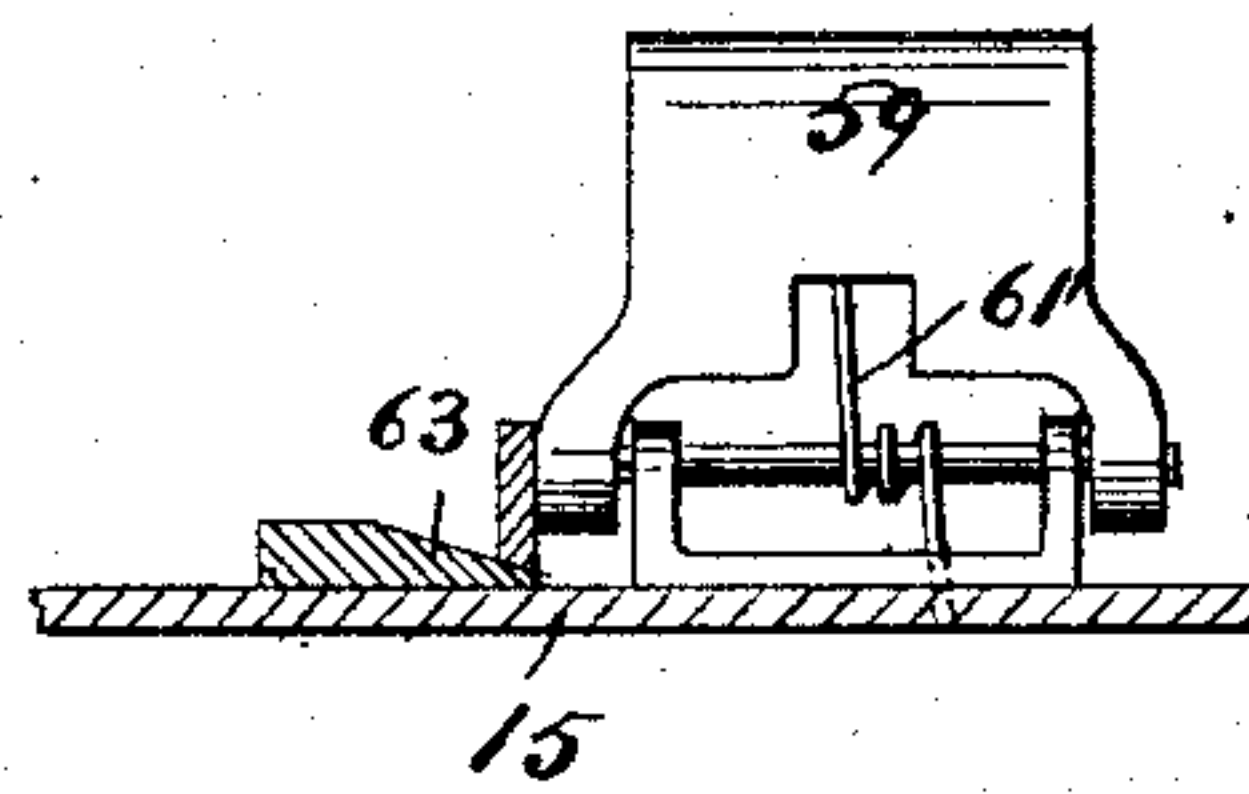


Fig. 11.



Witnesses.
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Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN C. BARR, OF BISMARCK, (DAKOTA TERRITORY,) NORTH DAKOTA.

INDICATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 428,710, dated May 27, 1890.

Application filed February 5, 1889. Serial No. 298,695. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BARR, of Bismarck, in the county of Burleigh and Territory of Dakota, have invented a new and useful Indicator-Lock, of which the following is a specification.

The object of my invention is to provide an indicator-lock designed to take the place of a seal for the doors of cars, warehouses, or other buildings, or for the lids or covers of boxes, chests, or other receptacles.

The invention consists, generally, in an indicator-lock provided with a series of permutation wheels or disks and inclosed in a suitable casing and adapted to receive a suitable hasp, which after it has been engaged with the mechanism cannot be removed therefrom without operating the permutation-wheels, and thereby changing the indicator.

The invention further consists of an indicator which before the device is set can be made to indicate any desired number within its limits, but which is locked when the device is set, and cannot be changed until the indicator is changed.

The invention consists, further, in a safety-indicator to prevent making a "blind seal."

The invention consists, further, in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a portion of a car and car-door with my indicator-lock applied thereto. Fig. 2 is an elevation of the indicator-lock partially broken away to show the hasp in position. Fig. 3 is an elevation with the front plate removed. Fig. 4 is a section on line *x x* of Fig. 3. Fig. 5 is an elevation with the rear plate removed. Fig. 6 is a section on line *y y* of Fig. 3. Fig. 7 is a bottom plan view with the lower plate removed. Fig. 8 is a detail of the indicating mechanism and lock therefor, and Figs. 9, 10, and 11 are details.

I have shown this device applied for use in place of a seal in connection with a car-door, and I have herein described particularly the use of the device upon such a door. It will be understood, however, that I do not confine myself to such an application, as it may be equally well used upon any other door or upon any lid, cover, or slide for any kind of an aperture.

As shown in Fig. 1, a suitable hasp 3 is secured upon the car-door 5.

The indicator-lock 7 is secured upon the outside of the body of the car close to the doorstopper 9. The lock is provided with an indicator 11, which may be used to designate the number of the station at which the car was last set or the person who set it. When the hasp 3 is disconnected from the lock, the number is changed. When the hasp is properly connected with the lock, it is "sealed." The lock is also provided with an indicator, which shows "O. K." when the hasp is in position and properly connected with the lock, and shows a cross (+) when the hasp is in position but is not properly connected with the seal, but forms a "blind lock." The lock is also preferably provided with a series of permutation-wheels, which preferably show one letter and a number consisting of three figures. Any number of figures or letters, or both, may be used in the permutation device.

The hasp can at any time be connected with the lock without changing the combination shown by the permutation-wheels; but it cannot be disengaged therefrom without changing the combination or, in other words, "breaking the seal."

The lock itself consists, preferably, of a suitable casing 15, which is provided with a slot or recess 17, which is adapted to receive the hasp. This recess preferably opens through the bottom of the casing, and also through the side wall thereof, thus permitting the hasp to be inserted by moving it up through the bottom of the recess in the direction indicated by the arrow *a* in Fig. 2, and which can only be removed by opening the car-door, and thereby moving it in the direction of the arrow *b* in the same figure.

The hasp is provided with a recess 19, and projecting into the recess into which the hasp fits is a spring-catch 21, that is adapted to engage this recess. This catch 21 is formed upon a block 23 and extends through an opening in a bolt 25. The bolt 25 forms the rear wall of the recess in which the hasp fits. The bolt 25 is capable of a limited movement in the direction of the arrow *c* in Fig. 3 toward the open end of the recess which receives the hasp. A spring 29 is arranged to bear against the bolt 25 and hold it in the retracted position shown in Fig. 3. A spring 31 is arranged back of the block 23 and holds it forward

against the sliding bolt 25, and causes the catch 21 to project through the opening in the sliding bolt 25. The under side of the catch 21 is beveled, as shown in Figs. 3 and 4, so that as the hasp is inserted from the under side of the casing it strikes against the beveled surface of the catch and forces the catch back and permits it to engage the recess in the hasp. The hasp may thus be connected with the lock without operating the permutation device.

The block 23 is provided on the side next to the sliding bolt 25 with an inclined face 24, which rests against the inclined face of a stationary wedge 26. (See Fig. 7.) As the bolt 25 moves in the direction of the arrow *d* in Fig. 7, the block 23, being connected to the sliding bolt 25 by the catch 21, moves with the said bolt 25, and at the same time as its wedge-shaped face rides over the face of the wedge 26 the block 23 is moved laterally away from the bolt 25, and the catch 21 is gradually retracted until its end is brought flush with the bolt 25. This movement of the bolt 25 will be effected by opening the car-door and drawing the bolt against the tension of the spring 29 by means of the connection of the hasp with the catch 21. As soon as the catch 21 is drawn back flush with the surface of the bolt 25 the hasp will be released, and then the bolt and the catch will be returned to their former positions ready for the next insertion of the hasp.

During the forward movement of the bolt 25 before the hasp is released the permutation mechanism will be operated for the purpose of changing the number shown by the indicator. This permutation mechanism consists of a series of toothed wheels 35, 37, 39, and 41. (Four wheels are here shown, though any preferred number may be used.) These wheels are geared together, as shown in Fig. 5, and they are provided with a series of figures or letters arranged in any preferred manner. These figures and letters are preferably arranged promiscuously, not consecutively, so that it will be impossible to anticipate what combination will be shown when the register is operated. These wheels are preferably of different diameters and are provided with different numbers of teeth. For example, as here shown, the wheel 35 is provided with eleven teeth, the wheel 37 with nine teeth, the wheel 39 with ten teeth, and the wheel 41 with thirteen teeth. By this arrangement each combination shown by these wheels can be repeated only after a number of changes equal to the multiple of the number of teeth upon all of the wheels. For example, in this case, starting at "J 269," it requires eleven multiplied by ten by nine by thirteen, equaling twelve thousand eight hundred and seventy, strokes of the bolt 25 to repeat this combination.

Each wheel is preferably provided with a disk which is equal to or exceeds the diameter of the wheel, and upon this disk the fig-

ures or letters are placed. The wheels 35 and 39 are preferably arranged with a space between the disk and the main part of the wheel, which permits the disks of these wheels to overlap that of the center wheel, and thus bring the numbers close together at the point where they are shown through the opening in the casing.

The casing is provided with suitable openings through which one figure or letter upon each wheel is shown.

In Fig. 2 the combination shown is "F 569," which will be the indicator-mark when the permutation-wheels are in this position.

A spring-dog 43 is arranged upon the sliding bolt 25 and engages the wheel 35, so that each time the bolt is moved forward each wheel is moved one notch.

A stop-pawl 49 is provided to engage the wheel 35 and prevent any backward movement thereof.

Arranged in the casing and opposite a suitable opening therein are a series of wheels 51, arranged loosely upon the shaft 53. Each of these wheels is preferably provided upon its circumference with a series of figures from 0 to 9, and is also provided with a series of radial notches 55. A spring-pawl 67' is arranged to engage each wheel to prevent a backward movement thereof. A pivoted locking-dog 59 is arranged within the casing and is adapted to engage one notch in each of the wheels 51, thereby locking the wheels. The wheels may be set so that any number on each wheel will be shown through the opening in the front of the casing. I prefer to provide mechanism by which these wheels will be locked whenever the hasp is connected with the lock or the car is "sealed" and will be released whenever the number is changed. For this purpose the dog 59 is provided with a spring 61', which tends to hold it out of engagement with the wheels 51.

A bell-crank lever 61 is arranged within the casing and is provided with a wedge-shaped end 63, that is adapted to pass under the rear end of the dog 59 and throw the other end of the dog forward into engagement with the wheels 51. The lever 61 is provided with a projection 65, that extends into the recess in the casing into which the hasp is inserted. The position of this projection is such that the hasp cannot be inserted into the recess without raising the projection 65, and thereby forcing the wedge-shaped projection on the other end of the lever 61 under the dog 59, and thereby engaging the dog with the wheels 51.

A spring 67 is arranged to withdraw the lever 61 from engagement with the dog 59 and permit that dog to be disengaged from the wheels 51 as soon as the hasp is drawn away from the projection 65.

A plate 71 is pivoted within the casing, and is preferably provided with the letters "O.K." and with a cross, (+), either of which may be shown through an opening 73 in the front of

the casing. This plate is preferably in the shape of a sector of a circle, and its periphery is arranged to move over the opening 73 in the casing, and upon this periphery are the letters "O. K." and the cross, (+.) This plate is pivoted to the end wall of the casing and is provided with an arm 75, to which is secured a pin 76, which projects into a recess in the block 23. When the block 23 is in its normal position, with the catch 21 projecting through the sliding bolt 25, as it will be when the hasp is in position and the catch is in engagement with the slot therein, the plate 71 will be in position to bring the letters "O. K." on its periphery opposite the opening 73 in the casing. As the block 23 is moved away from the sliding bolt 25, the plate 71 is turned upon its pivot, so that when the catch 21 is drawn back flush with the surface of the bolt 25 the cross (+) on the periphery of the plate 71 is brought opposite the opening 73 in the casing. If, therefore, the hasp is inserted into the recess in the casing in such position that the catch 21 cannot engage the recess in the bolt, this indicator will show the cross at the opening in the casing, and therefore will show that the device is not properly engaged. Whenever the hasp is inserted into the recess in the casing, the letters "O. K." will be shown by this indicator, and it will thus be known that the device is properly engaged.

It will be seen that this device forms a continuous automatic indicator which cannot be counterfeited, and which may be used any number of times, thus avoiding the expense and annoyance occasioned by the ordinary system of sealing, in which the seals may be easily counterfeited, and which requires a constant renewal of the seals.

I do not confine myself to the details of construction of the mechanism herein shown, as the same may be varied without departing from my invention.

I claim as my invention—

1. An indicator-lock comprising, in combination, a suitable casing, a sliding bolt arranged therein, a series of permutation-wheels adapted to be operated by said bolt, a hasp, and a spring-catch connected with said bolt and arranged to engage said hasp, and adapted to permit said hasp to be engaged with the catch without moving the bolt, but permitting said hasp to be withdrawn only by moving the sliding bolt and operating the permutation-wheels, substantially as described.

2. In an indicator-lock, the combination of a series of permutation-wheels, a spring-catch, and a hasp which is adapted to be engaged with said catch without moving said wheels, but cannot be disengaged therefrom without moving said wheels, substantially as described.

3. In an indicator-lock, the combination, with the series of permutation-wheels, of the

sliding bolt 25, the sliding block 23, provided with the beveled catch 21, passing through said bolt 25, and a hasp adapted to be engaged with said catch without moving said bolt, but incapable of being disengaged therefrom without moving said bolt and operating said permutation-wheels, substantially as described.

4. In an indicator-lock, the combination, with a series of permutation-wheels, of a sliding bolt 25, connected therewith, a movable wedge-shaped block 23, provided with a beveled catch 21, projecting through said bolt, a stationary wedge 26, against which said block 23 is arranged, and a hasp 3, having a slot adapted to engage said catch 21, whereby said hasp may be connected with said catch without moving said bolt, and whereby as said hasp is withdrawn the sliding bolt is moved, the permutation-wheels are operated, and the hasp is released, substantially as described.

5. In an indicator-lock, the combination, with a suitable casing, of a series of permutating gear-operated indicating-disks provided with a series of promiscuously-arranged characters, each disk being provided with a different number of characters, and the number of characters thereon corresponding to the number of cogs in the gear-wheel to which said disk is attached, lock mechanism for operating said indicating-disks, and a suitable hasp adapted to engage said lock mechanism and arranged to turn all of said disks each time it is withdrawn, whereby when said hasp is withdrawn unknown combinations of characters will be made visible, substantially as described.

6. In an indicator-lock, an indicating device consisting of a series of wheels 51, provided with figures upon their faces and with a series of radial slots, and a locking-dog adapted to engage all of said wheels and to be thrown into engagement therewith when the indicator is set, substantially as described.

7. In an indicator-lock in which a hasp is engaged by a spring-catch, a safety-indicator consisting of a pivoted plate adapted to move with said catch and provided with characters which show the position of the catch, substantially as described.

8. In an indicator-lock, the combination, with the movable block 23, provided with the catch 21, of the pivoted plate 71, provided with the marks or characters upon its face and having the arm 75, provided with the pin 76, engaging said block 23, substantially as described.

In testimony whereof I have hereunto set my hand this 16th day of November, 1888.

JOHN C. BARR.

In presence of—

A. C. PAUL,

T. D. MERWIN.