

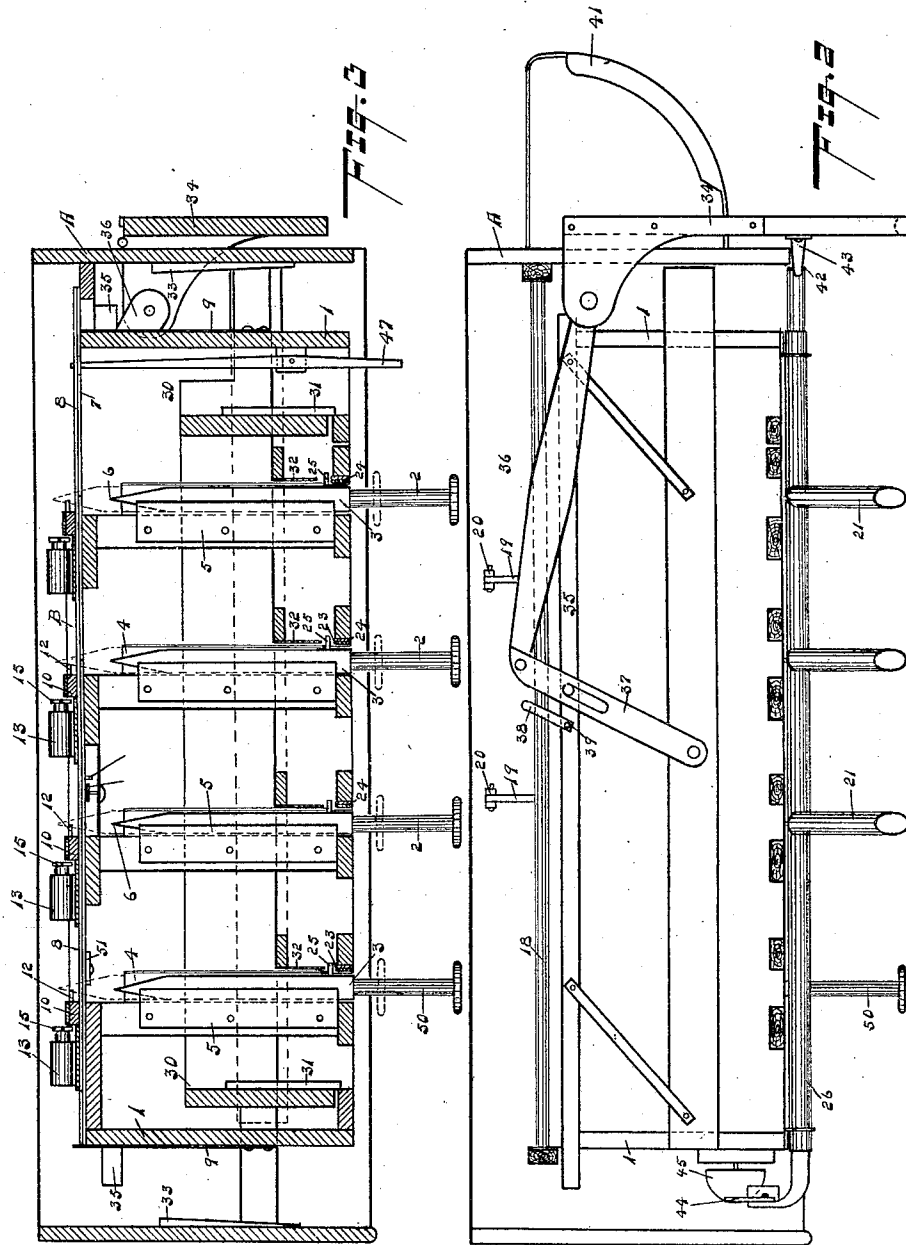
W. LANGRILL.
VOTING MACHINE.

APPLICATION FILED JUNE 10, 1909.

989,017.

Patented Apr. 11, 1911.

5 SHEETS—SHEET 2.



WITNESSES:

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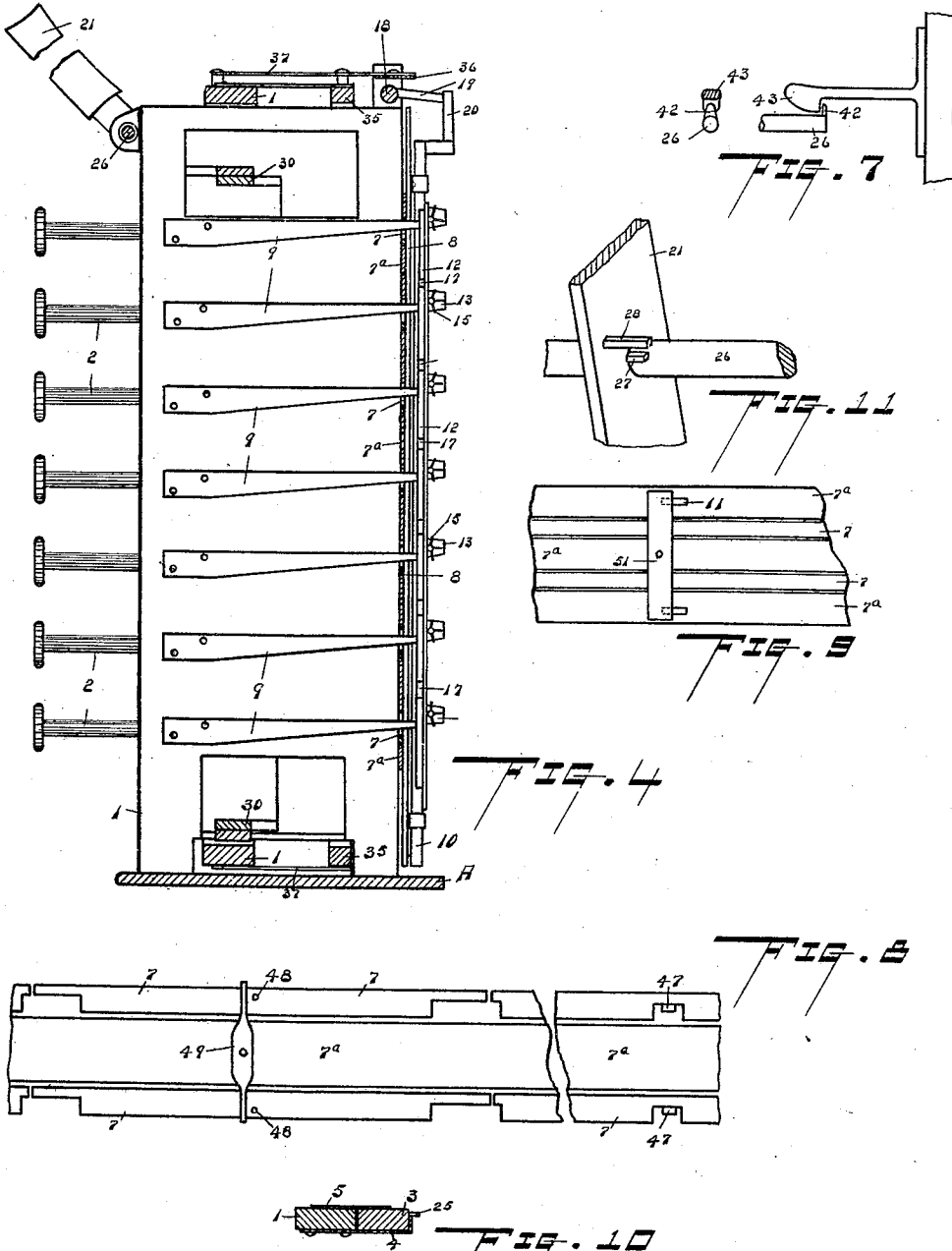
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5 SHEETS—SHEET 3.



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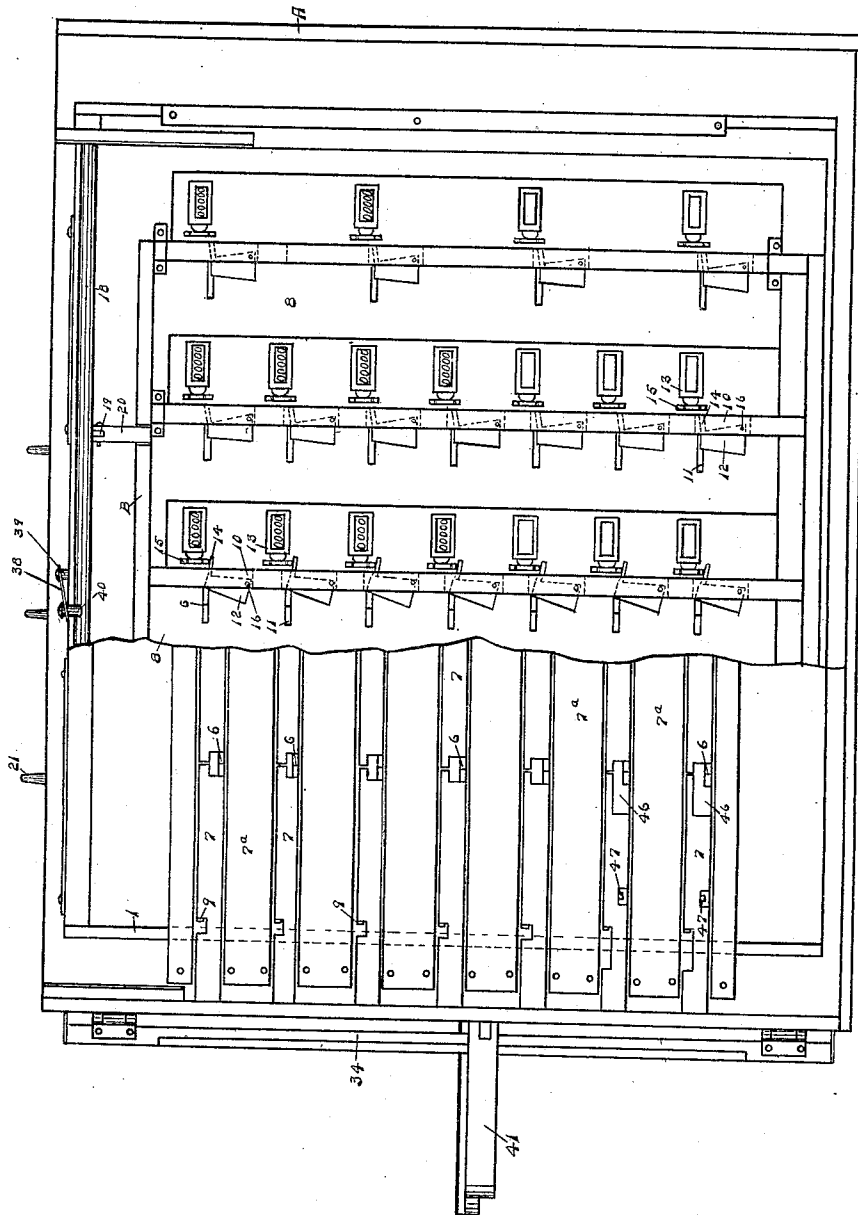
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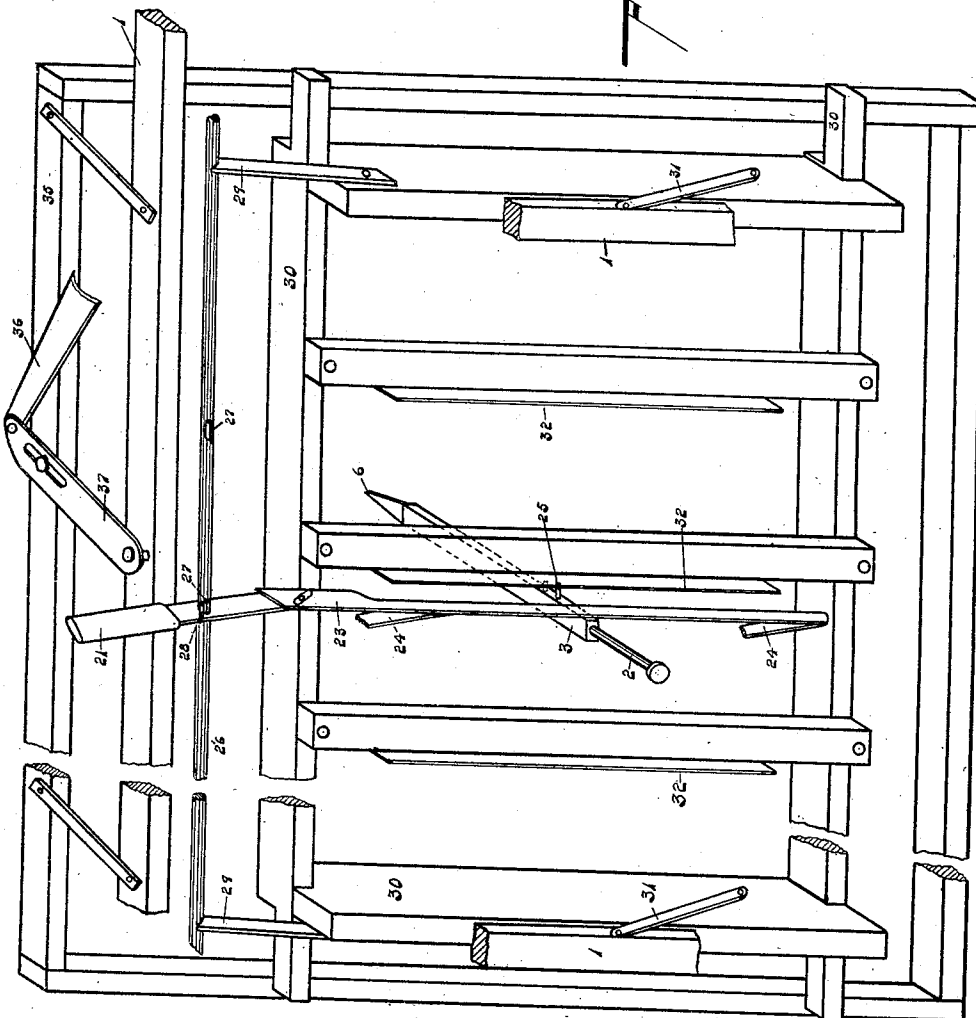
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5 SHEETS—SHEET 5.

FIG. 5



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WILLIAM LANGRILL, OF BAY CITY, MICHIGAN.

VOTING-MACHINE.

989,017.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed June 10, 1909. Serial No. 501,291.

To all whom it may concern:

Be it known that I, WILLIAM LANGRILL, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Voting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to voting machines.

One object is the provision of improved means for locking the booth or the machine against operation until a vote has been registered.

Another object is the provision of simple and novel means for registering a party vote.

Another object is the provision of improved registering mechanism for recording the vote.

Another object is the provision of improved key resetting means.

Another object is the provision of means for permitting the voter to vote for two or more candidates in different parties for the same office, where two or more candidates are to hold the same office.

Another object is the provision of improved means for voting yea or nay on questions submitted to the people.

Another object is the provision of novel means for automatically resetting the means preventing the depression of two or more keys, for candidates for the same office, when it is desired to split a ticket.

Other novel features reside in the construction of a machine, all of which will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a face view of a voting machine embodying my invention, Fig. 2 is a top plan view, parts being omitted to better disclose the construction, Fig. 3 is a horizontal cross-sectional view on line $x-x$ of Fig. 1, Fig. 4 is a vertical cross-sectional view on line $y-y$ of Fig. 1, Fig. 5 is a rear view, Fig. 6 is a detail view illustrating a portion of the key resetting means, Fig. 7 is a detail view of the gate locking mechanism, Fig. 8 is a detail view of the mechanism for permitting a voter to vote for a plurality of candidates for a single office, Fig. 9 is a detail view of the means enabling the voter to vote yea or

nay on questions submitted to him, and Fig. 10 is a detail sectional view of the key support, Fig. 11 is a detail of the means by which the party levers communicate their movement to the party lever shaft.

This invention is in line with those shown in my prior Patents, No. 856,267, dated June 11, 1907, No. 860,675, dated July 23, 1907, and No. 864,173, dated Aug. 27, 1907, to which reference is made for such further description as may be necessary to a complete understanding of the invention.

To effect the various functions necessary for the proper registration of the voter's choice and the resetting of the machine in readiness for the next voter, I utilize a plurality of selective keys, a party-lever mechanism for actuating any one series of keys simultaneously, a key-return mechanism actuated through the operation of the party lever on the keys, and normally adapted to prevent the operative movement of the keys until a party lever is actuated, a locking means for normally preventing a vote for two or more candidates for the same office, release means for permitting the voter to vote for two candidates in different parties for the same office, where such office is to be held by a plurality of men, means set by the keys for registering the voter's choice, and means for resetting the keys, registering the voter's choice and locking the booth. In addition thereto I provide means for voting yea and nay on questions submitted.

The machine comprises a casing A containing the mechanism. Such casing may be inclosed within a booth or screened by curtains, in any usual or convenient manner, not shown.

Within the casing is located the supporting frame work 1. The selective mechanism consists of a plurality of vertically extending rows of keys 2, 2, adjacent which are located the names of the candidates and the offices for which they are running, the names for each party being arranged in vertical lists respectively. The heads of the keys may bear numerals if desired, which correspond with the numerals on the vertically arranged rows of registering devices hereinafter set forth. The keys are movable inwardly in a rectilinear line.

The body portions 3 of the keys may be slidably supported in any suitable manner, as on the flanged shelves 4, 4, and in order that any of the keys may be removed for

repair or substitution, I may provide the spring plates 5, 5 suitably supported adjacent the shelves and having their free ends engaging the body portions. These springs also operate to maintain the keys in the positions to which they have been moved, against accidental displacement. The inner ends of the keys are preferably pointed or beveled as at 6 and are adapted to actuate a locking mechanism which normally prevents the operation of more than one key for a candidate running for one office.

Associated with the keys is a plurality of horizontally extending lines of movable sections 7, there being a line of sections for each horizontal line of candidates for the same office. The sections are received in ways 7^a formed on the vertical rear face of the frame work, and consist of separate lengths of suitable material, the adjacent ends of which normally lie in alinement with the pointed ends 6 of the keys and are recessed to receive such pointed ends. A sheet 8 slotted in alinement with the pointed ends of the keys, maintains the sections in position in the ways.

Means as the leaf springs 9 engage the end sections of each horizontal line, to maintain the adjacent ends of the sections normally in contact. The depression of a key will cause the pointed end to enter the recess between two adjacent sections and spread the sections apart so as to move the recesses out of alinement with the remaining keys in the horizontal row, thereby preventing the remaining keys from being operatively actuated because their points will engage the sections. The sections are spread apart against the tension of the springs 9 which return the sections to normal position, as soon as the keys are reset, and because of the springs at both ends of a line of sections, the recesses between the sections are always brought into alinement with the ends of the keys. The projection of the pointed ends of the keys between the sliding locking sections of the mechanism operates to set the registering mechanism.

The registering mechanism preferably comprises a vertically sliding sash B, guided in any convenient manner. This sash lies parallel with the slotted sheet 8, the vertical bars 10 of the sash being located adjacent the vertical rows of slots 11 in the sheet. These bars carry vertical rows of pawls 12, lying in the paths of movement of the beveled ends of the keys and adapted to be thrown into position to actuate any suitable registers 13, by the engagement of the keys therewith. As one means of effecting this result, I preferably, though not necessarily, recess the vertical bars 10 to receive the pawls. In the form shown, such pawls are shaped something like a truncated isosceles triangle pivoted at one lower corner to the

bar and provided with a laterally extending finger 14 adapted to be projected into alinement with the wheel 15 of a register 13. That side face of the pawl opposite its pivot point 16 normally lies over and partially covers the adjacent slot 11 in sheet 8, in such manner that the end of the key will engage the pawl near that end opposite the pivotal point, in order to throw the pawl laterally and project the finger. The rotation of the pawls is limited in one direction by the rests 17 on the bars 10, and, owing to the fact that the pivotal point is offset from the center of gravity, the pawls will always return to normal position from their tilted position, upon the withdrawal of the keys.

In order to register the voter's choice, I provide a shaft 18 having arms 19 to which the sash is connected by means of links 20, the partial rotation of the shaft in one direction being adapted to move the sash in one direction to bring the projected fingers 14 into engagement with the wheels 15 of their respective registers 13, the partial rotation of the shaft in the reverse direction operating to return the sash to normal position.

In order to enable the voter to vote a straight party ticket with the expenditure of the least time whereby to facilitate the voting, I provide a series of party levers controlling the actuation of their respective vertical rows of keys. These party levers 21 are pivotally mounted intermediate their ends, the outer ends of the levers projecting through openings in a cover 22 in position to be grasped and pulled down by the voter. The inner ends of the levers have secured thereto the vertical depending bars 23, connected by links 24 to the frame work in order to have a parallel motion vertically. Stud 25 project laterally from the keys into the paths of movement of the bars 23 so that the movement of the lever will advance the bar in a vertical plane to engage the studs and depress all the keys in one party line simultaneously. The lever, when released, will return to its original position, owing to the weight of the bars 23 and links, or it may be returned in any other convenient manner.

It is desirable that the machine be so arranged that the keys are not operatively depressible until a party lever has been actuated, the means for rendering the keys inoperable also forming a portion of the resetting means, and as one construction for accomplishing this end, I preferably mount the party levers loosely on a single shaft 26 journaled to the frame. This shaft is provided with abutments 27 adapted to be engaged by dogs 28 carried by the respective levers. The abutments lie in contact with the dogs so that movement of the levers is communicated to the shaft. Arms 29 carried by the shaft are pivotally secured at

their outer ends, to a holding frame 30 which is also connected by links 31 to the frame work 1 so that the frame is moved in an oblique line toward and from the frame work, remaining parallel with the frame work at all times. The holding frame 30 is provided with vertical rods 32 lying adjacent the respective vertical rows of keys and in the path of movement of the studs 25. Normally, these vertical rods lie closely adjacent the studs when the keys are not depressed, and prevents the operative engagement of the keys and pawls in any suitable manner, as by its own weight. The ends of this obliquely moving frame may be extended if desired, for frictional engagement with the plates 33 on the inner faces of the casing A. The holding frame is pushed back out of the way by the actuation of any one of the party levers to throw the keys of any one party line into operative engagement with the pawls and is held in such position by its engagement with the friction plates 33.

In order to operate the registering devices and reset the selective mechanism, I may utilize the mechanism shown in my Patents, Nos. 860,675 and 864,173, consisting of a swinging gate 34 connected to the vertically obliquely moving resetting frame 35 by means of the links 36, 37, such resetting frame being connected to the shaft 18, by means of the lever 38, stud 39, and arm 40 on the shaft, as shown and described in the above mentioned patents. The gate is provided with the catch and guarded ratchet plate 41 described in my Patent Number 860,675, for insuring that the vote is registered before the next voter enters the booth. The gate 34 may be connected with the door of a booth or a curtain lever, so that it will be operated by the voter upon entering and when leaving the booth. The opening movement of the gate draws the sash B in a direction to cause the fingers 14 of the pawls to engage the wheels 15 on the registering devices 13 and also throws the horizontally moving resetting frame 35 toward the front of the machine and into engagement with the vertically moving holding frame 30, disengaging the latter from its friction-holding plates 33. The holding frame, by its engagement with the studs 25, returns the depressed keys of the selective mechanism to normal position.

As one means for locking the voter in the booth until he has pulled a party lever, I provide the shaft 26 on which the party levers are mounted, with a tongue 42 adapted to be engaged by a hooked catch 43 on the gate. The partial rotation of the shaft imparted thereto by the actuation of a party lever swings the tongue out of engagement with the catch, thereby permitting the gate to be swung open. The shaft 26

may also carry a hammer 44 adapted to impinge against a bell 45 when the party lever is returned to normal position after being operated. As one means for permitting a voter to choose two or more candidates in different parties for the same office, where such office is to be held by two or more persons, I have provided the following construction.

It will be remembered that the insertion of the inner end of a key between the sliding sections causes the adjacent recessed ends of such sections to move out of alignment with the remaining keys in the same horizontal row. Therefore, ordinarily it would be impossible to depress a key indicating a candidate of a different political party for the same office. But as it often happens that two or more candidates are to be elected to the same office and the voter may desire to split his ticket, I provide sliding locking sections having cut away portions 46, in addition to the recessed ends, which sections are insertible in place of the sections ordinarily employed in those horizontal lines of sections corresponding with the names of the candidates running for election to the multiple-candidate office. In order to operate those lines of sections to enable a voter to split his ticket, I provide the finger levers 47 pivoted intermediate their ends. The outer ends of such levers project in front of the machine and the inner ends of the levers are engaged with the respective lines of sliding sections.

To prevent the voter from voting for more candidates than are required for the office, I provide certain sections in those lines actuated when voting for candidates for a multiple-candidate office, with laterally projecting pins 48 adapted to engage and operate the opposite ends of a locking lever 49 pivoted intermediate each two lines of locking sections equipped for voting for a multiple-candidate for office.

In operation, the voter entering the booth will close the door which operates the gate 34 to engage its latch 43 with the tongue 42 on the party lever shaft 26, locking the voter in the booth. The voter then pulls a party lever which releases the tongue from the latch and simultaneously throws in all the keys of the party whose lever is actuated. If he desires to vote a straight ticket, he now leaves the booth, the opening of the door of which swings the gate to register his choice and reset the mechanism for the next voter. Should the voter desire to split his ticket, he pulls out those keys indicating candidates whom he does not wish to vote for, in the row depressed by the actuation of the party lever. This permits the springs 9 controlling the positions of the locking sections in the candidate lines among whom he wishes to make a choice, to instantly return the sec-

tions to normal position. Thereupon the voter depresses the key of the candidate in some other party for whom he desires to vote. Where two or more candidates are to be elected to the same office, the names of the respective candidates of each party for that office are arranged under one another, and it may occur that the voter in splitting his ticket, finds that he wishes to vote for two or more candidates whose names are arranged in the same horizontal line. To accomplish this, he will withdraw the keys indicating the names of all the candidates for that office in the party whose party lever he has actuated. Then he will depress the key indicating the name of that candidate in another party for whom he wishes to vote. Next he will actuate the finger lever 47 in the same horizontal line with the names of the candidates for whom he wishes to vote. This operates to move the locking sections controlling the depression of the remaining keys in that line so that the cut-away portions 46 lie in alinement with the ends of the remaining keys which permits the voter to depress one or more additional keys in the same line for the remaining candidates whom he desires to elect to fill the multiple-candidate office. Simultaneously with the actuation of such finger lever, the pin 48 carried by one of the sections of the line controlled by such finger lever, is brought into engagement with the adjacent end of the locking lever 49 whose opposite end engages the pin on a section in the horizontal line of sections next adjacent. This operates to slide the last named line of sections along so that the recessed ends of the sections lie out of alinement with the ends of the keys, and also the lever 49, by its engagement with the pins 48, when moved to the positions just above stated, operates to prevent the return of the sections to normal position even though it be attempted to operate the finger lever 48 controlling such sections. In this manner, the voter is prevented from voting for more candidates than are necessary to fill the office. It is obvious that the length of the cut-away portions 46 determines the number of candidates in any one horizontal line who can be voted for, so that a larger cut-away portion would be necessary where three candidates are to be elected to the same office than where there are but two to be elected.

It frequently happens that questions are submitted to the voter for determination as, for instance, whether to bond the city, county, or State, as the case may be, for improvements and the like and it is necessary that the voter shall vote in the affirmative or negative thereon. To accomplish this purpose, a vertical column of keys 50 is provided which are similar to the keys 2. The inner ends of the keys 50 pass through slots 11 in the sheet 8 and actuate pawls carried

by the sash B so that the foregoing description will suffice. Each compartment devoted to a question is provided with two keys for voting affirmatively and negatively respectively, and in order to prevent the voter from depressing both keys, I provide a gravity plate 51, pivoted intermediate its ends between the slots 11 on the sheet 8, the lower end of the plate being heaviest so that normally the plate is vertical with its edges overlying the slots 11. The depression of one of the question keys causes its beveled inner end to engage and swing the gravity plate so that one end or the other thereof will lie over the slot 11 which is in alinement with the remaining question key to block the latter and prevent it from engaging the pawl, even though it be operated.

My invention is simple, compact, and not easily liable to get out of order. The machine is easily accessible for adjustment, inspection and repair, and it is evident that changes might be made in the form and arrangement of the several parts described, without departing from the spirit and scope of my invention.

Having thus fully disclosed my invention, what I claim as new, is:—

1. In a voting machine, a selective mechanism comprising a plurality of keys, a holding frame normally positioned to maintain the selective mechanism inoperative, means for moving the holding frame in one plane of movement to permit the operation of the selective mechanism, means engaged by the holding frame to retain it in such withdrawn position, a resetting device movable in a plane transverse to that traversed by the holding frame and adapted to engage and return it to normal position, and means for actuating the resetting device.

2. In a voting machine, a selective mechanism comprising a plurality of keys, a holding frame normally positioned to maintain the selective mechanism inoperative, means for moving the holding frame in one plane of movement to permit the operation of the selective mechanism, a frictional member engaged by the holding frame to retain it in such withdrawn position, a resetting device movable in a plane transverse to that traversed by the holding frame and adapted to engage and return it to normal position, and means for actuating the resetting device.

3. A voting machine comprising a selective mechanism consisting of a plurality of keys arranged in rows, a party lever for each row, a shaft on which the party levers are loosely mounted, means on the shaft adapted to be engaged by any one of the party levers when actuated, to impart a partial rotation to the shaft, a holding frame connected to the shaft and normally adapted to maintain the selective mechanism in inoperative position, the holding frame being

retracted by the actuation of a party lever to permit the operation of the selective mechanism.

4. A voting machine comprising a selective mechanism arranged in rows, registers engaged by the selective mechanism, registering and resetting mechanisms, a gate, the actuation of which operates the registering and resetting mechanisms, party levers loosely mounted on the shaft for actuating the respective rows of the selective mechanism, a shaft on which the party levers are loosely mounted, means on the shaft adapted for engagement by the respective levers, and a locking means normally connecting the shaft and gate when the latter is in closed position.

5. A voting machine comprising a selective mechanism arranged in rows, registers adapted for engagement by the selective mechanism, registering and resetting mechanisms, a swinging member, the actuation of which operates the registering and resetting mechanisms, a shaft, party levers loosely journaled on the shaft, means on the shaft adapted for engagement by the party levers to actuate the shaft, and coacting locking members carried by the shaft and swinging member respectively, to retain the latter in one position until the shaft is actuated.

6. A voting machine comprising a selective mechanism arranged in rows, registers adapted for engagement by the selective mechanism, registering and resetting mechanisms, a swinging member, the actuation of which operates the registering and resetting mechanisms, a shaft having a tongue thereon, party levers loosely journaled on the shaft, means on the shaft adapted for engagement by the party levers to partially

rotate the shaft, and a latch on the swinging member adapted to take over the tongue when the voter has closed the booth, to lock the voter in until he has actuated a party lever.

7. A voting machine comprising a selective mechanism, a movable sash, tripping means pivotally supported on the sash and normally adapted to lie at one limit of their movement, registers with which the tripping means engage, the selective mechanism adapted to engage and move the tripping means out of normal position to enable the latter to engage the registers, the selective mechanism engaging and maintaining the tripping means in set position during the movement of the sash in one direction, and means for withdrawing the selective mechanism to permit the tripping means to automatically return to normal position.

8. A voting machine comprising a selective mechanism, consisting of a plurality of keys arranged in rows, ways, a plurality of locking sections received in each way, the joints of the locking sections normally lying in alinement with the inner ends of the keys, a slotted plate closing the ways, the slots in which plate lie in alinement with and receive the inner ends of the keys, movably supported gravity-operated pawls partially overlying such slots and adapted to be actuated by the keys, and registers operated by the pawls during their engagement with the keys.

In testimony whereof, I affix my signature in presence of two witnesses.

WILLIAM LANGRILL.

Witnesses:

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