W. H. DANA.

VOTING MACHINE.

APPLICATION FILED MAY 27, 1910.

1,016,553.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.

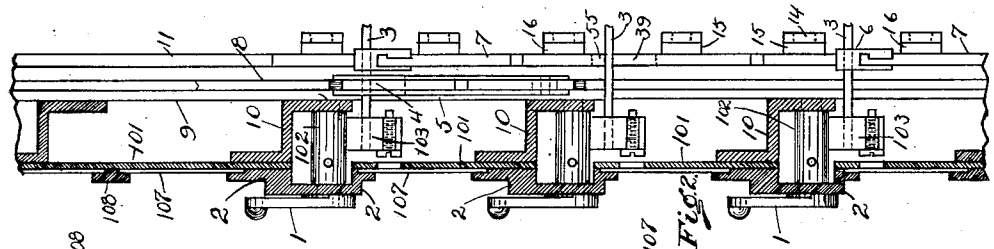

Fig. 2.

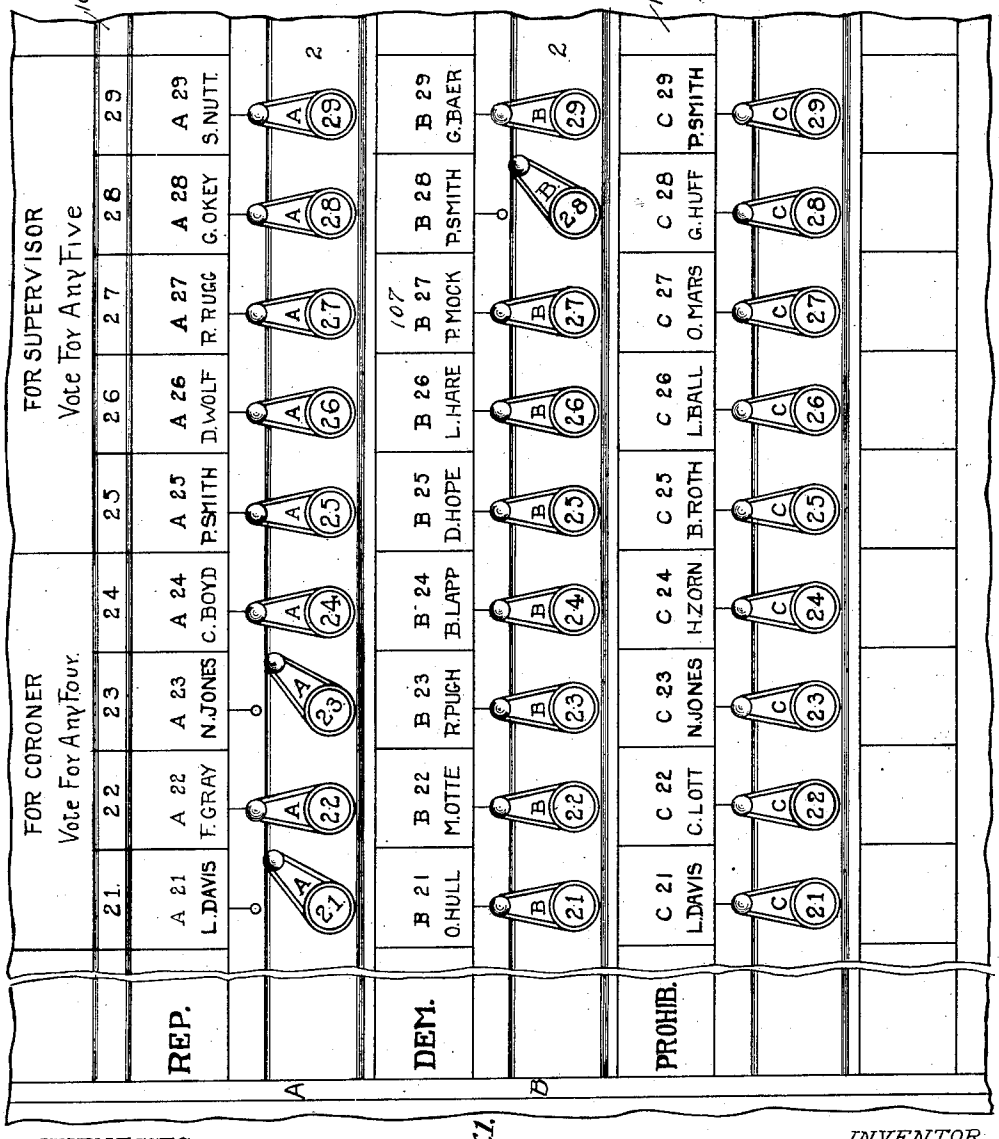

Fig. 1.

WITNESSES:

C. M. Fahnestock

K. Smith

INVENTOR.

William H. Dana

BY

Alfred M. Allen

ATTORNEY.

W. H. DANA.

VOTING MACHINE.

APPLICATION FILED MAY 27, 1910.

1,016,553.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 2.

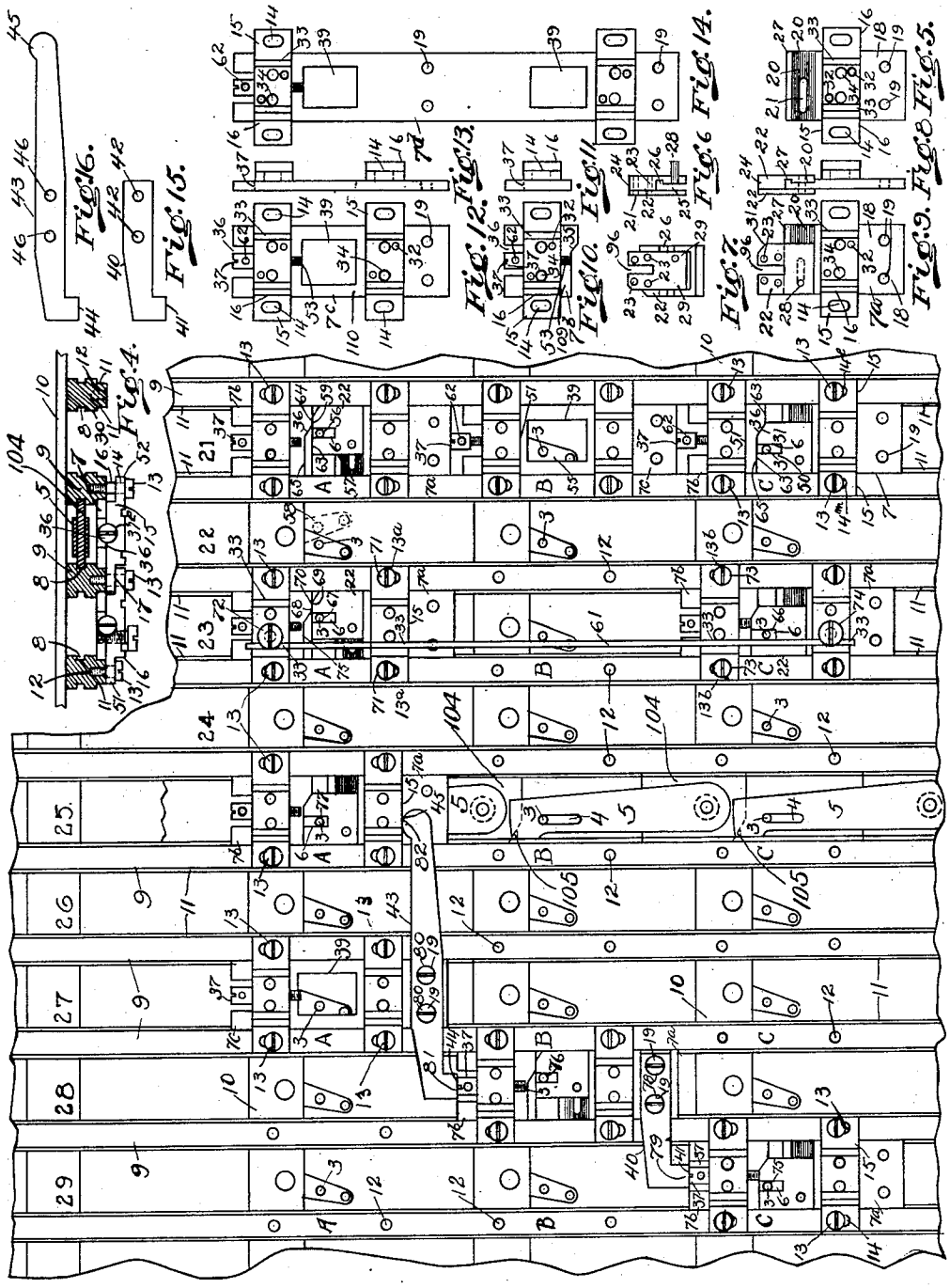

Fig. 3.

WITNESSES:

C. M. Palmestock

H. Smith.

INVENTOR.

William A. Dana

BY

Alfred M. Allen

ATTORNEY.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. DANA, OF DAYTON, OHIO, ASSIGNOR TO LEOPOLD RAUH, OF DAYTON, OHIO.

VOTING-MACHINE.

1,016,553. Specification of Letters Patent. Patented Feb. 6, 1912.

Application filed May 27, 1910. Serial No. 563,770.

To all whom it may concern:

Be it known that I, WILLIAM H. DANA, a citizen of the United States, and a resident of the city of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Voting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in voting machines in which provision is made for multi-candidate group voting where a number of candidates are to be selected for any particular office, and in which mechanism is employed to group together voting devices for the different party rows so that the voter can only vote for the required number of candidates, whether the names of the candidates appear in one party row or are scattered through the various rows of the different parties.

It is customary in many places to allow the different parties to indorse candidates of the other parties, so that in any particular group of candidates of different parties where a number of candidates are to be selected, the candidate or candidates may appear more than once in the group. Under these circumstances, an additional problem is presented from that in which there are no indorsed candidates in group voting, because when the name of a candidate appears a plurality of times in the group, it is not only necessary to prevent more than the required number of candidates to be voted for, but it is necessary to prevent any indorsed candidate from being voted for more than once.

It is the object of my invention to provide means in connection with group candidate voting devices to prevent plurality voting for any such indorsed candidate or candidates.

While I have illustrated my improvements in connection with that type of voting machine described in my former Patents No. 845,860, of March 5, 1907, and No. 886,314, of April 28, 1908, and as more particularly described in my pending application for Letters Patent Serial No. 522,393, filed October 13, 1909, it will be evident that without departing from the spirit of my invention, the restrictive devices to be hereinafter described may be applied to other types of voting machines in which interfering devices are employed arranged in rows, to prevent the selection of more than the desired number of candidates in any row or rows.

In the drawings, Figure 1 is a front elevation of a portion of a voting machine showing the front of the machine with a portion of the tickets and voting levers for three party rows. Fig. 2 is a vertical section of a portion of the machine shown in Fig. 1, with the registry frames and actuating mechanism therefor removed. Fig. 3 is a rear elevation of that part of the machine shown in Fig. 2. Fig. 4 is a horizontal section of the right hand end of that portion of the machine shown in Fig. 3. Figs. 5 and 6 are respectively front and side elevations of the two parts of one of the plates for the restrictive mechanism for indorsed candidates. Fig. 7 is a perspective view of the member shown in Fig. 6 taken from the back side. Figs. 8 and 9 are respectively front and side elevations of the entire plate made up of the members shown in Figs. 5 and 6 when assembled. Figs. 10 and 11 are respectively front and side elevations of a second plate employed in connection with the restrictive mechanism. Figs. 12 and 13 are respectively front and side elevations of a third plate used in connection with the restrictive mechanism. Fig. 14 is a front elevation of a plate similar to that shown in Fig. 12, except that it is twice the length. Figs. 15 and 16 are front views of two forms of connecting arms for the restrictive devices.

I have not thought it necessary to show the general framework and casing of the machine which holds the operating parts except such parts of the frame as are necessary to support the devices involved in the present invention.

Extending horizontally across the machine and riveted or otherwise permanently secured to the framework are a series of bars 10, in cross section the shape of a Z, and hence I have called these bars Z-bars. These

Z-bars form the division between the horizontally disposed tickets and the actuating and registering mechanisms. Secured to the front face of these Z-bars are cover plates 101, and mounted over the top and bottom of the cover plates and above and lengthwise of the Z-bars, are the key plates 2. The key plates 2 are recessed out at their top and bottom edges to provide channels for the reception of the printed ballot slips 107, upon which are printed the names of the candidates, and above the uppermost key plate is a channel bar 108 which is also grooved to receive the printed ballot slip of the uppermost ticket, and above this ticket the printed slip containing the names of the offices. The key plates 2 and the innermost section of the Z-bars form the bearings for the hubs 102 of the voting levers, and the hubs carry the arms 103, provided with the pins 3, which extend inwardly through slots 4 in the primary interlocking plate members 5 (Fig. 3), and each interlocking device comprises a pivoted member 5 and a flat rectangular plate 104, to which the member 5 is pivoted. The plates 104 are provided with a beveled corner 105, and each plate is mounted to slide in the grooves 8, 8, in the vertically mounted guide bars 9, which guide bars form the division between the various office rows, and are permanently secured to the Z-bars. The plates 104 are engaged by the outer ends of the pivoted members 5 of the interlocking devices, so that when a voting lever is operated, pin 3 will oscillate the pivoted member 5 and thus spread the interlocking plates. Stop plates are provided at the ends of each vertical row of interlocking devices to limit the movement of these interlocking plates and thus limit the number of voting levers that can be actuated in any vertical row or rows.

In order to carry out my present invention, I provide a series of plates and connecting devices which are illustrated in detail in Figs. 5–15. One of these plates and its parts is shown in Figs. 5–9 inclusive, and I have designated this plate as a whole as 7^a. The second plate, as a whole designated 7^b, is shown in Figs. 10 and 11, and the third plate as a whole is marked 7^c and illustrated in Figs. 12 and 13, while a similar plate 7^c, except longer and provided with additional openings is marked 7^d and shown in Fig. 14. Connecting arms of different lengths for connecting these special plates are shown in Figs. 15 and 16. In order to mount these special interlocking plates 7^a, 7^b and 7^c to carry out the purposes of my invention, the guide bars 9 are recessed at 11, as shown in Fig. 4, and a series of screw threaded holes 12 are formed in the guide bars, suitably spaced apart and arranged in horizontal alinement.

In order to readily locate the proper relative position for mounting the special interlocking plates with reference to the party and office rows, I letter the front plate of the machine and the ballot strips with letters A, B, C,—a letter for each part, and number the office rows and also each office space. In the section of the voting machine shown, these numbers run from 21 to 29, as illustrated in Fig. 1, while on the rear plate of the machine, I correspondingly letter the party rows A, B, C and so forth, and number the rows, as shown in Fig. 3.

The ends of the bars 15 of each of the three sets of special interlocking plates to be hereinafter described are provided with slotted openings 14 and studded screws 13 are inserted through the openings 14 of these cross bars and secured in the proper place in the screw threaded holes 12 of the guide bars 9.

In order to economize space, inasmuch as the cross bars 15 of the special plates extend over two of the guide bars, the ends of these bars 15 are halved out or recessed at 16, as shown in Fig. 4, so that the right hand end of one bar may overlap the left hand end of another bar, to admit of mounting one set of plates immediately adjacent to another set in two adjacent rows, and short and long screws 13 are furnished with their necks or shanks sufficiently long to permit the cross bars 15 and the plates to move freely in the slots 14.

The plate 7^a as a whole is made up of the flat plate 18, provided with two screw threaded holes 19 near its lower edge and with a transverse channel 20 near its upper edge, in which channel an oblong opening 21 is formed through the plate. Secured in this channel 20 is the movable member 22 of the plate 7^a which is illustrated in Figs. 6 and 7. This movable member is preferably constructed in two parts, riveted together by rivets 23. 24 is one of these parts recessed on its inner face to form in connection with the bottom plate the opening 25 with a narrow groove 26 to fit within the channel 20 in the plate 18, and with the groove 26 to receive the lip 27 on the upper edge of the plate 18. This plate 24 is located in position. The back plate is then located in place and the rivet 28 is then entered through the oblong opening 21 and the two plates riveted together, so that the movable member 22 can slide laterally within the limits of the slot 21. This movable member 22 is also provided with a vertical slot 96 through which, when mounted, the pin 3 of the voting lever projects, and it will be evident that when the pin 3 is moved by means of the voting lever, that the member 22 of the plate 7^a will be moved with it.

The upper right hand corner of the member 22 is beveled as shown at 31 (Fig. 9). The back plate of this movable member is

cut away on the side, as shown in Fig. 7, so as to allow for a clearance between the extended surfaces of the guide bars when the plate is located in place. The plate 18 is provided with a cross bar 15, secured by rivets 32, and the cross bar is provided with transverse or vertical grooves 33 and also with two screw threaded holes 34. The second plate of the special interlocking plates is illustrated in Figs. 10 and 11, and comprises a flat plate 109 to which is secured by rivets 32 one of the cross bars 15, provided with the slotted openings 14 at the ends and the screw threaded holes 34 near the middle and the transverse vertical grooves 33. I have numbered these parts of the cross bar the same for the two plates 7^a and 7^b, because the cross bars are identical. The lower bearing surface of the plate 109 has a beveled offset 35, which corresponds to the beveled surface 31 on the movable member 22 of the plate 7^a, and at the upper end of the plate 109 a slot 36 is provided to give space for the head of the screw 37, which screw passes through the cross bar and plate, about midway between the two. This screw forms an adjustable bearing for the bearing surface of another plate or arm, as hereinafter described. The plate 7^c is made up of a flat plate 110 with a rectangular opening 39 through the plate, and above and below this opening are secured cross bars similar to the cross bars of the other two plates. These cross bars are riveted with the body plate 110 and are provided with the oblong openings 14 and the screw threaded holes 34. The upper edge of this plate 110 is slotted as in the plate 7^b at 36, to receive the headed screw 37.

As will hereinafter appear, it is sometimes necessary to have longer plates than the plate illustrated in Figs 12 and 13, and such plate is shown in Fig. 14, in which two openings 39 are provided, but in other respects the interlocking plate 7^d is a duplicate of the plate 7^c.

Further details of the construction and the other parts of the special interlocking devices will probably be understood more clearly, if we now describe the manner in which these plates are used. Let us take for illustration, groups of candidates as indicated in Fig. 1. In the office for coroner, there are four candidates of each party and three political parties are indicated. The office rows are numbered 21, 22, 23 and 24, and the party rows are lettered A, B and C. The second group is of candidates for supervisor, in which five candidates are to be selected, and the office rows are numbered from 25. to 29 inclusive, and the parties are lettered A, B and C. In the group of candidates for coroner, L. Davis appears in the party A and the party C in office row 21, and N. Jones also appears in office row 23 in parties A and C. In the second group, P. Smith appears in party A, office row 25, and party B, office row 28 and party C, office row 29.

It is evident that without restrictive interlocking devices, any elector, in voting for coroner, could cast two votes for L. Davis and two votes for N. Jones, and in voting for supervisor that he could cast three votes for P. Smith and the other two for two other candidates. Let us therefore arrange the special interlocking plates to prevent two votes for L. Davis. Turning to the rear of the machine, we take one of the interlocking plates 7^a and secure this plate at the space indicated in the party row C and office row 21. The plate is so secured in the recessed portion 11 between the two guide bars 9 that the pin 3 on the voting lever enters the slot 96. The screws 13, one with the long shank on the right hand side and one with the short shank on the left hand side are then passed through the slotted openings 14 and secured in the screw holes 12, the screws retaining the plate loosely in position, and the screws also form a stop and bearing upon which the plate rests. Plate 7^b is then selected and the screw 37 adjusted so that its lower end is flush with the lower edge of the cross bar 15, and one of the plates 7^b is then secured by screws 13 through the slotted openings 14 engaging the holes 12 in the guide bars with the bearing surface 65 resting on the upper bearing surface 63 of the plate 7^a. I then secure one of the plates 7^c in the bearings 11 between the two guide bars, resting its lower bearing surface on the screw head 37 of the plate 7^b, screws 13 being passed through the slotted openings 14 in the ends of the two cross bars into the screw holes 12 in the guide bars, and with the pin 3 of the key lever B^{21} extending through the opening 39,—this large opening affording ample clearance for the movement of this voting lever without affecting its operation. The screw 37 of the plate 7^c is also adjusted so that the lower end of the screw comes flush with the lower edge of the upper cross bar of this plate, and I then secure in place another plate 7^a in the bearings 11 by the screws 13 passing through the slotted openings in the ends of the cross bars of this plate, with the lower bearing surface of this plate resting on the head of the screw 37 of the plate 7^c, with the pin 3 of the voting lever for A 21 passing through the slot 96 in this plate, and I then actuate this voting lever which shifts the sliding member 22 of this plate to the right, as indicated in column 21, Fig. 3. I then place another of the plates 7^b in position in the bearings 11 and secure it with the screws 13, with its extended bearing surface 64 resting on the bearing surface 63 of the movable member 22, as shown at 59, in Fig. 3. Having the plates in

this position, with one of the keys operated or in voted position, I then adjust the screws 37 by entering a pin in the holes 62 in the screws, and turn the screws up or down to take up all the surplus space between the lowermost screws 13, in column 21 and the topmost screws. It will now be evident that of the two voting levers for L. Davis A 21 and C 21, only one of these levers would be operated, while at the same time the primary interlocking mechanism is in no way affected by the restrictive interlocking plates. That L. Davis can only be voted for once can be seen; for let us unvote the key lever for A 21, and the bearing surface 63 of the plate 22 will be removed from under the extended surface 64, so that the uppermost plate 7^b can drop down until its normal bearing surface 65 rests on the bearing surface 63 of the plate 22. Now if the elector operates the voting lever C 21, the pin 3 on this lever will force the beveled surface 31 of the movable plate 22 against the beveled surface 36 of the plate 7^b and shift it, and all the plates above it upward, and the extended bearing surface 64 resting on the bearing surface 63 fills again the entire space between the lower and upper screws 13, so that no other set of spreader plates within the series can be operated.

It will be obvious that if there were three or four non-indorsed candidates intermediate the candidate indorsed, just so many connecting plates 7^c will need to be employed, and when there are no candidates intermediate, and the indorsed candidate appears in adjoining party rows and in the same office row, no connecting plates 7^c will be needed, and the lower bearing surface of the upper set of plates will rest upon the screw 37 of the lower set. When one series of indorsed candidates happens to lie immediately above another series, the adjusting screw 37 immediately beneath the upper series of plates is retained in its normal position, so that each series is independent of the other.

It may happen that in the average size machine in which seven party rows are provided and forty to fifty office rows, that with a plurality of candidates indorsed, two sets of candidates may be indorsed in the same office row, one set entirely between the other set in the party rows, and in this event I use the construction for connecting the restrictive interlocking plates illustrated in column 23, Fig. 3, in which the connecting plate 7^c is not employed, but a rod 61. I have illustrated this method of connecting the plates in connection with the indorsed candidate N. Jones. For the voting levers A 23 and C 23, I mount the two sets of spreader plates in the office row 23, in the same manner as in the office row 21. Instead, however, of making use of the connecting plate 7^c, I provide a rectangular rod 61, which is placed in the grooves 33 of the cross bar 15, and the upper end of this rod is secured to the plate 7^b by means of the screw 72. The lower set of plates is then moved upward so that the plate 7^b bears against the screws as shown at 73 in Fig. 3, and I then secure the lower end of the rod 61 to the plate 7^a by means of the screw 74. The two sets of spreader plates are now connected together by the rod 61, so that the screws 13 for the plate 7^a at the top of the column 23 form the stop or support for this plate and the plate 7^b, so that they cannot be drawn downward, while the screws 13 for the plate 7^b at the bottom of the column form a stop for the lower set of plates, so that they cannot be drawn upward, and therefore while the member 22 of the upper set of plates is in its voting position, as shown in Fig. 3, for column 23, the member 22 of the lower set of plates cannot be shifted by the pin 3, and this voting lever will be locked. If, however, the upper key is unvoted, the upper plate 7^b will drop downward into its normal position, and the lower set of plates will be shifted downward to take up the space. The elector can then vote the key lever C 23, which will force the lower plate 7^b upward one space, but its further movement will be limited by the screws 13 which attach this plate to the guide bars, so that if the key lever C 23 is operated, the lever A 23 cannot be moved.

I have now explained the method of using the restrictive interlocking plates where the indorsed candidates are in the same vertical column, and we will now consider the case of interlocking where the indorsed candidate appears in different columns, as shown in connection with the selection of a supervisor, in which P. Smith appears at A 25, B 28 and C 29. In this event, I mount three sets of plates 7^a and 7^b in the same manner as for the primary series already described, with the pins 3 of the three P. Smith voting levers entered through the slots 96 in the plates 7^b, as shown in columns 29, 28 and 25, of Fig. 3. In order to couple together these restrictive interfering plates in the separate columns, I provide arms of varying lengths, such as shown in Figs. 15 and 16. As many of these arms are provided as may be necessary and of different lengths to extend laterally from one vertical column to any other vertical columns desired. In Fig. 15, 40 represents one of these arms preferably made of sheet metal, of a length to extend between two adjacent columns. This arm has a bearing surface 41 and two holes 42 which correspond with the screw holes 19 of the interlocking plates, by means of which the arms may be secured to any of the plates when-

ever required. In Fig. 16, I illustrate a connecting arm 43 also preferably made of sheet metal and of a length sufficient to extend over two intermediate columns. This arm 43 has bearing surfaces 44 and 45 at either end and two holes 46 which register with the screw holes 19. Having entered the interlocking plates in each of the three columns, I then connect the plate 7^a of column 28 with the plate 7^b of column 29 by means of one of the arms 40, which is secured to the plate 7^a of column 28 by the screws 78 and with the bearing surface 41 of the arm 40 resting on the adjusting screw 37 of the plate 7^b in column 29. I then mount one of the connecting plates 7^c in column 27 as before with the pin 3 of the voting lever A 27 entered through the opening 39, which opening, as described, is sufficiently large not to interfere with the operation of this pin, inasmuch as none of the levers in this row are to be interlocked. A connecting arm 43 is thus secured to the plate 7^c by means of the screws 80 with the bearing surface 44 resting on the adjusting screw 37 in column 28, and with its bearing surface 45 contacting with the cross bar 15 of the plate 7^a in column 25. The screws 13 at the bottom of column 29 as illustrated in Fig. 3, form a support or stop for the lowermost plate of the series, while the screws 13 for the uppermost cross bar of plate 7^b in column 25 form the stop and limit the upward movement of the plate, and by adjusting the screws 37 as heretofore described to take up the surplus space, the movement of the plates can be restricted so that one voting lever of the series can be operated.

It will be understood that there are to be furnished with each machine such a number of plates, arms, screws, rods and so forth as may be necessary to provide for the restrictive interlocking for as many sets of indorsements as may possibly be needed for any election, and it will be evident from the foregoing description, that no matter how the indorsed candidates may appear on the various tickets, that the necessary plates and indicating devices can be readily and easily attached to the guide bars to restrict the voting for these indorsed candidates, while at the same time the primary interlocking devices and the various other constructions of the voting machine are not altered or affected in any way.

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

1. In a voting machine, in combination with a series of voting levers and a series of primary interlocking devices to prevent the actuation of more than a predetermined number of voting levers, a supplemental pair of sliding blocks for each selected lever, and connecting plates to connect together the pairs of blocks whereby only a single pair of blocks can be actuated in any group of selected sliding voting levers.

2. In a voting machine, in combination with a series of voting levers and a series of primary interlocking devices to prevent the actuation of more than a predetermined number of voting levers, a pair of supplemental sliding blocks, one for each selected lever, with a pin on the voting lever to engage the supplemental block and separate the same, and means to connect together the pairs of blocks of any group of sliding levers without interference with the intermediate interlocking devices.

3. In a voting machine, in combination with a series of voting levers and a series of primary interlocking sliding blocks for each office row, and guide bars to hold the blocks, of supplemental sliding blocks, one for each selected voting lever and slotted connection for each set of supplemental sliding blocks, with the guide bars to permit separation a predetermined distance, with pins on the voting levers to engage the supplemental sliding blocks and separate same the predetermined distance, and connecting devices to connect together one of each set of supplemental blocks whereby the actuation of any set of supplemental blocks will prevent the actuation of any other voting levers of the selected group.

4. In a voting machine, in combination with a series of voting levers and a series of primary interlocking devices to prevent the actuation of more than a predetermined number of voting levers, a supplemental interlocking device for selected voting levers comprising a pair of interlocking plates, for each selected lever, one plate provided with actuating member slidingly mounted thereon, and connection therefor with the selected voting lever whereby the actuation of the sliding member will spread the plates a predetermined distance.

5. In a voting machine, in combination with a series of voting levers and a series of primary interlocking devices to prevent the actuation of more than a predetermined number of voting levers, a supplemental interlocking device for selected voting levers comprising a pair of interlocking plates, for each selected lever, one plate provided with an actuating member slidingly mounted thereon, a slot in the sliding member and a pin on the voting levers engaging said slot whereby the actuation of the voting lever will shift said sliding member to spread the plates a predetermined distance.

6. In a voting machine, in combination with a series of voting levers and a series of primary interlocking devices to prevent the actuation of more than a predetermined number of voting levers, a supplemental interlocking device for selected voting levers

comprising a series of pairs of interlocking plates, one pair of plates for each selected lever, one plate provided with an actuating member slidingly mounted thereon, and connection therefor with the selected voting lever whereby the actuation of the sliding member will spread the plates a predetermined distance, and connecting bars to connect together opposite members of each pair of plates whereby the actuation of one pair of plates will prevent the actuation of the other pairs of plates thus connected.

WILLIAM H. DANA.

Attest:
GEO. M. LEOPOLD,
ROBT. B. LEOPOLD.