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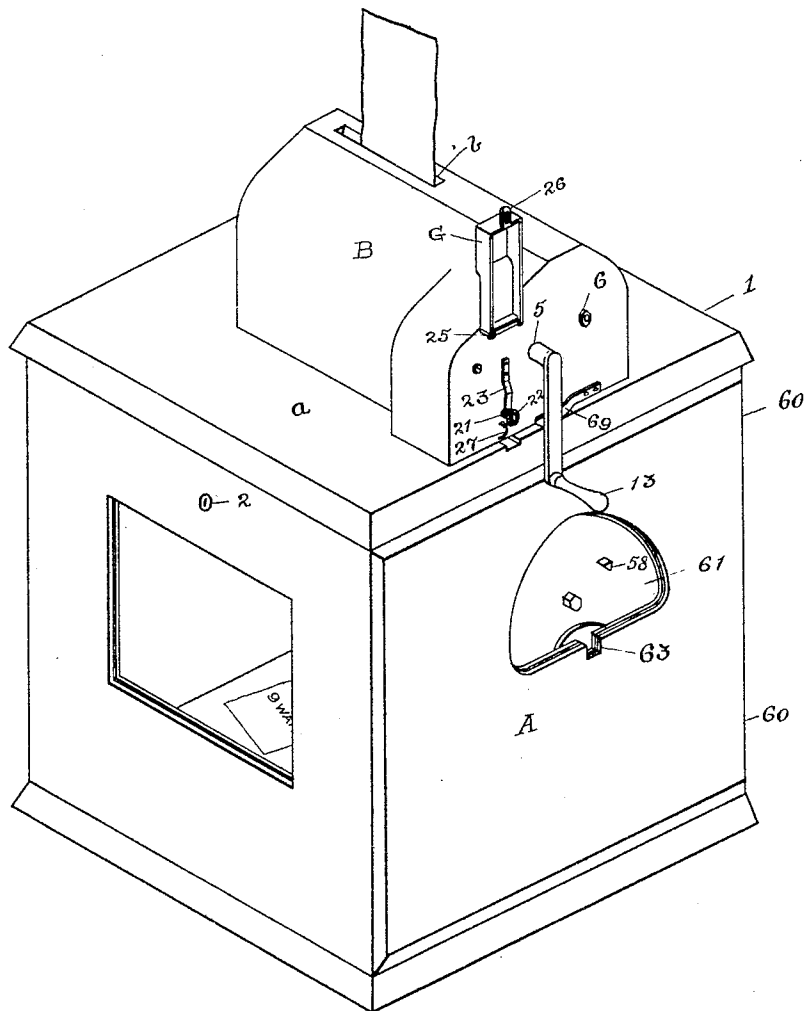
4 Sheets—Sheet 1.

W. S. BLACK.
REGISTERING BALLOT BOX.

No. 499,869.

Patented June 20, 1893.

Fig. 1



Witnesses,
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M. C. Massie.

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(No Model.)

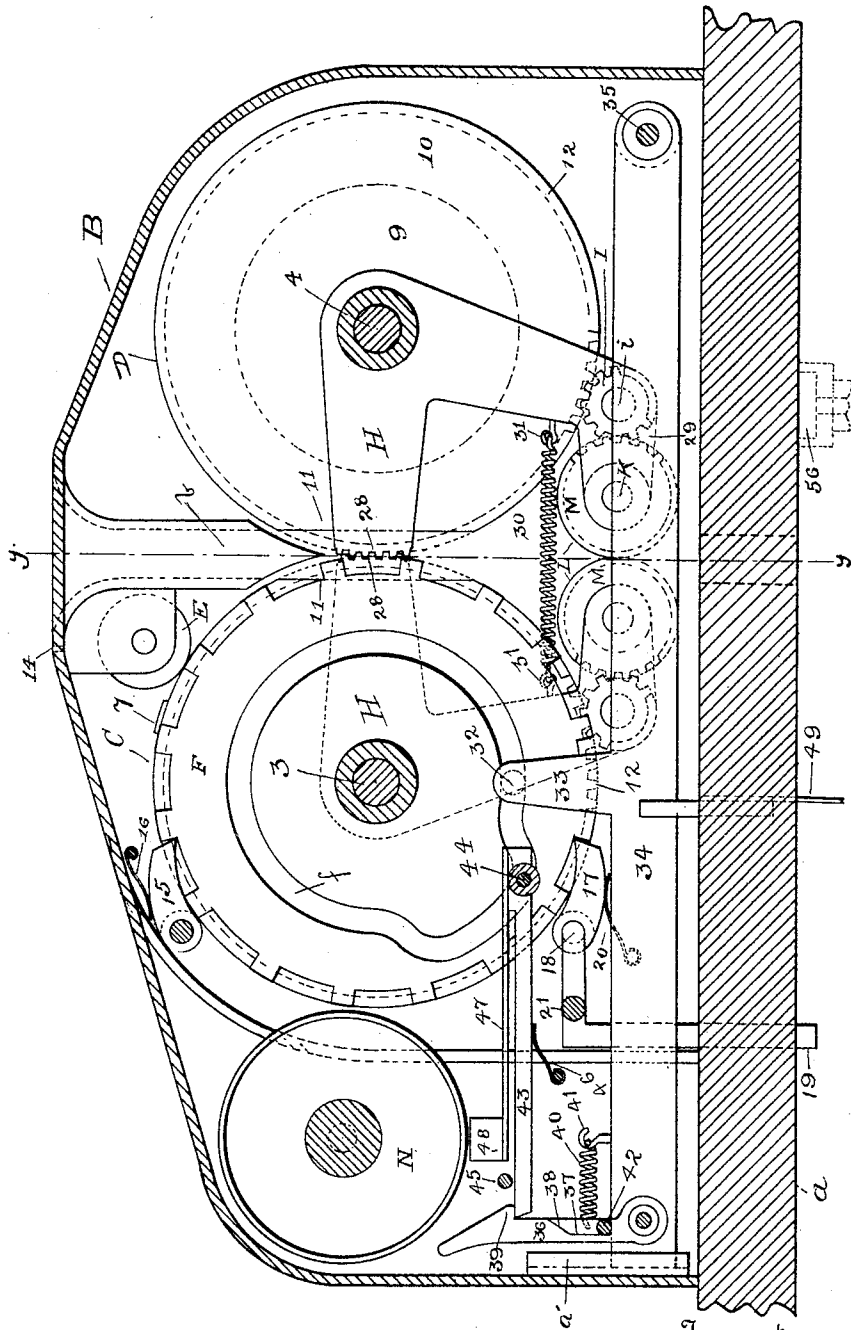
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Fig. 2.



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Fig. 3.

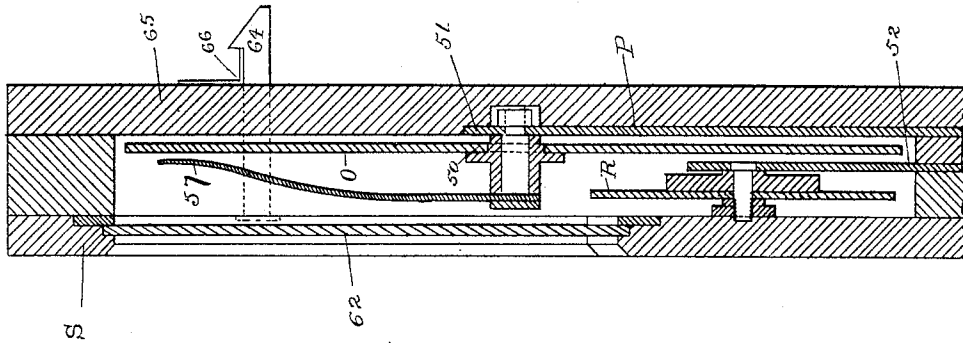
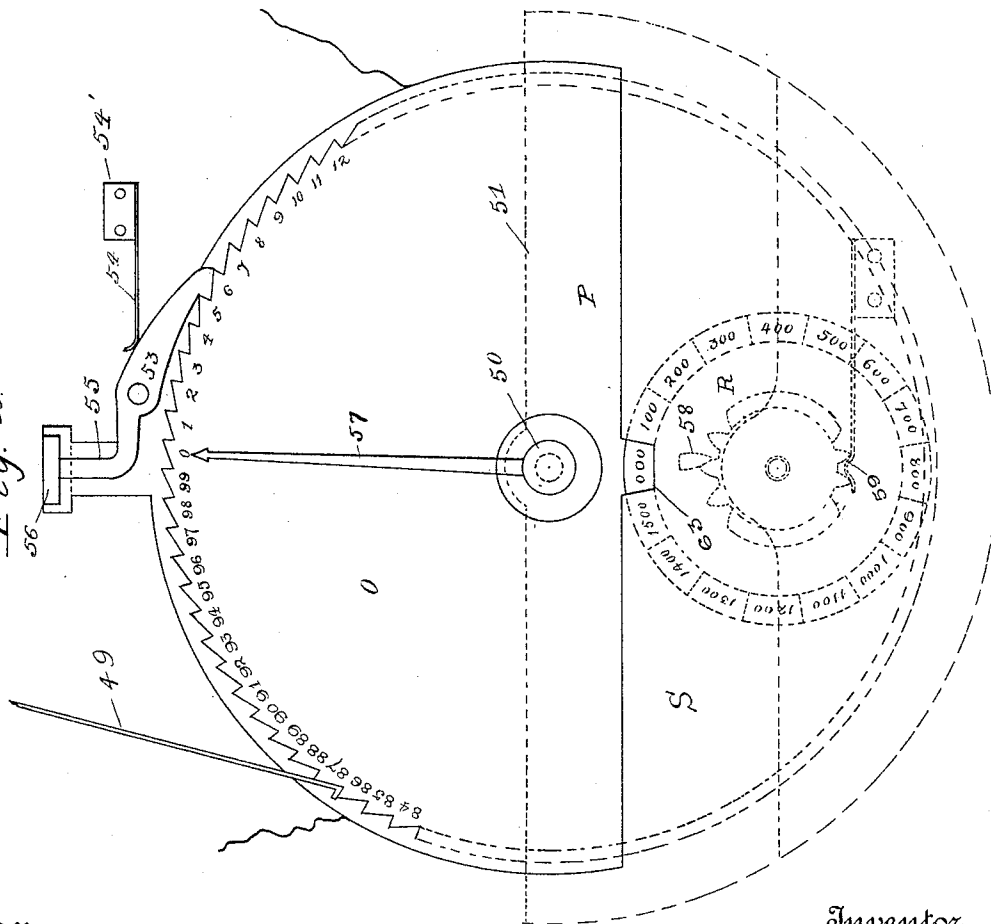


Fig. 2.



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Fig. 6

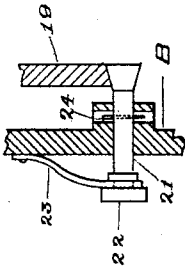
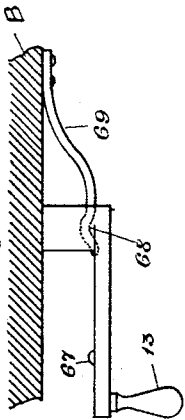


Fig. 5



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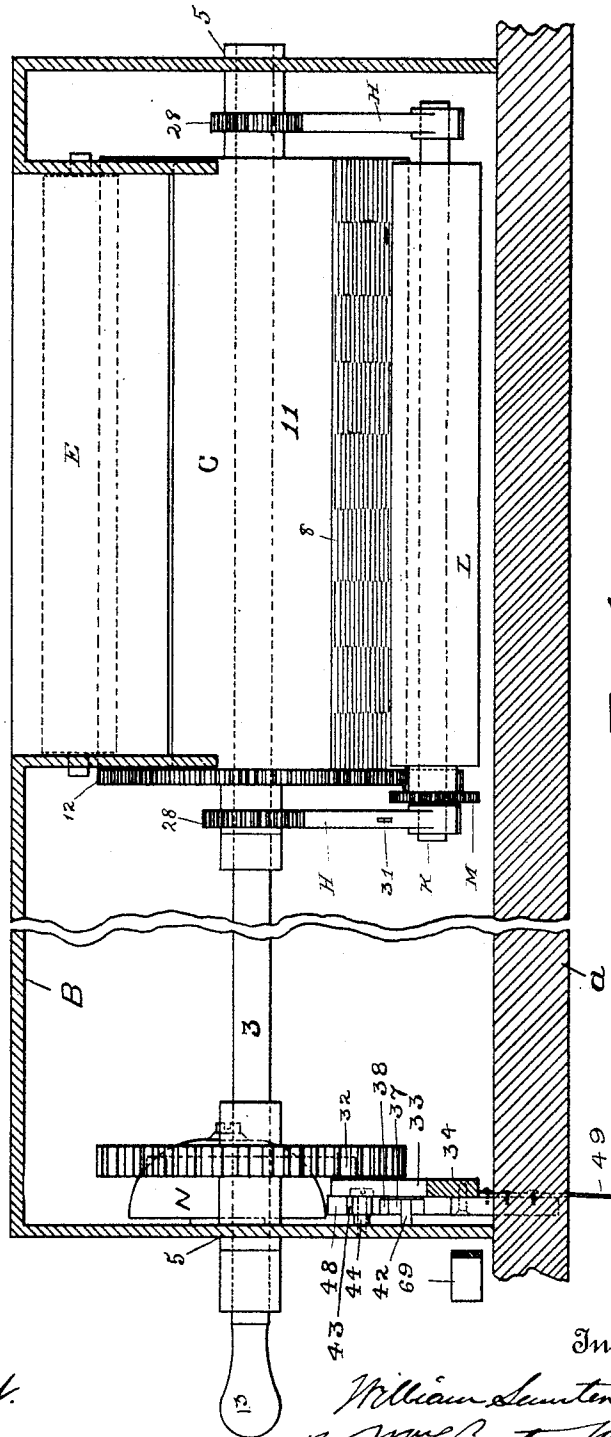


Fig. 4

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UNITED STATES PATENT OFFICE.

WILLIAM SUMTER BLACK, OF BALTIMORE, MARYLAND, ASSIGNOR TO
GEORGE W. WARFIELD AND HENRY ROHR, OF SAME PLACE.

REGISTERING BALLOT-BOX.

SPECIFICATION forming part of Letters Patent No. 499,869, dated June 20, 1893.

Application filed February 11, 1893. Serial No. 461,926. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SUMTER BLACK, a citizen of the United States of America, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Ballot-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in ballot-boxes, the primary objects of the invention being, first, to make a printed impression on the backs of legally-cast ballots while the ballot is in position to be deposited in the box, whereby the deposit of infolded or other illegal ballots not having this impression may be detected; secondly, to provide means for registering only such ballots as have the printed impression; thirdly, to provide for the compulsory deposit of the ballot in the box after the ballot is printed and before it is recorded; and, finally, to provide means whereby manipulation of the operative parts of the ballot-box by unauthorized persons is prevented.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a ballot-box embodying my invention. Figs. 2 and 2^a together form an end view of the ballot depositing and registering apparatus. These two views will be referred to hereinafter as Fig. 2. Fig. 3 is a vertical sectional view of the recording mechanism taken through the center of Fig. 2, the pawl being left off. Fig. 4 is a vertical sectional view of the depositing mechanism, taken on the line *yy*, Fig. 2, looking toward the front. Figs. 5 and 6 are detail views.

Referring to the drawings, A is a box of any suitable size, provided with a lid *a*, hinged at 1 and having a lock 2. On top of the box-lid *a* is fastened a casing B, preferably of metal and having an inward-extending ballot-channel *b*, the lower end of which opens between a pair of cylinders C and D arranged longitudinally of the casing B and mounted on shafts 3 and 4, journaled at each end in the casing, as at 5 and 6.

C is a type-cylinder, preferably of metal, and provided with suitable type 7 and with fine staggered corrugations, as shown at 8, for a purpose hereinafter described.

D is the impression-cylinder, consisting of a central metal cylinder-body 9 and an exterior rubber covering 10. Each cylinder is flattened on one side at 11, to form an opening between the cylinders to receive the lower end of the ballot when first introduced into the box. To keep the flat portions of these cylinders in proper relation to each other, so that they will always be opposite each other in the normal position of the cylinders, each shaft 3 and 4 is provided with a gear-wheel 12, these gear-wheels meshing into each other, as shown. The shaft 3 is extended beyond the end of the casing B and provided with a crank 13, by means of which the cylinders may be turned, it being understood that when the cylinders are revolved the flat portions are turned away from each other and the circumferences of the cylinders come in contact with each other, the elasticity of the rubber covering on the cylinder D permitting the type 7 on cylinder C to pass down between the cylinders and print the ballot, if one be between the cylinders at the time. To ink the type, a small ink-roller E is revolvably mounted in the casing above the type-cylinder C, this ink-roller being supplied with ink when necessary through suitable small holes 14 in the top of the casing.

To prevent the cylinders from being turned backward, the shaft 3 is provided with a ratchet-wheel F, against which a pawl 15 is pressed by a spring 16; and to prevent forward motion of the cylinders, when desired, a pawl 17, pivoted at 18 and having a downward-extending arm 19, is pressed against the under side of the ratchet-wheel F by a spring 20. The upper pawl 15 is always in contact with the ratchet-wheel, and it is plain that when the lower pawl 17 is held against the ratchet-wheel it is impossible to turn the cylinders C and D in either direction. To permit the rotation of these cylinders it becomes necessary to throw the pawl 17 out of engagement with the ratchet-wheel F. For this purpose the downward-extending arm 19 projects through

an opening in the lid *a*, so that when the lid is raised the arm may be pressed to throw out the pawl. To hold the pawl in this position, a bolt 21, passing through an opening in the end of casing B and having an exterior knob 22, is adapted to be shot inward below the arm of the pawl by a spring 23 secured to the exterior of the casing, the outward movement of the bolt being limited by a pin 24, passing transversely through the bolt. It is apparent that when the bolt is withdrawn from below the arm of the pawl 17, the latter will be forced up into engagement with the ratchet-wheel, and at the same time the bolt will be held outward by the pawl, so that when the arm 19 is pressed to disengage the pawl from the ratchet-wheel, the bolt will be forced inward to lock the pawl out of engagement with the ratchet-wheel. The inner end of the bolt is tapered and the under side of the pawl-arm inclined to give the bolt a greater frictional hold on the arm. To prevent unwarranted tampering with the bolt, a lid G is arranged to cover the bolt and its spring, the lid being hinged above the bolt at 25 and adapted to be locked below the bolt by a hasp 26 passing over a staple 27, into which a padlock may be inserted.

At each end of the cylinders C and D is arranged a pair of bell-cranks II, one bell-crank of each pair being pivotally mounted on shaft 3, and the other bell-crank on shaft 4. Each bell-crank has a cogged segment 28, adapted to mesh with the cogged segment of the opposite bell-crank; and each bell-crank has also an inward-projecting arm 29, this arm being provided with a stud *i*, on which is mounted a pinion I, meshing into its respective gear-wheel 12, as shown. The outer end of each arm 29 is provided with journals in which longitudinal shafts K are revolvably mounted, each shaft carrying a roller L, and, at one end of the roller, a gear-wheel M meshing into the gear-pinion I of its respective bell-crank.

It is apparent that the two rollers L will be revolved by turning the hand crank, through the medium of the gear wheel, and also that the rate of travel of the circumference of each roller L is just the same as that of the cylinders. Moreover, when the end of the ballot is forced down upon the rollers L it will be caught by those rollers and carried on down into the box below, it being understood that the lid *a* is slotted below the rollers. The rollers swing away from each other to permit the ballot to pass between them, being drawn together after the passage of the ballot by spiral springs 30 fastened to hooks 31 on the bell-cranks, as shown. The segments 28, being in mesh with each other, serve to keep the normal line of contact of the rollers L always in a vertical plane below the center of the ballot-channel.

For the purpose of recording each ballot as it is deposited in the box, the ratchet-wheel F on shaft 3 is provided with a cam-slot *f* in its

exterior face, into which slot projects a pin 32 carried on the side of a lug 33 formed on the upper side of a lever 34, which is pivoted at 35. As the cylinders C and D are revolved the lever 34 will be oscillated in a vertical plane through the medium of the cam-slot and pin, its free end being guided in a grooved projection *a'* in the case. To this free end of the lever 34 is pivotally attached on one side a detent 36, having a straight face 37, terminated at its upper end by an inclined face 38, the detent being also provided with a hooked end 39. A spring 40, attached to a hook 41 projecting from the upper edge of the lever 34, tends to hold the straight face 37 in contact with a pin 42 projecting from the side of the casing. The hooked end of the detent is adapted to engage the outer end of a clapper-lever 43 pivoted to a stud 44, and normally held against a pin 45 by a spring 46. To the upper surface of the clapper-lever is attached a clapper-spring 47, carrying at its outer end a clapper 48, not quite in contact with a gong N. When the detent is drawn down, its hooked end will engage the clapper-lever and draw the latter down until the inclined surface 38 comes in contact with the pin 42, when the continued downward movement of the detent will crowd the hooked end off the clapper-lever, permitting the spring 46 to force the clapper-lever up until stopped by the pin 45, the momentum of the clapper 48 enabling it to overcome the elasticity of the clapper-spring 47 and thereby strike the gong, the elasticity of the clapper-spring 47 finally returning the clapper to its normal position out of contact with the gong. As the detent is forced up again, its end is forced out by the end of the clapper-lever until the hooked end of the detent passes the end of the clapper-lever, when the spring 40 will again draw the hooked end over the end of said lever.

To the under side of the lever 34 is secured a spring push-rod 49, having its lower end bent to form a pawl, which engages a ratchet-dial-wheel O, revolvably mounted at 50 in one side 51 of a trough-shaped dial-frame P, whose front side 52 is of a lower height than the rear side 51. When the lever 34 is depressed it will force down the spring push-rod 49 and rotate the dial O one tooth, the upward movement of the lever withdrawing the push-rod and permitting its lower end to spring into the next tooth above. To prevent the backward movement of the dial, which might take place through the friction of the spring push-rod on the teeth of the ratchet dial-wheel O, a pawl 53 is arranged to bear against the teeth of the ratchet-wheel, being held in this position by a spring 54 attached to the side of the box at 54', as shown. To permit the disengagement of the pawl 53 from the ratchet dial-wheel when setting the latter to zero the pawl is provided with an upright extension 55, having a head 56 by which the pawl 53 may be pressed out of contact with the ratchet-wheel O. The face of the ratchet-wheel O

is engraved with suitable numbers running preferably from zero to 99, and a stationary pointer 57, attached to the center-post of the dial, serves to indicate the proper number on the dial. To the face of the dial O is attached a spur 58, adapted to engage at each revolution of the dial one tooth of a dial gear-wheel R, which is frictionally held by a spring-detent 59 bearing against the lower side of the gear-wheel, this spring-detent also assisting in the revolution of the gear-wheel R by riding down each tooth when the wheel R has been moved by the spur 58 a distance sufficient to crowd the detent beyond the center of the tooth with which it engages. The gear-wheel R being moved one tooth for each revolution of the wheel O will indicate the number of hundreds of ballots cast, while the dial O indicates units, it being apparent that when the dial O has moved from zero around to 99 there will have been ninety-nine ballots cast, the spur 58 being so arranged as to throw the wheel R one tooth when the dial O moves from 99 to zero. The face of the dial R is stamped or otherwise marked with numbers indicating the hundreds of votes cast, running preferably from zero to 15, there being of course one tooth on the gear-wheel R for each number on the dial.

It will be seen that the dials are secured to the exterior of the box at one end, and, for the purpose of protecting this recording mechanism, an outer door S is provided, being hinged at its rear side as at 60 and having an opening 61 protected by glass 62, this opening revealing the upper half of the dial O and the uppermost tooth of the dial R, the door being slotted at 63 for this purpose. By opening the door the dials may both be set at zero. To lock the door S effectually to prevent unwarranted tampering with the recording mechanism, a catch 64 is secured to the inner face of the door, near its upper edge, this catch being long enough to pass through the end 65 and project inside the box, where it is caught by a spring 66 fastened to the inner surface of the end of the box, thus preventing the opening of the door S without first raising the spring 66, which can only be done when the lid of the box is raised.

The hand-crank is provided on its inner side with a rounded tooth 67 adapted to engage a notch 68 in a spring 69 secured to the end of the casing. This device serves to indicate the point of starting and completing of each revolution, the normal position of the hand-crank being with its tooth 67 in engagement with the notch in the spring.

The operation of my machine, briefly stated, is as follows: The ballot to be deposited is inserted into the ballot-channel, its lower end projecting into the space between the cylinders, it being understood that the flattened sides of the cylinders C and D are opposite each other when the handle is in its normal position. By rotating the handle from its engagement with the spring 69 one complete

revolution the ballot will be first printed by the type, then drawn down by the lower rollers and deposited in the box below. The cam-slot *f* is so timed that the lever 34 is not operated until the cylinders have almost made a complete revolution, so that the gong will not be struck nor the recording dials moved until the ballot has been deposited.

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

1. In a ballot-box, the combination, with a casing having an inlet-opening in its top, of a pair of printing-cylinders mounted below said opening and having a normally-open passage-way between them, and a pair of feed-rolls mounted below said cylinders and being normally in close contact.

2. In a ballot-box, the combination, with a casing having an inlet-opening in its top, of a pair of printing-cylinders mounted below said opening and having a normally-open passage-way between them, and a pair of oscillating feed-rolls mounted below said cylinders and being normally in close contact.

3. In a ballot-box, the combination, with a casing having an inward-projecting ballot-channel, of a type-cylinder and an impression cylinder revolubly journaled below the ballot-channel, each cylinder having a flattened side, the cylinders being so arranged that their flattened sides normally face each other.

4. In a ballot-box, the combination, with a pair of cylinder-shafts, of a pair of bell-cranks hung on each shaft, each bell-crank having a cogged segment on one of its arms adapted to mesh with the cogged segment of the opposite bell-crank, a lower roll-shaft journaled in each pair of bell-cranks, a lower roll for each roll-shaft, a gear-wheel fixed on each lower roll-shaft, a pinion revolubly mounted on one bell-crank of each pair and meshing with the gear-wheel of its respective roll-shaft, and an upper gear-wheel for each pinion, the upper gear-wheels being fixed on the cylinder-shaft, substantially as described and for the purpose set forth.

5. In a ballot-box, the combination, with a pair of cylinder-shafts provided with cylinders, and a wheel fixed to one of the cylinder-shafts and having a cam-slot, of a lever pivoted at one end and provided with a stud adapted to enter the cam-slot, a push-rod attached to the lever, a ratchet dial-wheel engaged by the free end of the push-rod and provided with a projecting stud on its face, a pawl engaging the ratchet dial-wheel, and a gear dial-wheel adapted to have its teeth engaged by the stud on the ratchet dial-wheel at each revolution of the latter, substantially as described and for the purpose set forth.

6. In a ballot-box, the combination, with a pair of cylinder-shafts provided with cylinders, and a ratchet-wheel fixed on one of the shafts, of an upper spring-pressed pawl engaging the ratchet-wheel to prevent back-

ward rotation of the shaft, a lower spring-pressed pawl, provided with a downward-projecting arm, engaging the ratchet-wheel to prevent forward rotation of the same, and a
 5 spring-pressed bolt normally bearing against the side of the lower pawl and adapted to slide beneath the pawl-arm when the pawl is thrown out of engagement with the ratchet-wheel.

10 7. In a ballot-box, the combination, with a pair of cylinder-shafts provided with cylinders, and a ratchet-wheel fixed on one of the shafts, of an upper spring-pressed pawl engaging the ratchet-wheel to prevent back-
 15 ward rotation of the shaft, a lower spring-pressed pawl provided with a downward-projecting arm having an inclined lower surface, said lower pawl engaging the ratchet-wheel to prevent forward rotation of the shaft, and
 20 a spring-pressed bolt normally bearing against the side of the lower pawl and having a tapered end adapted to slide below the pawl-arm when the lower pawl is disengaged from the ratchet-wheel, substantially as described
 25 and for the purpose set forth.

8. In a ballot-box, the combination, with a casing having a ballot-channel and a series of inking-openings, of a type-cylinder and an
 30 impression cylinder below the ballot-channel, and an inking roller journaled in the casing

below the inking-openings and above the type-cylinder, substantially as described and for the purpose set forth.

9. In a ballot-box, the combination, with a casing having a groove on its inner side, a
 35 cylinder-shaft mounted in the casing, a wheel fixed on the shaft and provided with a cam-slot, and a lever pivoted at one end to the casing and provided with a stud engaging
 40 the cam-slot, the free end of the lever moving in the groove in the casing, of a detent having an inclined surface on one side and provided with a hooked end, a detent-pin, a
 45 spring normally holding the detent against the detent-pin, a clapper-lever pivoted to the casing and engaging with the hooked end of the detent, a clapper-spring secured to the
 50 clapper-lever, a clapper on the free end of the clapper-spring, a gong, a pin secured to the side of the casing, and a spring normally holding the clapper-lever against the said pin, substantially as described and for the purpose set forth.

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

WILLIAM SUMTER BLACK.

Witnesses:

AMBROSE H. BAILEY,
 M. C. MASSIE.