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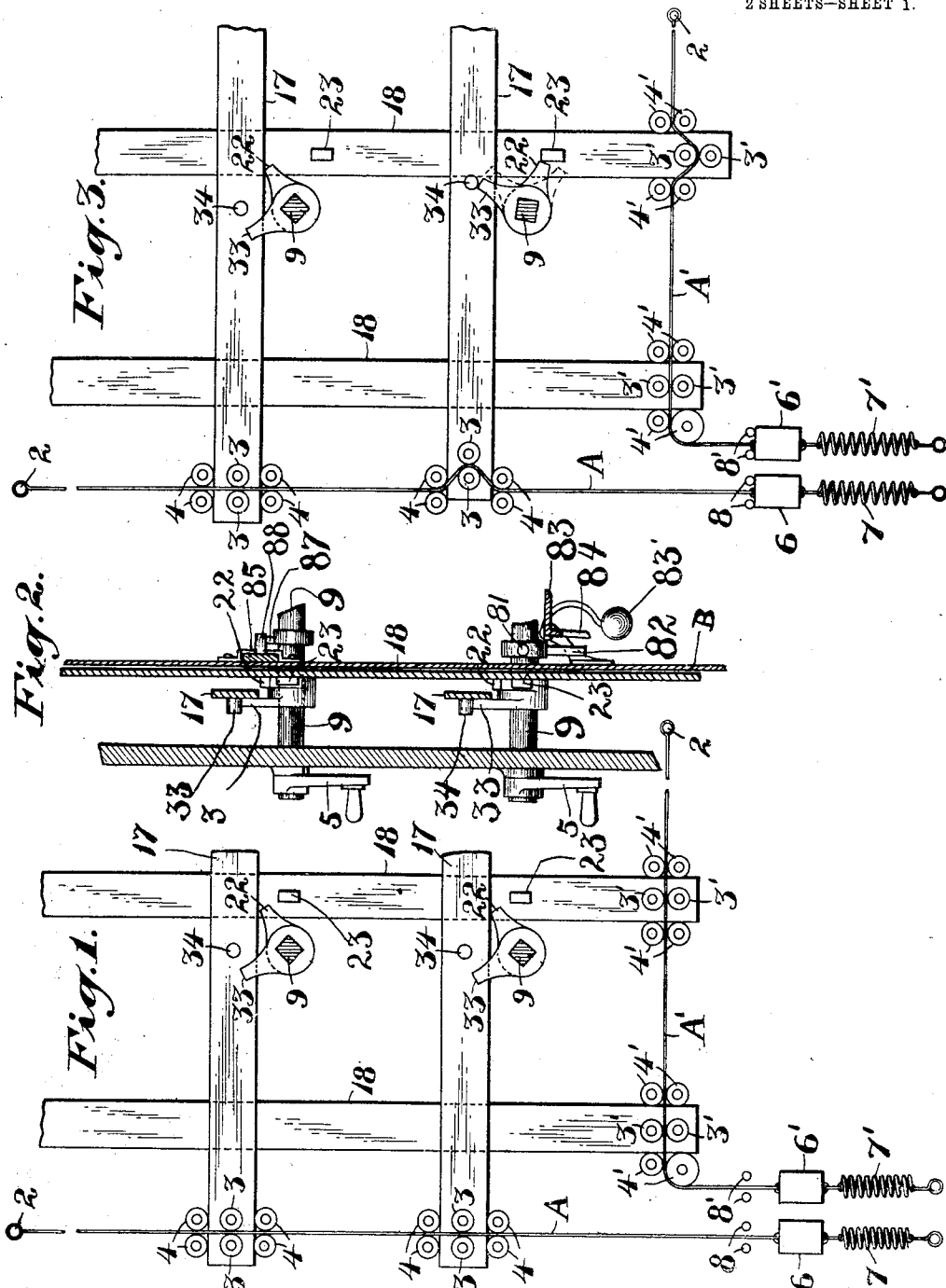
PATENTED JUNE 11, 1907.

W. M. CUTTER & W. A. SUTFIN.

VOTING MACHINE.

APPLICATION FILED OCT. 15, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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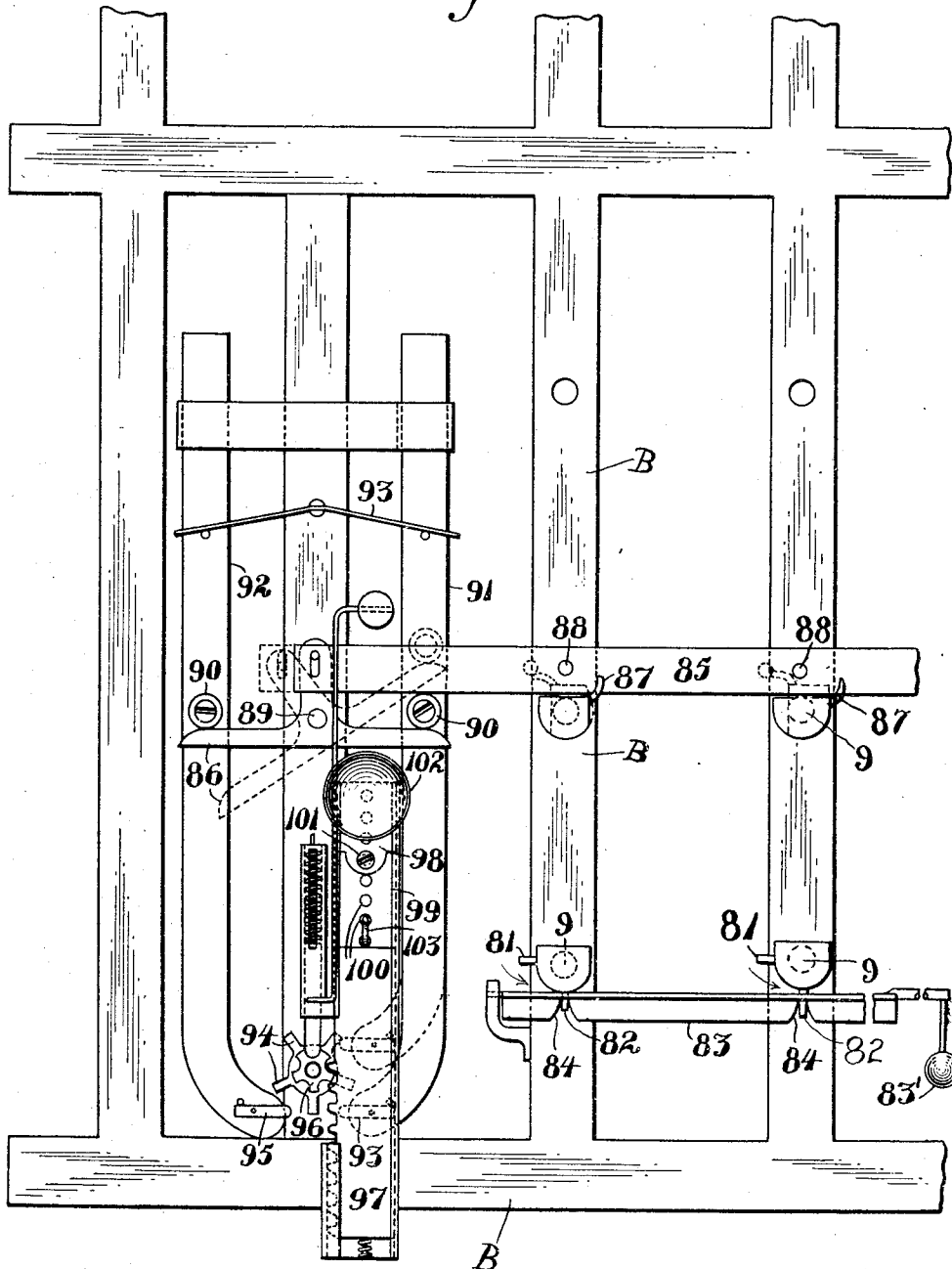
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2 SHEETS—SHEET 2.

Fig. 4.



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F. C. Fiedner
J. H. Fiedner

Inventors,
William M. Cutter and
Willis H. Sutfin.
By *Geo. H. Strong*
Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM M. CUTTER AND WILLIS A. SUTFIN, OF MARYSVILLE, CALIFORNIA;
SAID SUTFIN ASSIGNOR OF ONE-HALF OF HIS RIGHT TO SAID CUTTER.

VOTING-MACHINE.

No. 856,997.

Specification of Letters Patent.

Patented June 11, 1907.

Original application filed August 2, 1905, Serial No. 272,316. Divided and this application filed October 15, 1906.
Serial No. 338,973.

To all whom it may concern:

Be it known that we, WILLIAM M. CUTTER and WILLIS A. SUTFIN, citizens of the United States, residing at Marysville, in the county of Yuba and State of California, have invented new and useful Improvements in Voting-Machines, of which the following is a specification.

Our invention relates to voting machines and especially to interlocking mechanisms therefor. Its object is to provide means in a voting machine whereby the machine may be quickly changed from a single candidate machine to group-candidate machine, or vice versa; or from either a single-candidate or group-candidate machine to a partly single and partly group-candidate machine; and which will make it absolutely impossible for any one voter to vote more than once for any one candidate, or more than once for any single-candidate office, or for more than the proper number of candidates for any group of candidates.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of our mechanism for preventing the simultaneous actuation of any two keys in the machine. Fig. 2 is a section of the same taken through one of the vertical locking-bars. Fig. 3 is a view similar to Fig. 1, showing the locking bars in position when being acted on by a key. Fig. 4 is a side elevation of the group interlocking mechanism.

5 represents the voting keys generally arranged in vertical and horizontal rows: the vertical rows corresponding to the parties, Republican, Democratic, &c., and the horizontal rows corresponding to candidates or offices, as mayor, city attorney, judges, etc. Each key has a stem 9 journaled to turn in a fixed part B (Fig. 2) of the machine, and each stem carries the arms or lugs 22—33 arranged approximately at right angles to each other.

17—18 represent horizontal and vertical slidable locking bars disposed in suitable relation to the horizontal and vertical rows of voting keys so that on the turning of a key, its lug 22 will engage a lug or projection 23 on

a corresponding vertical bar 18 to reciprocate the latter, and the lug 33 will engage a lug or projection 34 on a corresponding horizontal bar 17 to reciprocate it; the reciprocation of these two bars 17—18 operating temporarily to lock every other key in the machine by the following means:

A—A' represents two tapes or ribbons of steel or other suitable, tough, flexible material, each having one end fixedly secured to a respective anchorage 2. One of these tapes as A is arranged vertically and is adapted to pass between the pins or rollers 3 on the horizontal bars 17 and between upper and lower fixed pins or rollers 4, and are for the purpose of locking the horizontal bars 17; and the other tape A' is arranged horizontally and is adapted to pass between the pins or rollers 3' on the vertical bars 18 and between the upper and lower fixed pins or rollers 4', and is for the purpose of locking the vertical bars 18. 6 is a weight secured to the vertical tape A and 6' is a similar weight secured to the tape A'. The function of the weights is to maintain the tapes taut and to afford stops to engage the stop pins 8—8' and limit the movement of the tapes. The action of the weights 6—6' may be supplemented by the springs 7—7'. The disposition of the pins or guides or obstructions 8—8' with respect to the weights or stops 6—6' on the tapes is such that when a key stem 9 is turned in one direction or to the right as in voting, the inner pins 3—3' on the bars 17—18 will press against their respective tapes, bend the same between the inner and outer fixed pins 4—4' and lift the weights until the latter engage the obstructions 8—8'. This places the tapes on tension and as they are non-stretching it is manifest that it would be impossible while the tapes are on tension to move any of the other bars 17—18; and as the keys cannot be turned into voting position without moving some of the bars 17—18, it will be equally manifest that an absolute lock is provided against the simultaneous operation of two or more keys in the machine.

Each of the several bars 17—18 is independently operable, and each is adapted to be maintained in a normal position of rest so as to be capable of reciprocation in either direction: that is when a key is turned as before

described to the right as in voting, the horizontal bars are moved in and the vertical bars are moved downward, the lugs or arms 22—33 passing over their respective lugs or projections 23—34 as the key reaches the end of its movement, allowing the bars to fly back to normal.

Fig. 1 represents normal unvoted position. In Fig. 3 the full lines represent the intermediate position of the lugs 33—22 during the voting operation, and just as they are about to pass their projections 34—23; while the dotted lines of lugs 33—22, Fig. 3, represent their full, voted position. In Fig. 1, the lugs 33—23 are shown at their limit of movement in one direction, and in Fig. 3 the dotted position of the lugs 33—22, represent their limit of movement in the opposite direction. When lugs 33—22 are at their limit of movement in either direction the tapes A—A' are slack as shown in Fig. 1. It is to be remembered that the sole function of the tapes is to prevent the simultaneous operation of two or more keys. Other means will be shortly described by which it is made impossible to vote one key after another for the same office where only one candidate is to fill the office.

If after voting, and with the lugs 33—22 in dotted line position Fig. 3 and the tapes slack, the key is turned back to initial position as occurs where the voter wishes to change his vote, the arms 22—33 engage the lugs or projections 23—34 to move the bars 17—18 in the opposite direction; the arms 22—33 passing the lugs or projections as the key approaches initial unvoted positions. The latitude of movement allowed the bars and keys by the steel-tapes A—A' and the arrangement of the projections 23—34 with respect to the arcs of movement of the arms 22—33 are such as to permit of the foregoing described actions and to be productive of the desired results.

Having described the means for preventing the simultaneous actuation of any two keys, we will now explain the mechanism whereby a voter is prevented from voting for two candidates for one office where only one candidate is to be elected, or from voting more than the correct number for a group-candidate office where there are to be a plurality of candidates elected to the same position.

First as to single-candidate voting: The keys representing the names of all the candidates of any one single-candidate office, as "Mayor," "Assessor," etc., are arranged in a horizontal line just as the keys of each party are arranged in vertical line. Each key-stem of a single candidate row carries in addition to lugs 33—22 two pins 81—82 arranged substantially at right angles to one another, and one behind the other and adapted to engage opposite sides of a horizontal rockable angle

bar 83. This bar has notches 84 in one edge disposed relative to pins 82. The pins 81 are so arranged with respect to the other flange of the angle bar that when any key is turned in a voting position, the pin 81 of that key will press down on the angle bar and rock the latter to cause the notches 84 to engage all the pins 82 of the other keys in that row and lock all these other keys against turning. The angle-bars are counterweighted as shown at 83' to cause them to stand normally with their unnotched flange substantially horizontal and in the position to be engaged by the pins 81 when any key is turned into voting position. Turning a key in the direction of the arrow Fig. 4 to register a vote, causes pin 81 (Figs. 2 and 4) to hit the horizontal unnotched flange of the angle bar 83 to rock the same and cause the vertical pins 82 on all the other key stems to be caught in the respective notches 84 in said bar 83. Of course the pin 82 on the key stem voted moves out of the way of engagement by the bar 83 before the latter begins to rock. As there is one rock bar 83 for each single candidate office, it naturally follows that on turning a key of any candidate for that office all the other keys representing the same office are locked against movement and remain locked until the voted key is returned to initial position. It has previously been shown how two keys are prevented from simultaneous actuation by tapes A—A' so there is consequently no possible chance of an elector voting for more than one candidate for any single candidate office. Nevertheless, if it is desired to change the vote, the several keys are all released by simply turning back the voted key into initial unvoted position; this allows the angle bar to rock and release the several pins 82.

Where the vote is for "group-candidates" as judges, supervisors, alderman, &c., the following checking means are employed: If, say, five judges were to be elected, the five candidates of each party would be arranged in their proper vertical, party-column and all the candidates of all the parties for this group-office would be arranged in horizontal lines. Instead of now using an angle bar lock as 83, which prevents two candidates in the same horizontal row being voted for, we employ a straight horizontal sliding bar as 85 for each horizontal row of the group. Each bar 85 is supported to slide in suitable guides on the back of the frame of the machine and is connected at one end to a short rockable L-shaped lever 86. The bar is movable in either direction by means of an arm 87 on the key stem, which engages a pin 88 on the bar. The L-lever 86 is fulcrumed to a fixed part of the machine at 89 and the ends of the horizontal arms of the lever engage beneath stops 90 on respective sliding dogs 91—92. A spring 93 assisted by grav-

ity, normally holds the dogs down with both of them resting on the lever 86 and tending to keep vertical the slotted arm which is connected to bar 85. Consequently when any key of this horizontal series is turned down to vote, the pin 87 will engage lug 88 to reciprocate bar 85 to the left, rock lever 86 and lift dog 91; before however the key is turned its full distance, the pin 87 will slip off of lug 88, the bar will fly back to normal position and dog 91 will drop. If the same key is then turned back, the bar 85 will be moved in the opposite direction, and dog 92 lifted; each complete movement in either direction of a key causing the bar first to be engaged and then to be released. When dog 91 is lifted it causes a pivoted part 93 to engage a tooth of a five pointed star wheel 94 to turn the same one step in one direction. Likewise when the dog 92 lifts, it causes a pivoted member 95 to engage the opposite side of the star wheel to turn it in the opposite direction. There is no movement of the star wheel when either dog drops. The star wheel is provided with a pinion 96 engaging a sliding rack 97 having any desired number of teeth. This rack is raised one tooth space at each actuation of dog 91 and is dropped one tooth space at each actuation of dog 92; obviously an actuation of dog 92 can only succeed an actuation of dog 91. The rack 97 is adapted to be set for a single-candidate or for any desired number of candidates represented by the total number of the group. The rack is set by interposing a suitable stop in the path of the rack. This stop is here shown as a block 98 adjustable in guide 99 in which the rack slides. The rack is perforated at 100 to receive a screw 101 by which the rack is held in position. The perforations 100 are spaced correspondingly with the rack movement so that if the rack is to be set for five judges, the number in the group, the screw 101 is engaged in the fifth hole from the bottom. If desired the stop member 98 may carry a bell 102. When the rack is raised its permitted distance, a part 103 strikes the bell to warn the voter.

The operation of the machine is as follows: With the front door fully opened the entire machine is reset in readiness for a voter. The voter expresses his choice for a candidate on any of the tickets by turning to the right a trifle over a quarter of a circle the key of that particular candidate; this operation is repeated for the other candidates of his choice until he has voted for as many as the law allows him to vote for, or as he may wish to vote for, and within the legal limit of the time. Should he desire to change any vote so cast by him, all he has to do is to turn back the key, as far as it will go, of the candidate whose vote he wishes to alter. This change of votes may go on as long as he is allowed to

remain at the machine, and at the same time, when he is through only a single candidate for a single-candidate office will be voted for, and no more than the correct number of votes will be cast for any group-candidate office.

As we have seen, the turning of a regular key operates the horizontal and vertical locking bars 17—18 to prevent the simultaneous actuation of any two regular keys; and the angular locking bar 83 Fig. 4 prevents more than one single-candidate key in the same horizontal row being voted by the same voter.

With the group-candidate-voting the sliding bar 85 permits the voter to vote a mixed ticket and to vote two or more candidates of different parties, which candidates may be represented by keys in the same horizontal line; but it is to be understood that while the bar 85 allows two keys in the same horizontal line to be voted, they must be voted successively since the front bars 17—18 as we have seen prevent their simultaneous actuation. At the same time the rack 97 and the stop 98 will prevent him from voting for more than the correct number in the group. The bars 83—85 are easily interchangeable to permit the machine being changed from a single-candidate machine to a group-candidate machine, or vice versa: or from either a single- or group-candidate machine to a partly single-candidate and partly group-candidate machine.

This application is a division of our original application for voting machines filed August 2, 1905, Serial No. 272,316.

Having thus described our invention, what we claim and desire to secure by Letters Patent, is—

1. In a voting machine, the combination of voting mechanisms arranged in series vertically according to the political affiliation of the candidates represented by said mechanisms and arranged horizontally according to the offices to be voted for, and means to prevent the simultaneous operation of any two candidate voting mechanisms in the same horizontal row, said last-named means including vertical and horizontal sliding bars having a limited movement in two directions from an intermediate normal position of rest.

2. In a voting machine, the combination of voting mechanisms arranged in series vertically according to the political affiliation of the candidates represented by said mechanisms and arranged horizontally according to the offices to be voted for, means to prevent the simultaneous operation of any two candidate voting mechanisms in the same horizontal row, said last-named means including vertical and horizontal sliding bars, and flexible tapes acted on by said bars.

3. In a voting machine, the combination

of voting keys arranged in series vertically according to the political affiliation of the candidate represented by said keys and arranged horizontally according to the offices to be voted for, means to prevent the simultaneous operation of any two candidate voting keys in the same horizontal row, and means to prevent the simultaneous operation of more than one key in the same vertical series, said last-named means comprising slidable bars engageable by the keys and operable in either direction by the keys, and bendable stops operable on by the bars.

4. In a voting machine, the combination of voting mechanisms arranged vertically in series according to the political affiliation of the candidates represented by said voting mechanisms and horizontally according to the respective offices to be voted for, and means normally preventing the simultaneous actuation of more than one mechanism in the same horizontal or in the same vertical series, said last-named means including respective horizontal and vertical sliding bars and bendable stops engageable by the bars.

5. In a voting machine, the combination of a plurality of voting keys arranged in line, and means to prevent the operation of more than one of said keys in said line, said means including a rockable notched angle bar.

6. In a voting machine, the combination of a plurality of voting keys arranged in line, said keys having rotatable stems, and means to prevent the operation of more than one of said voting keys, said means including a rockable notched angle bar and projections on the stem engageable in the notches in said angle bar and means to rock said bar on the operation of any key stem.

7. In a voting machine, the combination of a plurality of voting keys arranged in line, said keys having rotatable stems, and means to prevent the operation of more than one of said means including a rockable notched angle bar, projections on the key stems to rock the bar and other projections on the stems engageable with notches in the angle bar.

8. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a toothed rack-bar operable one step at each actuation of a key, and an adjustable stop in the path of said rack-bar, a pinion engaging the teeth in the rack-bar and mechanism to rotate the pinion in either direction.

9. In a voting machine, a group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said

group, said means including a toothed rack-bar operable one step at each actuation of a key, and an adjustable stop in the path of said rack-bar, a pinion engaging the teeth in the rack-bar and sliding dogs operating on opposite sides of said pinion to rotate the latter to reciprocate the rack bar.

10. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar reciprocal by said key stems a lever engaged by said sliding bar, a sliding rack-bar, connections between the lever and said sliding rack-bar to reciprocate the latter, and a stop interposable in the path of said rack bar.

11. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar operable by the key stems, sliding-dogs, connections between the sliding-bar and said dogs to operate the latter alternately, a sliding rack-bar, connections between the dogs and the rack-bar to reciprocate the latter, and stop means interposable in the path of the rack-bar.

12. In a voting machine, group-voting mechanism including keys having stems, means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar operable by the key stems, sliding dogs, connections between the sliding-bar and said dogs to operate the latter alternately, a sliding rack-bar, connections between the dogs and the rack-bar to reciprocate the latter, stop means interposable in the path of the rack-bar, and means independent of said operating means for the rack-bar to return the rack-bar to its normal position.

13. In a voting machine, group-voting mechanism, including a key, a rockable L-shaped lever, a sliding bar operable by the key, said bar engageable with said L lever, dogs actuated by said L lever, and a device operated by the dogs to limit the number to be voted for in a group.

14. In a voting machine, group-voting mechanism, including a rockable L lever, means to rock said lever, a pair of dogs operable by said lever, a rack having an adjustable stop to limit the number which can be voted for in a group, and connections between the rack and said dogs to actuate the rack.

15. In a voting machine, group-voting mechanism including a rockable lever, means to rock said lever, a pair of dogs operable by

said lever, a rack having an adjustable stop to limit the number which can be voted for in a group, connections between the rack and said dogs to actuate the rack in one direction when one dog is operated, and to actuate the rack in an opposite direction when the other dog is operated.

16. In a voting machine, group-mechanism including a sliding-bar, means to reciprocate the bar, a rockable lever engageable by said bar, independently operable dogs actuated by said lever, a pinion engageable by said dogs, one dog turning the pinion in one direction and the other turning it the other way, a rack engageable by the pinion, and means carried by the rack to limit the number which can be voted for in any one group.

17. In a voting machine, the combination of a plurality of voting keys having rotatable stems, means to prevent the simultaneous actuation of two or more keys, said means including slidable locking bars, some of said locking bars arranged transversely to the other locking bars, means on the key-stems to operate the locking bars, said locking bars mounted for reciprocation in either direction, means for holding said bars in operable position relative to the key stems, and suitable stop means operable by said bars.

18. In a voting machine, the combination of a plurality of voting keys having rotatable

stems, means to prevent the simultaneous actuation of two or more keys, said means including slidable locking bars, some of said locking bars arranged transversely to the other locking bars, means on the key stems to operate the locking bars, said locking bars mounted for reciprocation in either direction, and means for holding said bars in operable position relative to the key stems and suitable stop means operable by said bars, said last-named means including flexible tapes engageable by the bars.

19. In a voting machine, the combination of a plurality of keys, and means to prevent the simultaneous actuation of a plurality of said keys, said means comprising horizontal and vertical sliding bars, connections between the bars and keys whereby on the actuation of a key, a corresponding horizontal and a corresponding vertical bar are reciprocated, and bendable stop devices engageable by said bars.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

WILLIAM M. CUTTER.
WILLIS A. SUTFIN.

Witnesses:

EDW. F. HEISCH,
ALVIN LONG.