

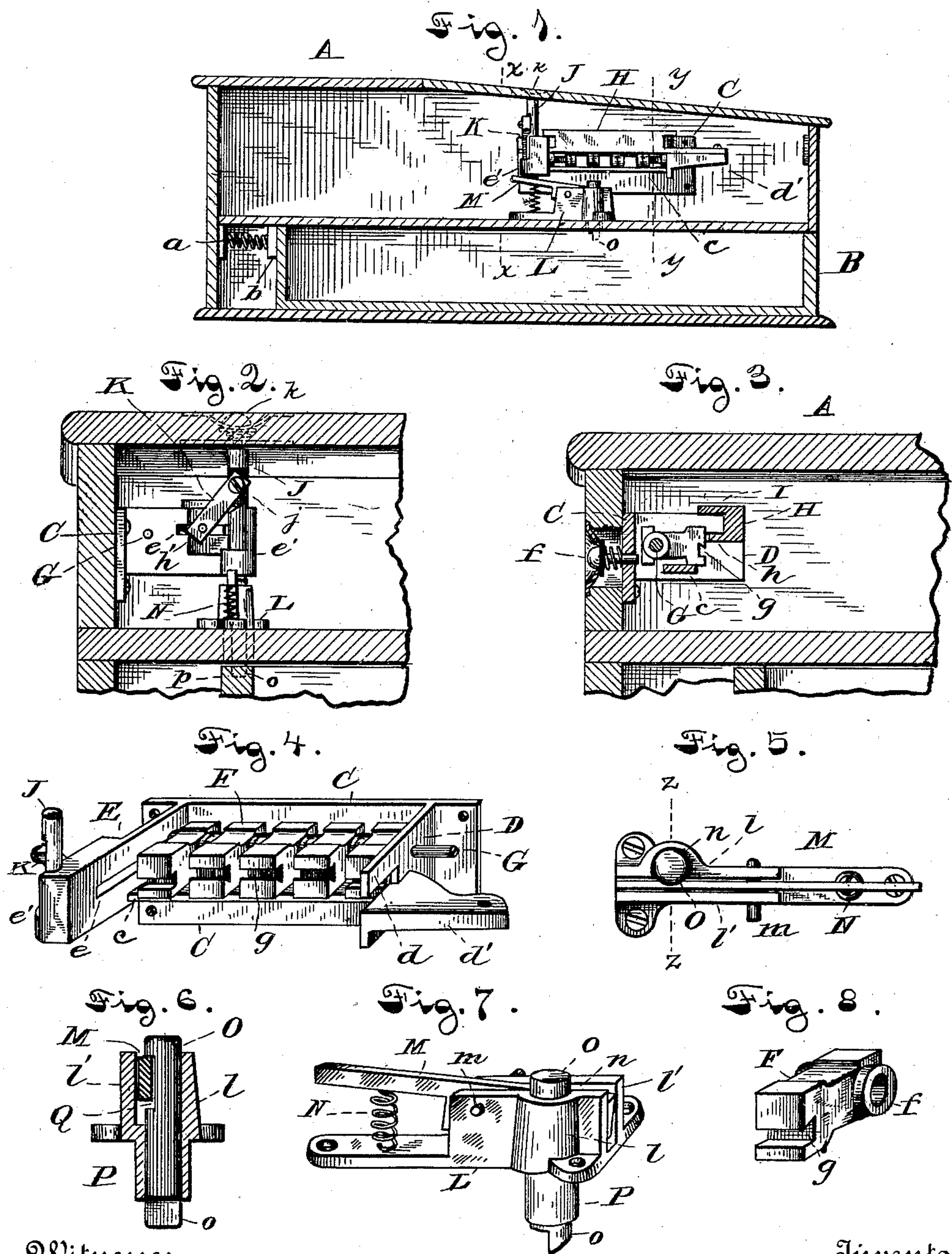
(No Model.)

2 Sheets—Sheet 1.

A. R. PECK.  
COMBINATION LOCK.

No. 408,355.

Patented Aug. 6, 1889.



Witnesses

H. D. Neale.

C. F. Drew.

Inventor

Arthur R. Peck

By his Attorney

M. D. Peck

(No Model.)

2 Sheets—Sheet 2.

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Fig. 9.

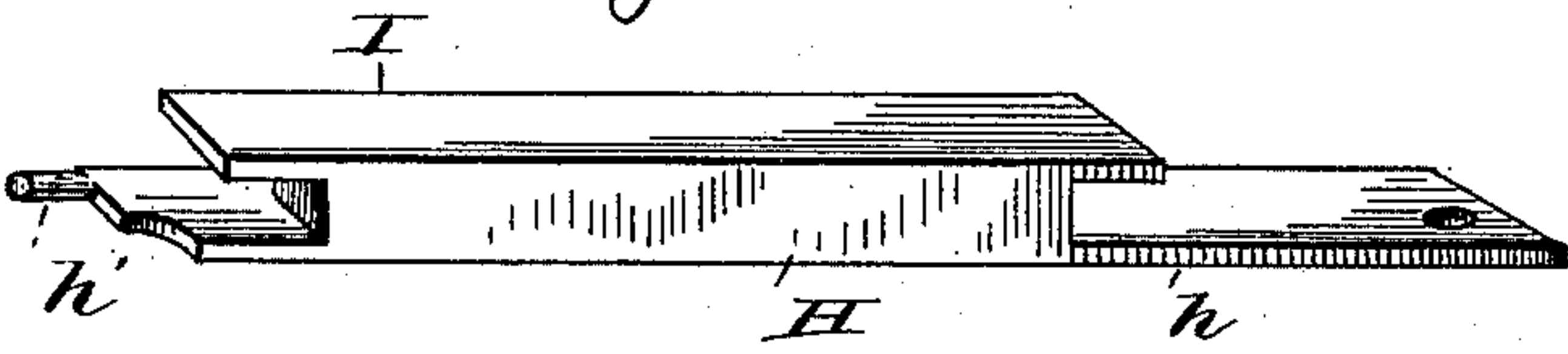


Fig. 10.

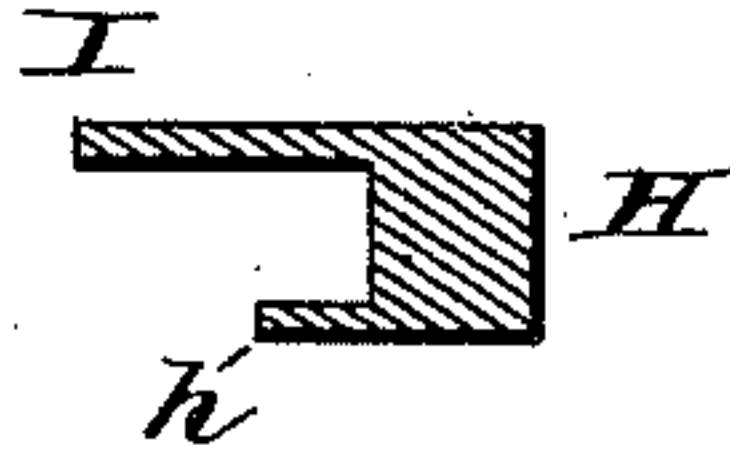


Fig. 11.

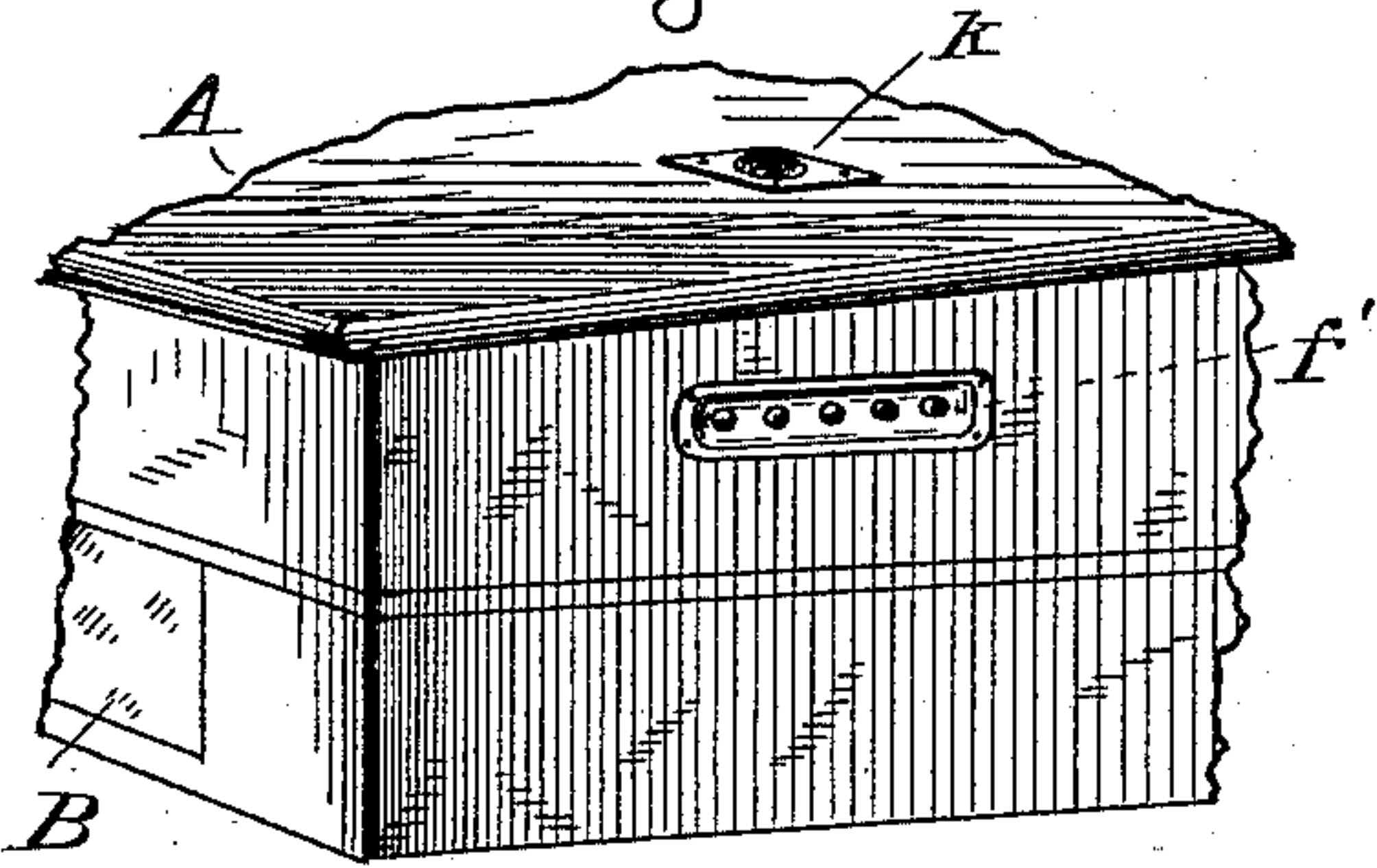


Fig. 12.

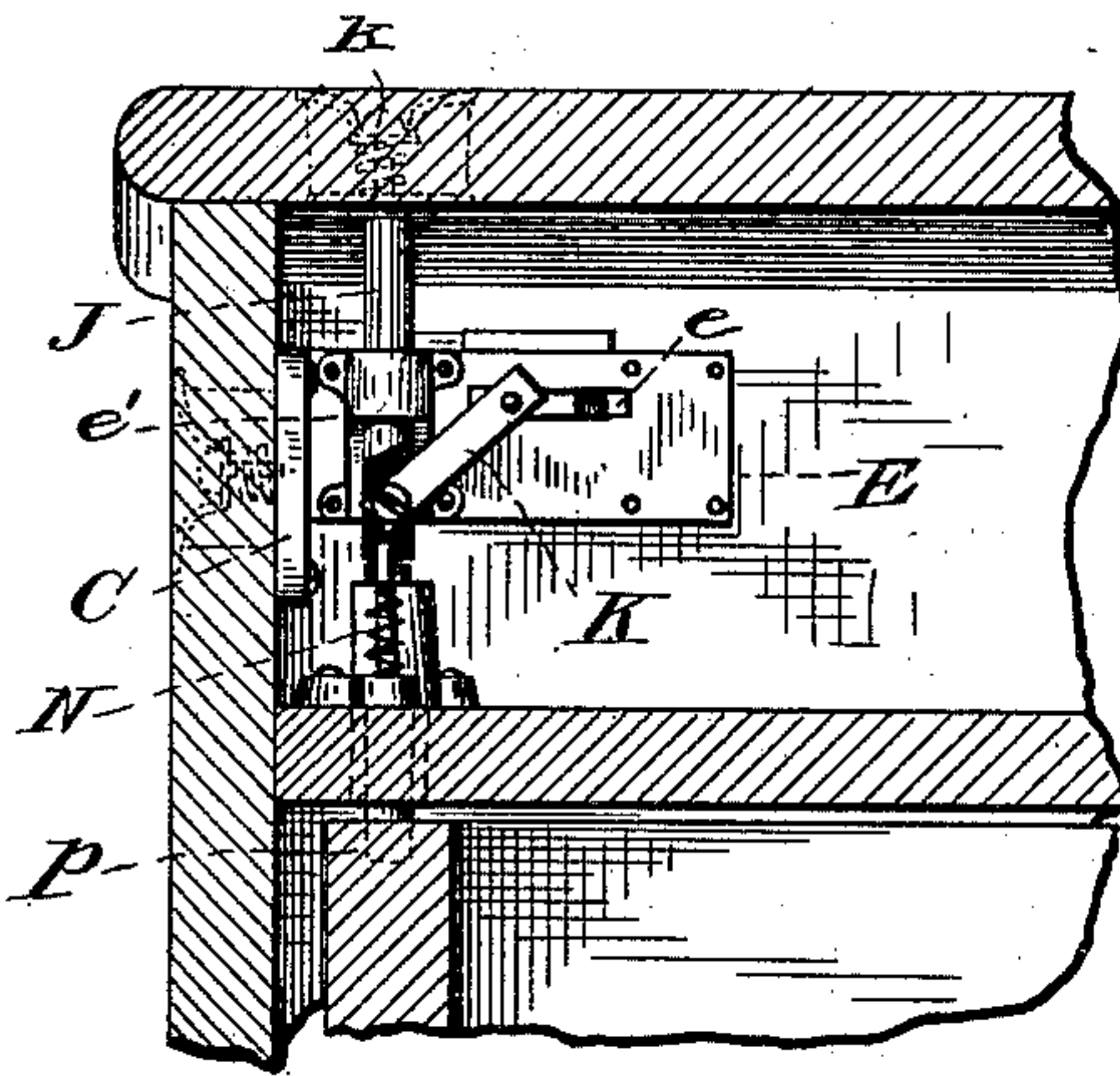


Fig. 13.

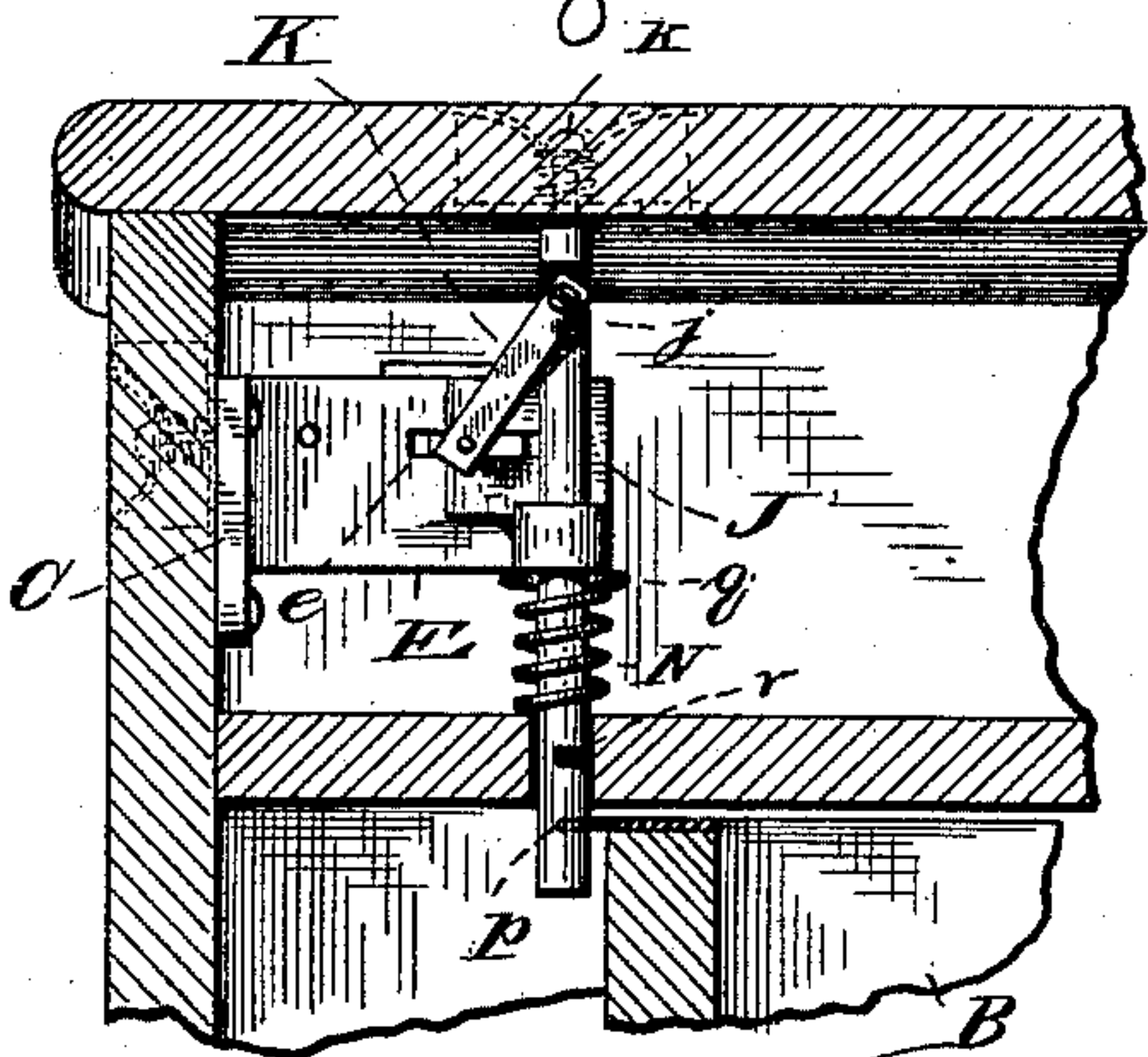


Fig. 14.

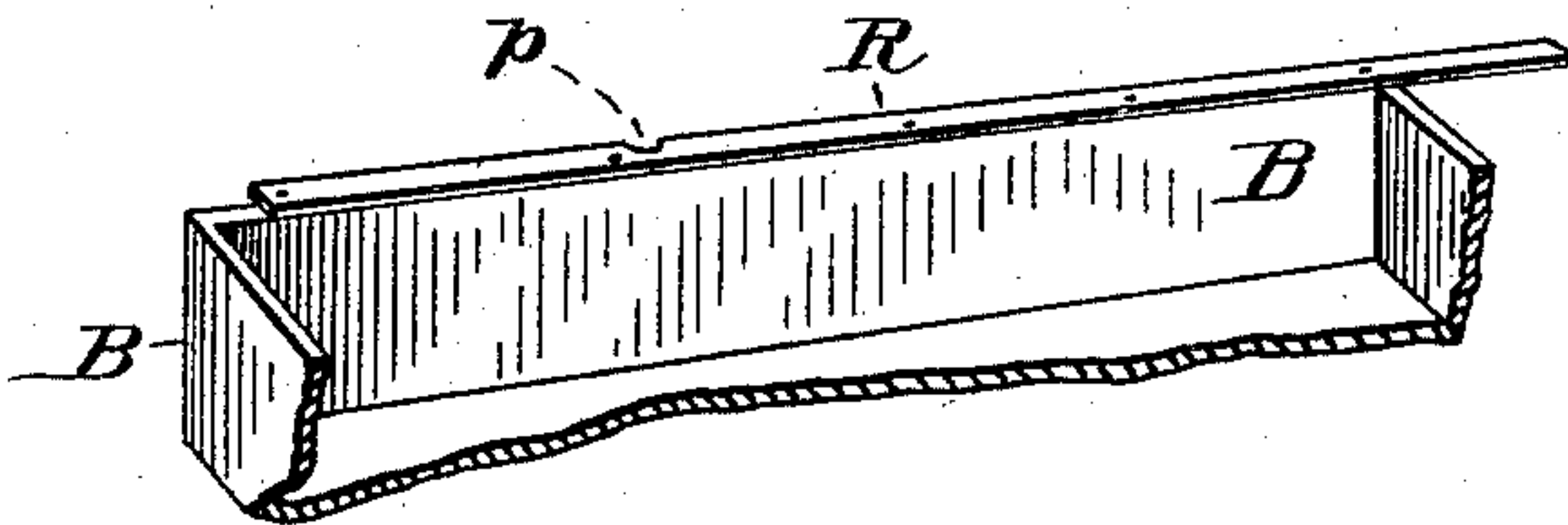
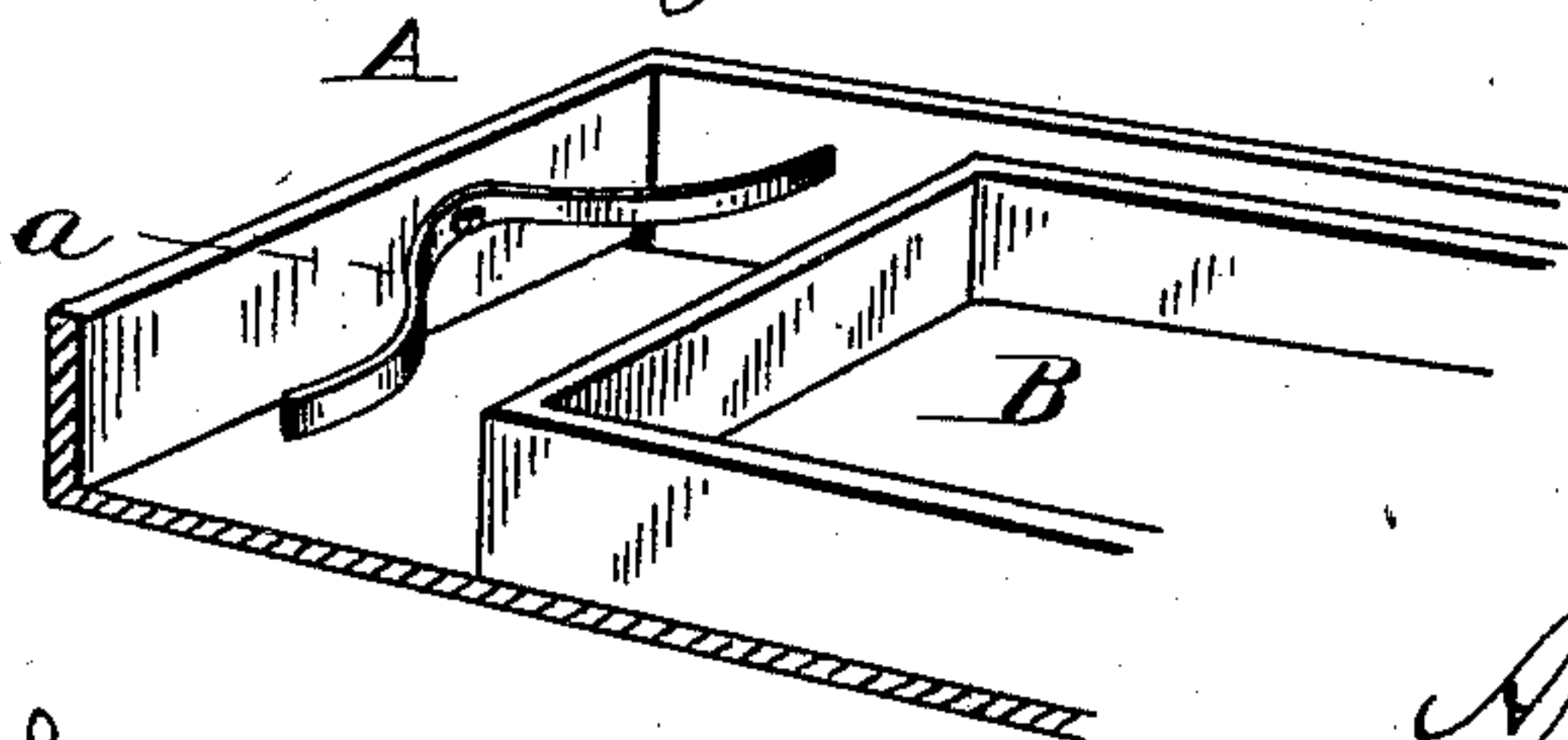


Fig. 15.



Witnesses

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# UNITED STATES PATENT OFFICE.

ARTHUR R. PECK, OF CORTLAND, NEW YORK.

## COMBINATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 408,355, dated August 6, 1889.

Application filed April 11, 1889. Serial No. 306,851. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR R. PECK, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Combination - Locks for Drawers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in combination-locks for money tills or drawers, though it may be applied to other purposes, and has for its object to simplify the construction and to permit of the ready changing of the combination by reversing the tumblers of the lock as may be desired, and to provide for the retraction or disengagement of the locking-bolt from the drawer by the manipulation of one or more keys; and to these ends my invention consists in the combination of parts and their novel construction, as will appear from the following description, and more particularly pointed out in the claims and the accompanying drawings, in which—

Figure 1 is a sectional elevation of a desk and its money drawer or till embodying my invention. Fig. 2 is a partly-broken away cross-sectional view taken on the line  $x x$  of Fig. 1. Fig. 3 is a similar view taken on the line  $y y$  of Fig. 1. Fig. 4 is an enlarged detail perspective view more especially of the tumbler mechanism. Fig. 5 is a detail plan view of the locking-bolt and its actuating-lever. Fig. 6 is a sectional view thereof, taken on the line  $z z$  of Fig. 5. Fig. 7 is a detail perspective view of the same. Fig. 8 is a slightly-enlarged perspective of one of the detached tumblers. Fig. 9 is a similar view of the retaining and releasing oscillating bar. Fig. 10 is a transverse section thereof. Fig. 11 is a perspective view of part of the desk and drawer, showing the position of the keys. Fig. 12 is a slight modification of my invention, taken on line  $x x$  of Fig. 1. Fig. 13 is also a slight modification thereof, taken at the same point as Fig. 12. Fig. 14 is a detail,

broken away, showing the drawer with a plate thereon, as disclosed in Fig. 13; and Fig. 15 is a perspective view more particularly of the drawer or till, employing therewith a modified form of spring.

Like letters of reference refer to corresponding parts in each figure of the drawings.

In my invention I employ a cash-desk A in connection with a money till or drawer B, both in their general outline of ordinary construction. I place on the back end of the drawer or till B a buffer or follower  $b$ , which is suitably held in position to slide between the cleats on extensions of the drawer cleats or ways. This buffer or follower has applied to it a spring  $a$ , which is compressed as the drawer or till is moved inward against the follower  $b$ , and when the drawer is unlocked the recoil action of the spring will automatically throw or project the drawer outward to a limited extent.

A bracket or frame, preferably of cast metal, is secured upon the inside of the desk A. This bracket is substantially rectangular in form, having a securing or side plate C, by which it is attached to the side of the desk, and an end plate D, having an open slot  $d$  in the end, projecting from the side plate, with an arm  $d'$ , extending at right angles thereto and away from the bracket. At the other end of the side plate C there is an end plate E, provided with a closed slot  $e$ . The outer portion of this plate is re-enforced or thickened on the outside to form a sleeve  $e'$ , which is partially cut away or open. Between the end plates D and E there is a cross-bar  $c$ , which is formed integral with the plates at near their lower edges and extends from one to the other, and serves as a floor for parts of the lock, hereinafter described. A series of rocking tumblers F are cast or otherwise formed in rectangular blocks of about one inch in length, having near their head ends a sleeve with a projecting hub  $f$ , through which a journal or shaft G is passed. The ends of the shaft are secured in the plates D and E near the side plate C, and hold the inner ends of the tumblers, while their outer ends rest upon the cross-bar  $c$  of the bracket. The opposite ends of the tumblers F are provided with recesses or notches  $g$  on one side



of the center of their faces, each of which has one inwardly-inclined wall from the end toward the center and one wall straight or parallel to the outside of the tumblers, which in cross-section gives the recesses a dovetailed appearance. There is a series of these tumblers *F*—in the present instance five in number—which are reversible upon the shaft *G*, to form a great number of combinations by bringing the end recesses *g* in or out of alignment with each other, as desired, when their notched ends rest upon the cross-bar *c*. When the tumblers are turned to bring the notches *g* downward or below the center of their ends, the inclined wall is on the upper side of the notch, so that when the tumblers are rocked upon the shaft *G* by means of spring push-buttons *f'* in the side of the desk and their outer end thrown upward against a stop-plate the inclined walls of the notches will be on the same plane and register with the straight walls of the notches in the adjoining tumblers that are on the bar in a reverse position.

An oscillating bar *H*, somewhat rectangular in shape, is formed of two plates of metal united by a narrow bar welded between them at one edge; or, if desired, the entire bar may be cast in one piece. The lower plate *h* of this bar extends to the outer end of the arm *d'* of the frame or bracket, where it is pivoted, and its body oscillates in the slots *d* and *e* of the end plates and works into and out of the notches *g* of the tumblers, while its free end extends through the slot *e*, and is provided with a journal *h'* at one side of its end. The upper plate *I* of the bar is somewhat wider than the lower plate and of just sufficient length to extend over the tops of the end plates *D* and *E*, and serves as a stop to limit the extent of the upward throw of the tumblers *F* as their notches are brought into position to register one with the other. The bar *i*, uniting the plates *h* and *I*, is of a length just sufficient to slide back and forth between the end plates *D* and *E* as the bar *H* is operated.

The partially cut-away or opened sleeve *e'* in the re-enforced end plate *E* of the frame or bracket is provided with a vertical locking-bolt *J*, which has an oblique recess *j* in one side of its upper portion. Within this recess there is pivoted one end of a link *K*, that limits the movement of the bolt. The other end of the link has a bearing that receives and holds the journal *h'* of the bar *H* as it extends through the slot of the end plate. As the bolt *J* is operated by a spring push-button *k* from the top of the desk, the link *K* throws the oscillating bar *H* toward the tumblers and the edge of the plate *h* into their recesses or notches, when they are brought into position to register with each other. The bar *H* is drawn back from the tumblers by the link *K* in the upward movement of the bolt *J* caused by the action of a spring, hereinafter described.

*L* represents a cast-metal shoe, which is secured to the inside bottom of the desk underneath the bracket. This shoe has side plates *l l'* at one end, between which a lever *M* is pivoted at *m*. The arm of the lever extends to the opposite end of the shoe from the vertical plates where it comes in contact with the end of the bolt *J* of the bracket, which rests upon it. Underneath the lever-arm there is a spring *N*, which rests on the base of the shoe and holds the arm in a raised position. A portion of the side plate *l* of the shoe has an outwardly-bulging side, forming a semicircular recess *n* on its inner side, facing the plate *l'*. Within this recess there is a bolt *O*, that extends down through a sleeve *P* of the shoe-casting that passes through the floor of the desk. The lower end of the bolt forms a tooth *o*, which engages a recess or notch *p* in the top edge of the till or drawer *B* to effect the locking of the drawer. This tooth is beveled upon its lower forward edge to permit the rear edge of the drawer to readily pass under it in pushing or sliding the latter into the desk. The rear side of the tooth is perpendicular and faces a corresponding end wall of the notch or recess *p* in the top edge of the drawer or till when the drawer has been pushed in to its farthest limit to prevent the outward movement of the drawer until the tooth of the bolt has been retracted or withdrawn from the notch or recess.

The inner side of the upper portion of the bolt *O* is notched at *Q* to near one-third of the diameter for the loose reception of one side of the lever *M*, the other side of the lever resting against the vertical plate *l'*. As the lever is rocked upon its pivot by means of the spring push-button *k* on the top of the desk striking the upper end of the bar *J*, which rests upon the lever *M*, the end of the lever between the vertical side plates of the shoe moves up and down, carrying with it the bolt *O* and locks or unlocks the drawer or till, as desired. As shown in Figs. 2 and 4, the vertical locking-bolts *J* and *O* are set on the inner edge of the lock at some distance from the side of the desk, requiring the till or drawer *B* to be set in from the edge of the desk to conform to the lock.

If desired, the end plate *E* may be made of a uniform thickness with the partially-opened or cut-away sleeve *e'* cast in a separate piece, as shown in Fig. 12, so that it can be secured to either end of the plate *E* by screws or other means. When made in this form and it is desired to so place the lock as to have the bolts register with a drawer whose edge is near the wall or side of the desk, the sleeve *e'* is secured to the plate *E* in a reverse position, so that the open or cut-away part of the sleeve is downward, to enable the working of the link *K*, which is pivoted in a recess in the lower portion of the bolt *J*.

While I prefer to use the shoe *L*, having the lever *M* therein, in connection with my im-



proved combination-lock proper, I do not, however, confine myself to this combination, as the bolt J may be extended downward and take into the drawer and supply the place of the shoe and lever, as shown in Fig. 13. In this modified construction the coil-spring N is placed around the bolt J, with its lower end resting upon the floor of the desk, while its upper end is held under a pin *q* through the bolt, which presses the spring downward and the coils together as the bolt is thrown down, and when released raises the bolt to its normal position. The downwardly-extended bolt in this instance is made to project somewhat below the top of the drawer or till and at one side to come in contact with a plate R, secured to the top and projecting outwardly over the side of the drawer. This plate also extends at some distance in the rear of the drawer to form a hold for the bolt when the drawer is pulled out beyond the bolt.

In the outer side of the plate R there is a notch or recess *p* corresponding with the one hereinbefore described in the top of the edge of the drawer for the reception of about one-half of the diameter of the bolt J, which works up and down therein. When the bolt is raised by the spring N and is in its normal position, it fills the notch in the plate R and holds the drawer in a stationary position; but when pressed down by the push-button *k* the requisite distance admitted by the link K, acting upon the locking-bar H in the notches of the tumblers, a notch *r* in the bolt receives the edge of the plate R, enabling it to freely slide through the notch, when the spring *a* automatically throws the drawer out to view. As the drawer is slid into place, as the notch *p* in the plate R receives the bolt to the depth of the notch *r*, the bolt is released and the contracted coil-spring N throws the bolt upward into its normal position, filling the notch in the plate and locking the drawer within the case.

While I have shown a coil-spring in Fig. 1 for expelling or throwing the drawer out when released, I do not wish to confine myself to this particular form of spring, as a leaf-spring may be used, as shown in Fig. 15, or any other well-known kind of spring that will accomplish the same purpose.

In operation the hand is placed upon the desk with the thumb on the top push-button *k* and the fingers on the side buttons *f'*, representing the tumblers F, having their notches *g* turned downward, these being in the present instance the end ones, as shown in Fig. 4. As the buttons *f'* are pressed inwardly, striking the lower part of the heads of the tumblers, rocking them upon the journal G, the notched ends are raised until they strike the upper plate I of the bar H, when they will register with the notches in the tumblers that remain unmoved. The button *k* is then pressed down, carrying the bolt J, which through its link K moves the oscillating bar H into the registering notches of the

tumblers a sufficient distance to permit the bolt to pass down upon and carry with it the lever M, which withdraws the bolt O from and releases the drawer, which is automatically thrown out by the spring *a* in the rear.

The drawer is replaced by sliding it in against the beveled tooth *o* when sufficient pressure is brought to bear to overcome the tension of the spring N, when the bolt O is raised and slides into the notch in the drawer, locking it in place.

Having thus fully described my invention, that which I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a combination-lock for drawers, a series of rocking tumblers on a journal having one of their ends notched, said notches being adapted to register with each other and to receive an oscillating bar, as set forth.

2. In a lock, a series of reversible tumblers having one end journaled in a frame and the other end with a notch at one side the center of its end face, said tumblers adapted to be rocked to bring the notches in alignment to receive an oscillating bar, as set forth.

3. The combination, with a rectangular frame or bracket having a cross-bar or floor therein, of a series of rocking tumblers journaled at one end in the frame, the other end resting on its floor, said tumblers having notches in one end adapted to register and to receive an oscillating bar, as set forth.

4. In a lock-frame, a series of reversible tumblers journaled at one end therein, the other end having a notch at one side the center of its face with one inwardly-inclined wall, part of the tumblers arranged on the journal with the notches below the center and adapted to be rocked to bring all the notches in line with the inclined wall of the rocked tumblers on the same plane with the straight walls of the notches of the stationary tumblers arranged with the notches above the center, and to receive an oscillating bar in said notches, as set forth.

5. The combination, with a lock frame or bracket composed of a side or securing plate, an open slotted end plate extending from one end of the securing-plate, having an arm at right angles thereto, and a closed slotted end plate on the other end of the securing-plate, of a bar pivoted on the right-angled arm and working in the slots of the plates and adapted to take into notches in rocking tumblers journaled in the bracket, as set forth.

6. The combination, with a lock frame or bracket having slotted end pieces with a cross-bar or floor between them, and an arm at right angles from one of said end pieces, having the end of a bar pivoted thereon that oscillates in the slots and in notches of the rocking tumblers journaled in the frame, of a sleeve on the other end piece provided with a spring-actuated locking-bolt, said bolt being connected with the free end of the bar by a link limiting the movement of the bolt, as set forth.

7. The combination, with a desk having a



lock frame or bracket secured on its inner side with a series of end-notched rock-tumblers journaled within one side of the frame, and an oscillating pivoted bar on the other side of the frame working in the notches of the tumblers and having its free end connected with a vertical locking-bolt, of a series of spring push-buttons on the side of the desk for rocking the tumblers and a push-button on top of the desk for operating the locking-bolt, as set forth.

8. The combination, in a lock-frame, with a series of rocking tumblers having notches in their ends adapted to register and to receive a pivoted oscillating bar, of one of the end plates of the frame re-enforced at one end, with a cut-away sleeve therein, having a vertical locking-bolt recessed in its side, and a link pivoted in said recess and to the free end of the oscillating bar, as set forth.

9. The combination, with a desk having a lock-frame secured on its inner side with reversible rocking tumblers therein having notched ends receiving an oscillating bar, the free end of the bar connected with a vertical

bolt in the end plate of the frame, of a shoe secured to the floor of the desk having a pivoted spring-lever therein and underneath said bolt, one end of said lever connected with a bolt extending through the floor and adapted to take into the edge of a spring-actuated drawer beneath, as set forth.

10. The combination, with a desk having a reversible tumbler lock mechanism connected with a vertical bolt, of a shoe beneath the bolt having side plates at one end with a lever pivoted between them, one of said plates having a semicircular recess, a locking-bolt in said recess extending through a sleeve beneath the shoe, the upper part of the locking-bolt having a notch therein to receive one end of the lever and the other end supported by a spring beneath the vertical bolt of the lock, as set forth.

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

ARTHUR R. PECK.

Witnesses:

G. F. BEAUDRY,  
WM. GRADY.