

J. H. McELROY.

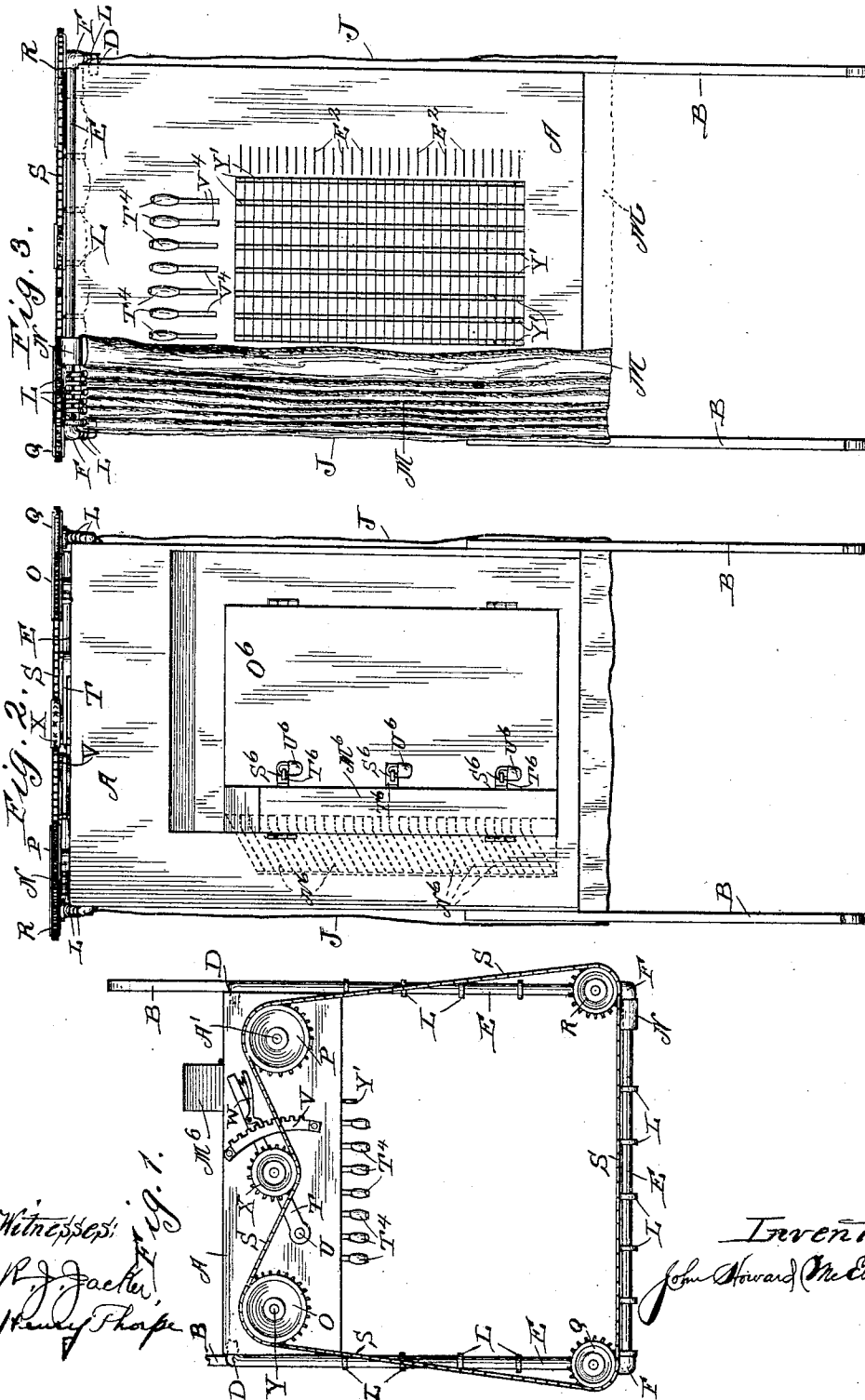
VOTING MACHINE.

APPLICATION FILED MAR. 12, 1900.

972,213.

Patented Oct. 11, 1910.

5 SHEETS—SHEET 1.



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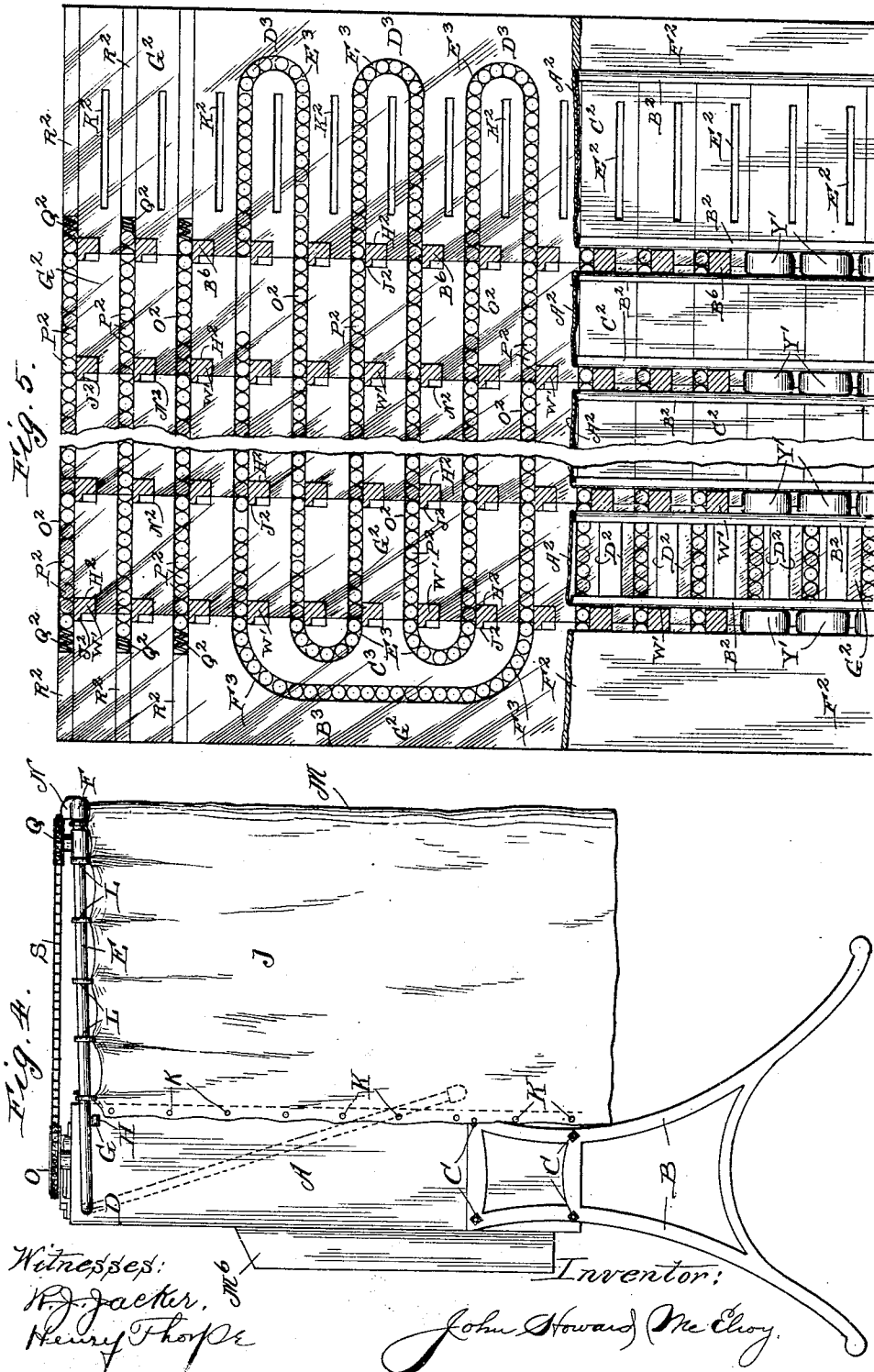
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5 SHEETS—SHEET 2.

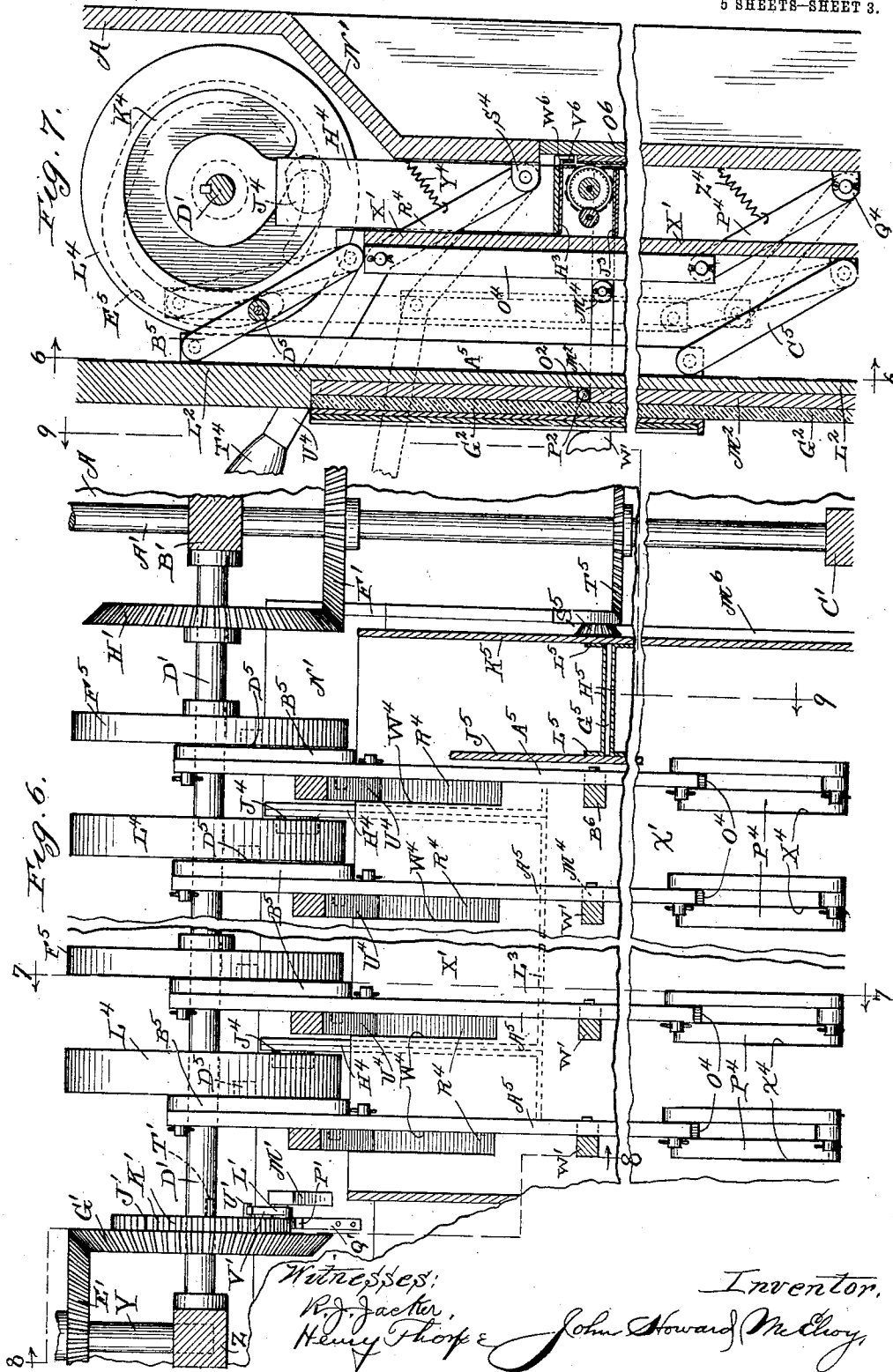


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5 SHEETS—SHEET 3.



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5 SHEETS—SHEET 4.

Fig. 9.

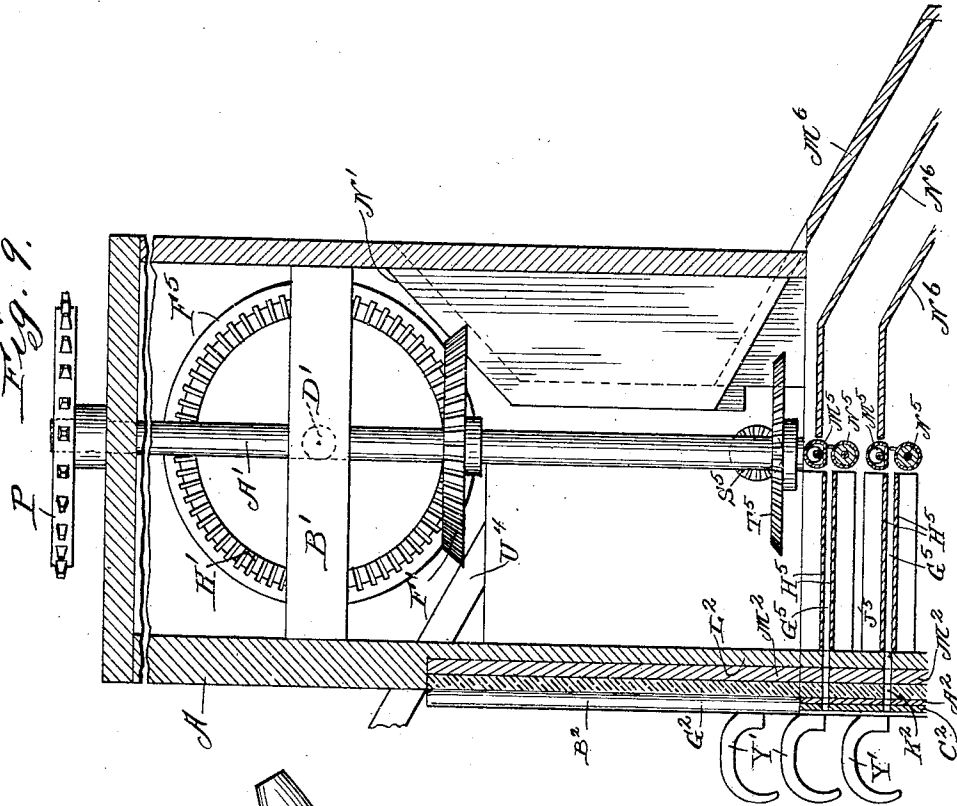
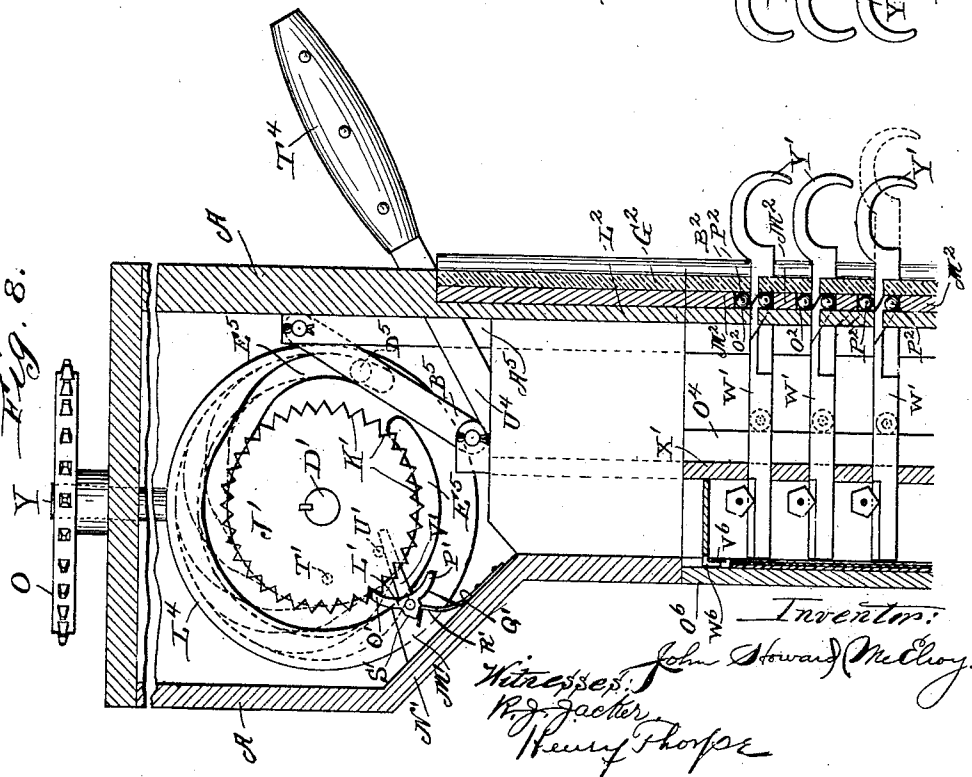


Fig. 8.



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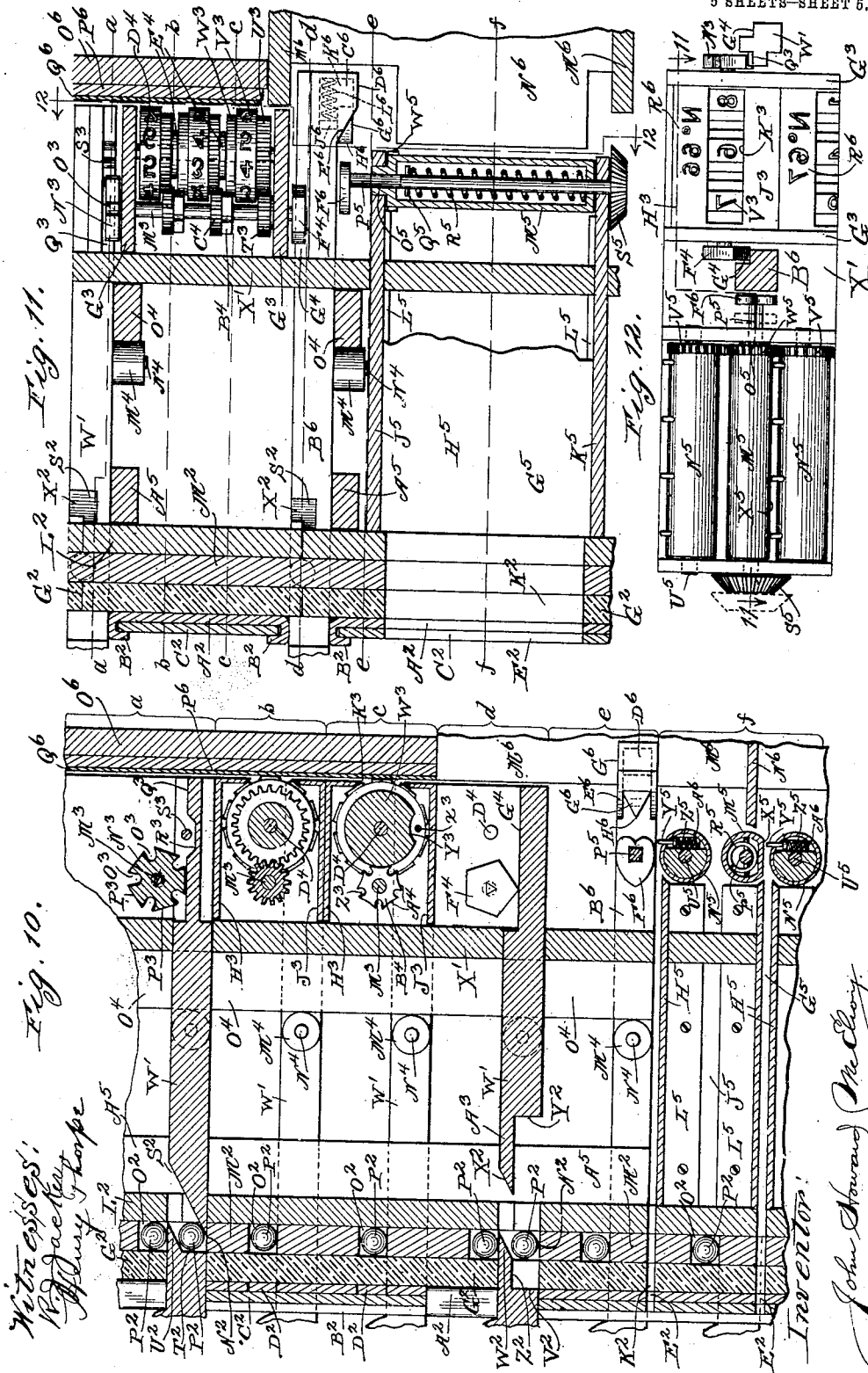
J. H. McELROY.
VOTING MACHINE.

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Patented Oct. 11, 1910.

5 SHEETS—SHEET 5.

972,213.



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UNITED STATES PATENT OFFICE.

JOHN HOWARD McELROY, OF CHICAGO, ILLINOIS.

VOTING-MACHINE.

972,213.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed March 12, 1900. Serial No. 8,568.

To all whom it may concern:

Be it known that I, JOHN HOWARD McELROY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

My invention relates to what are commonly known as voting machines, for registering the choices of the electors for the various offices to be filled at a general election from the various candidates presented, and is concerned with various improvements therein.

The first feature of my invention relates to the general method of operating voting machines, and this feature may be embodied in a variety of forms, one of which I have shown.

In all voting machines hitherto devised or constructed, with which I am familiar, it has been customary to either operate the registers as the keys are operated, and when the operation is completed to lock the keys in their operative position, or else to have the mechanism arranged so that when a key is operated, it is merely put into operative relation with the corresponding registers, and all the keys are operated simultaneously when the machine is re-set. In the latter case, the keys are not necessarily locked when they are operated, but may be constructed so that they can be moved freely into and out of operative position. In machines of the first class, it has been found that it is difficult to arrange that class of machines with mechanism by which a straight ticket can be voted by one movement, and in which a scratched ticket can also be voted by the one movement, together with as many other movements as may be necessary to operate the registers for candidates in whose favor the corresponding candidates in the column for which a straight ticket was voted have been scratched. With this former class of constructions, if a scratched ticket was voted, it was necessary to operate the registers for each candidate separately. In the second class of machines, this difficulty has been overcome by arranging the straight ticket mechanism to set all the keys in that party group for operation, and any desired candidate can then be scratched by unsetting his key and operating the key for the corresponding

candidate in whose favor the candidate for the voter's party has been scratched.

In accordance with my present invention, I employ a series of reciprocating keys, associated with the corresponding registers, and construct the mechanism so that as any key is moved to its operative position, the corresponding register will be operated whether the key is moved directly, or by the intervention of straight ticket mechanism. If, after a key has been operated, it is desired to scratch that candidate, or correct a mistake, the key can be moved back to its inoperative position, and this backward movement of the key will unoperate, *i. e.*, count one off of, the corresponding register which has just been advanced by the operation of the key. The keys, however, must be returned to normal position when the machine is re-set without unoperating the registers, and this might be accomplished in a variety of ways, such as by arranging the re-setting mechanism so that the registers will be moved out of operative relation to the keys before they are turned to their unoperated position; or in which the keys are moved bodily out of operative relation to the registers before they are re-set; or in which they keys are turned or otherwise moved without translating them so that as they are re-set they will not unoperate their corresponding registers. In the present application, I have shown the first method of preventing the unoperation of the registers on the re-setting of the keys, as that method adapts itself most readily to the style of machine to which the invention is applied.

Another feature of my invention relates to the construction of the candidate registers, which are adapted to be locked from movement at all times except when they should properly be operated by the voter.

My invention further relates to certain improvements in combinations not directly concerned with the features enumerated above, all as will be fully hereinafter described and set out in the claims.

Referring to the sheets of drawings, in which the same letters of reference are used to designate identical parts in all the figures, Figure 1 is a top plan view of the voting machine and its inclosing booth; Fig. 2 is a rear elevation of the same; Fig. 3 is a front elevation of the same with the curtain drawn aside to expose the ballot; Fig. 4 is a side elevation of the same; Fig. 5 is a front

elevation of the key-board, parts of the figure being in section on different vertical planes to more clearly disclose the construction; Fig. 6 is a front elevation, with the parts in section on the line 6—6 of Fig. 7; Fig. 7 is a side elevation in section on the line 7—7 of Fig. 6; Fig. 8 is a side elevation in section on the line 8—8 of Fig. 6; Fig. 9 is a side elevation in section on the line 9—9 of Fig. 6; Fig. 10 is a vertical section through the machine on certain section lines, as will be fully explained hereinafter; Fig. 11 is a plan view in section on the line 11—11 of Fig. 12; and Fig. 12 is a rear elevation of a portion of the mechanism in section on the line 12—12 of Fig. 11.

In the above drawings, Figs. 1 to 4 are on one scale, Figs. 5 to 9 are on another and larger scale, and Figs. 10 to 12 are on another and still larger scale.

Referring now especially to Figs. 1 to 4, the casing of the machine, which I designate generally by the reference character A, is, except as hereinafter described, of a rectangular shape, and is supported by legs B, which may be of any desired shape and construction, and which I preferably secure detachably to the casing A, as by the bolts C, to permit of the ready dismemberment of the machine when it is desired to fold it up to economize on the space occupied by it. For the same purpose, the booth proper is formed with a curtain, which is constructed as follows. Pivotally secured thereto by means of apertures in the ends of the machine near the top, as at D, is a strong bail or frame E, which, as will be best seen from Fig. 1, is substantially rectangular, except that it is open at the end where it takes into the machine, this fourth side being represented by just a sufficient length of the pipe of which it is preferably composed to take into the apertures at D to pivotally secure the bail in place. Of course, it will be understood that I might run a bail entirely through the machine. As before stated, this bail is preferably constructed of small metallic tubes, which are connected together at the outer corners by the joints F. To sustain this frame in its upper position when the machine is in use, I employ a pair of latches G at each end of the machine, these latches being spring pressed and having their under sides beveled as at H, resembling the ordinary door latch in both features. It will be readily perceived that by pressing in the latches G, the frame can be swung down to the dotted line position shown in Fig. 4, in which position it would be more convenient for storage than in the position shown in full lines. The sides of the booth are formed by curtains J, which are preferably buttoned on to the ends of the casing A as at K, and which are suspended by the rings L from the frame E.

The curtain J on the left hand side of the machine as you face it, is preferably carried around to form the movable curtain M in front of the machine, which curtain is suspended by the same kind of rings L. At the right hand side of the curtain, the sleeve N is employed, and this sleeve is the same diameter as the rings, and serves to assist in supporting the curtain M. This sleeve N is connected to the re-setting mechanism so that as the curtain is swung from the closed dotted line position of Fig. 3 to the open full line position, the re-setting and allied mechanism will be properly operated. These connections are as follows: Journaled in the top of the casing A, in a manner that will be more fully described hereinafter, are two sprocket wheels O and P, and journaled in the sides of the frame E, in suitable bearings, near the front portion of the frame E, are the two smaller sprocket wheels Q and R. A sprocket chain S passes around all these wheels O, P, Q and R, and this chain is connected to the sleeve N so that as the sleeve is moved from the right to the left in entering the booth, the chain will be moved correspondingly and the wheels rotated from left over to the right, looking down on them. To keep the chain taut, and also for the purpose of readily loosening it so that the chain can be removed when the machine is dismantled for storage, I provide a chain tightener of the following construction: The lever T is pivoted to the top of the casing A as at U, and has its forward end passing under a curved rack V, with which coöperates the spring dog W secured to the end of the lever T so that the lever will remain in any position along the rack V to which it is moved. A small sprocket wheel X is journaled upon the lever T, and it will be readily seen that the chain S can be tightened to any degree desired, or readily loosened so that the chain can be easily taken off of the wheels.

Referring now especially to Figs. 6 to 9, it will be seen that the sprocket wheel O is secured to the upper end of the vertical shaft Y, which is mounted in suitable bearings in the machine, the upper bearing being formed by an aperture in the top of the casing, while the lower bearing is formed in a cross piece Z which extends from the front to the rear of the machine. The sprocket wheel P is likewise rigidly secured to the upper end of the vertical shaft A', which, however, instead of terminating in a bearing in the cross piece B' corresponding to the cross piece Z, extends through said cross piece and down to a bearing formed in the cross piece C' at the bottom of the machine. The cross pieces Z and B' are provided with bearings therein for the ends of the horizontal shaft D', which is geared to the shafts Y and A' by means of the bevel gear wheels E' on the shaft Y, F' on the shaft A', and G' and H'

on the shaft D'. The distance that the chain S is moved in fully opening the booth, and the size of the sprocket wheels O and P, and the relative proportions of the bevel gear wheels E' and F' to their coöperating gear wheels G' and H' is such that the shaft D' is given a rotation forward through an angle of about 315° as the booth is opened, and returned through the same angle as the booth is closed. To insure the complete opening and closing of the booth and the resulting complete operation of the parts at the same time, and to prevent any possible manipulation of the machine, I employ a complete stroke mechanism, which is as follows: Referring especially to Figs. 6 and 8, it will be seen that I have secured on the shaft D', adjacent to the wheel G', and preferably integral therewith, the disk J', which is provided with the notches K' shown in Fig. 8. Coöperating with these notches which extend entirely around the periphery of the disk J', is the dog L', which is pivotally mounted upon a projection M' secured to an inclined portion N' of the rear wall of the casing. This dog L' has the two noses O' and P', one of which is held yieldingly in engagement with the notches K' by means of the leaf spring Q', which is secured upon the inclined portion N' of the casing, and which has its triangular free end R' coöperating with the triangular end S' of the dog L' to hold said dog yieldingly in either of its two positions, in which the noses O' and P', respectively, will coöperate with the teeth K' to compel the movement of the disk in one direction or the other, depending upon which nose is in engagement. To shift the position of the dog L' to permit a change of direction when the stroke is completed, I employ the lugs or pins T' and U', shown in dotted lines in Fig. 8, which coöperate with the arm V' upon the dog L', which arm projects into the plane of said pins. From an examination of Fig. 8, it will be seen that while the parts are in the position shown therein, the disk J', and consequently the shaft D', can turn from left over to right, until the pin T' coming around on the other side of the dog B' strikes it and forces it into its other position so that the nose P' comes into engagement with the teeth or notches K', after which the movement in that direction is stopped, and the direction of movement must be reversed until the pin U' coming in contact with the arm V' of the dog L' moves it back to the position shown in said figure. By this construction, it will be readily perceived that any possible manipulation of the curtain M, or an equivalent door, is prevented, as when the voter starts to throw it open to enter the booth, he is compelled to throw it completely open, before he can start to close it. After he starts to close it, it must be completely

closed, before it can be opened again, and as the movement of the shaft D', as will be subsequently explained, controls the operation of the device, it will be seen that fraudulent manipulation of the machine is absolutely prevented, unless with the connivance of the judges or inspectors of the election.

Before entering into a further description of the mechanism and connections operated by the shaft D', I desire to explain in detail the construction of the keys and their interlocking mechanism, and the coöperating registers, which details are best shown in Figs. 5, 8 and 10 to 12. Each key W' extends substantially from the rear of the casing to and through the front of the casing, being supported by the vertical partition X', as well as by the front side of the machine, which is made up of the different parts to be described. The key W' is of a generally rectangular shape, with the exceptions hereinafter described, and is provided with the hook Y', at its outer end, as the keys are constructed to be drawn out as they are operated, and the hook Y', of course, facilitates grasping them for this movement. These keys are constructed to slide freely back and forth in the front wall of the casing, which is made up of the parts hereinafter described, and in the partition X', which extends vertically through a portion of the machine parallel to the front and rear walls in the position shown in the various figures. The front wall is composed of three distinct layers, which are preferably employed in building up the mechanical structure, together with an outer part or layer that serves to hold the ballots. The outermost layer A², shown in elevation in the lower part of Fig. 5, and in section in Figs. 7 to 11, consists primarily of a metallic strip fastened to the various layers composing the front wall, which are all conveniently bolted together, and has its edges turned over as at B² so as to form a channel into which the strip C² upon which the names and other information constituting the ballot can be conveniently placed and retained. For the purpose of conveniently viewing the interlocking mechanism at all points when the ballots are removed, I may cut away parts of the body portion of this strip A² as at D², in Fig. 5, so that the interlocking mechanism may be readily visible for the purposes of noting its adjustment and action in overhauling the machine preparatory to an election. These strips A², as will be seen from Fig. 5, extend vertically between the rows of keys, filling up all the available space. Over the irregular balloting column shown at the right hand side of the machine, a similar but wider strip is employed, and this strip has the elongated apertures E² therein for a purpose to be subsequently de-

scribed. To make the parts of the machine beyond these vertical strips A^2 substantially flush therewith, I preferably fill out the remainder of the ballot board with the strips F^2 , which may be of any desired material. The next layer or part of the front wall G^2 , I preferably form of strips of glass, in order to facilitate the inspection of the parts in noting the operation of the interlocking mechanism, although it will be understood that other material might be employed. These strips G^2 are placed lengthwise in a vertical position, and consist of elongated rectangles, except that the sides have notches cut therein so that when the adjacent strips are placed together the notches form an aperture of a certain shape which is necessary to cooperate with the keys. On the left hand side of each plate, except the left hand end one, the rectangular notches H^2 are employed, which are of the necessary size and shape to accommodate the right hand two-thirds of one of the keys W' . On the opposite side of each of the plates is the aperture J^2 , which is square, and which is one-sixth the area of the aperture H^2 , and whose upper edge is flush with the upper edge of the aperture H^2 . It will be seen that these notches together serve to form an aperture which is of the same cross section as is the key W' at the point where it passes through said plate G^2 . When these plates G^2 are assembled, the surface thus formed is continuous except for the apertures through which the keys pass, and the elongated apertures K^2 which register with the apertures E^2 previously mentioned in connection with the irregular balloting mechanism. The rear plate L^2 of the front wall is preferably formed of metallic strips corresponding in every respect to the strips G^2 . Of course, it will be understood that the rear plate L^2 might be continuous, and the apertures therein cut or punched out, but I prefer the built up construction as being somewhat easier to manufacture. The intermediate layer between the strips G^2 and L^2 is made up of a series of strips M^2 , preferably metallic, and resembling in their general contour the strips G^2 and L^2 , except that they are placed horizontally instead of vertically, and the notches N^2 therein through which the keys W' pass are square, these notches being arranged in the upper edge of the plates registering exactly with the apertures formed by the notches J^2 and H^2 in the plates G^2 and the corresponding notches in the plates L^2 . These plates M^2 , which I represent in Fig. 5 as showing through the glass plates G^2 , do not abut against each other, but are separated by a sufficient space so that a horizontal channel O^2 , which is preferably square in cross section, is formed between each pair of plates. For the single candidate rows, such as the upper three rows of Fig. 5, I fill these channels O^2 with a series of pieces P^2 , which are preferably metallic spheres, like the ordinary balls used for ball bearings, although it will be understood that I might substitute short cylindrical rollers, or even sliding blocks. At the ends of each of these single candidate channels, I insert the small coiled springs Q^2 , and the length of the channel and the number of balls therein is regulated by the strips or blocks R^2 , which are placed in the ends of the channel so as to close it. It will be understood that the number of balls in the channel is so regulated to the length of the channel and the size of the springs Q^2 that when the springs Q^2 are expanded, the channel is completely filled, but that an additional ball P^2 can be pressed upward between the adjacent balls so that by pressing the springs Q^2 , one ball more, but not more than one, can be forced into the channel. For the purpose of forcing these balls into the channel, I make the key W' of a peculiar shape, best shown in Figs. 8 and 10, the key being so shaped that when it cooperates with the apertures through which it passes, it will serve, when it is in its innermost position, to receive one of the balls P^2 within the body of the key itself, and when the key is withdrawn, it will force the said ball upward out of the key, and into the channel O^2 . The key is preferably of such a shape that when the key is pushed in to the limit of its movement, and also when it is drawn out to the limit of its movement, the upper side of the key will form a part of the bottom of the channel O^2 , so that the channel will be continuous and its bottom uniform no matter which position the key is in, so that the balls can be moved freely past the keys, a condition which is necessary in connection with the multi-candidate groups, as will be explained farther on. The key W' may conveniently be made of three vertical strips fastened together, each strip being of the same thickness, and all of them having the same maximum width. While I have not shown the keys in the drawings as actually built up of these separate strips, I will suppose that they are for the purposes of description, as it will somewhat facilitate it. The right hand strip, so far as the parts normally extending from the partition X' to the hook Y' are concerned, is of maximum width throughout. The intermediate strip, throughout the same portion of its length, as will be seen in the upper key shown in section in Fig. 10, is of the uniform maximum width, except that it has parts of it cut away, so as to form an incline S^2 , an abutment T^2 , and a ledge or projection U^2 . The left hand strip has also a cut away portion which forms an abutment V^2 , a projection or ledge W^2 corresponding to and forming

a part of the ledge U^2 , a short incline X^2 , corresponding to and forming an auxiliary to the upper part of the incline S^2 , and an abutment Y^2 . It will be seen that the portions of this left hand strip between the abutments V^2 and the incline W^2 , and between the abutment Y^2 and the incline X^2 , form the short flanges Z^2 and A^3 projecting from the left hand side of the intermediate portion of the key. The ball P^2 , as will be seen in the two sections of the key in Fig. 10, when it is within the key, rests in the opening formed by the apertures in the intermediate and left hand portion of the keys, and that when a key is withdrawn, the incline S^2 will force the ball upward, between the balls immediately above it, as indicated in Fig. 5, and into the channel O^2 , thereby adding one ball more to the number in the channel. The incline S^2 cooperates with one-half of the balls, while the portions of the walls or plates G^2 and L^2 directly beneath the flanges Z^2 and A^3 prevent the ball from moving backward and forward with the key, but compel it to be moved upward by the action of the incline S^2 . When the key is in its innermost position, the bottom of the channel is formed by the ledges U^2 and W^2 , and when the key has been drawn out, and the ball forced completely upward into the channel O^2 , the bottom of the channel at that point is formed by the top of the key just beyond the inclines X^2 and S^2 . When the key is returned either by the voter or by the resetting mechanism to be subsequently described, as the aperture in the key passes beneath the channel, so as to make the opening in the bottom thereof, the ball above the channel will fall into the aperture and roll down into the pocket in the key.

For the purpose of multi-candidate groups, such as the six rows grouped together as shown in Fig. 5, instead of having the springs Q^2 and the blocks R^2 , I arrange plates B^3 , C^3 and D^3 at the ends of, and in the same plane as, the plates M^2 so as to form the semi-circular connections E^3 between the channels O^2 . I preferably form these plates B^3 , C^3 and D^3 so that the channel will be continuous throughout, so that if it were desired, one ball could be pushed from any portion of the channel all the way through and around to its original position. Where the numbers of rows are even, this is conveniently arranged by the use of the semi-circular connections E^3 arranged alternately at either end, and the additional connection F^3 , which joins the outermost rows. If the number of rows actually employed is uneven, it will be preferable to employ an even number of channels, and not provide one of the channels with keys. In arranging a multi-candidate group such as shown, the number of keys to be operated is deter-

mined, and a ball is placed in each key. Sufficient balls to completely fill the channel are then placed therein, except that a number of balls corresponding to the number of keys that can be operated are then withdrawn. By this construction, it will be seen that when any key is operated, one ball will be added to the channel, which then remains in the same condition as before, with the balls free to be forced or moved therein in whatever way may be necessary to accommodate them to the further operation of any of the keys. It will be readily apparent that one key in each horizontal row cannot be operated simultaneously, as is preferable for straight ticket voting, as the balls between the adjacent keys would cause them to jam, and, consequently, the multi-candidate groups, if any are employed, must not be operated by the straight ticket mechanism, but must be voted separately. It will be equally apparent that while two keys in the same horizontal row cannot be operated simultaneously, there is no occasion to do so, and any necessary number of keys can be operated in the same row one after the other, which might be necessary if the voter should desire to cast a ballot for one man from each political party represented in the multi-candidate group. It will also be apparent that when the multi-candidate group has been fully operated, the continuous channel will be full of balls, so that if all the keys should be re-set simultaneously, there would be a ball above every key ready to enter the key as it is withdrawn. It will, of course, be understood that the plates B^3 , C^3 and D^3 will be arranged in any desired shape and manner necessary to make the desired connections for the multi-candidate groups. By the construction thus employed, in which the operation of a key does not close the channel at all, but simply introduces an additional movable member therein, I have provided a construction of the utmost flexibility for a purely mechanical structure, and one that will be capable of adaptation to any kind of multi-candidate groups. As interlocking mechanisms of this general type have previously been employed, it has been difficult to arrange them so that there shall be perfect freedom of action in all the peculiar combinations that may arise in multi-candidate voting.

Referring now especially to Figs. 10 to 12, I will describe the construction of the registers and the corresponding parts of the keys that cooperate therewith. The registers are mounted in a vertically moving frame, which is built up of a series of parallel vertical bars G^3 , these bars being arranged in pairs between the vertical columns of keys, and having each pair connected by the upper and lower cross pieces H^3 and J^3 , these cross pieces having their outer ends

turned downward and upward, respectively, so as to together form a casing for each individual register with an aperture K^3 in each of said casings, through which aperture the figures on the register wheels may be seen and through which they project to a limited extent. These vertical bars G^3 are connected by cross bars at the bottom, not shown, and by the cross pieces L^3 , shown in dotted lines in Fig. 6, the whole serving to form a substantially rectangular frame which is raised and lowered at each operation of the machine by mechanism and in the manner subsequently to be more fully described. Journaled in suitable bearings in the plates G^3 are the shafts M^3 . Rigidly secured on the left hand end of the shaft M^3 , looking from the front of the casing, is the Geneva stop wheel N^3 , which I preferably form with the five notches O^3 and the five corresponding locking surfaces P^3 . The right hand portion of the key at its rear end is cut away as at Q^3 to form a flange upon which the detent or delay surfaces P^3 normally rest, and this flange is still further cut away at R^3 to permit the unlocking of the wheel when it is to be operated. The pin S^3 is suitably mounted in the cut away portion R^3 and projects from the central portion of the key into the plane of the shoulder formed by the outer portion. It will be readily apparent that as the key is pulled out, the pin S^3 will coöperate with one of the notches O^3 so as to rotate the disk through one-fifth of a revolution, and that as soon as the disk is released from the pin S^3 it is immediately locked by the flange Q^3 . It will be equally apparent that if after the key has been pulled out, it be pushed in, the disk will be moved back to its initial position and the register will be thereby unoperated. It will be apparent that the pin S^3 is a register engaging member moved by the key to actuate and unactuate the register, as the key is operated and unoperated unless the register is moved out of the path of movement of said register engaging member prior to the movement of the key, as is the case where the machine is re-set. Rigidly secured to the shaft M^3 just on the inside of the right hand wall G^3 is a gear pinion T^3 , which meshes with a gear pinion U^3 rigidly secured to the side of a wheel or disk V^3 , which constitutes the primary numbering wheel of the register. The number of the teeth on the wheel U^3 is twice that of the teeth on the gear wheel or pinion T^3 , so that the one-fifth of a revolution imparted to the shaft M^3 rotates the wheel V^3 through one-tenth of a revolution, which is necessary as the wheel V^3 is numbered according to the decimal system. Also rigidly secured to the wheel V^3 , but, of course, on the opposite side from the wheel

U^3 , is the Geneva stop disk W^3 , the shape of which is best shown in section in the portion c of Fig. 10. It may be here explained that the different vertical sections of the registers and corresponding mechanisms shown in Fig. 10 are on the lines $a-a$, $b-b$, $c-c$, $d-d$, $e-e$ and $f-f$, respectively, of Fig. 11. As it is desired to impart one-tenth of the rotations of the wheel V^3 to the next higher or tens wheel, the disk W^3 is provided with one pin X^3 , and the necessary notch Y^3 coöperating therewith, and this pin and disk coöperate with the notches Z^3 and delay surfaces A^4 , respectively, of the Geneva stop disk B^4 , which is mounted to rotate on the shaft M^3 . The disk B^4 is integral with, or otherwise rigidly secured to the gear pinion C^4 , which corresponds in shape and function to the gear pinion T^3 . The tens wheel of the train corresponds in every detail to the units wheel B^3 which has just been described, and the higher wheels are similarly constructed and have the necessary transferring mechanism interposed between them. The registering wheels are all mounted on a fixed shaft or rod D^4 , which is secured in the strips G^3 , and the washers E^4 may be interposed between the disks U^3 and W^3 of the adjacent wheels, if desired. It will be readily apparent that by the mechanism thus described, every actuation of the disk M^3 by the operation of the key counts one on the disk V^3 , and that every tenth rotation thereof is carried over to the tens wheel, and so on to the hundreds wheel. It is also equally apparent that the registering mechanism will operate forward or backward so that the registers may be unset if desired. Rigidly secured on the right hand end of the shaft M^3 is a disk F^4 , which is in the form of a regular pentagon, and which coöperating with the under left hand side of the key above that particular register serves to accurately position the same, and also to lock it from movement when the register frame is moved. As will be seen from section d of Fig. 10, when the registers are in their lower or operable position, the disk F^4 occupies the position shown therein, and upper left hand side of the key being cut away as at G^4 to accommodate this disk. If now the register frame be raised by the means to be subsequently described, a definite distance, the uppermost side of the disk F^4 will come squarely in contact with the under side of the left hand portion of the key. If the shaft M^3 is not exactly positioned, this will cause it to be brought to exact position so that the numerals will appear on the register just as they should, and, furthermore, the coöperation of the side of the disk F^4 with the under surface of the key will prevent the register being turned by any means whatever while the

frame is in its abnormal position, which is its position when the booth is open and the registers accessible for inspection.

The mechanism for raising and lowering the registering frame will next be described, reference being had especially to Figs. 6 and 7. The frame work carrying the registers has connected to its upper cross piece L^3 two or more vertical strips or links H^4 , which have anti-friction rollers J^4 mounted upon their upper ends. These anti-friction rollers J^4 take into and cooperate with cam slots K^4 formed in the right hand faces of the disks L^4 secured upon the shaft D' . The disk L^4 shown in Fig. 7 is in the position of rest that it occupies when the booth is closed, and the voter is supposed to be inside of it ready to operate the voting mechanism. It will be seen there that the register frame is in its lowermost position, so that as the keys are manipulated by the voter, the registers will be operated. When the voter opens the curtain or other exit to leave the booth, the shaft D' will be rotated by the mechanism previously described, and almost as soon as the rotation starts, the action of the cam slots K^4 will be to lift the registering frames so as to carry the registers out of operative relations to the keys, and to bring them into the locking relation to the keys previously described, in which relation they remain until another voter has entered the booth and closed the curtain or door after him, when the registers can become accessible for operation.

In order to provide for straight ticket voting, I mount on the side of each of the keys, between the partition X' and the front wall an anti-friction roller M^4 , which may be conveniently mounted upon a stud N^4 projecting from the side of the key. To cooperate with all these anti-friction rollers M^4 of each key in a vertical column except those in the multi-candidate groups, I provide the bar O^4 , which is pivoted at its lower end by a suitable stud to the supporting link P^4 , the lower end of which is pivotally mounted in a stud Q^4 projecting inwardly from the lower portion of the rear wall of the casing. The upper end of the bar O^4 is likewise pivotally secured to a link R^4 , which is pivotally mounted upon a bearing stud S^4 similar to the stud Q^4 and secured to and projecting inwardly from the inner side of the upper portion of the rear wall of the casing. Of course, these links P^4 and R^4 are of the same length and extend at the same angle, so that any movement imparted to the bar O^4 will always be parallel to its original position. To swing this bar O^4 forwardly, I provide a straight ticket handle T^4 , which is secured to a bar U^4 projecting out through a slot V^4 in the front wall of the casing, and which preferably is formed integral with and virtually constitutes a

continuation of the link R^4 . The partition X' is slotted as at W^4 to permit the necessary descent of the link R^4 as the straight ticket handle is pulled down to the dotted line position of Fig. 7 in operating the machine. The partition X' is also slotted as at X^4 to permit the passage of the links R^4 . Coiled springs Y^4 and Z^4 may be secured to the links R^4 and P^4 , respectively, and to the rear wall of the casing to normally hold the straight ticket lever and its associated bar O^4 in their upper inoperative position. It will be apparent that, as the handle T^4 is pulled down, all the keys in that vertical row will be thrust out, operating all the registers in that vertical row. If it is then desired to scratch any candidate, after releasing the straight ticket lever, the key of the candidate that is to be scratched can be pushed in, unoperating his register, after which the key of the candidate in whose favor the scratching was done can be pulled out and the register of that candidate thereby operated. Thus it will be seen that to vote a straight ticket, it is only necessary to pull down the straight ticket lever or handle belonging to that particular party, after which any scratching can be done by the means previously set out. It will, however, be understood that in case any multi-candidate groups are employed, the keys of the candidates therein for which it is desired to vote must be pulled out, as the keys in such groups are not operated by the straight ticket mechanism. To prevent such operation, I will preferably arrange such groups at the bottom of the columns below where the bars O^4 terminate, or I might arrange them at the top of the columns above the bars O^4 .

After the ballot is completed, and as the voter opens the curtain or door to leave the booth, the registers are raised out of operative position by the mechanism previously described and shortly after they are raised, the keys are re-set by the following mechanism: Parallel to and in the same plane as the bar O^4 is another bar A^5 , which normally rests against the rear side of the front wall of the casing, and is supported by the links B^5 and C^5 , similar in construction and operation to the links R^4 and P^4 , except that they are placed on the opposite sides of their bar A^5 , and are carried by lugs projecting inwardly from the partition X' . To move these bars A^5 from front to rear so that by cooperating with the anti-friction rollers M^4 of the operated keys they will be returned to normal position, I secure an anti-friction roller or stud D^5 upon the right hand side of the link B^5 and in position to project into the cam slot or groove E^5 formed on the left hand faces of the disks L^4 and upon as many additional disks F^5 secured upon the shaft D' as may be necessary for the number of

vertical rows of registers employed. By an examination of the cam slot E^5 , shown in dotted lines in Fig. 7, it will be seen that shortly after the register frame has been raised, the link B^5 is drawn rearward by the action of the cam slot, carrying with it the bar A^5 which is compelled to move parallel to itself by reason of its connection to the link C^5 . In order to distribute somewhat uniformly over the entire movement of the apparatus the work to be performed, I preferably place these cams E^5 in different angular positions relative to the shaft D' , as indicated by the dotted lines in Fig. 8, so that first one bar A^5 will be operated, then the adjacent one, and so on until all of them have been operated. In addition to thus equalizing the power demanded throughout the operation of the machine, if a multi-candidate group has been badly scratched, I secure a successive operation in returning the different keys that does not require such a rapid adjustment of the balls to the requirements of re-setting the device.

The mechanism for casting irregular ballots will next be described. For this purpose, the apertures E^2 and K^2 , previously described as passing through the front wall of the casing, are provided, and these apertures open into the passage-way G^5 , which terminate just in front of the feeding rolls to be described. These passage-ways G^5 are preferably formed by the metallic strips H^5 extending between the vertical cross partitions J^5 and K^5 , and to which they are secured by riveting or otherwise fastening thereto the upturned flanges L^5 . The vertical partition X' is cut away between the cross partitions J^5 and K^5 so as to not interfere with the passage-ways thus formed. Mounted in the extreme outer edges of the partitions J^5 and K^5 are several pairs of rollers M^5 and N^5 . The rollers M^5 have their left hand bearing O^5 somewhat enlarged, and passing through a squared or other angular aperture therein is the correspondingly squared rod P^5 , which has its other end rounded and passing through a similar aperture in the hollow roller and furnishing a bearing for the other end of the roller. A pin Q^5 passing through, or a disk secured to the shaft P^5 near the right hand end of the roller, serves to coöperate with an expanding helically coiled spring R^5 surrounding said shaft and serving to hold it yielding in the full line position of Fig. 11. The right hand end of the shaft P^5 has rigidly secured thereto the bevel gear pinion S^5 , which is normally out of the plane of the coöperating bevel gear wheels T^5 secured to the shaft A' previously mentioned. As this shaft A' is rotated at every operation of the machine, it will be apparent that if the shaft P^5 is pushed forward to the dotted line position of Fig. 12, so that

the teeth of the pinion S^5 mesh with the teeth of the gear wheel T^5 , the shaft P^5 , and consequently the roller M^5 , will be rotated until the key, which controls the position of the shaft P^5 , as will be subsequently described, is returned to its unoperated position. It will be remembered that the vertical rows of keys are arranged to be returned at different times in the operation of the machine, and I arrange the cam for returning the irregular balloting keys so that they will be the last ones to be returned, and as they are returned just before the conclusion of the re-setting of the machine, the rollers M^5 and N^5 will have been rotated far enough to feed through the prepared ballot to be subsequently described. The roller N^5 may be rigidly secured to the shaft U^5 upon which it is mounted, or it may be loose thereon, the construction of its bearings being immaterial inasmuch as it is meshed to and rotates with the roller M^5 by reason of having the gear pinion V^5 thereon meshing with the gear pinion W^5 on the roller M^5 , these gear pinions being conveniently located just inside the casing at either end of the rollers. In order to insure a certain grip of the ballot, the roller M^5 is cut away as at X^5 to form a passage-way between said rollers when they are in their normal position. To close this passage and prevent the possibility of a ballot being forced between them and thereby an unauthorized irregular vote, I provide the pins Y^5 projecting from the roller N^5 , the said pins being mounted to slide in the bores Z^5 in the roller, and being normally held in their upper position by means of a small expanding helically coiled spring A^6 interposed between the end of the pin Y^5 and the other end of the bore Z^5 . As will be seen from section f of Fig. 10, the irregular ballot, which is preferably of a cardboard almost thick enough to fill the slot or channel G^5 , and of a width corresponding to said channel, and of a length permitting its complete insertion in said channel with a small portion projecting from the aperture E^2 , after the name of the irregular candidate has been written thereon, is inserted as far as will be permitted, which is to where its end contacts with the pins Y^5 . The corresponding key, however, has first been pulled out, and this serves to throw the shaft P^5 to the dotted line position of Fig. 12, and also to bring the rollers M^5 and N^5 to the normal positions as shown by the following mechanism.

The keys B^6 for the irregular balloting apparatus are the same as the ordinary keys everywhere except on the right hand side of the rear ends, where the cut away portions adapted to coöperate with the disk N^3 are omitted, and the key is lengthened and provided with a cam flange C^6 , which con-

sists of the horizontal portion D^6 and the inclined portion E^6 leading thereto. The function of the inclined portion E^6 is to co-operate with the head F^6 rigidly secured on the end of the rod P^5 , so that as the key is withdrawn in the normal operation thereof, the head F^6 , and consequently the shaft P^5 , will be cammed from the full line position of Fig. 12 to the dotted line position, and held in the dotted line position by reason of the surface D^6 coöperating with the head F^6 . To position the rollers M^5 and N^5 , I make the head F^6 of a heart-shape, as best shown in section *c* of Fig. 10, and place a spring-pressed plunger G^6 in the end of the key. This spring-pressed plunger G^6 has a sharp point H^6 which coöperates with the edge of the heart-shaped head F^6 as the key is withdrawn and forces the head to the normal position shown. This plunger is of the general shape shown in Figs. 10 and 11, and has the tail J^6 projecting into an aperture K^6 formed in the end of the key beneath the cam flange C^6 , a small expanding coiled spring L^6 being interposed between the tail and the end of the aperture to yieldingly hold the plunger in its forward position. As will be readily seen, the nose H^6 of the plunger coöperates with the head F^6 in whatever position it finds it, and turns it to its normal position, this position being reached just at the time that the incline E^6 has forced the head F^6 inward and out of engagement with the plunger G^6 . Thus it will be seen that as the key is drawn out, the feeding rollers are properly positioned, and the gear pinion S^5 is moved into mesh with its gear wheel T^5 .

To receive the irregular ballots as they are fed through the machine as it is being reset, I provide a small auxiliary casing M^6 , which is of the general shape shown in the full and dotted line positions in Fig. 2, and which is hinged at its left hand side to the rear wall of the main casing A . This casing M^6 is divided by the partitions N^6 , which are preferably metallic strips secured to the sides of the casing, into compartments, which are of the general shape shown in the dotted line position of Fig. 2, consisting of the short horizontal portion and the longer inclined portion. The inclined portion of the casing is the one which is adapted to finally receive the ballots, which are slightly less than the length of said inclined portion, so as to readily pack therein if any considerable number of ballots should be cast, which is, however, a very rare occurrence in the actual use of this class of machines.

I preferably arrange the machine so that instead of merely writing off the totals shown after the election is over, I am enabled to take an impression of the registers and thus have an indisputable record of the election. For this purpose, I form the

figures upon the wheels V^3 of raised type, which type project just outside of the casing, as shown in Fig. 10. A door O^6 is provided in the rear side of the casing covering the entire space occupied by the registers, and a suitable pad P^6 is placed on the inside thereof, so that when the type on register wheels have been inked by any suitable apparatus, such as an ordinary inking roller, a strip of paper Q^6 may be placed upon the pad P^6 , and the door closed so as to take an impression of all of the type. The faces of the registers are provided with some identifying mark or number formed thereon as a type surface, as at R^6 , so that the number printed may be identified with relation to the candidates for whom the vote is cast. Of course, it might be possible to have the name of the candidate arranged in type in connection with his register, but that would necessitate more extensive changes at each election. As a convenient method of securing the door O^6 and the auxiliary casing M^6 , I may place the staples S^6 upon the door and having the strips T^6 upon the auxiliary casing coöperating therewith, the doors being secured in position by the padlocks U^6 , which will, of course, be provided with different keys in the hands of different judges or inspectors of the election so as to prevent the unauthorized inspection or tampering with the returns by any one of these officials.

For the purpose of preventing any possible access to the registers when they are not in their uppermost locked position, I employ a locking mechanism which may consist of the staples V^6 placed on the inside of the door, as shown in Figs. 7 and 8, and in a position to have the hooks W^6 projecting downward from the frame of the register casing enter therein when the registers are in their lowermost position. When, however, the registers are in their uppermost position and are locked from possible manipulation or movement, the hooks W^6 are withdrawn from the staples V^6 and the door O^6 can be opened.

While I have not described in detail the exact shape of the casing, and the exact construction of the framework therein, it will be understood that the casing is of the shape adapted to house the working mechanism, and the partitions and supports are such as are adapted to support the various parts.

While I have shown and described in detail the novel interlocking mechanism employed by me, I do not herein claim the same, as it is made the subject of a separate application, No. 297,134, filed January 22, 1906.

While I have shown my invention as embodied in the form which I at present consider best adapted to carry out its purposes, it will be understood that it is capable of modifications and that I do not desire to be

limited in the interpretation of the following claims by the language thereof except as may be necessitated by the state of the art.

5 I do not claim to be the original and first inventor of a voting machine in which the registers are mounted in a frame which normally occupies a position so that the registers are out of engagement with the keys
10 but which is movable to bring the registers into engagement with the keys so as to be subsequently operated thereby.

What I claim as new, and desire to secure by Letters Patent of the United States,
15 is:

1. In a voting machine, the combination with a series of keys grouped according to offices and freely movable forward and backward, and having interlocking mechanism operated by the forward movement of the key and unoperated by the return movement to prevent the operation of more than a determined number of said keys in any group at the same voting operation; of a
20 series of registers corresponding to the keys and adapted to be operated thereby as the key is advanced, and unoperated as the keys are returned by the voter prior to the operation of the re-setting mechanism, said registers being movable bodily out of operative
25 relation to the keys; and re-setting mechanism for moving the registers out of operative relation to their keys as the operated keys are returned to normal position.

35 2. In a voting machine, the combination of plural series of keys grouped according to parties and according to offices freely movable forward and backward and having interlocking mechanism operated by the forward
40 movement of the keys and unoperated by the return movement to prevent the operation of more than a determined number of said keys in any group at the same operation, straight ticket mechanisms for simultaneously advancing all the keys of any
45 one party group; with plural series of registers corresponding to the keys and adapted to be operated thereby as the key is advanced, and unoperated as the keys are returned by the voter prior to the operation
50 of the re-setting mechanism, said registers being movable bodily out of operative relation to the keys; and re-setting mechanism for moving the registers out of operative
55 relation to their keys while the operated keys are returned by said mechanism to normal position.

3. In a voting machine, the combination with a series of keys grouped according to
60 offices and freely movable forward and backward and having interlocking mechanism operated by the forward movement of the keys and unoperated by the return movement to prevent the operation of more than
65 a determined number of said keys in any

group at the same voting operation; of a movable frame carrying a series of registers corresponding to the keys and adapted to be operated thereby as the key is advanced, and unoperated as the keys are returned by the
70 voter prior to the operation of the re-setting mechanism, and re-setting mechanism for moving said frame bodily to carry the registers out of operative relation to their keys as the operated keys are returned to normal
75 position.

4. In a voting machine, the combination with a series of keys grouped according to offices and freely movable forward and backward, of register actuating members moved
80 back and forth with the keys, interlocking mechanism operated by the forward movement of the keys and unoperated by the return movement thereof to prevent the operation of more than a determined number of
85 said keys in any group at the same operation, a series of registers corresponding to the keys and adapted to be operated by the register actuating member as the keys are advanced, and unoperated as the keys are
90 returned by the voter prior to the operation of the re-setting mechanism, said registers being movable bodily out of operative relation to the actuating member, and re-setting mechanism for moving the registers out of
95 operative relation to their actuating members as the operated keys are returned to normal position.

5. In a voting machine, the combination of a plural series of keys grouped according
100 to parties and according to offices, freely movable forward and backward and having interlocking mechanism operated by the forward movement of the keys and unoperated by the return movement to prevent the
105 operation of more than a determined number of said keys in any group at the same operation, straight ticket mechanisms for simultaneously advancing all the keys of any one party group, register actuating
110 members moved back and forth with the keys; with plural series of registers corresponding to the keys and adapted to be operated by the actuating members moved by the keys as they are advanced, and unoperated
115 as the keys are returned by the voter prior to the operation of the re-setting mechanism, said registers being movable bodily out of operative relation to the actuating members; and re-setting mechanism
120 for moving the registers out of operative relation to the actuating members while the operated keys are returned by said re-setting mechanism to normal position.

6. In a voting machine, the combination
125 with a series of keys grouped according to offices and freely movable forward and backward and having interlocking mechanism operated by the forward movement of the keys and unoperated by the return move-
130

ment to prevent the operation of more than a determined number of said keys in one group at the same voting operation, register actuating members moved back and forth with the keys; of a movable frame carrying a series of registers corresponding to the keys and adapted to be operated by the actuating members as the keys are advanced, and unoperated as the keys are returned by the voter prior to the operation of the re-setting mechanism, and re-setting mechanism for moving said frame bodily to carry the registers out of operative relation to the actuating members as the operated keys are returned to normal position.

7. In a voting machine, the combination with the reciprocating frame, the registers mounted therein, of a series of keys for operating said registers when they are in one position, a re-setting bar for returning said keys, and a shaft carrying two cam disks, one coöperating with the re-setting bar, and the other with the reciprocating frame to carry the registers out of engagement with the keys, the cams being so located that the frame is moved before the keys are re-set.

8. In a voting machine, the combination with the reciprocating frame, the registers mounted therein, of plural series of keys for operating said registers when they are in one position arranged in columns, a plurality of re-setting bars for returning said keys corresponding in number to the columns thereof, and a shaft carrying a plurality of cam disks, one of which coöperates with the register frame to reciprocate the same, and the others coöperating respectively with the re-setting bars to move the same, the cams being so located upon the shaft that the frame is moved first and the re-setting bars are subsequently operated *seriatim*.

9. In a voting machine, the combination with the actuating mechanism, and registers normally in engagement therewith, of means for moving said registers out of engagement with said actuating mechanism and for locking them from movement when moved out of said engagement, a door giving access to said registers, and locking connections between said door and registers whereby the door cannot be opened until the registers are locked.

10. In a voting machine, the combination with the actuating mechanism, a movable frame which carries a plurality of registers normally in engagement with said actuating mechanism, of means for moving said frame to carry the registers out of engagement with said actuating mechanism, the locking mechanism to hold said registers from movement when the frame is moved to carry them out of said operative engagement, a door giving access to said registers, and locking connections between said door and the frame carrying the registers whereby the door cannot

be opened until the frame has been moved to carry the registers to their inoperative and locked position.

11. In a voting machine, the combination with a plurality of keys, a corresponding number of registers normally in engagement with said keys and held from movement except by the keys, of means for moving said registers out of engagement with the keys, means for locking said registers from movement when carried out of engagement with their keys, a door giving access to said registers, and locking connections between said door and registers whereby the door cannot be opened until the registers are locked from movement by any means whatever.

12. In a voting machine, the combination with the plurality of keys, of a frame in which a plurality of registers are mounted, said registers normally being in engagement with the keys and held from movement except by said keys, means for moving said frame to carry the registers out of operative engagement with the keys and to lock them from operation, a door giving access to said registers, and locking connections between said door and frame whereby the door cannot be opened until the frame is moved so that the registers are locked from operation by any means whatsoever.

13. In a voting machine, the combination with the series of keys, of a corresponding series of registers, and means for moving said registers into two positions, in the first of which the registers are in operative engagement with the keys so as to be locked from movement except by said keys, and in the other of which they are in engagement with the keys, but are locked from movement by any means whatsoever.

14. In a voting machine, the combination with the shaft having the cam disk thereon, of the pivoted arms, the re-setting bar carried thereby, one of said arms being arranged to coöperate with said cam disk, substantially as and for the purpose described.

15. In a voting machine, the combination with the shaft having a plurality of cam disks thereon, of a corresponding number of re-setting bars carried by pivoted arms, one of each of said arms being arranged to coöperate with one of said cam disks, said disks being arranged at different angular distances from a fixed point so as to operate said re-setting bars *seriatim*.

16. In a voting machine, the combination with candidate selecting mechanism arranged according to offices and movable freely from unoperated to operated position and vice versa, of a series of registers adapted to be operated by the selecting mechanism as it is moved from unoperated to operated position and vice versa, and means for operatively disengaging said selecting mechanism from all of the registers

and for subsequently returning it to inoperative position while thus disengaged.

17. In a voting machine, the combination with a series of candidate keys grouped according to offices and freely movable from unoperated to operated position and vice versa, and having interlocking mechanism operated by the movement of said keys to prevent the operation of more than a determined number of said keys in any group at the same voting operation; of a series of registers corresponding to the keys and adapted to be operated thereby as the keys are moved from unoperated to operated position and vice versa; and means for operatively disengaging all of said keys from all of said registers and for subsequently returning to unoperated position all of the keys that have been left in operated position while thus disengaged.

18. In a voting machine, the combination with a series of candidate selecting mechanisms arranged according to offices and movable freely from unoperated to operated position and vice versa; of a series of registers adapted to be operated by the selecting mechanism as it is moved from unoperated to operated position and vice versa; and mechanisms for translating one of said series relative to the other and for returning all of said selecting mechanisms to unoperated position while said series is translated and without thereby unoperating the corresponding registers.

19. In a voting machine, the combination with a series of candidate keys grouped according to offices and freely movable from unoperated to operated position, and vice versa, and having interlocking mechanism operated by the movement of said keys to prevent the operation of more than a determined number of said keys in any group at the same voting operation; of a series of registers corresponding to the keys and adapted to be operated thereby as the keys are moved from unoperated to operated position, and vice versa; and mechanism for translating one of said series relative to the other and for returning all of said selecting mechanisms to unoperated position while said series is translated and without thereby unoperating the corresponding registers.

20. In a voting machine, the combination with a series of keys grouped according to offices and movable freely from unoperated to operated position, and vice versa, and having interlocking mechanism operated by the movement of said keys to prevent the operation of more than a determined number of said keys in any group at the same voting operation; of a series of registers corresponding to the keys and adapted to be operated thereby as the key is moved from unoperated to operated position and vice versa, and mechanism for translating one of said

series relative to the other and for returning all the operated keys to unoperated position while said series is translated without thereby unoperating the corresponding registers.

21. In a voting machine, the combination of a plural series of keys grouped according to parties and according to offices, freely movable forward and backward and having interlocking mechanisms operated by the forward movement of the key and unoperated by the return movement to prevent the operation of more than a determined number of said keys in any group at the same voting operation, straight ticket mechanisms for advancing all the keys of any one party group; with plural series of registers corresponding to the keys and adapted to be operated thereby as the key is advanced, and vice versa; and mechanism for moving bodily one of said plural series relative to the other and for returning all of the operated keys to normal position while said plural series remains moved without thereby unoperating the corresponding registers.

22. In a voting machine, the combination with a series of candidate keys grouped according to parties and according to offices freely movable forward and backward and having interlocking mechanism operated by the forward movement of the key and unoperated by the return movement to prevent the operation of more than a determined number of said keys in any group at the same voting operation, straight ticket mechanism for advancing all the keys of any one party group; with plural series of registers corresponding to the key and adapted to be operated thereby as the key is advanced, and vice versa; and means for operatively disengaging all of said keys from all of said registers and for subsequently returning to unoperated position all the keys that have been left in operated position while thus disengaged.

23. In a voting machine, the combination with the registers, of the keys cooperating therewith to actuate the registers, resetting mechanism by which the keys and registers are disengaged prior to the resetting of the keys, and means for moving the primary register wheels exactly to operated or unoperated position when they are disengaged from the keys.

24. In a voting machine, the combination with the frame, of the registers mounted therein, the keys cooperating therewith to actuate the registers, resetting mechanism by which the register frame is moved to disengage the registers from the keys prior to the resetting of the keys, and means for moving the primary register wheels exactly to operated or unoperated position when the frame is moved to disengage them from the keys.

25. In a voting machine, the combination

with the frame, of the registers mounted therein, the keys cooperating therewith to actuate the registers, resetting mechanism for moving the frame to disengage the keys and registers prior to the resetting of the keys, an actuating element connected with the primary wheel having surfaces adapted to be brought into a certain plane when the primary register wheel is exactly in position, and other surfaces with which said first-mentioned surfaces are adapted to engage when the register frame is moved.

26. In a voting machine, the combination with the frame, of the registers mounted therein, the keys cooperating therewith to

actuate the registers, resetting mechanism for moving the frame to disengage the keys and registers prior to the resetting of the keys, an actuating element connected with the primary wheel having surfaces adapted to be brought into a certain plane when the primary register wheel is exactly in position, and other surfaces on the keys with which said first-mentioned surfaces are adapted to engage when the register frame is moved.

JOHN HOWARD McELROY.

Witnesses:

LOUISE E. SERAGE,
HATTIE O. HALVORSON.