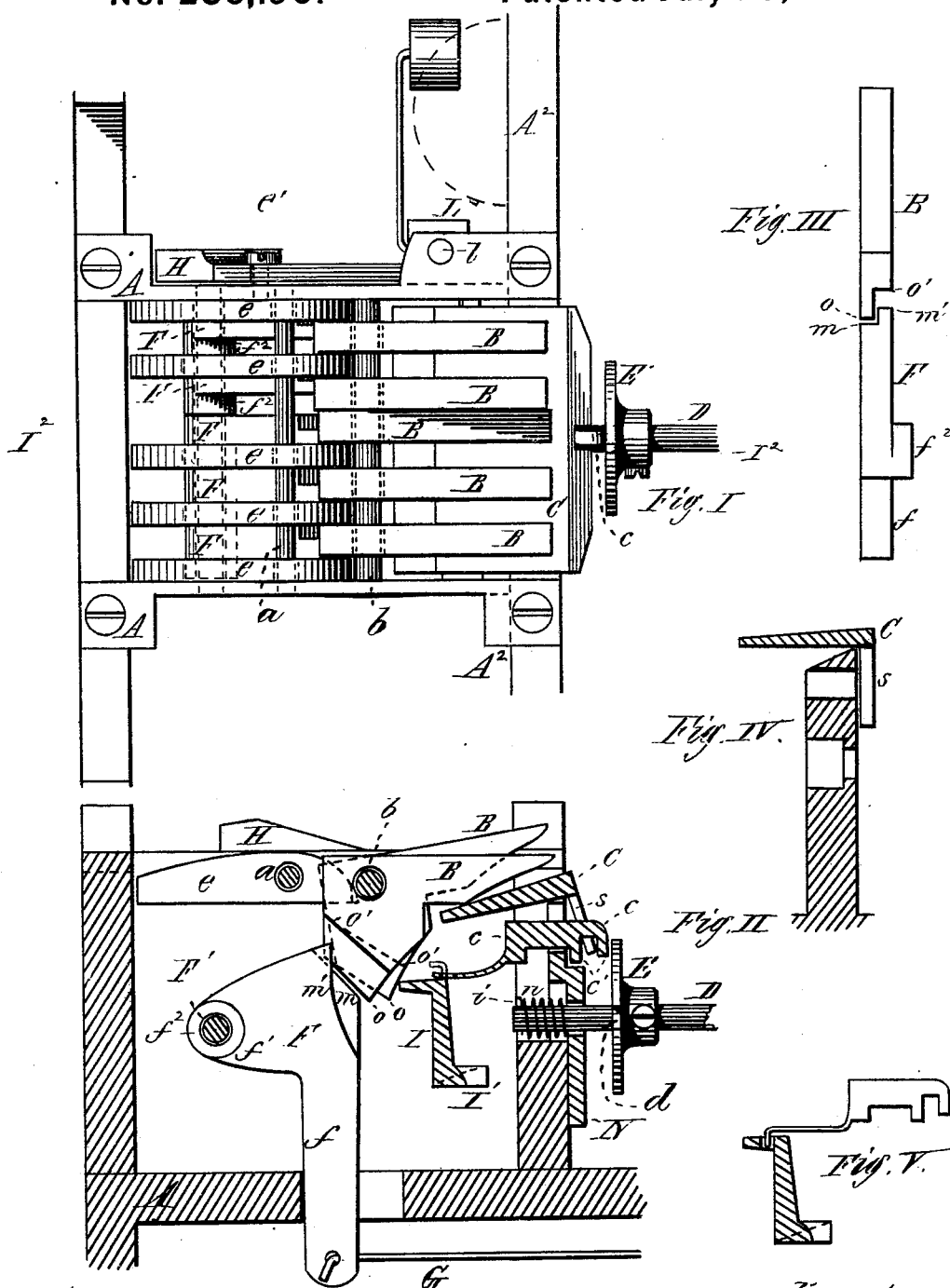


M. L. MORGAN.
Till-Alarm.

No. 206,190.

Patented July 23, 1878.



Witnesses
Andrew J. Partridge
C. E. Beckland.

Inventor
Milo L. Morgan.
By T. A. Curtis,
his atty.

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Fig. VI.

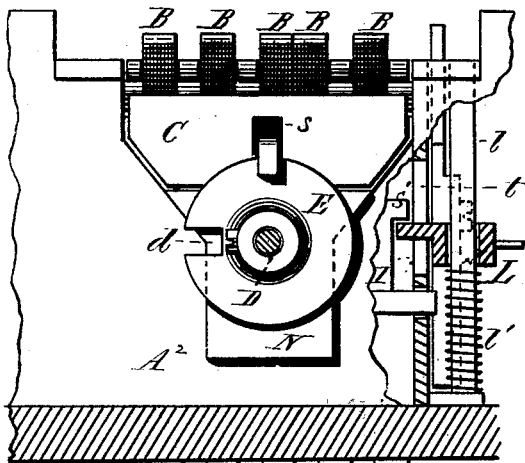
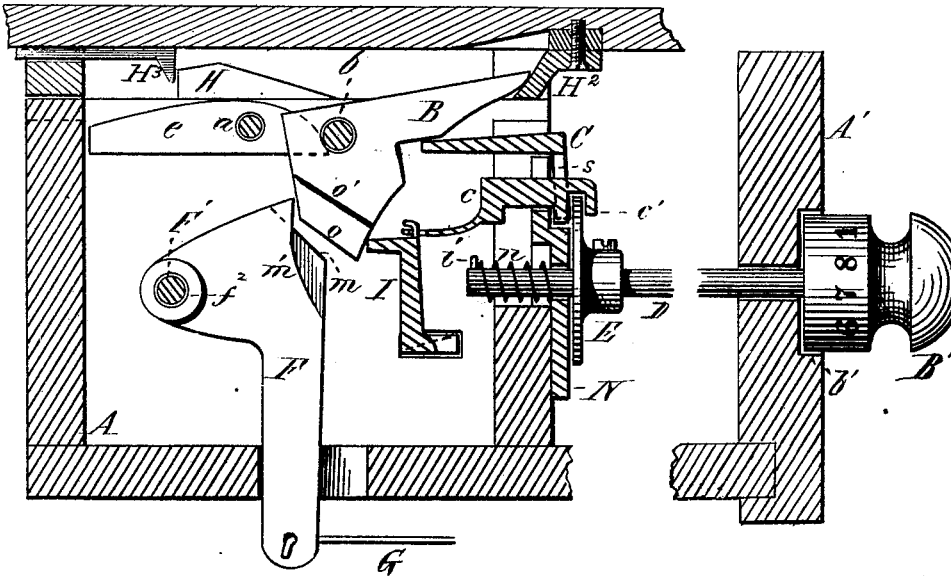


Fig. VII

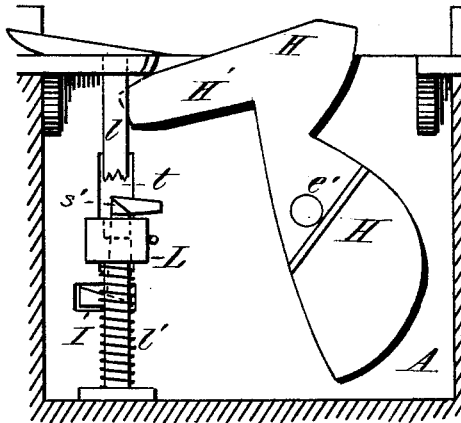


Fig. VIII

Witnesses,
Andrew S. Partridge,
J. E. Buckland.

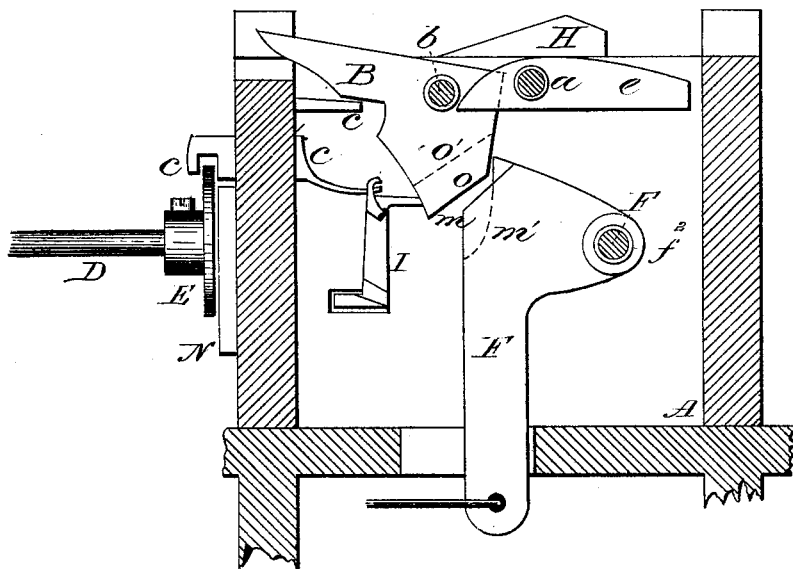
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Fig. IX.



Attest:

Andrew G. Postidge
C. F. Rickland

Inventor:

Milo L. Morgan
By T. A. Curtis
his atty.

UNITED STATES PATENT OFFICE.

MILO L. MORGAN, OF NORTHAMPTON, MASSACHUSETTS.

IMPROVEMENT IN TILL-ALARMS.

Specification forming part of Letters Patent No. **206,190**, dated July 23, 1878; application filed January 24, 1878.

To all whom it may concern:

Be it known that I, MILO L. MORGAN, of Northampton, in the State of Massachusetts, have invented a new and useful Improved Till Lock and Alarm, and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to a money-till lock and alarm, and has for its object the effectual security against access to the till by parties other than those who use the same.

To this end my invention consists of a series of pivoted levers and tumblers, so arranged together, and with dogs and other mechanism, hereinafter described, that an alarm may be given by either pulling the knob of the till or by drawing the wrong pulls, or that the till may be unlocked by drawing the right pulls after the knob has been drawn, as will be more fully hereinafter set forth.

Figure I is a plan view of the main portion of the lock as it is secured in the till. Fig. II is a vertical section of the same at line I², showing the knob drawn out and the disk disconnected from the link which operates the alarm. Fig. III is a rear view of the tumbler and lever, showing their connecting-points, by which the tumbler is thrown either up or down by the same movement of the lever. Fig. IV is a vertical section, showing a modification of the front on which the tumbler-plate rests. Fig. V is a vertical section, showing another modification of the link-connection between the disk and the trip which gives the alarm. Fig. VI is a vertical section at line I², showing the knob and its rod thrown in, and the disk engaged with the link which operates the alarm. Fig. VII is a front view of the disk, tumblers, tumbler-plate, and with a portion of the till broken away, showing the alarm-setting mechanism; and Fig. VIII is a side view of the alarm-setting mechanism. Fig. IX is a vertical section inside of the side plate of the frame.

In the drawings, A represents the two metal sides which support the parts of the lock in position, in which the rods *a*, *b*, and F' have their bearings, said metal sides being attached, in any suitable manner, to the till, and the partition A² serving to support the tumbler-

plate C, one portion of which extends down a short distance in front of the partition A², and its rear portion extending back horizontally beneath the tumblers B, this horizontal portion being the heaviest, to cause the plate to tilt readily into the position shown in Fig. II when the disk is not forced back against it.

In the drawing, in Figs. II, VI, and VII, a front plate, N, is shown as secured to the partition A² to support the tumbler-plate C; but this is not required, as the partition A² may be highest on the front side, to support the tumbler-plate at its angle, so as to tilt readily, and will answer the same purpose whether made of metal or of wood.

The levers F are made in the form of elbows, having the arms *f* and *f*¹, the latter being perforated at or near their extremities, and are hung, side by side, upon a rod, F', the arms *f* protruding through the bottom of the till, with wires attached to their lower ends, which are connected with the ordinary pulls. The upper end or exterior angle of each lever F is made of two different forms, the lever being divided about midway its thickness, one half being made of the form shown at *m*, and the other half of the form shown at *m*¹.

The tumblers B are hung upon or pivoted to the rod *b*, so that they may rest upon the rear part of the plate C at their forward ends, and the lower portion of each tumbler is cut away, from *o* to *o*¹, about half the thickness of the tumbler, so that when the latter is set for the edge *o* to bear against the edge *m* of the lever, the point at the upper end of the edge *m*¹ may pass by the lower edge *o* of the tumbler, as shown in Fig. II.

Each tumbler B is of about the same thickness as each lever F, and the whole series of tumblers occupy about the same space upon the rod *b* as the same number of levers occupy on the rod *a*, and all the tumblers are arranged to slide freely along the rod *b*, and are kept apart by the dogs *e*, which are arranged to slide along the rod *a*, the ends of said dogs being sufficiently long to project a little distance in between the tumblers when the dogs are in a horizontal position, as shown in Fig. I.

The trip I has a bearing at each end in the sides at I¹, in such manner that it may tilt forward and backward a little, its upper edge standing just in front of the lower part of the

tumblers B, and one end of the trip is provided with a projection, s' , beveled on its upper side.

The bell-hammer L slides up and down on the rod l , a spring, l' , placed beneath it operating to force it upward; and a portion of the bell-hammer projects inward sufficiently to strike against the beveled upper side of the projection s' on the trip, and tilt the latter backward, when the hammer is forced down past said projection, the trip tilting forward again as soon as the hammer has passed down, and holding it down by the projection s' .

A pivoted weighted lever, H, the upper end of which projects above the side A, serves to automatically set the alarm by its upper end striking against a stop, H^2 , secured to the under side of the counter or table, when the till is pushed in, causing the end of the arm H^1 to force the hammer down, where it is caught and held by the projection s' .

A link, e , which is loosely connected with the upper part of the trip L, extends out through the part A^2 and through the front of the tumbler-plate C, and is provided with two projections or shoulders, e' , with a little space between them, as shown in Fig. VI; and a hole is made through the partition A^2 , through which the rod D is inserted, with a pin, i , or collar at the end, and a spring, u , placed between this pin and the partition A^2 . This rod extends out through the front of the till, and has a knob, B' , on the outer end, provided with numbers on its periphery, in the usual manner; and, if desirable, a recess may be made in the front of the till, into which the knob would be drawn when the rod is forced in by the spring u .

A circular plate or disk, E, provided with a recess, d , of such size and shape that the outer projection e' of the link will just pass through it, is secured to the rod D by a set-screw passing through the hub of the disk; and when the rod is forced in by the spring u , as is the case when the disk is turned into a position with the recess d corresponding in position with the outer projection e' of the link, by turning the knob and rod D the disk will revolve, (if the rod be turned,) with its outer portion between the two projections e' of the link, and press the front portion of the plate C in against the partition A^2 , causing the rear part of said plate to lie in a horizontal position beneath the forward ends of the tumblers B.

H^2 represents a stop secured to the under side of the top of the till, just over the forward ends of the tumblers when the till is shut.

The disk is set to the knob by loosening the set-screw in the hub of the disk, turning the knob so that one of the numerals on its periphery—say, the numeral 7—is uppermost or directly over the axis of the rod D, and then turning the disk so that the recess d shall correspond with the projection e' on the link, and then tightening the set-screw.

The tumblers are set in the following manner: Suppose it is desired to set the two upper tumblers B in Fig. I to open the till, and to

set the three lower ones as a check or guard, the long arm of the upper dog e in the same figure is raised to a vertical position and moved up on the rod a , and dropped to a horizontal position above the first tumbler. The second dog is then moved in the same manner up next the first tumbler, and the second tumbler moved up next to that, and the third tumbler is moved up to the second, with the third dog below it, and the lower three dogs, e , are each placed below its respective tumbler, all shown clearly in Fig. I. As thus set, the two upper dogs hold their respective tumblers in a position with their lower rear edges in front of the points at the upper end of the parts m' of their respective levers F, as shown in dotted lines in Fig. II, the weight of said levers against the tumblers operating to hold the forward ends of those two tumblers in an elevated position, as shown in the drawings, while the edges o of the other three tumblers being directly in front of the edges m of the levers F, those tumblers are free to drop into their lowest position, their forward portions resting upon the rear part of the plate C.

The operation of the invention is as follows: Suppose the disk E to be set on the numeral 7 of the knob B' , and the two upper tumblers in Fig. I to be set for opening the till, as above described, if the disk is in between the projections e' , as shown in Fig. III, the front of the plate C is thereby pressed in, and the forward ends of all the tumblers are held in an elevated position, when they would strike against the stop H^2 if the till was drawn out. If this were done, any one of the tumblers striking against the stop would force its lower and forward end against the upper part of the trip L, and tilt it forward, its catch s' thereby releasing the bell-hammer L, allowing it to fly upward to strike the alarm. The knob B' must therefore be turned until the numeral 7 thereon is directly over the axis of the rod D, when, the recess d in the disk being directly behind the outer projection e' of the link, the rod and disk may be drawn outward by the knob until the disk is forward of the outer projection e' , and, the rod and disk being rotated a little either way and released, the disk will rest against the front of the projection e' and be held there. This will allow the horizontal part of the plate C to drop, and allow, also, the three lower tumblers in Fig. I to drop, as shown clearly in Figs. I and II.

If, then, the two pulls beneath the till, connected by wires G to the two upper levers, be pulled, the points at the upper ends of said levers will be drawn back from contact with the rear side of the two corresponding tumblers, and their forward ends will drop into a position not to strike the stop H^2 when the till is pulled out, and the till can then be opened without giving an alarm.

On the contrary, if any one of the other three pulls be drawn out, the edge m of the corresponding lever F will come in contact with the edge o of the corresponding tumbler,

and its forward end will be raised or tilted up into position to strike the stop H^2 if the till is pulled out, and thereby tilting the trip I and striking the alarm.

Any desired number of the tumblers may be set to open the till, leaving any one or more as a check for the alarm; and a great variety of combinations may be obtained by merely setting the tumblers; or all the tumblers may be set for opening the till, and the alarm obtained by the knob alone, the latter, of course, increasing the combination by its whole circumference, inasmuch as the setting of the tumblers has no connection whatever with or any reference to the numerals on the knob, because when the knob and disk are forced in, as shown in Fig. VI, if the knob be pulled out with the recess d in any position except immediately behind the outer projection e' of the link e , the latter will be pulled out and the trip I be tilted and the alarm struck.

The knob must, therefore, be turned with the right point in its periphery uppermost, and with the recess d behind the projection e' , so that the disk can be drawn forward without giving the alarm, and also to permit the plate C to tilt and the tumblers to be operated; and, if the right tumblers are not operated, the alarm will be struck on attempting to move the till outward.

It will be seen by the above-described arrangement of mechanism that the various combinations incident to any ordinary similar combination till-lock, together with the alarm, may be obtained by operating the pulls in this invention without using the knob at all; while, the knob and disk being brought into use, by turning the knob to the required number and permitting the disk to move in, another system of combination is added, having no reference whatever to the first, and also another means of getting an alarm and of unlocking the till.

Suppose all the tumblers are set with their edges o opposite the edges m of the levers, or in the position of the three lower tumblers in Fig. I, then, if the disk is in the position shown in Fig. VI, the till may be unlocked and opened by simply pulling the knob B' ; and if it is desired not to use the knob at all, either in getting the alarm or unlocking the till, the knob is drawn out and placed permanently in the position shown in Fig. II; or the plate C may be easily removed and laid aside, the till may then be unlocked by the pulls, and the alarm obtained from the tumblers and trip I, the latter always dropping back to its position

of its own weight after being tilted to secure the bell-hammer.

The levers F may be held at the proper distance apart by a boss, f^2 , made on the side of each lever, or by a collar placed between. Of course, the plate N (shown in the drawings) is not an essential feature of the invention, as the partition A^2 may be made in the form shown in Fig. IV, and the link e may as well hook over into a hole or recess made in the link, as shown in Fig. V.

Having thus described my invention, what I claim as new is—

1. The levers F, in combination with the tumblers B and the tumbler-plate C, substantially as described.

2. The combination of the levers F, the tumblers B, the tumbler-plate C, and the dogs e , substantially as set forth.

3. The dogs e , arranged to be moved along the rod a , in combination with the tumblers B, whereby any desired number of the tumblers may be set to unlock the till or give the alarm without removing the dogs from their rod, substantially as set forth.

4. The tilting trip I, provided with the catch s' , in combination with the bell-hammer L, whereby the latter is secured and released to strike the alarm, substantially as described.

5. The combination of the tumblers B, the stop H^2 , and the trip I, as a means of releasing the bell-hammer to strike an alarm by the outward movement of the till, substantially as described.

6. The combination of the lever H, the stop H^3 , the bell-hammer L, and the trip I, whereby the bell-hammer is automatically set for the alarm by pushing in the till, substantially as set forth.

7. The rod D, disk E, having a recess, d , and the link e , trip I, and hammer L, whereby an alarm may be given by the simple movement of the rod without operating the pulls or tumblers, and whereby the disk may be thrown out of connection with the alarm and the alarm obtained by the operation of the tumblers alone, substantially as set forth.

8. The rod D, disk E, link e , and tumbler-plate C, whereby the till may be unlocked and opened by the simple longitudinal movement of the rod without using any of the ordinary pulls, substantially as set forth.

MILO L. MORGAN.

Witnesses:

T. A. CURTIS,

C. E. BUCKLAND.