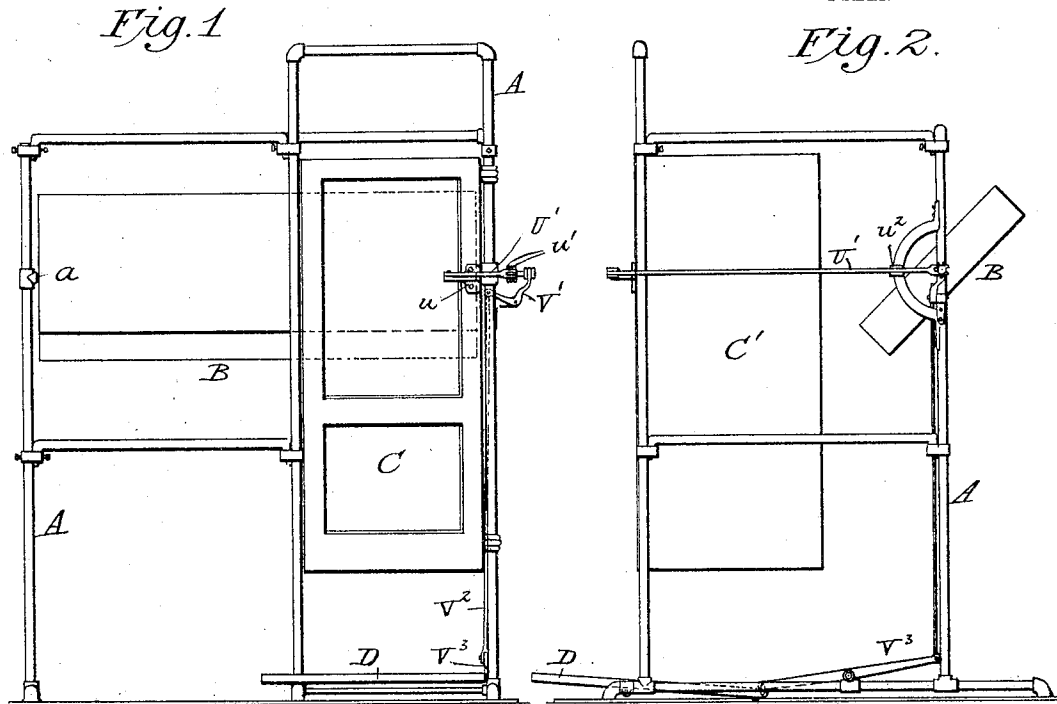


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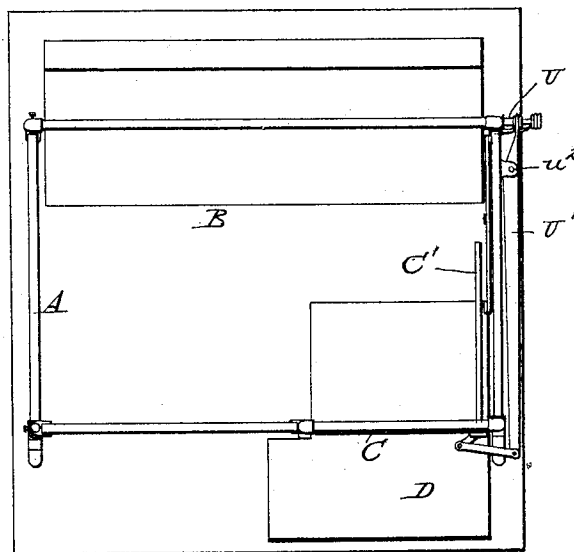
PATENTED APR. 25, 1905.

J. B. MAHANA.  
VOTING MACHINE.  
APPLICATION FILED DEC. 29, 1902.

4 SHEETS—SHEET 1.



*Fig. 3.*



WITNESSES:

*H. Kellogg*  
*C. D. Bull*

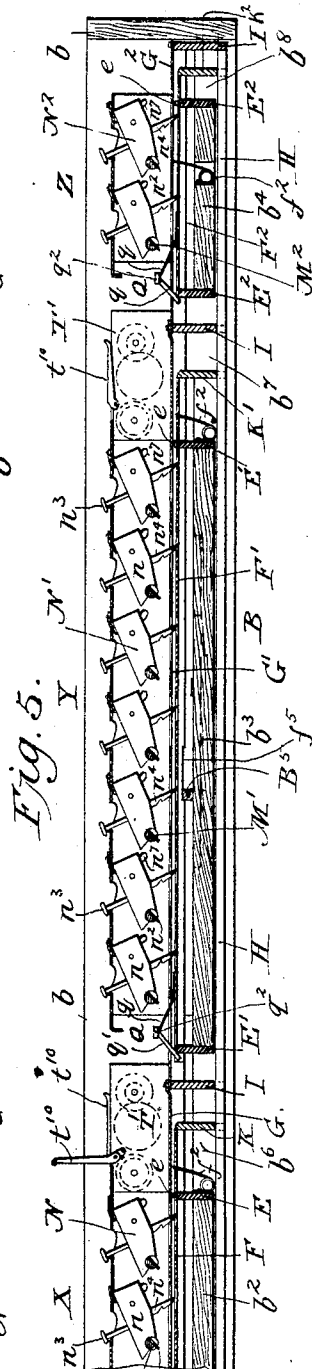
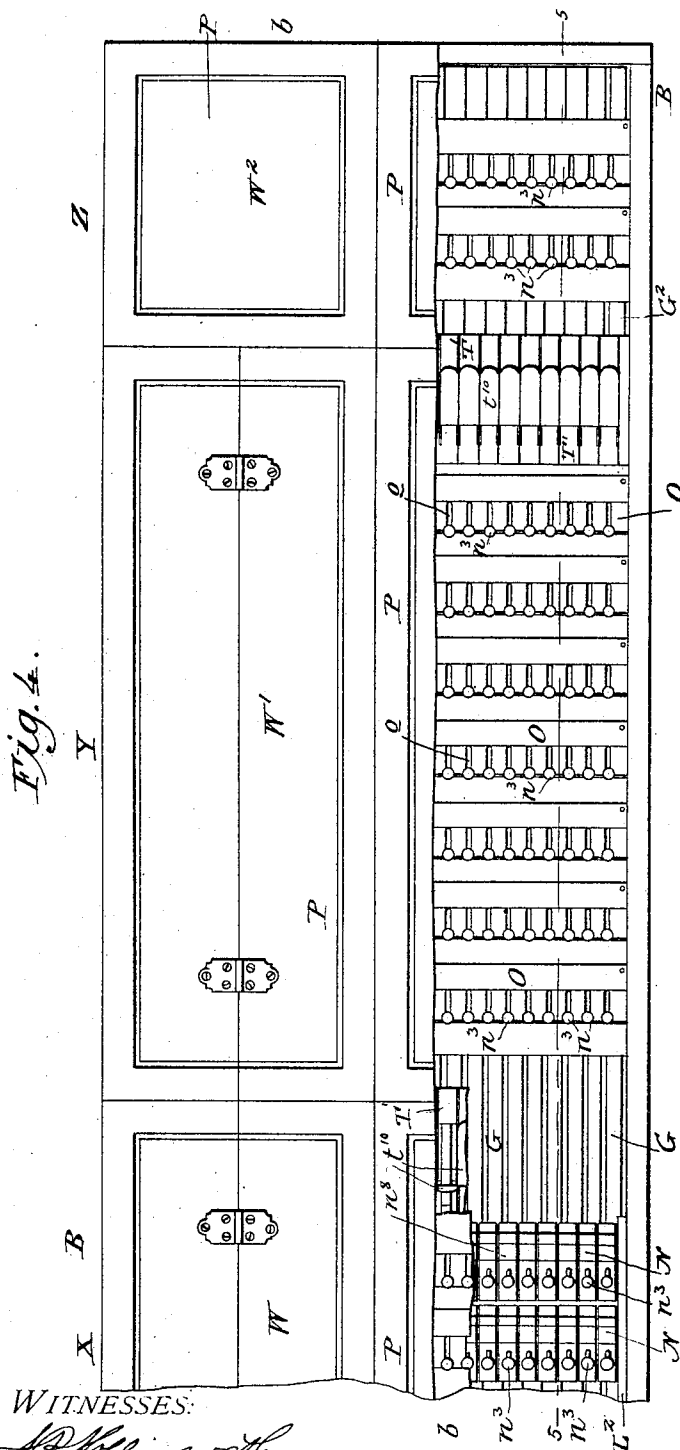
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APPLICATION FILED DEC. 29, 1902.

4 SHEETS—SHEET 2.



WITNESSES:

A. H. Hellingworth  
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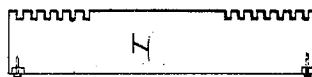
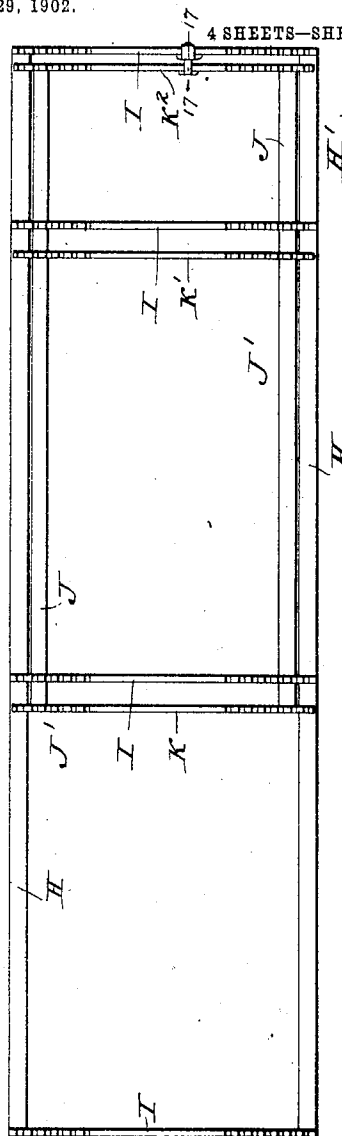
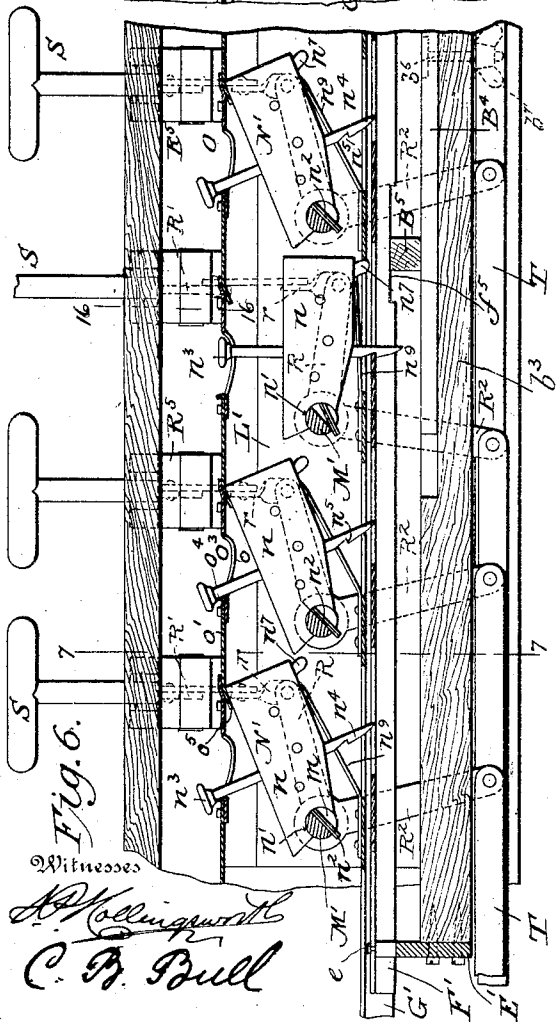
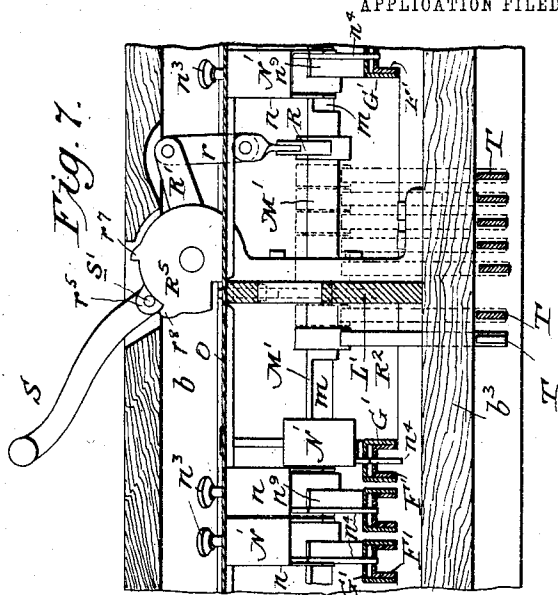
 $B\gamma$ 

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APPLICATION FILED DEC. 29, 1902.

4 SHEETS—SHEET 3.



Witnesses  
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APPLICATION FILED DEC. 29, 1902.

4 SHEETS—SHEET 4.

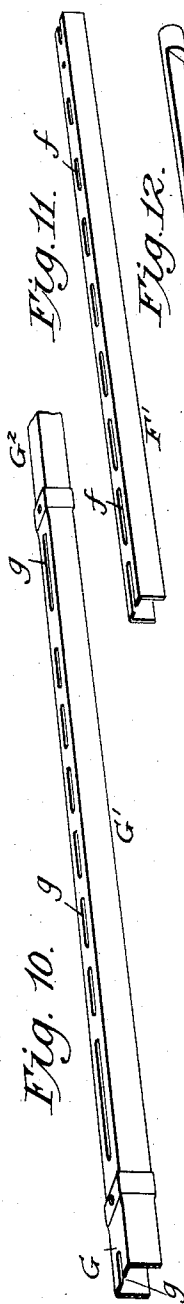


Fig. 11. f

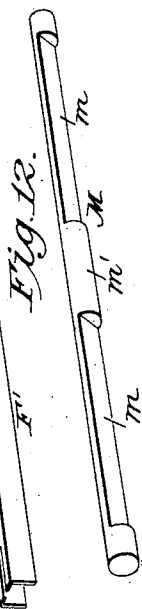


Fig. 12.

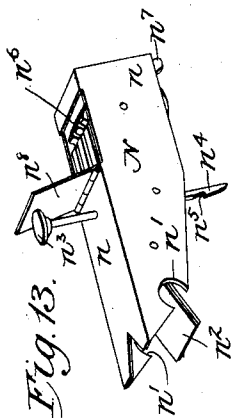


Fig. 13.

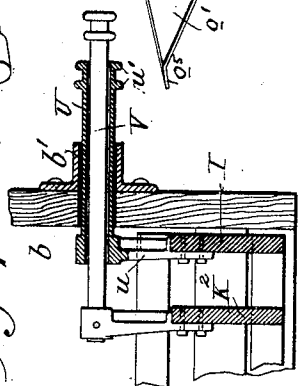


Fig. 17.

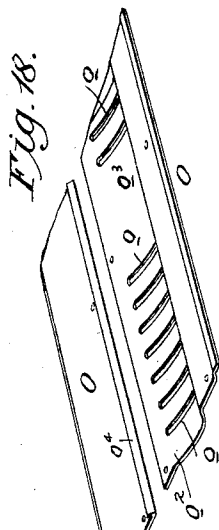


Fig. 18.

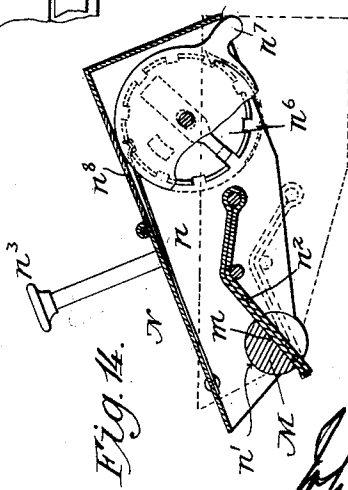


Fig. 14.

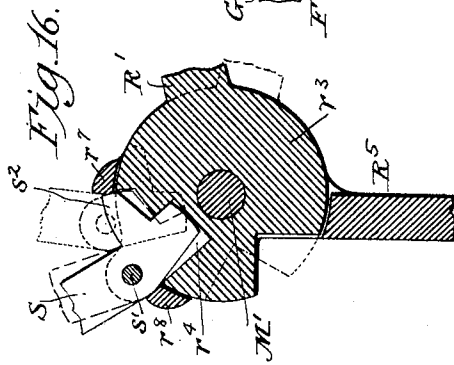


Fig. 16.

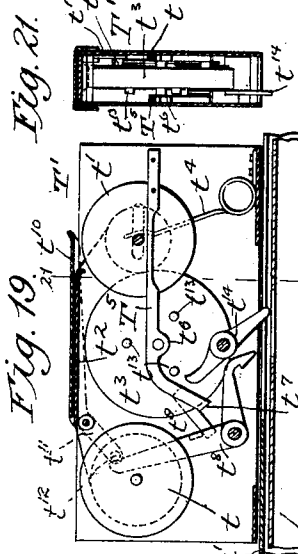


Fig. 19.



Fig. 20.

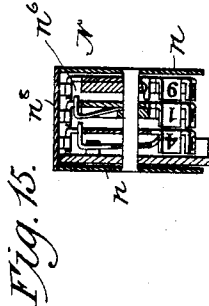


Fig. 15.

Witnesses

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By

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# UNITED STATES PATENT OFFICE.

JOHN B. MAHANA, OF TACOMA, WASHINGTON, ASSIGNOR TO M-E  
VOTING AND COUNTING MACHINE COMPANY, A CORPORATION  
OF WASHINGTON.

## VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 788,486, dated April 25, 1905.

Application filed December 29, 1902. Serial No. 137,057.

*To all whom it may concern:*

Be it known that I, JOHN B. MAHANA, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented a new and useful Improvement in Voting-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same.

This invention relates to an improvement in automatic voting-machines, which is simple in construction and operation and so organized that a "straight" or "mixed" ticket may be voted and the vote automatically counted or registered by the voter as he leaves the booth or other place wherein the machine is erected, the arrangement being such that the register will not be brought into operation until the voter has left the vicinity of the machine. The departure of the voter from the booth actuates devices which tally the keys voted and return the parts to normal position in readiness for the next voter.

A further object of my invention has reference to means whereby when a key is depressed it will be locked in its depressed position, but without registering the vote, so that by the operation of certain other means the depressed key, which indicates the voter's choice for a certain candidate for a particular office, may be returned to normal position and another key depressed to vote for a different candidate for the same office. It is thus made possible for a voter after having set the machine to vote a certain ticket to rearrange the keys, thereby "cutting" certain candidates and voting for others, or if on further consideration he concludes to cast his vote for the first-named candidate this change may also be made. All the above-mentioned changes are made without operating the registers or exposing them to the view of the voter. After he has finally made up his ticket he opens the door of the booth and passes out, the opening of the door being the active cause whereby the registering mechanism is controlled. A depressible platform, which must be stepped upon by the voter, op-

erates through suitable levers and their connections the mechanism for restoring the parts to normal position.

Other objects of my invention are described hereinafter and pointed out in the claims.

Referring to the drawings, Figure 1 represents a front elevation of a voting-booth with my improved voting-machine in suitable position therein; Fig. 2, a side view of the same, and Fig. 3 a top plan view. Fig. 4 is a plan view of a portion of my machine, certain parts thereof being shown broken away to expose mechanisms thereunder; Fig. 5, a longitudinal section of Fig. 4 on the line 5 5. Fig. 6 is an enlarged view of a portion of Fig. 3, and Fig. 7 a cross section on the line 7 7 of Fig. 6. Fig. 8 is a plan view of the sliding frames, and Fig. 9 an end view of one of said frames enlarged. Fig. 10 is a view in perspective of one of the record-operating bars. Fig. 11 is a similar view of a key-locking bar. Fig. 12 shows in perspective one of the key-supporting shafts. Fig. 13 is a perspective view of one of the voting-keys; Fig. 14, a longitudinal section, and Fig. 15 a cross-section, thereof. Fig. 16 is an enlarged cross-sectional view on the line 16 16 of Fig. 6, and Fig. 17 a sectional view on the line 17 17 of Fig. 8. Fig. 18 is a perspective view of a portion of two of the cover-strips for the keys. Fig. 19 is a longitudinal sectional view of one of the independent-voting mechanisms; Fig. 20, a plan view of the same, and Fig. 21 a cross-section on the line 21 21 of Fig. 19.

Similar letters of reference indicate similar parts in the several figures.

Figs. 1, 2, and 3 illustrate a preferred form of voting-booth consisting of a frame A, of gas-pipe, suitably connected to inclose a rectangular space, Fig. 3, within which the voting-machine B is placed, it being pivoted in suitable bearings *a* to two of the uprights of the frame A. A door C is hinged to the frame A, through which door the voter must pass to reach the voting-machine. A leaf or blind C' is connected to the door at its hinged edge in such position that it lies against the side of the booth when the door is closed, (see Fig.

3;) but when it is opened for the passage of a voter the leaf or blind will close the opening and prevent persons from seeing within the booth. In practice a curtain long enough to conceal the voting-machine and the action of the voter will surround the booth. At the entrance to the booth and pivoted to the floor is a platform D, upon which the voter steps as he enters and leaves the booth. This platform is connected by suitable means with mechanism within the voting-machine for restoring the parts to normal position after the vote has been registered by the opening of the door as the voter leaves the booth.

Referring now to Figs. 4 to 17, it will be seen that the voting-machine B is contained within a rectangular case or box  $b$ , having hollow journals  $b'$ , pivoted, as before stated, in bearings  $a$  on the frame A. In the construction shown the voting mechanism is divided into three sections X, Y, and Z, the section X being used for presidential and State elections, that Y for county and municipal elections, and that Z for voting on all other subjects brought before the people, as local option, &c.

The back of the case  $b$  consists of three parts  $b^2$ ,  $b^3$ , and  $b^4$ , extending across the case from top to bottom and separated from each other and from the sides of the case, leaving openings  $b^6$ ,  $b^7$ , and  $b^8$ . Screwed or bolted to the sides of each part  $b^2$ ,  $b^3$ , and  $b^4$  are two plates  $E$   $E'$   $E'$  and  $E^2$   $E^2$ , respectively, the edge of each plate projecting a short distance into the case  $b$ , where it is notched, as shown in Figs. 7 and 9, to form alternate rectangular projections and depressions. The projections of the plates  $E$   $E'$   $E'$  and  $E^2$   $E^2$  support sliding shaped or channel bars  $F$   $F'$   $F^2$ , held in place by screws  $e$  passing through slots in the ends of each sliding bar and into the rectangular projections. Each sliding bar is arranged to be moved independently for a greater or lesser distance within certain limits by manually-operated devices described hereinafter for holding the vote-recording mechanism in down position to be actuated; but when the record has been made all the sliding bars  $F$ ,  $F'$ , and  $F^2$  may be worked simultaneously to restore the parts to normal position. It is to be understood that the plates  $E$  and the sliding bar  $F$  are in section X and the plates  $E'$ , sliding bars  $F'$ , the plates  $E^2$ , and sliding bars  $F^2$  in the sections Y and Z, respectively.

Over each sliding bar  $F$ ,  $F'$ , or  $F^2$  is placed, respectively, a second channel-bar  $G$ ,  $G'$ , or  $G^2$ , one of each of the latter bars being joined end to end to form practically one series of bars running from end to end of the case  $b$ . To avoid confusion, the bars  $F$ ,  $F'$ , and  $F^2$  will be called "key-locking" bars, while the bars  $G$ ,  $G'$ , and  $G^2$  will be known as "record-operating" bars.

Behind the case  $b$  and extending horizontally from end to end thereof near its top and bottom are two bars  $H$ , connected by bolts or

other suitable fastenings to cross-plates I, which extend edgewise through the openings  $b^6$ ,  $b^7$ , and  $b^8$  into the case. The cross-plates I are formed with rectangular projections on their inner edges similar to those on the plates  $E$ , to which projections the joined ends of the record-operating bars  $G$ , &c., are attached. The bars  $H$  (of which there may be more than two) and the plates I form a strong and rigid frame  $H'$ , (see Fig. 8,) which by means of suitable connections hereinafter described is moved to the right or left when the door C of the voting-booth is opened and closed. A second frame,  $J'$ , constructed of the bars  $J$  and cross-plates  $K$ ,  $K'$ , and  $K^2$ , is placed within the first-named frame and slides in a similar manner when operated by the platform D. The cross-plates  $K$ ,  $K'$ , and  $K^2$ , which also project through the openings  $b^6$ ,  $b^7$ , and  $b^8$ , abut against the respective series of key-locking bars  $F$ ,  $F'$ , and  $F^2$  when moved to the left and cause all the voting-keys in operative position to be simultaneously disengaged from the key-locking bars.

Within the case  $b$  and extending from end to end thereof are three upright plates  $L$   $L'$   $L^2$ , fixed, respectively, at the top, bottom, and longitudinal center of said case, each plate being covered by a cap-plate  $l$ , fastened thereto by screws. The plates  $L$   $L'$   $L^2$  serve as bearings for cross-shafts  $M$ ,  $M'$ , and  $M^2$  in the respective sections X, Y, and Z. Each shaft, as shown in Fig. 12, is formed with cylindrical end and central portions, the intermediate parts being semicylindrical, the flattened surface  $m$  of which being for a purpose hereinafter described. The central cylindrical portion  $m'$  is made longer than the corresponding end portions  $m^2$ .

Removably secured to each shaft are a series of manually-operated voting-keys, those in section X being lettered N, while those in sections Y and Z are lettered  $N'$  and  $N^2$ , respectively. Each key being an exact duplicate of all the others, a detailed description of one will be sufficient. Each key, as N, consists in part of a casing  $n$ , forming the sides and top of the key, each side near one end being cut away at  $n'$  in the arc of a circle, the radius of which arc is that of a shaft  $M$ . Secured within the casing  $n$  is a plat-spring  $n^2$ , adapted to bear on the flattened surface  $m$  of its shaft  $M$  to hold the key N normally in elevated position. When the key is forced down by pressing on the finger-piece  $n^3$ , it turns on the shaft  $M$ , which movement places the spring  $n^2$  under tension and ready to restore the key to place when released. A finger  $n^4$ , having a pointed end and notched at  $n^5$ , projects downwardly from the key N and is so arranged as to enter a slot  $f$  in the bar  $F$  and be temporarily retained therein. A recorder or counter  $n^6$  is also contained within the key N, its operating-lever  $n^7$  projecting below the casing  $n$  in position to enter a notch

g in the bar G when the key is depressed. The casing n is cut away for a short distance on the top of the key, through which cut the counting-wheels may be seen. This opening, however, is closed by a cover n<sup>3</sup> when a vote is being taken.

The keys NN' N<sup>2</sup> are assembled side by side on their respective shafts M M' M<sup>2</sup>, sufficient space only being left between them to insure their free movement. The keys are arranged in vertical and horizontal rows, the vertical rows in sections X and Y standing for the various political parties, while the horizontal rows represent the several offices on the positions to be filled by vote. A cover O is placed above the keys, the stems of the finger-pieces n<sup>3</sup> passing through slots o therein. When not in use, doors or covers P, secured to the case B, protect the parts from injury.

The upper half of the section X will be used when voting for presidential electors and the lower half only of the same section for congressmen and State officers. Section Y is also divided horizontally, the upper part for State representatives and county officers and the lower part for municipal and other local officers. The section Z will be used when there is voting on constitutional and other amendments and questions where a yea-and-nay vote is all that is required. This section therefore has but two vertical rows of keys.

Returning to the key-locking bars F, F', and F<sup>2</sup> and the record-operating bars G, G', and G<sup>2</sup>, it will be seen on reference to Figs. 4, 5, 6, 7, 10, and 11 that each of the bars G, G', or G<sup>2</sup> has a series of longitudinal slots g of equal length formed therein, each slot being sufficiently long to permit the finger n<sup>4</sup> and the recorder-lever n<sup>7</sup> of a key N to pass therethrough when said key is depressed, the lever n<sup>7</sup> entering at the extreme forward end of said slot. Each of the key-locking bars F, F', or F<sup>2</sup> is also provided with a series of perforations f of gradually-reduced length beginning at the left end of the bar. When a key N, N', or N<sup>2</sup> is pushed down, its finger n<sup>4</sup> passes through the slot f immediately beneath it and pressing against the bar at the left end of the slot slides that bar endwise against the force of a spring f<sup>2</sup> until the notch n<sup>5</sup> enters the slot, when the spring n<sup>2</sup>, retracting the bar slightly, enters the notch and holds the key in depressed position.

As heretofore stated, each horizontal row of keys in a section X or Y is assigned to one elective office, each candidate's name for the office being written or printed on a slip and pasted on the cover O above one of the keys. To prevent fraudulent voting, it is necessary that means be provided for holding in a depressed position but one key for the same office. Should a second key be pushed down, it will either return to its first position after the finger has been removed or it will remain down and cause the release of the first key

depressed, the result depending on whether a key to the left or the right of the locked key (in the same section) is operated. This object is accomplished by means of the variation in length of the slots f in the key-locking bars F, F', or F<sup>2</sup>.

Referring to Figs. 6 and 11, it will be seen that the slot at the extreme left of the bar F' is longer than any other slot in the bar. When the key N' above this slot is depressed, its finger n<sup>4</sup> will have a certain amount of free movement before it makes contact with the bar F' and becomes locked thereto. The next slot f to the right is shorter and the finger n<sup>4</sup> of the corresponding key will have less free movement and will therefore strike the bar F' sooner and move it a greater distance, disengaging the first-mentioned key, which under the force of the spring n<sup>2</sup> will return to its normal position, the second key being locked down. As the slots f gradually decrease in length toward the right-hand end of the bar F, any key which may be pushed down will release any other key on its left which may have been previously depressed, nor can any key on the left of one locked down be also locked down, because the bar F' will have been pushed too far to the left for the notched finger n<sup>4</sup> to become engaged therewith. Should a key have been pushed down by a voter and on reconsideration he wishes to vote for a candidate whose name is on a key to the left of the one operated, the bar F must be restored to its original position. This is accomplished by means of a resetting-key Q, attached to the key-locking bar F near its left end. The key Q is composed of an upwardly-inclosed spring q, fastened at one end to the bar F, and a rigid guiding-rod q', fixed to the free end of the spring and inclining downwardly, the finger-piece q<sup>2</sup> being fixed to the spring at its junction with the guiding-rod. The guiding-rod q' passes through a slot in the end of the bar F and bears on one of the upright plates E. On depressing the key Q the guiding-bar q' slides over the plate E' and draws the bar F' to the left sufficiently far to disengage the notched arm n<sup>4</sup> of any key N' which may be at the time in engagement therewith, after which, the finger being removed from the key Q, the bar F' will be returned to its original position.

Pinned or otherwise attached to each shaft M' in the section Y are a laterally-projecting arm R and a rearwardly-extending arm R<sup>2</sup>. Each arm R is pivotally joined by a forwardly-projecting link connection r to a second arm R', journaled in a bearing R<sup>5</sup>, secured to the back of the case, as indicated in Fig. 16. The arm R' is in front of and stands at a right angle to the arm R, there being as many arms R' as there are political parties arranged for in the section. A hand-lever S, attached to the hub of each arm R', when raised lowers the arm and through the link r causes the

arm R to rock the shaft M' and depress all the keys N' on the shaft, which are immediately locked in their lowered position by means of the key-locking bars F', as hereinbefore described. After the keys N' are locked in their downward position the hand-lever S is drawn down, which movement will again rock the shaft M', but in an opposite direction, thereby putting the springs  $n^2$  of the keys N' under tension, and as the keys are locked they cannot return with the shaft.

The hub  $r^3$  of the arm R' has formed therein a socket  $r^4$ , within which the inner end of the hand-lever S is inserted. A pin  $s'$  passes through the hand-lever and through ears  $r^5$  on the hub  $r^3$ , the pin forming a pivot for the hand-lever, which has a slight independent movement. That part of the hand-lever within the socket is made somewhat smaller than the socket itself to permit of this movement. Projecting from one side of the hand-lever S is a lug  $s^2$ , adapted to engage with a fixed stop  $r^7$  when the hand-lever is drawn down to its fullest extent. Stops  $r^7$   $r^8$  on the bearing R<sup>5</sup> limit the movement of the hand-lever as it is pushed up and drawn down. When the hand-lever is raised, it first swings on its pivot  $s'$  until the lug  $s^2$  has been carried below the stop  $r^7$  and its under side brought into contact with the upper face of the socket  $r^4$ . Continuing the upward movement of the hand-lever until it strikes the stop  $r^7$  will cause all the keys controlled by said lever to be locked in their depressed position. Now by drawing down the hand-lever the springs  $n^2$  are placed under tension, as previously described, and are held so by the lug  $s^2$ , locking behind the pin  $r^6$ , when the hand-lever strikes the lower stop  $r^7$ .

It will be seen that section X is not provided with hand-levers S, the shafts M in that section being operated through connecting-rods T, pivoted to the arms R<sup>2</sup> on the shaft M' and corresponding arms R<sup>3</sup> on the shafts M. The arms R<sup>2</sup> and R<sup>3</sup> are placed out of line or offset on their respective shafts in such manner that the shaft M' in section X on which the keys—say of the Republican party—are pivoted is connected to the corresponding shaft M (appropriated to that party) in section Y, and so on throughout the entire system.

The cover O comprises a series of overlapping strips  $o'$   $o^2$  of thin metal reaching from the top to the bottom of the case and fastened by screws to a bar  $l^2$ , bolted to the cap-plate L. Each strip  $o^2$  is grooved longitudinally, and across the groove a series of slots  $o$  are made for the passage therethrough of the stems of the finger-pieces  $n^3$ . The groove  $o^3$  serves to stiffen the strip  $o$  and to receive the finger-pieces  $n^3$  when the key N is depressed. The strips  $o'$  have each an upturned flange  $o^4$  on one edge, against which the key-stems may rest when the key is elevated, and a downwardly-turned portion  $o^5$  to serve in a meas-

ure as a stop for the body of the key when it rises.

It sometimes happens that a voter, not satisfied with the regularly-nominated candidates for office, desires to cast his vote for a person whose name does not appear among the regular nominees. To accommodate this class of voters, I apply to my machine a simple device in connection with each horizontal row of keys by means of which a voter may cast his vote for an independent candidate or candidates to fill a certain office or as many offices as are to be voted for. These independent devices are represented in Figs. 4, 5, 19, 20, and 21, wherein T' indicates one of a series of casings of thin metal containing the operating mechanisms, which are placed side by side from the top to the bottom of the case  $b$ , one above each sliding bar G or G'. Within each casing are journaled two spools  $t'$ , the pivots of the latter spool turning in horizontal slots to allow for change of position. A web of paper on the spool  $t$  passes over a table  $t^2$  to the spool  $t'$ , on which it is wound by the intermittent rotation of a friction-wheel  $t^3$ , bearing on the spool, the latter being held in contact with the friction-wheel by a spring  $t^4$  pressing against the pivots of the spool. A U-shaped spring T<sup>5</sup>, fastened at its ends to the inner sides of the casing T', is provided with bearings  $t^6$  for the journal of the friction-wheel  $t^3$ . The bow  $t^7$  of the spring is carried beyond the periphery of the friction-wheel to a point where it may be engaged by a rocking lever  $t^8$  to change the position of said wheel. Pivoted near its center to one side of and within the casing T' is a rocking lever  $t^8$ , one end of which is notched and extends below the casing in position to engage at the proper time with the key-locking slide F', while the other end extends in an opposite direction toward the top of the casing. From the rocking lever near its pivotal point is a projection  $t^9$ , with which the bow  $t^7$  of the spring  $t^5$  is engaged. A pivoted plate (indicated by  $t^{10}$ ) is placed above the table  $t^2$  and has downwardly-extending side flanges outside the casing. An arm  $t^{11}$ , attached to the pivoted plate  $t^{10}$ , is provided with a pin  $t^{12}$ , which engages the upper end of the rocking lever  $t^8$  in such manner that on raising the plate or cover  $t^{10}$  the rocking lever will be operated to depress the spring  $t^5$  and lower the friction-wheel  $t^3$ . When the pivoted plate is raised, it exposes a portion of the web or strip, on which may be written the name of the candidate for office. From one side of the friction-wheel  $t^3$  project short pins  $t^{13}$ , in this instance three in number and equally spaced. A centrally-pivoted lever  $t^{14}$  is pivoted to one side of the casing T, one end of which lever engages a slot in the record-operating bar G', by means of which bar it is vibrated, and when the friction-wheel is carried down by the act of raising the plate  $t^{10}$  one of the pins



$t^{13}$  is brought opposite the upper end of the vibrating lever, which will strike the pins  $t^{13}$  when the bar  $G'$  is raised and turn the friction-wheel  $t^3$  sufficiently far to wind on the spool  $t'$  a length of paper equal to that exposed on the table  $t^2$ , carrying any name which may have been written on the paper out of sight and exposing a fresh surface for the next name.

Through one of the hollow journals  $b'$ , on which the voting-machine is pivoted, passes a tubular slide  $U$ , its inner end being secured by means of a depending arm  $u$  to the cross-plate  $I$  at the extreme right of the machine. Between collars  $u'$  on the outer end of the tubular slide  $U$  rests the forked end of a lever  $U'$ , pivoted to the frame of the booth at  $u^2$ . The opposite end of the lever  $U'$  is connected to the door  $C$  of the booth, which on being opened moves the frame carrying the record-operating slides  $G$ ,  $G'$ , and  $G^2$  (of which the cross-bar  $I$  forms a part) to the left, thereby actuating all the record-levers  $n'$  of the keys  $N$ ,  $N'$ , or  $N^2$  which may have been depressed and also the lever  $t^{14}$  of the independent voting devices  $T$  or  $T'$ . When the door is closed, the bars  $G$ ,  $G'$ , and  $G^2$  are returned to normal position. A second slide  $V$ , arranged to move within the slide  $U$ , is connected to the cross-plate  $K^2$ , fastened to the bars  $J$ , to which, as will be remembered, the plates  $K$  and  $K'$  are also secured. Connected to the outer end of the slide  $V$  is an elbow-lever  $V'$ , pivoted to the frame of the booth. The other arm of the elbow-lever  $V'$  is connected by a rod  $V^2$  to one end of a straight lever  $V^3$ , its opposite end being connected to the pivoted platform  $D$ . The platform is of such dimensions that the voter must necessarily walk thereon as he leaves the booth. His weight on the platform while he is within the booth has no effect on the mechanism, but as he opens the door to pass out his weight is carried across the fulcrum of the platform, which is thereby depressed, causing the plates  $K$ ,  $K'$ , and  $K^2$  to slide the key-locking bars  $F$ ,  $F'$ ,  $F^2$  to the left and disengage all the keys which may be locked down. The levers  $t^8$  of the independent mechanisms are also unlocked, which, returning to position, raise the friction-wheels  $t^3$  and close the pivoted plates  $t^{10}$ .

Under each key  $N$  is a spring-arm  $n^9$ , riveted or otherwise fastened to the register-operating bar  $G$  thereunder. The spring-arms  $n^9$  are upwardly inclined to bring their free ends into such relation to the recorder-operating-levers  $n'$  that when the keys are depressed the spring-arms, being eccentrically attached, will act on the operating-levers  $n'$  and move them backward until the pawls thereon are in position to act on the first counting-wheels of the registers.

The keys  $N$ , as stated, are alike, and as they bear no distinguishing-marks, such as the names of an office or candidate, they can

be quickly assembled on the several shafts without regard to order. Should a defect of any kind appear in a key after the machine has been set up, it can be quickly removed and a new key substituted by removing the strips  $o$  or  $o'$  immediately above the defective key and inserting a suitable tool in the V-shaped notch  $n^{11}$  in the key, (see the dotted lines in Fig. 14,) the defective key by such means being quickly forced off its shaft  $M$ , allowing for the quick substitution of a new key.

All voting-machines, so far as I am aware, are fixed securely in a supporting-frame, so that when a large number of offices are to be filled, with numerous candidates in the field, it is difficult for persons having defective vision or otherwise disabled to see clearly the indicated names of the offices and the candidates or to reach the voting-keys at the extreme upper part of the machine. To overcome such defect, I mount my machine on horizontal pivots  $b'$ , as stated, so that it may be swung to and fro to bring all parts of the machine easily within the inspecting range of the voter.

When not in use, the case  $b$  is closed by covers  $W$ ,  $W'$ , and  $W^2$ , placed over the respective sections  $X$ ,  $Y$ , and  $Z$ . The cover for each section is divided into two parts, which may be further subdivided and the subdivisions hinged together. By this expedient the mechanism will be protected and only such keys of a section exposed as are necessary in casting the votes.

To prevent unused keys from being locked down when the shafts  $M$ , &c., are rocked, one or more slides  $B^4$ , arranged to move in mortises formed in the part  $b^3$  of the back, have attached to them cross-pieces  $B^5$ , their upper edges projecting into cut-out portions  $f^3$  of the key-locking bars  $F$ . Each slide  $B^4$  is held in place by a bolt  $b^6$  passing through a slot in the part  $b^3$  and provided with a thumb-nut  $b^7$ . On loosening the thumb-nut  $b^7$  and moving the slide  $B^4$  to the left the cross-piece  $B^5$  will carry the key-locking bars  $F$  with it a distance sufficient to prevent the fingers  $n^4$  from engaging the notches in said bar when depressed. The nut is then tightened to hold the bar in this position. The number of slides  $B^4$  and the length of the cross-pieces  $B^5$  will be regulated as circumstances demand. It is to be understood that the slides  $B^4$  are arranged in a manner similar to that employed in other sections.

I do not restrict myself to the exact details of construction, combination, and arrangement herein set forth, it being obvious that minor variations thereof not involving the exercise of invention may be made by the skilled mechanic, and such departures from that as herein described and claimed not involving invention I consider as within the scope and terms of my claims.

Having thus described my invention, I claim—

1. In an automatic voting-machine composed of two or more laterally-placed sections, the combination of a series of parallel shafts in each, keys yieldingly connected to each section of said shafts arranged in rows at right angles to the shafts and adapted to be depressed when the shafts are rocked, a sliding locking-bar beneath each row of keys in each section, each bar being adapted to lock in depressed position any one of the superposed keys, a hand-lever connected to each shaft in one of the sections for rocking said shafts, and connections extending from said shafts to corresponding shafts in another section, substantially as set forth.
2. In an automatic voting-machine, the combination with a series of parallel shafts, of keys yieldingly connected to said shafts, and arranged in rows at right angles thereto, means for individually rocking the shafts to depress the keys thereon, means for locking the depressed keys, and means for releasing any key thus depressed and locked and substituting therefor any other key in the same row, substantially as set forth.
3. In an automatic voting-machine, the combination with a series of parallel shafts, of keys, each containing a register, yieldingly connected to said shafts and arranged in rows at right angles thereto, means for individually rocking the shafts to depress the keys thereon, means for locking the depressed keys, means for releasing any key thus depressed and locked and substituting therefor any other key in the same row without operating the register, and means for operating said register after the voter has left the vicinity of the machine, substantially as set forth.
4. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles thereto, and means for operating each shaft which, when the shaft is moved in one direction depress the keys thereon and cause them to be locked in such depressed position, and when moved in the opposite direction produces a yielding connection under strain to raise the keys when unlocked, substantially as set forth.
5. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles to the shafts, a sliding bar beneath each row of keys for locking any one of said keys in a depressed position, and means for disengaging a locked key should another key in the same row be depressed and locked, substantially as set forth.
6. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles to the shafts, a sliding bar beneath each row of keys for locking any one of said keys in depressed position, means for disengaging a locked key when another key in the same row is depressed and locked, and independent means for unlocking any depressed and locked key in the row, substantially as set forth.
7. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly mounted on said shafts and arranged in rows at right angles thereto, a sliding bar beneath each row of keys for locking any one of said keys in depressed position, and means separate from the keys for unlocking any depressed and locked key in the row, substantially as set forth.
8. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles thereto, a sliding bar beneath each row of keys for locking any one of said keys in depressed position and a hand-lever connected to each shaft, one of said hand-levers being capable of movement in one direction to rock the shaft, depress the keys and cause them to engage the locking-bar, and of being drawn in the opposite direction to return the shaft and place under tension said yielding devices, substantially as set forth.
9. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles to said shafts, a register carried by each key, a sliding bar beneath each row of keys for locking any one of said keys in depressed position, a register-operating bar placed over the key-locking bar for acting on the register, and means for actuating said bars, substantially as set forth.
10. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles thereto, each key having a notched finger, a sliding locking-bar having longitudinal slots therein of gradually-decreasing length from one end to the other into each of which one of said notched fingers is adapted to enter and lock the key when depressed, and means for moving the bar and disengaging the key, substantially as set forth.
11. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and arranged in rows at right angles thereto, each key having a notched finger, sliding locking-bars each having longitudinal slots therein of gradually-decreasing length from one end to the other, into one slot of each bar one of said notched fingers is adapted to enter and lock all the keys depressed, and means for simultaneously disengaging the keys, substantially as set forth.
12. In an automatic voting-machine, the combination of a series of parallel shafts, keys

yieldingly connected to said shafts and arranged in rows at right angles thereto, a register carried by each key, sliding locking-bars each having slots of gradually-decreasing length from one end of said bar to the other, means on each key adapted to enter one of said slots and lock such keys as are depressed, register-operating bars placed over the locking-bars and provided with means for operating the registers of the locked keys, means for simultaneously operating the registers of all the depressed keys, and means for simultaneously disengaging the keys from the locking-bar, substantially as set forth.

13. An automatic voting-machine containing a series of parallel shafts and keys fulcrumed on said shafts in rows arranged at right angles thereto and adapted to be locked in depressed position, combined with independent voting mechanisms each mechanism being provided with a web of paper on which the name of a candidate may be written, and means for simultaneously releasing the locked keys and moving the paper, substantially as set forth.

14. An automatic voting-machine containing a series of parallel shafts and keys fulcrumed on said shafts in rows arranged at right angles thereto, and adapted to be locked in depressed position, combined with an independent voting mechanism in line with each row of keys, each independent voting mechanism being provided with a web of paper on which a candidate's name may be written, means for exposing the paper and disengaging any key in the same row which may be locked, and

means for simultaneously releasing all other locked keys and moving that portion of the paper written on from view, substantially as set forth.

15. In an automatic voting-machine, the combination of a series of parallel shafts, keys fulcrumed on said shafts and arranged in rows at right angles thereto, sliding bars below the keys with which the keys lock when depressed, and an adjustable slide for moving and retaining out of action certain sliding locking-bars and the keys coacting therewith from being locked when depressed, substantially as set forth.

16. In an automatic voting-machine, the combination of a series of parallel shafts, keys yieldingly connected to said shafts and springs serving the double purpose of holding the keys on the shaft and raising them when depressed, substantially as set forth.

17. A voting-machine containing a series of parallel shafts and having keys yieldingly connected thereto, combined with a series of removable covering-strips *o*, *o'*, the strip *o* being longitudinally grooved and cross-slotted through which slots the key-operating stems pass, and the strip *o'* having oppositely-turned flanges on its edges, to form stops for the keys, substantially as set forth.

In testimony whereof I hereunto set my hand and seal.

JOHN B. MAHANA. [L. s.]

In presence of—

EDWIN S. CLARKSON,  
JNO. R. ADAMS.