

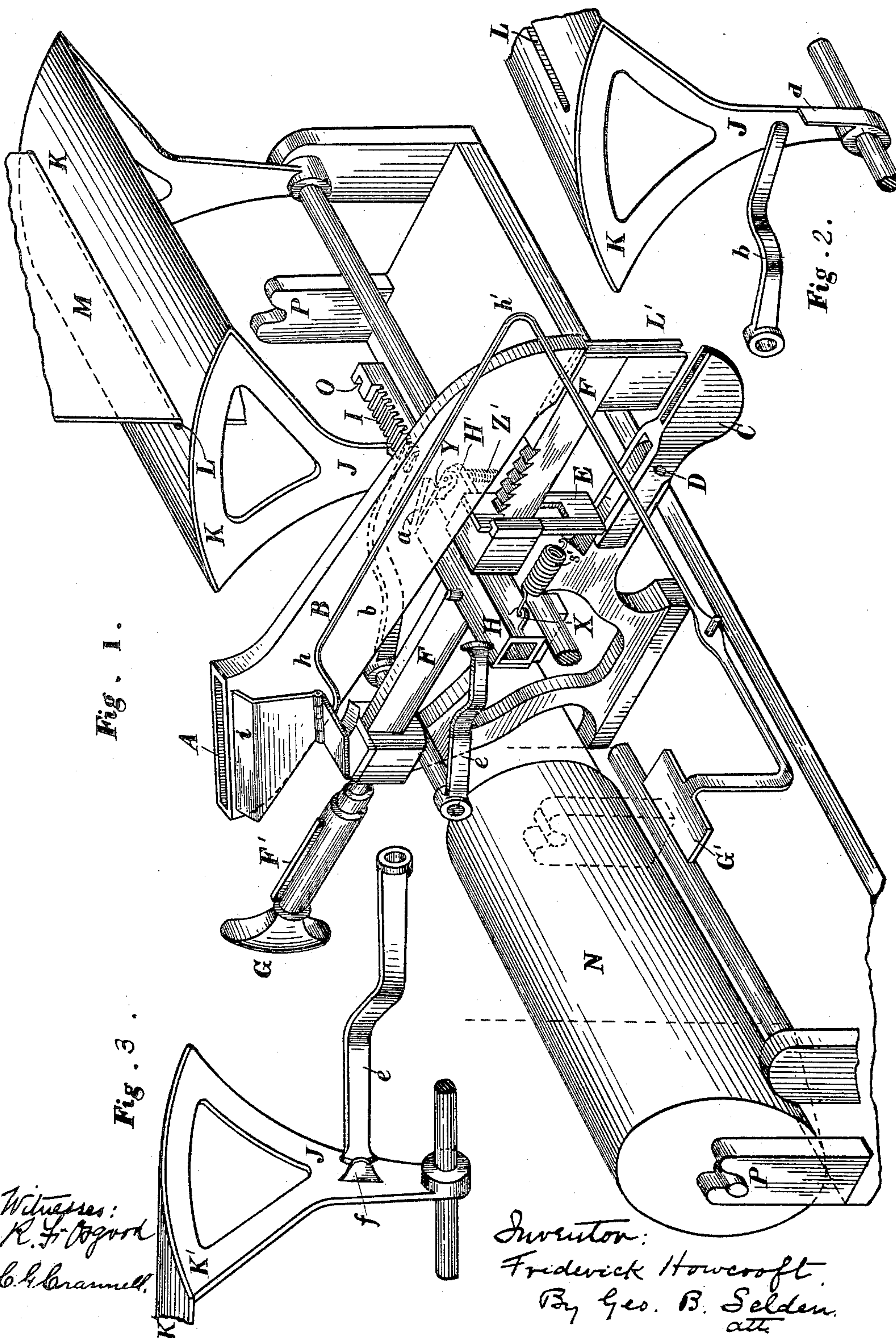
(No Model.)

3 Sheets—Sheet 1.

F. HOWCROFT.  
MESSAGE CABINET.

No. 442,439.

Patented Dec. 9, 1890.



Witnesses:  
R. F. Cogswell  
C. H. Crummett

Inventor:  
Frederick Howcroft.  
By Geo. B. Selden  
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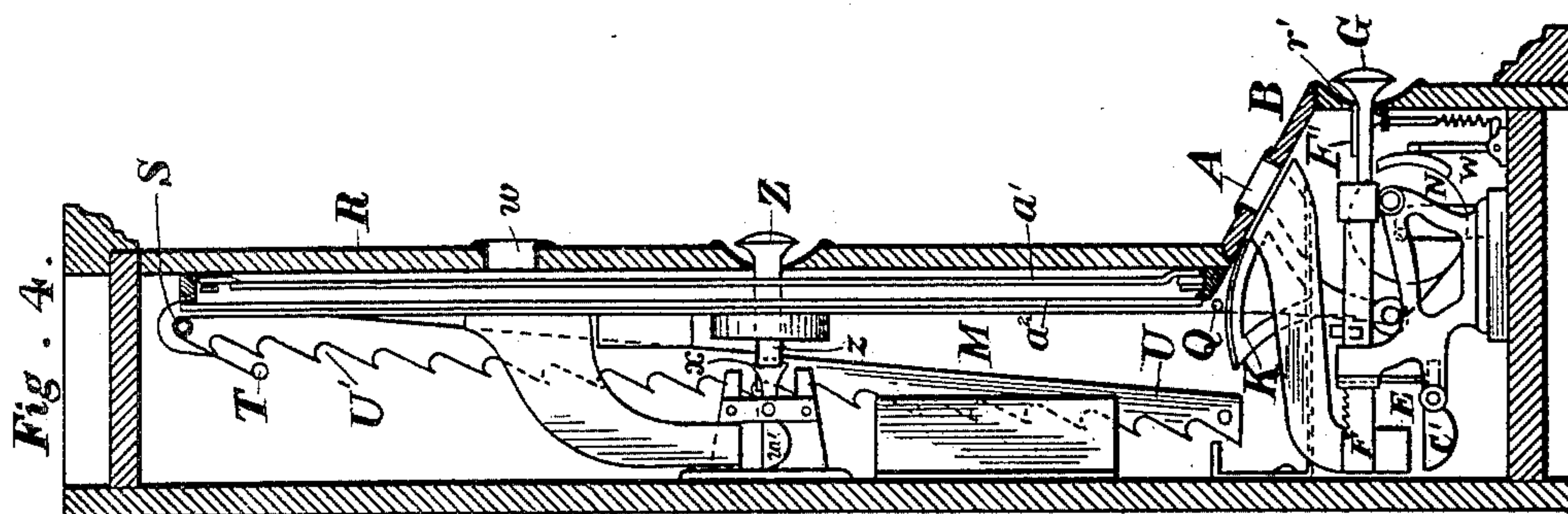
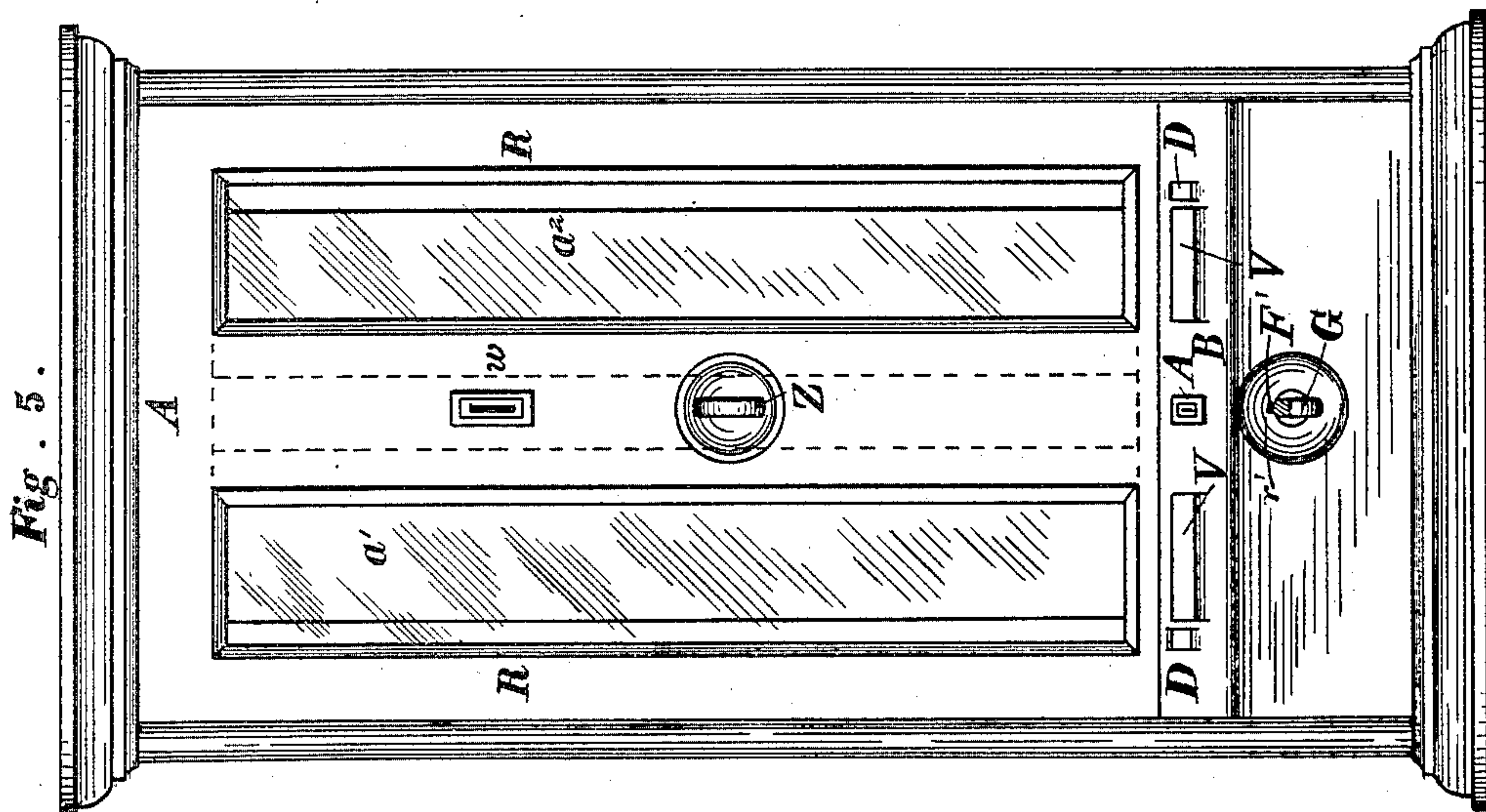
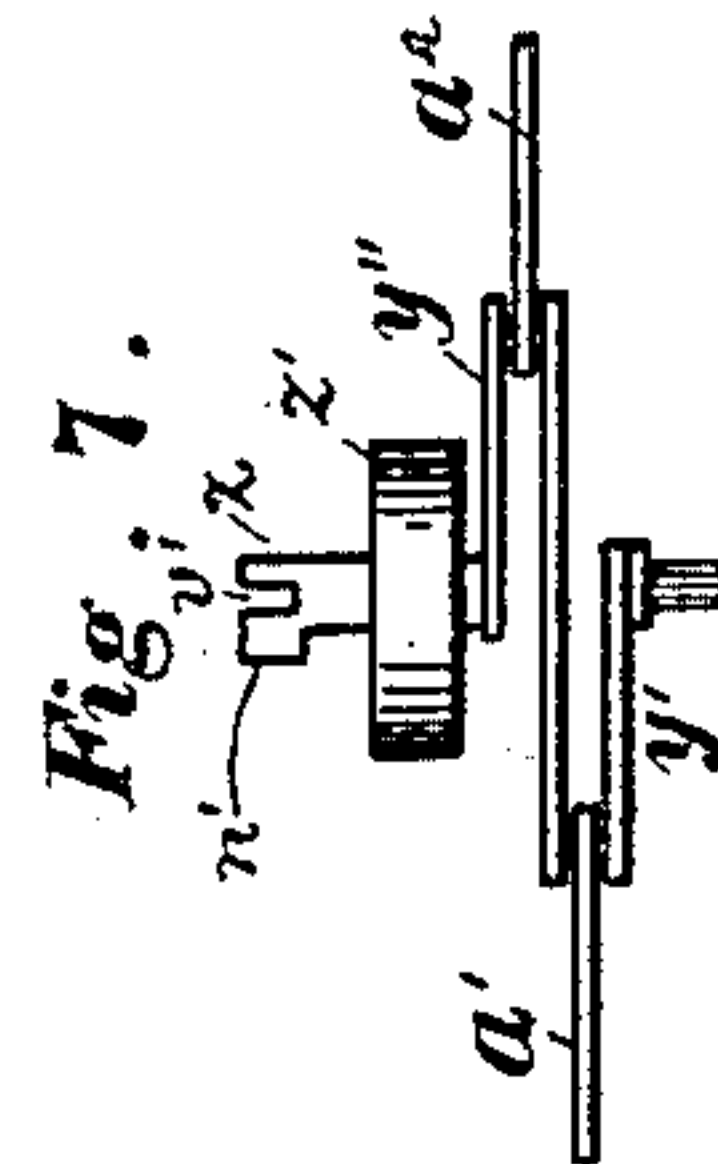
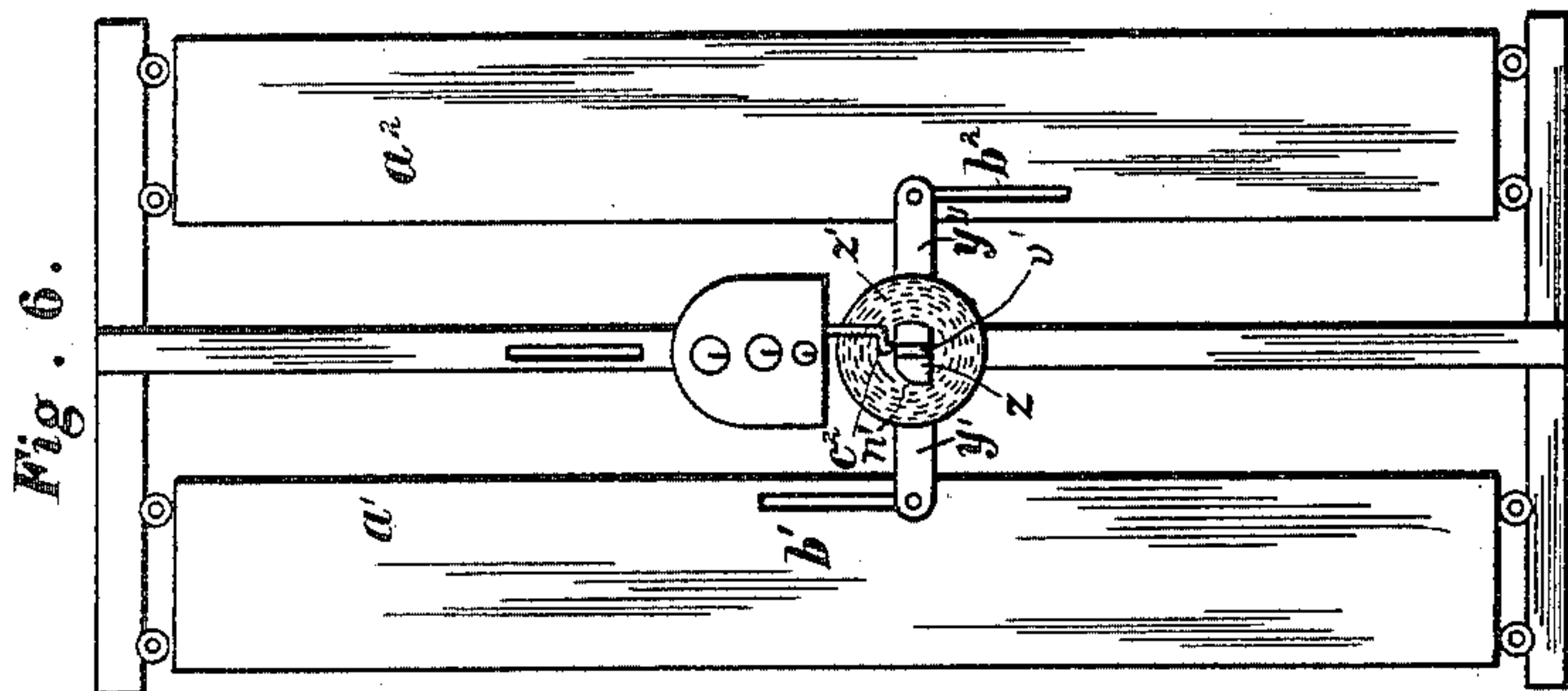
(No Model.)

F. HOWCROFT.  
MESSAGE CABINET.

3 Sheets—Sheet 2.

No. 442,439.

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3 Sheets—Sheet 3.

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MESSAGE CABINET.

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Fig. 8.

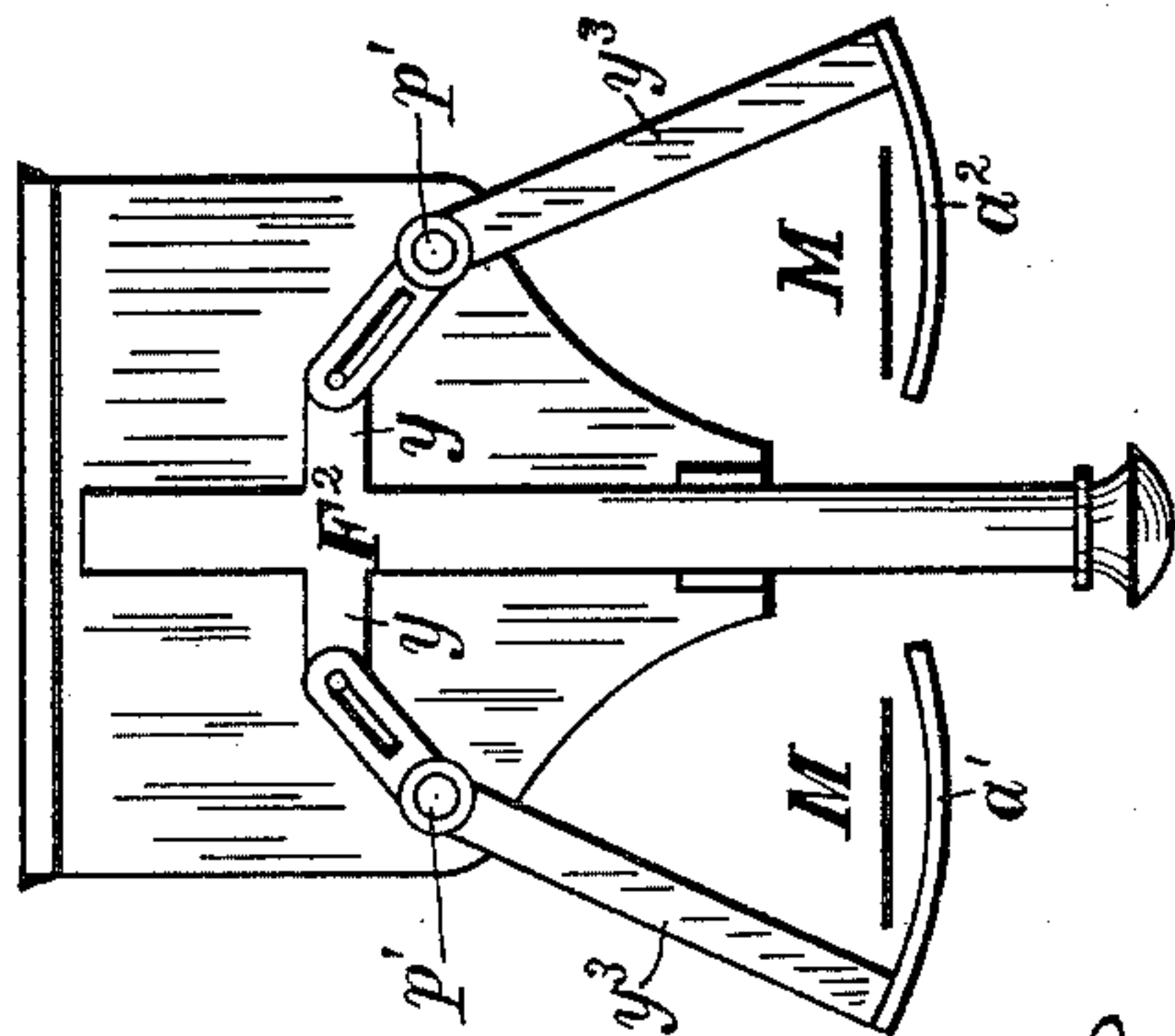


Fig. 9.

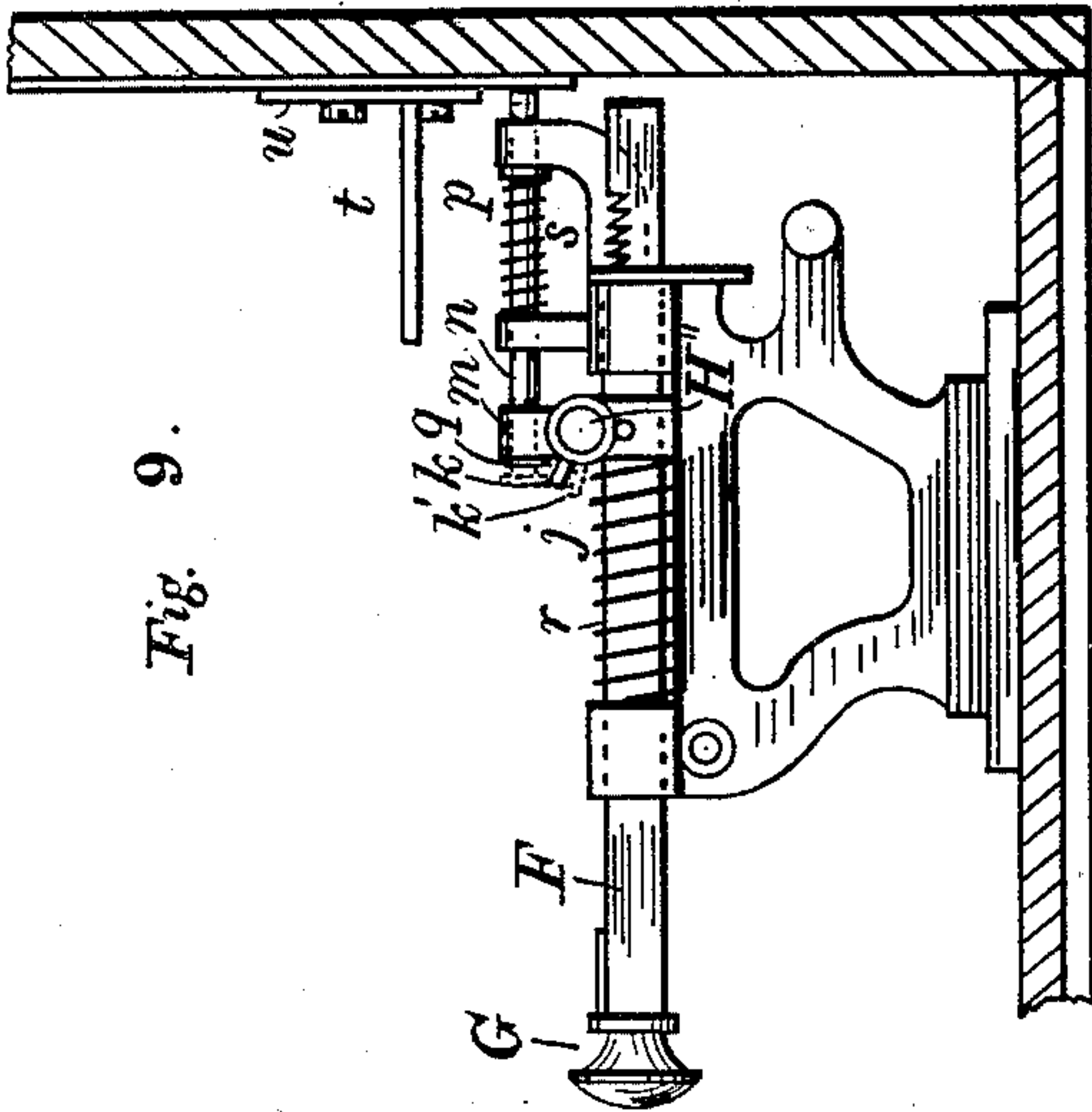


Fig. 10.

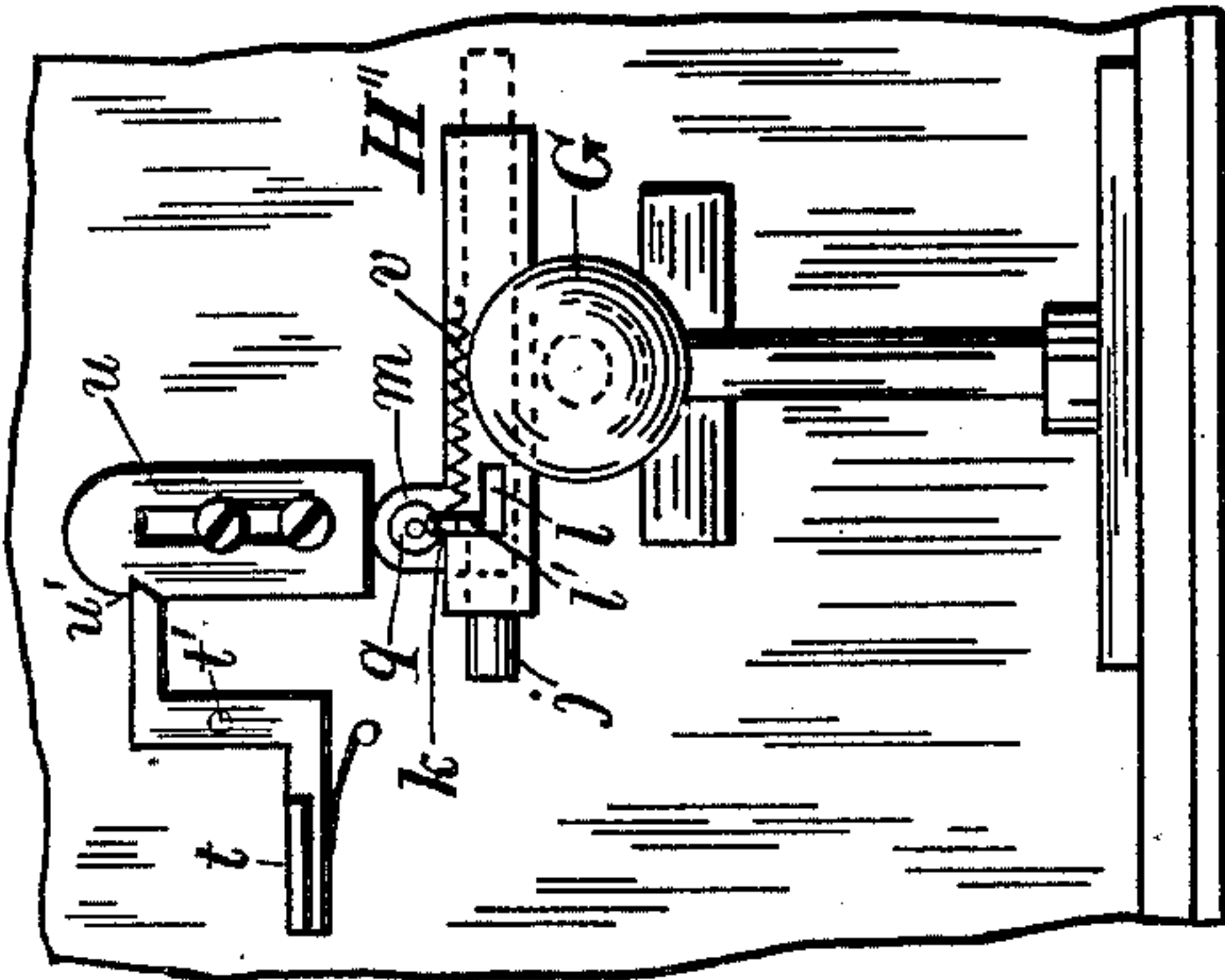


Fig. 11.

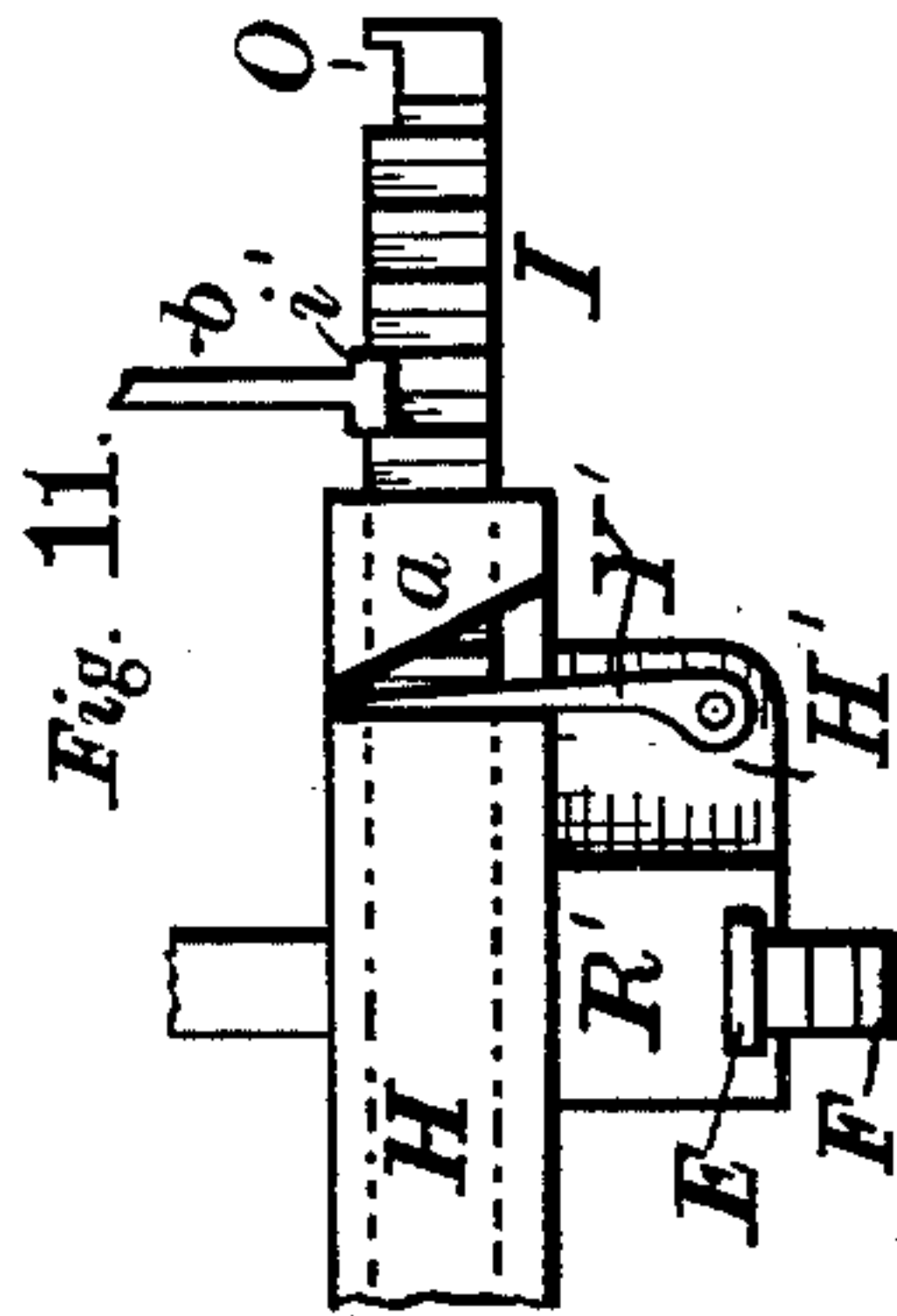
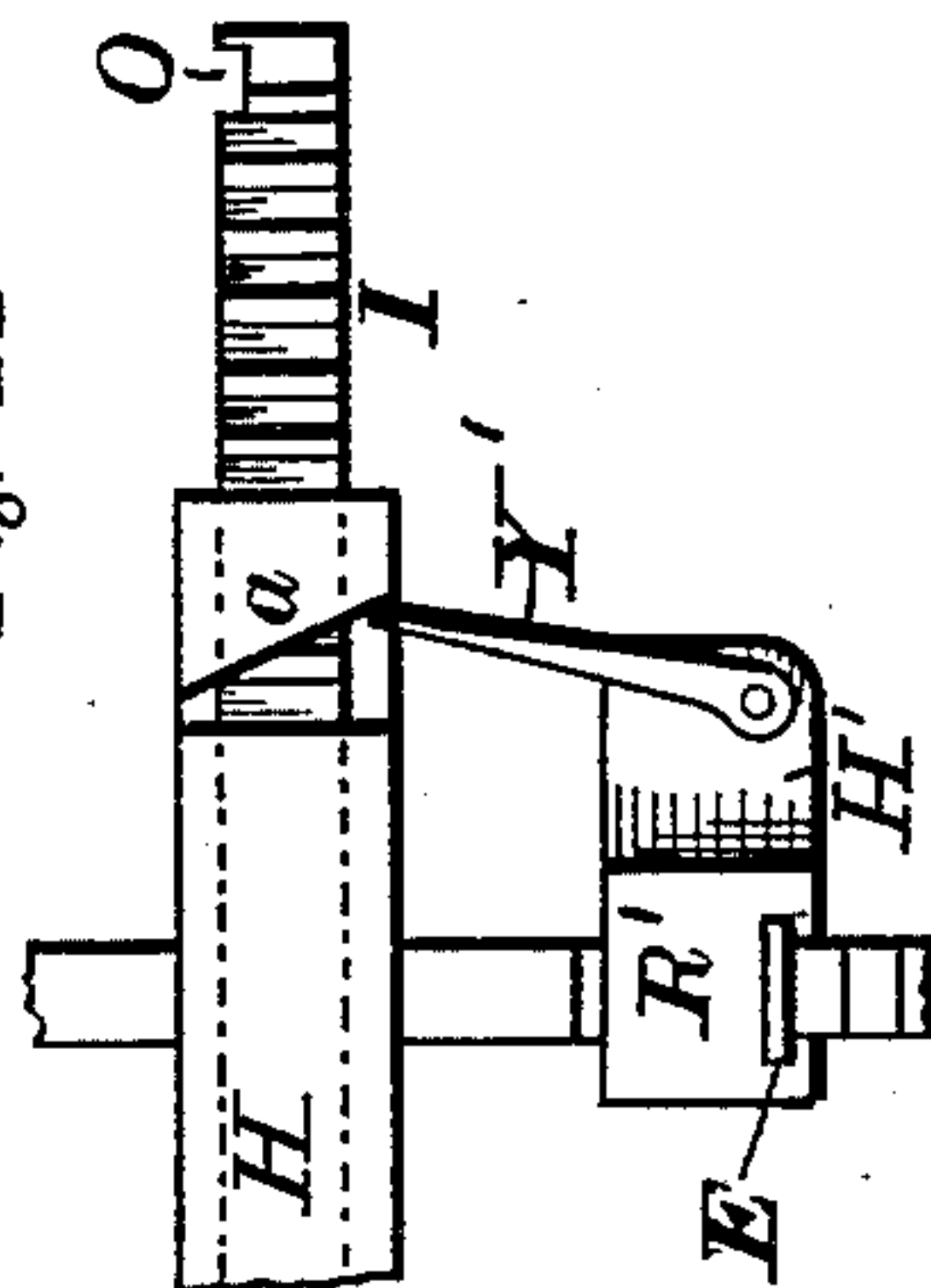


Fig. 12.



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# UNITED STATES PATENT OFFICE.

FREDERICK HOWCROFT, OF LONDON, ENGLAND.

## MESSAGE-CABINET.

SPECIFICATION forming part of Letters Patent No. 442,439, dated December 9, 1890.

Application filed July 2, 1890. Serial No. 357,588. (No model.) Patented in England November 21, 1888, No. 16,898, and January 21, 1889, No. 1,107.

*To all whom it may concern:*

Be it known that I, FREDERICK HOWCROFT, a subject of the Queen of Great Britain, residing at Hart Street, Covent Garden, in the county of Middlesex, England, have invented certain Improvements in Message-Cabinets, (for patents on which I have made applications in Great Britain, No. 16,898, dated November 21, 1888, and No. 1,107, January 21, 1889,) of which the following is a specification, reference being had to the accompanying drawings.

According to my invention I provide a cabinet to hold a quantity of paper in such a manner that by the insertion of a coin a message may be written upon said paper through openings provided in the lower part of the cabinet, which, for convenience, is of desk shape, and by the insertion of another coin such written message may be viewed and read through glazed or other openings in the front or upper part of the cabinet, which are normally covered by sliding or other shutters, all but a narrow strip at the side through which can be read the address of the party for whom the message is intended.

In order that my invention may be fully understood, I have appended the accompanying three sheets of drawings, in which—

Figures 1, 2, and 3 are perspective views of the operating mechanism. Fig. 4 is a sectional side elevation. Fig. 5 is a front elevation. Figs. 6 and 7 represent the mechanism for operating the shutters. Fig. 8 represents a modification of the said mechanism. Figs. 9 and 10 are modifications of the operating mechanism. Fig. 11 is a plan view of a portion of the cross-head, showing the slot with the inclined side and the lever which operates the sliding rack. Fig. 12 represents the parts shown in Fig. 11 in a different position.

The *modus operandi* is as follows: A person wishing to write a message and to have the same displayed inserts a coin at A, which rolls down the chute B into the coin-receiver C, which is pivoted at D. The coin depresses said receiver C and raises the locking-bolt E from the toothed serrations of the draw-bar F, which can now be pulled out by the handle G, carrying with it the cross-head H, which is

hollow, and contains therein the sliding toothed rack I, which engages, as indicated in Fig. 1, against one arm J of the writing-slab K and moves it opposite the opening V, Fig. 5. When the handle G is pulled out, it is turned axially one-fourth of a revolution to lock the slab in the forward position, in which position a message may be written on the paper through the opening V.

The handle G is provided with a feather F', Figs. 1 and 4, which slides through a notch r', Figs. 4 and 5, in the edge of the opening in the support or guide through which the handle G passes, and by which feather and notch the handle is prevented from being turned axially until the feather has been entirely withdrawn from the notch, after which the handle can be turned, so that the inner end of the feather by coming in contact with the outer surface of the guide prevents the handle from moving inward until the feather is again brought opposite the notch. The inner end of the handle is fitted into the end of the bar F by any suitable kind of joint which permits the handle to be turned about its axis, while the bar and handle are compelled to travel lengthwise together.

The feather F' is somewhat shorter than the cylindrical portion of the handle G, which passes through the guide. The locking-bolt E is arranged to slide up and down in suitable ways, falling by its own weight, so as to engage with the serrations on the bar F, and to prevent the pulling out of the handle G, except when a coin of the required dimensions is introduced in the receiver C, when the locking-bolt E is raised by the weight of the coin and the bar F is released. The locking-bolt is slotted and the bar F passes through the slot in the construction shown in the accompanying drawings, the upper edge of the slot being adapted to engage with the serrations on the bar; but it is obvious that the locking-bolt may be made of any other suitable shape.

Through the slot L, Fig. 1, in the writing-slab is passed the paper M, fed from a suitable roll N, Fig. 4, revolving in a standard P, but not shown on the right-hand side in Fig. 1 to avoid confusion. Above the slot L, when the quadrantal slab K is in the verti-



cal position, is a small roller Q, Fig. 4, behind which the paper written on passes from thence up behind the glazed front R to the upper roller S, over which it travels, having a weight T attached to its end. The weight T slides down the inclined racks U and serves to keep the paper tight. There are two inclined racks behind each of the glazed openings R, the pitch of the teeth of these racks being equal to the distance between the writing-opening V and the glazed opening R, measured along the path traversed by the paper.

Referring more particularly to Fig. 4, in which all the parts are in normal position, the pulling out of the draw-bar F moves the slab K, so that it comes underneath the opening V, as described, a distance of (say) three inches, and at the same time pulls the paper M and the weight T until the latter engages with the teeth U' of the racks U and raises it (say) one and one-half inch, the remaining one and one-half inch of paper required being drawn from the roll M.

An adjustable tension-brake W, Fig. 4, is applied to the roll N to prevent any undue rotation thereof.

While the slab K is held in position under the opening V, any desired message is written on the paper supported by the slab. The slab K is held in this position until the operator releases it by turning the handle G axially, so that the feather F' passes through a notch r', Figs. 4 and 5, in the guide, which supports its outer end, after which the draw-bar is pulled back by a spring S', Fig. 1, attached to the cross-head at X, Fig. 1, the coin previously used being discharged into any convenient receptacle after the return movement of the draw-bar and the paper traveling upward being drawn by the weight T until the message just written is visible through the glazed opening R, when the shutters a' a<sup>2</sup> are operated, as hereinafter described. The number of messages which may be written through each of the openings R in the cabinet, as shown in the accompanying drawings, is eighteen; but it is obvious that the construction may be modified, so as to permit a larger or smaller number, if desired. When one opening in the cabinet is full of messages, the other is brought into operation automatically in the following manner:

The cross-head rack I has on it nineteen teeth and the rack U eighteen teeth, corresponding to the number of messages designed to be written upon one strip of paper, and at every operation of writing a message the rack I is moved lengthwise one tooth, so that when eighteen messages have been written the end of the bar I is out of engagement with the arm J of the slab K and is brought into engagement with the arm of the other slab. The rack I is moved one tooth in the required direction by a lever Y', fixed to a spindle, on which is wound a spiral spring Z' under the supporting-bracket II'. The bracket II' is

attached to the standard or upright R', Figs. 11 and 12, which supports the locking-bolt E or to some other convenient part of the frame of the machine. The tension of the spring Z' tends always to move the free end of the lever Y' in one direction—that is, from left to right in Figs. 11 and 12. A slot cut in the upper side of the cross-head H opposite the lever Y has a slanting side a, adapted to move the free end of the lever when the cross-head moves toward the lever in opposition to the spring Z'. This slot is cut through the upper side of the cross-head down to the bottom of the teeth of the rack I, which is exposed through the slot. The lever Y' is made of a depth or thickness greater than the height of the teeth, so that it can engage between the teeth and also bear on the slanting side a of the notch in the cross-head above the teeth. The slanting side a is made of a pitch corresponding with that of the teeth of the rack I, and consequently when the draw-bar F is pulled the cross-head is moved away from the lever Y', as represented in Fig. 12, and the lever Y escapes from one of the teeth of the rack and is swung to the right by the spring Z, as indicated at Y', Fig. 12. When the draw-bar and cross-head return toward the lever, the point of the lever passes into the space between the next teeth, the slanting side a moves the lever from right to left into its former position, and the lever carries with it the rack I the distance of one tooth, the parts then occupying the position shown in Fig. 11. This is repeated at every operation, and when at the end of the eighteenth message the rack is clear of the slab K and engaged with the slab on the opposite side the locking-lever b falls through the slot O in the end of the rack I and engages with the stop d, Fig. 3, on the arm of the slab K, locking the same in place, while the locking-lever c, Fig. 2, of the opposite slab falls at the same time free from the stop f, thus allowing free movement of the slab K' until eighteen more messages have been written thereon. The locking-levers b and c are connected together by a spindle turning freely in a suitable support and both levers fall at the same time from their gravity. In order to prevent the locking-lever b from entering between the teeth of the rack I and stopping its movement, I make the end of the lever which bears on the rack of a width greater than the space between the teeth, as indicated at i', Fig. 11, so that the rack can move along under the lever until the notch O comes opposite the lever, when the latter will fall by its own weight. When the last strip of paper in the cabinet is full of messages, a weight corresponding to T on its end falls upon the platform G', Fig. 1, and depresses the same, raising the opposite end h of the pivoted lever h' and closing the coin-chute B by means of the hinged shutter i, so as to prevent any more money being introduced into the apparatus.



When it is desired that the message previously written should be inspected, a coin is inserted into the slot  $w$ , Figs. 4 and 5, which falls down the chute and operates the coin-receiver  $w'$ , lifting its locking end  $x$  clear of the slot  $V'$ , Fig. 6, in the spindle  $z$ , provided with handle  $Z$ , by turning which axially the shutters  $a' a^2$  are operated or shifted inward, so as to permit the inspection of the messages behind them. It will be observed from Figs. 4 and 7 that the shutters  $a' a^2$  are placed out of line with each other, so that one can pass in front of the other when they are both moved inward. The spindle  $z$  has attached thereto the double-action cranked levers  $y' y''$ , Figs. 6 and 7, which work in the slots  $b' b^2$  in the shutters  $a' a^2$ , and when the spindle is turned cause the shutters to assume a position immediately behind each other clear of the glazed openings, through which the messages can be read at leisure. The coin is allowed to drop into a convenient receptacle, and the pivoted coin-receiver  $w'$  returns to its position ready for the introduction of another coin.

The handle  $Z$  must be held during the inspection of the messages, for upon releasing the same the shutters are automatically closed over the writing under the action of a coiled spring inclosed in a barrel  $z'$ , fixed to the spindle  $z$ . I further affix a registering device operated at every turn of the handle, a sliding rod  $c^2$ , Fig. 6, which operates the registering apparatus, being lifted by a cam  $n'$ , Figs. 6 and 7, on the spindle  $z$  or in any other suitable manner, for the purpose of checking the number of coins received by the said cabinet.

An alternative mode of arranging the shutters is shown in Fig. 8, in which  $M M$  are the strips of paper on which the messages are recorded, and  $a' a^2$  are the shutters which cover the messages. A coin releases the bar  $F^2$  in any ordinary manner, and on being pulled out the cross-head  $y$  on the bar  $F^2$ , which is provided with pins working in the slotted ends of the levers  $y^3$ , swings the shutters outward and discloses the messages. The levers are pivoted at  $p'$  to any convenient support.

Figs. 9 and 10 show an alternative method of operating the different writing-slabs, in which I dispense with the toothed rack  $I$  and use a shooting bolt  $j$  in the following manner: I retain the use of the cross-head  $H''$ , as before, but it is round in form and serves for the barrel of the shooting bolt  $j$ , which performs the same functions as the rack  $I'$ , said bolt having in it a pin  $k$ , projecting through a bayonet-joint slot  $l$  in the barrel, and which is held in the position shown in Fig. 9, being arranged while in this position to operate the writing-slab situated on the left hand as you face the cabinet, the end of the bolt projecting beyond the cross-head, as shown in Fig. 10. In order to make the bolt operate the other writing-slab, it is necessary to shift it lengthwise, so that its end may project

from the right hand of the cross-head, as represented by the dotted lines in Fig. 10. The bolt is shifted lengthwise by the spring  $v$ , Fig. 10, the apparatus being so constructed that when all the paper on one side has been filled with messages the bolt  $j$  is turned axially, so that the pin  $k$  can move along the longitudinal slot  $l$ . Passing through a bearing  $m$  on the barrel is a small rod  $n$ , with a head  $q$  abutting against the bearing, said rod passing through other bearings  $p$ , attached to the standard. The draw-bar  $F^2$  being pulled out carries with it the barrel  $H''$ , bolt  $j$ , and rod  $n$  by means of the head  $q$ . After the message is written the draw-bar is released in the manner before described and brought back to its former position by the spring  $r$  and the small rod  $n$  similarly by the spring  $s$ . However, when seventeen messages have been written the weight  $T$  on the end of the paper strip descends upon the platform  $t$  and releases the sliding block  $u$ , which falls and rests upon the end of the small rod  $n$ , thereby turning the bolt axially and shifting the pin from  $k$  to  $k'$ , Fig. 9.

The platform  $t$  is sustained by a suitable spring being connected to a lever pivoted at  $t'$ , the end of which engages in a notch in the block  $u$ , as indicated at  $u'$ , Fig. 10. When the draw-bar is pulled for the eighteenth message, the sliding block  $u$  is allowed to fall still farther until it assumes a position immediately behind and in the way of the rod  $n$ , which on its return strikes against  $u$ , and is prevented thereby from making any further movement. The cross-head  $H''$ , having a further inward motion, pushes the pin  $k$  of the bolt  $j$  against the head  $q$  of the rod  $n$  until  $k$  is opposite the horizontal portion of the slot  $l$ , and being released from the shoulder  $l'$  the bolt is suddenly pulled by the spring  $v$ , and is thus caused to shift lengthwise, assuming the necessary position for operating the slab on the right-hand side, as before described with reference to the rack  $I$ , the slab on the other side being locked in the manner before described by the levers  $b$  and  $e$ .

It will be understood that the entire apparatus is inclosed within a suitable case designed to protect the machinery and to prevent the abstraction of the money from the receivers. The glazed openings  $R$  are formed in a removable door  $A'$ , Fig. 5, which is provided with a suitable lock. The writing-openings  $V$  are also formed in a removable cover  $B'$ , Fig. 4. A small opening  $D'$ , Fig. 5, is made on one side of each of the writing-openings  $V$ , through which the address or any suitable number or character is inscribed on the paper at the time the message is written, and it will be observed that the shutters  $a' a^2$  are so located when closed that the address of the message always remains visible, the shutter covering the body of the messages only, which cannot be read except by a person who inserts a coin in the slot  $w$  and then uncovers the messages by turning the handle



Z. The end  $x$  of the coin-receiver is provided with a gravity-latch which holds it up out of the slot in the spindle until released by the return movement of the spindle.

5 The shutters  $a'$   $a^2$  when arranged to slide in suitable ways, as indicated in Fig. 6, are provided with rollers which travel in the guides.

When the coin to operate the draw-bar F is introduced at A, it travels down through the chute B and through the slotted guide L' on the end of the draw-bar, depressing the coin-receiver C by its weight and remaining in this position, supported laterally by the sides of the guide L' until by the movement of the draw-bar the coin is permitted to fall off the coin-receiver into a suitable receptacle below.

It will be observed that the construction of the apparatus is such that all the paper is utilized for the writing of messages thereon, except a narrow blank space, which may be left between any two of the messages, this result being accomplished by the conjoint action of the movable writing-slab K, the weight T on the end of the paper, and the racks U, whereby a portion of the paper necessary for any one message is drawn from the roll, the remainder being obtained by pulling the strip of paper downward until the weight T engages with the teeth of the racks U, this operation permitting any particular message to be written on the paper at a short distance below the next preceding message.

As indicated by the dotted lines in Fig. 5, the paper is wider than the length of the writing-opening, or when the address-opening is used wider than both of these openings together, so that it is impossible to destroy the continuity of the strip of paper by cutting out that portion of the paper which is exposed under the openings or either of them.

I claim—

45 1. The combination, in a message-cabinet provided with a writing-opening V, of the coin-controlled draw-bar F, the movable writing-slab K, and paper M, substantially as described.

50 2. The combination, in a message-cabinet provided with a writing-opening V and a separate address-opening D', of the coin-controlled draw-bar F, the movable writing-slab K, and paper M, substantially as described.

55 3. The combination, in a message-cabinet provided with a writing-opening V, of the coin-controlled draw-bar F, the movable writing-slab K, paper M, and the movable coin-controlled message-covering shutter  $a'$ , substantially as described.

60 4. The combination, in a message-cabinet provided with a writing-opening V and a separate address-opening D', of the coin-controlled draw-bar F, the movable writing-slab K, paper M, and the movable coin-controlled shutter  $a'$ , arranged to conceal the messages

while displaying the addresses, substantially as described.

5. The combination, in a message-cabinet provided with duplicate writing-openings V V, of the coin-controlled draw-bar F, the movable writing-slabs K, duplicate strips of paper M, and suitable mechanism constructed and arranged to operate one of the writing-slabs a certain number of times and then to operate the other, substantially as described.

6. The combination, with the case of a message-cabinet provided with duplicate writing-openings V V, of the coin-controlled draw-bar F, carrying cross-head H, the sliding rack I, lever  $\gamma$ , and the movable writing-slabs K K, substantially as described.

7. The combination, with the coin-controlled draw-bar F, of the movable writing-slab K and traveling paper M, having a weight T attached to its free end, substantially as described.

8. The combination, with the case of a message-cabinet provided with the duplicate writing-openings V V, of the coin-controlled draw-bar F, cross-head H, notched rack I, suitable mechanism for moving the rack, writing-slabs K K, and pivoted levers  $b$   $e$ , substantially as described.

9. The combination, with the case of a message-cabinet provided with the writing-opening V, of the coin-controlled draw-bar F, the movable writing-slab K, supported on pivoted arms J and provided with slot L, the paper M, and guide-roll Q, substantially as described.

10. The combination, with the case of a message-cabinet provided with writing-opening V, of the movable writing-slab K, arranged to be operated by the coin-controlled draw-bar F, the guide-roll S, paper M, having weight T attached thereto, and the notched racks U, substantially as described.

11. The combination, with the case of a message-cabinet provided with writing-opening V, of the coin-controlled draw-bar F, the movable slotted writing-slab arranged to be operated by the draw-bar, paper-roll N, provided with brake W, paper strip M, passing through slot L around the guide-pulleys Q and S and having weight T attached to its free end, and the notched racks U, substantially as described.

12. The combination, with the case of a message-cabinet provided with a writing-opening V and an address-opening D', of suitable coin-controlled mechanism constructed and arranged to move a strip of paper under both openings, and then to display the same behind a glazed opening closed by a shutter which permits the inspection of the address, and suitable coin-controlled mechanism which permits the moving of the shutter to inspect the messages, substantially as described.

13. The combination, with two parallel strips of paper having messages written thereon with the addresses of the messages on the outer edges of the strips, of the movable



shutters  $a' a^2$ , arranged to conceal the messages while displaying the addresses, and provided with mechanism whereby the shutters are moved inward to uncover the messages, substantially as described.

14. The combination, with two parallel strips of paper having messages written thereon and the addresses of the messages on the margins thereof, of the movable shutters  $a' a^2$  and suitable coin-operated mechanism which permits the moving of the shutters and the inspection of the messages on the introduction of a coin, substantially as described.

15. The combination, with two parallel strips of paper having messages written thereon with the addresses of the messages on the margins thereof, of the movable shutters  $a' a^2$ , rotatable coin-operated spindle  $z$ , and suitable connecting mechanism, whereby the shutters are moved by turning the spindle so as to display the messages, substantially as described.

16. The combination, with the movable message-concealing shutters  $a' a^2$ , of the coin-operated rotatable spindle  $z$ , spring  $z'$ , and cranks  $y' y^2$ , substantially as and for the purposes set forth.

17. The combination, with the case of a message-cabinet provided with writing-opening V, of suitable coin-controlled mechanism constructed and arranged to pass a traveling band of paper under the said writing-open-

ing, and then to display any message written thereon behind a glazed opening provided with a movable shutter, and suitable coin-controlled mechanism which permits the moving of the shutter to inspect the messages, substantially as described.

18. The combination, with the case, of a message-cabinet provided with writing-opening V, of a traveling band of paper wider than the opening, suitable coin-controlled mechanism which at each operation advances the paper a given distance behind the said opening, a glazed opening provided with a movable shutter, and suitable coin-controlled mechanism adapted to permit the moving of the shutter and the inspection of the messages on the introduction of a coin, substantially as described.

19. The combination, with a message-cabinet provided with a writing-opening, of the movable coin-controlled slab K, provided with paper-slot L, roll N, paper M, and weight T, substantially as described.

In witness whereof I have hereto signed my name, in the presence of two subscribing witnesses, this 27th day of August, 1889.

FREDERICK HOWCROFT.

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