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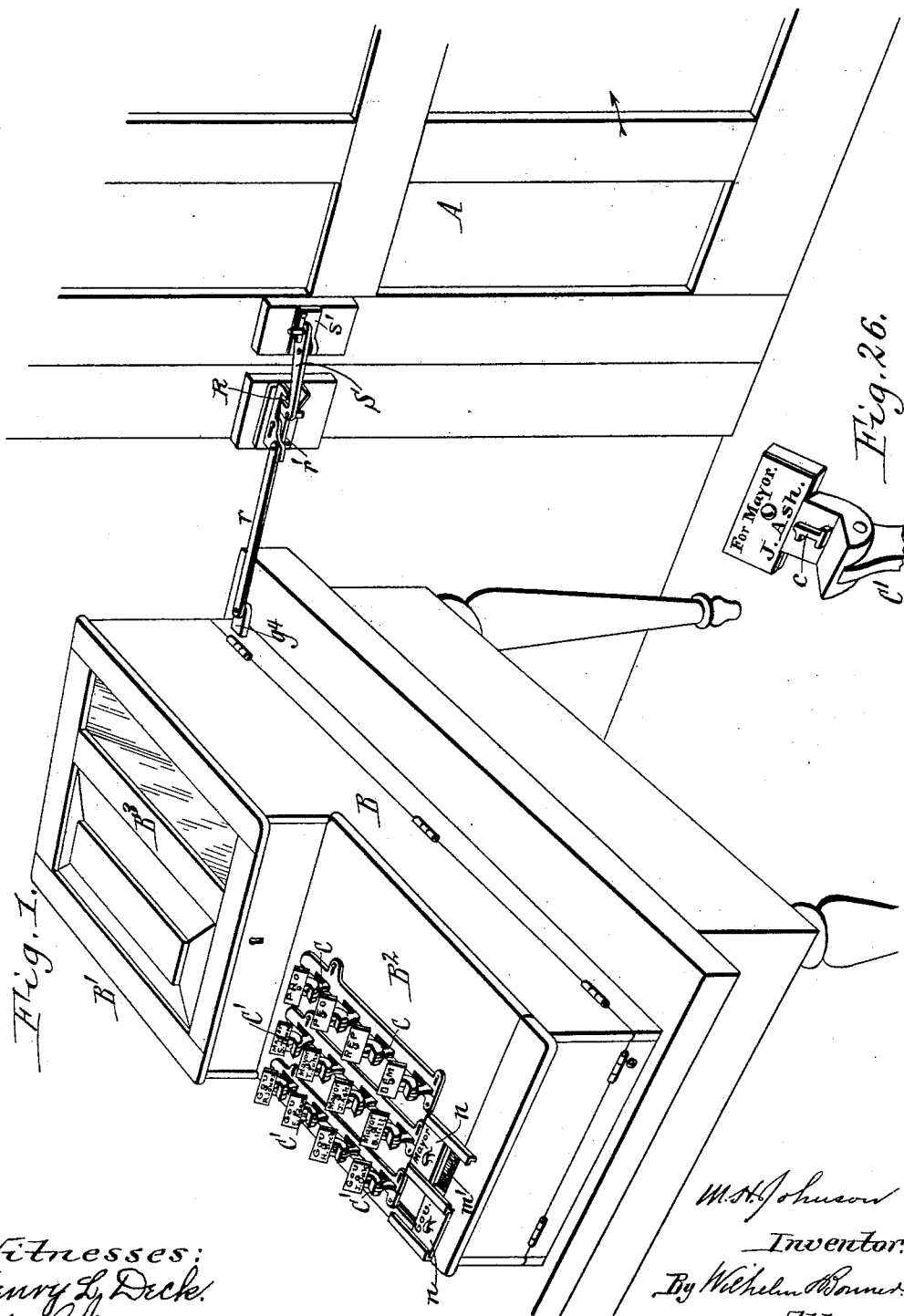
Patented May 9, 1899.

M. H. JOHNSON.
VOTING MACHINE.

(Application filed Sept. 6, 1898.)

(No Model)

5 Sheets—Sheet 1.



Witnesses:
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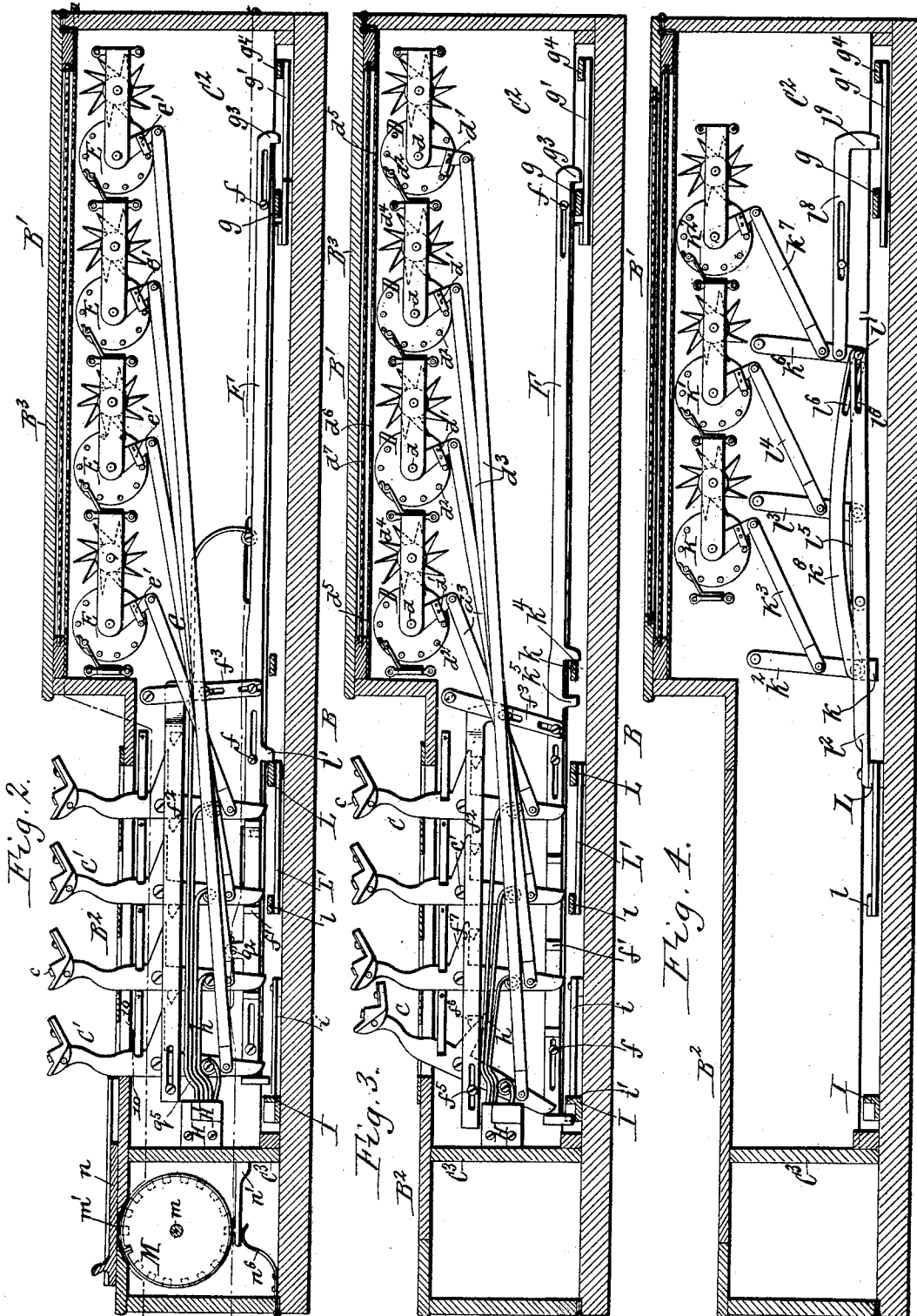
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5 Sheets—Sheet 2.



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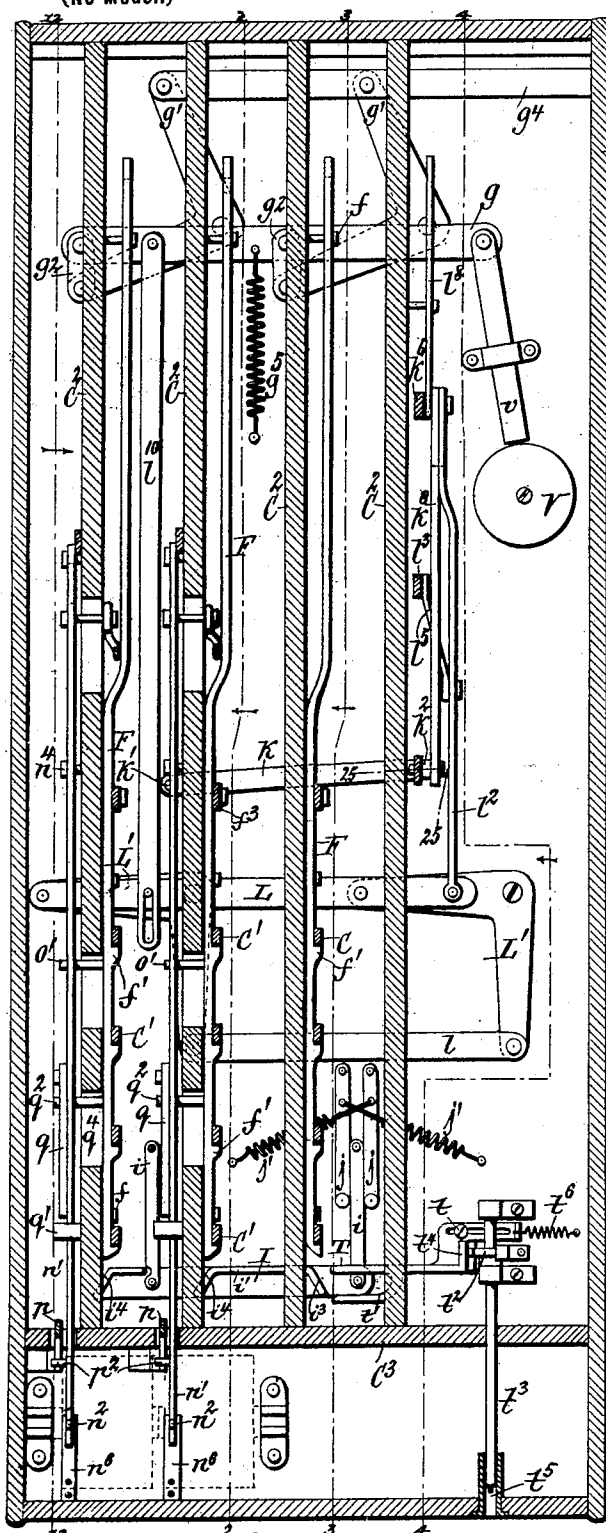


Fig. 5.



Fig. 10.

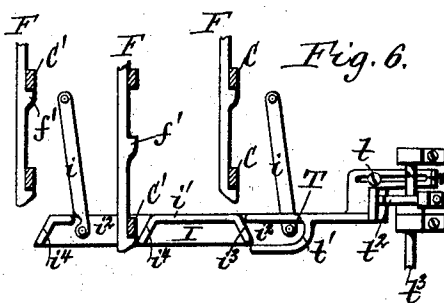


Fig. 6.

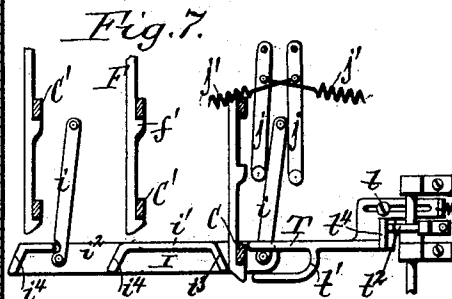


Fig. 7.

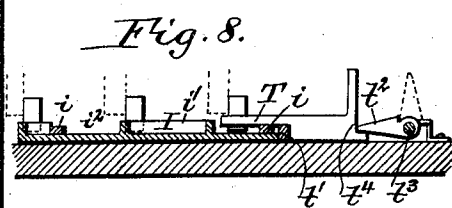


Fig. 8.

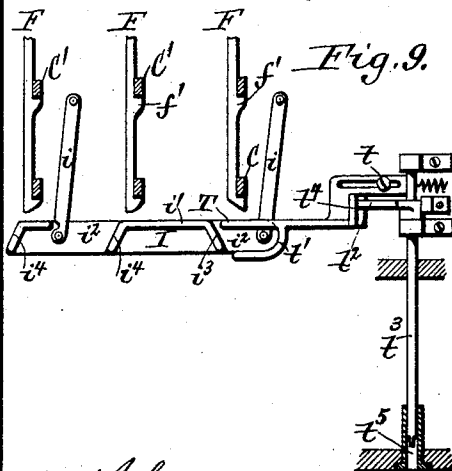


Fig. 9.

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5 Sheets—Sheet 4.

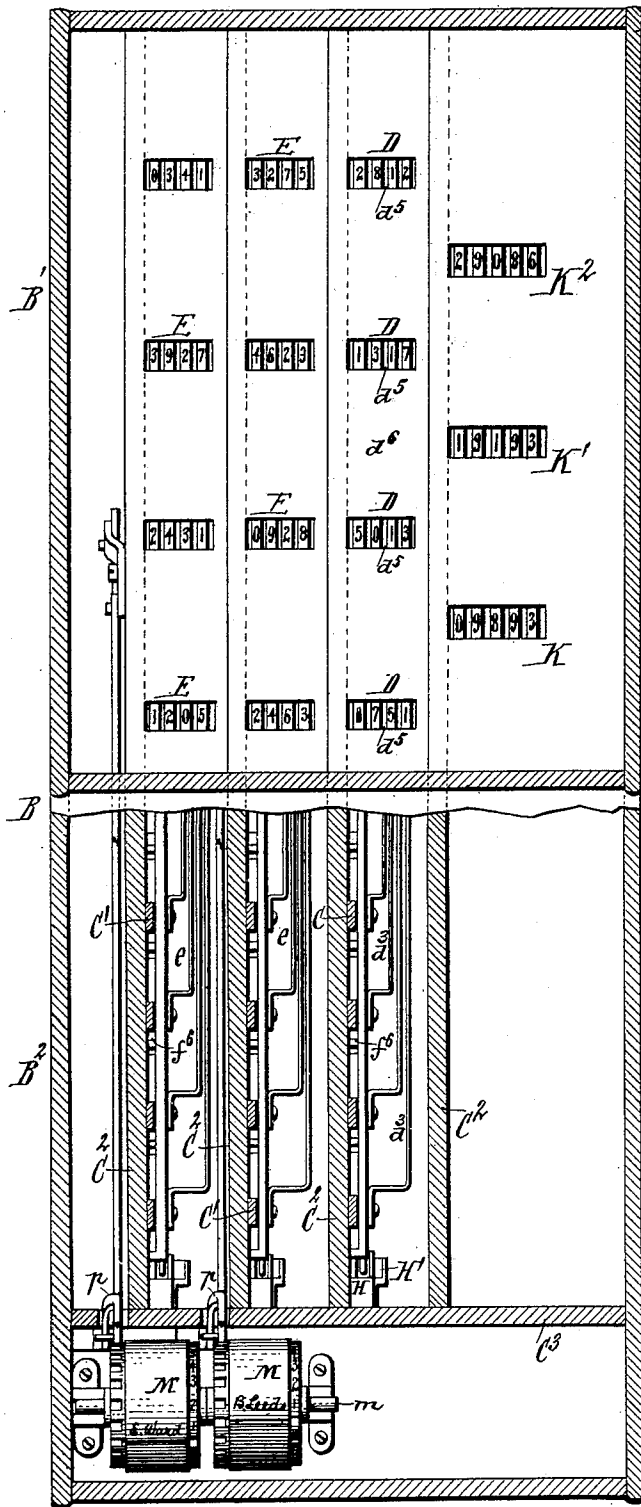


Fig. 11.

Fig. 21.

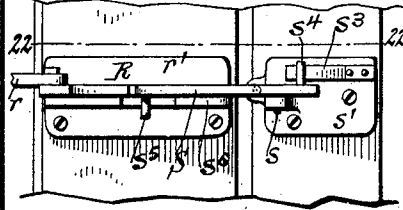


Fig. 22.

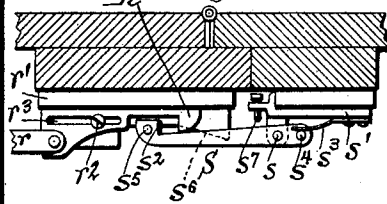


Fig. 23.

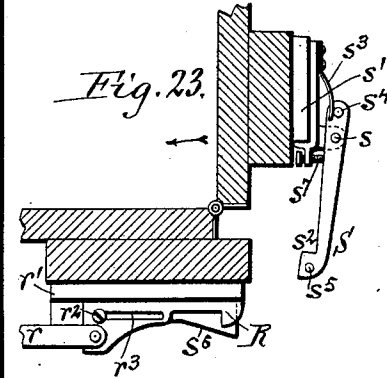
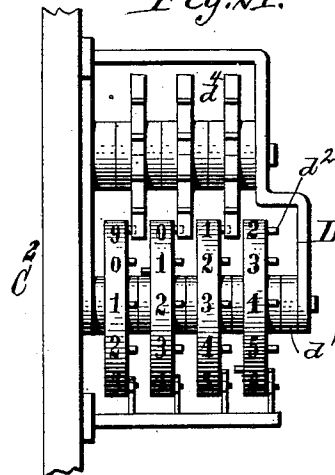


Fig. 24.



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No. 624,818.

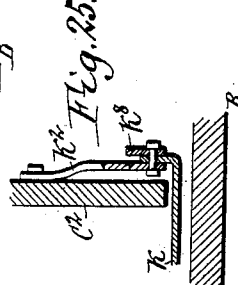
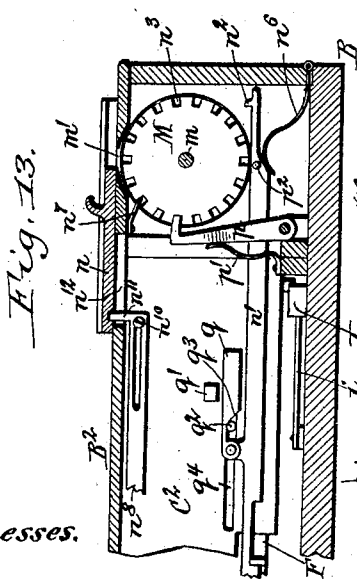
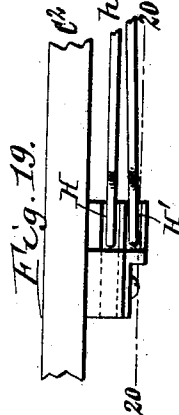
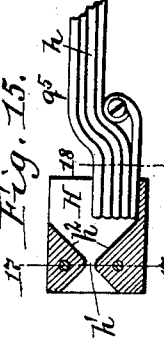
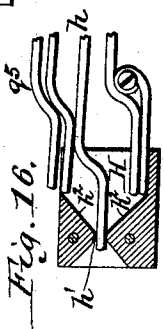
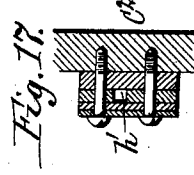
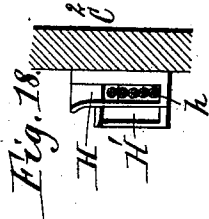
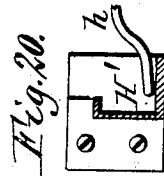
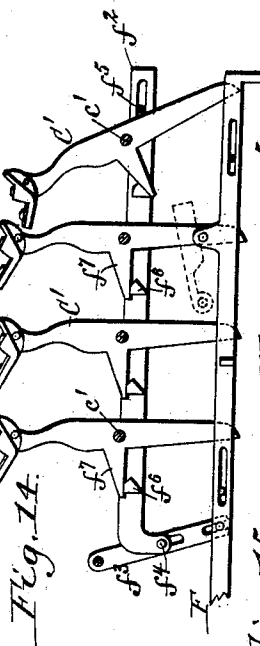
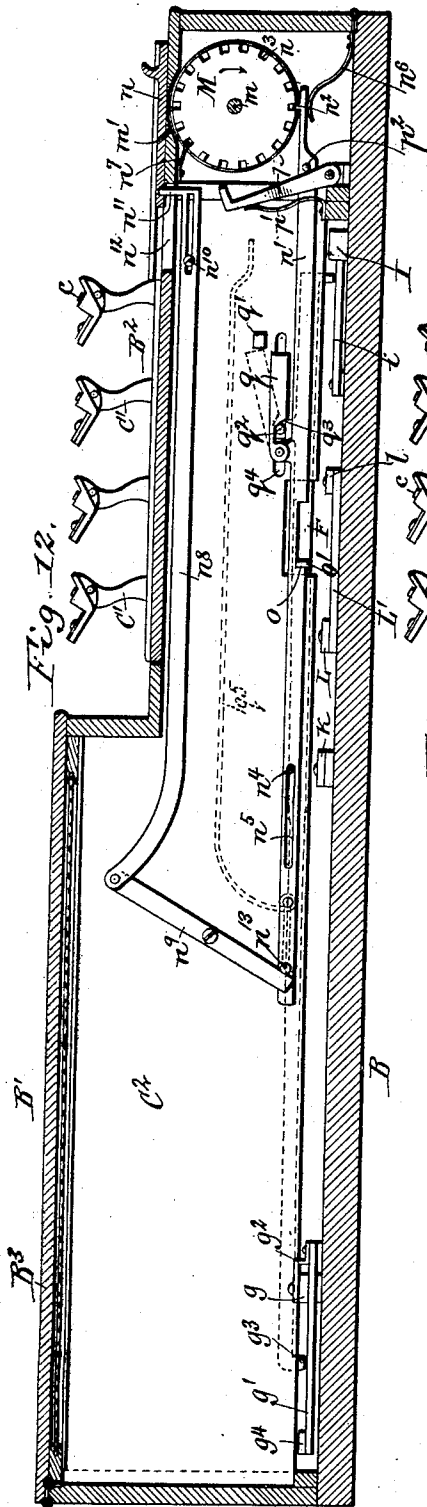
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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

MARQUIS H. JOHNSON, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF
TO JAMES CAMPSALL, OF SAME PLACE.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 624,818, dated May 9, 1899.

Application filed September 6, 1898. Serial No. 690,257. (No model.)

To all whom it may concern:

Be it known that I, MARQUIS H. JOHNSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Voting-Machines, of which the following is a specification.

This invention relates to that class of voting-machines which employ registering devices or counters for registering and totalizing the number of votes cast and keys or push-buttons which are operated by the electors and which actuate the registering devices through intermediate mechanism.

The object of my invention is the provision of a comparatively simple, compact, and reliable machine of this character by which the elector can at his option vote either a straight party-ticket, a split or mixed ticket, or for persons not nominated on party-tickets, the machine being so organized as to defeat any attempt to repeat or vote more than once for any candidate or for more than one candidate for the same office.

In the accompanying drawings, consisting of five sheets, Figure 1 is a perspective view of my improved voting-machine shown in connection with a booth or compartment and the door-operated means for resetting the machine to its normal condition after being used by a voter. Figs. 2, 3, and 4 are vertical longitudinal sections of the machine in lines 2 2, 3 3, and 4 4, Fig. 5, respectively. Fig. 5 is a horizontal section thereof in line 5 5, Fig.

2. Fig. 6 is a fragmentary horizontal section similar to Fig. 5, showing the position of the locking devices when a split-ticket key is pushed. Fig. 7 is a similar view showing the position of said parts when a straight-ticket key is operated. Fig. 8 is a transverse vertical section showing the position of said parts when all the keys are locked. Fig. 9 is a fragmentary horizontal section corresponding to Fig. 8. Fig. 10 is a fragmentary horizontal section in line 10 10, Fig. 2, showing one of the retaining-springs of the key-levers. Fig. 11 is a horizontal section of the machine in line 11 11, Fig. 2, showing the devices for recording votes for candidates not named on regular party-tickets. Fig. 12 is a longitu-

dinal section in line 12 12, Fig. 1, showing the position of the parts when a drum-shutter is closed. Fig. 13 is a fragmentary section similar to Fig. 12, showing the position of the parts when a shutter is open. Fig. 14 is a fragmentary sectional elevation of a line of keys, showing the means of locking the same. Fig. 15 is a fragmentary vertical longitudinal section, on an enlarged scale, of the devices for preventing the actuation of more than one key of a group at a time and showing the parts in their normal position. Fig. 16 is a similar view showing the position of the parts when one of the keys of a group is depressed. Figs. 17 and 18 are transverse vertical sections in line 17 17 and 18 18, Fig. 15. Fig. 19 is a top plan view of the same parts, showing one of the locking-rods placed in the auxiliary locking-socket. Fig. 20 is a longitudinal section in line 20 20, Fig. 19. Fig. 21 is a face view of the door-trip device for resetting the machine to its normal condition after an elector has voted, showing the position of the parts when the door is closed. Fig. 22 is a horizontal section in line 22 22, Fig. 21. Fig. 23 is a similar section showing the position of the parts just after the door-pawl has tripped the resetting-slide. Fig. 24 is a top plan view of one of the counters or registers. Fig. 25 is a cross-section in line 25 25, Fig. 5. Fig. 26 is an enlarged perspective view of one of the voting-keys.

Like letters of reference refer to like parts in the several figures.

The machine is to be placed in a booth or compartment which the electors successively enter for registering or recording their choice of candidates and which has a door A, through which the voters may both enter and leave the booth, or, if preferred, two independent doors may be provided, one for the entrance and the other for the exit of voters.

B is the inclosing case of the machine, preferably made rectangular in form and having its rear portion B' constructed somewhat higher than its front portion B². This rear portion preferably has an upwardly-swinging hinged lid B³, and the sides and the front end of the case may be provided with hinged

panels, as shown in Fig. 1, to facilitate the examination and repair of the internal parts of the machine.

C C' represent the voting-keys or push-buttons whereby the counters or registers are actuated and which project in series or rows above the front portion of the inclosing case, as shown in Fig. 1. The keys C are for voting straight party-tickets by the actuation of a single key and bear the names or other designations of the respective parties, while the remaining keys are for voting a mixed or split ticket and bear the names of the various offices and of the candidates of the different parties running for the offices. As shown in Fig. 1, the straight or party keys C are arranged in a row extending lengthwise of the case, and the keys representing the same office extend in parallel lines or groups lengthwise of the machine, while the keys representing the different candidates of the same party are arranged in rows extending crosswise of the machine and in line with their respective party-keys C. In the drawings are shown but two rows of mixed-ticket keys representing the offices of "governor" and "mayor" by way of illustration; but it is obvious that as many of such groups of keys are employed as there are offices to be filled at the election.

In order to enable blind electors to vote without the assistance of others, the keys are provided with raised or embossed characters *c*, indicating the offices or parties represented by them, as shown in Fig. 26, so that they may be read by such persons with the use of the fingers, like the raised characters of books printed for the blind.

The keys preferably consist of upright rock-levers pivoted between their ends so as to swing lengthwise of the machine, and the key-levers of each longitudinal group are pivoted to one side of a partition or board C², which extends from the rear wall of the case to an intermediate transverse wall C³, arranged near the front end of the case. Each of the straight-ticket keys C operates a counter or register D, and the several counters of these keys are all preferably mounted on the same partition to which the corresponding key-levers are pivoted, as shown in Fig. 3. These counters may be of any suitable or well-known construction. Those shown in the drawings each consist of a series of register-disks arranged side by side on a horizontal shaft *d* and provided on their faces with numerals running from "0" to "9," the first disk being moved the distance of one numeral by each push of the corresponding actuating-key, and through the medium of a vibrating pawl-arm *d'* swinging on the shaft of the disks and engaging with pins *d²*, projecting from the side of the first disk, and a link *d³*, connecting said pawl-arm with the lower arm of the corresponding key-lever, as shown in Fig. 3. The movement of each disk except the last is transmitted to the next once during each rotation

thereof by a star-wheel *d⁴* in a manner common to this class of counters. Every time one of the straight-ticket keys is actuated by an elector his vote is registered upon the counter of the corresponding party, so that at the close of the polls the number of straight votes cast for each party is indicated by the counters, the latter being exposed through apertures *d⁵*, formed in a non-transparent plate *d⁶*, which covers the counters and which in turn is covered by a transparent door *d⁷*, preferably hinged at one end to the case, as shown in Figs. 2, 3, 4, and 12.

The mixed-ticket keys C', representing the individual candidates of the various parties, are constructed like the straight-ticket keys C, and those of each longitudinal group are pivoted to a longitudinal partition in the same manner as the keys C, there being as many of these partitions as there are longitudinal series of keys. Each of these mixed-ticket keys actuates an individual counter E through a link *e* and pawl-arm *e'* similar to the link *d³* and pawl-arm *d'* of the counters D, so that the votes for each individual candidate are separately registered.

In order to prevent an elector who votes a straight ticket from actuating more than one of the straight-ticket keys C, and also to prevent him from actuating more than one of a corresponding group of mixed-ticket keys C', a locking device is employed for each line or group of keys which is constructed as follows:

F represents combined shifting and stop bars arranged lengthwise of the case on one side of the lower arms of the same group of key-levers. These bars are guided upon horizontal pins *f*, projecting from the side of the adjacent partition C² and passing through longitudinal slots of the bar, as shown in Fig. 3. This bar is provided with lugs *f'*, which project laterally in front of the lower arms of said key-levers, as shown in Fig. 5, such a lug being provided for each lever, so that upon depressing any lever of a group the bar F is shifted forwardly to the position shown in Fig. 3.

f² is a longitudinal locking-bar arranged on one side of each group of key-levers below their pivots and connected with the shifting-bar F, so as to take part in the movements thereof. The preferred means for effecting this movement of the group-locking bar consists of a depending link *f³*, pivoted at its upper end to the partition C² and at its lower end to the shifting-bar F and connected between its ends to the bent rear end of the locking-bar by a pin *f⁴*, whereby the locking-bar is caused to move forward and backward with the shifting-bar. The front end of the locking-bar is guided by a pin *f⁵*, projecting from the partition C² into a longitudinal slot of the bar. As shown in Figs. 3, 11, and 14, the group-locking bar *f²* is provided on one side with locking lugs or stops *f⁶*, which are adapted to interlock with arms or noses *f⁷*, projecting rearwardly from the key-levers on

about a level with the pivots c' . The locking-bar has as many of these lugs as there are key-levers in the group. In the normal backward position of the locking-bar f^2 its stops f^6 stand a sufficient distance in rear of the noses f^7 of the key-levers to clear the same, as shown by dotted lines in Fig. 2, so as not to interfere with the movements of any of the levers of the group. When one of the levers of a group is depressed, both the shifting-bar F and the corresponding locking-bar f^2 are moved forwardly, causing the locking-stops f^6 , which cooperate with the undisturbed key-levers of the group, to be shifted underneath the noses f^7 of those levers and locking them against backward or effective movement, as shown in Figs. 3 and 14. By this forward movement of the group-locking bar that stop thereof which cooperates with the depressed key-lever also interlocks with the nose f^7 of that lever; but as the nose is arranged substantially at right angles to the lever the tilting of the lever causes it to move below the level of the lever-pivot, and hence the corresponding locking-stop f^6 engages against the upper side of the nose, as shown in the last-mentioned figure, thereby locking the actuated key-lever against forward movement and preventing the voter from repeating or actuating the same more than once.

After an elector has voted the various depressed key-levers are restored to their normal position ready for the next voter by a universal resetting-bar g , arranged transversely in the rear portion of the case and adapted to engage with all of the shifting-bars F . This resetting-bar is caused to move bodily backward and forward by a pair of horizontal bell-crank levers g' , pivoted to the bottom of the case, as shown in Figs. 2 to 5, and having their front arms connected with the resetting-bar by links g^2 . Each shifting-bar F is provided in rear of this resetting-bar with a lip or shoulder g^3 , against which the resetting-bar engages when shifted rearwardly and whereby all the bars of the various groups which have been shifted forwardly are returned to their normal position, thereby causing the shifting-bars to return the depressed key-levers to their normal position by the engagement of their lugs f^7 against the lower front sides of the levers. The lips g^3 of the shifting-bars F are arranged a sufficient distance in rear of the resetting-bar g to prevent the latter from interfering with the shifting-bars during their forward stroke. In resetting the shifting-bars F and the depressed key-levers to their former position the group-locking bars f^2 are at the same time shifted rearwardly sufficiently to withdraw their stops f^6 out of engagement with the noses f^7 of the key-levers, whereby all of the latter are unlocked ready to be actuated by the next voter.

The resetting-bar g is actuated by a transverse rod g^4 , connected to the rear arms of the elbow-levers g' and extending through one of the side walls of the case, as shown in Figs.

1 and 5, and said rod is returned to its normal position when said rod is released by a spring g^5 .

To prevent two or more keys of the same longitudinal group from being actuated simultaneously and so voting for more than one candidate for the same office or voting more than one straight party-ticket, each of the key-levers of the same group is provided with a stop-rod h , which is pivoted at one end to the lever, preferably below its pivot, and which slides at its opposite free end in a longitudinal socket H , secured to the adjacent partition on the front side of the foremost lever of the group, as shown in Figs. 2, 3, 15, 16, 17, 18, 19, and 20. The free ends of the stop-rods of each group rest one upon another and are free to slide in the socket independently of one another, the lowermost rod resting upon the bottom of the socket. The socket is sufficiently narrow to keep the rods in this superposed position and is provided in its rear wall with a central opening h' , which is just large enough to admit but one of the stop-rods at a time, as shown in Fig. 16. Above and below this opening the socket is provided with converging guides or beveled surfaces h^2 of corresponding angles, forming together a tapering channel which directs the stop-rods toward the opening of the socket. The several rods of a group are made of such a length that their free ends are normally flush, as shown in Fig. 15. When any one of the key-levers of a group except that having the uppermost stop-rod h is depressed, the corresponding stop-rod is shifted forwardly in the socket H and directed into the opening h' thereof by the converging guides h^2 , thus permitting the lever to be freely actuated and completely depressed. When the uppermost stop-rod of a group is moved into the socket, the same slides nearly horizontally into the opening h' , which latter is placed at the proper level for this purpose, as shown in Fig. 15. When a rod below the uppermost one is projected into the socket, said rod lifts or deflects those above it out of the way, as shown in Fig. 16. Should it be attempted to depress two or more keys of the same longitudinal group at the same time, the stop-rods of the depressed keys advance toward the socket-opening h' simultaneously and practically as a single rod having the cross-sectional thickness of both. As the opening of the socket is only large enough to admit a single stop-rod and as the tapering guide-surfaces h^2 direct all the rods uniformly toward the opening h' , neither of them comes squarely opposite the opening, and each blocks the entrance of the others into the same. Hence all of the projected stop-rods are arrested by the rear end of the socket H before the actuated key-levers have been moved sufficiently to operate the corresponding counters, thereby preventing fraudulent voting by the simultaneous depression of a number of keys.

It sometimes happens that candidates are

to be chosen only for some of the offices designated by the keys, and in that case it is desirable to lock those keys which are not required to prevent the actuation of the same and the erroneous count of the total number of votes that would result therefrom. In order to lock such unused keys, an auxiliary locking pocket or socket H' is arranged on one side of each of the main locking-sockets H , which pocket is adapted to receive the free ends of the stop-rods h , connected with the unused keys. As shown in Figs. 18, 19, and 20, each of these pockets H' is closed at its rear end, so as to arrest the forward movement of the stop-rods before the corresponding keys are depressed far enough to affect their counters, while its front end and its top are open. The top of the main locking-socket is also open in front of its upper inclined guide h^2 , so that the stop-rods of unused keys can be readily lifted out of the main socket and placed in the auxiliary socket, as shown in Fig. 19.

To prevent a person who votes a straight party-ticket from actuating any of the mixed-ticket keys or those representing individual candidates and also to prevent a person who votes a mixed ticket from actuating any of the straight-ticket keys, it is necessary to provide a locking mechanism which locks all the keys of one of such sets in the act of depressing any key of the other set. My improved device for accomplishing this result consists of a sliding locking-bar I , arranged across the front ends of the shifting-bars F . This locking-bar, which will hereinafter be termed the "series-locking" bar to distinguish it from the group-locking bar f^2 , is arranged to slide crosswise of the machine and guided by parallel horizontal links i , pivoted at their ends to said bar and the bottom of the case, respectively, as shown in Figs. 5 to 9. This series-locking bar has an upright flange i' , which is provided with apertures i^2 , and which stands in such close proximity to the front ends of the shifting-bars F that when the solid portions of said flange are opposite the bars they prevent the same from being moved forwardly out of their normal position, thereby locking the various series of keys, while when said series-locking bar is shifted to bring its apertures i^2 opposite the front ends of said shifting-bars the forward movement of the latter is unrestrained and the keys can be freely operated. The series-locking bar is provided on one side of its apertures and at or near its ends with shifting cams or oblique faces $i^3 i^4$, which are adapted to be engaged by the front ends of the shifting-bars F and which are arranged in the path of said bars in the normal position of the series-locking bar, as shown in Fig. 5, so that when any one of the shifting-bars F is projected by the actuation of one of the corresponding keys it rides over the opposing cam of the series-locking bar and shifts the bar laterally a sufficient distance to bring the solid portions of its

flange in front of all other shifting-bars which should be locked, as shown in Figs. 6 and 7, thereby locking such other bars and the keys controlled by the same. Fig. 6 shows the position of the parts when the shifting-bar F of a line of mixed-ticket keys is projected, said bar having entered its corresponding aperture in the series-locking bar I and shifted the latter so as to lock the shifting-bar F of the straight-ticket keys, the shifting bar or bars corresponding to the remaining series of mixed-ticket keys being left unlocked to permit the voter to indicate his choice as to candidates represented by such remaining groups of mixed-ticket keys. Fig. 7 shows the position of the parts when the shifting-bar F of the straight-ticket keys is projected, said bar having cleared the corresponding aperture i^2 or the end of the series-locking bar I and shifted the latter, so as to lock all of the shifting-bars F belonging to the mixed-ticket keys, inasmuch as none of these keys are to be actuated after the voter depresses a straight-ticket key.

As the series-locking bar I is shifted in opposite directions, the cam i^3 thereof, which coöperates with the shifting-bar F of the straight-ticket keys, is arranged to trend in the opposite direction from the cams i^4 , which coöperate with the shifting-bars F of the mixed-ticket keys, as shown in Figs. 6, 7, and 9. The series-locking bar has an aperture i^2 flanked by such a cam for each of the intermediate shifting-bars F ; but for the two shifting-bars at the ends of the series it has only a cam at each end of its flange, the ends of said flange clearing such terminal-shifting bars when the same are unlocked, as shown in Figs. 6 and 7.

When the shifting-bars F are restored to their initial position, the series-locking bar I is automatically returned to its normal central position by a pair of horizontal arms j , pivoted to the bottom of the case and bearing with their free front portions against opposite sides of one of the guide-links i of said bar, and a pair of oppositely-acting springs j' , operating, respectively, upon said arms and tending to retain them in a position at right angles to the series-locking bar. When the latter bar is shifted, the centering-arm j , which is on that side of the guide-link i toward which said bar is moved, is deflected and its spring is strained, the other arm and its spring remaining undisturbed, as shown in Fig. 7. As soon as the series-locking bar I is released the deflected arm j by the reaction of its spring returns said bar to its original position.

K is a counter for registering the total number of straight votes cast, K' a counter for registering the total number of mixed or split votes, and K^2 a counter for registering the grand total of said two classes of votes. These counters may be constructed like the counters D or of any other suitable construction.

Referring to Figs. 3, 4, and 5, k is a horizontal actuating-bar for the straight-vote

counter. This bar is pivoted at one end to the bottom of the case, as shown at k' , so as to swing lengthwise of the case, and is connected at its opposite end with a depending arm k^2 , pivoted at its upper end to the side of the adjacent partition C^2 , as shown in Figs. 4, 5, and 25. The arm k^2 is in turn connected with the actuator or pawl-arm of said counter by a link k^3 . The actuating-bar k is operated from the shifting-bar F of the straight-ticket keys by a lug or shoulder k^4 , projecting from said bar and arranged on the rear side of the actuating-bar k . When said shifting-bar is moved forward by the depression of any of the straight-ticket keys, its shoulder k^4 strikes the actuating-bar k and shifts it in the same direction, thereby actuating the straight-ticket counter through the arm k^2 and link k^3 . The actuating-bar is returned to its former position, preparatory to registering the next vote, by a lug k^5 , formed on said shifting-bar on the front side of the actuating-bar. This actuating-bar is also connected with the pawl-arm of the grand-total counter K^2 by a link k^6 , an arm k^7 , similar to the arm k^2 and link k^3 , and a link k^8 , connecting the arms k^2 and k^7 , so that the straight votes are also registered upon that counter.

L is a universal bar which actuates the mixed-ticket counter or totalizer and which is operated by the movement of the first mixed-ticket key manipulated by the voter, so as to register the total number of split or mixed tickets voted. The universal bar L is arranged crosswise of the case underneath the shifting-bars F of the mixed-ticket keys and guided so as to move bodily lengthwise of the machine. The bar is guided to move in this manner by a pair of horizontal bellcrank levers L' , pivoted to the bottom of the case and having their transverse arms connected with the universal bar, while their longitudinal arms are coupled by a link l , which causes them to move in unison. The universal bar L is caused to take part in the forward movement of any one of the shifting-bars F of the split-ticket keys by lugs or shoulders l' , formed on the bars on the rear side of the universal bar. The movement of this universal bar is imparted to the pawl-arm of the grand-total counter by a link l^2 , vibrating arm l^6 , and link l^7 , and to the pawl-arm of the mixed-ticket counter K' by a vibrating arm l^3 , a link l^4 , connecting said arm with the pawl-arm of the mixed-ticket counter, and a link l^5 , connecting the arm l^3 with the link l^2 . By these connections the number of mixed or split votes is registered upon the grand-total counter, as well as upon the mixed-ticket counter.

To permit either of the connecting-links k^8 l^2 to actuate the vibrating arm k^6 of the grand-total counter without restraint from the other, each of these links is provided with a longitudinal slot l^9 , through which the lower pivot-pin l' of said arm passes, as shown in Fig. 4.

When said arm is swung forwardly by either of said links, the pivot-pin of the arm k^6 slides freely in the slot of the other link. The return stroke of the actuator or pawl-arm of the grand-total counter K^2 is effected by means of an arm l^8 , pivoted at its front end to the vibrating arm l^6 of the grand-total counter and provided at its free rear end with a lip or shoulder l^9 , which engages behind the universal resetting-bar g . When the arm l^8 is in its normal position, its shoulder l^9 stands at such a distance behind the resetting-bar g that it does not come in contact therewith during the forward stroke of the pawl-arm of the grand-total counter. When the universal bar g is moved rearwardly, it engages against the shoulder of said arm and returns the pawl-arm to its rearmost position. The universal bar L , which is connected with the actuator of the mixed-ticket counter, is reset to its normal position by a link l^{10} , which is attached at its rear end to the resetting-bar g and which has a limited sliding connection with the bar L , such as a slot and pin, as shown in Fig. 5, whereby said universal bar is free to move forwardly, but compelled to move rearwardly with the resetting-bar. By this construction the universal bar L is shifted rearwardly by the depression of the first mixed-ticket key actuated by the voter, and it remains in its rearward position while the remaining mixed-ticket keys are operated by the voter, said bar being reset to its former position when the resetting-bar is actuated. Only one vote is by this means registered upon the mixed-ticket counter and the grand-total counter by each elector voting a mixed ticket.

To enable electors to vote for any person or persons not nominated by any of the regular political parties, a drum, tablet, or platen M , carrying a strip of paper, is employed in connection with each line or group of mixed-ticket keys representing the same office, upon which drum the voter may write or otherwise record the name of the person for whom he desires to vote. As shown in Figs. 2, 5, 11, 12, and 13, these recording-drums are arranged in the compartment between the front wall of the case and the transverse partition C^3 and mounted loosely on a transverse shaft m , supported in suitable bearings. The upper portions of the drums are arranged under apertures m' , formed in the top plate of the case, so that the voter can make a record upon the exposed portion of the strip of paper.

n represents longitudinally-movable slides or shutters which normally close the apertures m' and which must be opened in order to give the voter access to the recording-drums. These shutters are applied to the upper side of the top plate of the case and are guided in suitable ways, each shutter being provided with a knob or thumb-piece for shifting it. n' represents longitudinal reciprocating feed-bars arranged on the under side of the respective recording-drums M and extending rearwardly through the transverse

partition C³. Each of these feed-bars is provided on its front portion with a tooth n^2 , which is adapted to engage with one of an annular series of notches n^3 , formed in the periphery of the drum at one side thereof, and which is adapted to feed the drum forward intermittently from one notch to the next upon the rearward stroke of the feed-bar, so as to expose a fresh portion of the paper strip through the corresponding aperture m' . The front side of the tooth n^2 is beveled so as to ride over the notched portion of the drum during the forward stroke of the bar and not affect the drum. To permit of this action, the rear portion of the feed-bar is mounted on a horizontal pivot n^4 , projecting from the partition C² and passing through a longitudinal slot n^5 of the feed-bar, as shown in Fig. 12. This construction permits the bar to slide backward and forward and at the same time allows its front end to yield when the beveled front side of its tooth rides forwardly over the notches of the drum. The free end of the feed-bar is yieldingly held against the drum by a spring n^6 , secured to the case and bearing at its free end against the under side of the bar. Retrograde movement of the drum is prevented by a detent-pawl n^7 , engaging with its notches.

The rearward or opening movement of the shutter is transmitted to the feed-bar n' by a longitudinal connecting-bar n^8 and an upright rock-lever n^9 . This connecting-bar is guided and supported at its front end by a horizontal pin n^{10} , projecting from the side of the partition C² and entering a longitudinal slot in the bar, and it is provided at its front end with an upward projection n^{11} , which passes through a slot n^{12} , formed in the top plate of the case and engages with the shutter in such manner that this bar and the shutter are compelled to move together. The rear end of this connecting-bar is connected to the upper arm of the rock-lever n^9 , and the lower arm of this lever engages loosely against the rear side of a pin or projection n^{13} , arranged on the rear portion of the feed-bar n' , so that when the shutter is opened the rock-lever bears against the pin n^{13} and shifts the feed-bar forwardly to the position shown in Fig. 13, thus preparing the bar for its effective stroke. The opening movement of the shutter is also utilized for locking the straight-ticket keys and the group of mixed-ticket keys representing the same office as the exposed recording-drum, so that a voter who records a vote on one of the drums cannot also vote for other candidates running for the same office nor vote one of the straight tickets. The keys just referred to are locked in the act of opening the shutter by a shoulder o , formed on the feed-bar n' of the drum and engaging against a lug o' , projecting from the shifting-bar F of the corresponding group of mixed-ticket keys. This shifting-bar is moved forwardly when the shutter is opened through the connecting-bar n^8 , rock-lever n^9 , and the pin n^{12} on the

feed-bar, and as this shifting-bar operates the group-locking bar f^2 of the corresponding keys these keys are locked. As hereinbefore described, the forward movement of any one of such shifting-bars also shifts the series-locking bar I in the proper direction to lock the straight-ticket keys, and hence the opening movement of the shutter locks all the straight-ticket keys, as well as the group of mixed-ticket keys representing the same office as the uncovered drum. When these various keys are restored to their normal position by the retraction of the projected shifting-bar F, the lug o' of that bar strikes the shoulder o of the feed-bar n' and moves the latter rearwardly, thereby causing the feed-bar to turn the drum the distance of one notch for bringing a fresh portion of the recording-strip opposite the aperture. This rearward movement of the feed-bar also causes the pin n^{13} thereof to strike the rock-lever n^9 and reverse the same, causing this lever to close the shutter through the medium of the connecting-bar n^8 , as shown in Fig. 12.

Each drum is provided with a locking-pawl p , which interlocks with one of its notches when the shutter is open and locks the drum against rotation in both directions, thereby preventing a voter who has once recorded his choice from turning the drum to expose a fresh portion thereof through the aperture m' for fraudulently repeating his vote. The locking-pawl p is pivoted at its lower end to a stationary support and is yieldingly held in engagement with the drum by a spring p' . This pawl is moved out of engagement with the drum upon the effective stroke of the feed-bar n' by a pin or projection p^2 , arranged on the feed-bar and engaging against the front side of the locking-pawl above the pivot thereof, as shown in Fig. 12. The connections between the shutter and the feed-bar n' are so proportioned or constructed that the shutter is fully closed before the drum is fed forward, rendering it impossible for a person to write more than one name on the drum, the exposed portion of the paper strip being just wide enough to receive a single name. The releasing-pin p^2 of the locking-pawl p is so arranged that the pawl is disengaged from the drum before the tooth of the feed-bar n' engages in a notch of the drum.

When an elector does not use the recording-drum, but votes only for regular party nominees, it is necessary to lock the shutters of the drums to prevent a voter from recording a fraudulent vote upon any of the drums. For this purpose each shutter has a locking device consisting of a vertically swinging pawl q , which is pivoted at its rear end to the feed-bar n' of the drum and which is adapted to encounter a stop q' , projecting from the adjacent partition C², as shown by dotted lines in Fig. 12, thereby blocking the forward movement of the feed-bar, and consequently preventing the shutter from being opened. The stop q' is arranged above the plane of the free

end of this locking-pawl in the normal position of the latter, as shown by full lines in Fig. 12, so that when the feed-bar n' is advanced in this position of the pawl the pawl passes underneath the stop and does not interfere with the movement of the feed-bar.

q^2 is a lifting-pin which projects from the shifting-bar F , from which the feed-bar is actuated and which engages under the locking-pawl q and is adapted to move along a cam or incline q^3 , formed on the under side of the pawl in front of the pin, so that when said lifting-pin moves forwardly with said shifting-bar it swings the pawl upwardly, bringing its free end in line with the stop q' , as shown by dotted lines in Fig. 12, and preventing the further forward movement of the feed-bar. When the shifting-bar F is restored to its former position, the lifting-pin q^2 recedes with it and allows the locking-pawl q to descend by gravity and clear the stop, thus again unlocking the shutter. The feed-bar n' and the shifting-bar F are arranged on opposite sides of the partition C^2 , and the lifting-pin carried by the shifting-bar extends laterally through a longitudinal slot q^4 , formed in said partition. When a shutter is opened by a voter, the feed-bar n' of the corresponding recording-drum and the shifting-bar F of the corresponding group of mixed-ticket keys are moved forwardly in unison, and the locking-pawl q and its lifting-pin, carried by said bars, respectively, therefore advance in concert, so that said pin does not lift the pawl into its locking position, but allows it to remain in its horizontal position, in which it does not obstruct the movement of the feed-bar. In order to permit the shifting-bars F to advance independently of the feed-bars n' for locking the latter and the shutters when any of the voting-keys are depressed, the notches or recesses o of the feed-bars, which receive the lugs o' of the shifting-bars F , are made of such length that said lugs at no time strike the front ends of said notches.

It will now be understood that the opening movement of a shutter locks all of the straight-ticket keys and that group of mixed-ticket keys denoting the same office as the uncovered drum and also effects the return stroke of the feed-bar n' , and that the closing movement of the shutter, which is produced by the movement of the key-resetting mechanism, produces the effective stroke of the feed-bar for bringing a fresh portion of the strip on the drum opposite the aperture m' for the use of a subsequent voter.

To prevent a voter from opening one of the drum-shutters and at the same time depressing a voting-key, the feed-bar of each drum is provided with a stop-rod q^5 , similar to the stop-rods h of the keys, as shown by full lines in Figs. 2, 15, and 16 and by dotted lines in Fig. 12. The rod of each feed-bar has its free end arranged in the socket which receives the rods of the corresponding group of keys.

Owing to the loose connection between the

rock-lever n^9 and the feed-bar n' , the closing movement of the shutter, if performed by a voter, does not shift the feed-bar n' and does not, therefore, affect the recording-drum. This prevents a voter from feeding the drum forward more than one notch by reciprocating the shutter.

The resetting-rod g^4 may be operated by one of the election officials after a voter leaves the booth; but this rod is preferably actuated by the opening of the door through which the voter leaves the booth, so as to automatically reset the machine to its normal condition for the next voter. The automatic devices employed for this purpose are constructed as follows:

R is a horizontally-sliding hook or catch arranged on the inner side of the jamb to which the door is hinged, as shown in Figs. 1, 21, 22, and 23, and with which the outer end of the resetting-rod g^4 is connected by a link r , so that the rod reciprocates with said hook. This hook is suitably guided on a bracket r' , secured to the door, the means shown in the drawings consisting of a pin r^2 on the bracket, which passes through a longitudinal slot r^3 in the widened shank of the hook.

S is a horizontally-swinging catch or lever applied to the inner side of the door near its hinged edge and adapted to engage with the sliding hook R when the door is opened, so as to shift said hook in the proper direction to pull the resetting-rod g^4 . The catch S is pivoted at s to a bracket s' , secured to the door, and its front arm, which carries the nose s^2 of the catch, is swung toward the sliding hook R by a spring s^3 , secured to the door and bearing against the inner side of a pin s^4 , arranged on the short arm of the catch-lever. The latter is provided at its front end with a releasing-pin s^5 , which is adapted to ride over a cam s^6 , arranged at the outer end of the bracket r' . The wide outer end of this cam extends outwardly beyond the nose of the sliding hook R , so that as the door is opened the nose of the catch is gradually shifted outward on the nose of the hook by said pin and incline until the restoring-rod has been fully withdrawn, by which time the catch is disengaged from the hook and the spring s^3 is allowed to return the hook R , the rod g^4 , and connecting parts to their former position. When the door is closed, the nose of the catch S simply rides over the beveled nose of the hook R and again assumes the normal position shown in Fig. 22. The inward movement of the catch-lever is properly limited in the open position of the door by an adjustable stop or screw s^7 , which is mounted on the bracket s' and against which the front arm of the catch strikes.

The connection between the resetting-rod g^4 and the door is preferably inclosed by a suitable housing (not shown in the drawings) to prevent a voter from operating the resetting-rod before leaving the booth and repeating his vote.

When the parts of the machine are in their normal position ready for voting, the opening movement of the door causes the resetting-bar to be pulled again, but does not affect the resetting device connected therewith, because the resetting-bar g^4 shifts the bars F only backwardly, and after they have once been reset to that position any subsequent movement of the resetting-bar is an idle one so long as the machine remains in that condition. The same door may by this construction be used both for entering and leaving the booth.

To prevent tampering with the machine after the close of the polls, a locking device is provided whereby all of the voting-keys and the shutters of the recording-drums can be effectually locked against movement in either direction. This locking device consists of an auxiliary locking-bar T, which coöperates with the series-locking bar I and which is adapted to be moved in front of the shifting-bar F of the straight-ticket keys in the same manner as the series-locking bar, as shown in Fig. 9, so as to prevent the forward movement of said shifting-bar, and thereby lock said keys. This auxiliary locking-bar slides transversely on the bottom of the case and its rear portion is guided by a pin t , projecting from the bottom of the case through a slot in the bar, while its front portion is provided with a lip or shoulder t' , which is adapted to bear against the adjacent end of the series-locking bar I and to rest at all times against the front edge of said bar, so as to form a guide for the front end of the auxiliary locking-bar. The latter is moved toward the left or into its locking position by a tumbler t^2 , secured to a longitudinal shaft t^3 and bearing against a shoulder t^4 of said bar. This shaft extends forwardly into a key-socket t^5 , secured in the front wall of the case, and is turned by a suitable key, the outer end of the shaft being square or of other suitable cross-section. When released, the auxiliary locking-bar T is returned to its normal position by a spring t^6 .

When it is desired to lock all the voting devices, the auxiliary locking-bar T is shifted toward the left, thereby moving the same in front of the shifting-bar F of the straight-ticket keys and at the same time causing the auxiliary locking-bar to shift the series-locking bar I in the same direction by engaging against the right-hand end thereof, thereby bringing the solid portions of the series-locking bar in front of all the shifting-bars F of the mixed-ticket keys and locking the latter. As these last-named shifting-bars control the movement of the feed-bars n' of the recording-drums M, the shutters of the drums are also locked.

When it is desired to unlock all the voting devices, the auxiliary locking-bar T is retracted to the position shown in Fig. 5, in which it clears the shifting-bar F of the straight-ticket keys. The retraction of the auxiliary locking-bar also allows the springs j' to return the series-locking bar to the nor-

mal position, (shown in Fig. 5,) thereby unlocking the shifting-bars F of the remaining keys and also the shutters of the recording-drums controlled by the same.

In order to prevent the movement of one key-lever of a group from being accidentally imparted to others of the same group, each of said levers is provided with a yielding retarding device, which preferably consists of a flat spring u , secured at one end to the partition C^2 , which supports the key-levers, and bearing at its free end against the side of the lever, as shown in Figs. 2, 3, and 10.

V is an alarm-bell or gong which is sounded every time a voter opens the door to leave the booth, indicating that he has voted and that the next voter may enter the booth. This bell is sounded by a sliding rod or hammer v , connected with the universal resetting-bar g , the hammer being withdrawn by the rearward movement of said bar and projected against the bell by the forward movement thereof.

Briefly stated, the operation of my improved machine is as follows: In the normal condition of the machine all of the various keys and the shutters of the recording-drums M are unlocked and ready to be actuated. Should the elector, for example, desire to vote a straight party-ticket—say the Republican ticket—he depresses the key bearing the corresponding designation. This movement of the key is transmitted to the straight-vote counter K and also the grand-total counter K^2 . By the same movement the shifting-bars F of the same key group is moved forwardly, thereby moving the group-locking bar f^2 into the proper position to lock the remaining straight-ticket keys, as well as the depressed key, and also causing the series-locking bar I to be shifted into the proper position to lock the shifting-bars F of all the mixed-ticket keys. This locking of the shifting-bars also results in locking the shutters of the recording-drums, as hereinbefore described. It is therefore impossible for the elector to actuate a mixed-ticket key or to record a vote upon one of the drums after having once depressed a straight-ticket key.

Should the elector wish to vote a mixed ticket, he depresses that key C' in each longitudinal group which bears the name of his choice. In the act of depressing the first key the shifting-bar F of the corresponding key is advanced and caused to shift the series-locking bar I into the proper position to lock the shifting-bar F of the straight-ticket keys, the shifting-bars of the remaining mixed-ticket-key groups being left unlocked to enable the elector to depress a key in each of those remaining groups. In depressing such a key the other keys of the same group are also locked by the movement of the corresponding group-locking bar f^2 . At the same time the shutter of the recording-drum belonging to the same group is locked by the forward movement of the corresponding shift-

ing-bar F, which movement causes the pin q^2 of said bar to lift the locking-pawl q , so that if it be attempted to open the shutter said pawl encounters the stop q' and arrests the forward movement of the feed-bar n' , thus keeping the shutter closed. The movement of the first mixed-ticket key actuated by the voter is transmitted to the individual counter D of the corresponding candidate, also to the mixed-ticket counter K^1 , and also to the grand-total counter K^2 , thus indicating the total number of mixed or split tickets voted, as well as the total straight tickets, and also the sum of the straight and split tickets.

15 If an elector desires to vote for a person not nominated on any regular ticket, he opens the shutter of the recording-drum representing the office for which the vote is to be cast and writes the name of his choice upon the exposed portion of the strip on the drum. In the act of opening the shutter the shifting-bar F of the corresponding group of mixed-ticket keys is shifted forwardly by the engagement of the shoulder o of the feed-bar of said drum against the lug o' of said shifting-bar. This movement of the shifting-bar causes the corresponding group-locking bar f^2 to interlock with all of the keys of said group, thus preventing the voter from actuating any of said keys or voting for different candidates running for the same office after having once opened the shutter of that group. The same movement of the said shifting-bar shifts the series-locking bar I into the proper position to lock the shifting-bar F, which controls the straight-ticket keys, thus locking the latter also. The same locking action is repeated with reference to the other groups of mixed-ticket keys in case the elector records a vote upon their corresponding drums.

The total number of votes cast for any particular candidate is ascertained by adding the number of votes indicated by the corresponding individual counter D and the number of straight votes indicated by the straight-ticket counter of the party by which he is nominated.

I claim as my invention—

1. The combination with a group of key-levers each having a locking nose or projection arranged adjacent to its pivot, of a movable locking-bar having lugs adapted to engage on one or the other side of the locking-noses of the keys, according to the position of the keys, and a connection between said locking-bar and each of the keys of the group whereby the locking-bar is shifted by the depression of any one of said key-levers, substantially as set forth.

2. The combination with a group of key-levers each having a locking-stop, of a movable locking-bar adapted to engage with said stop, and a shifting-bar controlling the movement of said locking-bar and arranged to be engaged by all of the key-levers of the group, substantially as set forth.

3. The combination with a group of key-levers each having a locking-stop, of a movable

locking-bar adapted to engage with said stops, a shifting-bar having lugs or shoulders arranged in the path of said key-levers, respectively, and a connection whereby the movement of said shifting-bar is transmitted to said locking-bar, substantially as set forth.

4. The combination with two or more movable voting devices such as key-levers, each of said devices having a stop-rod which follows the movements thereof, of a stop-socket adapted to receive said rods and provided in its rear wall with an opening which admits but one of said rods at a time, and a tapering channel which directs the rods toward said opening, and an auxiliary stop-socket arranged adjacent to said perforated socket and having an imperforate rear wall, substantially as set forth.

5. The combination with two or more groups of keys and a longitudinal restoring-bar for each of said groups, of a universal bar arranged crosswise of said restoring-bars and engaging with all of the same, a pair of bell-crank levers having corresponding arms connected with said universal bar, and an actuating device connected with the other arms of said levers, substantially as set forth.

6. The combination with two or more groups of keys, and a stop-bar for each of said groups, of a horizontal locking-bar arranged opposite the ends of said stop-bars and having an upright stop-flange provided with apertures for the passage of said stop-bars, and upright shifting-cams arranged at the edges of said recesses and adapted to be engaged by the ends of said stop-bars, substantially as set forth.

7. The combination with two or more groups or classes of keys and a stop-bar for each of said groups, of a locking-bar arranged to move across the ends of said stop-bars and having a guide arm or link, a pair of pivoted restoring-arms bearing against opposite sides of said link, and springs tending to retain said restoring-arms in their normal position, substantially as set forth.

8. The combination with the voting-keys, counters for registering different classes of votes and a counter for registering the total number of votes, of actuating-bars for said class-counters, connections between said actuating-bars and the pawl-arms of said three counters which permit the simultaneous actuation of one of the class-counters and the grand-total counter without affecting the other class-counter, a resetting-bar, a link connecting said resetting-bar with one of said actuating-bars and a resetting-arm operated by said resetting-bar and connected with the actuator of the grand-total counter, substantially as set forth.

9. The combination with a number of voting-keys and a counter, of a universal bar actuated by said keys and operating said counter, a pair of bell-crank levers swinging in a parallel plane with said bar and having their corresponding arms pivoted thereto, and a

coupling-bar connecting the other arms of said levers, substantially as set forth.

10. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture, and a shutter applied to the aperture, of a series of voting-keys, locking devices for said keys, a shifting-bar controlling said locking devices, a feed-bar for said drum arranged parallel with said shifting-bar and having a shoulder or projection adapted to engage therewith, and a lever having one of its arms connected with said shutter and having its other arm engaged with said shifting-bar, substantially as set forth.

11. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture, and a shutter applied to the aperture, of a locking-pawl which prevents rotation of the drum, when the shutter is open and which is disengaged from the drum when the shutter is closed, and a feed device for the drum operated by the shutter, substantially as set forth.

12. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture, and a shutter applied to the aperture, of a locking-pawl which prevents rotation of the drum and a feed-bar for the drum operated by the shutter and having a projection which engages against said pawl for disengaging the same from the drum, substantially as set forth.

13. The combination with a case having an aperture and a recording drum or tablet arranged therein and adapted to be exposed through said aperture, of a shutter applied to the aperture, a feed-bar for intermittently moving said drum or tablet, and a loose connection between the shutter and said feed-bar which imparts only the opening movement of the shutter to the feed-bar, substantially as set forth.

14. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture and a shutter applied to the aperture, of a movable support which takes part in the opening movement of the shutter, a stop, a locking-pawl mounted on said support and arranged to strike said stop when moved out of its normal position and to clear the same when in its normal position, and a shifting device whereby said pawl is moved into its locking position, substantially as set forth.

15. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture, and a shutter applied to the aperture, of a movable support which takes part in the opening movement of the shutter, a stop, a locking-pawl mounted on said support and arranged to strike said stop when moved out of its normal position, and to clear the same when in its normal position, a series of vot-

ing-keys and a shifting device operated by said keys and arranged to move said pawl into its locking position, substantially as set forth.

16. The combination with a case having an aperture, a vote-recording drum or tablet adapted to be exposed through said aperture and a shutter applied to the aperture, of a reciprocating feed-bar for said drum which is moved in one direction by the shutter, a stop, a locking-pawl mounted on said feed-bar and adapted to encounter said stop, a series of voting-keys having devices for locking the same, and a stop-bar controlling said locking devices and having a projection arranged to be engaged by said feed-bar and another projection which is arranged to engage with said locking-pawl, substantially as set forth.

17. The combination with a voting booth or compartment having a swinging exit-door, of a voting-machine arranged in the booth and having a resetting device, a movable hook arranged on the wall of the booth adjacent to the hinged edge of the door, and connected with the resetting device of the voting-machine, and a movable catch mounted on the door and adapted to interlock with said movable hook, substantially as set forth.

18. The combination with a voting booth or compartment having a swinging exit-door, of a voting-machine arranged in the booth and having a resetting device, a movable hook arranged on the wall of the booth adjacent to the hinged edge of the door and connected with the resetting device of the voting-machine, a movable catch mounted on the door and adapted to interlock with said movable hook, and a cam arranged to disengage said catch from said hook after the latter has been moved sufficiently to operate the resetting device, substantially as set forth.

19. The combination with a voting booth or compartment having a swinging exit-door, of a voting-machine arranged in the booth and having a resetting device, a horizontally-sliding hook arranged on the wall of the booth adjacent to the hinged edge of the door and connected with said resetting device, a horizontally-swinging catch or lever pivoted to the door, adapted to interlock with said hook and having a releasing pin or projection, a spring which holds said catch in its operative position, and a stationary cam which is arranged adjacent to said sliding hook and over which the releasing-pin of the catch rides when the door is opened, substantially as set forth.

20. The combination with two or more groups or classes of keys and a stop-bar for each of said groups, of a main sliding locking-bar arranged to move across the ends of said stop-bars, and operating to lock the stop bar or bars of one class of keys and to leave the stop bar or bars of the other class of keys unlocked, and an auxiliary locking-bar arranged to shift said main locking-bar and operating to lock the stop-bars not locked by said main bar, substantially as set forth.

21. The combination with two or more groups or classes of keys and a stop-bar for each of said groups, of a main locking-bar arranged to move across the ends of said stop-bars, and operating to lock the stop bar or bars of one class of keys and to leave the stop bar or bars of the other class of keys unlocked, and a sliding auxiliary locking-bar operating against one end of said main locking-bar and adapted to lock the stop-bars not locked by

said main locking-bar, and a rock-shaft having an arm or tumbler which shifts said auxiliary slide, substantially as set forth.

Witness my hand this 31st day of August, 1898.

MARQUIS H. JOHNSON.

Witnesses:

JAMES CAMPSALL,
CARL F. GEYER.