

E. A. Barrows, Till Check.

N^o 62,388.

Patented Feb. 26, 1867.

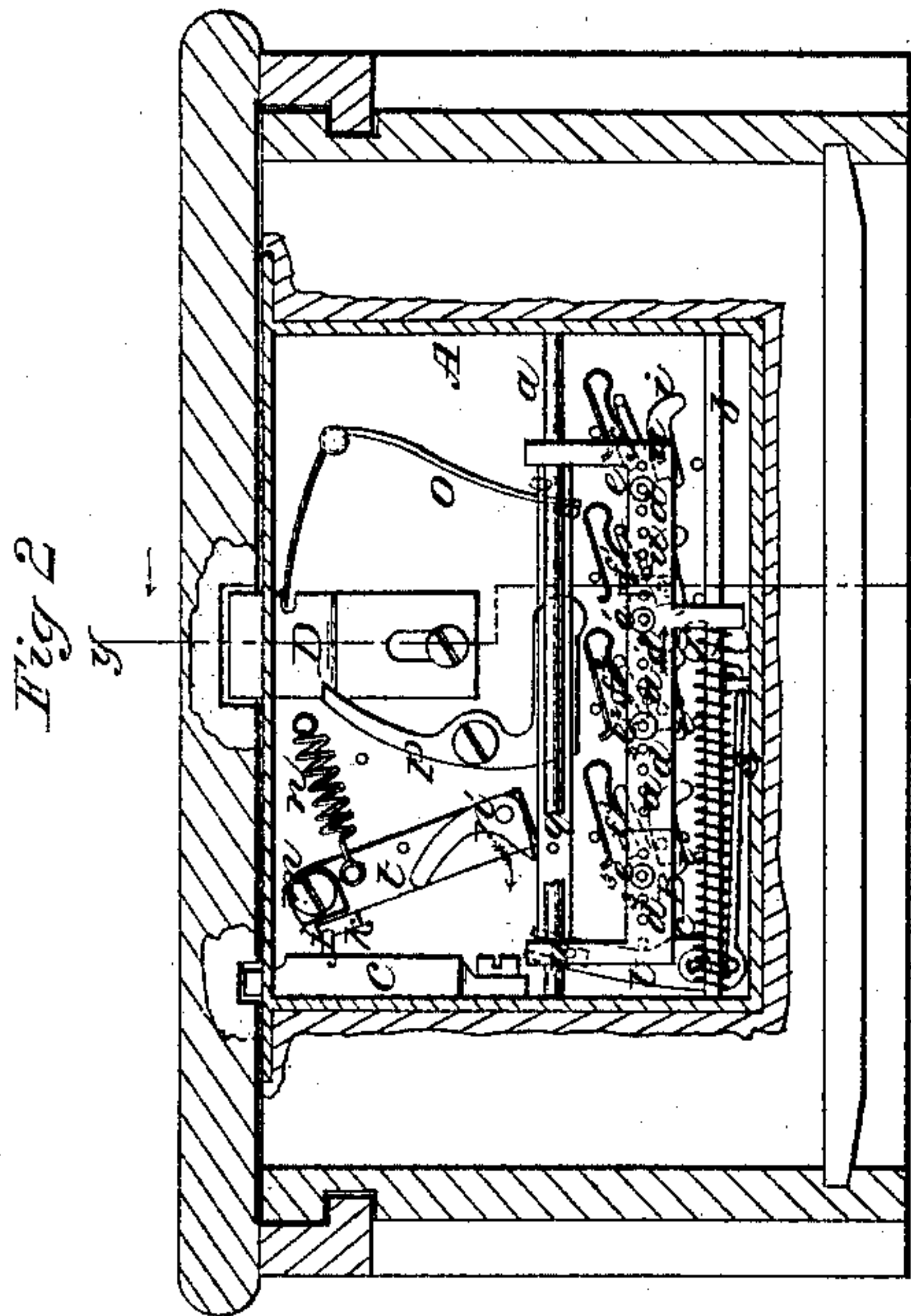


Fig. 2



Fig. 4

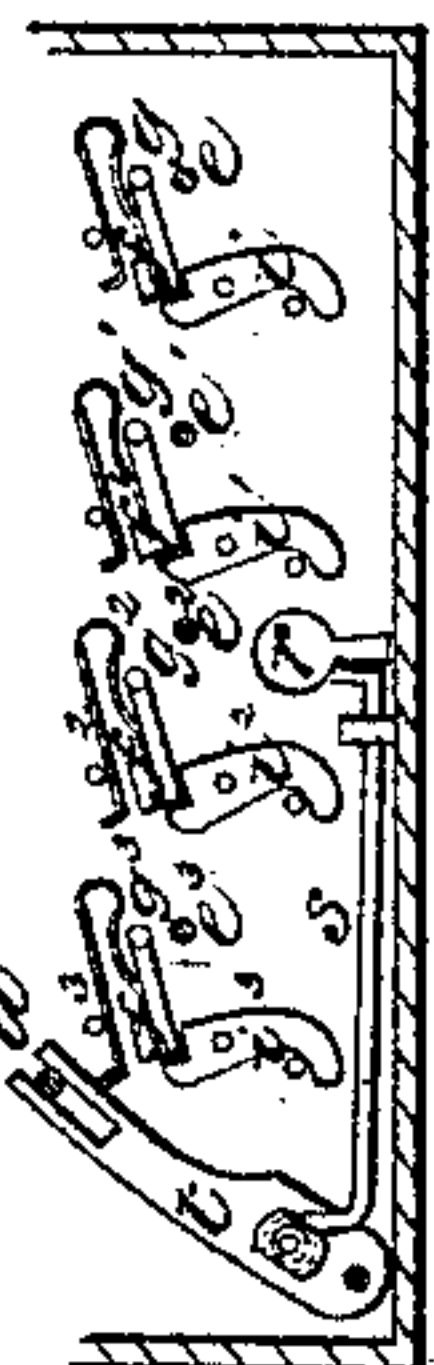


Fig. 5

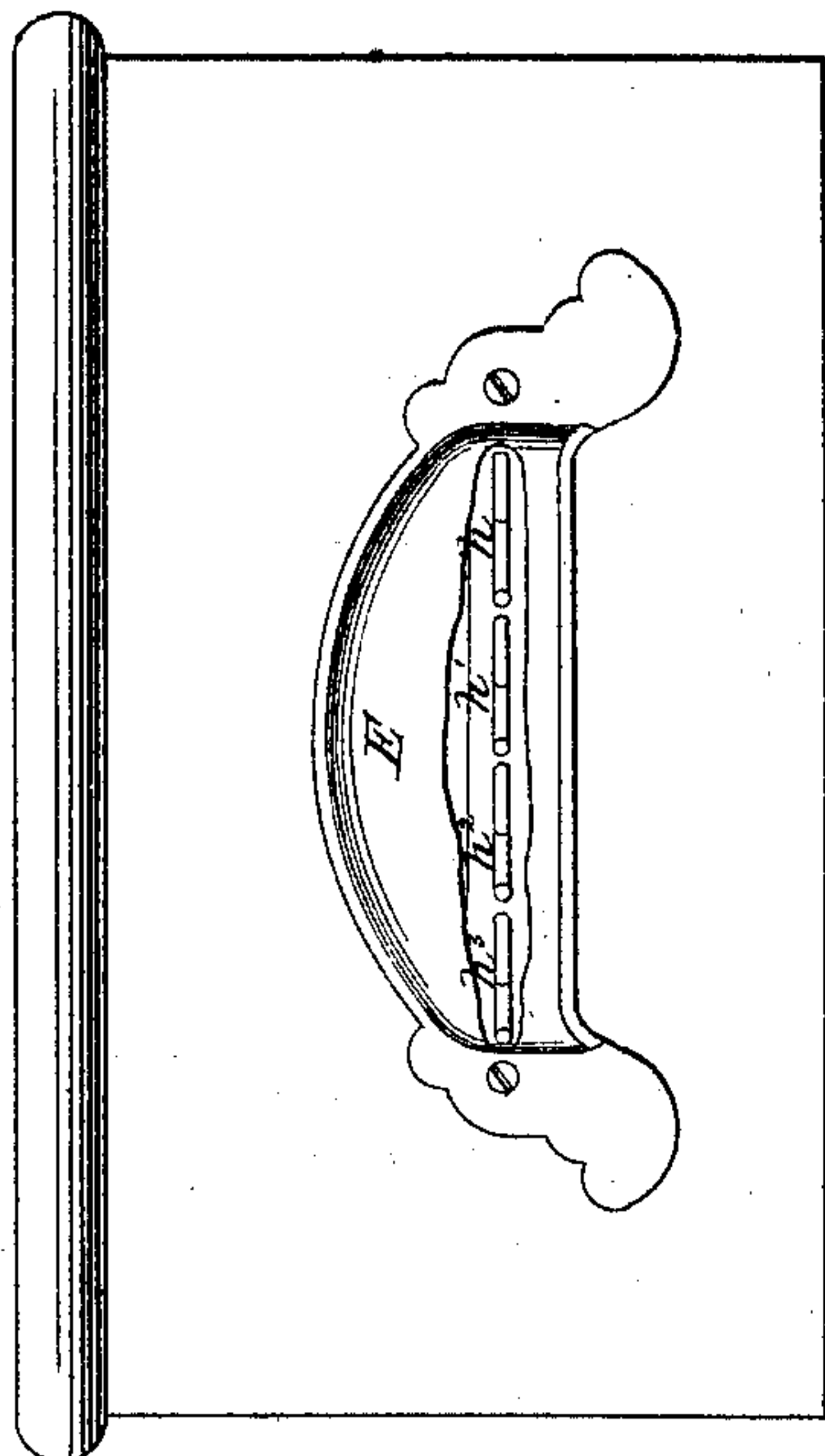


Fig. 1.

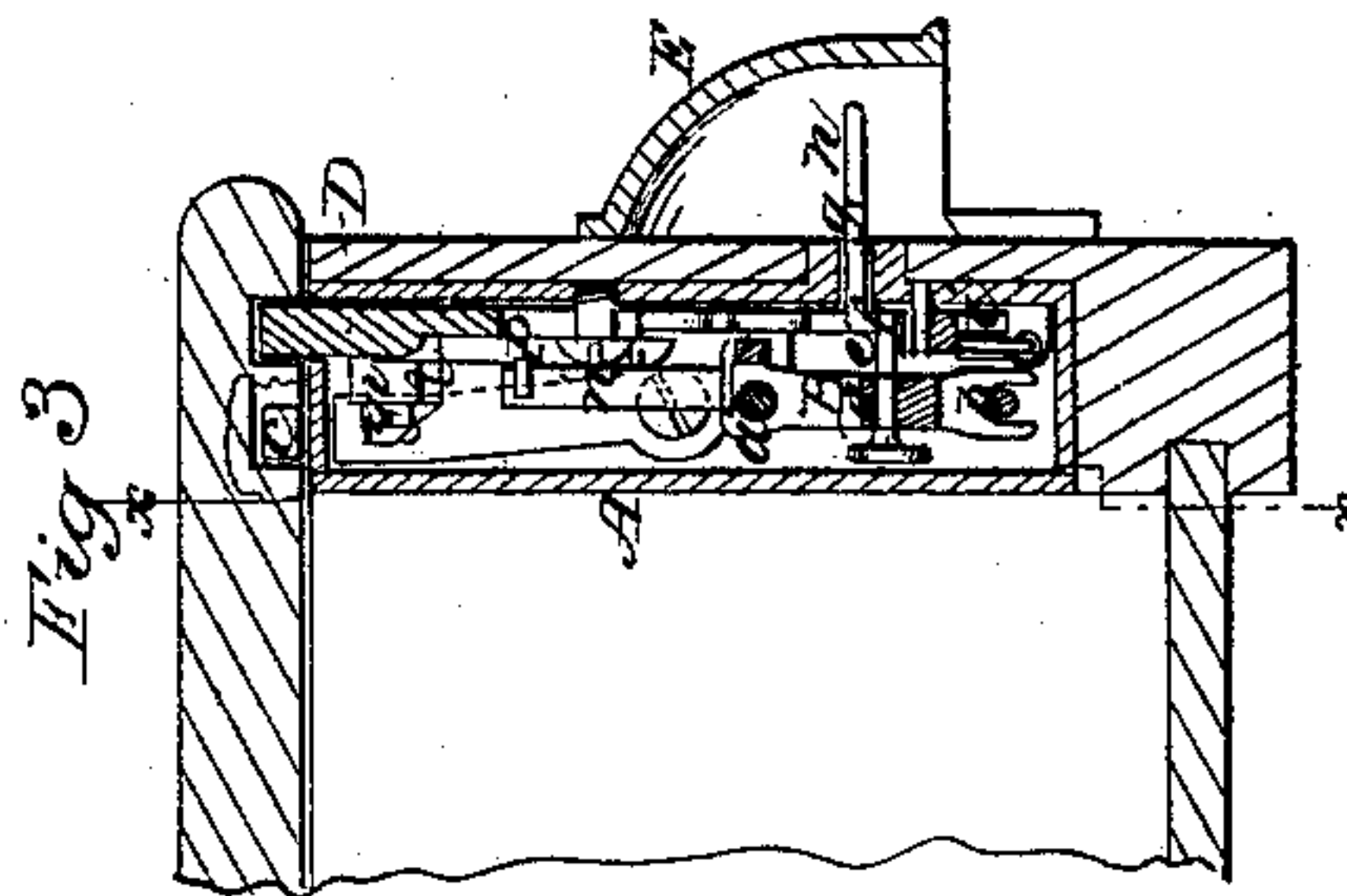


Fig. 3

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EDWIN A. BARROWS, OF WILLIMANTIC, CONNECTICUT.

Letters Patent No. 62,388, dated February 26, 1867.

IMPROVEMENT IN PERMUTATION 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 I, EDWIN A. BARROWS, of Willimantic, in the county of Windham, and State of Connecticut, have invented a new and improved Safety Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a front elevation of this invention.

Figure 2 is a longitudinal vertical section of the same, the line $x x$, fig. 3, indicating the place of section.

Figure 3 is a transverse section of the same, taken in the plane indicated by the line $y y$, fig. 2.

Figures 4 and 5 represent the internal mechanism in different positions.

Similar letters of reference indicate like parts.

This invention relates to an improvement in that class of locks which are provided with a combination mechanism to be operated by finger pieces in such a manner that the lock can only be opened by touching said finger pieces in the order corresponding to the set given to the mechanism. This mechanism consists principally of a sliding bar provided with four (more or less) sets of holes to receive the adjustable stops, and of a series of finger pieces and spring levers corresponding to the sets of holes in the sliding bar. Said sliding bar is set in motion by a spring latch whenever the drawer or door to which the lock is attached is closed, and by the motion of the bar a bolt is raised and the door or drawer is locked. By touching the finger pieces in the proper order, the sliding bar is allowed to fly back to its original position, and the door or drawer is opened; but if by mistake or ignorance the wrong finger pieces are touched, one or more dogs turn up and the lock cannot be unlocked until by a suitable key the sliding bar is pushed back to that position which it occupied before the finger piece had been touched, and the lock cannot be unlocked except by touching the proper finger pieces.

A represents a case, of cast or sheet metal, or of any other suitable material. Through the ends of this case extend two rods, $a b$, which are stationary and parallel to each other. These rods form the bearings for the sliding bar B, and a spring, c , pressing on a lug projecting from said bar, has a tendency to press the same back in the direction of the arrow marked thereon in fig. 2. The bar B is provided with a series of holes, $d d^1 d^2 d^3$, divided in four (more or less) sets, each set containing four (more or less) holes. These holes are intended to receive the pins $e e^1 e^2 e^3$, by means of which the various combinations of the lock are effected. These pins project through the sliding bar B, and they bear against the ends of spring arms $f f^1 f^2 f^3$, which are secured to the inner ends of short axes $g g^1 g^2 g^3$. These axes have their bearings in the front plate of the case A, and to their outer ends are secured the finger pieces $h h^1 h^2 h^3$, so that by touching said finger pieces the arms $f f^1 f^2 f^3$ can be turned up out of the way of the pins $e e^1 e^2 e^3$. Under the arms $f f^1 f^2 f^3$, and pivoted to the front plate of the case, are the dogs $i i^1 i^2 i^3$, which are loaded so that the same, when left to themselves, will assume the position shown in fig. 5; but if the sliding bar is pushed in the direction opposite the arrow marked thereon in fig. 2, the pins $e e^1 e^2 e^3$, by striking said dogs, cause them to turn to the position in which they are shown in the last-named figure, and they are retained in the position by the action of the arms $f f^1 f^2 f^3$, which bear down on them, impelled by the springs pressing on the same, as shown. If one of the finger pieces is touched so as to raise one of the arms $f f^1 f^2 f^3$, the corresponding dog turns up to the position in which all the dogs are shown in fig. 5. C is a latch, which is pivoted to the end piece of the case A, and from which projects a stud, j . This stud bears on an inclined plane, p , on the edge of a lever, l , which has its fulcrum on a pivot, m , and is subjected to the action of a spring, n . By this spring the lever l is drawn back to the position which it assumes in fig. 2 of the drawing, and the latch is pressed in towards the back plate of the case A; but if the drawer is pushed home, the head of the latch strikes the end of the recess provided to receive said head, and being forced out, causes the lever l to swing in the direction of the arrow marked near it in fig. 2. By this motion the end of the lever is brought in contact with the sliding bar B, and said bar is forced back against the action of the spring c to the position in which the same is shown in fig. 2. The end of the lever l is provided with a hinged toe, n' , which allows said lever to clear the sliding bar in going back. By this arrangement the sliding bar is set whenever the drawer is pushed home, or if the lock is attached to a door, whenever the door is closed, and it is retained in position by one or more of the pins $e e^1 e^2 e^3$, bearing against the corresponding

spring arms $ff^1f^2f^3$. While the bar is being set, and as the same moves in the direction opposite the arrow marked thereon in fig. 2, it bears against one arm of a bell-crank lever, o , which is made of thin and elastic material, and the other arm of which catches in a recess in the bolt D , and by the action of this bell-crank spring the bolt is pressed up and made to drop into a recess provided to receive it in the board, under which the drawer slides, or in the door-frame, if the lock is attached to a door. As soon as the bolt has reached its highest position, a dog, p , catches in a notch in the edge of said bolt, and retains the same firmly in position until said dog is made to release the bolt, leaving the same free to follow its gravity and to drop down. In order to release the dog p a stud, g , is secured in the sliding bar B , and if this slide is permitted to follow the action of the spring e , and to return to its original position, said stud strikes the dog and causes its point to release the bolt. In the drawing the pins e , e^1 , and e^3 are placed in the second holes of their sets, and the pin e^2 is placed in the first hole, and if the sliding bar B is brought in the position in which the same is shown in fig. 2, the pin e^2 bears on the end of the corresponding arm f^2 , while the arms f , f^1 , and f^3 simply rest on the corresponding dogs without coming in contact with their pins e , e^1 , and e^3 . If the finger piece h^2 is touched, the arm f^2 releases the pin e^2 , and the sliding bar, impelled by the spring e , moves in the direction of the arm marked thereon in fig. 2, until the pins e , e^1 , and e^3 bring up against the arms f , f^1 , f^3 , which position is shown in fig. 4 of the drawing. By pressing the finger pieces h , h^1 , h^3 simultaneously, the sliding bar is released and allowed to follow the action of the spring, and as the stud g strikes the dog p , the bolt D is released and the drawer or door is opened. If by mistake or ignorance the wrong finger piece is touched, for instance, the finger piece h^1 instead of the piece h^2 , the dog i^1 being relieved of the pressure of the arm f , turns up in a vertical position and places itself behind the pin e^1 , and the lock cannot be opened until, by inserting a proper key into the key-hole r , and turning the same in the right direction, the sliding bar is returned to the position which it occupied before the wrong finger piece had been touched. To effect this purpose a rod, s , is applied, one end of which is situated close to the key-hole, while its other end is pivoted to a lever, t . This lever is provided with a bifurcated end, which straddles a pin, w^1 , secured in the sliding bar. By turning the key in the proper direction in the key-hole, its bit presses on the rod s , and carries the sliding bar B back in the direction opposite the arrow marked thereon in fig. 2. While the sliding bar completes this motion, small pins, u , projecting from its inner surface, strike the dog or dogs, which previously had been turned up by touching the wrong key, and carry the same back to their original position. By touching the finger pieces in the proper order, corresponding to the set of the pins e , the lock is opened. It is obvious that the set of the pins may be changed in a great many different ways, and a safety-lock is obtained which is simple in its construction and perfectly sure in its operation. The set given to the pins e in the drawing requires the finger piece f^2 being touched first, and then the finger pieces f , f^1 , and f^3 simultaneously. The finger pieces are covered and protected by a cap, E , which also serves as drawer-pull or handle.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. The sliding bar B , provided with a series of holes, d , d^1 , d^2 , d^3 , and pins e , e^1 , e^2 , e^3 , more or less, in combination with the spring arms $ff^1f^2f^3$, finger pieces h , h^1 , h^2 , h^3 , latch C and bolt D , constructed and operating substantially as and for the purpose set forth.
2. The safety dogs i , i^1 , i^2 , i^3 , in combination with the sliding bar B , pins e , arms f , and finger pieces h , constructed and operating substantially as and for the purpose described.
3. The rod s and lever t , in combination with the sliding bar B , and with a suitable key constructed and operating substantially as and for the purpose set forth.

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Witnesses:

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