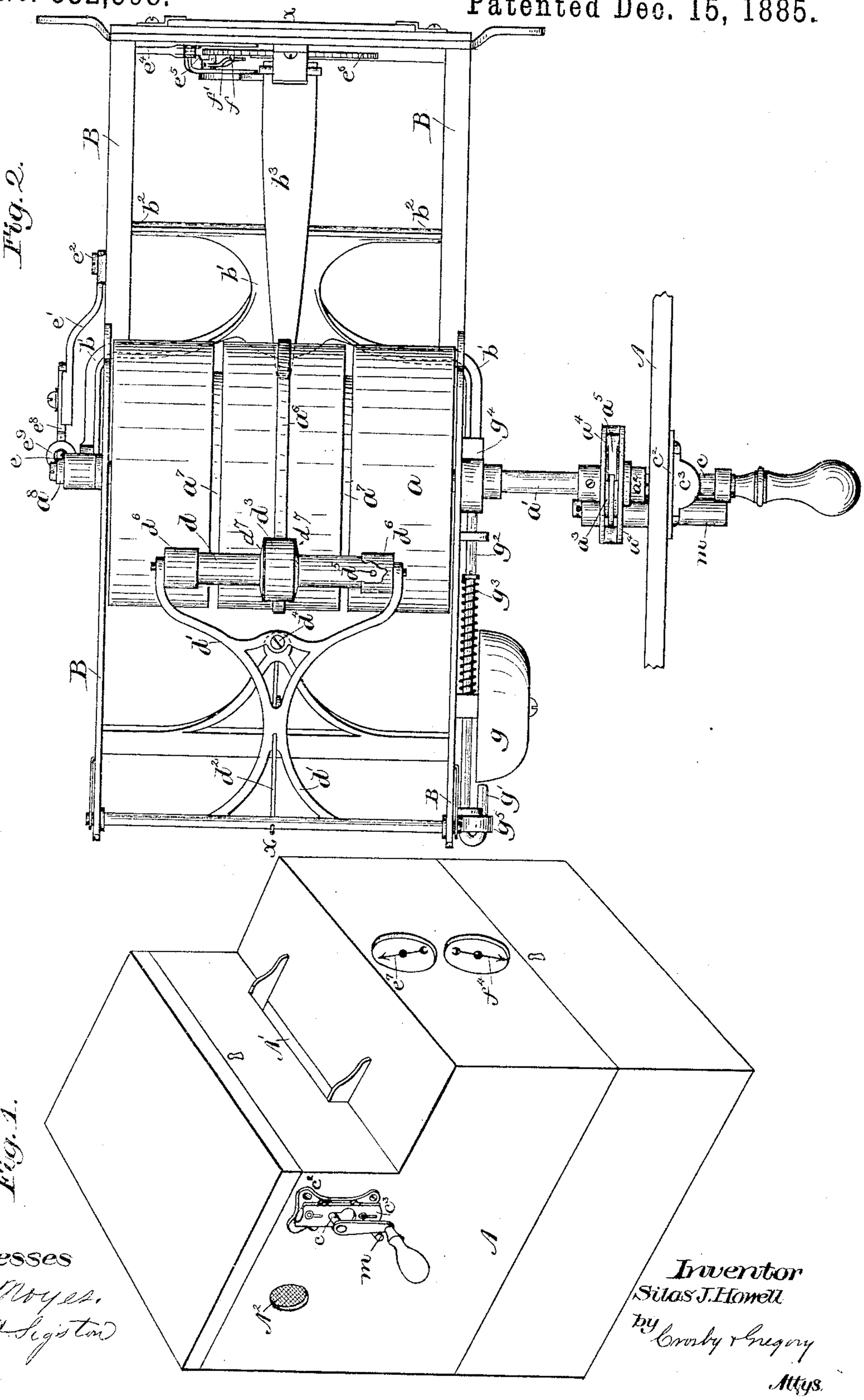
(No Model.)

3 Sheets—Sheet 1.

S. J. HOWELL.

REGISTERING AND CANCELING BALLOT BOX.

No. 332,398. Patented Dec. 15, 1885.



Witnesses
B. J. Noyes.
R. A. Sigiston

Inventor
Silas J. Howell
by Crosby & Gregory
Attys.

(No Model.)

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S. J. HOWELL.

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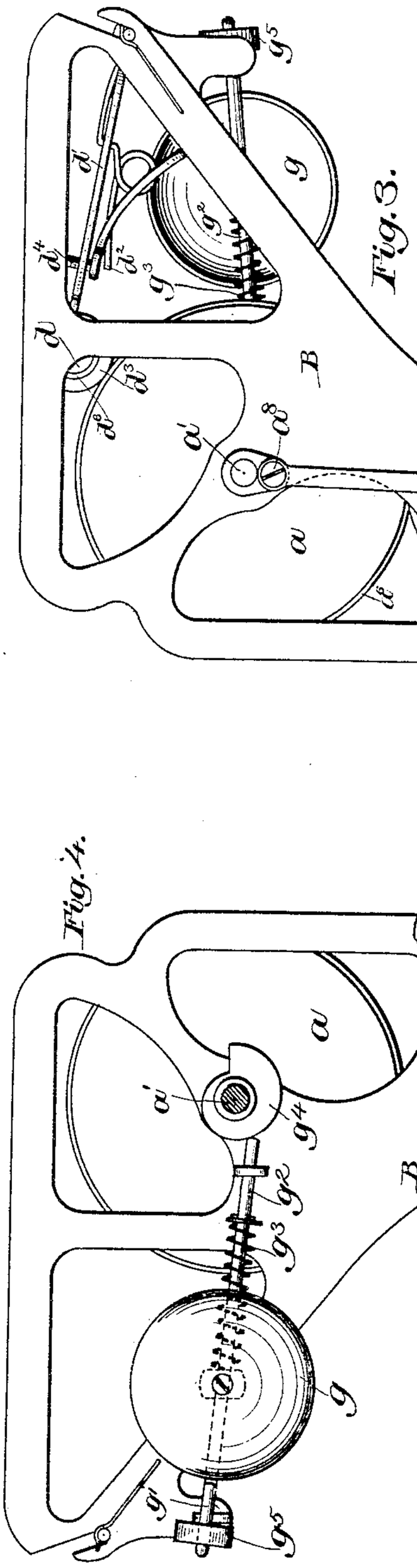

Fig. 3.

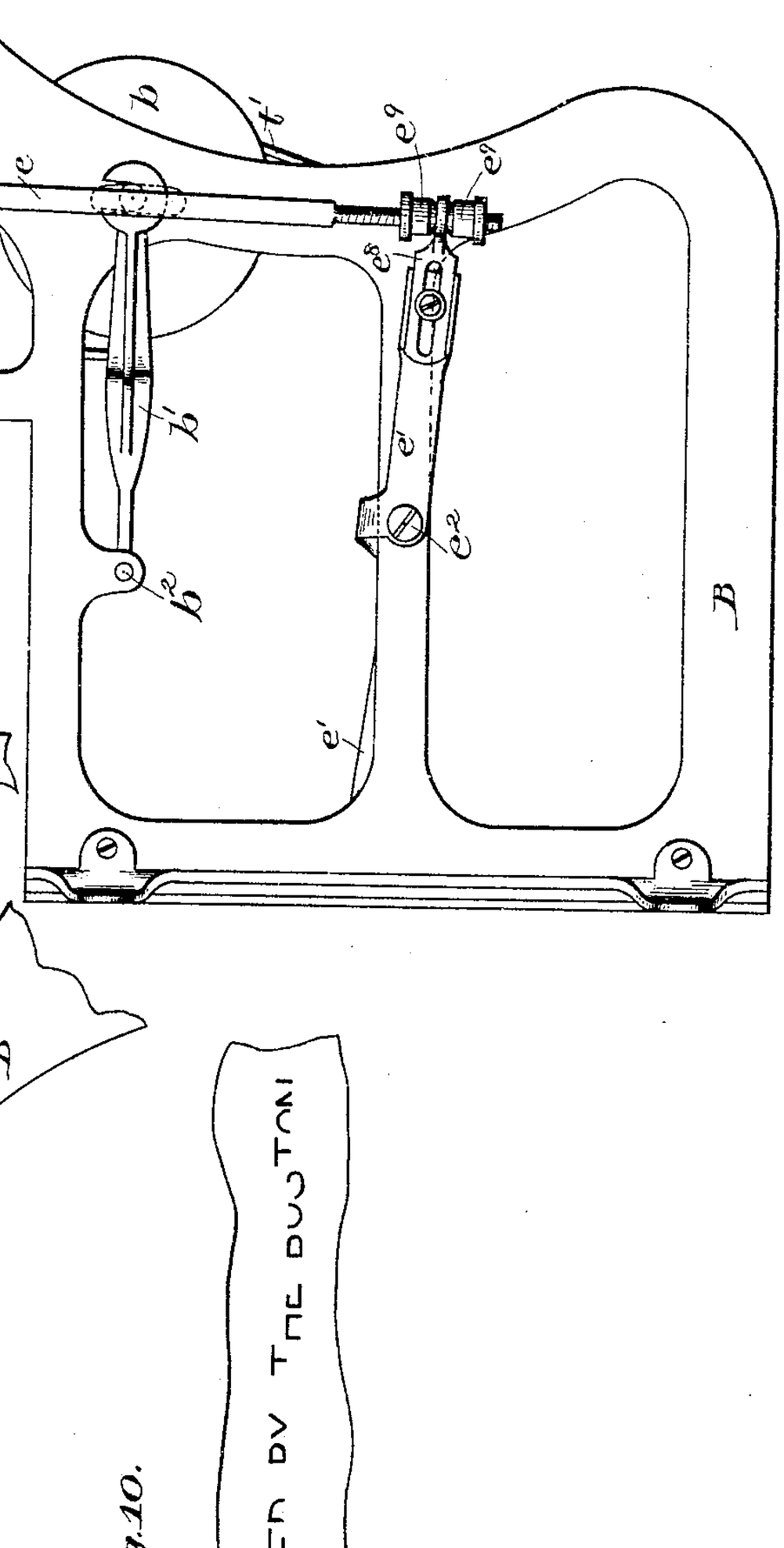

Fig. 4.

Fig. 10.

Witnesses
B. J. Noyes.
R. A. Sigston.

Inventor
Silas J. Howell
by Crosby & Gregory
Attys.

(No Model.)

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S. J. HOWELL.

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Fig. 5.

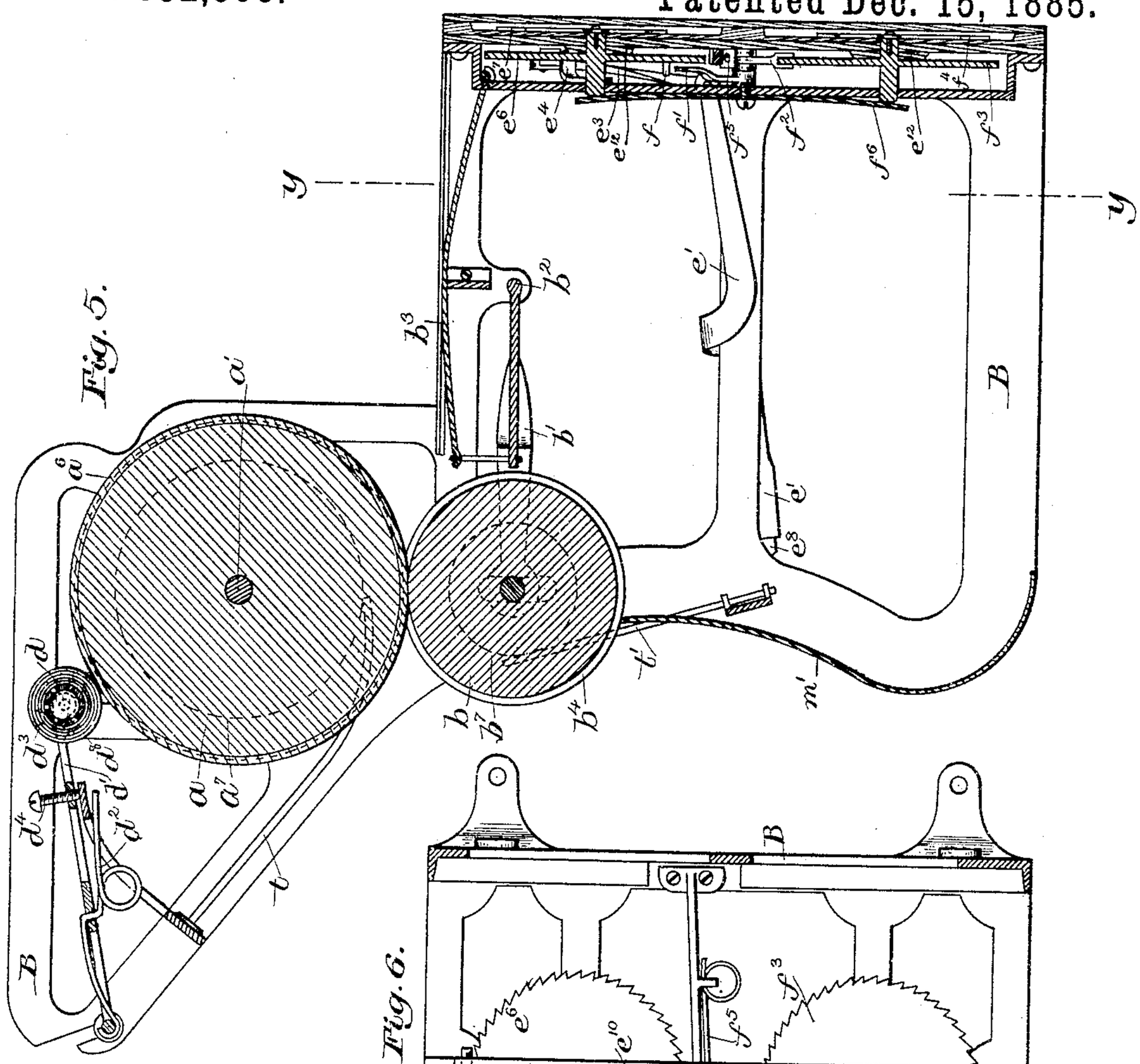


Fig. 6.

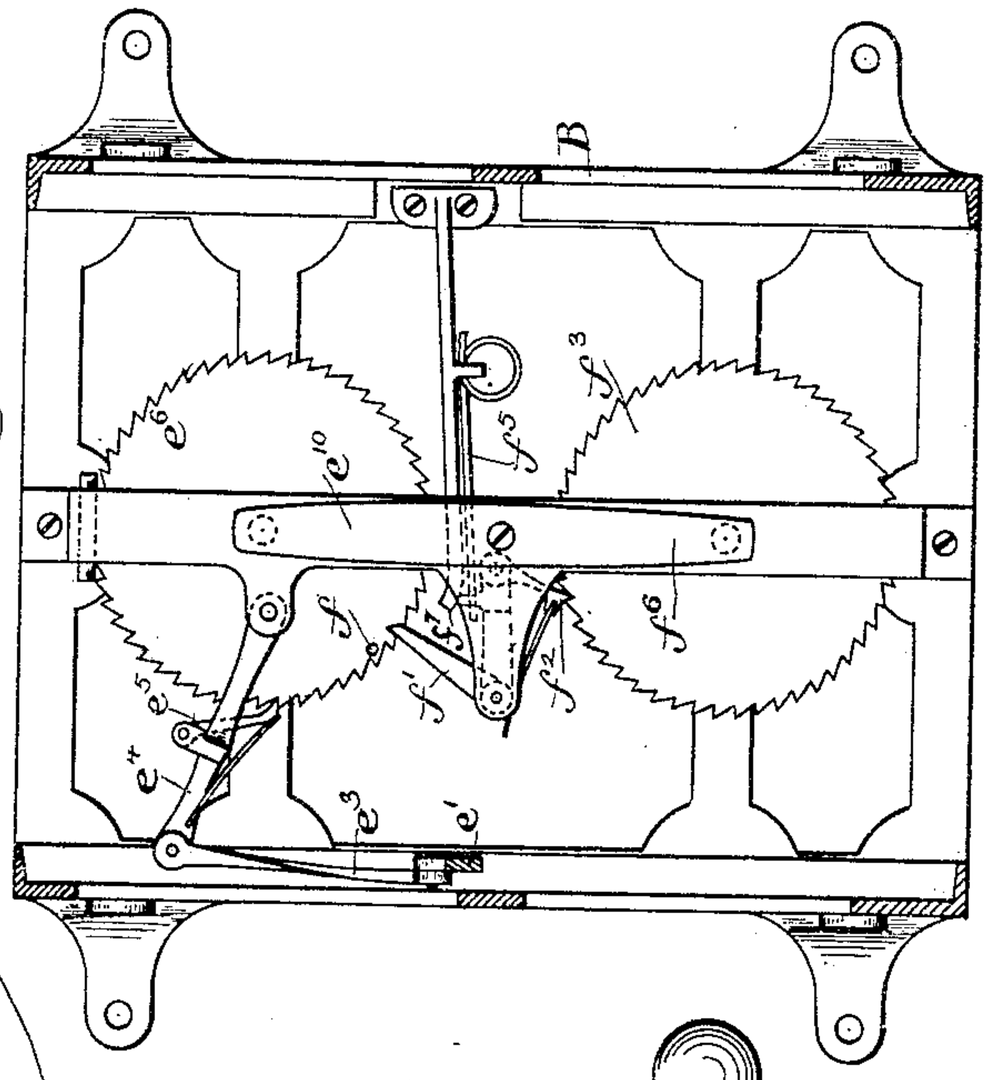


Fig. 7.

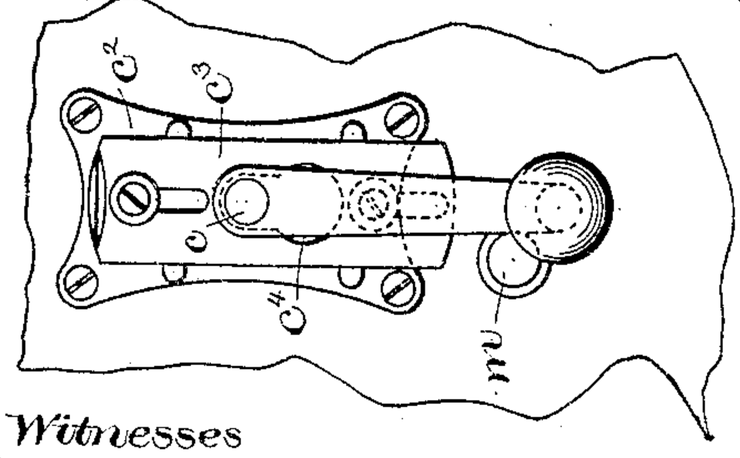


Fig. 9.

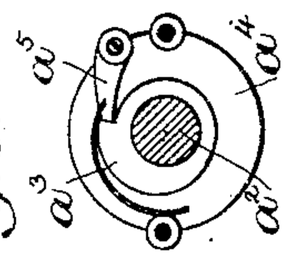
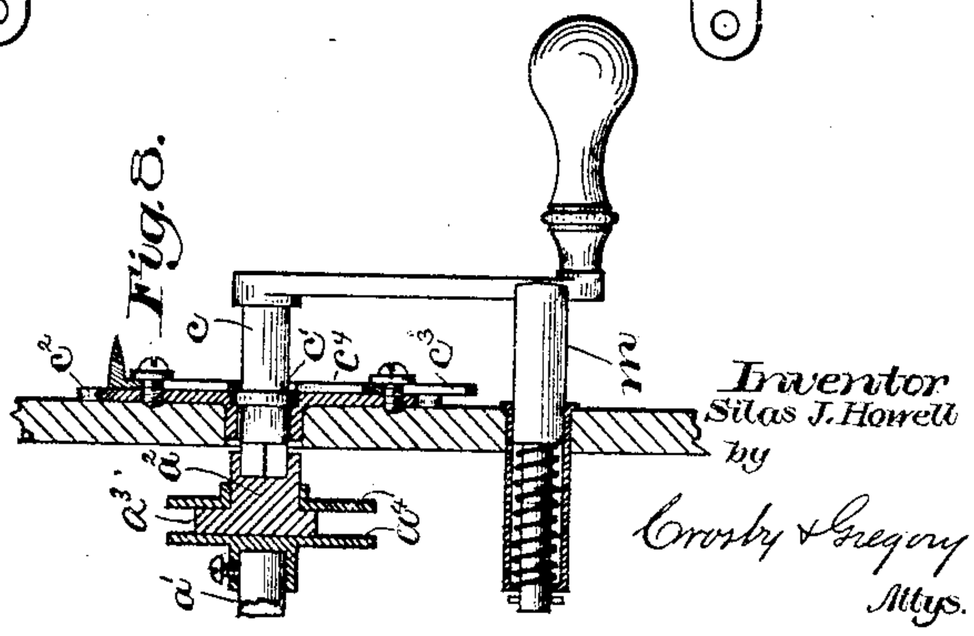


Fig. 8.



Witnesses

B. J. Noyes.

W. A. Sigston.

Inventor

Silas J. Howell

by

Crosby & Gregory

Attys.

UNITED STATES PATENT OFFICE.

SILAS J. HOWELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN BALLOT BOX ASSOCIATION, OF MASSACHUSETTS.

REGISTERING AND CANCELING BALLOT-BOX.

SPECIFICATION forming part of Letters Patent No. 332,398, dated December 15, 1885.

Application filed August 4, 1884. Serial No. 139,619. (No model.)

To all whom it may concern:

Be it known that I, SILAS J. HOWELL, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Ballot-Boxes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is embodied in a ballot-box containing mechanism for receiving the ballots one at a time and sounding an alarm as each one is received, and also for indicating on a suitable register or dial the total number of ballots received, the said register being visible to the public, and also for canceling by imprinting or stamping each ballot as received.

The invention consists, mainly, in details of construction of the various parts whereby the operation is rendered positive and certain.

Figure 1 is a perspective view of a ballot-box embodying this invention; Fig. 2, a plan view of the internal mechanism thereof; Fig. 3, a side elevation of the said mechanism; Fig. 4, an elevation of a portion of the mechanism as seen from the opposite side; Fig. 5, a longitudinal section of the said mechanism on line *x x*, Fig. 2; Fig. 6, a section on line *y y*, Fig. 5, showing the registering mechanism in elevation; and Figs. 7 to 10, details to be referred to.

The box A, of suitable size and shape to contain the operative mechanism and to receive the tickets or ballots used in voting, is provided with an opening, A′, through which the ballots are introduced one at a time. The ballots or tickets when inserted within the opening A′ are received between the peripheries of two rolls, *a b*, the former of which is fixed on a shaft, *a′*, having bearings in suitable frame-work, B, contained within the box. The cylinder or roll *b* has its bearings in a frame, *b′*, pivoted at b^2 (see Fig. 5) on the main frame-work, and acted upon by a spring, b^3, by which the said roll *b* is pressed toward the one *a*, so as to produce friction between the said rolls and the ballot or strip of paper inserted between them, the said roll *b* being capable of yielding or moving away from the roll or drum *a*, so as not to injure the working parts in case a large body should be inserted between the said rolls, as may be done for the purpose of interfering with the operation of the box. The shaft *a′* of the ballot-feeding drum or roll *a* is provided with a socket-piece, a^2, having a squared socket, (see Fig. 8,) or being otherwise adapted to receive an actuating key or crank, *c*, by means of which the said shaft and drum *a* thereon may be rotated to draw the ballot inserted between the peripheries of the rolls *a b* through between the said rolls so that it will drop into the box. The socket-piece a^2 is not positively connected with the shaft *a*, but has a shouldered flange or disk, a^3, turning freely between connected flanges or collars a^4, fixed upon the shaft *a′*, and provided with a pawl, a^5, which, when the said socket-piece is turned in one direction, is engaged by the shouldered flange a^4, causing the shaft *a′* and drum *a* to turn with it, although the socket-piece rotates freely in the opposite direction without turning the drum *a*. The shaft of the crank *c* is provided with a roller, *c′*, entering a suitable socket or recess in a plate, c^2, attached to the side of the box, and is held therein by a locking-plate, c^3, having a sliding movement on the plate c^2, and provided with an opening, c^4, which, when the said plate is raised, will permit the collar *c′* to pass through into its socket in the plate c^2. The opening c^4 in the locking-plate has a narrower offset, so that by sliding the plate c^3 down after the crank *c* has been placed in proper position the said plate c^3 will embrace the shaft of the crank *c* in front of the collar *c′*, retaining the shaft in proper position so long as it is desired to operate the box. After the ballots are all in the shaft or key *c* will be removed by the proper official, preventing further operation of the mechanism within the box.

A stop, shown as a yielding spring-pressed bolt, *m*, (see Fig. 8,) arrests the movement of the crank at the end of each rotation, it being necessary to press the said bolt out of engagement with the crank before the shaft *a′* and drum *a* can be again rotated. The drum *a* is provided with one or more bands, a^6, of type or other impressing devices, which project slightly beyond the periphery of the said drum, the roll or drum *b* having a corresponding groove or recess, b^4, so that the said impressing

devices do not come in contact with the periphery thereof, thus leaving the main unbroken surfaces of the rollers free to engage the ballot or strip of paper passing between them.

The groove b^4 is somewhat deeper than the amount of projection of the band of type from the drum *a*, so that in case the rolls are turned while no paper or ballot is between them the impressing devices will not touch the recessed portion of the roll *b*, which will consequently never become smeared with ink, as would be the case if the impression devices came in contact therewith. The support of the ungrooved portion of the roll *b* at the sides of the grooves is sufficient to cause the ballot to be properly imprinted without being supported directly opposite the type. The impressing devices will thus print a continuous line of characters from end to end of the ballot or ticket, crossing all the names printed thereon or applied thereto before the ballot is cast or voted in the form known as "pasters" or "stickers", so that if a paster should be removed from the ballot after it was received in the box the fact would be known with certainty by the interruption in the line of characters, or if such a paster were subsequently applied the fact will be indicated by the absence of the characters thereon, or by their failure to properly match with those on the remainder of the ticket in case it were attempted to counterfeit the characters on the paster before applying it, and if there should be reason to suspect the application of counterfeit pasters the truth would be known with certainty by removing the paster and ascertaining whether or not the ballot had been impressed underneath it. In order to render such attempts at counterfeiting more difficult, the characters are preferably arranged in an intelligible order, so that any irregularity will be noticeable, but they are of a somewhat unusual form—such, for instance, as a printed sentence, clause, or date, made of unusual or irregular type, as shown in Fig. 10, where the upper and under portions of the type are alternately removed in the consecutive portions of the line of type, and, as they will not come in the same position on the different ballots or tickets, it will be impossible to provide pasters with characters that would match properly with those above and below them on the ticket.

It will be understood that the impressing devices will lead to detection of duplicate ballots, as in case two are passed together between the rolls at a single operation thereof, the under one will not be imprinted or canceled, and all such uncanceled ballots will have to be discarded, in making the final account, as fraudulent.

The said type or impressing devices are provided with ink from a fountain or reservoir, consisting of a tube, *d*, pivoted on a frame, *d'*, itself pivoted on the main framework B, and acted upon by a spring, d^2, pressing a pad or roller, d^3, of absorbent material, saturated with the ink contained in the tubular reservoir *d* against the type, the position of the said frame *d'* being adjusted by a screw or equivalent adjusting device, d^4. The pad d^3, of absorbent material, is held in place by flanges d^7 on the tube *d*, as shown in Fig. 2, the said pad being composed, for instance, of a strip of cloth or similar material wound around the said tube between the said flanges. The tube *d* is provided between the flanges and within the surrounding absorbent pad with perforations d^8, (clearly shown in Fig. 5,) thus permitting ink contained within the tube to pass into the said pad, so as to be distributed thereby on the type or printing devices.

The journals of the frame *d'* are supported in notches in the main frame B, so that the said frame *d'* may be easily removed for the purpose of filling the fountain or reservoir *d*, which has openings d^5, (see Fig. 2,) to receive the ink, the said openings being covered by pieces d^6 of rubber or elastic tubing, which may be raised for a few moments before the apparatus is to be set in operation, so as to admit air and permit the pad d^3 to become saturated sufficiently for a day's use.

The rolls *a b* are both provided with deep grooves a^7 b^7, (shown in dotted lines in Fig. 5 and in the case of roll *a* in full lines in Fig. 2,) which receive yielding rods or wires *t t'*, pressing against the said rollers at the bottom of the grooves, and serving to strip or detach the ballots from the surfaces of the rolls in case they adhere thereto, thus preventing them from becoming wound around one or the other of the said rolls. The stripping devices *t'* bear on the roll *b* at the bottom of the grooves substantially in line with the direction of movement of the said roll about the axis b^2 toward and from the roll *a*, thus always maintaining the said rods *t'* in substantially the same relation to the roll.

By having the journals of the roll *b* in a yielding frame, the said roll has a substantially-parallel movement toward and from the roll *a*, and is not likely to bind, as is the case where the roll is made yielding by means of independently yielding boxes or bearings at each end of the roll, in which construction a large article inserted between the rolls near one end thereof will cause the adjacent bearing to yield, thus inclining the yielding roll and possibly causing it to wedge or get held fast in the framework.

As only one ballot can be conveyed into the box and canceled at each complete rotation of the drum, it will be understood that an account or record of the number of times that the said drum has been rotated will indicate the exact number of ballots cast, and in order to indicate the number of such operations and thus afford a check against false counting of the ballots, the box is provided with registering mechanism indicating the number of times the drum *a* has operated.

The shaft *a'* is provided with a crank, eccentric, or wrist-pin, a^8, (see Fig. 3,) connect-

ed by a pitman or connecting rod, e, with one arm of a lever, e', pivoted at e^2, upon the main frame-work, and having its other arm connected by a rod or link, e^3, (best shown in Fig. 6,) with a pawl-carrying arm, e^4, provided with a pawl, e^5, co-operating with the teeth of a ratchet or toothed disk, e^6, the shaft or arbor of which is provided with a hand or pointer, e^7, (see Fig. 1,) co-operating with a suitable dial properly spaced or graduated and numbered.

The connecting-rod e is shown as screw-threaded at its end which passes through an eye-plate, e^8, adjustably connected with the lever e', so as to vary the length of the lever-arm, and consequently the amount of angular movement imparted to the said lever, and the said plate is engaged by nuts e^9 on the threaded end of the rod e, so that each complete rotation of the drum causes a to-and-fro movement of the pawl e^5, by which the disk e^6 is turned for the space of one tooth and the pointer e^7 advanced one space on the dial. The disk and pointer are prevented from turning, except when positively actuated by the pawl, by means of a friction device, e^{10}, consisting of a spring bearing upon the arbor of the said disk and pressing the face of the latter against a washer, e^{12}. The disk e^6 is shown as provided with fifty teeth, and the dial has consequently fifty spaces, and will indicate the number of the rotations of the drum a up to fifty, and in order to indicate beyond this number the said disk is provided with a pin, f, which, at the end of a rotation or when the pointer is about to indicate fifty, engages an arm of the pawl-carrying lever f', the other arm of which is provided with a pawl, f^2, co-operating with the teeth of a disk, f^3, provided with a pointer, f^4, similar to one e^7, so that at each movement of the lever f', produced by the pin f at the end of each complete rotation of the disk e^6, the disk f^3 is advanced one tooth and the pointer f^4 one space on its dial, the spaces of which are marked with the consecutive multiples of fifty, so that by adding the number indicated by the pointer e^7 to that indicated by the pointer f^4 the total number of the operations of the drum a, and consequently of ballots cast, will be known. The lever f' is restored to its normal position or moved back to cause the pawl f^2 to engage the next tooth of the disk f^3 after the pin f has passed and disengaged the said lever by means of a spring, f^5, and its backward movement is limited by a stop, f^7. The disk f^3 is also acted on by a friction device, f^6, similar to the one e^{10}.

In order to indicate to all persons in the vicinity when each vote is cast, so that more than one vote or ballot cannot be cast at a time and registered without detection, each rotation of the drum is accompanied by an audible alarm, produced by a gong or equivalent, g, having a hammer, g', mounted on a slide-bar, g^2, acted upon by a spring, g^3, tending to move it in the direction to strike the hammer, the said rod being moved in the opposite direction, and the spring compressed by a cam, g^4, on the shaft a', (see Fig. 4,) the radial portion of which permits the spring g^3 to move the said rod and cause the hammer to strike a sharp blow on the bell or gong g, the said hammer being provided with a yielding cushion, g^5, which stops the hammer after its recoil, preventing it from checking the vibrations of the gong or bell. The box A is preferably provided with an opening, A^2, opposite the gong, to enable it to be clearly heard, the said opening being covered with wire-gauze or an equivalent, to prevent tampering with the mechanism within the box. The box is made in two parts, hinged or otherwise connected together, and locked or fastened while the voting is going on, but enabling it to be opened at the proper time for the removal of the ballots.

The frame B of the operative mechanism is fastened to the upper part of the box and removed therewith from the lower part, which receives the ballots. The strippers t t' are nearly tangential to the rollers, and the lower part of the frame-work B is provided with a shield or apron, m', (see Fig. 5,) preventing the ballots from entering within the said frame-work when they drop from the rolls.

The bystanders observing the number indicated by the pointers at the closing of the polls will know whether or not the votes of the precinct or district at which the box was used are properly counted, and any attempt at fraud by the improper use of pasters or by duplicates will be detected at the time of counting, and all votes not properly canceled may then be discarded as false or fraudulent.

It is obvious that the printing devices might be on the lower instead of the upper roll, in which case the ballots would be inserted in the box face downward, or, if desired, both rolls may be provided with printing devices which would not be directly opposite to one another.

I claim—

1. The ballot-feeding roll provided with a circumferential band of imprinting devices projecting beyond the periphery of the roll, combined with the co operating roll having a circumferential groove co-operating with the said band, the said groove being deeper than the amount of projection of the band, whereby the main portion of the rolls may come in contact without contact between the printing devices and grooved portion of the roll, substantially as described.

2. The ballot-feeding roll or drum provided with a circumferential band of imprinting devices, combined with the rotary tubular ink-reservoir provided with flanges and perforated between said flanges, and an absorptive pad on said reservoir between said flanges supplied with ink through the said perforations, and a flexible cover for an ink-supplying passage in said reservoir, substantially as described.

3. The rotary ballot-feeding drum or roll a,

having the grooves a^7 and fixed bearings, the roll b, having grooves b^7, and the stripping rods or wires t t', engaging the said grooves, respectively, as shown, combined with the frame b', in which the roll b has fixed bearings, the said frame being pivoted at b^2 and supported by spring b^3, so that the said roll b can and must move on the pivot b^2 in parallelism with the roll a, and not otherwise, substantially as described.

4. In a ballot-box, the ballot-feeding drum or roll a, having the shaft a', combined with the socket-piece a^2, having a shouldered flange or disk, a^3, turning freely between connected flanges a^4, fixed on said shaft and provided with a pawl, a^5, and means to lock a turning-crank in connection with said socket-piece, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SILAS J. HOWELL.

Witnesses:
JOS. P. LIVERMORE,
W. H. SIGSTON.