

4 Sheets—Sheet 1.

No. 586,031.

Patented July 6, 1897.

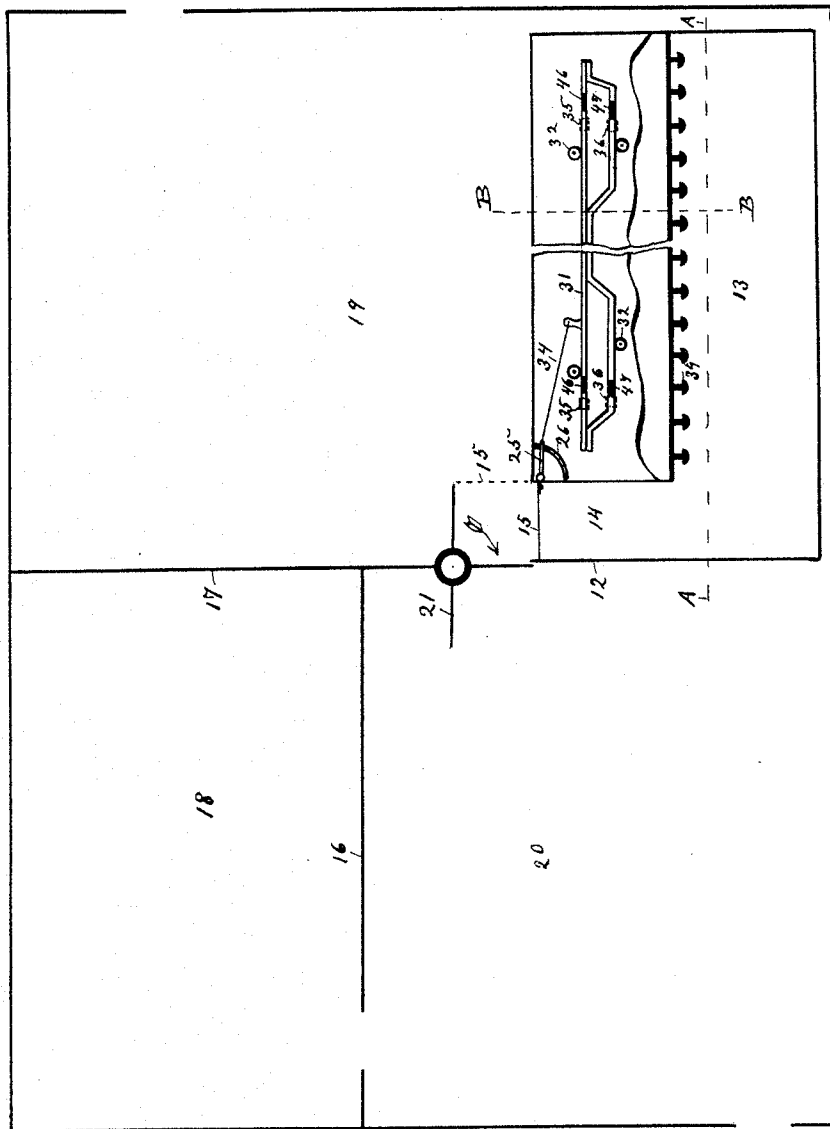


Fig. 1.

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R. A. HART.
VOTING MACHINE.

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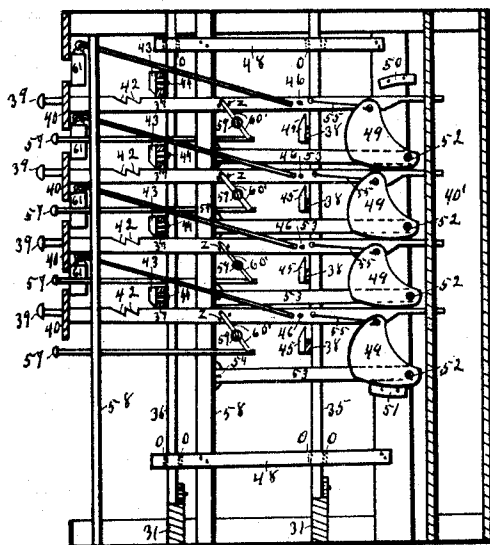


Fig. 2.

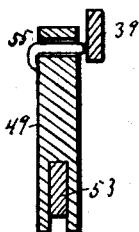


Fig. 3.

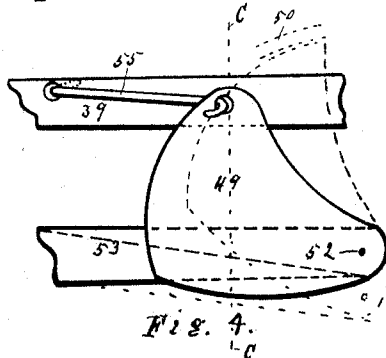


Fig. 4.

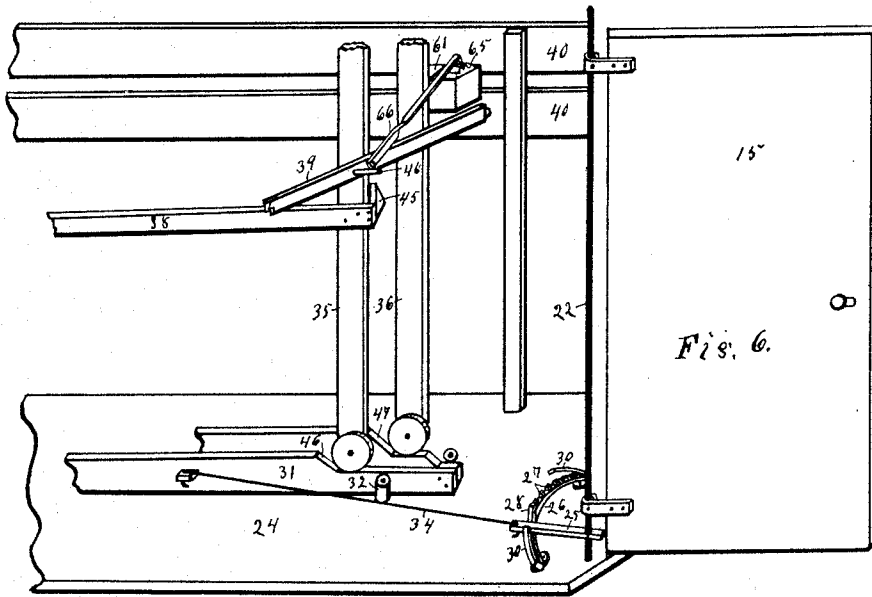
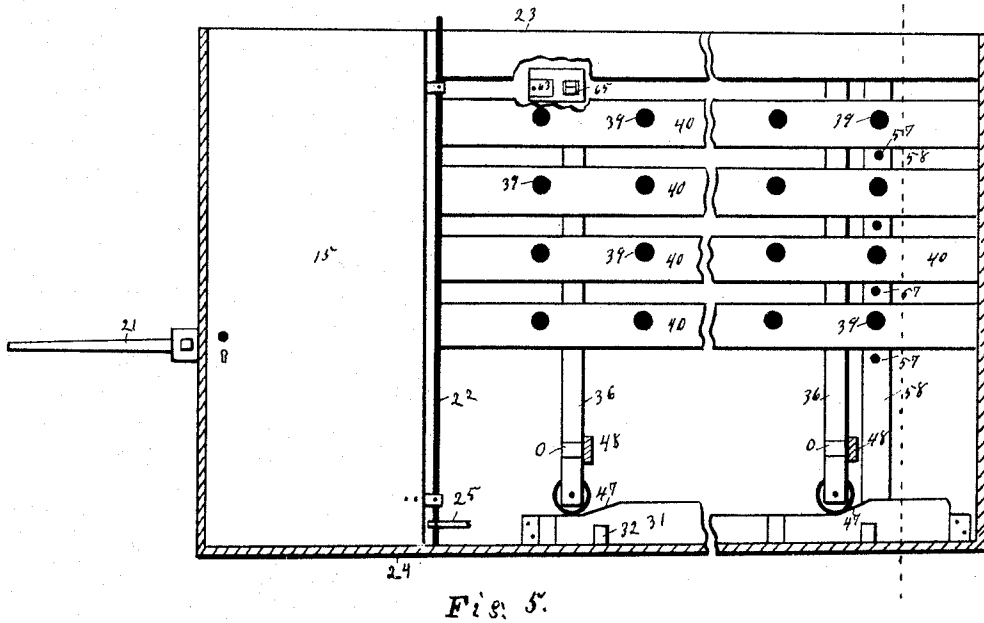
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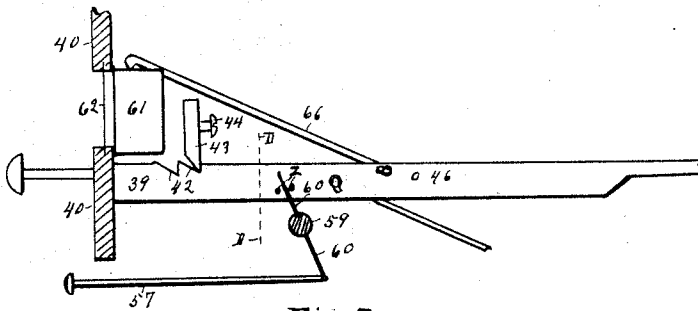


Fig. 7.

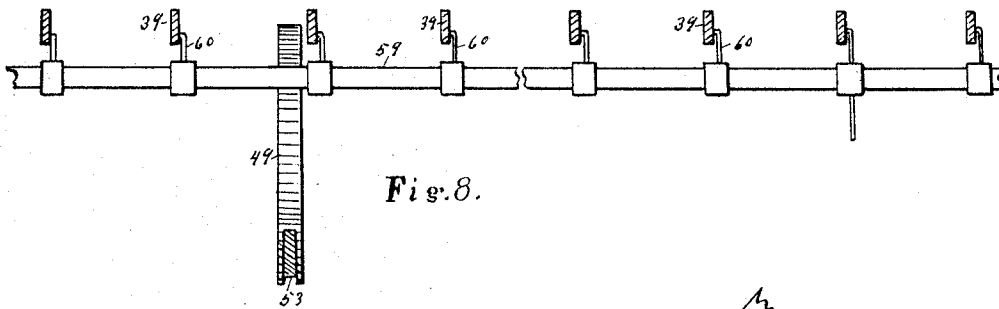


Fig. 8.

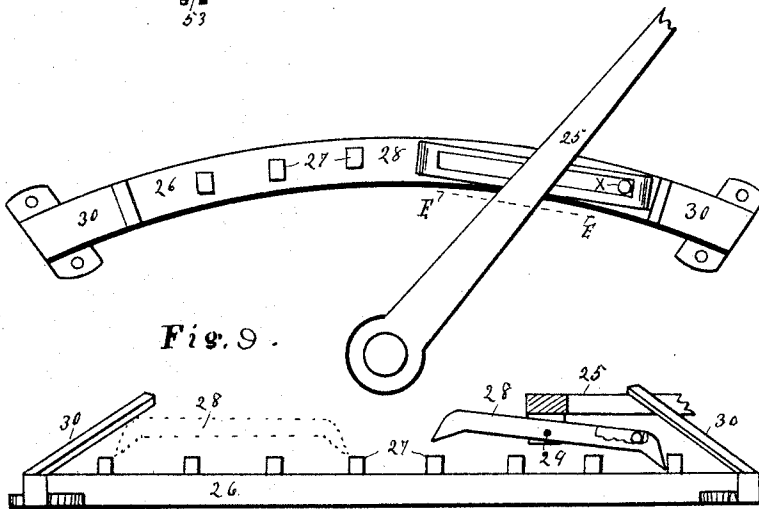


Fig. 9.

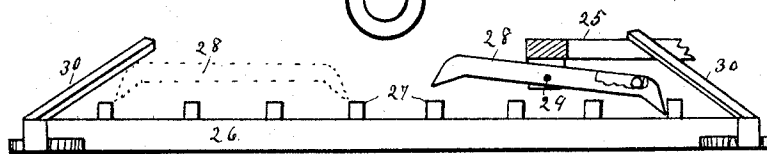


Fig. 10.

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UNITED STATES PATENT OFFICE.

RUSSELL A. HART, OF BATTLE CREEK, MICHIGAN.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 586,031, dated July 6, 1897.

Application filed November 2, 1895. Serial No. 567,775. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL A. HART, a citizen of the United States, residing at Battle Creek, in the county of Calhoun, State of Michigan, have invented a new and useful Voting-Machine, of which the following is a specification.

This invention relates to that class of voting-machines in which the keys for the voter's use are locked after the vote is tallied, to prevent repeating, and released to allow their use by the next voter by the swinging of the door of the closet in which the voter stands when operating the keys, and in which sliding cams are employed, attached to the door and arranged to raise and lower the frames to which the locking means is attached in locking and unlocking the keys.

One object of the invention is to facilitate the operation and prevent the door acting, unless it makes a full sweep, by the described improvements in the double sliding cams and means of attaching the same to the door.

Another object is to prevent voting for the same candidate more than once, and also for the same officer in any other party, by means of a series of eccentric locking-cams, as explained.

A further object is to improve the means whereby the whole ticket can be voted by a single action of the voter.

Another object is to enable the voter to see that his vote is tallied, when he manipulates the key, by having a portion of the mechanism of the tally-box presented to his view.

Another object is to regulate the course of the voters by means of a stile in a peculiar relation with the door of the voting-machine.

Other objects appear in the following description and claims.

In the drawings forming a part of this specification, Figure 1 is a plan of the machine, showing its arrangement in a room set apart for precinct election purposes, a portion of the upper closure of the machine being broken away; Fig. 2, a sectional elevation on line B B in Fig. 1, looking from a point at the right; Fig. 3, a section on line C C in Fig. 4, looking from a point to the right; Fig. 4, enlarged details from Fig. 2,

showing the operation of one of the eccentric cams; Fig. 5, a sectional elevation, enlarged, taken on line A A in Fig. 1, looking against that side which is faced by the voters when they manipulate the voting-keys, the same being a view looking against Fig. 2 from a point at the left; Fig. 6, an enlarged perspective of broken details, looking from a point near the turnstile in Fig. 1 against that side of the machine which would be opposite to that shown in Fig. 5; Fig. 7, an enlarged view of a voting-key and connections in Fig. 2; Fig. 8, a section on line D D in Fig. 7, looking from a point at the left and the same as looking from a point at the left of Fig. 2; Fig. 9, an enlarged broken plan of door attachments in Fig. 6; and Fig. 10 is a sectional elevation on line E E in Fig. 9.

Referring to the parts of the drawings pointed out by numbers, 12 in Fig. 1 is the rectangular closure of the machine, the same having a space 13 in the rear of the machine proper and a passage-way 14 leading into said space, which is closed by a door 15.

In use the machine for convenience may be set in one corner of a room, as here shown. When thus used, the wall of the room might serve in lieu of the back closure of the machine, and, as shown, two partitions 16 and 17 are fixed in the main room temporarily, so as to make an inspector's room 18, a room 19 for the voters, and a room 20, into which the voters pass after having voted.

Between the corner juncture of the partitions 16 and 17 and the contiguous corner of the machine I place a stile 21, capable of turning only in the direction indicated by the arrow, so the voters pass from room 19 through the door 15, and after voting pass out into the room 20, so those who have voted cannot pass into the room among those who have not voted.

The door 15 is hinged to the machine by means of an upright rod 22, which has bearings at the ends in the upper and lower closures 23 and 24 of the machine. A ratchet-lever 25, Figs. 1, 6, 9, and 10, is rigidly attached to the lower end of the hinging-rod 22 and extends across a bowed ratchet-bar 26, which has a series of upwardly-extending teeth or lugs 27 and an oblique overhanging

arm 30 at each end, beneath which the ends of the dog 28 pass when the door 15 is swung to its limit in either direction to open or close it. This dog 28 is hollowed in from the top and contains a weight-ball X, adapted to roll to the lowest end of the dog. Said dog is centrally pivoted at 29 to the ratchet-lever 25, Fig. 10, in position to engage the ratchet-teeth 27. When one end of the dog runs under one of the arms 30, it tilts and the ball X rolls to that end, carrying it down and holding it down, so that the ratchet-lever 25 can pass over the ratchet-bar 26 in the opposite direction, but cannot be stopped at any intermediate points between its end limits and swung in the other direction, since this is prevented by the then lowest end of the dog catching against one of the ratchet-teeth 27, as at the right in Fig. 10. Thus the door 15 has to make a full sweep—that is, it has to be entirely opened or entirely closed before it can be swung in the opposite direction—for which reason the voter with a disposition to repeat cannot manipulate the door when partly open to release keys he has once used in voting for the purpose of using them again.

On the bottom or floor of the machine beneath the voting mechanism is a double cam-slide 31, held or guided by rollers 32, Figs. 1, 2, and 6. Only one end of the double cam-slides is shown in Fig. 6, the balance being broken away, while in Fig. 5 it is shown broken into, but Fig. 1 shows it complete in plan view. A connecting-rod 34 is pivotally attached to the double cam-slide 31 and the ratchet-lever 25.

Above the double cam-slide 31 are two parallel frames composed of the upright posts 35 and 36, one at each end of each frame, and of the longitudinal slats 37, attached to the posts 36, Fig. 2, and of longitudinal slats 38, attached to the posts 35, Figs. 2 and 6. These posts are shown dotted in Fig. 1. The lower ends of these posts are provided with rollers to traverse the double cam-slide 31, as explained below. Only one of the slats 38 is shown in Fig. 6 and none of the slats 37, but it will of course be understood that a series of these slats are employed in each frame, as in Fig. 2. These frames move in a vertical manner by the means and for the purposes explained farther on.

Transversely through the machine and adapted to play endwise therein are a series of rows of keys 39 for the voter's use, Figs. 1, 2, 6, 7, and 8. These keys have sliding bearings at one end in the slats 40 on the voter's side of the machine proper and at the other end in the wall 40' at the other side, Fig. 2.

The slats 40 may be of the desired width, according to the number of rows of keys and the size of the machine. The design is to have as many rows of keys 39 as there are parties in the field and as many keys in a row as there are offices to fill on each ticket. I have

shown four rows to indicate four parties, but the number may vary. I have merely shown a series of keys in each row to illustrate the idea without regard as to what may be required in given instances.

Each key is provided with notches 42 in the upper edge just back of the slats 40. The vertically-movable frame, which has the posts 36, is provided with as many dogs 43 as there are keys, which dogs are adapted to drop by gravity into a notch of its key 39 when said key is pushed in by the voter in the act of voting, thus preventing the key from being drawn out again by the voter for the purpose of operating the key again to repeat his vote. These dogs 43 are attached to the slats 37 by screw-bolts 44, passed loosely through vertically-elongated slots in said slats and screwed into the dogs, Fig. 2. By this means each individual dog will drop by gravity into its respective notch 42, and when the frame to which the dogs are attached is raised by the cam-slide 31 they will be raised out of their notches. This action takes place when the door 15 is swung open, as explained farther on. The other vertically-movable frame is provided with a series of upwardly-projecting wedges 45, Fig. 6, in position to pass back of pins 46', which pins project laterally from the keys 39 and thus force the keys out again to their normal position, as before, being operated by the voter. This action takes place just after the dogs have been raised out of the notches 42. To make it clearer how this is accomplished, referring to Figs. 1, 2, 5 and 6 it will be observed that the double cam-slide 31 has two sets of inclined cam-surfaces 46' 47, there being two of said surfaces in a set, and those of one frame being a little in advance of the others. Thus when the door 15 swings open and draws on the double cam-slide the cam-surfaces 47 will first act to raise the frame over them and release the dogs 43, and then the cam-surfaces 46 following up act to raise the frame over them, which causes the insertion of the wedges 45 back of the pins 46, and, as stated, forces the keys out again for the use of the next voter.

In Figs. 2 and 5 are shown cross-strips 48, to which are attached each side of the posts of the vertically-movable frames guides O to said posts, or any suitable plan may be adopted.

Having shown how it is impossible for a voter to repeat his vote for the same candidate, I will now describe the means whereby he is prevented from voting for a man for the same office on any other ticket. I provide as many eccentric cams 49 as there are rows of keys 39, arranged in the machine one over the other and between two fixed stops 50 and 51, Figs. 2 and 4. These eccentric cams are pivotally attached at 52 to the ends of bars 53, which bars shut into a groove in the under side of the cams, Fig. 3, and are pivoted to a fixed support at 54. A rod 55 pivotally connects the cams 49 with the keys 39. By this

means when one of the keys 39 is pushed in in the act of voting, the eccentric cam for this key will be swung up, crowding against the other cams and fixed stops and filling all the space between said fixed stops. To illustrate: If the uppermost key were pushed in, the uppermost cam by rising on its pivot would crowd against the uppermost stop 50 and also against the cam next below the uppermost cam and thus fill all the space, so that no other push-key can be pushed in. If the intermediate keys are pushed in—that is, the keys between the uppermost and lowermost keys—their particular cam will crowd against the cam above and below it, and thus take up all the space. If the lowermost key be pushed in, its cam will crowd against the lower stop 51 and against the cam above the lowermost cam and thus fill the space, and thus making it impossible for the voter to operate a like key in any other row of keys. Hence he cannot vote for more than one man for the same office on different tickets, and, as stated, he cannot pull the key out again and make room to push in some other key, for it is held locked by the dogs 43; but when the door 15 is swung open the keys are released and pushed out again, as stated, and hence the eccentric cams 59 are swung down again, ready for the next voter.

At 57 are as many pull-keys as there are tickets or parties represented by the construction, the same being four, as here shown, and having slide-bearings in uprights 58, Figs. 2 and 5. These keys are for use when the voter desires to vote a straight ticket. There is a rotatable shaft 59 below each row of keys 39, Figs. 2, 7, and 8. This shaft is provided with upwardly-extending arms 60, which pass loosely between pins Z on the side of the keys 39, Figs. 2 and 7, and it is also provided with a downwardly-extending arm 60', pivotally attached to the inner end of the pull-key 57. By pulling on one of said keys the shaft 59 is rotated and all of the push-keys of this row are pushed in. When the push-keys are operated, the vote is tallied by a tally-box of any suitable design. I locate the tally-boxes 61 back of an opening over the keys, which opening is closed by a sliding glass 62, Fig. 7. When in this position, facing the voter, he can see that his manipulation of the keys count, since the boxes are provided with a little opening in front face, through which can be seen the movement of the ratchet-wheels 65, Fig. 5. These boxes have a sliding door 63, covering the tally-numbers. The ratchet-wheels 65, Figs. 2 and 6, are operated by a hooked lever 66, attached to the push-keys, or the keys might be made to pull.

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

1. In a voting-machine, the combination of push-keys for the voter's use, said keys being provided with lock-notches and a lateral

projection in the rear thereof, vertically-movable frames, one being provided with dogs adapted to fall by gravity into said notches, the other being provided with upwardly-projecting wedges adapted to crowd back of the lateral projections of the keys and push them out when the frames are raised, a double cam-slide adapted to raise said frames one in advance of the other, a hinged door, and means connecting the door with the cam-slide to cause the latter to operate and raise the frames when the door swings on its hinge, substantially as set forth.

2. In a voting-machine, the combination of push-keys for the voter's use, said keys being provided with lock-notches and a lateral projection in the rear thereof, vertically-movable frames, one being provided with dogs adapted to fall by gravity into said notches, the other being provided with upwardly-projecting wedges adapted to crowd back of the lateral projections of the keys and push them out when the frames are raised, a double cam-slide adapted to raise said frames one in advance of the other, a hinged door, a ratchet-bar, a lever having a ratchet pivoted thereto, and adapted to tilt down at the ends, the same being hollow and provided with a weight-ball adapted to hold the ends of the ratchet tilted down when the ratchet-lever makes its sweep during the swing of the door, and a rod pivotally connecting the lever and cam-slide, substantially as set forth.

3. In a voting-machine, the combination of the vertically-movable frames, the voting-keys having the lock-notches, the dogs adapted to fall by gravity in said notches, a hinged door for entering the booth, a ratchet provided with the overhanging end arms, a lever adapted to be swung by the action of the door in swinging it on its hinges, and provided with a pawl pivoted thereto in a manner to be tilted by its ends passing beneath the overhanging arms of the ratchet, substantially as set forth.

4. In a voting-machine, the combination of vertically-movable frames having rollers at each end at lower side, a double cam-slide having the inclined surfaces on each, those on one being in advance of those on the other, a hinged door provided with a lever, and a connecting-rod attached to said lever and cam-slide, substantially as set forth.

5. In a voting-machine, the combination of push-keys for the voter's use, the eccentric cams and pivoted levers to which said cams are pivoted, stops between which the cams are located, and rods pivotally connecting the push-keys and cams whereby the pushing in of one key prevents the pushing in of any other key, substantially as set forth.

6. In a voting-machine, the combination of the push-keys for the voter's use, said keys having the lock-notches and lateral projections in rear thereof, the vertically-movable frames one of them being provided with the

gravity-falling dogs, the other being provided with upwardly-projecting wedges adapted to crowd back of the lateral projections of the keys and to push them out when the frames
5 are raised, substantially as set forth.

7. The combination of a row of push-keys for voter's use provided with lock-notches and the rear lateral projections, the vertically-movable frames one being provided with
10 gravity-falling dogs and the other with upwardly-projecting wedges, a pull-key, a rotatable shaft provided with upwardly-extending

arms for operating the push-keys and a downwardly-projecting arm pivotally attached to the end of the pull-key, substantially as set
15 forth.

In testimony of the foregoing I have hereunto subscribed my name in the presence of two witnesses.

RUSSELL A. HART.

Witnesses:

W. H. EDWARDS,

W. H. SMITH.