

Sheet 1, 2 Sheets.

E. M. & J. E. Mox.

Indicator Lock.

N^o 98,513.

Patented Jan. 4, 1870.

Fig. 3.

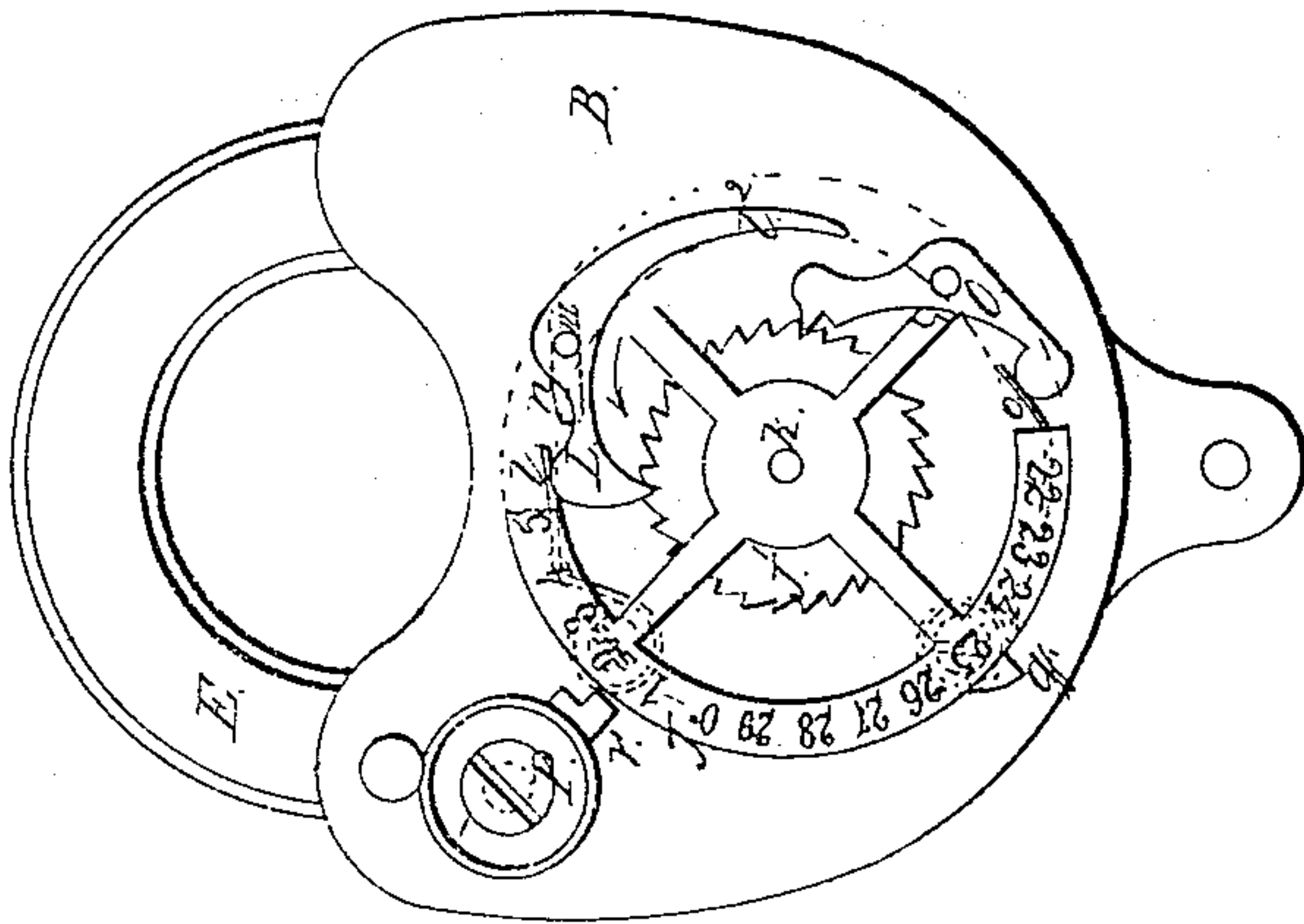


Fig. 2.

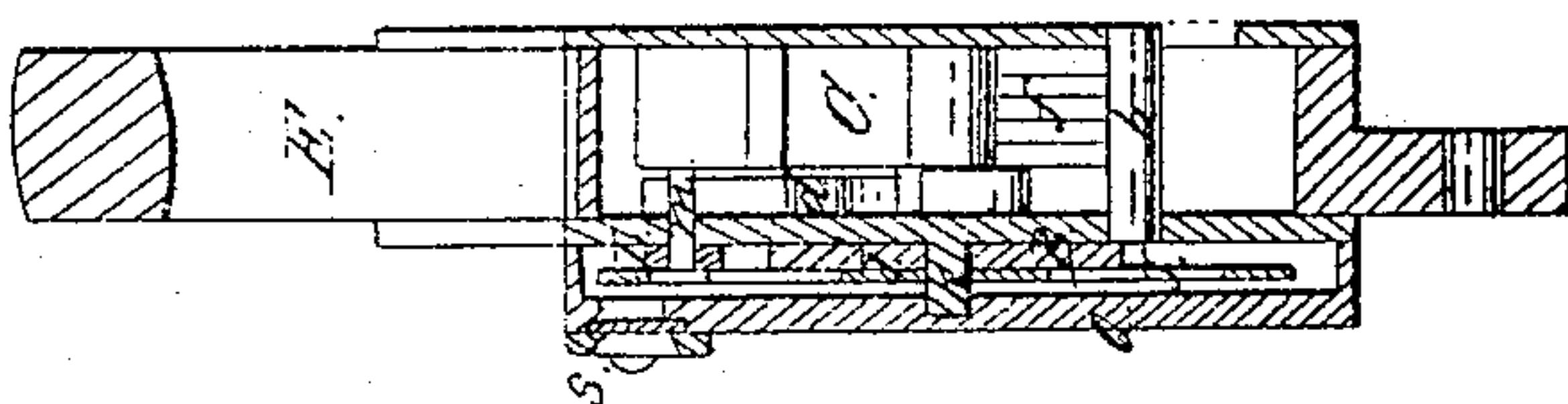
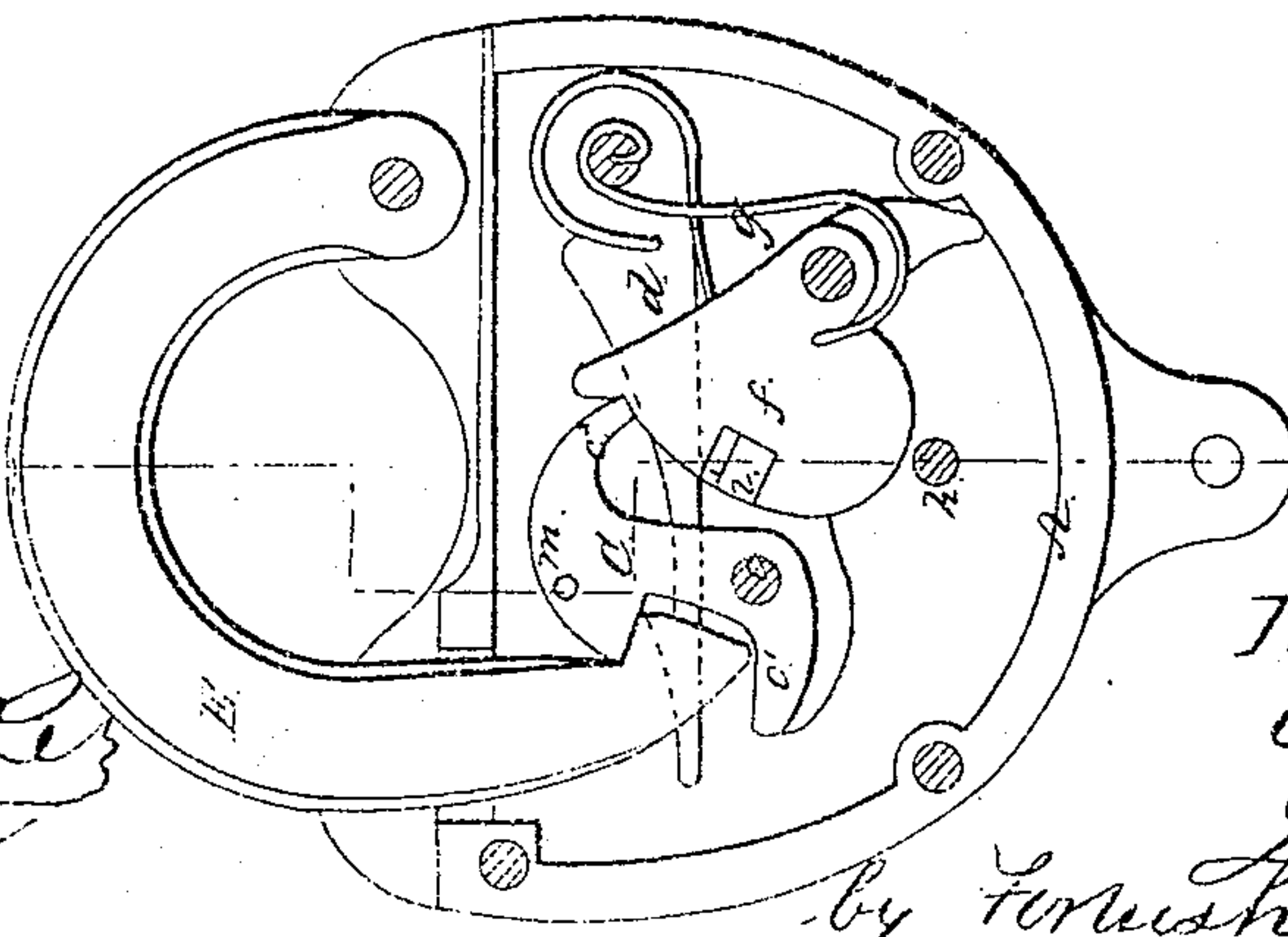


Fig. 1.



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Sheet 2, 2 Sheets

E. M. & J. E. Mix.

Indicator Lock.

N^o 98,513.

Patented Jan. 4, 1870.

Fig. 6.

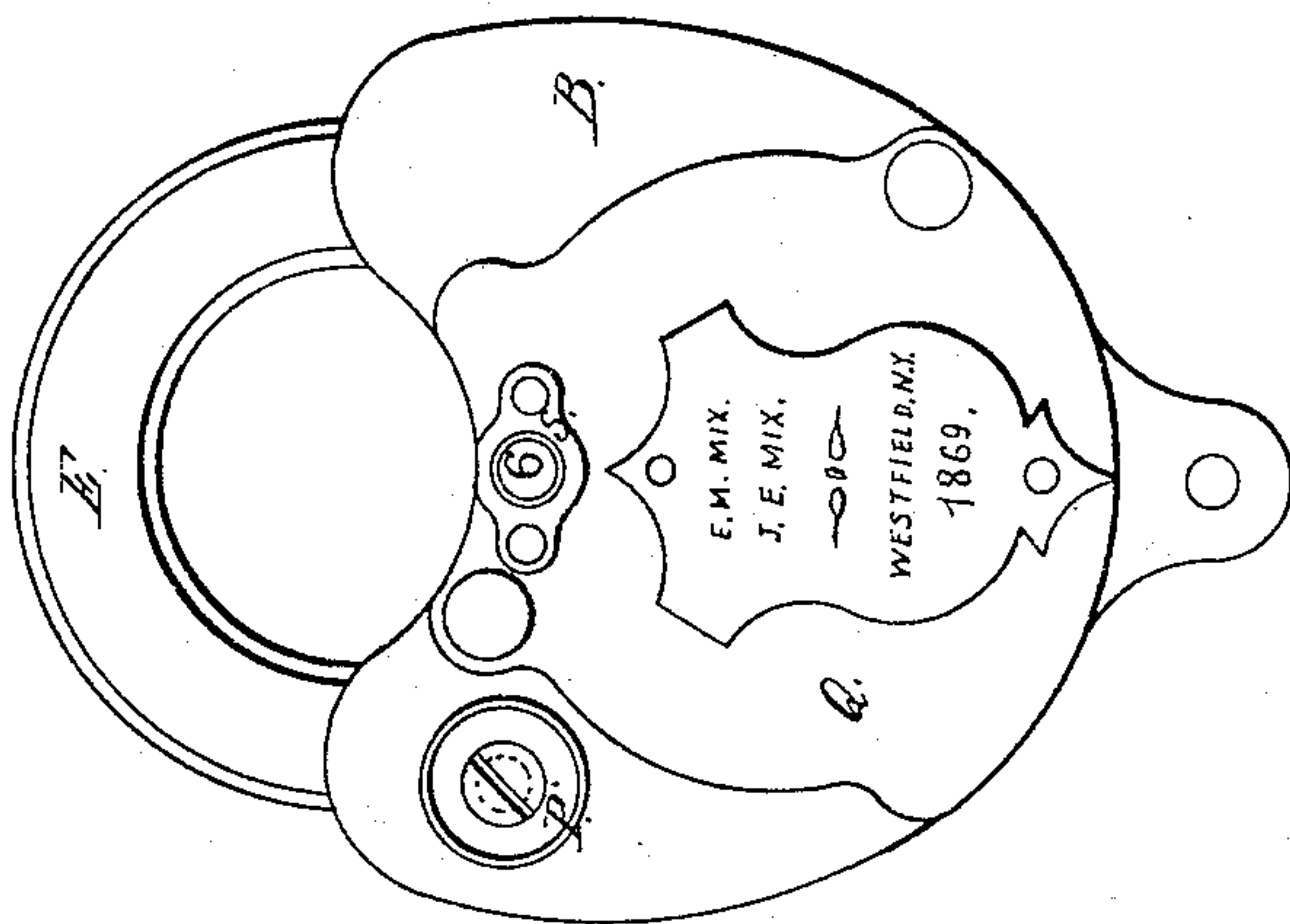


Fig. 5.

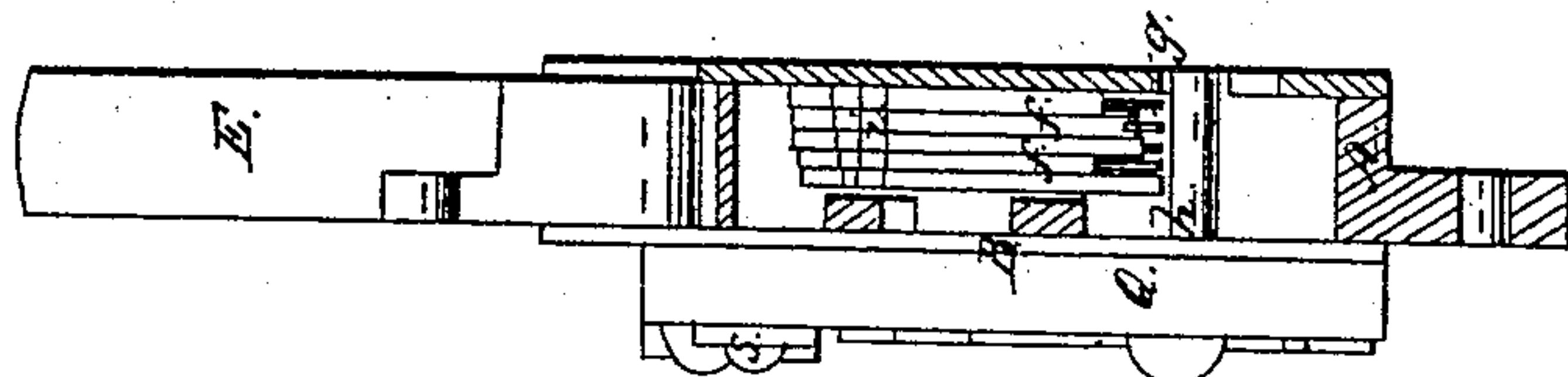
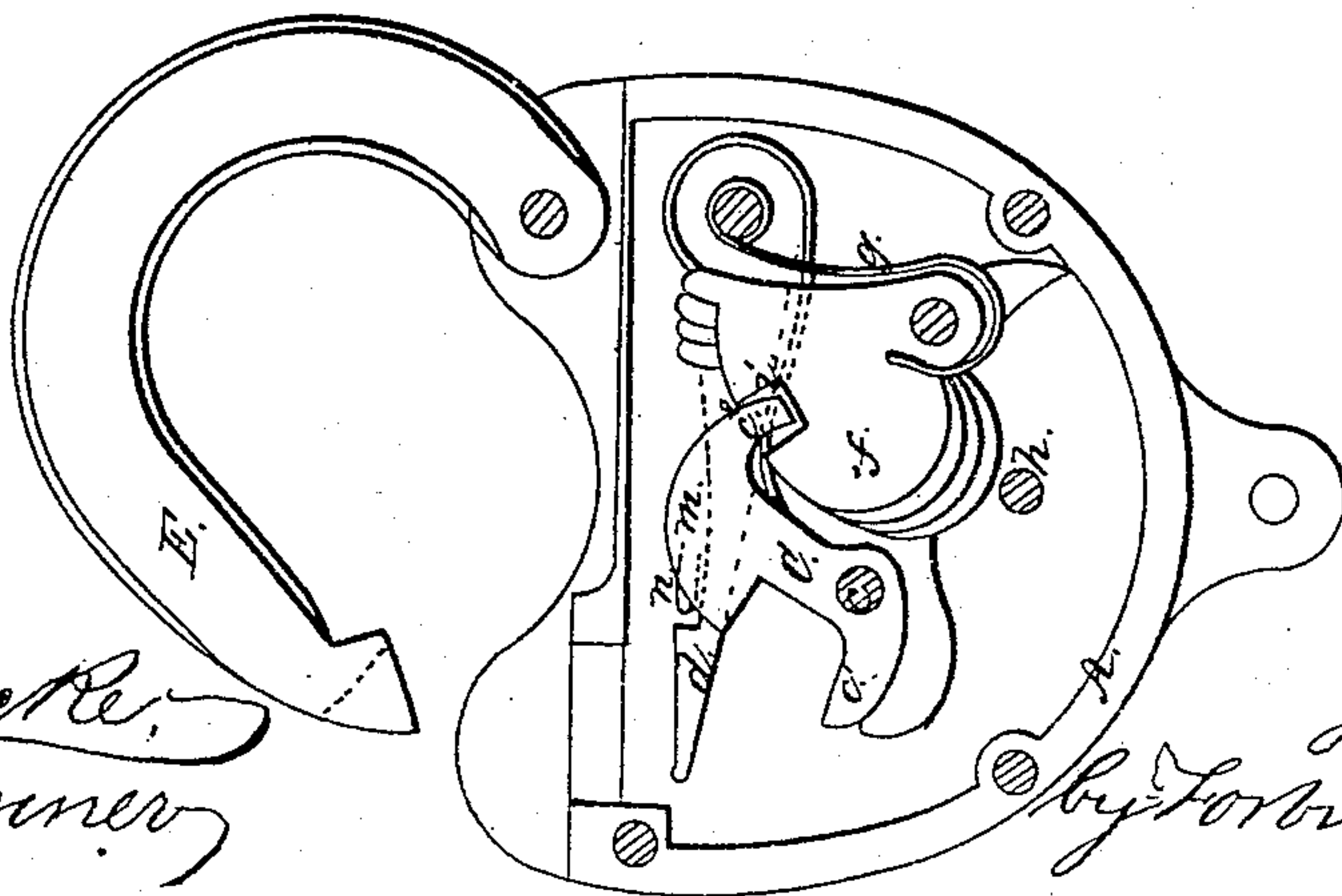


Fig. 4.



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Letters Patent No. 98,513, dated January 4, 1870; antedated July 27, 1869.

IMPROVEMENT IN INDICATOR-LOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, E. M. MIX and J. E. MIX, of Westfield, in the county of Chautauqua, and State of New York, have invented certain new and useful Improvements in Indicator-Locks; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure I is a face view of a padlock, with the face-plate removed, representing the mechanism in a locked position.

Figure II is a cross-section, in line *xx*, Fig. I, showing a front edge view of the locking-mechanism.

Figure III is a face view of the lock, with the plate covering the indicator-wheel removed.

Figure IV is a face view similar to Fig. I, except that the mechanism is shown in an unlocked position.

Figure V is a cross-section of the case, showing a front elevation of the tumblers in the position required for releasing the locking-catch.

Figure VI is a face view of the lock, complete.

Like letters of reference designate like parts in each of the figures.

Our invention relates to that class of locks in which a numbered wheel or wheels, intermittently moved by suitable mechanism each time the lock is opened, are employed to indicate, by exposing a certain number, the number of times the lock has been thus opened.

In one device already patented the indicator-mechanism is operated by the key in opening the lock. This mode of operation is defective, from the fact that the lock can be picked and opened without disturbing the indicator.

The object of our invention is to remedy this defect, and, at the same time, simplify and cheapen the required mechanism.

To accomplish this, our invention consists—

First, in connecting the actuating-mechanism of an indicator-wheel directly with the locking-bolt or catch, so that the latter cannot be withdrawn or the hasp released, without changing the position of the indicator-wheel and exposing a different number.

Second, in employing, in connection with a numbered wheel thus operated, a sealed stop, which will arrest the movement of the wheel when the maximum number thereon is exposed, and also by means of the connection with the locking-bolt or catch, prevent the latter being withdrawn or the lock opened, without first breaking the seal and disengaging the stop, even although the proper key is employed, and the tumblers moved to the required position for unlocking.

Third, in the construction and arrangement, with the pawl which actuates the indicator-wheel, of a guard detent, to prevent the wheel being moved more than

one degree by a single movement of the locking-catch and actuating-pawl.

In the drawings—

A is the padlock-case, B, the front plate thereof, C, the locking-catch, oscillating on a pivot, *c*; *d* is the spring-arm, which throws open the hasp E; *f f* are the tumblers, and *g g* springs attached thereto; and *h* the key-post, which, together, form the mechanism of the simple padlock.

The operation of this lock is as follows:

The lock being open, as shown in Fig. IV, the locking is effected by closing the hasp, the rebate in the end thereof depressing the spring-arm *d*, while the end of the hasp, pressing on the arm *c'* of the locking-catch, brings the latter in engagement therewith.

This disengages the locking-catch from the tumblers, which are thrown, by the springs *g*, into the position shown in Fig. I, in which they serve as a stop, to prevent the withdrawal of the catch from its engagement with the hasp.

In unlocking, the key forces back the tumblers to the position indicated in Fig. IV, which releases the locking-catch and brings the notches *i* therein in coincidence, as shown in Fig. V.

The locking-catch being thus released, the spring-arm *d* throws open the hasp and causes the locking-catch to oscillate backward, the tongue *c'* thereof entering the notches *i*, to which it is now opposite.

J represents our indicator-wheel, and J', a ratchet-wheel or rim attached thereto, which, together, revolve on a stationary axis, *k*.

The indicator has marked consecutively on it, figures 1, 2, 3, &c., which correspond with the ratchets of the wheel J', so that there will be a number for each ratchet, the number of the latter being limited by the space on the indicator for the numbers.

L is the pawl for actuating the indicator, and *l*, a spring for keeping it engaged with the ratchet-wheel.

This pawl is loosely attached to a pin, *m*, projecting outward from the locking-catch through a slot, *n*, in the case.

O is the guard-detent, and *o*, a pressure-spring therefor.

In Fig. III the parts are shown in their normal position.

The backward movement of the locking-catch in releasing the hasp, causes a corresponding movement of the pawl L, in the direction indicated by the arrow in Fig. III, which, in turn, moves forward the indicator one degree, and the ratchet-wheel one tooth.

The pawl L is provided with a curved stem, *p*, so arranged that it will approach the back edge of the detent during the actuating movement of the pawl, and, by following the detent as it enters the next suc-

ceeding ratchet, (which it does a little before the pawl has reached its limit of movement,) prevent the wheel changing its position more than one degree at each movement of the pawl, as sometimes it otherwise might.

P is a sealed stop, attached to the case of the lock by a countersunk screw, having the countersink beyond the screw-head, with its base larger than the top, so as to receive and retain a seal of soft metal or other material, which prevents the screw being loosened without first destroying the seal.

The indicator-wheel is formed with a lug, *q*, projecting from its periphery, and so arranged that when the wheel has performed a complete revolution, so as to expose its maximum or zero number, this lug will come in contact with the projection *r* of the stop, and arrest the further rotation of the wheel, until it is released by breaking the seal and removing the stop.

The projection *q* being moved past the stop, the latter is replaced and resealed, which leaves the lock free to be operated again.

The pawl, connecting with the locking-catch and indicator-wheel, as before described, the effect of thus arresting the movement of the indicator will be to lock the catch and hasp together, so as to prevent the disengagement of the latter, or backward movement of the catch or bolt, even although the tumblers are turned by the key or pick.

Q is the cap which covers the indicating-mechanism, in which an aperture is made of sufficient size to permit the exposure of one of the numbers marked on the wheel J. This hole is protected by a small piece

of glass arranged over it, and retained in place by a face-plate, *s*, riveted to the case.

In Fig. VI this aperture is shown with the figure 6 exposed, the figures indicating the other numbers, in succession, taking its place as the lock is opened.

It is evident that our improvements can be readily adapted to other locks than the one described, the essential requisite being the connection of the actuating-mechanism of the indicator directly with the locking-catch or bolt, so that the lock cannot be opened without producing a change in the indicator, and exposing a different number.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Operating the numbered wheel of an indicator-lock, by a direct connection of its actuating-mechanism with the locking-catch, substantially as and for the purpose set forth.

2. In combination with an indicator-wheel, the actuating-mechanism of which is connected directly with the locking-catch, so as to be operated thereby, the sealed stop P, operating substantially as set forth.

3. In combination with the indicator-wheel J J', the pawl L, provided with stem *P*, and guard-detent O, arranged and operating as and for the purpose described.

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