

No. 688,534.

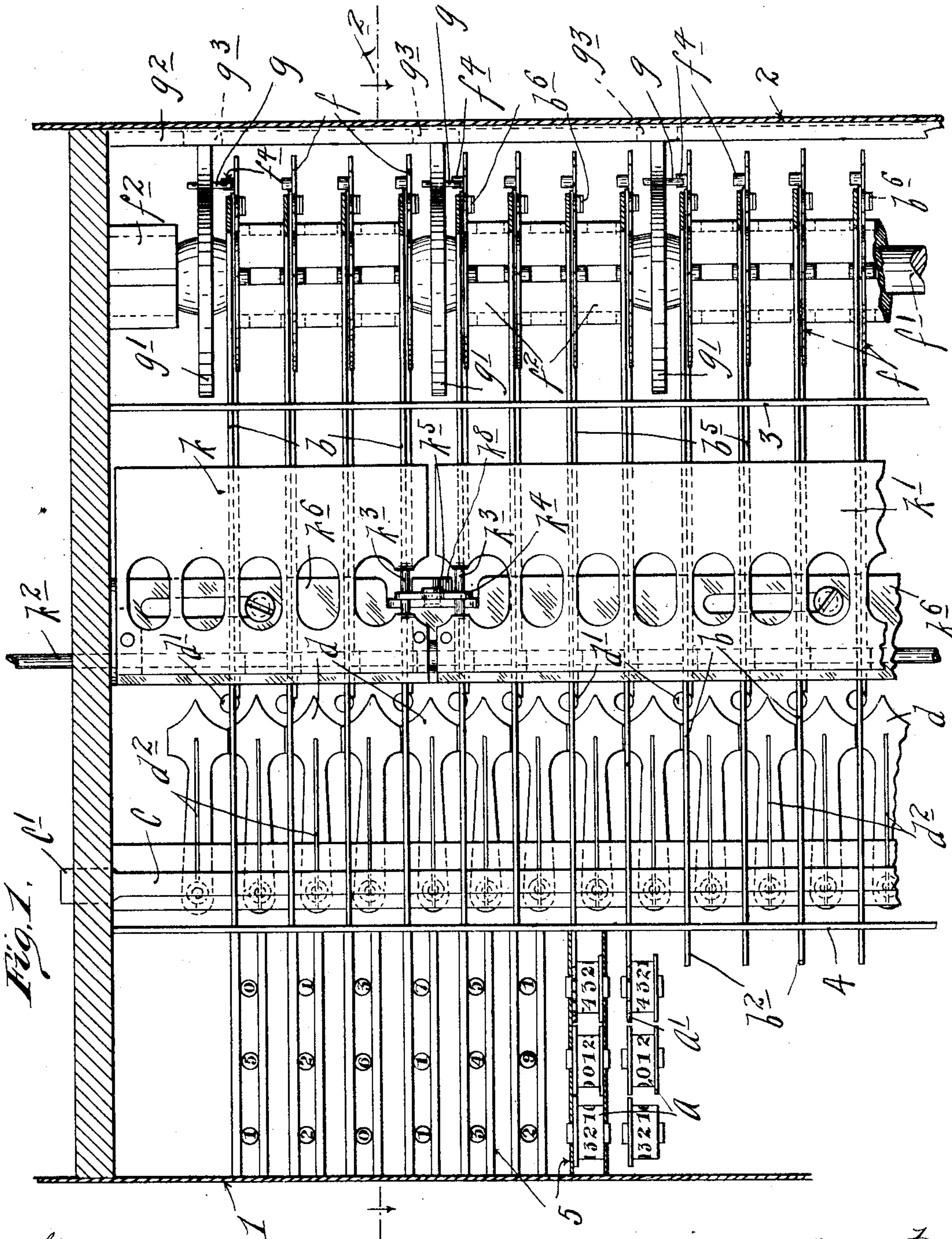
Patented Dec. 10, 1901.

S. LOE.
VOTING MACHINE.

(Application filed Aug. 13, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses,
Harry Hilgore,
Robert Otto.

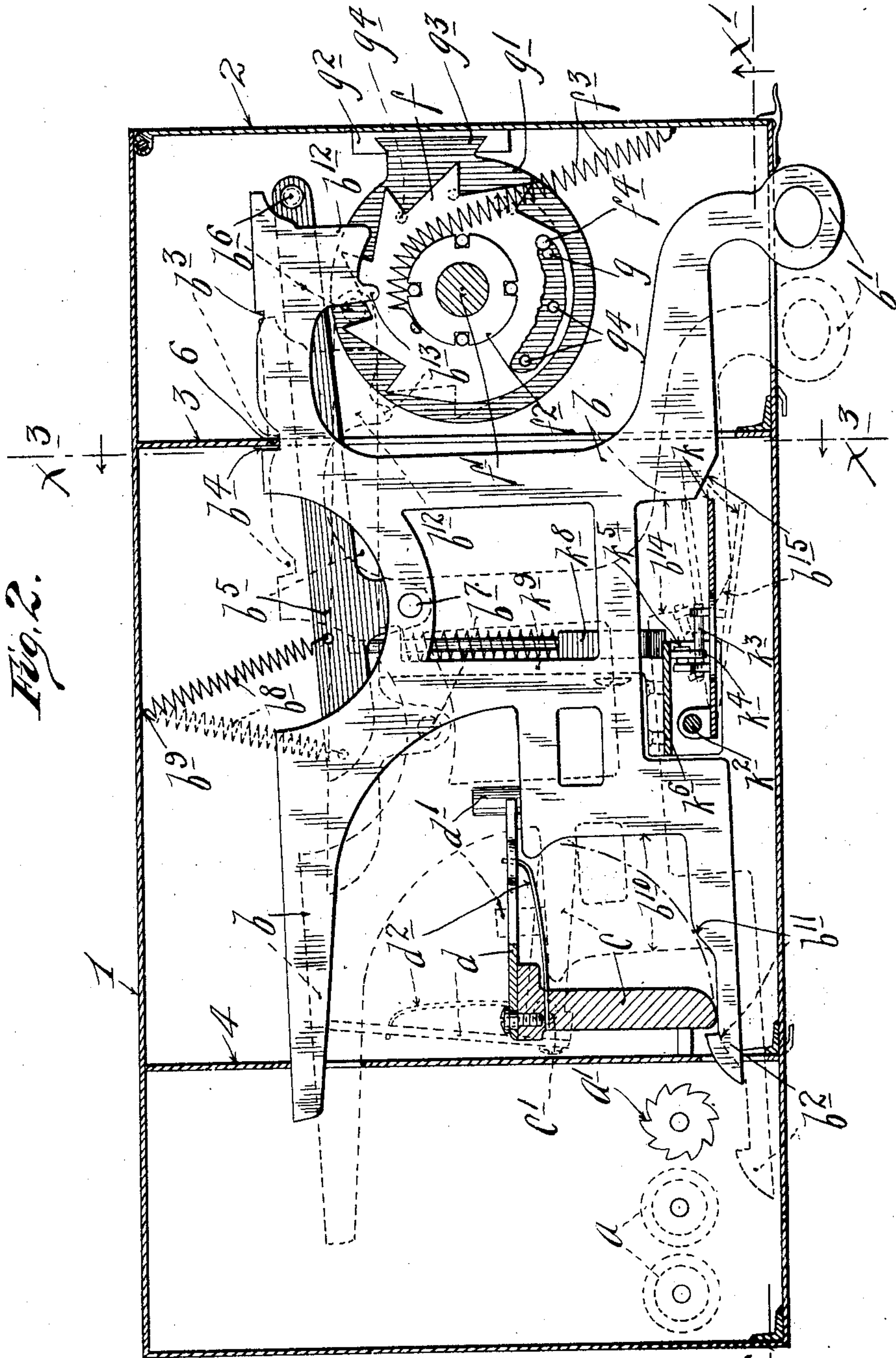
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(Application filed Aug. 13, 1901.)

(No Model.)

3 Sheets—Sheet 2.



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(Application filed Aug. 13, 1901.)

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3 Sheets—Sheet 3.

Fig. 3.

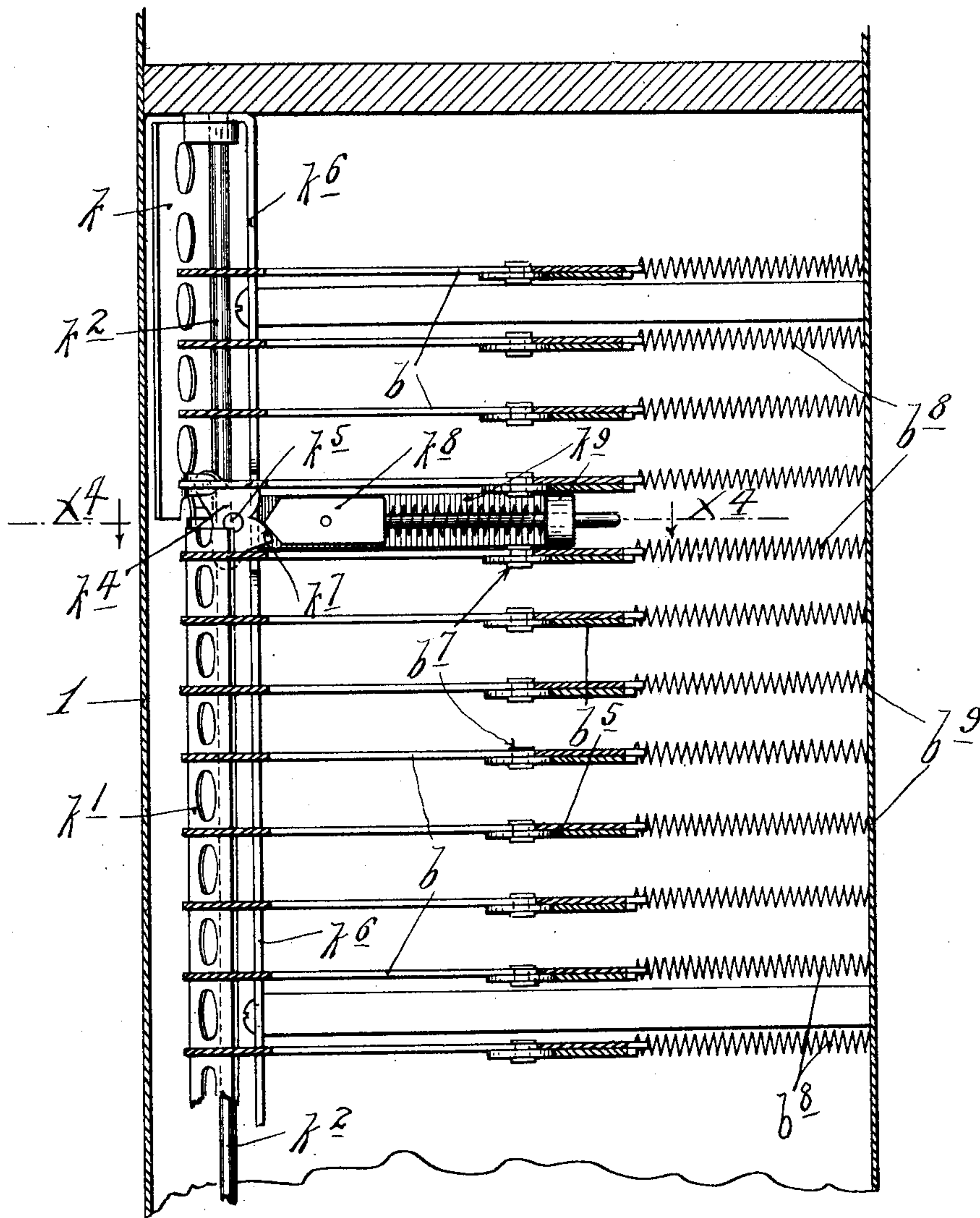
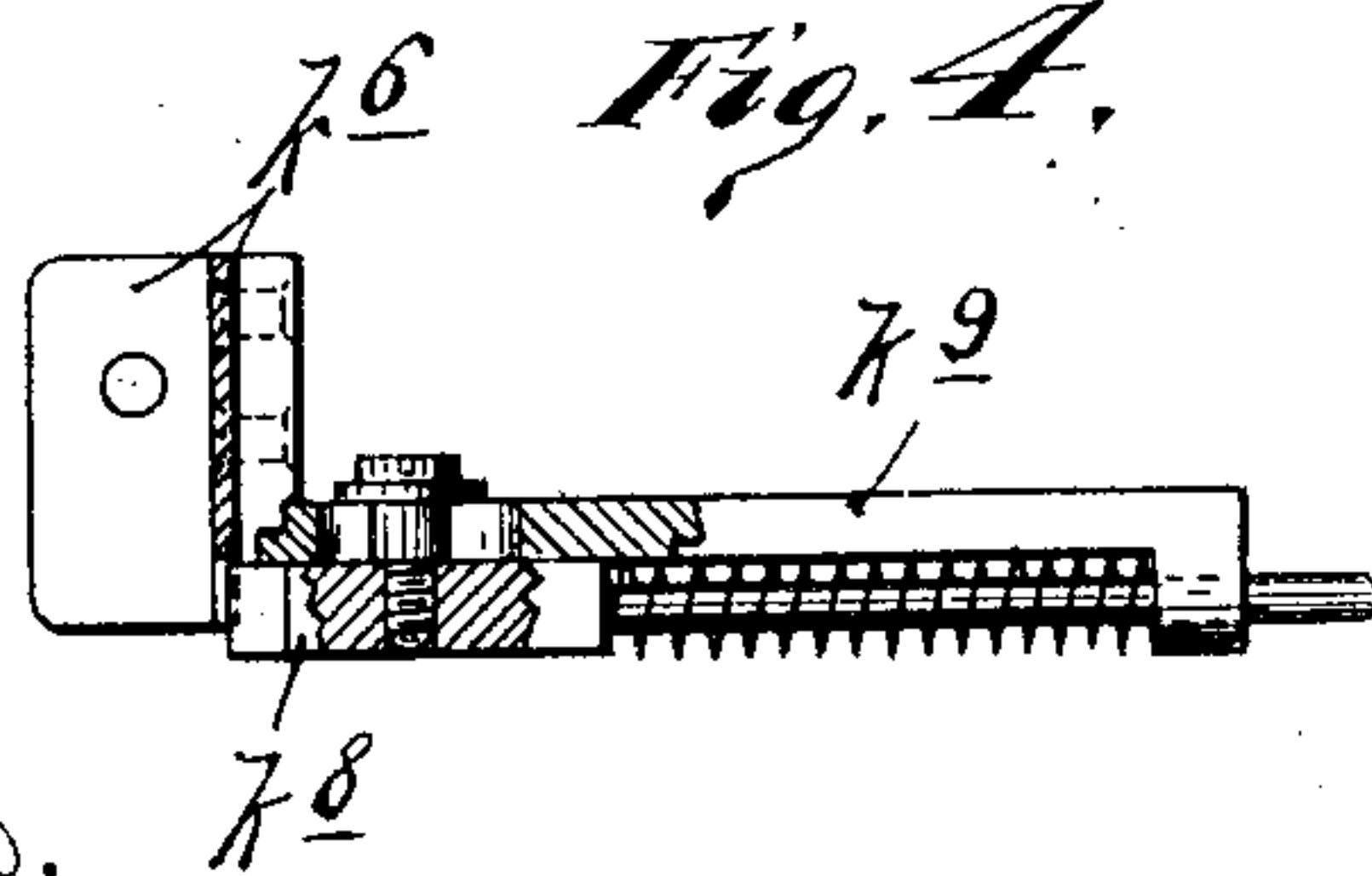


Fig. 4.



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UNITED STATES PATENT OFFICE.

SYVER LOE, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO
OLAF HOFF, OF NEW YORK, N. Y.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,534, dated December 10, 1901.

Application filed August 13, 1901. Serial No. 71,886. (No model.)

To all whom it may concern:

Be it known that I, SYVER LOE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Voting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to voting-machines of the character set forth and claimed in my prior application, Serial No. 52,755, filed March 25, 1901, and has for its object to improve the same in the several particulars hereinafter noted.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a transverse vertical section taken approximately on the line $x' x'$ of Fig. 2. Fig. 2 is a horizontal section taken approximately on the line $x^3 x^2$ of Fig. 1. Fig. 3 is a vertical section taken approximately on the line $x^3 x^3$ of Fig. 2; and Fig. 4 is a horizontal section on the line $x^4 x^4$ of Fig. 3, some parts being shown in full.

In the present case I have illustrated but a single section of a complete machine, such as illustrated in my said prior application.

The numeral 1 indicates a rectangular compartment-box, which is preferably constructed of metal and, as shown, is provided with a hinged side 2 and vertical partitions 3 and 4. Mounted within this compartment-box are a series of registers or tallies and a corresponding series of register-actuating slides, together with coöperating devices. The registers or tallies may be of any suitable construction and are indicated as entireties by the character a . As shown, these registers comprise each three counting-wheels mounted between spacing-plates 5, secured within the box 1. The front wheel of each tally has a ratchet a' for a purpose which will presently appear. Any ordinary, well-known, or suit-

able device may be provided for causing the one wheel of the tally to carry on to those of next higher order.

The series of register-actuating slides b are located in horizontal planes one over the other, and they are mounted with freedom for operative movements transversely of the machine and for a limited locking and releasing movement from front to rear thereof in suitable seats formed in the vertical partitions 3 and 4 of the box 1. Each slide b has a finger-piece or key-head b' , which works outward through a suitable slot in the front of the box 1, and by means of which the slide may be manipulated by the voter. Each slide b has also the ratchet-pawl b^2 , which at the proper time engages the ratchet-teeth a' of the corresponding register. Each actuating-slide b has also two detents, shown as in the form of notches $b^3 b^4$, which are engageable in turn with a coöperating lock-shoulder 6 of the partition 3. Again, each slide b is provided with a pivoted lock or stop-actuating dog b^5 , which, as shown, is provided at its free end with a stud or pin b^6 . Each pawl b^5 is pivoted to its coöperating slide b at b^7 and is connected by a spring b^8 to the side of the box 1 or other suitable support at a point b^9 . The relation of the spring b^8 to the pawl b^5 is important and will be considered later on; but it may be here stated that the said spring acting through said pawl yieldingly draws the slide b rearward and securely but yieldingly holds one or the other of its notches $b^3 b^4$ in engagement with the lock-shoulder 6. Furthermore, as shown, each slide b is further provided with a bearing-surface b^{10} , a cam-surface b^{11} , and a lock-lug b^{12} , with stop-finger b^{13} and a stop-shoulder b^{14} , having a cam-surface b^{15} , all for purposes which will hereinafter appear.

As in my prior application the set actuating-slides b are adapted to be simultaneously returned to the normal positions by a so-called "restoring-bar" c , which extends from top to bottom of the box a and is mounted for pivotal movements on vertically-projecting trunnions c' , that work in the top and bottom plates of the said box. Normally the restoring-bar c stands as indicated by the full lines in Fig. 2 and the register-actuating pawls b^2

of the several slides b engage the free edge thereof. To the laterally-projecting flange of the bar c is pivoted a series of cam-heads d , having outer ends. The pointed ends of the cam-heads d are subject to a camming action of cam studs or lugs d' , one on each of the slides b . As shown, the cam-heads d are yieldingly held in their normal positions by light springs d^2 , which project from the bar c . The relation of the cam-heads d to the lugs d' is such that but one of the actuating-slides b may be moved at a time from its normal to its set position. (Indicated by dotted lines in Fig. 2.) When one of the slides b is moved into its set position, its cam-lug d' passes beyond the expanded free end of the co-operating cam-heads d , and another slide may be then moved into its set position.

As in my said prior application the series of registers and the register-actuating slides are grouped, and different groups are provided for each office. One group is also appropriated for straight votes. To illustrate, we will assume that the entire series is appropriated to the State ticket, that the upper four registers and register-actuators are appropriated for straight votes for four different political parties represented on the ticket, and that the next lower four registers and register-actuators are appropriated to the four candidates for governor. The other registers and register-actuators will of course be grouped to correspond with the candidates for the different offices. Again, as in my prior application, a limiting-lock is provided for each group of the registers and register-actuators. Each of these limiting-locks comprises a series of ratchet-wheels f , mounted on a vertical shaft f' , suitably supported by the upper and lower plates of the box 1. The ratchet-wheels f of a particular group or series have interlocking hubs f^2 , which cause them to rotate together, and a coiled spring f^3 , connected to one of the hubs of each series and, as shown, to the hinged side 2 of the box 1, yieldingly holds the said wheels f in their normal positions. The normal positions of the limiting stop-wheels f are controlled by the engagements of stop-pins f^4 , which project from said wheels, and one of which engages a projecting stop-pin g of a disk-like support g' , which, as shown, is adjustably secured to a fixed vertical bar g^2 on the hinged side 2 by means of a dovetailed engagement g^3 . The support g' is provided with a series of perforations g^4 , in any one of which the stop-pin g may be inserted, so as to set the wheels f of a particular group in such position that they may be given the required number of steps of movement before they will serve to lock the co-operating unset actuating-slides b . When the proper number of movements has been given to the stop-wheels f of a particular group, their stop-pins f^4 will be thrown under the lock-lugs b^{12} and against the fingers b^{13} of such of the co-operating slides b as have been left in normal position. As is evident for the straight-

vote group and for the group appropriated to governor and other offices to which but one candidate may be elected, the groups of limiting stop-wheels f should be so set that they can be given only one step of movement. On the other hand, for other offices, such as judges, where several—say four—may be elected to the particular office, the co-operating groups of wheels f should be so set that they are capable of four movements.

By reference to Fig. 2 it will be noted that the spring b^8 , acting on the pawl b^5 , normally holds the pin thereof retracted from and out of engagement with the teeth of the co-operating limiting stop-wheel f . As the slide b is moved from its normal position to its set or dotted-line position said spring b^8 under its tendency to keep in straight line or dead-center with the pivot b^7 and point b^9 throws the free end of the pawl b^5 inward and causes the pin b^6 to engage with one of the teeth of the co-operating wheel f . This spring b^8 therefore serves to throw the dog b^5 into action at the proper time and to render the same inoperative at all other times, so that it will not interfere with the movements of the wheels under the action of other actuating-slides and their pawls b^5 .

We are now to consider the most important feature of my present invention—to wit, the straight-vote lock device or a device whereby when a straight vote has been recorded or one of the straight-vote actuators moved the actuators appropriated to individual votes will be locked, or, on the other hand, when one of the individual-vote actuators has been moved the straight-vote actuators will be locked. This device is afforded by a stop-blade formed in sections k k' , hinged on a vertical rod k^2 , suitably supported in the top and bottom plates of the box 1. The section k extends for co-operation with the four upper actuating-slides b , which are appropriated to straight votes, while the section k' extends for co-operation with all of the other—to wit, the individual-vote-actuating slides. At their adjoining edges the blade-sections k and k' are shown as provided each with a rigidly-secured wrist-pin k^3 , which pins are pivotally connected by a small rocker k^4 , which in turn is pivoted at its intermediate portion by a pin k^5 to a vertically-extended supporting-bar k^6 . At its inwardly-projecting edge the rocker k^4 is provided with an approximately V-shaped cam-notch k^7 . The V-shaped end of a spring-pressed centering-plunger k^8 , which is mounted to slide in the projecting arm k^9 of the bar k^6 , normally yieldingly holds the stop-blade sections k and k' in line with each other and in line with the beveled surfaces b^{15} of the actuating-slides b . When one of the straight-vote-actuating slides b is moved into its set position, the stop-blade section k will be thereby moved outward and the blade-section k' will be moved inward, as indicated by dotted lines in Fig. 2, in which positions the said blade-section k' stands in

front of the stop-shoulders b^{14} of all of the individual-vote-actuating slides, and thereby locks the same in their normal positions. As is evident, if one of the individual-vote-actuating slides b is moved a reverse action will take place and the stop-blade k will be moved into a position to lock the straight-vote-actuating slides.

The hinged stop-blade above described affords a very simple and efficient lock and requires but the very slightest force to operate the same. This ease of action is important, inasmuch as it is important that very slight additional friction should be put upon the actuating-slides.

The actuating-slides b are also, as in my prior application, adapted to be moved individually from normal to set positions and back again without action on their coöperating registers, thus permitting the voter to change his vote.

Under the action of the restoring-bar c when it is moved from its normal to its dotted-line position (see Fig. 2) all of the set slides b are simultaneously restored to normal positions. Under this returning movement the edge of the said bar c moves out of engagement with the pawls b^2 and into engagement with the bearing-surfaces b^{10} of the said slides, and the said pawls b^2 under such movement engage the ratchet-teeth a' of their coöperating registers and register the proper vote.

It will of course be understood that the devices above described are capable of considerable modification within the scope of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a group of registers and register-actuators appropriated to straight votes, and a group of registers and register-actuators appropriated to individual votes, of the stop-blade having sections connected for reverse movement and coöperating one section with each of said group of actuators, the one section of said stop-blade when acted upon by a coöperating actuator serving to move the other section into a position to lock the actuators of the other group, substantially as described.

2. In a voting-machine, the combination with a group of registers and register-actuators appropriated to straight votes, and a group of registers and register-actuators appropriated to individual votes, of a hinged stop-blade formed in sections connected for reverse movements and coöperating one section with each group of actuators, the movement of one blade-section, under the action of a coöperating actuator, serving to throw the other blade-sections into a position to lock

the actuators of the other group, substantially as described.

3. In a voting-machine, the combination with registers and coöperating actuating-slides b having stop-shoulders b^{14} and cam-surfaces b^{15} , certain of which registers and actuators are appropriated to straight votes and others to individual votes, of the hinged and sectional stop-blade k, k' connected for reverse movements, said sections k and k' coöperating with the said parts b^{14} and b^{15} of the slides b which are appropriated, respectively, to straight and individual votes, substantially as described.

4. In a voting-machine, the combination with a group of registers and register-actuators appropriated to straight votes, and a group of registers and register-actuators appropriated to individual votes, of a hinged and sectional stop-blade connected for reverse movements and one section thereof coöperating with said straight-vote actuators and the other with said individual-vote actuators, which blade-sections, when acted upon by a coöperating actuator, move the other section into position to lock the actuators of the coöperating group, and a yielding device normally holding said blade-section in intermediate positions, substantially as described.

5. In a voting-machine, the combination with registers and coöperating slides having stop-shoulders b^{14} and cam-surfaces b^{15} , certain of which registers and actuators are appropriated to straight votes and others to individual votes, of the hinged and sectional stop-blade k, k' coöperating with said parts b^{14} and b^{15} , the rocker k^4 connecting said blade-sections for reverse movement, and the spring-pressed centering-plunger k^8 coöperating with said rocker k^4 to hold said blade-sections in intermediate positions, substantially as described.

6. In a voting-machine, the combination with a register and register-actuating slides, of coöperating ratchet-toothed limiting stop-wheels serving to lock said slides by predetermined movements, pawls pivoted to said operating-slides for action on said toothed stop-wheels, and springs b^8 applied to said pawls and connected to a relatively fixed support at such points that the tension of the said springs, under extreme movement of said slide, will throw the said pawls to and from operative positions, substantially as described.

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

SYVER LOE.

Witnesses:

ELIZABETH KIETH,
F. D. MERCHANT.