(No Model.)

2 Sheets—Sheet 1.

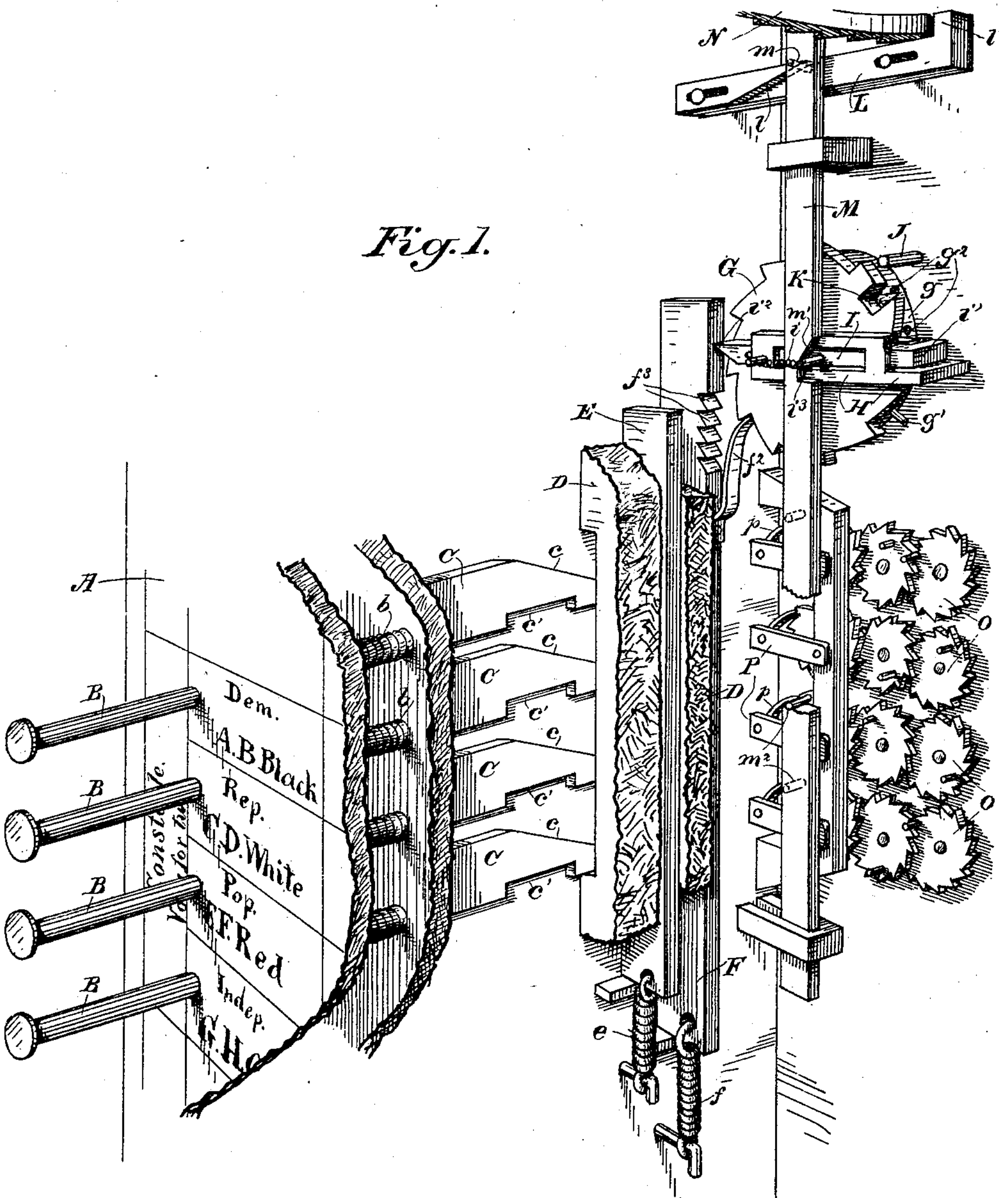
T. D. STROUP.

VOTING MACHINE.

No. 548,403.

Patented Oct. 22, 1895.

Fig. 1.



Witnesses,

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Inventor,

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By Dewey & Co.

attys

ANDREW B. GRAHAM. PHOTO-LITHO. WASHINGTON. D.C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

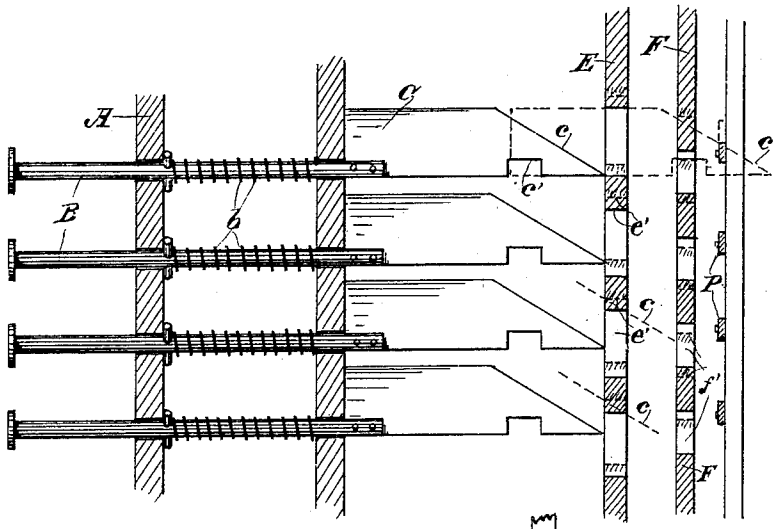


Fig. 3.

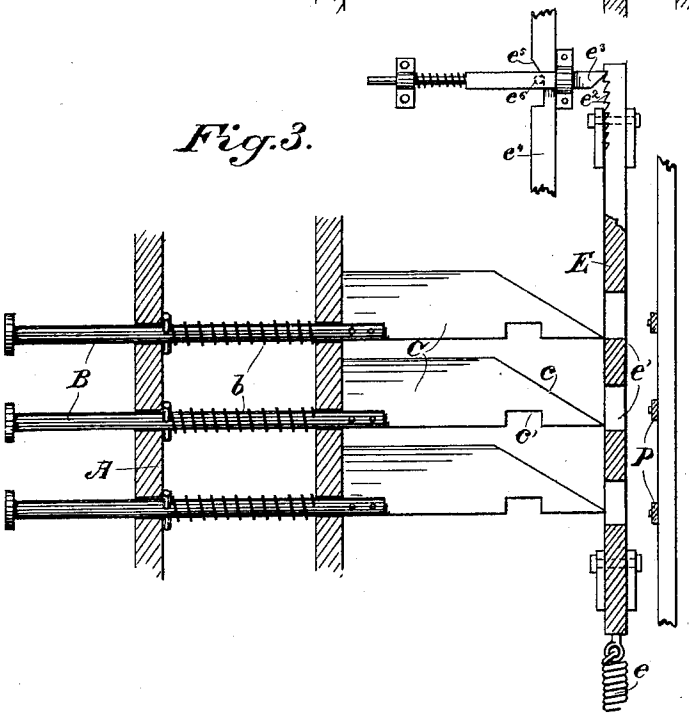
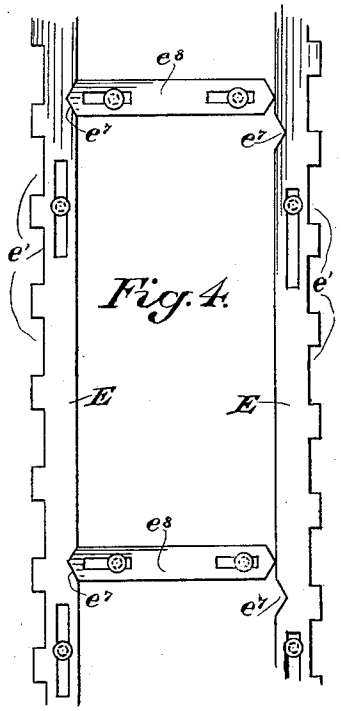


Fig. 4.



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Inventor,
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Attys

UNITED STATES PATENT OFFICE.

THOMAS D. STROUP, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO GEORGE SANDERSON, OF SAME PLACE.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 548,403, dated October 22, 1895.

Application filed July 23, 1895. Serial No. 556,895. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. STROUP, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Voting-Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to voting-machines; and it consists, in connection with the keys and the registering device operated thereby, of a novel locking-bar actuated by the keys and adapted to permit the operation of one or more of the keys, as the case may require.

It also consists in the means for actuating the locking-bar, so as to cause it to subserve its function upon the operation of a stated number of keys and the means by which this stated number may be varied according to the necessities of the case.

It also consists in means interposed between the keys and the registering mechanism by which the latter is operated by the operation of the former.

It also consists in the means controlled by the closing of the door of the booth as the voter departs, of setting back the mechanism to its initial position ready for a fresh operation, and it finally consists in details of arrangement, construction, and combination, which I shall hereinafter fully describe and specifically claim.

The principal object of my invention is to provide a simple and effective locking device by which the number of keys operated can be accurately fixed, whereby the voter is permitted to operate that number of keys and no more.

Referring to the accompanying drawings, Figure 1 is a perspective view of the operative mechanism of my machine, the box or casing being broken away to show the relative arrangement of parts. Fig. 2 is a side elevation of keys and bars. Fig. 3 is a view showing the employment of the locking-bar alone. Fig. 4 is a view showing the combining of the locking-bars in parallel sets.

Upon the front of a case A are properly delineated the names of candidates, political parties, and other necessary matter by which the voter is to be guided. Beside each name is a key B. In the instance shown in the drawings the four keys are to represent four candidates for the same office, as—for example, that of mayor. The shanks of these keys extend through the front of the casing, and they are controlled by springs *b*, whereby they are normally projected. To the shank of each key is attached a body portion C, the inner extremity of which is provided with an inclined plane *c* on the top edge and a notch *c'* on the bottom edge. Between suitably-fixed guides D is mounted and adapted to slide the locking-bar E, which is controlled by a spring *e*, whereby it is normally retracted. This locking-bar is provided with notches *e'* throughout its length, said notches being so located as not to be in perfect alignment with the planes of movement of the key-bodies C. These notches are, however, in the normal position of the locking-bar E in line with or open to the extreme points of the inclined planes *c* of said bodies, whereby, if any one key be pressed inwardly, its inclined plane extremity will enter the notch of the locking-bar opposite to it. This entering of the notch will by reason of the inclined plane cause the upward movement of the locking-bar E, and this upward movement will be sufficient to allow the key-body to pass through its notch, but will throw all the other notches of the locking-bar out of line with the points of all the other keys, so that as long as the locking-bar is held in this position none of the other keys can be operated, as each will be completely blocked or stopped by said bar. Upon the withdrawal of the key which has passed through it the bar E will return under the influence of its spring *e*, so that its notches will again be presented to the action of the inclined plane of any one of the keys. It is obvious, therefore, that if but one of a group of candidates is to be voted for it is only necessary to hold the locking-bar E in the position to which it has been moved by the key representing that one candidate, and as long as it is so held none of the other keys can be operated. This is the simplest operation of the locking-bar and will be best explained at this time and by reference to Fig. 3.

When but one candidate is to be voted for, the locking-bar will have on its top on one

edge teeth e^2, with which a spring-controlled pawl e^3 is adapted to engage in order to hold the bar up. The pawl is released by means of a sliding bar e^4, having an inclined plane e^5, which operates against a pin e^6 on the pawl, and so retracts said pawl. This sliding bar e^4 is the equivalent of and is to be actuated by the same means as the rod M, hereinafter described in connection with the means for voting for several of a group of candidates.

In the case of voting for a single candidate, as above described, the key operated is still held in its pressed-in position by reason of its notch c' being locked in the notch of the locking-bar, and said key is not released to enable it to spring out again until said locking-bar descends. In this way the voter cannot operate the same key twice.

In those cases where several candidates of a group are to be voted for for the same office—as, for example, for the office of supervisor and where the instruction is to vote for a number for the same office—provision must be made for setting the machine in such a way that the voter can operate the required number of keys and no more. To effect this I have also mounted in the guides D a moving bar F, controlled by a spring f. This bar has notches f', which are directly in line with the planes of movement of the key-bodies C, so that the inclined planes or points of said key-bodies are adapted to enter said notches at any time and thereby to elevate the bar F. Mounted in the machine above is a ratchet-wheel G, with the teeth of which a pawl f^2 on the bar F is adapted to engage on each upward movement of the bar. Mounted in a suitable guide H is a pawl I controlled by a spring i. This pawl is a double one, having a point or tooth i' adapted to engage with the teeth of the ratchet G from behind and a point or tooth i^2, which is adapted to engage with teeth f^3 on the upper end of the bar F. A spring g controls the ratchet G in such a manner as to throw it around until it is limited by a fixed stop J in the guide H by reason of a stop-pin g' on the ratchet coming in contact with the fixed stop J. The stop g' on the ratchet is adjustable to various places, as by means of fitting in a series of holes g^2 in said ratchet, so that by placing it in different holes the time of contact with the fixed stop J will be varied, and the ratchet G will be pulled around by its spring to a greater or less extent, according to the contact of these stops. In the ratchet G, at one place, is made a deep notch K.

The operation of this mechanism is as follows: Suppose it to be intended that the voter shall vote for three candidates for the same office. In such a case the stop g' is so adjusted as to permit the spring of the ratchet-wheel G to turn said wheel around far enough that the deep notch K will be removed from the line of action of the point i' of the pawl I the distance of three of the ratchet-teeth. The voter entering the booth presses one of the keys B, whereby the inclined plane-point of said key entering the notch of the bar F will lift said bar and cause its pawl f^2 to engage with the ratchet G and move said ratchet around one tooth. In this position the ratchet is held by the point i' of the pawl I, but the teeth of the ratchet are too shallow to allow the other point i^2 of said pawl I to come to engagement with the teeth f^3 of the bar F, so that when the key B is relieved and springs outwardly the bar F will descend to its original position. The voter thereupon operates a second key and the ratchet G is moved one tooth more. The voter then operates a third key, and upon this movement of the ratchet G the deep notch K, which has advanced one tooth at each movement, is brought around into line with the point i' of the pawl I, so that said point enters the deep notch, and thus allows the whole pawl I to move over far enough to cause its other point i^2 to enter a tooth f^3 of the bar F, and thereby to hold said bar up. In thus holding the bar up the third key cannot return to its outer position, for the reason that it is held by its bottom notch c', fitting over the notch of the bar F. This holding of the key necessarily holds the locking-bar E, heretofore fully described, and which has been moved up by the keys, in an elevated position, because it cannot come down, for the reason that the key-body is passed through it, and as it cannot come down it locks all the other keys, and no more of them can be operated. In like manner if four candidates are to be voted for the stop g' is so regulated as to remove the deep notch K of the ratchet-wheel from the point i' of the pawl I a distance of four teeth of the ratchet, so that it will not be brought around into alignment with said point i' until four of the keys have been operated, and in this case the fourth key will be locked in a pressed-in position by the holding up of the bar F, and this pressed-in position of the key will, in turn, hold up the bar E, and said bar will prevent the movement of any other keys.

In order to relieve the bar F, and thereby to relieve the locking-bar E, there is in the upper portion of the case A a sliding bar L, having upon it at one place an inclined plane l. This inclined plane l is adapted to operate upon and to depress a pin m in a vertically-moving rod M, which has upon it lower down an inclined plane m', adapted to operate against a pin or stud i^3 on the pawl I. By moving the sliding bar L it will cause the rod M to move downwardly, and said rod, through its inclined plane m', acting on the pin or stud i^3, will cause the pawl I to retract, thereby withdrawing its front point i^2 from the teeth f^3 of the bar F and allowing said bar to descend, and also withdrawing its rear point i' from the deep notch K of the ratchet-wheel G and allowing said ratchet-wheel to spring back to its normal position, defined by the contact of the stops g' and J. The descent of the bar F, as thus described, will release

the last key pressed in, which said key, springing outwardly again, will release the locking-bar E, so that the parts thus return to their normal position.

The bar L is adapted to be operated automatically by the closing of the door of the booth upon the outgoing of the voter. In order to effect this there is secured to the door of the booth (which door I have not herein shown) a segment-bar N, the end of which is adapted to come in contact with the lug l' on the bar L when said door is closed, thereby moving said bar over.

The indicating mechanism may be of any suitable character, the reading being effected by means of an ordinary register operated by a combination of multiple wheels, such as I have shown by O. The first of each of these wheels is adapted to be operated by means of a short lever P, the end of which is in the line of the point of the inclined plane c of its respective key. As this point of the key projects through the bars E and F, as heretofore described, it comes in contact with the lever P, and by raising said lever causes the partial turning of one of the multiple wheels O and thereby effecting the registration of the movement. The lever P remains in a slightly-elevated position when thus moved, so that the operation of the same key a second time will not have the effect of registering again. The connection between each lever P and the wheel of the series O is by means of a pawl p engaging the ratchet-teeth of said wheel. In order to effect the return of the lever P to its normal position, ready for a repetition of the operation, I extend the rod M downwardly past all of the levers, and I have pins or studs m^2 on said rod, which are adapted to come down, as the rod descends, upon said levers and return them to normal position.

In cases where there are a great number of candidates to be voted for for the same office and it is undesirable to arrange the keys representing said candidates in one line I have provided for arranging them more compactly in parallel lines. To do this I have only to connect the locking-bars of the parallel lines as I have shown in Fig. 4. In this case the parallel locking-bars E are provided with notches e^7 in their edges directly opposite one another. Between these two bars extend transversely-slidable locking-links e^8, the ends of which are formed to conform to the notches e^7 of the two bars. The length of the intervening links e^8 is such that when the point on one side is entered into the notch of the bar on that side the point on the other side is withdrawn from the notches of the other bar by a distance equal to the depth of such notch, so that the points of said links are in the general plane of the edge of said other bar. When, now, either of the bars is moved upwardly and is held up in a locked position, as heretofore described, the points of the links will bear against the plain or unnotched side of said bar, so that the other bar cannot be lifted, for the reason that the other points of the links engaging said bar hold it, and said links cannot be moved over sidewise because their other points bear directly against the unnotched edge of the lifted bar. Thus the lifting and holding of one of the bars will lock all the others of the series, so that no more keys can be operated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a voting machine, and in combination with slidable keys having inclined points, a slidable locking bar having notches adapted to be engaged by the inclined points of the keys whereby when the bar is in its normal position, the points of all the keys will engage the notches of said bar, but when raised by any one of the keys, the notches of the bar will be out of line with the points of all the other keys, so that the latter cannot be operated, a slidable spring-actuated pawl adapted to engage teeth or notches on the upper portion of the slidable pawl, to hold the bar elevated, and a slidable bar having an inclined plane to engage said pawl and withdraw it from its engagement with the toothed surface of the notched bar and allow the latter bar to resume its normal position.

2. In a voting machine, and in combination with slidable keys having inclined points, a slidable bar arranged on end and adapted to slide vertically, having notches adapted to be engaged by the inclined points of the keys, said notches being so located that when the bar is in normal position, the points of all the keys will engage the notches of said bar, but when raised by any one of the keys, the notches of said bar will be out of line with the points of all the other keys whereby the latter cannot be operated, a spring-actuated pawl slidable at right angles with the movement of the locking bar, and adapted to engage the same at its upper portion, to hold the bar in the position to which it is moved by one of said keys whereby the others are locked, and a bar slidably mounted approximately parallel with the locking bar, having an inclined plane to engage a projection of the pawl and retract said pawl whereby the locking bar is released for the repetition of the operation.

3. In a voting machine, the combination, of slidable keys the upper edges of which are formed with inclined planes and the lower edges with notches c', a slidable locking bar having notches adapted to be engaged by the inclined points of the keys and to in turn have their end walls engage the said notches c' whereby the engaged key cannot return to operative position, a pawl slidably mounted at right angles with the movement of the locking bar, and adapted to engage the upper portion of the same, to hold the bar in the position to which it is moved by one of the keys, whereby the others are locked, and a bar slidably mounted parallel or approxi-

mately parallel with the locking bar, and having an inclined surface to engage a projection of the pawl, and retract said pawl whereby the locking bar is released for a repetition of the operation.

4. In a voting machine, the combination of slidable keys having the inclined points and locking notches, the slidable locking bar having the notches adapted to receive the inclined points of said keys, said notches being so located that when the bar is raised by the passage through one of its notches of one of the keys, all the other notches will be thrown out of line with the points of the other keys, a second slidable bar, having notches in line with the points of said keys and through which said points are adapted to move, a means for holding said second bar up whereby the key is locked by engagement with its notch, and the locking bar held up to prevent the operation of the remaining keys, and a means, operated by the movement of said second bar, for controlling at predetermined times, the means for holding said bar up.

5. In a voting machine, the combination of slidable keys having the inclined points and locking notches, the slidable locking bar having the notches adapted to receive the inclined points of said keys, said notches being so located that when the bar is raised by the passage through one of its notches of one of the keys all its other notches will be thrown out of line with the points of the other keys, a second slidable bar having notches in line with the points of said keys, and through which said points are adapted to move, a pawl on said bar, a ratchet with which said pawl engages, and a pawl controlled by said ratchet for engaging, at predetermined times, the second slidable bar and holding it up whereby the key is locked by engagement with its notch, and the locking bar held up to prevent the operation of the remaining keys.

6. In a voting machine, the combination of the slidable keys with their inclined points and underlying notches, the slidable locking bar, with its notches as described, the second slidable bar with its notches and pawl, the ratchet-wheel with which the pawl engages, said ratchet-wheel having a deep notch and a controlling spring, variable stops for regulating the position of the deep notch of the ratchet-wheel, and the two-pointed spring-controlled pawl adapted to engage the ratchet-wheel, and when engaging the deep notch to also engage the second slidable bar whereby said bar is held elevated and the key last operated is locked to hold the locking bar up and prevent the operation of the remaining keys.

7. In a voting machine, the combination of the slidable keys with their inclined points and underlying notches, the slidable locking bar, with its notches as described, the second slidable bar with its notches and pawl, the ratchet-wheel with which the pawl engages, said ratchet-wheel having a deep notch and a controlling spring, variable stops for regulating the position of the deep notch of the ratchet-wheel, the two-pointed spring-controlled pawl adapted to engage the ratchet-wheel, and when engaging the deep notch to also engage the second slidable bar whereby said bar is held elevated and the key last operated is locked to hold the locking bar up and prevent the operation of the remaining keys, and a movable rod and devices thereon for releasing the two-pointed pawl.

8. In a voting machine, the combination of the slidable keys with their inclined points and underlying notches, the slidable locking bar, with its notches as described, the second slidable bar with its notches and pawl, the ratchet-wheel with which the pawl engages, said ratchet-wheel having a deep notch and a controlling spring, variable stops for regulating the position of the deep notch of the ratchet-wheel, the two-pointed spring-controlled pawl adapted to engage the ratchet-wheel, and when engaging the deep notch to also engage the second slidable bar whereby said bar is held elevated and the key last operated is locked to hold the locking bar up and prevent the operation of the remaining keys, a movable rod and devices thereon for releasing the two-pointed pawl, and the means for operating the rod M, consisting of a sliding bar L with its inclined plane and the bar N on the door of the booth for operating the bar L.

9. In a voting machine, the combination of the keys having the inclined points, the wheels of the registering mechanism, the pivoted levers having the pawls engaging said wheels and lying in the path of movement of the inclined points of the keys, and the means for returning said levers consisting of the sliding rod with its pins.

10. In a voting machine, the combination of the slidable keys with their inclined points and underlying notches, the slidable locking bar, with its notches as described, the second slidable bar with its notches and pawl, the ratchet-wheel with which the pawl engages, said ratchet-wheel having a controlling-spring and a deep notch, variable stops for regulating the position of the deep notch of the ratchet-wheel, the two-pointed spring-controlled pawl adapted to engage the ratchet-wheel, and when engaging the deep notch to also engage the second slidable bar whereby said bar is held elevated, and the key last operated is locked to hold the locking bar up and prevent the operation of the remaining keys, means for releasing the two-pointed pawl consisting of a movable rod, the wheels of the registering mechanism, the levers P for operating said wheels and adapted to be operated by the inclined points of the keys, and the pins on the movable rod for returning the levers.

11. In a voting machine, the combination, of

parallel locking bars provided with notches in their edges, directly opposite one another, and the transversely sliding links, the ends of which conform to the notches of the bars, said links having such a length that when the points on one side are entered into the notches of the bar on that side, the points on the other side are withdrawn from the notches of the other bar, and bear against the unnotched surface of the bar.

In witness whereof I have hereunto set my hand.

THOMAS D. STROUP.

Witnesses:
S. H. NOURSE,
WM. F. BOOTH.