

No. 669,190.

Patented Mar. 5, 1901.

E. K. TOLMAN.
REGISTERING AND CANCELING BALLOT BOX.

(Application filed Dec. 14, 1899.)

(No Model.)

2 Sheets—Sheet 1.

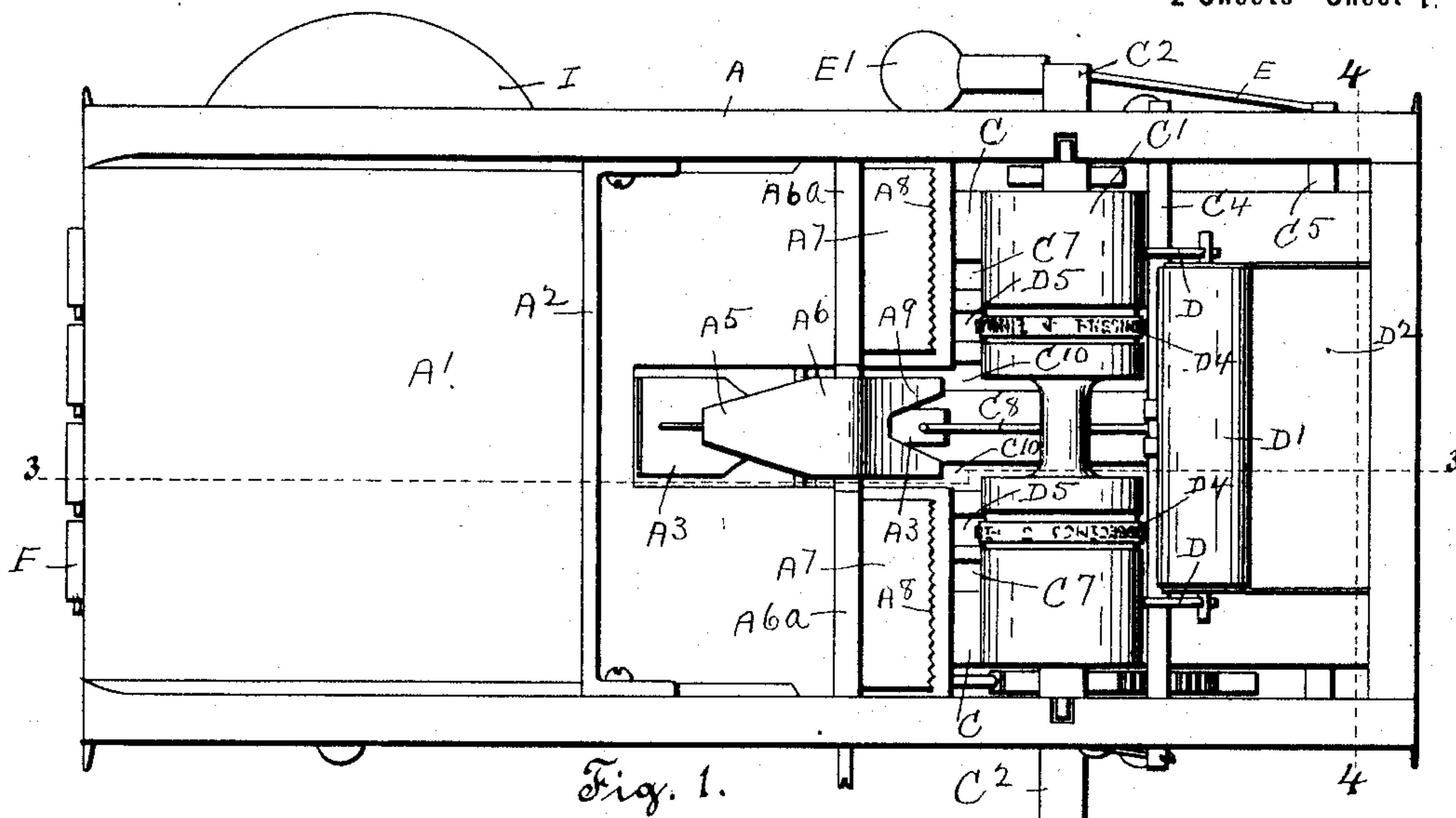


Fig. 1.

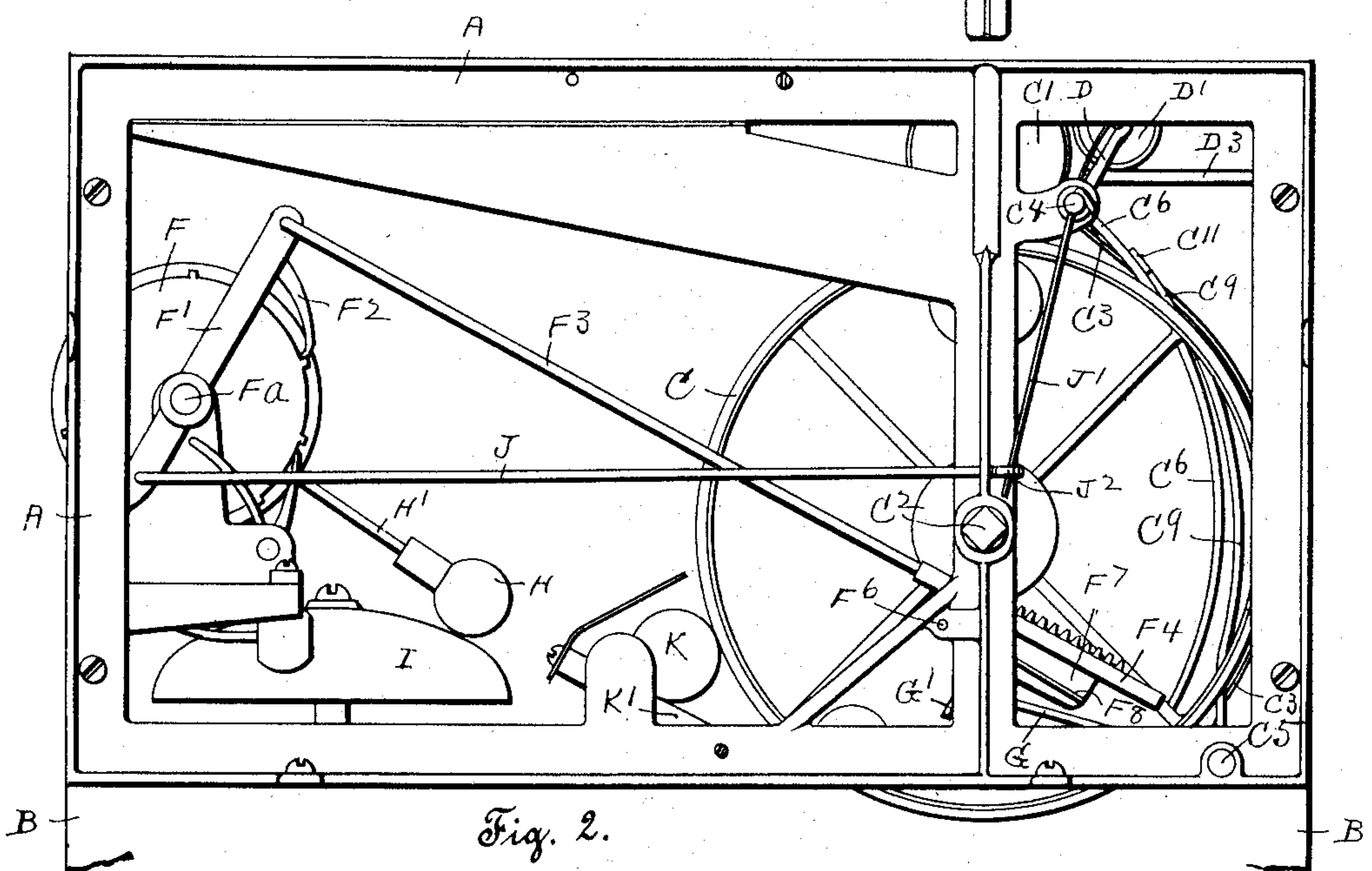


Fig. 2.

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2 Sheets—Sheet 2.

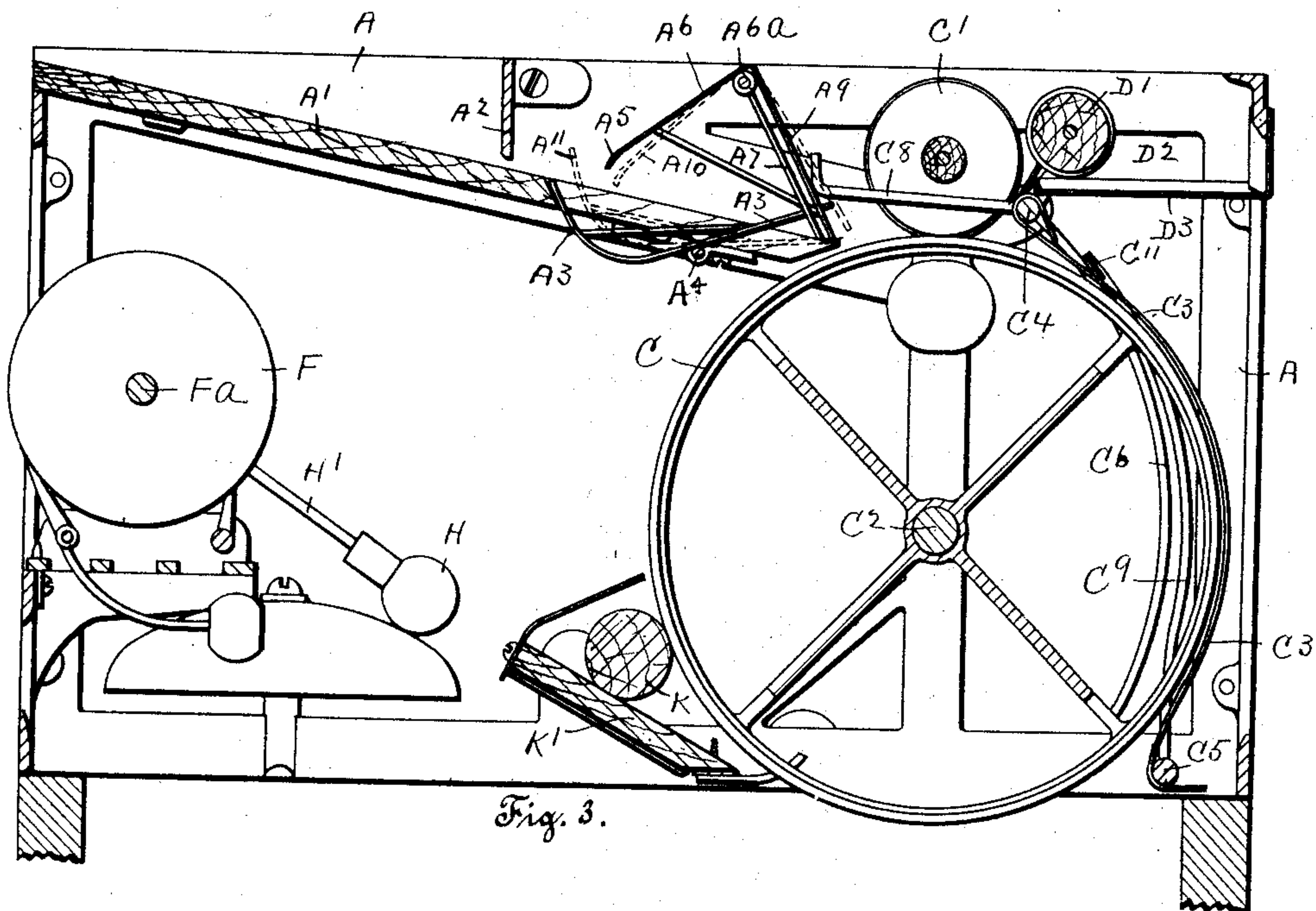
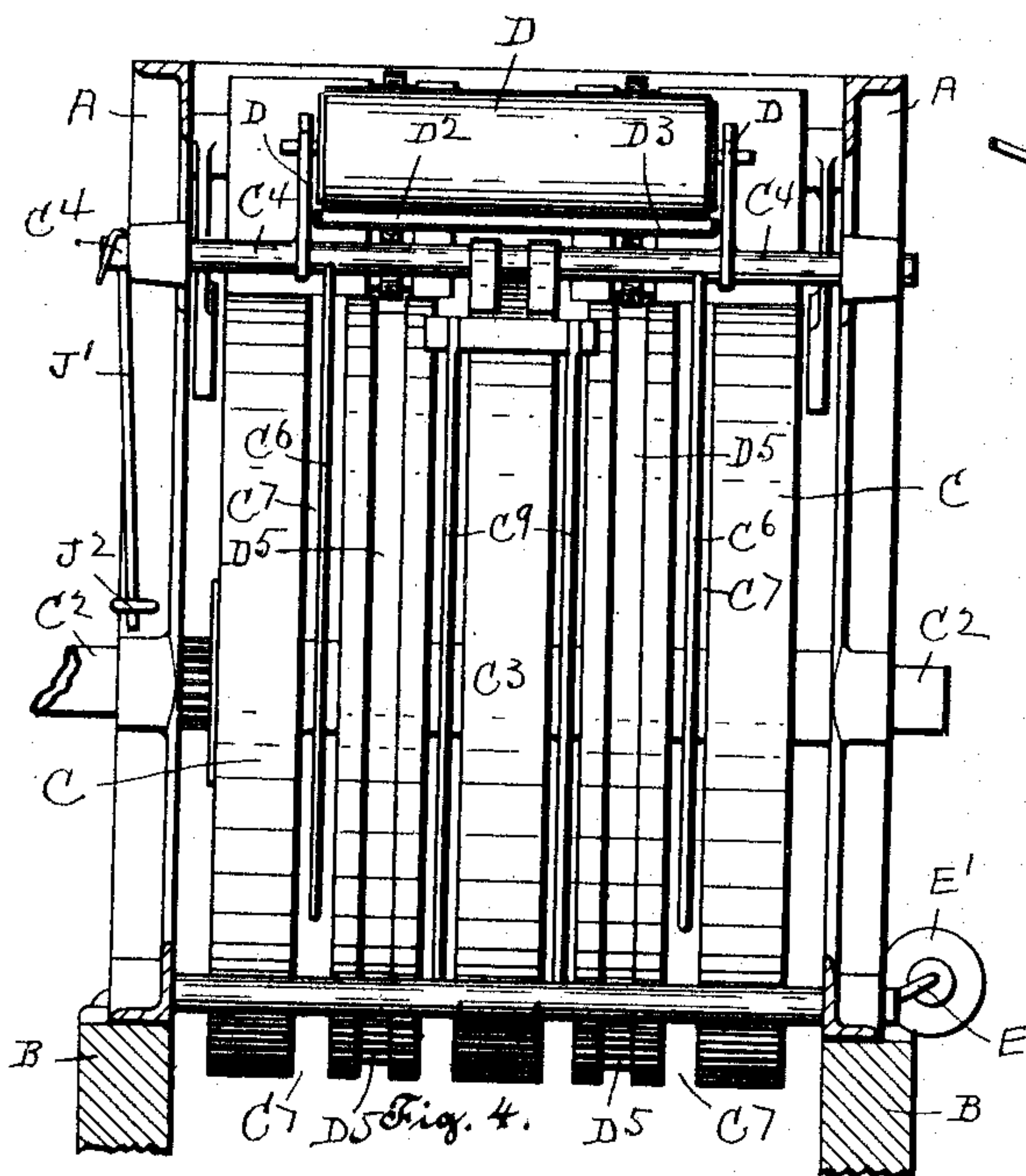


Fig. 3.



UNITED STATES PATENT OFFICE.

EDWARD K. TOLMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO GEORGE H. FERNALD AND ALFRED S. PINKERTON, OF SAME PLACE.

REGISTERING AND CANCELING BALLOT-BOX.

SPECIFICATION forming part of Letters Patent No. 669,190, dated March 5, 1901.

Application filed December 14, 1899. Serial No. 740,256. (No model.)

To all whom it may concern:

Be it known that I, EDWARD K. TOLMAN, a citizen of the United States, and a resident of Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Registering and Canceling Ballot-Boxes, of which the following is a specification, accompanied by drawings, forming a part of the same, in which—

Figure 1 represents a top view of a ballot-box embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a vertical sectional view on line 33, Fig. 1. Fig. 4 is an end view with the end portion of the frame removed, and Fig. 5 is a detached view of a portion of the mechanism for operating the registering device.

Similar letters refer to similar parts in the different figures.

My invention relates to a ballot-box adapted to receive, cancel, and register ballots; and it consists in certain improvements in the operating mechanism by which the efficiency of the box is increased, as hereinafter described, and pointed out in the annexed claims.

The ballot-box forming the subject of my present invention is an improvement upon the ballot-box shown and described in Letters Patent of the United States No. 503,626, granted to me August 22, 1893, and in Letters Patent of the United States No. 528,191, granted to me October 30, 1894.

Referring to the drawings, A represents a framework supporting the operative mechanism and mounted upon a box or case B, (partly shown,) which is open at the top for the reception of the ballots after they have been canceled and registered, as hereinafter described.

A' denotes a feed-board upon which the ballot is placed face downward and pushed endwise through a contracted space beneath a fixed guard-rail A². As the ballot is pushed forward it passes over the forward end of a lower pivoted guard-plate A³, which is attached to a spindle A⁴, journaled in the frame of the machine and beneath the forward member A⁵ of an upper pivoted V-shaped guard-plate A⁶, attached to a spindle A^{6a}, journaled

in the frame of the machine. The ballot passes beneath the free ends of check-plates A⁷, which are pivoted on the spindle A^{6a} and provided with teeth A⁸ to prevent the return movement of the ballot. The forward movement of the ballot on the feed-board also carries it beneath the rear member A⁹ of the V-shaped guard-plate A⁶, thereby tilting the V-shaped guard-plate and carrying the forward member A⁵ down against the ballot, as shown by the broken lines A¹⁰. The ballot is pushed forward until its edge enters between the drum C and a weighted friction-roller C', when the rotation of the drum, by means of a crank applied to its shaft C², causes the ballot to be drawn forward and its advancing edge entered between the periphery of the drum C and a sheet-metal band C³, with its ends hooked over the rocking spindles C⁴ and C⁵ and held concentrically with the periphery of the drum C, thereby causing the ballot as it is carried forward to lie closely against the periphery of the drum. The spindle C⁴ is journaled in the framework and is provided with a pair of curved fingers C⁶, which extend into circumferential grooves or openings C⁷ in the drum C. The spindle C⁴ is also provided with an arm C⁸, which projects over the rear end of the lower tilting guard-plate A³. Spindle C⁵ is also journaled in the frame and is provided with fingers C⁹, which extend into circumferential grooves or openings C¹⁰ of the drum C, with their free ends connected by a tie-plate C¹¹, which rests upon the band C³.

As the ballot is carried forward by the rotation of the drum C beneath the concentric band C³ it causes the fingers C⁶ and C⁹ to be pushed out of the grooves or openings in the drum C, thereby rocking the spindles C⁴ and C⁵. The rocking motion of the spindle C⁴ depresses the arm C⁸ and rocks the lower tilting guard-plate A³, bringing its forward end above the surface of the feed-board, in position, as shown by the broken lines A¹¹, to intercept the passage of a succeeding ballot. The rocking spindle C⁴ also carries arms D, in the ends of which is journaled an ink-roll D', which rests in its normal position upon an ink-pad D², supported on a shelf D³. The rocking motion of the spindle D⁴ serves to

carry the ink-roll D' into contact with two annular rings of type D⁴, held on the weighted friction-roller C', thereby inking the types D⁴ as the weighted friction-roller C' rotates in contact with the ink-roll D' during the passage of the ballot beneath the fingers C⁶. The projecting rings of type D⁴ run in grooves D⁵ in the drum C to permit the weighted friction-roller to run in close contact with the drum C. Whenever a ballot is passed through the machine face downward the types D⁴ run in contact with the back of the ballot, printing characters thereon, which serve to cancel it.

The printed characters may be any arbitrary canceling-marks or the name of the town or city, with the number of the ward and precinct at which the voting takes place.

The rocking spindle C⁵, carrying the fingers C⁹, is provided with an arm E, carrying a counterweight E', by which the fingers C⁹ are held in the grooves C¹⁰ of the drum C, with the tie-plate C¹¹ in contact with the concentric band C³, by which the tips of the fingers C⁹ are held outside the band in order to secure the passage of the ballot beneath the fingers C⁹ and to move them out of their grooves and rock the spindle C⁵ for the purpose of actuating the counting and registering mechanism F, which may be of any known type or construction.

The counting mechanism shown is arranged to be actuated by the annular movement of a pawl-lever F', carrying a pawl F², by which the first wheel of the counting mechanism is advanced one tooth in the usual and well-known manner in mechanisms of this class. The pawl-lever F' is attached to a shaft F^a, on which the wheels of the counting mechanism turn, and it is actuated by a link F³, pivoted to its free end and provided with a rack-bar F⁴, adapted to be raised into engagement with a pinion F⁵ on the shaft of the drum C. The rack-bar F⁴ normally rests on a pin or stud F⁶, projecting from the inside of the frame A, so as to permit a sliding movement of the rack-bar without its engagement with the pinion F⁵. Projecting from the under side of the rack-bar F⁴ is a plate F⁷, having on one side a flange F⁸, and extending beneath the flange is a radial arm G, carried by the rocking spindle C⁵, so that when the fingers C⁹ are pushed out of their grooves in the drum C by the passage of a ballot, thereby rocking the spindle C⁵, the free end of the arm G is raised, thereby lifting the rack-bar F⁴ into engagement with the pinion F⁵ and causing the rotation of the drum C to impart an angular movement to the pawl-lever F'. As the rack-bar is moved by the pinion F⁵ the flange F⁸ slides above the stud F⁶ and in the direction to push the pawl-lever F', thereby moving the pawl F² back to engage another tooth, and on the stud F⁶ until the end of the flange passes the stud, when the rack-bar will fall upon the stud F⁶, carrying the teeth of the rack-bar out of engagement with the pin-

ion F⁵, allowing the pawl-lever F' to be reversed by means of a counterweight H, carried by an arm H', which is attached to the opposite end of the shaft to which the pawl-lever F' is attached, thereby causing the pawl F² to move the first wheel of the counting mechanism forward one tooth. A gong I may be placed in the path of the falling counterweight, so as to be struck as each ballot is counted. The length of the rack-bar F⁴ is sufficient to move the pawl-lever F' back far enough to cause the pawl F² to engage a fresh tooth on the first wheel of the counting mechanism, and in case the ballot is so long that it has not then passed free from the fingers C⁹ the free end of the arm G will be held in its raised position, so that when the rack-bar falls, as represented in Fig. 5, it will rest upon the free end of the arm G, which is bent downwardly at G' to engage the lower end of the flange F⁸ and act as a pawl to prevent the reversed movement of the rack-bar until after the ballot has entirely passed from beneath the fingers C⁹, thereby preventing the counting of the ballot until after the ballot has been delivered from the rotating drum C.

The free end of the forward member A⁵ of the upper tilting V-shaped guard-plate A⁶ is arranged in a vertical plane at the rear of the forward end of the lower tilting guard-plate A³, so that when the upper V-shaped guard-plate is tilted by the passage of the ballot beneath the rear member A⁹, as shown by the broken lines A¹⁰, and the lower guard-plate A³ is tilted, as shown by the broken lines A¹¹, the free end of the member A⁵ is carried below the raised end of the guard-plate A³, thereby effectually preventing the admission of the second ballot until the first ballot has passed entirely by the fingers C⁶ and been delivered from the rotating drum into the box B. If an attempt is made to enter a second ballot before the first has been delivered from the machine, its advancing end will either strike the raised end of the lower guard-plate A³ and be held from further movement, or if it should pass over the raised end of the lower guard-plate A³ it will strike the V-shaped guard-plate A⁶ and be deflected upwardly.

Letters Patent No. 529,191, granted to me October 30, 1894, contained upper and lower pivoted guard-plates similar to the guard-plates A³ and A⁶ herein described; but in that patent the two members of the upper guard-plate were made to hang on opposite sides of the forward end of the lower guard-plate and the forward member of the upper guard-plate performed a function similar to that of the guard-rail A²—viz., to hold the ballot down—whereas in my present machine the upper guard-plate serves to deflect the ballot upward and conduct it out of the machine. In Letters Patent No. 503,626, granted to me August 22, 1893, the counting and registering mechanism were actuated by their operative connection with a rock-shaft having fingers

which entered the grooves of the drum and were arranged to be lifted by the passage of a ballot, whereas in my present machine the counting and registering mechanism are actuated by their operative connection with the shaft of the rotating drum, and means controlled by the ballot are provided for effecting a connection between the drum-shaft and the counting mechanism. I also distribute the pressure over the surface of the ballot by employing two sets of fingers, which are raised by the passage of the ballot on the drum, the first set being employed to rock the ink-roll and the lower tilting guard-plate, as in Patent No. 528,191, and the second set to control the operation of the counting mechanism, and I provide means for holding the counting and registering mechanism in check when long ballots are used, whereas the counting and registering mechanism are held from registering or striking the gong until after the ballot has been delivered from the drum C. I also provide means in my present machine whereby the ballot is held in contact with the periphery of the drum independently of the fingers C⁶ and C⁹. To the lower end of the pawl-lever F', I pivot one end of a link J, which is pivoted at its opposite end with an eye J², in which is inserted the end of a rod J', which is carried by the rocking spindle C⁴, so that when the pawl-lever F' is rocked by the engagement of the pinion F⁵ with the rack-bar F⁴, as already described, the spindle C⁴ will be rocked to carry the ink-roll D' against the type D⁴.

The passage of a short ballot over the drum C when it is first brought in contact with the fingers C⁶ rocks the lower guard-plate A³ and carries the ink-roll against the type, the free end of the rod J' swinging within the eye J², which is slightly elongated for that purpose; but when the ballot has passed beneath the fingers C⁹ and rocked the spindle C⁵ the rack-bar F⁴ is carried into engagement with the pinion F⁵, thereby rocking the pawl-lever F' and by means of the link J and rod J' holding the ink-roll D' in contact with the type. In case a long ballot is used the end G' of the arm G rocks the rack-bar F⁴ against its reversed movement, as shown in Fig. 5, thereby holding the ink-roll in contact with the type until the ballot has entirely passed the fingers C⁹. The drum C is held against backward movement by means of a roll K, resting on an inclined shelf K', as shown and described in my former patent, No. 528,191, already referred to.

I do not wish to confine myself to the specific construction and arrangement of the several parts of the machine as herein described, and shown in the accompanying drawings, as the same may be modified in many particulars without departing from the scope of my present invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a feed-table on which

the ballot is presented to the machine, a tilting guard-plate below said feed-table and arranged to be raised into the path of the ballot as it lies on said feed-table, an upper guard-plate pivoted above said lower guard-plate and having an inclined member arranged to be depressed at the rear of said lower guard-plate, whereby a ballot when pushed over the raised end of said lower guard-plate is deflected upwardly by the inclined member of said upper guard-plate, substantially as described.

2. The combination with a feed-table, of a tilting guard-plate A³ and a guard-plate A⁶ pivoted above the guard-plate A³, with its forward member at the rear of the forward end of the plate A³, substantially as described.

3. The combination with a feed-table, of a drum and a friction-roll, between which a ballot is seized and drawn from said feed-table, pivoted fingers extending over the periphery of said drum, and means, concentric with said drum, for holding the ballot in contact with said drum after it passes said friction-roll, and carrying it under the ends of said pivoted fingers, substantially as described.

4. The combination with a grooved drum by which the ballot is fed forward, of a band held concentrically with said drum to hold the ballot in contact therewith, pivoted fingers entering the grooves of said drum and arranged to be lifted out of said grooves by the passage of a ballot, a tilting guard-plate operatively connected with said pivoted fingers, a registering mechanism and a second set of pivoted fingers operatively connected with said registering mechanism and entering the grooves of said drum, with the free ends of said fingers normally extending outside said band, substantially as described.

5. The combination of the grooved drum, fingers attached to a rock-shaft and entering said grooves, with the ends of said fingers normally projecting beyond the periphery of said drum, whereby the advancing end of the ballot is conducted beneath the free ends of said fingers and made to move said fingers out of said grooved drum, thereby rocking said shaft, substantially as described.

6. The combination of a grooved drum, a rock-shaft, fingers attached to said rock-shaft and entering the grooves in said drum, with the free ends of said fingers projecting beyond the periphery of the drum, a tie-piece connecting the free ends of said fingers and means for holding said tie-piece away from said drum, substantially as described.

7. The combination of a grooved drum, a band held concentrically with said drum, whereby the ballot is held against the periphery of the drum, a rock-shaft, fingers attached to said rock-shaft and entering said grooves with the free ends of said fingers projecting beyond said band, substantially as described.

8. The combination of a drum, a shaft rotating with said drum, a pinion held on said shaft, a registering mechanism comprising a

vibrating lever, and provided with rack-teeth arranged to engage said pinion, to move said lever in one direction as the drum is rotated, substantially as described.

5 9. The combination of a drum, a shaft rotating with said drum, a registering mechanism rotating with said drum, means comprising a pawl-and-ratchet mechanism for actuating said registering mechanism, and means
10 controlled by the passage of a ballot over said drum for operatively connecting said pawl-and-ratchet mechanism and said rotating shaft, substantially as described.

10 10. The combination with a drum, a shaft rotating with said drum, of a pinion carried by said shaft, a rack adapted to be moved into engagement with said pinion to actuate said registering mechanism, means controlled
15 by the passage of a ballot over said drum, whereby said rack is carried into engagement with said pinion and released therefrom by the passage of a ballot over the drum, substantially as described.

20 11. The combination of a grooved drum, a shaft rotating with said drum, a rock-shaft, fingers carried by said rock-shaft and entering the grooves in said drum, and arranged to be moved therefrom by a ballot passing over said drum, whereby said rock-shaft is
25 rocked, a registering mechanism, intermediate connecting mechanism between said registering mechanism and said shaft, and means controlled by said rock-shaft by which said intermediate mechanism and said rotating
30 shaft are operatively connected, substantially as described.

35 12. The combination of a drum, a shaft rotated with said drum, a pinion carried by said shaft, a rack adapted to engage said pinion, means controlled by the passage of a
40 ballot over said drum for carrying said rack into engagement with said pinion, means for holding said rack in engagement with said pinion independently of the ballot, actuated
45 by the movement of said rack, substantially as described.

50 13. The combination with the drum, and a shaft rotated thereby, of a pinion carried by said shaft, a rack normally out of engagement with said pinion, a rock-shaft, means for rocking said shaft controlled by the passage of a ballot over said drum, an arm carried by

said rock-shaft and arranged to lift the rack into engagement with said pinion, and hold said rack against reverse movement until released by the passage of the ballot over the drum and a registering mechanism operatively connected with said rack, substantially as described. 55

14. The combination of the drum and a shaft rotated with said drum, of a pinion carried by said shaft, a rack adapted to engage said pinion, means controlled by the ballot for carrying said rack into engagement with said pinion, a fixed stud, a flange on said rack
60 arranged to slide on said stud, and hold the rack in engagement with said pinion, and a registering mechanism operatively connected with said rack, substantially as described. 65

15. The combination of a drum, a type-roll arranged to run in contact with a ballot passing over said drum, an ink-roll normally held out of contact with said type-roll, means for carrying said ink-roll into contact with said type-roll and comprising a rock-shaft, an arm projecting from said rock-shaft, a link
70 operatively connecting said arm with a vibrating lever, a second link pivotally connected with said vibrating lever and provided with rack-teeth, a pinion adapted to engage said rack-teeth and carry the ink-roll into contact with the type-roll, substantially as described. 75 80

16. The combination of a drum, means for holding the ballot in contact with the drum, a shaft rotating with said drum, a registering mechanism, means for actuating said registering mechanism comprising a vibrating lever, means actuated by said shaft for moving said lever in one direction, a weight
85 for reversing the motion of said lever and actuating the registering mechanism controlled by the ballot, means for operatively connecting said shaft and said lever, and means for disconnecting said shaft and said lever when the ballot has passed over said drum, substantially as described. 90 95

In testimony whereof I have signed my name to this specification, in presence of two subscribing witnesses, this 21st day of November, 1899.

EDWARD K. TOLMAN.

Witnesses:

RUFUS B. FOWLER,
AVA T. MURPHY.