

(No Model.)

3 Sheets—Sheet 1.

J. B. BENTON.

REGISTERING AND CANCELING BALLOT BOX.

No. 327,644.

Patented Oct. 6, 1885.

Fig. 1.

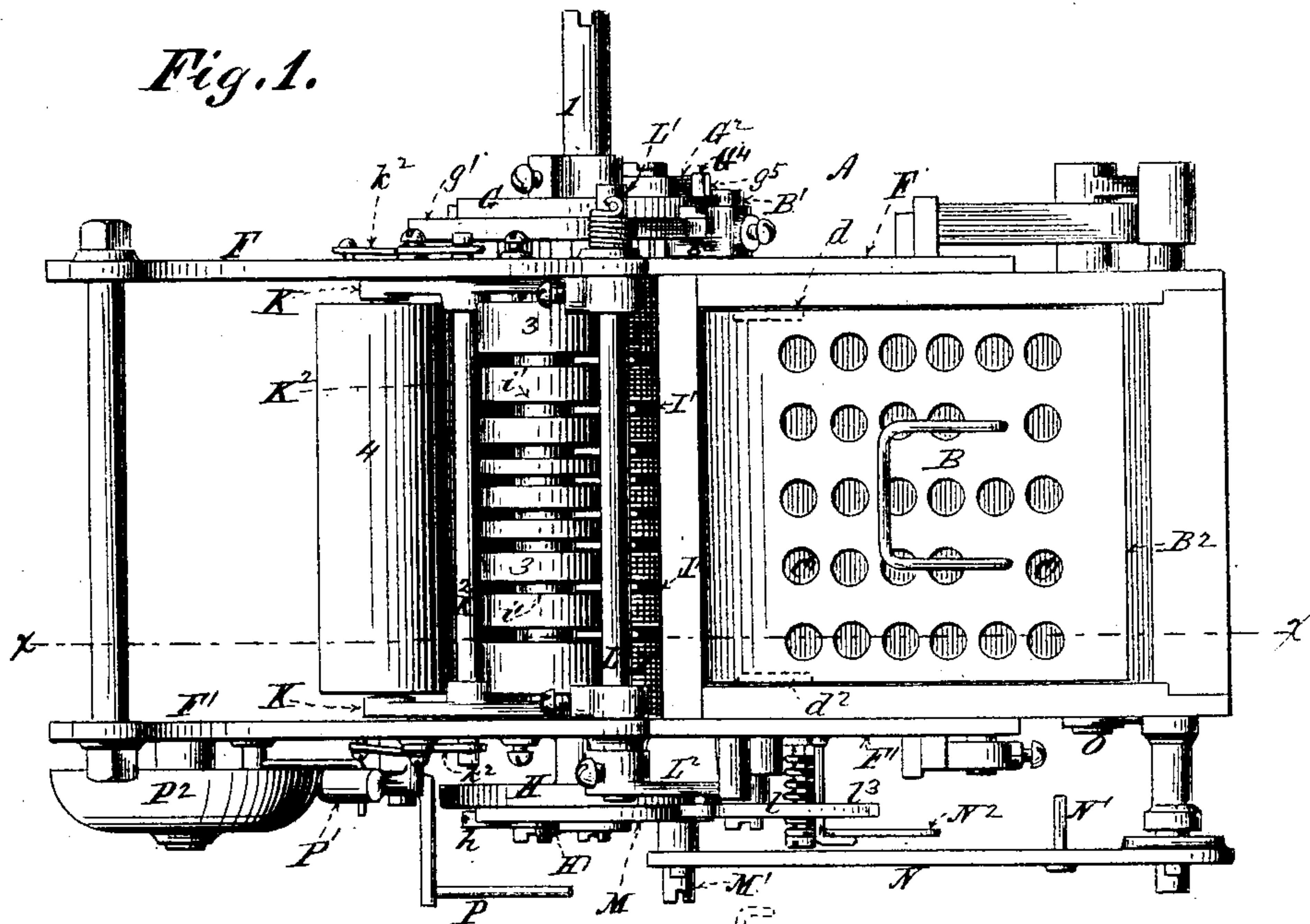
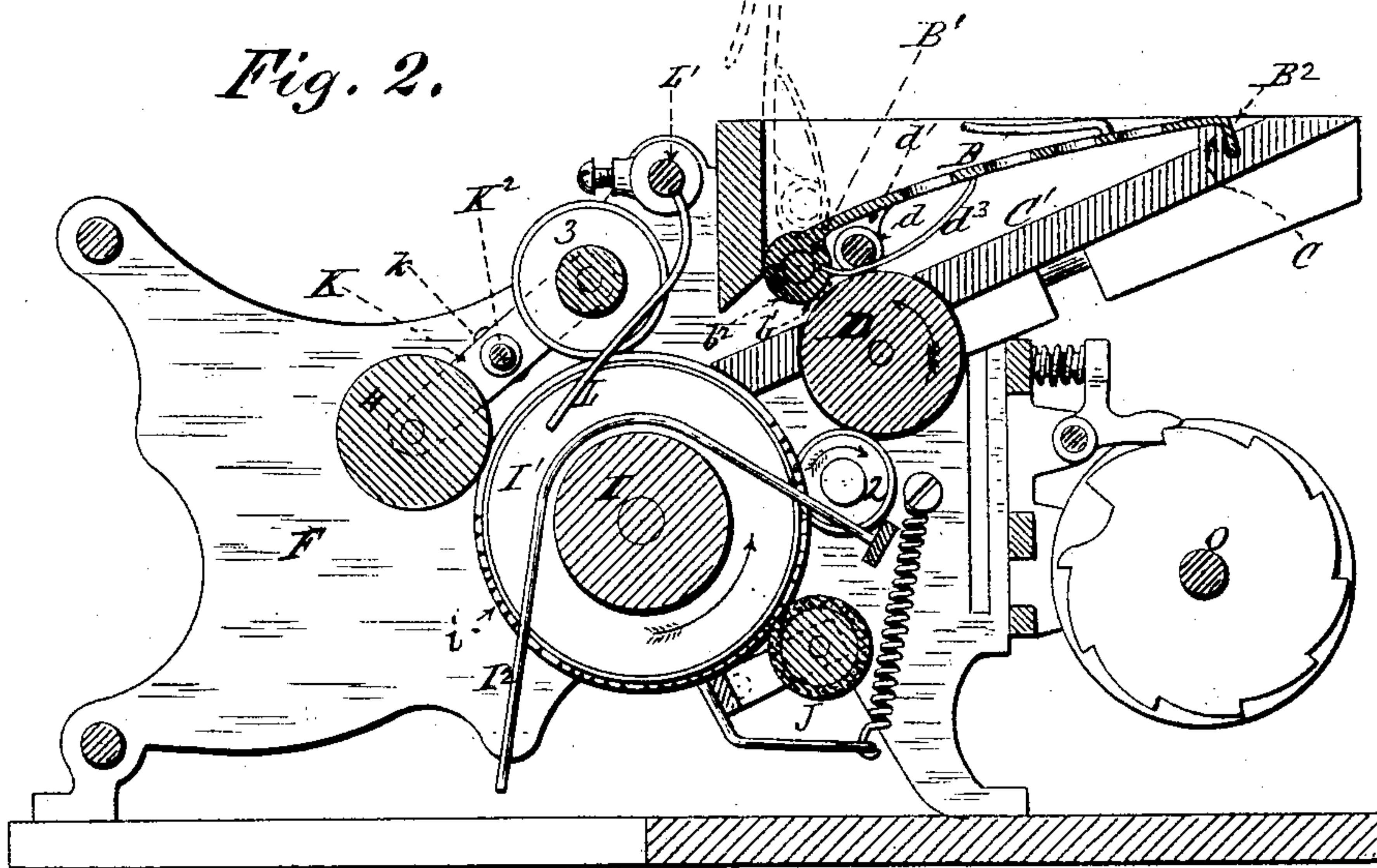


Fig. 2.



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(No Model.)

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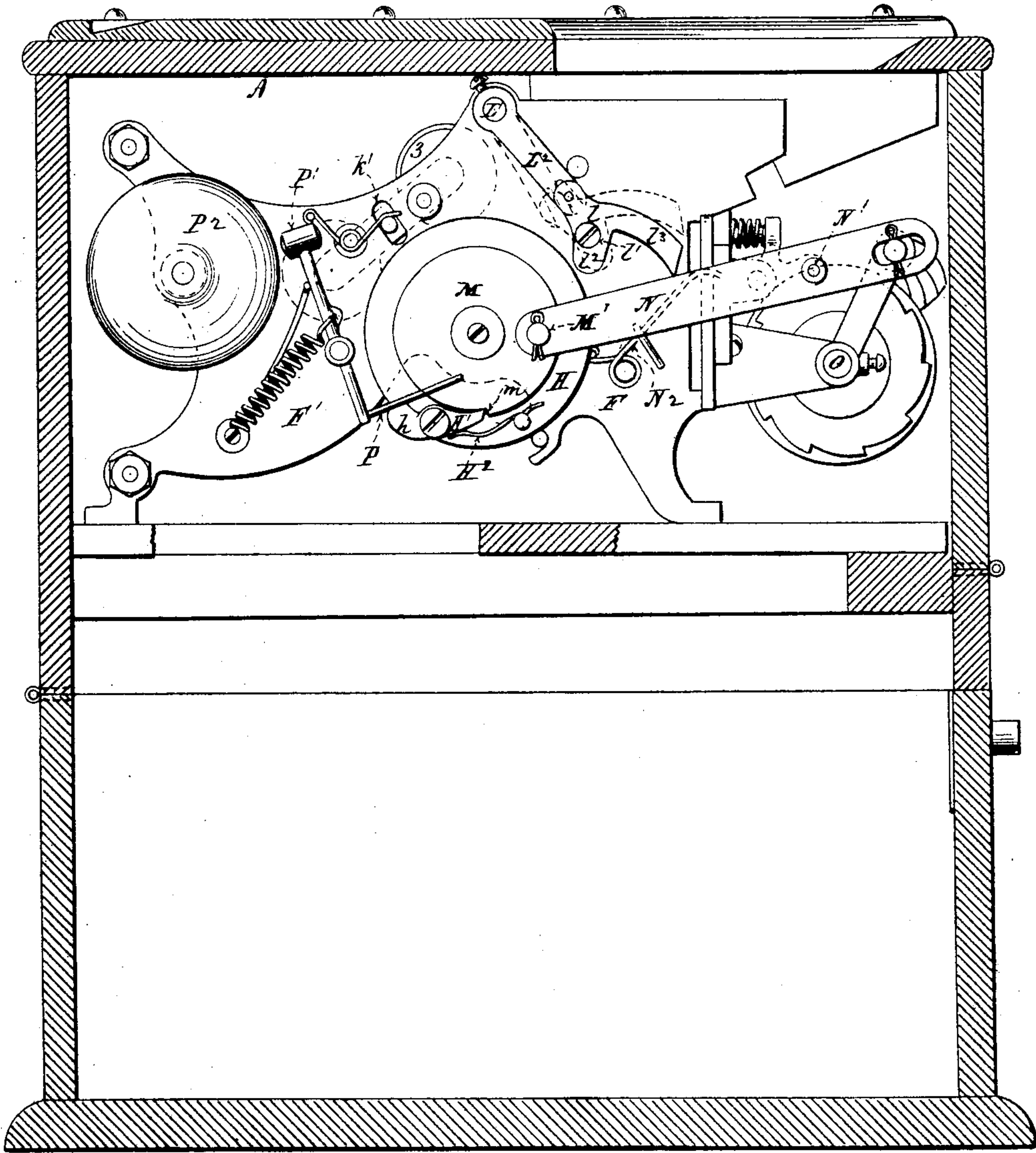
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Fig. 3.



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Fig. 4.

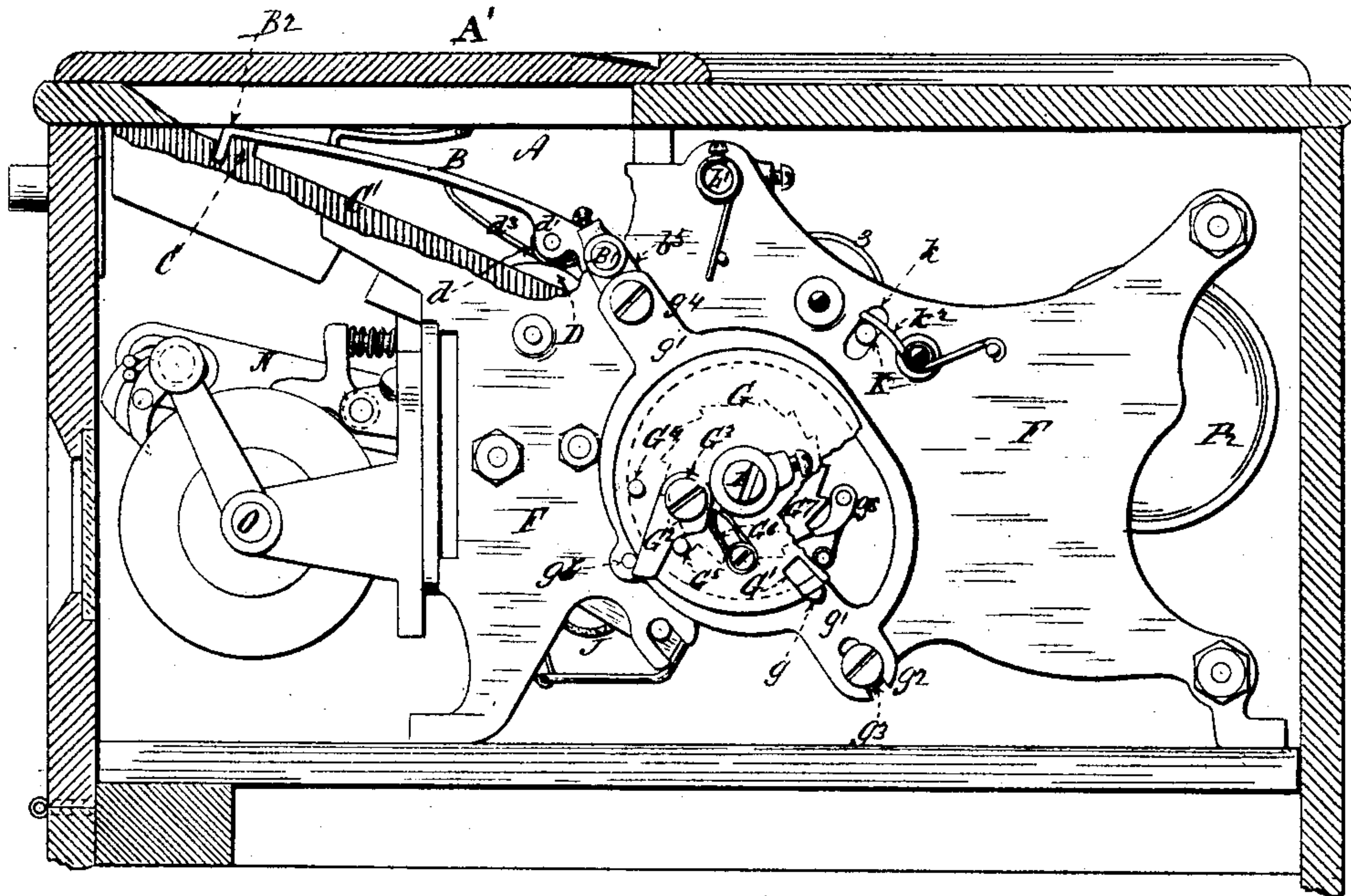
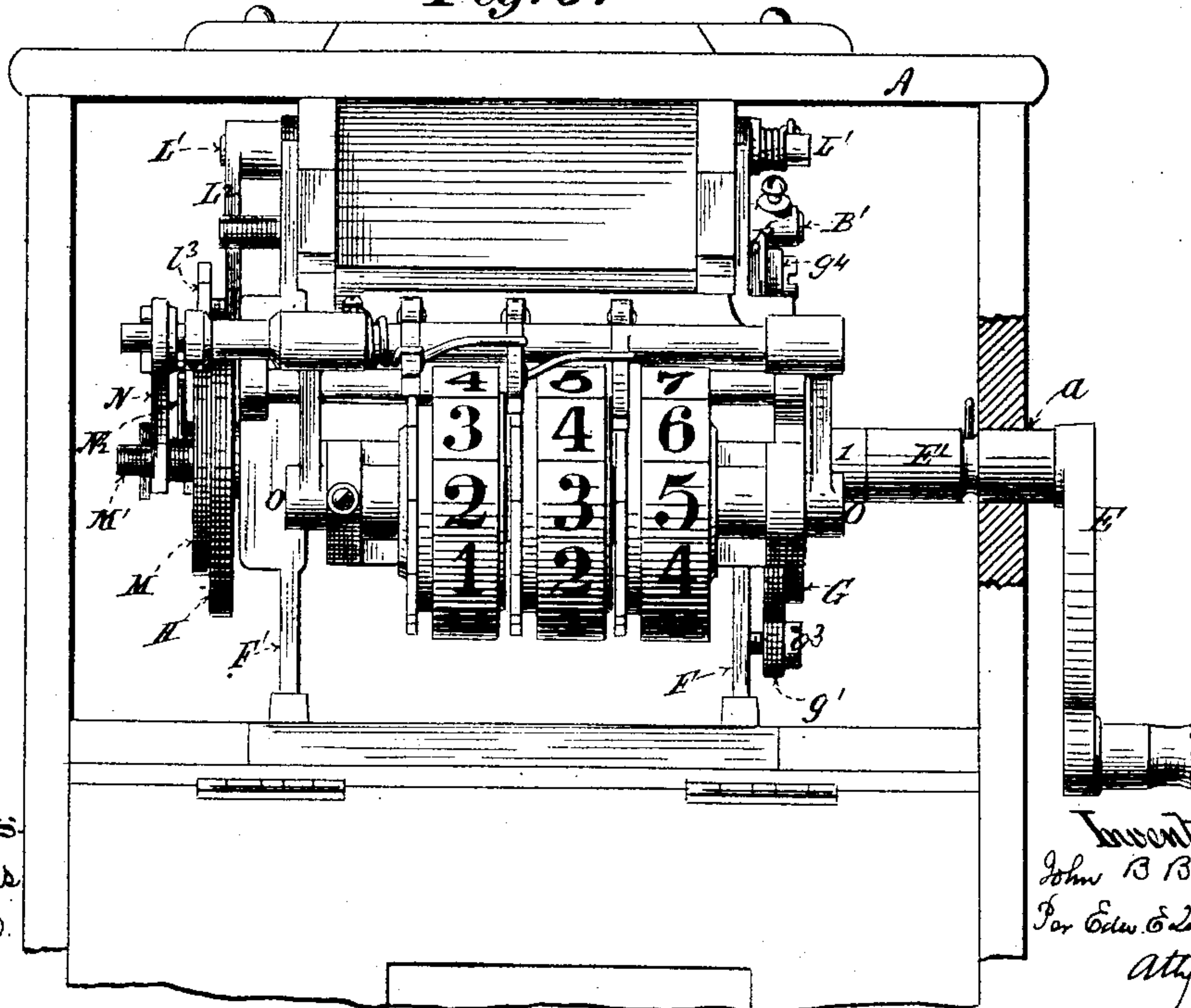


Fig. 5.



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UNITED STATES PATENT OFFICE.

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REGISTERING AND CANCELING BALLOT-BOX.

SPECIFICATION forming part of Letters Patent No. 327,644, dated October 6, 1885.

Application filed November 23, 1884. Serial No. 148,875. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. BENTON, of Roselle, New Jersey, have invented certain Improvements in Registering and Canceling Ballot-Boxes, of which the following is a specification.

My improvements relate to ballot-boxes of the type in which a marking or canceling cylinder and a register contained within a box are actuated by means of an external handle as the ballots are deposited, for the purpose of successively marking the ballots and permanently registering the number of ballots marked.

My improvements consist in the provision of means for automatically arresting the motion of the actuating-handle at the conclusion of each of its actuating movements; also, in means for preventing the raising of the cover from the receiving-table upon which the ballots are deposited, excepting when the actuating-handle occupies a prescribed position after having completed its actuating movement; also, in the provision of means for preventing the movement of the actuating-handle so long as the cover is raised, whereby the cover must be removed from and then returned to the ballot-table in order to permit each successive movement of the actuating-handle to be made; also, in the provision of means for closing the passage through which the ballots are fed from the receiving-table into the box, before the cover is raised sufficiently from the receiving-table to permit a ballot to be slipped under it, and for holding such passage closed so long as the cover remains raised; also, in the provision of means whereby the actuation of the register is dependent upon the presence of a ballot in the feeding or canceling apparatus, so that if the cover be raised, and the actuating-crank, having thus been freed, be turned, no change will be made in the register unless a ballot, which has been deposited upon the receiving-table, is actually fed through the marking apparatus. Therefore, as only one ballot can be canceled at a time, so that if two or more superposed ballots are fed into the box only one of them is marked or canceled, the number of canceled ballots in my improved ballot-box always corresponds with the number registered.

I have also introduced into my apparatus, as an incidental feature which may be employed, if desired, an alarm-bell, which is sounded every time a ballot is canceled, but which, like the registering apparatus, is not actuated by the mere turning of the actuating-crank when no ballot is being fed through the canceling device.

The mechanism which I employ is contained in the upper part of a suitable box, the lower part of which is the receptacle for the ballots. The box may be made of glass, or may be provided with a window or windows for permitting the inspection of the register.

The accompanying drawings, representing a ballot-box containing my improved apparatus for canceling ballots and automatically registering the number of ballots canceled, are as follows: Figure 1 is a top view of the apparatus detached from the box. Fig. 2 is a vertical section taken through the line $x x$ on Fig. 1. Fig. 3 is a vertical section of the box, showing in elevation the side of the apparatus opposite that to which power is applied. Fig. 4 is an elevation, partly in section, of the crank side of the apparatus, showing the upper part of the ballot-box in vertical section. Fig. 5 is an end elevation of the box, partly in section, showing the register.

The drawings represent a ballot-box, A, provided at the top with a sliding cover, A', the removal of which affords access to a hinged cover, B, supported at one end upon a horizontal shaft, B', and having upon its opposite end a downwardly-turned flange, B², which, when the cover is down, drops over the horizontal rib C, extending across the higher end of the inclined ballot-receiving table C', the lower edge of which is in close proximity to and slightly below the highest part of the surface of the feed-roller D. It is intended that the ballot shall be placed upon the receiving-table C', with its lower edge resting upon the top of the feed-roller D in position to be pressed against the feed-roller D by the idler-roller d when the cover is dropped down. The idler-roller d has its bearings in the brackets d' d'' , affixed to the under side of the cover B, and is circumferentially grooved to admit the stripping-wires d^3 .

The shaft B' of the cover B is provided with

the cam b , the length of which equals the length of the feed-roller D. This cam has a flat side, b' , which, when the cover B is down, stands slightly distant from the surface of the feed-roller D, thus leaving a passage through which the ballot is fed from the table into the box. Before the cover B can be raised sufficiently far to clear the lower edge of its flange B^2 from the top of the rib C, so that a ballot can be slipped under it, the concentric portion b^2 of the cam is brought into contact with the surface of the feed-roller D, thus closing the passage into the box. The purpose in thus closing this passage is to prevent the introduction of any object into the interior of the box when the cover is raised.

The prime shaft 1 of the machine is operated by means of an external handle, as, for example, by the crank-key E, the hollow hub E' of which is inserted through the hole a in the wall of the box, and applied to the end of the prime shaft 1.

The prime shaft 1 is provided with bearings in the vertical standards F and F' , which constitute the principal members of the frame of the apparatus. The portions of the prime shaft projecting outside of the standards F and F' have rigidly affixed to them, respectively, the two disks G and H.

The disk G, affixed to the crank end of the prime shaft 1, is provided with the radial slit G' , extending inward from its periphery and intended for engagement by the locking-catch g , which is a pin affixed to the swinging frame g' , provided with the forked arm g^2 , embracing the shank of the screw g^3 , inserted in the standard F. The swinging frame g' is placed between the disk G and the standard F, and on the side opposite to the forked arm g^2 is provided with the arm g^4 , which is pivotally connected with the crank-arm b^3 , affixed to the shaft B' of the cover B.

The parts are so arranged that when the cover B is down the pin g occupies a position in which it just clears the periphery of the disk G; but upon raising the cover B the frame g' is made to swing laterally upon the screw g^3 . The pin g is thereby carried into engagement with the radial slit G' , provided the disk G, which is affixed to and rotates with the prime shaft 1, has been brought to rest in such a position that the mouth of the radial slit G' immediately adjoins the pin g . When the slit G' is not in alignment with the pin g , the cover B cannot be raised because of the collision of the pin g with the periphery of the disk G. On the other hand, the prime shaft 1 cannot be rotated so long as the cover B is sufficiently elevated to hold the pin g in the slit G' of the disk G.

As a convenient means of stopping the rotation of the disk G when the slit G' is in alignment with the pin g , and preventing the prime shaft from being continuously turned more than one revolution, the disk G is provided with the retaining-pawl G^2 , which rocks upon the screw G^3 , by means of which it is

pivotally connected to the face of the disk G. Its range of oscillation in either direction is limited, respectively, by the stop-pins G^4 and G^5 , inserted in the face of the disk G. A spring, G^6 , tends to hold the retaining-pawl G^2 against the stop-pin G^4 , in which position the free end of the pawl projects outside of the periphery of the disk G.

Just before the conclusion of the actuating movement of the prime shaft, the outwardly-projecting end of the pawl G^2 is brought into collision with the pin g^5 , affixed to the swinging frame g' , and as the rotation of the disk G continues the pawl G^2 is rocked backward upon its pivot G^3 until it strikes against the stop-pin G^5 , which prevents its further oscillation, and brings the disk G and prime shaft to rest in such a position that the mouth of the radial slit G' is immediately opposite the pin g .

By the raising of the cover B, and the consequent lateral swinging of the frame g' , the pin g^5 is carried out of engagement with the end of the pawl G^2 , which, being thus freed, is rocked upward against the pin G^4 by the action of its spring G^6 . Upon lowering the cover B the frame g' is swung laterally backward to its former position. The pin g is carried out of engagement with the radial slit G' , and, as the end of the pawl G^2 has been previously disengaged from the pin g^5 , no obstacle is then presented to the repetition of the actuating movement of the prime shaft.

On its inner side the disk G is provided with the ratchet-wheel G^7 , which, by the engagement of its teeth with the spring-pawl g^8 , pivoted to the standard F, prevents the backward rotation of the prime shaft. The swinging frame g' surrounds the ratchet-wheel g^7 , and is sufficiently large to clear the ratchet-wheel and its pawl.

In the operation of the cover and the prime shaft there is thus a close interdependence. The two functions of the cover in respect of tripping the retaining-pawl out of engagement with its bearing, and also causing the pin g to engage the radial slit G' , and thereby prevent the rotation of the prime shaft when the cover is raised, are separable functions. Either one may be dispensed with without affecting the operation of the other.

The movable pin, which serves as the roller for the retaining-pawl G^2 , need not necessarily be connected with the cover B, but may be mounted upon a movable frame, to which access may be had through an opening in the wall of the box. In either event, however, it will be observed that the disengagement of this pin from the retaining-pawl G^2 requires to be effected manually either by power applied directly to the pin or the frame in which it is affixed, or by the manual lifting of the cover B.

The portion of the prime shaft between the standards F and F' has mounted upon it the roller I, provided with a suitable number of circumferential grooves, I' . The projecting

portions of the roller I are preferably covered with india-rubber. One or more of these projecting portions is provided with projecting type *i*, which are supplied with ink from the inking-roller J, the surface of which is composed of flannel or felt, and is saturated with ink. The printing-roller I bears upon and drives, the intermediate roller, 2, which in its turn bears upon and drives the feed-roller D. By the motion thus communicated from the prime shaft 1, the feed-roller D is made to rotate in the same direction as the prime shaft, and to thereby feed the ballots forward over the feed-roller D, and under the cam *b*, and then between the printing-roller and the friction-roller 3, and then between the printing-roller and the friction-roller 4.

The friction-rollers 3 and 4 are mounted in a movable frame composed of the two side pieces, K and K', and the shaft K², connecting the two side pieces, and projecting therefrom on either side and loosely entering the slots *k* *k'*, formed, respectively, in the standards F and F'. The rollers 3 and 4 thus rest upon the printing-roller by their own gravity.

If desired, a spring, *k*², may be applied at each end of the shaft K² to force the rollers 3 and 4 against the printing-roller.

The roller 3 is provided with circumferential grooves *i'*, corresponding in number and position with the grooves *i* in the printing-roller. The main object of the circumferential grooves in the printing-roller and in the roller 3 is to provide room for the curved fingers L, which are affixed to the rock-shaft L', and incidentally to allow of the employment of the stripping-fingers I². In their normal position the fingers L rest upon the bottom of or contained within the circumferential grooves in the printing-roller; but when the ballot is fed through between the printing-roller and the friction-roller 3 the fingers L are lifted, thus rocking the shaft L'. This rocking of the shaft L' permits the transmission from the prime shaft of the power required to operate the register and to ring the alarm bell. Such transmission is effected by means of the impelling-pawl H', pivoted to the face of the disk H, the point of which pawl is held by the spring H² against the periphery of the crank-wheel M, loosely mounted upon the prime shaft outside of the disk H. The periphery of the crank-wheel M is notched, forming the shoulder *m* for engagement by the point of the impelling-pawl H'. So long as such engagement continues, the crank-wheel M is rotated whenever the prime shaft is turned, and reciprocating motion is thus imparted to the pitman N, hung upon the crank-pin M', inserted in the face of the crank-wheel M. The pitman N is the actuator for imparting, by means of a suitable ratchet wheel and pawl, a step-by-step motion to the register-shaft O.

Any of the well-known forms of registers may be employed. That shown in the drawings is a register of the type in which the count is represented by figures upon the peripheries

of a series of step-by-step rotating wheels, each containing the figures from 0 to 9, and each, commencing with the unit-wheel, acting, at the time it makes its tenth movement, to move the next adjoining wheel one step. The unit-wheel, being keyed to the shaft O, is moved one step by each reciprocating movement of the pitman N.

During the rotation of the crank-wheel M the crank-pin M' strikes against and vibrates the hammer-arm P, causing the hammer P' to strike the bell P², and thus sound an alarm every time the crank-wheel is turned and the register actuated.

The end of the rock-shaft L', projecting outside of the standard F', is provided with the slotted crank-arm L², which engages a pin in the tripping-lever *l*, pivotally connected with the standard F' by the screw *l'*. The tripping-lever is provided with a projection, *l*².

When the fingers L stand within the grooves of the printing-roller the projection *l*² intersects the path of motion of the heel *h* of the impelling-pawl H', and hence as the prime shaft is rotated, presses the heel *h* of the impelling-pawl H' toward the center of the crank-wheel, thus rocking the point of the impelling pawl out of engagement with the shoulder *m*, and thus causing the turning of the crank-wheel to be discontinued. When the crank-wheel is thus brought to rest by the disengagement of the impelling-pawl from the shoulder *m*, the pitman N is in such a position that the pin N', inserted transversely in the side of the pitman, is brought against the end of the arm *l*² of the pivoted lever *l*, and is also deposited upon the top of the curved spring N², affixed to the side of the standard F'.

By the bearing of the pin N' upon the spring N² and against the end of the arm *l*² of the lever *l*, the pitman N and the crank-wheel M are kept stationary until, by the feeding of the ballot over the periphery of the printing-roller, the fingers L are lifted and the pivoted lever *l* thereby oscillated in such a direction as to move the projection *l*² away from the path of the heel *h* of the impelling-pawl H', so that as the prime shaft rotates the point of the impelling-pawl H' re-engages the shoulder *m* and again rotates the crank-wheel M. By this means the actual passage of a ballot through the canceling apparatus is necessary in order to permit the transmission of the motion required to actuate the register; and hence the register affords an exact record of the number of ballots canceled, and cannot be thrown out of time by any movements of the actuating-handle when no ballots have been deposited on the receiving-table. Similarly, the alarm will not be sounded unless a ballot is being actually passed through the canceling apparatus.

In operation after a ballot has been fed through the canceling apparatus the fingers L drop down into the grooves in the printing-roller, thus rocking the shaft L' to which the fingers L are affixed, and swaying the trip-

ping-lever l , so that the projection l^2 is swung into the path of movement of the heel h of the impelling-pawl H' just before the conclusion of the actuating movement of the handle.

5 The collision of the heel h of the impelling-pawl with the projection l^2 trips the impelling-pawl out of engagement with its shoulder m in the loose wheel M , and at the same time the end l^3 of the tripping-lever is dropped in front of the pin N' inserted in the pitman N .
 10 Having been thus tripped the impelling-pawl ceases to exert its impelling influence upon the loose wheel M , and the momentum of the wheel M , and the parts with which it is connected, is arrested by the collision of the
 15 pin N' with the end l^3 of the tripping-lever. The capacity to thus act as a stop for arresting the momentum of the wheel M is not, however, an essential condition to the possession by the tripping-lever of the capacity for
 20 performing its principal function—that of tripping the impelling-pawl. Thus the tripping-lever may be used solely to trip the impelling-pawl, and the loose wheel and its connections may be made to move with sufficient
 25 friction to cause the stoppage of the wheel M as soon as the pawl is tripped out of engagement with the shoulder m .

If, after the tripping of the impelling-pawl
 30 at the end of one actuating movement the prime shaft is again turned, and no ballot is introduced, the projection l^2 will again trip the impelling-pawl just before it arrives in position to engage the shoulder m upon the
 35 loose wheel M , and will hold it out of engagement with the shoulder m until by the rotation of the shaft the point of the pawl is carried beyond the shoulder m , when it drops upon the concentric portion of the periphery
 40 of the loose wheel.

It will thus be seen that it is not until a ballot which has been introduced has actually passed through the canceling apparatus that the projection l^2 is removed from the path of
 45 the heel of the impelling-pawl, so that the impelling-pawl will be permitted to re-engage its shoulder m and again rotate the loose wheel M , and consequently actuate the register, and also, if a bell be present, vibrate the
 50 hammer thereof and sound the alarm.

I claim as my invention—

1. In a ballot-box, a device for canceling ballots and a register for registering the number of ballots canceled, consisting of mechanism contained within the ballot-box and actuated by an external handle, in combination with a retaining device consisting, essentially, of a retaining-pawl and a suitable bearing for engaging such pawl, and thereby automatically
 55 arresting the rotation of the prime shaft of the said mechanism at the conclusion of every actuating movement of the said handle, and means for manually effecting the disengagement of said pawl and thereby permitting a
 60 repetition of the actuating movement of the said handle.

2. In a ballot-box, a device for canceling

ballots, and mechanism for feeding ballots thereto, operated by the rotation of prime shaft actuated by an external handle, and a
 70 retaining device consisting, essentially, of a retaining-pawl and a suitable bearing for engaging said pawl, and thereby arresting the rotation of the said shaft, and stopping the actuating movement of the said external handle
 75 at a prescribed point, in combination with a movable cover for the opening, through which ballots are fed to the said canceling device, and means for connecting the said cover to the said retaining device, whereby the disengagement of the said pawl from its bearing is effected by the movement of the said cover.

3. The combination, in a ballot-box, of a ballot-canceling device actuated by the rotation of a shaft connected with an external handle, a movable cover for closing the opening through which ballots are fed to the said canceling device, suitably connected with a movable locking-catch, and a seat for the said catch formed in or upon a disk affixed to the
 85 said shaft, whereby the said catch is held in engagement with its seat, and prevents any rotation of the said shaft, except when the said cover occupies the position in which it closes the said opening.

4. In a ballot-box, substantially such as described, the combination of the swinging frame g' , provided with the pins g and g^5 , and the disk G , rigidly affixed to the prime shaft 1 , provided with the radial slit G' , and having
 100 pivoted to it the retaining-pawl G^2 , with the movable cover B , suitably connected with and adapted to impart the required swinging movements to the said frame g' , substantially as and for the purposes set forth.

5. The ballot-receiving table C' , and the feed-roller D , in combination with the cover B , the cam b , and the idler-roller d , substantially as and for the purpose set forth.

6. The combination, as herein set forth, of the ballot-receiving table C' , provided with the transverse rib C , the feed-roller D , the cover B , provided with the downwardly-turned flange B^2 , the cam b , and the idler-roller d .

7. The circumferentially-grooved printing-roller I , and the correspondingly-grooved friction-roller 3 , and means for feeding a ballot between the printing-roller I and the friction-roller 3 , in combination with the fingers L ,
 120 the rock-shaft L' , the arm L^2 , the tripping-lever l , provided with the projection l^2 , the impelling-pawl H' , and the notched crank-wheel M , whereby power is transmitted from the prime shaft to actuate the register each time
 125 a ballot is fed through between the printing-roller I and the friction-roller 3 .

8. In a ballot-box, a counting-register suitably connected with and actuated by the rotation of a loose wheel supported upon the prime
 130 shaft of the machine and driven by an impelling-pawl pivoted to a disk affixed to the prime shaft and adapted to engage a shoulder or notch formed in the periphery of the

said loose wheel, and means for automatically tripping the said pawl out of engagement with the said shoulder and thereby preventing the said pawl from rotating the said loose wheel
5 during every rotation of the printing-roller, which occurs without the presence of a ballot, between the printing-roller and a friction-roller, which presses the ballot upon the faces of type formed in the periphery of the printing-roller.
10

9. In a ballot-box containing a grooved printing-roller and a register actuated by an external handle, mechanism, substantially such as described, for arresting the movement of
15 the printing-roller at the conclusion of each actuating movement of the handle, in combination with the fingers L, the rock-shaft L', and means, substantially such as described, for ren-

dering the actuation of the register dependent upon the position of the fingers L relatively to the bottom of the grooves in the printing-roller.

10. The combination, as herein set forth, of the rock-shaft L', provided with the fingers L, adapted to be rocked in a prescribed direction by the passage of a ballot through the canceling apparatus, and provided with a
25 crank-arm, L², the tripping-lever l, provided with the projection l², and the arm l³, and the pin N', inserted in the pitman N, for transmitting from the crank-wheel M the power re-
30 quired to operate the register.

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