

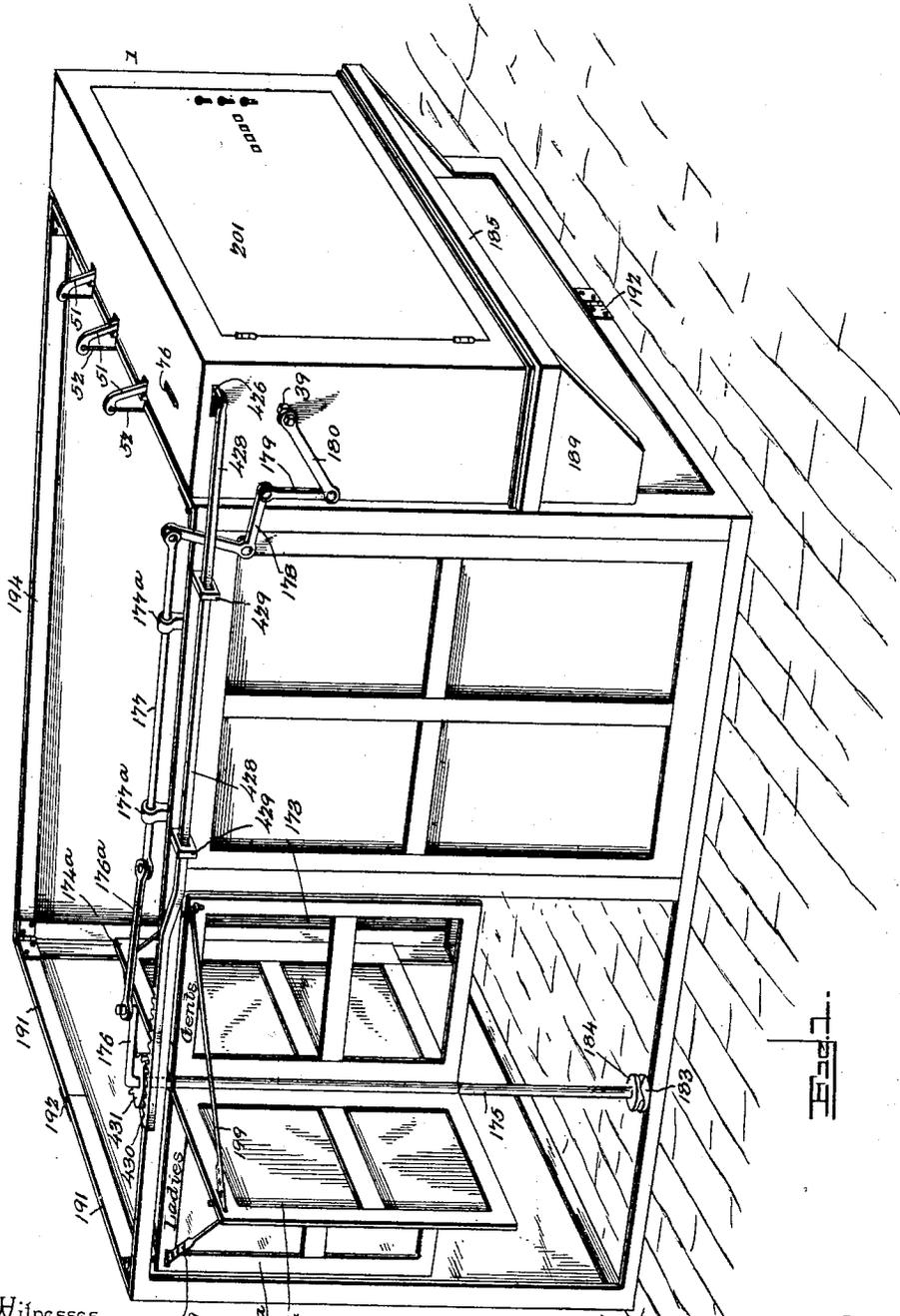
L. R. WINSLOW.
VOTING MACHINE.

APPLICATION FILED DEC. 28, 1899.

966,505.

Patented Aug. 9, 1910.

19 SHEETS—SHEET 1.



Witnesses
E. J. Stewart,
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Inventor
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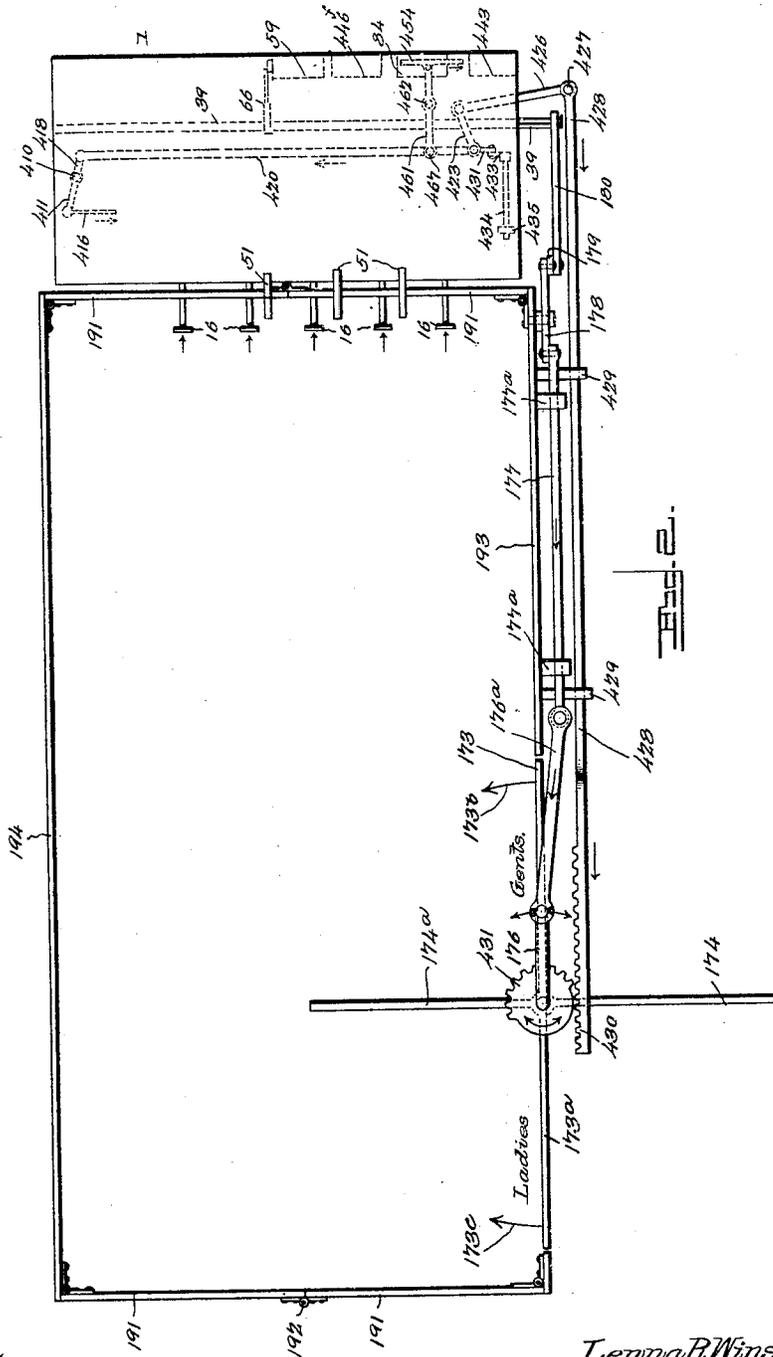
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Witnesses

E. F. Stewart
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Lenna R. Winslow inventor

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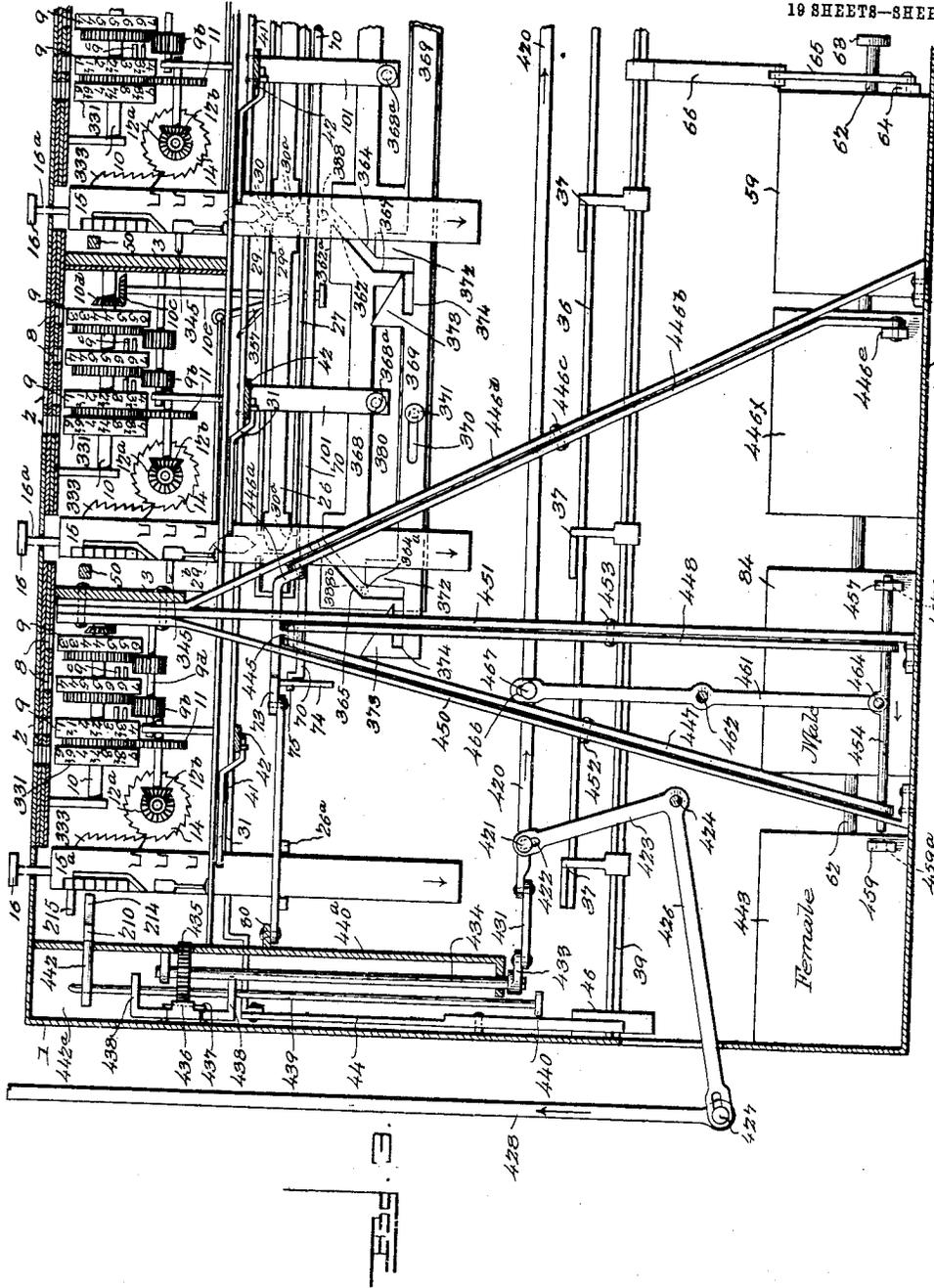
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19 SHEETS—SHEET 3.



Witnesses
P. F. Stewart
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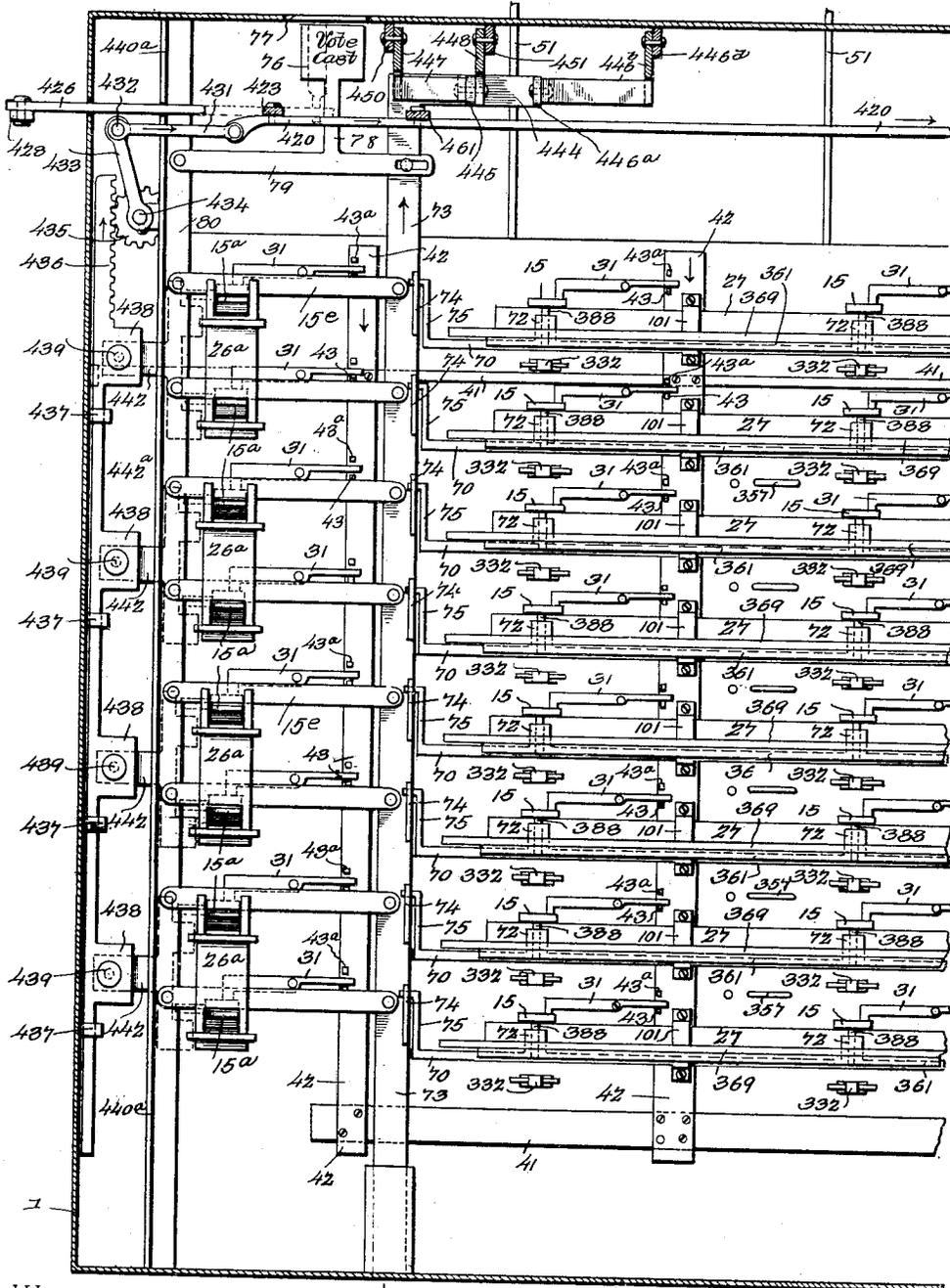
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19 SHEETS—SHEET 5.



Witnesses

E. Stewart
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Fig. 4.

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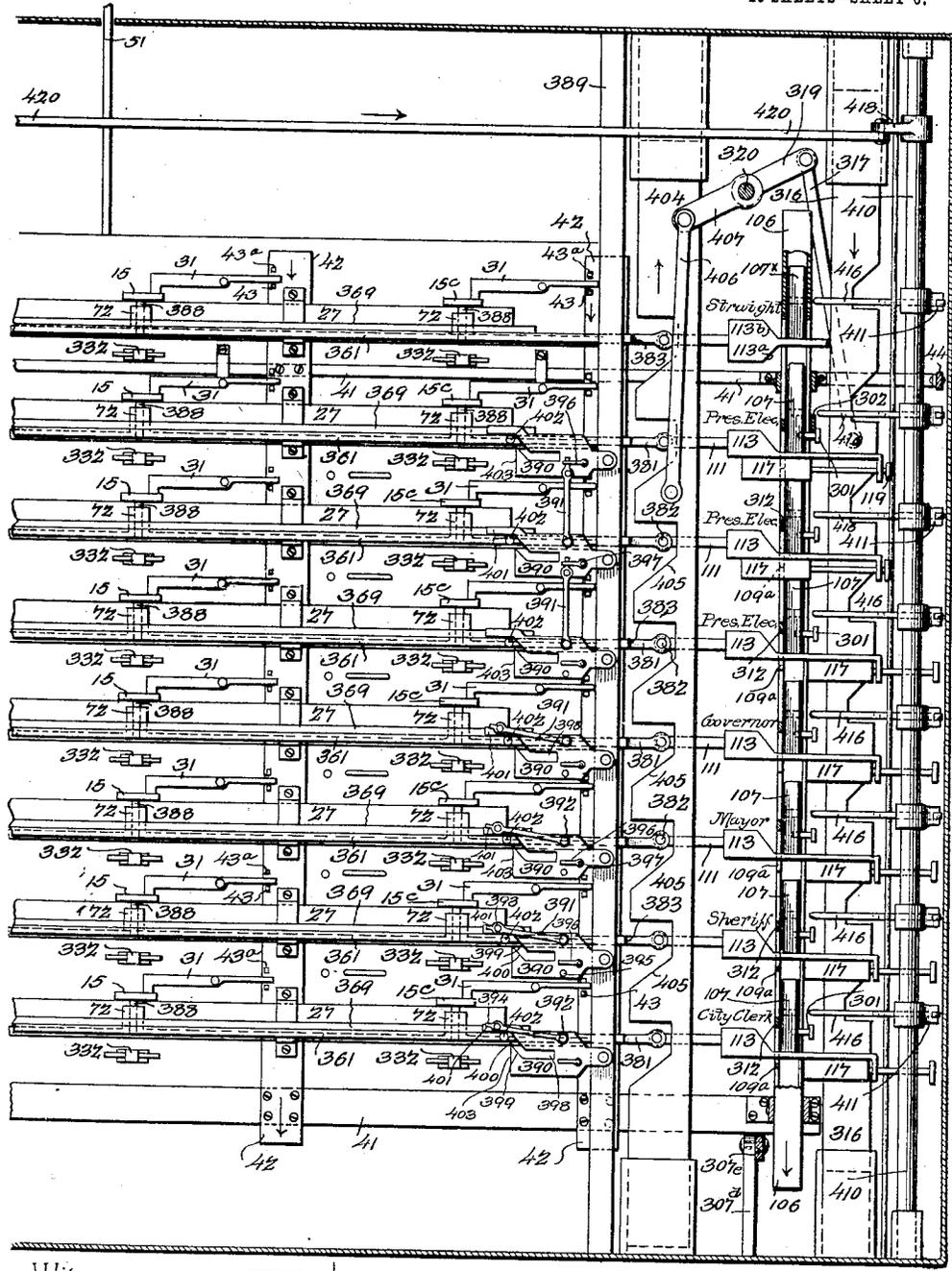
C. Snow & Co.

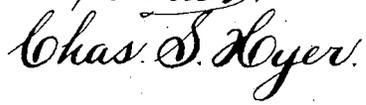
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19 SHEETS—SHEET 6.



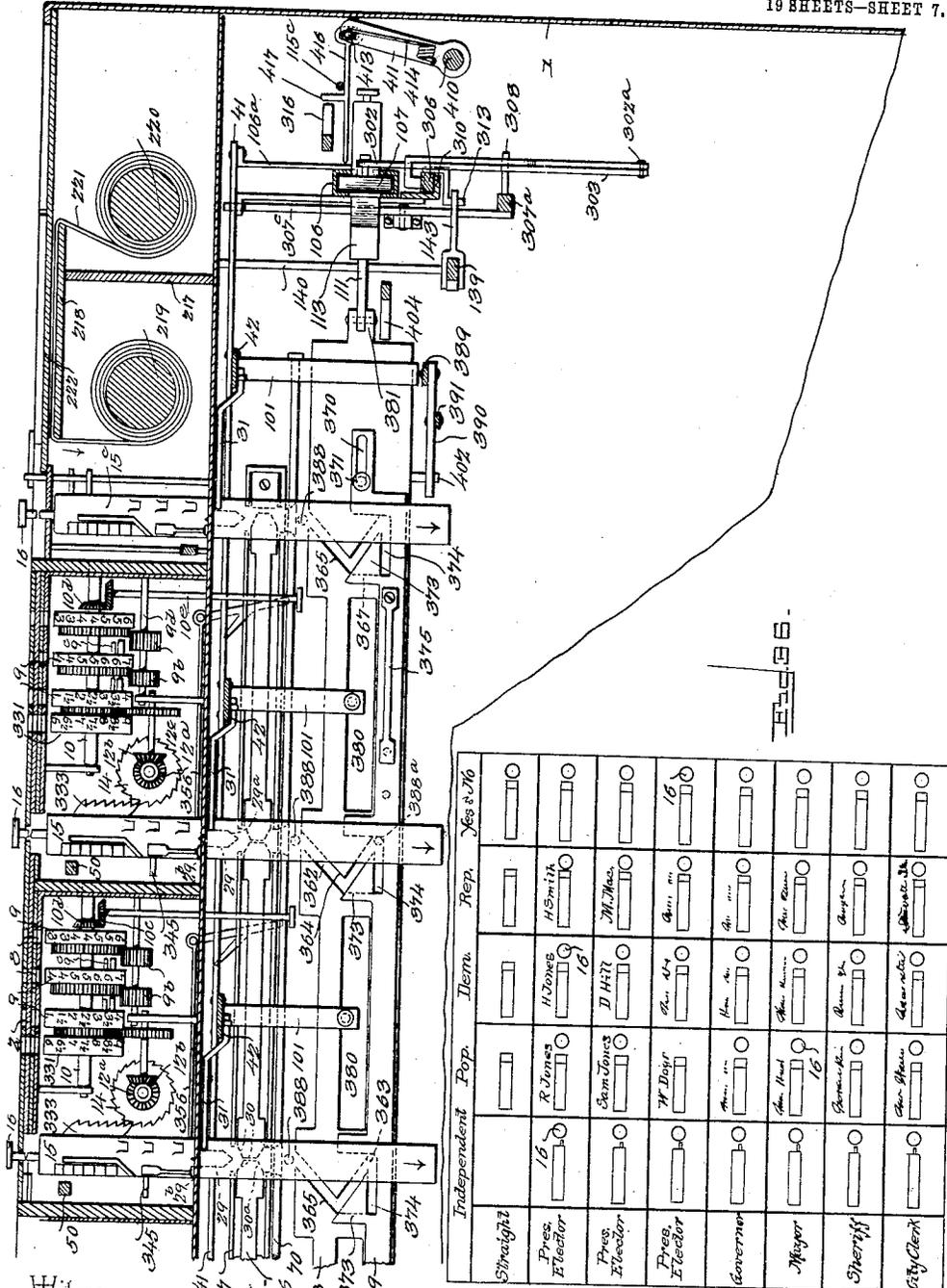
Witnesses  Lenna R. Winslow, Inventor
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966,505.

L. R. WINSLOW.
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Patented Aug. 9, 1910.

19 SHEETS—SHEET 7.



Witnesses
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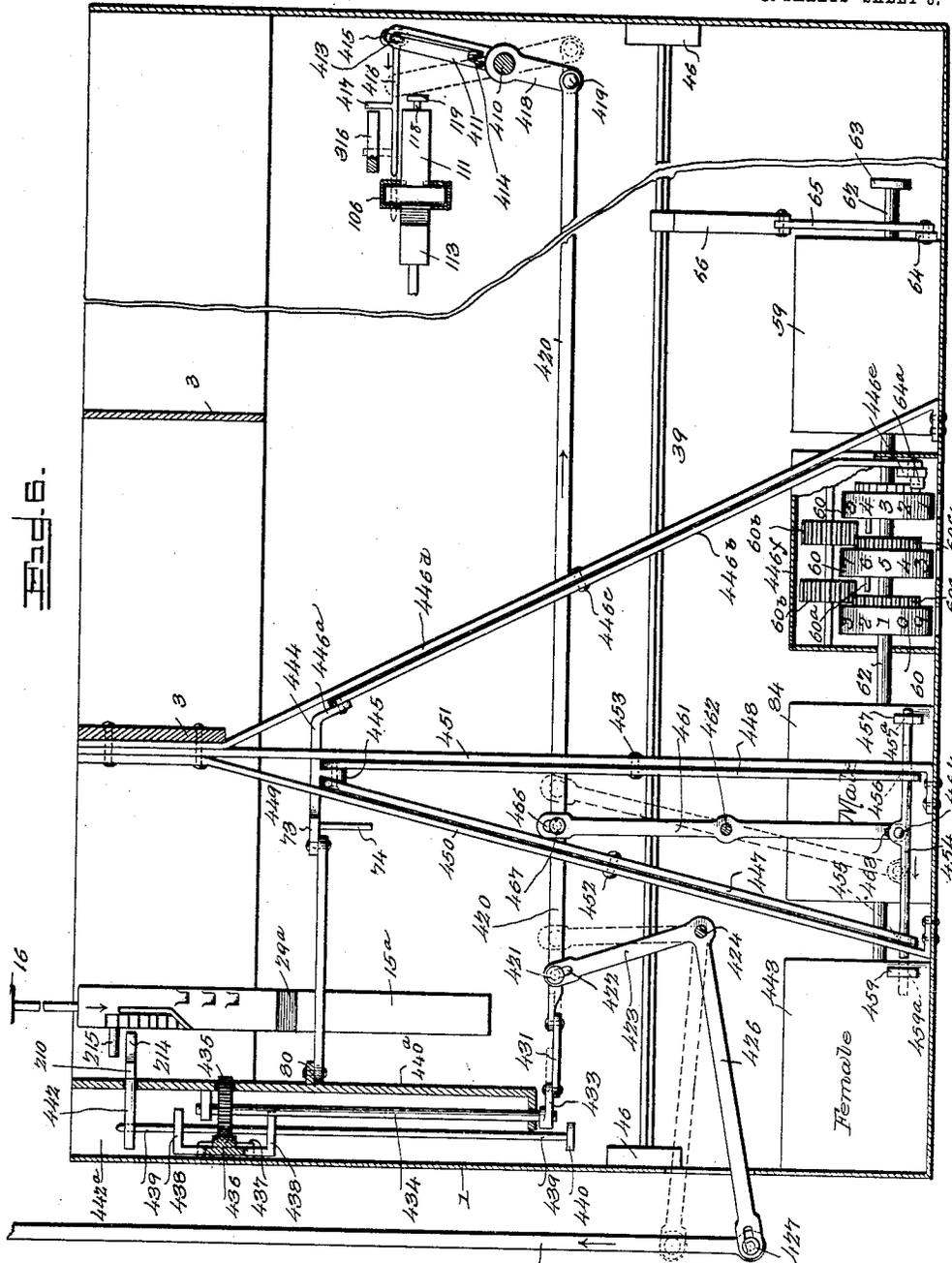
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L. R. WINSLOW.
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19 SHEETS—SHEET 8.



Witnesses
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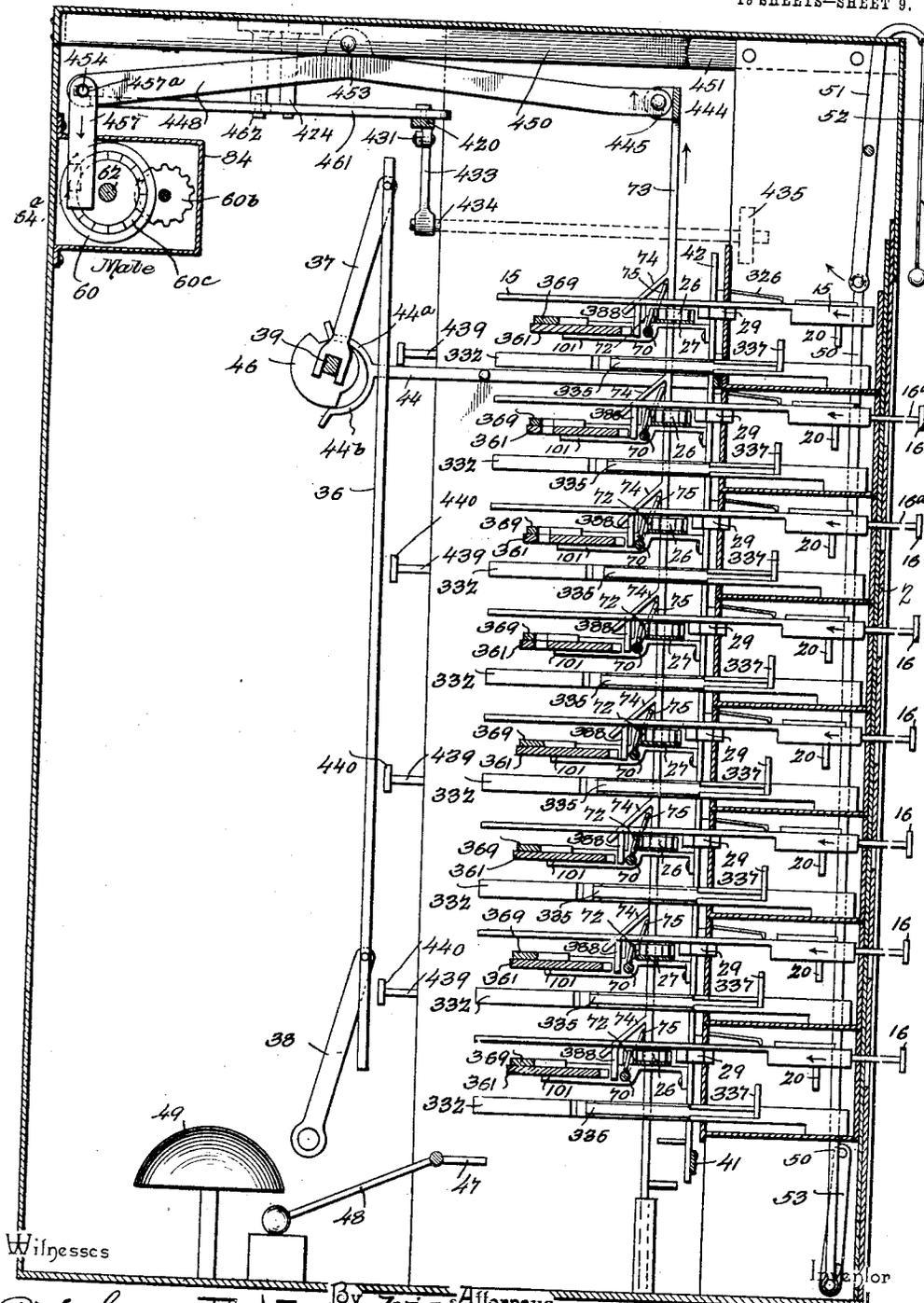
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19 SHEETS—SHEET 9.



Witnesses
E. J. Stewart
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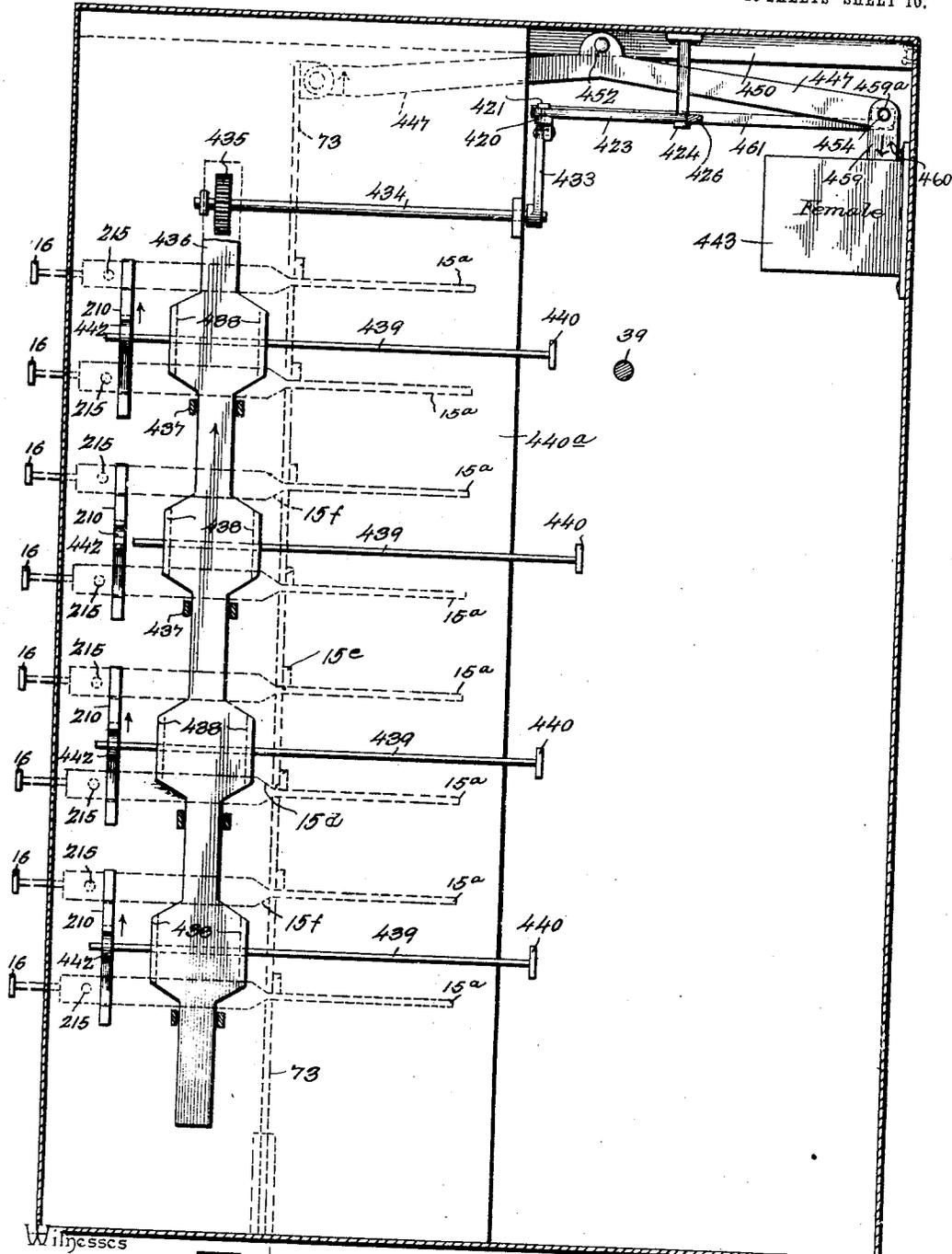
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Patented Aug. 9, 1910.

19 SHEETS—SHEET 10.



Witnesses

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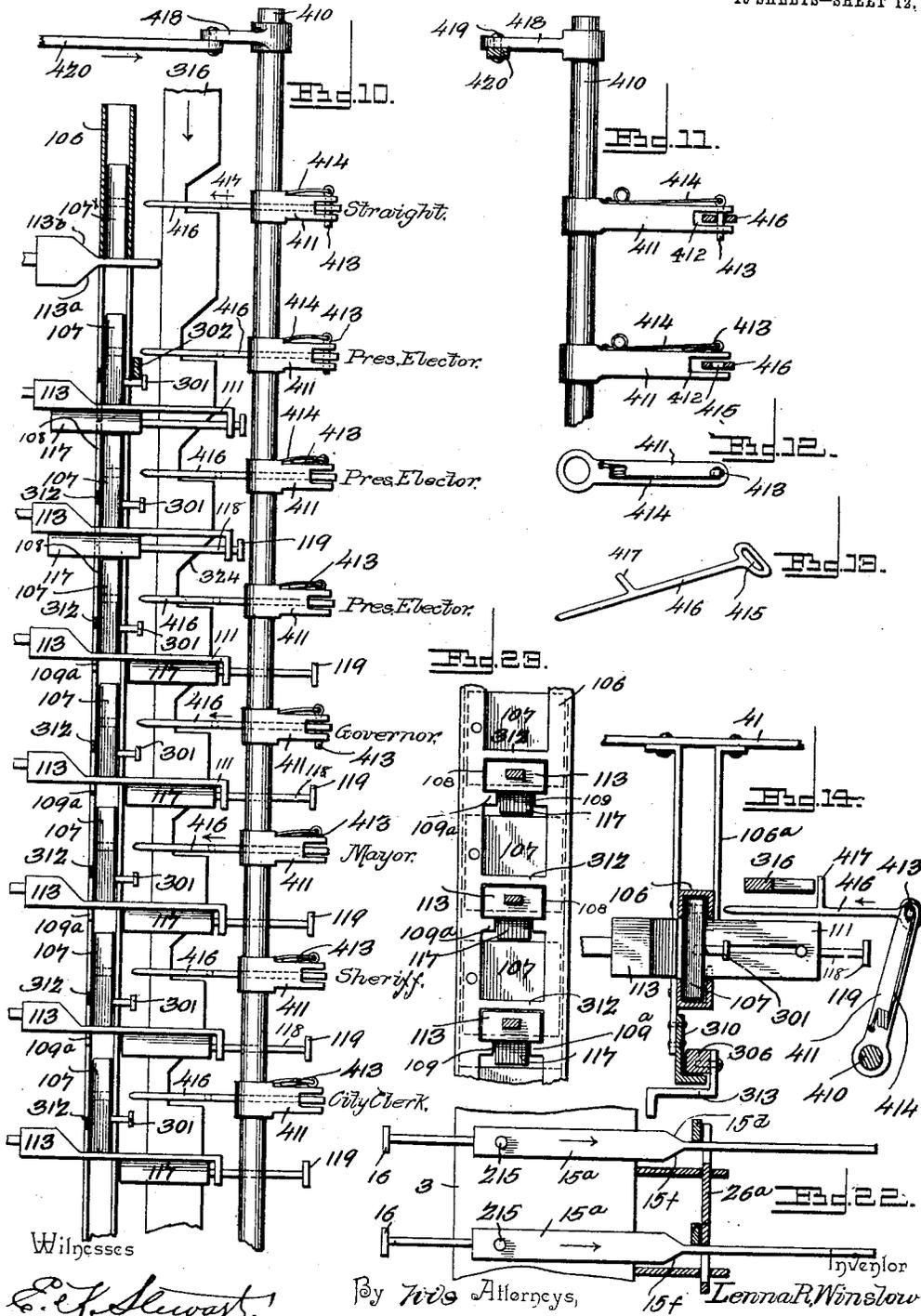
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966,505.

Patented Aug. 9, 1910.

19 SHEETS—SHEET 12.



Witnesses
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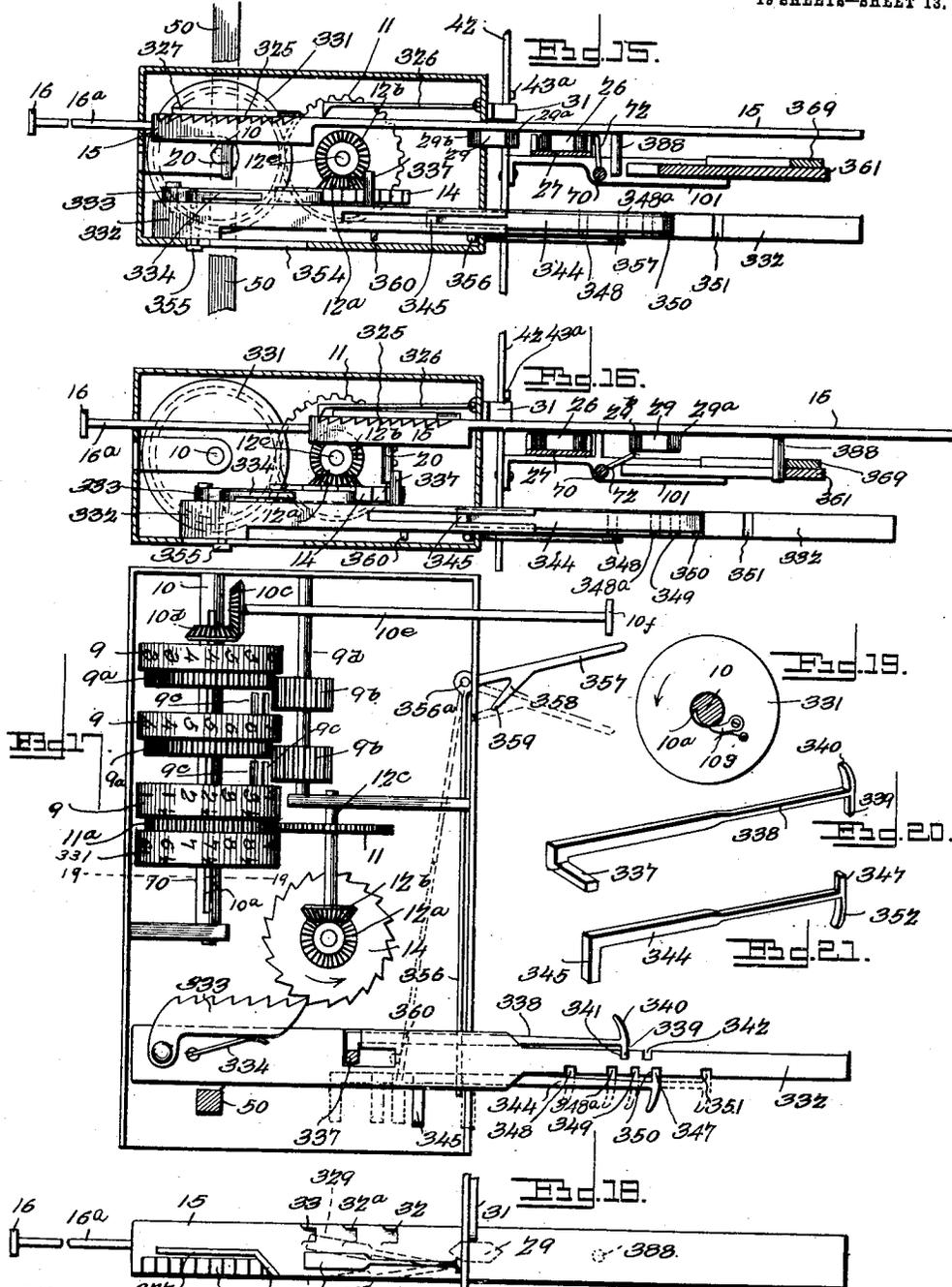
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L. R. WINSLOW.
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Patented Aug. 9, 1910.

18 SHEETS—SHEET 13.



Witnesses
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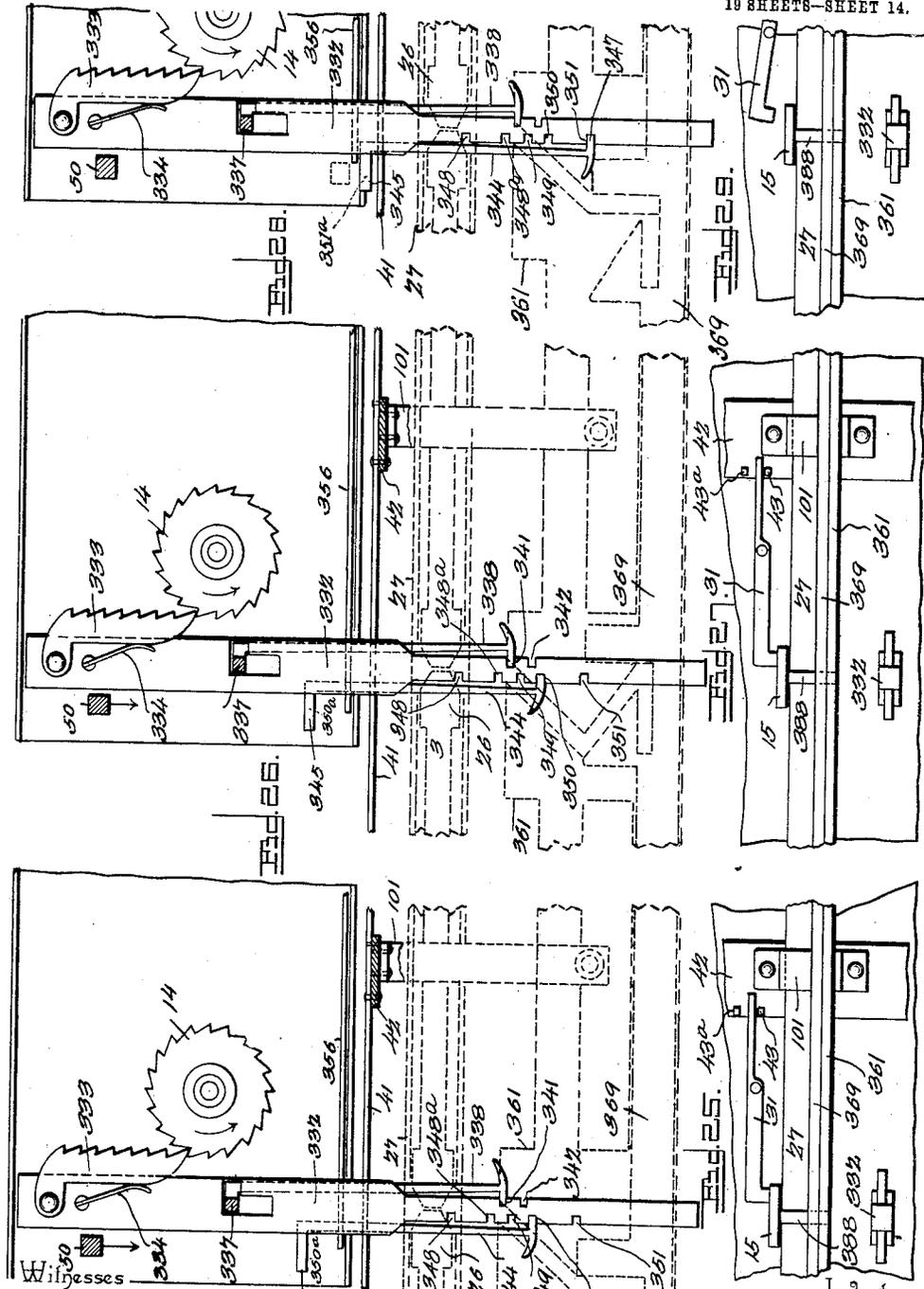
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19 SHEETS—SHEET 14.



Witnesses
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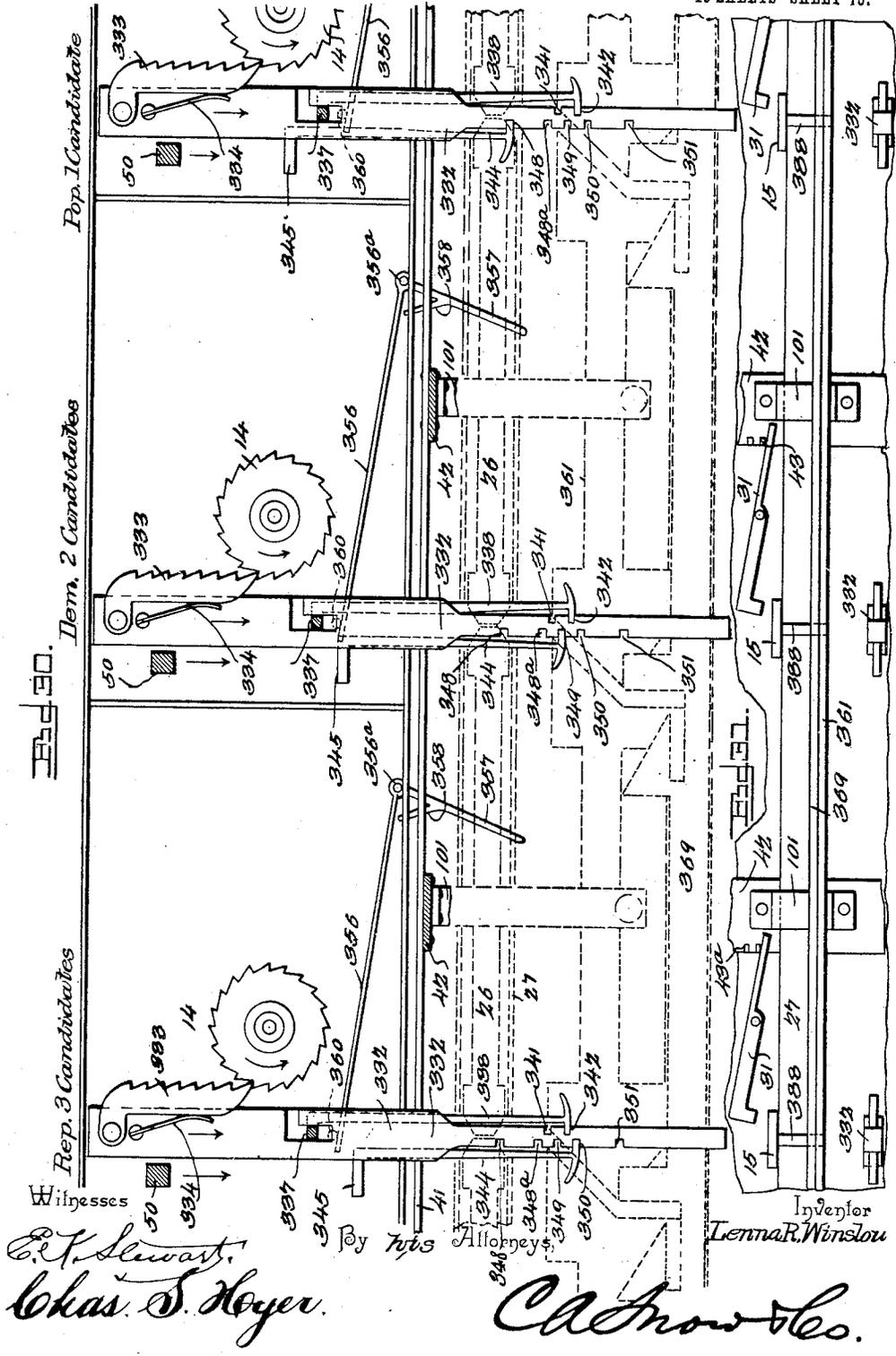
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18 SHEETS—SHEET 15.



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19 SHEETS—SHEET 16.

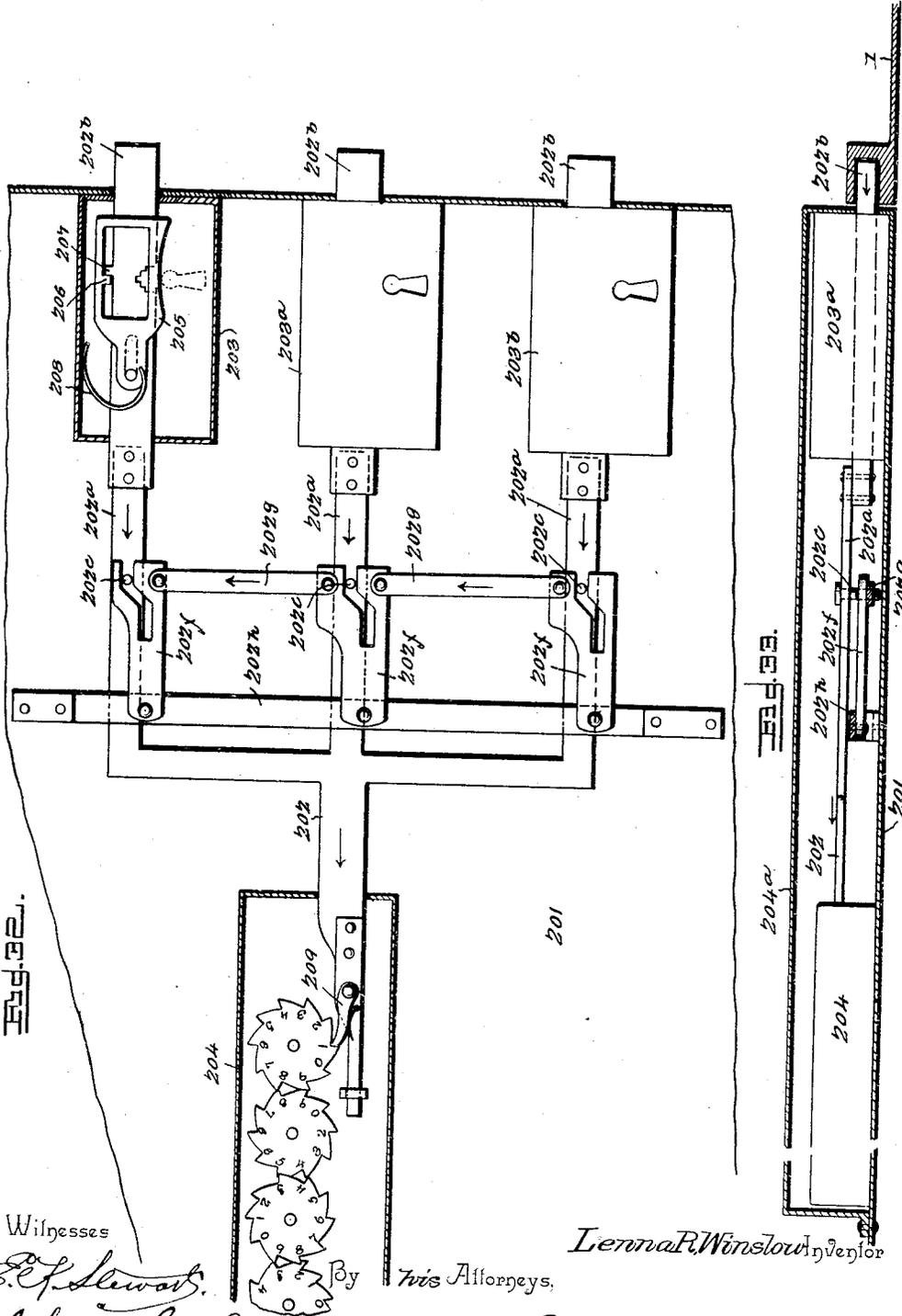


Fig. 16.

Fig. 17.

Witnesses
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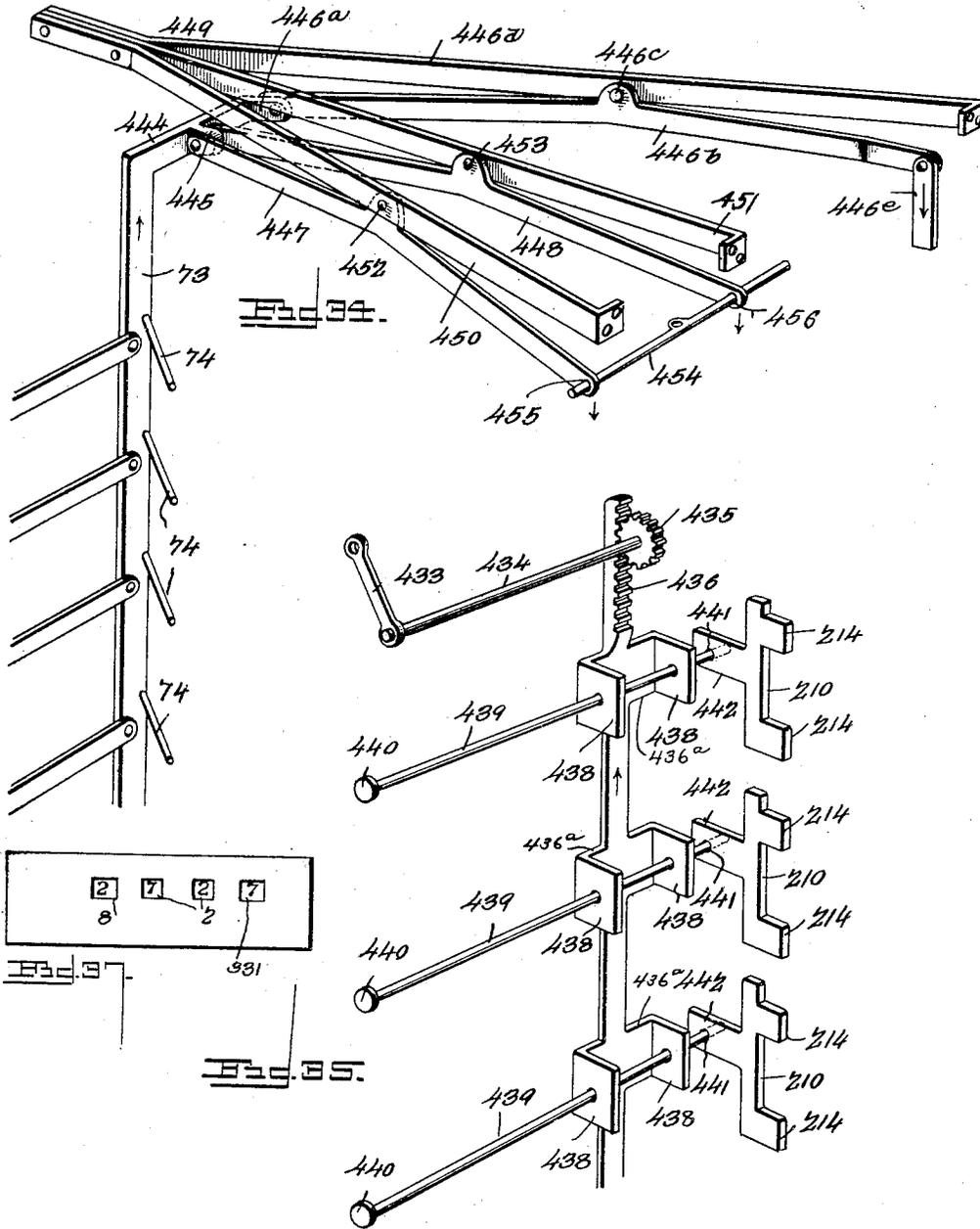
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L. R. WINSLOW.
 VOTING MACHINE.
 APPLICATION FILED DEC. 28, 1899.

966,505.

Patented Aug. 9, 1910.

19 SHEETS—SHEET 17.



Witnesses
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966,505.

L. R. WINSLOW.
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APPLICATION FILED DEC. 28, 1899.

Patented Aug. 9, 1910.

19 SHEETS—SHEET 18.

Fig. 38.

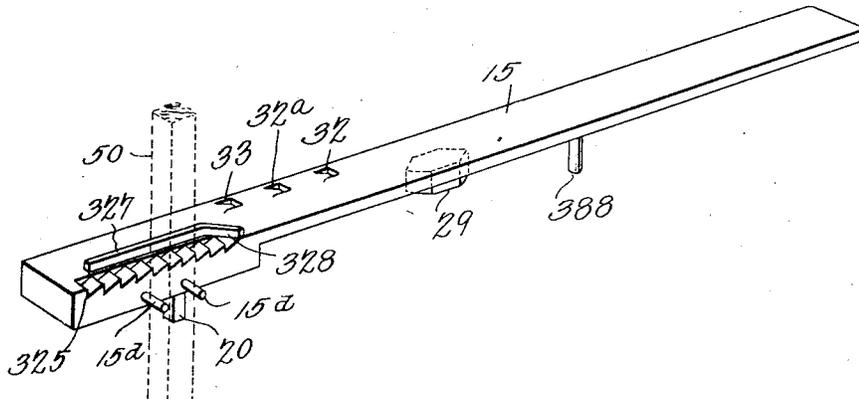
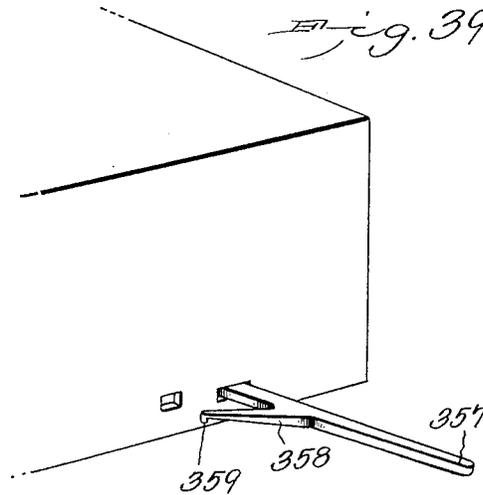


Fig. 39.



Witnesses
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Attorneys

L. R. WINSLOW.

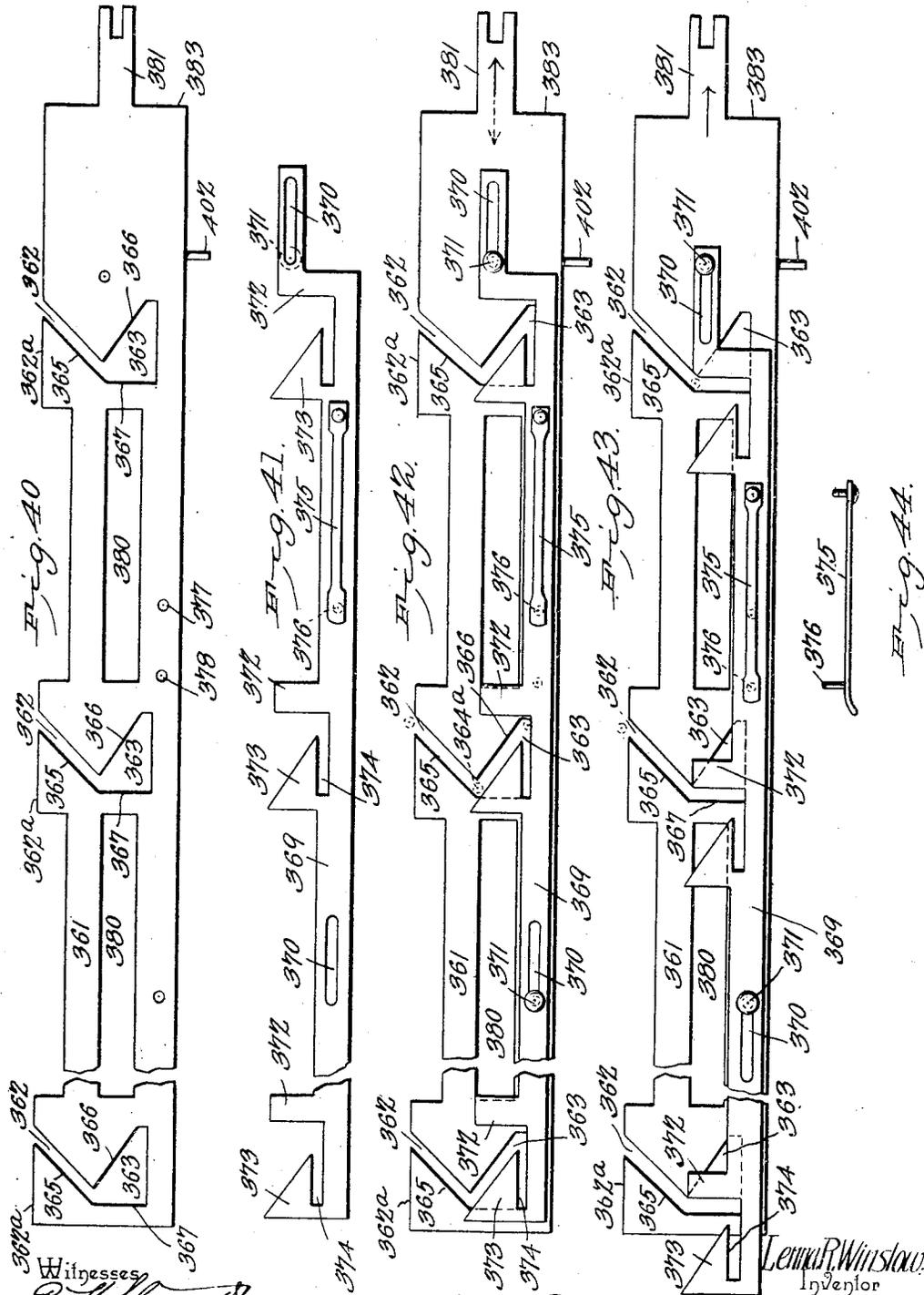
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19 SHEETS—SHEET 19.

966,505.



Witnesses
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J. H. Jochem, Jr.

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 Attorney

UNITED STATES PATENT OFFICE.

LENNA RYLAND WINSLOW, OF COLUMBUS, OHIO.

VOTING-MACHINE.

966,505.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed December 28, 1899. Serial No. 741,842.

To all whom it may concern:

Be it known that I, LENNA R. WINSLOW, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Voting-Machine, of which the following is a specification.

The invention relates to voting machines, and while, for clearness of illustration both as to construction and operation, it has been found expedient to illustrate and describe all of the essential parts of the voting apparatus, including counters, counter-actuating devices, main, secondary, auxiliary and supplemental interlocking devices, as well as limiting devices, the novel features of which are embodied and claimed in other copending applications, the principal object of the present invention is to provide a simple and efficient construction of booth and means for disposing the same with reference to the casing which incloses the voting apparatus; to provide a novel construction and arrangement of total counters and means for operating the same whereby an accurate record of the admission to the booth, the total number of voters and the total numbers, respectively, of restricted and unrestricted voters may be secured independently of the vote counters, in order that a suitable check on the operations of the machine may be obtained; and to provide simple and efficient voter restricting mechanism applied to the means for operating the individual counters and to the means for operating counters related with mechanism devoted to amendment and proposition voting, and adapted for operation by means which control access to the counter-actuating devices or entrance to the booth, whereby the mechanism is automatically set to restrict certain classes of voters by and during their entrance to the booth.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

In the drawings—Figure 1 is a perspective view of a voting machine and booth embodying the invention. Fig. 2 is a plan view of the same. Fig. 3 is a plan view of a

portion of the voting mechanism partly in section, the tops or covers of the boxes or the tally mechanisms being removed. Fig. 3^a is a similar view showing the opposite end of the machine to that indicated in Fig. 3. Figs. 4 and 4^a are elevations of opposite end portions of the machine. Fig. 5 is a horizontal sectional view of a portion of the voting mechanism at the end indicated in Fig. 3^a, showing the arrangement of the parts when adjusted for class voting. Fig. 6 is a plan view with the intermediate portion of the machine broken away, and with the tally mechanisms covered and the auxiliary or full-stroke interlocking devices omitted, to show the restrictive mechanism for the proposition and single-ticket voting devices, and also indicating the tally mechanisms for registering the restricted, unrestricted, total-vote and total-admission counters. Fig. 7 is a transverse vertical section taken in a plane indicated by the line 7—7 of Fig. 3^a. Fig. 8 is a transverse vertical section taken in a plane just inside that end wall of the machine which is indicated in Fig. 3. Fig. 9 is a transverse vertical section taken in a plane just inside the end wall shown in Fig. 3^a to show the limiting mechanism. Fig. 10 is a detail view of the secondary interlocking mechanism, the individual vote-restricting mechanism, and the replacing bar for the latter. Fig. 11 is a detail view of a portion of the restricting mechanism to show the means for arranging the restricting pins in operative position. Fig. 12 is a plan view of one of the arms of the shaft by which the restricting pins are actuated. Fig. 13 is a detail view of one of the restricting pins. Fig. 14 is a detail plan view showing the relative arrangement of parts including a portion of the releasing frame, the secondary locking block guide, a block arranged therein, a spacer, the limiting bar, a restricting pin and means for supporting and operating the same, and the replacing bar for the restricting pins. Fig. 15 is a detail sectional view of the counter and actuating devices, arranged in their normal positions. Fig. 16 is a view of the same with the parts in their voted positions. Fig. 17 is a plan view of the same, the operating element of the counter-actuating devices being omitted. Fig. 18 is a plan view of an operating element of a counter-actuating device. Fig. 19 is a detail view of the false dial and the

means for resetting the same. Figs. 20 and 21 are detail views of the adjustable contact pins carried by the operated element of a counter-actuating device. Fig. 22 is a detail side view of a pair of counter-actuating devices for amendment or proposition voting. Fig. 23 is a detail view of a portion of the guide for the secondary interlocking blocks, showing the blocks and spacers arranged therein, the latter being in section. Fig. 24 is a diagrammatic plan view showing the relation between the operated element of a counter-actuating device, the means whereby motion is communicated therefrom to the counter, and the main and auxiliary or full-stroke interlocking devices, said interlocking devices being shown in dotted lines, and the latter being adjusted for single-ticket voting. Fig. 25 is a rear elevation of the parts illustrated in Fig. 24, and also showing the relative positions of the operating element of the counter-actuating device, and the locking pawl for preventing withdrawal of said operating element. Figs. 26 and 27 are views similar, respectively, to Figs. 24 and 25, with the auxiliary or full-stroke interlocking devices adjusted for class or minority representation voting. Figs. 28 and 29 are views similar, respectively, to Figs. 24 and 25, with the parts adjusted for cumulative voting. Fig. 30 is a plan view of a series of the parts illustrated in Fig. 28, with the return springs for the operated elements of the counter-actuating devices adjusted to automatically return said elements, with the main or individual ticket contact pins adjusted to adapt the parts for communicating half-vote movement to the counters, with the straight-ticket contact pins set respectively to communicate one vote, one and one-half vote, and three vote movement to the counters for one full-stroke movement of the straight ticket bar, and with the auxiliary or full-stroke interlocking devices set for cumulative voting. Fig. 31 is a rear view of the mechanism shown in Fig. 30. Fig. 32 is a sectional elevation of lock mechanism for controlling the entrance door to the casing of the voting mechanism. Fig. 33 is a horizontal sectional view of the same. Fig. 34 is a detail view in perspective of the means for communicating motion to the total-voter counter and to the total, restricted and unrestricted voter counters. Fig. 35 is a detail view in perspective of the lock-out devices for the amendment or proposition counter-actuating devices. Fig. 36 is a diagram showing the front or inner side of the voting machine casing. Fig. 37 is a front elevation of one of the tally boxes. Fig. 38 is a detail view showing the means for communicating motion from the straight-ticket rod to the slide by which the operated element of the straight-ticket counter-actuating device

is operated. Fig. 39 is a detail view showing the means for adjusting the return spring for the operated element of a counter-actuating device. Fig. 40 is a plan view of one of the main slides of the auxiliary interlocking devices. Fig. 41 is a similar view of the auxiliary slide for cooperation with the main slide shown in Fig. 40. Fig. 42 is a plan view of the main and auxiliary slides in operative relation, and adjusted for class or minority representation voting. Fig. 43 is a plan view similar to Fig. 42 of the main and auxiliary slides adjusted relatively for single-ticket and cumulative voting. Fig. 44 is a detail view of the latch or locking device whereby the main and auxiliary slides are secured in their adjusted relative positions.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

In the illustrated embodiment of my invention I employ a booth having an entrance opening, admission and exit through which is controlled by a turn-stile so constructed as to conceal the interior of the booth, and the operations of the voter occupying the same, when the latter has passed thereinto, and to expose the interior after the voter has left the booth; and on one wall of the booth is disposed a casing containing the voting mechanism, and handles or buttons of suitable voting elements being exposed at the inner face or front of this casing. Within the casing are located individual and total vote counting devices or tally mechanisms for indicating respectively the number of votes cast for each nominee for each party in the field, the total number of straight tickets, the total number of persons admitted to the booth (total admission counter), the total number of voters, or those actually casting one or more votes (total voter counter), the total number of unrestricted voters (as men), and the total number of restricted voters (as women). The casing also contains counter-actuating devices (for manipulation respectively by the voters in casting votes), grouping mechanism whereby a number of single-candidate series may be arranged in a group, as for presidential electors, councilmen, etc., main interlocking devices for preventing the simultaneous operation of two or more keys in the same single-candidate series, locking devices for preventing subsequent operation of one counter while a previously operated counter in the same single-candidate series remains in its voted position, secondary interlocking devices for preventing simultaneous operation of two counters in different single-candidate series, straight-ticket interlocking devices for preventing simultaneous operation of a straight-ticket voting element and an individual voting element, limiting mechanism

for limiting the number of voting elements which can be operated by a voter after entering and before leaving the booth, auxiliary or full-stroke interlocking devices for insuring a full-stroke movement of each counter-actuating device, supplemental interlocking devices to prevent operation of a counter-actuating device when a previously operated counter-actuating device has been partly withdrawn, replacing mechanism to be actuated by the turn-stile to replace the voting devices as the voter leaves the booth, to retain the voting elements in locked position while the booth is empty, and to liberate the voting elements when the turn-stile is moved to admit a voter, releasing devices for liberating those voting elements which are locked successively in their voted positions to prevent the repeated operation of a single voting element by the same voter, locking devices for preventing withdrawal of the voting element after a fractional voting movement thereof, checking devices for preventing voting movement of the element after a fractional withdrawal thereof, when said voting element is adjusted (as in cumulative voting) for repeated actuation (controlled by the limiting mechanism), means for casting and counting fractional as well as whole votes, and means controlled by the movement of the turn-stile for restricting certain classes of voters as to the offices for which they may cast votes, and as to the questions, amendments, etc., in reference to which they may vote.

The booth construction shown in Figs. 1 and 2 embodies front and rear walls 193, 194, of which the former is provided with an entrance opening, end walls 191 of sectional construction, the sections being hinged together, as at 192 to fold inward, and being hinged at their outer edges to the front and rear walls, respectively, and a shelf or platform 185 suitably supported on one end wall of the booth by means of brackets 189. This shelf or platform supports a casing 1 which contains the voting mechanism, hereinafter described. The entrance opening is controlled by a turn-stile having a central spindle 175 carrying opposite open leaves 173, 173^a, and opposite screen wings 174, 174^a, arranged at right angles to the open leaves and connected therewith by braces 199. Two of these leaves are preferably fixed to the spindle while the other two are mounted pivotally thereon to fold parallel with the fixed leaves to provide for compactly folding the booth, the leaves being held in their operative positions by the said braces. To insure the full swinging movement of the turn-stile in either direction through an angle of ninety degrees a cam 184 is fixed to the spindle to cooperate with a fixed cam 183. The spindle is provided at its upper end with a crank arm 176 connected by a

link 176^a with a rod 177 mounted to slide in guides 177^a, and this rod is connected by a bell-crank lever 178 and a link 179 with a crank arm 180 on the replacing shaft 39 which is mounted in the casing 1, and with which is connected suitable replacing mechanism hereinafter described.

The front or inner face of the casing 1, as shown diagrammatically in Fig. 36, is provided with a series of slots or inspection openings adjacent to which are arranged handles or push buttons 16, constituting the exposed parts of counter-actuating devices, said inspection openings and adjacent handles or buttons being arranged in single-candidate series, which, in the construction illustrated, are horizontally disposed, the several openings and buttons in the single-candidate series being arranged in vertical party columns, respectively assigned to the Republican, Democratic, and Populist parties. In addition thereto a column of inspection openings and buttons at the right of the machine is assigned to amendment or proposition voting indicated as "Yes" and "No," while at the left a column of inspection openings and buttons is assigned to independent voting, but as the independent voting devices form no part of the present invention, and may be of any suitable preferred construction, they are not described in detail herein. The several single-candidate series are designated by the name of the office for which the candidate in the several party columns have been nominated by their respective parties, the uppermost single-candidate series being designated as "Straight," and indicating that that series of counters is devoted to registering the number of straight tickets cast for the several political parties. In this series the buttons of the counter-actuating devices do not project through the front wall of the machine adjacent to the inspection openings, but are otherwise located, as hereinafter explained.

Supported by vertical partitions 3 within the casing and extending rearward from the front wall thereof are counters having containing boxes in the front walls of which are formed inspection openings registering with those of the front wall of the casing, and on an arbor 10 mounted within the box are arranged units, tens and hundreds dials 9 provided peripherally with tally members visible through the inspection openings, but normally concealed by a movable shield 2 which, however, is provided with slots adapted to register with the inspection openings when the shield is in an adjusted position. The object of the shield is to conceal the number of votes cast for each candidate during the progress of the election, and it is adapted to be moved to permit inspection of the tally mechanisms when the election

has been completed and the results are being noted. Also carried by each units dial is a false dial 331 having a peripheral series of numerals exposed through a permanently open inspection opening to indicate to each voter that his operation of the button has resulted in casting a vote for that candidate. The arrangement of the false dial relatively to the units dial is such, however, as not to indicate the position of the latter. In other words, the numerals of the former are arranged irregularly with relation to those of the latter. Otherwise the second occupant of the booth, after the opening of the polls, would be able to see the exact vote cast by the previous occupant of the booth, and hence the machine would not be adapted for casting a strictly secret vote. It will be noted that the numeral 6 of the false dial is opposite the numeral 1 of the units dial. Carried by the units dial is a gear 11^a with which meshes a spur wheel 11 carried by a spindle 12^c, and having a bevel gear 12^b with which meshes a gear 12^a on a ratchet wheel 14, and this ratchet wheel is adapted for operation by an actuating pawl 333 having a plurality of teeth and carried by one element of the counter-actuating devices hereinafter described. As the tally mechanisms illustrated are designed to register either a whole or a fractional vote, the units dial is provided with whole and half-vote indicating numerals, as 1, 1½, 2, 2½, etc.

Each of the tens and hundreds dials carries a gear 9^a with which meshes a spur wheel 9^b on a spindle 9^a, motion being communicated from the units dial to the tens dial, and motion being communicated from the tens dial to the hundreds dial by means of pins 9^c (carried respectively by the units and tens dials) engaging the spur-wheels 9^b which in turn transmit motion to the gears 9^a. In order that the half-step movement may be conveyed throughout the series the tens and hundreds dials are double numbered, as 4—4, 5—5, 6—6, etc., and the units and tens dials each carry two pins 9^c. Hence, when the units dial has been advanced to register 9, and a half-step movement is imparted thereto, a corresponding half-step movement will be conveyed through the gears 9^b and 9^a to the tens dial, which will advance the tens dial from the first of the exposed pair of similar numerals to the second of said pair of numerals, and a second half-step movement of the units dial will move the tens dial to the next numeral. For instance, if the dials are in a position to indicate that 899 votes have been cast for a certain candidate, the first of the numerals 8 of the hundreds dial, the first of the numerals 9 of the tens dial, and the numeral 9 of the units dial will be exposed. If then the units dial receives a half step movement to expose the numeral 9½ thereof through

the inspection opening, the tens dial will be advanced through one-half step and will expose the second numeral 9 thereof, while the hundreds dial will also be advanced through a one-half step and the second numeral 8 thereof will be exposed. Hence, the reading of the dials will be respectively 8, 9 and 9½. If now the units dial is advanced another half step, each of the dials will receive a corresponding movement, and hence the units dial will expose the numeral 0, the tens dial will expose the numeral 0, and the hundreds dial will expose the numeral 9. Without the double numbering of the dials of a denomination higher than units, the half-step movement communicated thereto would expose the portions of said dials of higher denomination between two adjacent numerals, and this would be confusing in reading the tally.

For resetting the tally mechanisms the arbor 10 is provided with a bevel gear 10^d with which meshes a similar gear 10^e on a spindle 10^e having a turn-button 10^f exposed at the rear of the tally box. Also each dial is provided with a spring-actuated pawl 10^g (see Fig. 19) for engagement by a groove 10^a in the arbor. Thus, by advancing the arbor in the direction indicated by the arrow in Fig. 19 this groove will engage the pawls of the several dials and thus turn them all to zero.

The straight-ticket counter-actuating devices consist of levers 51 provided at one end, outside of the casing, with grips 52 adapted to be drawn downward by the voter, and connected at the other end to straight-ticket rods 50 supported at their lower ends by links 53.

Each counter-actuating device or voting element consists of an operating element comprising the slide 15 connected by a stem 16^a with the button 16, and an operated element consisting of a slide 332 mounted beneath for movement parallel with the operating element, the means for communicating motion from the operating member to the operated member being such as to provide for a variable movement of the latter, whereas the movement of the former is constant or uniform. In other words, the relation between the operating and operated members of each voting element is such that under all circumstances the distance through which the former moves during each operation is and must be uniform, whereas motion communicated to the operated member may be varied to suit the requirements and conditions under which the particular counter may be used, as more particularly explained hereinafter. Thus, by allowing the movement of the operating member to be controlled by the voter, under certain restrictions hereinafter explained, and providing for the operation of the counter or tally

mechanism by the operated member, it is possible to so arrange the parts that either a whole or a fractional vote, or a multiple vote, may be cast by one operation of the key. The straight-ticket voting elements are of a construction similar to that of the individual voting elements, with the exception above described, that the exposed means (in lieu of the button 16) for communicating motion to the operating member 15 consists of a lever 51, grip 52 and rod 50. The same reference numerals are retained for the members 15 and 332 of the straight-ticket counter-actuating devices for the reason that the only difference in construction resides in the fact that the operating member 15 assigned to the straight-ticket counters terminates within the casing, and is not provided with a push button 16 and stem 16^a. The slides 15 of the straight-ticket series are connected with the straight-ticket rods 50 to receive motion therefrom, and in the construction illustrated the connecting means consist of lateral pins 15^a (Fig. 38) between which the rod 50 is arranged to slide. In other respects the voting elements of the straight-ticket and individual ticket devices are identical, and, therefore, the description of one will suffice for all.

The operating member 15 communicates motion to the operated member by means of cooperating motion-transmitting devices, one of which is adjustable, and in the construction illustrated these motion-transmitting devices consist of a pin 20 depending from the operating member, and a pin 337 carried by and adjustably mounted upon the operated member, whereby with the parts in their normal or initial positions, a greater or less movement of the operating member will be necessary before motion is communicated to the operated member, to provide for the movement of the operated member through a greater or less distance, according to the required movement of the counter which receives motion from the operated member through which the units ratchet 14 and a plural-toothed pawl 333 mounted upon the operated member 332, and having an actuating spring 334 (see Figs. 15 to 20 and 30), notwithstanding the fact that the operating member has a uniform whole-stroke movement. The pin 337 is carried by a stem 338 adjustably fitted in a mortise or groove formed in the edge of the body portion of the slide 332 and having a terminal stud 339 for engagement with either of a plurality of seats or notches 341, 342 in the reduced portion at the rear end of the slide 332. The stem is also provided with a finger-hold 340 to facilitate adjustment of the pin, and the stem is preferably of yielding or spring material to maintain the stud in the seat in which it is placed. In the construction illustrated means are provided

for two adjusted positions of the pin 337, that shown in Fig. 17 wherein the stud is arranged in the forward seat 341, and which may be termed the forward or whole-vote position, whereby when the operating member 15 moves from the position shown in Fig. 15 to the end of its complete stroke as seen in Fig. 16, the member 332 will have moved through a distance sufficient to cause the pawl 333 to turn the ratchet wheel 14 through one-tenth of a revolution. Preferably, the ratchet wheel is provided with twenty teeth to allow definite movement through one-twentieth of a revolution or a half step, and, therefore, when the pin 337 is adjusted to its rear position, as shown in Fig. 30, the pin 20 of the operating member will engage the pin 337 later in the stroke of the operating member, and thus will carry the operated member a distance only sufficient to advance the ratchet wheel one tooth, and thus move the units dial of the counter to register a one-half vote.

Whereas the series of counters in the uppermost or straight-ticket row are important as a means of keeping the tally of the number of straight tickets cast in each party row, it is necessary that each operation of a straight-ticket voting element shall register a vote on each of the counters in the party column (unless for reasons hereinafter explained, as in minority representation voting, it is desirable to disconnect the devices arranged for actuating the counters, and provide only for the adjustment of such counters by the operation of the individual keys), and, therefore, the operated member of each voting element is provided with a pin or projection 345 in the path of the straight-ticket bar 50, the same being adjustably mounted upon the member 332, and having a spring stem or tongue 344 terminating in a stud 347 for engagement with either of a series of seats or notches 348, 349, 350 and 351 formed in the reduced portion of the member 332. When the projection is adjusted as shown in full lines in Fig. 17 with the stud 347 in the seat 350, the straight-ticket bar 50 will carry the slide through one whole-vote movement to impart a one-tenth revolution to the units dial (suitable for single-ticket or class voting), whereas when the projection is adjusted to the position in which the stud is in engagement with the seat 351, as shown in dotted lines in Fig. 17, the projection is out of the path of the bar 50, and, therefore, the slide 332 will not receive motion therefrom. This is the position of the straight-ticket projection 345 on those voting elements which are devoted to minority representation voting, when it is desired that the actuation thereof shall be solely by means of the buttons 16. When the projection 345 is adjusted to the position in which the stud 347 is in the seat

349, the motion imparted to the slide 332 by the operation of the straight-ticket lever will be sufficient to register a one and a half vote on the counter, and when the stud is engaged with the seat 348 the motion imparted to the member 332 will be sufficient to register three votes. The positions of the pin 345 suitable to provide for casting a plurality of votes on the counter by the operation of the straight-ticket voting lever are of value in cumulative voting.

In order that the utility of the above-described adjustments may be fully understood, it should be explained that in "single" voting the adjustment of the parts devoted to that use is such that one operation of a voting element will advance the counter sufficiently to register one whole vote, the operation of this voting element being independent of all others in the machine, and being adapted for conditions wherein each political party places one candidate in the field for a given office, such as governor, mayor, etc., (see rows so marked). In class voting, wherein each political party places in the field a number of candidates equal to the number of offices of the same rank to be filled, such as presidential electors, each voter is entitled to operate a given voting element only once, and each may select from the candidates of all of the political parties, and hence a number of votes equal to the entire number of offices to be filled, suitable limiting mechanism (hereinafter described) being employed to prevent him from voting a greater number (see rows marked "Pres. Electors"). In minority representation voting each party places in the field a number of candidates in excess of the number of offices of the same rank to be filled, and each voter, while free to select from the total number nominated, is permitted to cast a number of votes only equal to the number of offices to be filled, as for school trustees, when three candidates may be placed in the field, whereas but two candidates can be elected. In cumulative voting, each political party places in the field a number of candidates equal to or less than the number of offices of the same rank to be filled, as for town councilmen, etc., and each voter is entitled to cast a number of whole votes equal to the number of offices to be filled, but he can distribute his votes as he prefers, giving one vote to each of the candidates of his party, if the number of candidates is equal to the number of offices to be filled, or giving two of his votes to one candidate, or splitting his vote to divide it equally or otherwise among two or more selected candidates. For instance, if the number of offices to be filled is three, and three candidates are placed in the field by his party, the voter may give each one vote, or may give each of two candidates one and one-half

votes, or may give one candidate two votes and another one, or may give one candidate three votes. On the other hand, whereas one party may be able to place three candidates in the field for the three offices, another party, not so strong in that section, may be able to place only two candidates in the field for those three offices, and a third party may be able to place only one candidate in the field. This will necessitate casting three votes for the single candidate, or one and one-half votes for each of the two candidates in the weaker parties, provided, of course, the voter desires to cast all of the votes to which he is entitled for the candidates selected and nominated by his party for those offices. When a voter desires to vote a straight ticket, therefore, it is necessary that the parts of the mechanism shall be adjusted so that the operation of the straight-ticket voting element shall advance all of the counters devoted to single voting to register one whole vote, and, therefore, the adjustment of the projection 345 as shown in full lines in Fig. 17 is necessary. The same adjustment is necessary on the voting elements devoted to class voting, wherein the number of candidates is equal to the number of offices to be filled. In those rows devoted to minority representation voting, on the other hand, the projection 345 must be adjusted so that the keys will not be affected by the operation of the straight-ticket lever, as each voter is entitled only to cast a number of votes which is less than the total number of candidates for that office in the field, see dotted lines indicating engagement of projection 347 with the seat 351, Fig. 17. In cumulative voting the adjustment of the projection 345 will depend upon the number of candidates in the field by each party.

Returning to the example of three offices, it will be seen that in that party row wherein three candidates have been nominated, the projection 345 must be arranged in its one-vote position with the stud 347 in engagement with the seat 350 so that the operation of the straight-ticket lever will operate all of the counters in the single candidate series devoted to cumulative voting through a one-vote movement, the projection 345 in the party column wherein only two candidates have been nominated for three offices must be arranged in the one and one-half vote position, with the stud 347 in the seat 349, see Fig. 17, so that the operation of the straight-ticket lever will advance the keys of both counters sufficiently to indicate one and one-half votes on each counter, and in the party column wherein only one candidate has been placed in the field the projection 345 must be arranged in its three-vote position, with the stud 347 in the seat 348, so that the operation of the straight-ticket

lever will advance the slide 332 sufficiently to impart a three-vote movement to the counter actuated thereby.

It is necessary in a machine of this type to provide means for preventing the repeated operation of voting elements not devoted to cumulative voting, to prevent the simultaneous operation of two or more voting elements in the same single-candidate series, to prevent the simultaneous operation of two or more voting elements in different single-candidate series, and either in the same or different party columns, and to otherwise guard against fraud in the manipulation of the machine; and, therefore, in the construction illustrated there is employed a releasing frame consisting of uprights 42 and cross-bars 41, suitably mounted in the casing for downward movement from its normal position in which it is held by levers 44 fulcrumed at intermediate points and having yokes forming upper and lower arms 44^a, 44^b in which operate cams 46 fixed to the replacing shaft 39 adapted to be turned in opposite directions respectively by the movement of the turn-stile in opposite directions during the entrance of a voter to the booth and his withdrawal therefrom. In the construction illustrated these connections consist of a crank-arm 176 on the spindle 175 of the turn-stile connected by a link 176^a with a rod 177 mounted in guides 177^a and connected by a bell-crank lever 178 and a link 179 with an arm 180 on the shaft 39. Thus, as the turn-stile is moved in one direction by the entrance of a voter, the shaft 39 is turned through a partial revolution in one direction, and when the turn-stile is moved in the opposite direction during the exit of the voter, said shaft is moved a corresponding distance in the opposite direction. The cams 46 are so constructed that when the turn-stile is moved to permit the exit of a voter the yoked ends of the levers 44 are elevated, thus depressing the frame 41-42, hereinafter designated briefly as frame 42, whereas when the succeeding voter enters the booth, and thus moves the turn-stile in the opposite direction the cams 46 depress the yoked ends of the levers 44 and thus elevate the frame 42.

Mounted respectively adjacent to each counter is a key-locking pawl 31, see particularly Figs. 3, 3^a, 4, 4^a, and on the releasing frame respectively adjacent to the tails or rearward extensions of these pawls, are arranged pairs of lower and upper pins 43 and 43^a, and when these tails or extensions are arranged between the pins the pawls are free to engage by gravity with notches 32, 32^a and 33, formed in the upper surfaces of the slides 15, a plurality of these notches being employed so that as the slide is advanced in the operation of casting a

vote the notches are successively engaged by the pawl to prevent withdrawal after a partial voting movement. When the releasing frame is depressed by the movement of the booth door or turn-stile to permit the exit of a voter, the upper pins 43^a depress the tails or extensions of the pawls 31 and thus withdraw the pawls from engagement with the notches to release the slides for replacement. On the other hand, when the tails or extensions of the pawls 31 are arranged beneath the lower pins 43 of the releasing frame, the pawls are permanently held out of operative relation with the notches of the slides 15, to permit withdrawal of a slide 15 by the voter (subject to limiting devices hereinafter explained) in order that successive operations may be accomplished, as in cumulative voting. By placing the notches in the slides 15 so that they will be engaged respectively after each of a series of functions to be performed by the key, it will be seen that the repetition of either of these functions will be prevented. (See elevated pawls, Fig. 31.)

On brackets 101 carried by the releasing frame are arranged guides 27 in which are arranged interlocking blocks 26 for cooperation with double-ended wedges 29 having beveled extremities 29^a, 29^b carried by the operating members of the voting elements, these blocks being free to slide in the guide and having beveled extremities for separation by the wedges, but the combined lengths of the blocks with relation to the guide being such that only one wedge can pass into and through the guide at one time. Thus, when a key is advanced from its normal position, the first function accomplished is the spreading of the locking blocks by the wedge 29, to lock out all of the remaining keys in the same single-candidate series, although after the wedge has passed entirely through the guide, other keys in the same single-candidate series may be operated (subject to limiting devices hereinafter explained). Also mounted in suitable bearings in these brackets 101 are rock-shafts 70 having wings 72 also arranged in the paths of the wedges 29 whereby when the operating member of the voting element is advanced the wedge 29 after passing through the series of interlocking blocks 26 swings the adjacent wing 72 rearwardly and thus turns the rock-shaft 70 to which it is fixed. This rock-shaft 70 is provided adjacent to one end with a crank-arm 75 which cooperates with a pin 74 (one for each rock-shaft 70) on a vertically movable bar 73, which in turn is related by a slot and pin connection with the lever 79 carrying a vote indicator 78 having a plate 76 carrying the words "Vote cast" adapted to be projected through an opening 77 in the top of the casing. Thus, this indicator is projected by the operation of the first voting

key in any single-candidate series to indicate to the spectators, judges of election, etc., that the occupant of the booth has cast a vote. (See Fig. 4.) The operation of this indicating device is also accomplished by the casting of a vote in reference to a proposition or amendment, and for this purpose the slides 15^a in the amendment column are provided with upper cams 15^d in the paths of which are arranged pivoted bars 15^e which rest on the members 15^a and are pivotally connected at their movable ends with the bar 73. These voting members 15^a are also provided with lower cams 15^f, and interlocking blocks 26^a are related therewith to prevent the operation of one of a pair of keys, devoted to the same question, after the other has been operated, and thus to prevent the consecutive casting of "yes" and "no" votes on the same question. (See Figs. 4, 8 and 22.)

As hereinbefore stated, whereas the operated members of the counter-actuating devices are capable of a variable movement to impart a variable movement to the tally mechanism, to suit different conditions of voting, the operating member has a uniform full-stroke movement which is controlled by certain full-stroke interlocking devices herein-after explained; but under certain conditions, as in cumulative voting, it is necessary to permit the voter, after imparting a full-stroke movement to the operating member, to withdraw it for a succeeding movement, and in order to insure the full retraction of the key before imparting a second full-stroke movement thereto, there is provided on each slide 15 a ratchet 325 adjacent to which is arranged a guard 327 having a deflected rear end forming a cam 328, and mounted on the rear wall of the box or shell of the tally mechanism is a laterally yieldable pawl 326 which, when the slide 15 is advanced, is terminally deflected by the cam 328, see Fig. 18, and is retained in this deflected position until the forward end of the guard 327 is reached, when the resilience of the pawl returns it to its normal position in alinement with the slide, and in engagement with the teeth of the ratchet 325. The slide 15 may now be withdrawn, and the extremity of the pawl 326 will slide idly over the teeth thereof, but should this return movement of the slide be interrupted at an intermediate point, and the voter attempt to make a partial advance movement thereof, it will be prevented by the engagement of the pawl with the teeth of the ratchet. Not until the slide has been entirely withdrawn, and the extremity of the pawl deflected to the dotted line position 330 by the front side of the cam, can a succeeding advance movement of the key be accomplished.

Under certain conditions (in cumulative voting) it is necessary to insure the auto-

matic return of the operated slide 332 to its normal position when the operating member is withdrawn by the voter, and, therefore, a return spring 356 shown in Fig. 17 is arranged in the tally box or shell for engagement at its free end with a pin 360 (Figs. 15 and 16) depending from the slide 332, said spring being connected with a spindle 356^a having a handle 357 provided with an arm 358 terminating in a catch 359 for engagement with the wall of the tally box, as shown in Fig. 39 and by dotted lines in Fig. 17. When the parts are adjusted for single-ticket, class or minority representation voting, the spring is in the full-line position indicated in Fig. 17, out of engagement with the pin 360, and in order to provide for the automatic return of the slide 332 it is necessary simply to move the lever 357 to engage the catch 359 as shown in the dotted-line position, thereby insuring the return of the slide 332 as soon as the slide 15 is withdrawn by the voter. The pawls 31, previously described, by engagement with the notches 32, 32^a and 33, prevent the withdrawal of the slide 15, except in cumulative voting.

The auxiliary or full-stroke interlocking devices consist of slides, also arranged parallel with the single-candidate series of counters, in rear of the main interlocking devices consisting of the blocks 26, and mounted on the brackets 101, whereby they are supported on the releasing frame 42, each slide having relatively adjustable members 361 and 369 provided with correlative guide-slots 362 for cooperation with pins 388 on the keys or slides 15. These slide members 361 and 369 are adapted for relative longitudinal adjustment to vary the configuration of the guide slots, and are held in their adjusted positions by the locking device 375 having a terminal pin 376 for engagement with either of the openings 377 and 378 in the slide 361. By the cooperation of the pins 388 with the slots 362, the auxiliary interlocking device is longitudinally shifted when the voting key is advanced, and, therefore, other voting keys in the same single-candidate series are locked against movement until after the first key has been withdrawn to replace the slide, or until the full-stroke movement of the key has restored the slide to its normal position. When the members of the auxiliary interlocking devices are arranged in the relative positions indicated in Fig. 42 the triangular member 373 of the slide 379 covers a portion of the opening 363 of the slide 361, and thus forms with the obliquely disposed wall 366 of said opening an oblique slot 363 which forms a continuation of the slot 362, whereby when the pin 388 is advanced by the operation of a voting key the slide is first moved in the direction indicated by the full line arrow at the right in Fig. 42 until it

reaches the point 364^a, whereupon a continuance of the advance movement of the key causes the movement of the slide in the opposite direction, as indicated by the dotted-line arrow in said figure, until the pin reaches the dotted-line position in alinement with the longitudinal slot 374. When the parts are adjusted as in Fig. 42, the retraction of the key is prevented by the pawl 31, but other voting keys in the same single-candidate series may be operated, because by the return of the slide to its normal position as above described the entrance ends of the slots 362 are brought into alinement with the pins 388 of the remaining keys of the series. Prior to this complete return of the slide to its normal position, due to the full-stroke movement of the operated key, the stop edges 362^a of the slide 361 are in the paths of movement of the pins 388 of the remaining keys. On the other hand, when the members of the auxiliary interlocking devices are arranged in the operative positions indicated in Fig. 43, wherein the slide 369 is adjusted to the left, the transverse ear or projection 372 of the slide 369 forms, with the transverse wall 367 of the opening 363, a transverse slot which communicates with the slot 362, whereby when a voting key is advanced the pin 388 moves the slide in the direction indicated by the arrow at the right, and thence passes into the transverse portion of the slot without imparting a return movement to the slide. This relative adjustment of the members of the slide is adapted for single-ticket and cumulative voting. The withdrawal of the voting key pin 388 in contact with the wall 365 of the slot 362 will return the slide to its normal position and thus align the entrance openings of all of the slots 362 with the pins 388 of the keys. Any suitable means for mounting the member 369 on the member 361 may be employed, such as a slot 370 engaging the headed guide-pin 371.

The secondary interlocking devices embody a guide 106, also carried by the releasing frame 41 and supported by brackets 106^a; and secondary interlocking blocks 107 mounted in the guide 106, spacers 111 being interposed between the adjacent ends of blocks 107, extending through the guide and respectively connected with the auxiliary interlocking devices, so that the operation of the movable element of the counter will cause the longitudinal movement of a spacer through the guide 106, and the elevation of the superposed block 107, by means of a cam 113 on said spacer. Also carried by each spacer is a filling block 117 mounted thereon to slide, and adjustable by means of a feed screw 118 having a head 119. The blocks 107 are so proportioned with relation to the guide, and the intervals between adjacent spacers, that the inward adjust-

ment of a filling block to occupy a position in the plane of the guide will fill the space between the spacer upon which it is mounted and the upper end of the subjacent interlocking block 107. The spacers are pivotally connected as at 382 with the ends of the auxiliary interlocking devices which have projections 381 for that purpose, to adapt them for vertical swinging movement. Each spacer rests normally on supporting ears 109^a projecting inward from the sides of the guide 106, and is limited in its upward movement to a distance approximately equal to the thickness of the filling block 117 (or the thickness of the cam 113) by a stop 312 also disposed transversely in the guide 106 (Fig. 23). The only exception to the above described construction of spacers is that the uppermost one of the entire series which relates to the straight-ticket voting devices (Fig. 4^a), and is connected with the auxiliary interlocking slide which coöperates with the straight-ticket series of the counters, has a double cam 113^a, 113^b for simultaneous introduction into the guide 106 when a straight-ticket counter is actuated. An idle lock-out block 107^x, corresponding in construction with those heretofore described, is mounted in the guide above and rests on the straight-ticket spacer for a purpose hereinafter explained. When the straight-ticket spacer is advanced into the guide the cam 113^b raises the superposed lock-out block and the cam 113^a occupies a position in the path of the subjacent block 107, and, therefore, prevents the subsequent elevation of said subjacent block by the operation of the next lower spacer, and if the filling blocks (for instance) in the upper and intermediate series marked "Pres. Electors" are adjusted into the guide 106, as shown in Fig. 4^a, the advance of the straight-ticket spacer will prevent the introduction of a spacer of either of the series marked "Pres. Electors" into the guide, and hence will lock said spacers against longitudinal movement, and will correspondingly lock the counters of those series. It should be understood, moreover, that if the filling blocks of all of the series were adjusted into the guide, the only unoccupied space for permitting vertical movement of the spacers and blocks 107 would be that between the upper end of the uppermost interlocking block of the group and the straight-ticket spacer, and as the movement of any spacer of the group into the guide will elevate this uppermost block, and also any other block and spacers which may be above it, and as the vertical swinging movement of any spacer is prevented by the stop 312 when the cam 113 of said spacer is advanced into the guide, only one spacer of an entire group may be advanced at one time, and, therefore, a simultaneous opera-

tion of two or more counting devices in different single-candidate series or office rows is prevented.

In addition to the above-described main, secondary and auxiliary interlocking devices, it has been found desirable under certain circumstances to use what may be termed "supplemental" interlocking devices (see Fig. 4^a) which consist of members 390 pivotally mounted upon a frame bar or support 389 and having cam slots 398 for the reception of pins 402 carried by the auxiliary interlocking slides, these members of the supplemental interlocking devices being adapted for arrangement in groups by links 391 (see the single-candidate series marked "Pres. Electors"), which may be positioned to connect the member 390 of one series with the corresponding member of the series above, or may be allowed to occupy a folded position, as indicated in the lower single-candidate series, catches 397 being employed to lock said links in their connected positions. When a key in any one of a group of single-candidate series is advanced to its voted position the pin 401 (by the movement of the auxiliary slide) enters the cam slot 398 of the member 390, thus raising the latter and all of the connected members, and thus disposes the stops formed by the end shoulders 403 of said connected members in the paths of the pin 402 of the other auxiliary interlocking devices in that group. The return movement of the operated auxiliary interlocking device withdraws the pin 402 and thus returns the member 390 of the supplemental interlocking devices to their normal positions with the tongues 401 resting on the pins 402.

The limiting mechanism which is illustrated in connection with the above described mechanism is designed for limiting the number of successive operations of the counters in the same or different single-candidate series or office rows, when the other parts of the apparatus are adjusted for class or minority representation, or for cumulative, voting. When the apparatus is adjusted to vote for single candidates, or, in other words, for individual voting, each unrestricted voter is entitled to operate a counter in each of the single-candidate series or office rows, but after having voted for a candidate for a given office, as by advancing a voting key, all of the other counters in the same candidate series are locked out by the interlocking mechanism provided for that purpose (the auxiliary interlocking devices being set in the position indicated in Fig. 43 to retain the spacer with its cam 113 in the guide 106, and to dispose the stop edges 362^a in the paths of the pins 388 of all the remaining keys in that single-candidate series), and the operated key is held from

retraction by suitable locking mechanism, such as the pawls 31 engaging the notches 33. Obviously, the operation of a counter in each single-candidate series advances the spacer of that series into the guide of the secondary interlocking devices, and when a vote has been cast for each office, further operation by that voter is impossible, and the machine is not reset for subsequent operation until the voter withdraws from the booth and thus actuates the releasing and replacing devices hereinbefore described. In class voting, on the other hand, where a number of candidates are placed in the field by each party and a corresponding number of officers of the same rank are to be elected, (as, for instance, presidential electors, when each party places three candidates in the field, and three electors of the same or different parties are to be elected), or in minority representation voting, when each party places a number of candidates in the field and a less number of officers of the same grade are to be elected, (as when each party places three candidates in the field, and but two of the same grade but of either party may be elected) it is necessary to provide for arranging a plurality of single-candidate series or office rows of counters in a group, (as for instance, the series marked "Pres. Electors") and so relating them that whereas only one counter in the entire group may be operated at a time, and whereas one counter having been operated cannot be a second time operated, any other counter, whether in the same or a different candidate series, may be subsequently operated, and this successive operation may be continued until the full number of votes to which the voter is entitled have been cast, when the mechanism will be locked, and further operation of any counter of that group will be prevented. And in cumulative voting, where a number of candidates are placed in the field by each party and a corresponding number of officers of the same grade but of any party are to be elected, but where each voter is entitled to apply his vote as he prefers, and either cast one vote for each of a number of candidates corresponding to the number of officers to be elected, or more than one vote for a less number of candidates, (as for aldermen, when, for instance, three candidates are placed in the field by each party and each voter is entitled to cast one vote for each of three candidates, or one and one-half votes for each of two candidates, or three votes for one candidate), it is necessary to provide means for permitting the repeated operation of each counter, or the successive operation of two or more counters, without permitting successive partial operations of the same counter, or the operation of a second counter until after the first counter has been wholly

withdrawn or retracted to its normal position, provided the total number of successive operations, whether of the same or different counters, is limited to the number to which a given voter is entitled, the mechanism arranged in a group being locked to prevent the further operation of any of the counters thereof after a number of operations sufficient to cast the allowed number of votes or half votes have been accomplished.

The control of the counters to adapt the mechanism or a portion thereof for either class, minority representation or cumulative voting, is accomplished by means of the interlocking devices, such as those hereinbefore described, and more particularly by the auxiliary interlocking devices by which the spacers which cooperate with the blocks of the secondary interlocking mechanism are actuated, the pins which cooperate with the cam slots 362 of the auxiliary slides being employed to withdraw the cams 113 of the spacers from the guides 106 when repeated operations of the same counter are to be permitted, or when a subsequent operation of other counters in the same candidate series are permitted, and the employment or displacement of positive locking devices for the counters (such as pawls 31 which cooperate with the notches of the slides 15) controlling the repeated or successive operations of the counters. Under either of the above-mentioned conditions, however, it is necessary, as will be seen, to provide means for limiting the number of operations of the counters (whether the same or different) and as the parts are so related as to cause the advance of a spacer into the guide of the secondary interlocking devices for each operation of a counter, and as the uppermost block 107 of a group rises in the guide when any spacer of that group is advanced (as above described), it is only necessary to limit the number of operations of the uppermost block of the group to a number corresponding with the number of full-stroke operations to which each voter is entitled, in order to insure the desired limitation and prevent the casting of more than the proper number of votes.

The means which are illustrated (see Fig. 9) for accomplishing this limitation of the number of operations of the uppermost interlocking block of a series, consist of a rack 306 mounted in a guide 310 supported by the brackets 106^a (which also support the guide 106); a pawl frame consisting of a block 304^a, a bracket 303 attached to the block, and a lever 302 pivotally mounted upon said bracket; a check pawl 304 mounted upon said block; and a lug or pin 301 projecting laterally from said uppermost block 107; and having the free end of the lever 302 resting thereon. In order to pro-

vide for arranging any particular candidate series in a group and limiting the number of the vertical movements of the uppermost block 107 in that group, each block 107 is provided with a lateral pin or lug 301, and the block 304^a is provided with openings for the reception of pins 300 which extend laterally from the guide 310 whereby the block may be arranged to lock the feed pawl and lever in relation to either of the blocks 107, a thumb-nut 304^b being threaded upon the extremity of each of the pins 300 which are engaged with the openings of said block 304^a. As a counter in the group of candidate series is operated, the spacer connected with the interlocking devices of that series is advanced into the guide 106, thereby raising the uppermost block 107 of the group and correspondingly raising the feed pawl, and, therefore, the rack 306. Subsequent downward movement of the rack is prevented by the check pawl, while the feed pawl drops into engagement with the next lower tooth when the interlocking block 107 returns to its normal position. The number of successive upward steps of the rack is limited by a stop-pin 315 adapted for engagement with either of a series of seats or openings 311 in the guide 310. The initial or normal position of the rack 306, to suit the location of the group of connected series and the location of the feed pawl, is controlled by a rest-pin or stop 314 below the lower end of the rack and also adapted for engagement with either of a series of seats or openings in the guide 310. When the rack has been advanced by successive operations of the feed pawl until its upper end comes in contact with the stop-pin 315, further upward movement is prevented, and hence subsequent elevation of the uppermost interlocking block 107 of the group is prevented, and, therefore, the introduction of either of the cams 113 into the group is prevented, and operation of the counters in that group is impossible.

The lock-out or restrictive devices cooperate with the secondary interlocking devices, and consist essentially of lock-out pins 416 (see Figs. 3^a, 4^a, 5, 6 and 10 to 14, inclusive) detachably connected at their outer ends with arms 411 of a rock-shaft 410 suitably mounted in the casing, and connected by an arm 418 with the draw-bar 420 (hereinbefore described as the means for actuating the shift-pin by which the operation of the restricted and unrestricted total counters are controlled), said pins being connected with the arms 411 by means of bolts 413 held in place by springs 414, the secondary interlocking blocks 107 and the guide 106 being provided with socket openings which are normally in registration and which are adapted for the reception of said pins 416. Thus, when the vote of a person

entering the restricted side of the turn-stile is to be restricted as to one or more of the single-candidate series, or, in other words, when a voter classified as restricted is to be prevented from casting a vote for a given office, the pins 416 of that series are connected with the corresponding arm 411 of the rock-shaft 410, whereby when the turn-stile is moved in a direction to admit the restricted voter, the attached pin 416 will lock the block 107 of that single-candidate series in its depressed position, and thus prevent the actuation of any voting key in that series. For replacing these lock-out pins in their normal positions, or withdrawing them from engagement with the blocks 107, when the turn-stile is returned to its normal position, a replacing bar 316, provided with a series of cam faces 324 in operative relation with transverse projections 417 on the pins 416, is mounted for vertical movement in the casing, said bar being connected by a link 317 with a crank-arm 319 on a rock-shaft 320, which in turn has a crank-arm 321 connected by a link 322 with a crank-arm 323 on the replacing shaft 39 (see Fig. 3^a). In the construction illustrated, the lock-out pins are provided with slotted heads 415 arranged in bifurcations 412 in the arms 411, and a pivot pin 419 serves to connect the draw-bar 420 with the arm 418 (see Fig. 11).

For positively returning the auxiliary interlocking devices to their normal positions when (as in single-ticket or cumulative voting) they have been left by the voter in their adjusted or advanced positions, a replacing bar 404 is employed, the same having cam faces 405 arranged in operative relation with shoulders 383 at the ends of the auxiliary slides, said bar being suitably mounted and being adapted for upward movement by means of the rock-shaft 320 having a crank-arm 407 connected by a link 406 with said bar.

To return the limiting mechanism to its normal position there is employed a releasing device consisting of a bar 307^a mounted in suitable guides 307^b (Fig. 9), and having pins 308, 309 spaced apart to correspond with the intervals between the tails of the check pawls 307 and 304, respectively, so that no matter where the pawl frame may be adjusted with relation to the guide 310, said pawls will occupy positions above their corresponding pins 308 and 309. Upward movement of this bar to trip the pawls and permit the rack 306 to return by gravity to its normal position is effected by means of a lever 307^c fulcrumed upon a bracket 307^a, and having its extremity 307^e arranged in the path of the downward movement of the releasing frame 41. In order to insure the return of the limiting bar or rack, a replacing device is employed, the same consisting of a bar 139 connected by link 142 to crank

141 on resetting shaft 39, said bar 139 being mounted in guides 140 and carrying replacing arm 143 for engagement with the trip 313 secured to rack 306. The replacing arm may be and preferably is mounted for adjustment on the bar 139.

The means for replacing the voting elements after they have been released from the interlocking devices consist of a replacing frame 36 carried by swinging arms 37, 38, of which the former are carried by the replacing shaft 39. This replacing frame comes in contact with the rear ends of the members of the voting elements immediately after the depression of the releasing frame.

It is desirable, in order to prevent fraud or detect it if committed, and also to prevent inaccuracies of the machine from remaining undetected, to provide, in addition to the vote counters, which are assigned respectively to the individual and straight-ticket voting elements, such total counters as will indicate first the total number of persons admitted to the booth, whether they vote or not, second, the total number of persons who actually vote or cast one or more votes, third, the total number of unrestricted voters, such as men, and, fourth, the total number of restricted voters, such as women, and those who have a limited franchise. The specific construction of the total admission, total voter and total restricted and unrestricted voter counters forms no part of my present invention, and may be constructed in any suitable or well known manner, the operation of the counter mechanism 59 (assigned to registering the total number of persons admitted to the booth) being controlled by the replacing shaft 39 which is provided with a crank-arm 66 connected by a link 65 with a counter-actuating plunger 64, whereby each rocking movement of the shaft 39 in one direction (caused by the movement of the turn-stile to admit a voter) registers one vote on the counter mechanism. Mounted on a suitable Y-frame consisting of angularly-disposed bars 450 and 446^a is a lever 446^b connected with the actuating plunger 446^c of the total voter counter 446^d, said lever being pivoted at an intermediate point, as shown at 446^e, and being connected at the end opposite to the plunger with a deflected extremity 446^a of an arm 444 carried by the vertical plunger 73, whereby said lever 446^b with the plunger 446^c are actuated to advance the total register when the first vote is cast by the recently admitted occupant of the booth. A suitable construction of counter, adapted for total admission, total voter, and also total restricted and unrestricted voters, is shown in plan view in Fig. 6, and consists of units, tens and hundreds dials 60, one numeral of each being exposed through suitable inspection openings in the wall of the casing, pins

60^a carried by the units and tens dials, a pawl 64^a mounted for actuating a ratchet on the units dial, and gears 60^b meshing with gears 60^c respectively on the tens and hundreds dials, the teeth of the gears 60^b being arranged in the paths of said pins 60^a on the units and tens dials. Thus, should the occupant of a booth cast only one vote, and should it be a vote cast for a candidate or in reference to a proposition or amendment, the fact that a vote has been cast will be registered on the counter 446^f. Should the occupant not cast a vote his admission to the booth will be registered on the counter 59, and hence the difference between the register numbers on the counters 59 and 446^f will indicate the number of persons admitted to the booth who have not cast votes.

The actuating plungers 457 and 459 of the male and female or unrestricted and restricted counters 84 and 443, are provided with sockets 457^a and 459^a respectively for the reception of the adjacent ends of the shift pin 454, the length of said pin being such that it can be engaged with only one of the plungers at a time. This shift pin is carried by the lever 461 pivoted at 462 and connected with an ear 463 on the shift pin by a pivot 464, the normal position of the shift pin being indicated in full lines in Fig. 6, wherein it is in engagement with the plunger 457 of the unrestricted counter. Also connected with the shift pin are levers 447 and 448 mounted for vertical swinging movement on pivots 452 and 453 connected at their opposite ends to a projection 445 on the arm 444. The levers 447 and 448 are provided with guides 455 and 456 in which the shift pin is adapted to slide longitudinally, when actuated through the medium of the lever 461, to engage its extremities respectively with the sockets in the plungers 457 and 459. The end of the shifting lever 456 opposite to the shift pin is connected by a slot 466 and pin 467 with a bar 420.

When an unrestricted voter enters the booth the operation of the first voting element is registered on the total counter and also on the total unrestricted counter, because the shift-pin 454 is normally in engagement with the plunger 457, and when a restricted voter enters the booth the movement of the turn-stile (through suitable connections hereinafter described) is such as to move the bar 420 to shift the lever 461 and the pin 454 to engage the plunger 459, whereby the operation of the first voting key is registered on the total-voter counter, and also on the total restricted counter. Motion is communicated to the bar 420 on the turn-stile by means of a mutilated gear 431 carried by the spindle 175 and adapted when the turn-stile is moved in one direction, as indicated by the arrow 173^c, to mesh with a rack 430 carried by a bar 428 mounted to slide in guides

429 and connected by a bell-crank lever 426 to the bar 420, said lever 426 being fulcrumed at 424, and having a slotted connection 427 with the bar 428, and also a slotted connection 421, 422 with the bar 420. In operation the unrestricted voters are caused to enter the booth at the right of the spindle 175 and thereby swing the turn-stile in the direction indicated by the arrow 173^b, see Fig. 2. This moves the smooth or untoothed portion of the mutilated gear 431 over the rack 430 and hence does not communicate motion to the bar 428. The shift pin 454 thereof remains in its full-line position, see Fig. 6. When the turn-stile is moved in the opposite direction, however, by the entrance of a restricted voter at the left of the spindle 175, the toothed portion of the gear 431 actuates the bar 428 and hence moves the shift pin to its dotted-line position, Fig. 6, whereby the actuation of the first voting element advances the total restricted voter counter one step. When the restricted voter leaves the booth and thus swings the turn-stile in the opposite direction to that indicated by the arrow 173^c, the parts are returned to their normal positions with the shift pin 454 in engagement with the plunger 457 of the unrestricted voter counter.

The means for restricting the operations of a voter in reference to amendments, propositions, etc., embody a rock-shaft 434 having a crank-arm 433 connected by a link 431 with the draw-bar 420; a gear 435 meshing with a rack on a slide 436 mounted in guides 437 and provided with ears 438; lock-out pins 439 mounted in registering openings of said ears and having heads 440 to be grasped by the operator in setting the machine prior to an election; and lock-out blocks 210 having ears 442 provided with openings 441 for engagement by said lock-out pins 439, these blocks also being provided with stop ears 214 adapted, when the slide 436 is in one position, to occupy positions in the paths of pins 215 on the amendment voting keys. Prior to the election the pins 439 which relate to those propositions for which a restricted voter may not vote, are moved into engagement with the blocks 210, and when a restricted voter enters the booth and operates the draw-bar 420 to turn the rock-shaft 434, the slide 436 is elevated and carries with it those blocks 210 which are connected by the advanced or adjusted pins 439, and thereby the ears 214 of said blocks are arranged in the paths of the pins 215 on the voting keys devoted to that proposition.

In order to prevent tampering with the casing after the mechanism has been set previous to an election, and prior to the official count, or to detect an attempt to tamper therewith so that the vote registered by

the machine may be thrown out, there is employed on the outside or rear door of the casing a tally lock (see Figs. 32 and 33) consisting of a series of lock members 203, 5 203^a, 203^b of similar construction having bolts 202^b, and means for controlling the movements of said bolts so that all must be operated simultaneously by keys respectively fitted thereto and each held by a different 10 officer of the election. The construction of the bolt-locking devices are identical, and, therefore, the interior construction of only one of the casings is exposed, a tumbler 205 actuated by a spring 208 and having a stud 15 206 to engage a similar stud 207 on the bolt being employed. The rearwardly projecting portions 202^a of the locking bolts carry pins 202^c arranged in angular slots 202^d of tumblers 202^e connected by links 202^f, said 20 tumblers being mounted on a frame bar 202^a. The bolts 202^a are connected to form a single rigid frame with which is rigidly associated a stem 202 extending into a tally casing 204 and having a pawl 209 to advance 25 the units ratchet of a series of tally disks. The entire lock mechanism is mounted in a casing 204^a mounted on the door 201.

It will be understood from the foregoing description that the number of seats provided in the operated element of the counter-actuating devices for the adjustment of 30 the spring-actuated studs of the contact projections may be varied to provide for any desired adjustment of said projections to secure a fractional or whole vote, or any desired multiple vote, and, therefore, in addition 35 to the adjustments hereinbefore described, I have provided seats 348^a between the seats 348 and 349, to provide for adjustment of the straight-ticket contact projection when 40 it is desired that one stroke thereof shall communicate a two-vote movement to the counter.

The term "turn-stile" has been used in 45 this specification as an equivalent of a barrier or other means serving to limit or control the access of a voter to the voting mechanism in the sense that it is a means 50 which shall be operated as the voter approaches and leaves, or approaches or leaves that point adjacent to the voting mechanism from which he may manipulate the voting element.

Having described the invention, what is 55 claimed is—

1. In a voting machine, the combination with a plurality of counters, of a turn stile for controlling access to the counters and 60 capable of movement in opposite directions from a point of rest, and means actuated by the opposite movements of the turn-stile for controlling the operation of the respective counters.

2. In a voting machine, the combination 65 with counters, of a turn-stile for controlling

access to the counters, said turn-stile being capable of movement in opposite directions from a point of rest, and means whereby movement of the turn-stile in one direction 70 will be registered on one of the counters, and movement in the opposite direction will be registered on the other counter.

3. In a voting machine, the combination with counters, of a turn-stile, for controlling 75 access to the counters, capable of movement in opposite directions from a point of rest, restricting mechanism, a movable rack operatively connected with the restricting mechanism, and a mutilated gear actuated 80 by the turn-stile for engagement with the rack when the turn-stile is moved in one direction.

4. In a voting machine, the combination with counter-actuating devices and movable 85 members respectively actuated by said devices, of lock-out pins for engagement respectively with said movable members, a rock-shaft carrying said pins, a turn-stile movable in opposite directions from a point 90 of rest, and means actuated by the turn-stile when moved in one direction for operating the rock-shaft.

5. In a voting machine, the combination with counter-actuating devices and movable 95 members for operation respectively by said devices, of lock-out pins for respective engagement with said movable members, a rock-shaft for moving the lock-out pins in one direction, a replacing bar for moving 100 said pins in the opposite direction, a turn-stile for controlling access to the counters and movable in opposite directions from a point of rest, connections between the turn-stile and the replacing bar, and means for 105 actuation by the turn-stile when moved in one direction, the same being operatively connected with the rock-shaft.

6. In a voting machine, the combination with vote counters and actuating devices, of 110 total restricted and unrestricted voter counters, means operated by the vote counter actuating devices for operating the voter counters, and having a shiftable element for arrangement in operative relation with 115 either of the voter counters, a turn-stile, and means actuated thereby for adjusting the shiftable element of the counter-actuating means.

7. In a voting machine, the combination with counter-actuating devices, of restricted 120 and unrestricted voter counters and a total voter counter, and means for communicating motion from a counter-actuating device to the total-voter counter and one of the 125 other counters.

8. In a voting machine, the combination with counter-actuating devices, of restricted 130 and unrestricted voter counters and a total-voter counter, a turn-stile, and means controlled by the turn-stile for communicating

motion from a counter-actuating device to the total-voter counter and one of the other counters.

9. In a voting machine, the combination with counter-actuating devices, of restricted and unrestricted voter counters, a lever operatively connected to each of the counter-actuating devices, a shift pin carried by the lever for operative relation with either of the voter counters, a turn-stile movable in opposite directions from a point of rest, and connections between the turn-stile and the shift-pin for adjusting the latter with relation to the voter counters.

10. In a voting machine, the combination with counter-actuating devices and replacing mechanism therefor, of restrictive mechanism operatively positioned in relation to the counter-actuating devices, a turn-stile for controlling access to the counter-actuating devices and movement in opposite directions from a point of rest, and connections between the replacing and restrictive mechanisms and the turn-stile whereby the restrictive mechanism is actuated by the movement of the turn-stile in one direction and the replacing mechanism is actuated by the movement of the turn-stile in either direction.

11. In a voting machine, the combination with counter-actuating devices and a turn-stile for controlling access thereto, of restrictive devices having stops for the counter-actuating devices, a plunger for operation by the turn-stile when moved in one direction, and adjustable connections between the plunger and the stops.

12. In a voting machine, the combination with counter-actuating devices and a turn-stile for controlling access thereto, of stops for obstructing the movement of the counter-actuating devices, a plunger for operation by the turn-stile when moved in one direction, and movable pins carried by the plunger for engagement with said stops.

13. In a voting machine, the combination with counter-actuating devices, and movable members respectively actuated thereby, of restrictive mechanism having pins for engagement with said members, arms with which the pins are detachably connected, and means connected with said arms for actuation by a voter in approaching the counter-actuating devices.

14. In a voting machine, the combination with counter-actuating devices, and movable members respectively actuated thereby, of a rock-shaft having terminally-bifurcated arms, pins for engagement respectively with said movable members and having slotted terminals engaged with the bifurcations of the arms, spring-actuated pins carried by the arms for engagement with the slotted ends of the pins, and means operatively connected with the rock-shaft for actuation by

a voter in approaching the counter-actuating devices.

15. In a voting machine, the combination with counter-actuating devices, and movable members actuated respectively thereby, of restrictive mechanism having a rock-shaft and means carried thereby for engagement with said movable members, restricted and unrestricted voter counters having movable elements, a longitudinally movable bar operatively connected with said rock-shaft, a lever connected with said bar and carrying a shift pin for engagement with the movable element of either of the voter counters, connections between the counter-actuating devices and said pin for actuating the counters, and means operatively connected with said longitudinally movable bar for actuation by a voter in approaching the counter-actuating devices.

16. In a voting machine, the combination with counter-actuating devices, a turn-stile for controlling access thereto, replacing mechanism for the counter-actuating devices operatively connected with the turn-stile, and restrictive devices for controlling the movement of the counter actuating devices also operatively connected with the turn-stile, of a total-admission voter counter operatively connected with the replacing devices, a total-voter counter, and operating devices for the same adapted for operation by the counter-actuating devices, restricted and unrestricted voter counters, and means controlled by the turn-stile for operatively connecting either of said restricted and unrestricted voter counters with the counter-actuating devices.

17. In a voting machine, mechanism for voting for a plurality of offices, a plurality of barriers, and means operated by one of said barriers only to prevent the operation of any given number of office voting mechanisms less than the whole number to be voted for.

18. In a voting machine mechanism for voting for a plurality of offices, a plurality of barriers, and means operated by one of said barriers only to prevent the operation of any given number of office voting mechanisms less than the whole number to be voted for and for restoring said preventing means to normal position.

19. In a voting machine, the combination with vote counters, and actuating devices, of total restricted and unrestricted voter counters, means operated by the voter counter actuating devices for operating the voter counters and having a shiftable element for arrangement in operative relation with either of the voter counters, a barrier, and means actuated thereby for adjusting the shiftable element of the counter actuating means.

20. In a voting machine, the combination

with counters, of a turn-stile for controlling access to the counters, capable of movement in opposite directions from a point of rest, and releasing and restricting means actuated, respectively, by the opposite arms of the turn-stile for controlling the operation of the counters.

21. In a voting machine, a reciprocating turn-stile, interlocking mechanism, and intermediate means for resetting actuated interlocking mechanism to normal position on movement of the turn-stile in either direction.

22. In a voting machine, the combination with counter actuating devices, of a guide having blocks movably mounted therein for actuation by the devices, lock-out pins for respective engagement with said blocks, and

a replacing device for automatically returning said pins to their normal positions. 20

23. In a voting machine, the combination with counter actuating devices, of movable members for actuation by said devices, lock-out pins for engagement respectively with said movable members, and having projections, and a replacing device for engagement with said projections to return the lock-out pins. 25

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses. 30

LENNA RYLAND WINSLOW.

Witnesses:

LAURA E. CARSON, JR.,
J. C. CARSON.