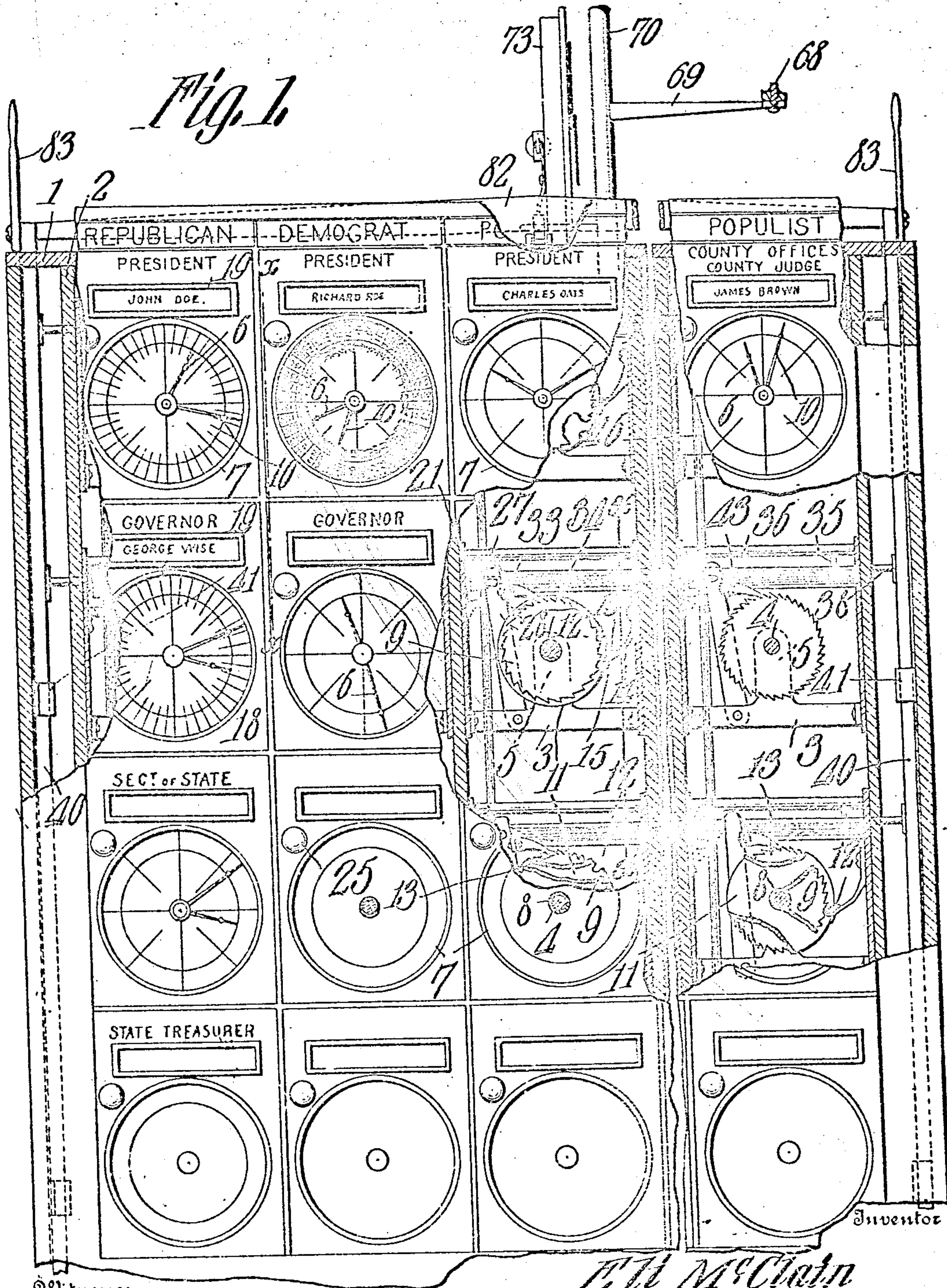


E. McCLAIN.
VOTING MACHINE.
APPLICATION FILED OCT. 25, 1907.

898,910.

Patented Sept. 15, 1908.

4 SHEETS—SHEET 1.



Witnesses

E. J. Stewart
J. T. Chapman

By

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C. Snow

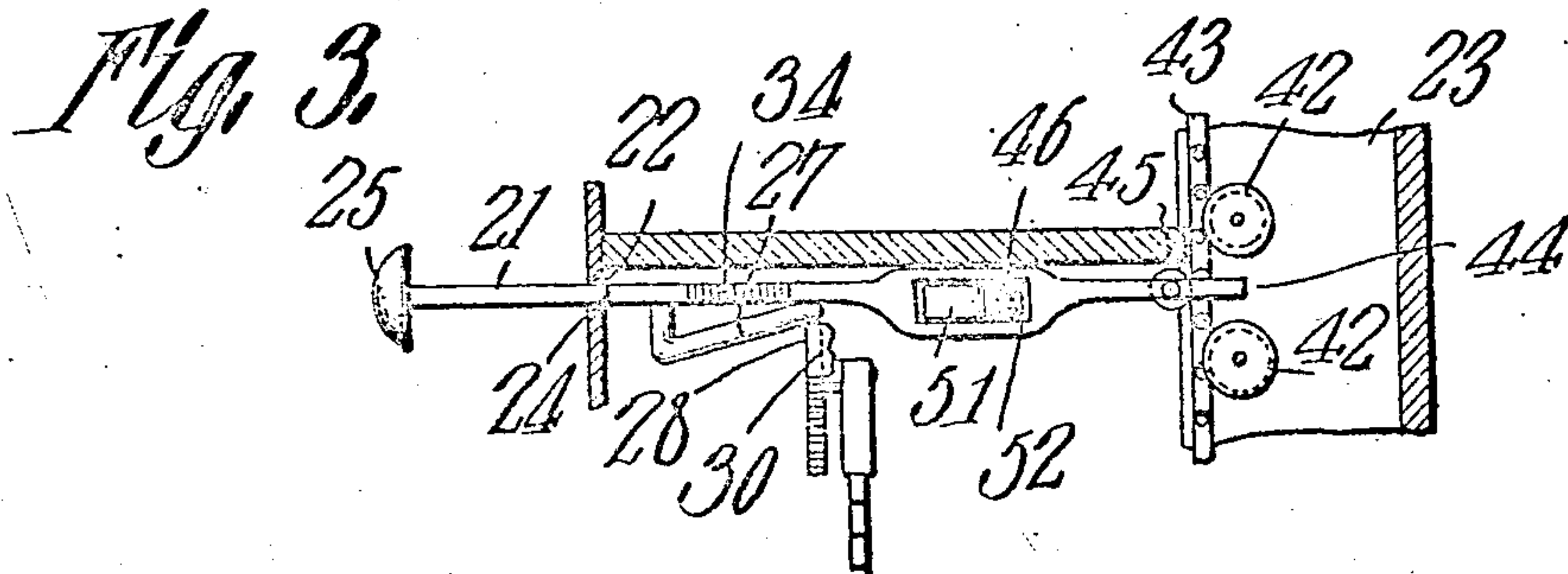
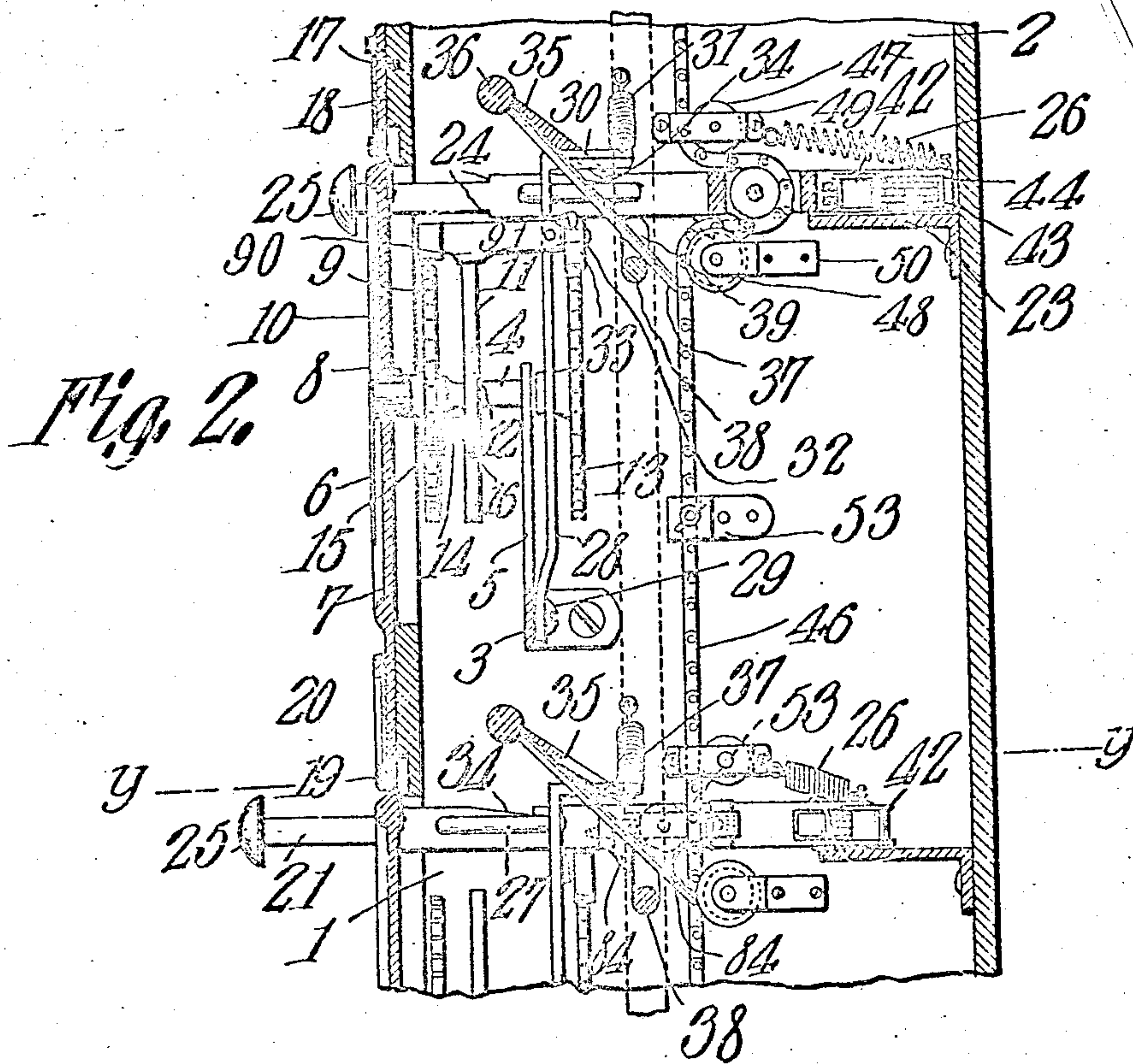
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4 SHEETS—SHEET 2.



Witnesses

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4 SHEETS—SHEET 3.

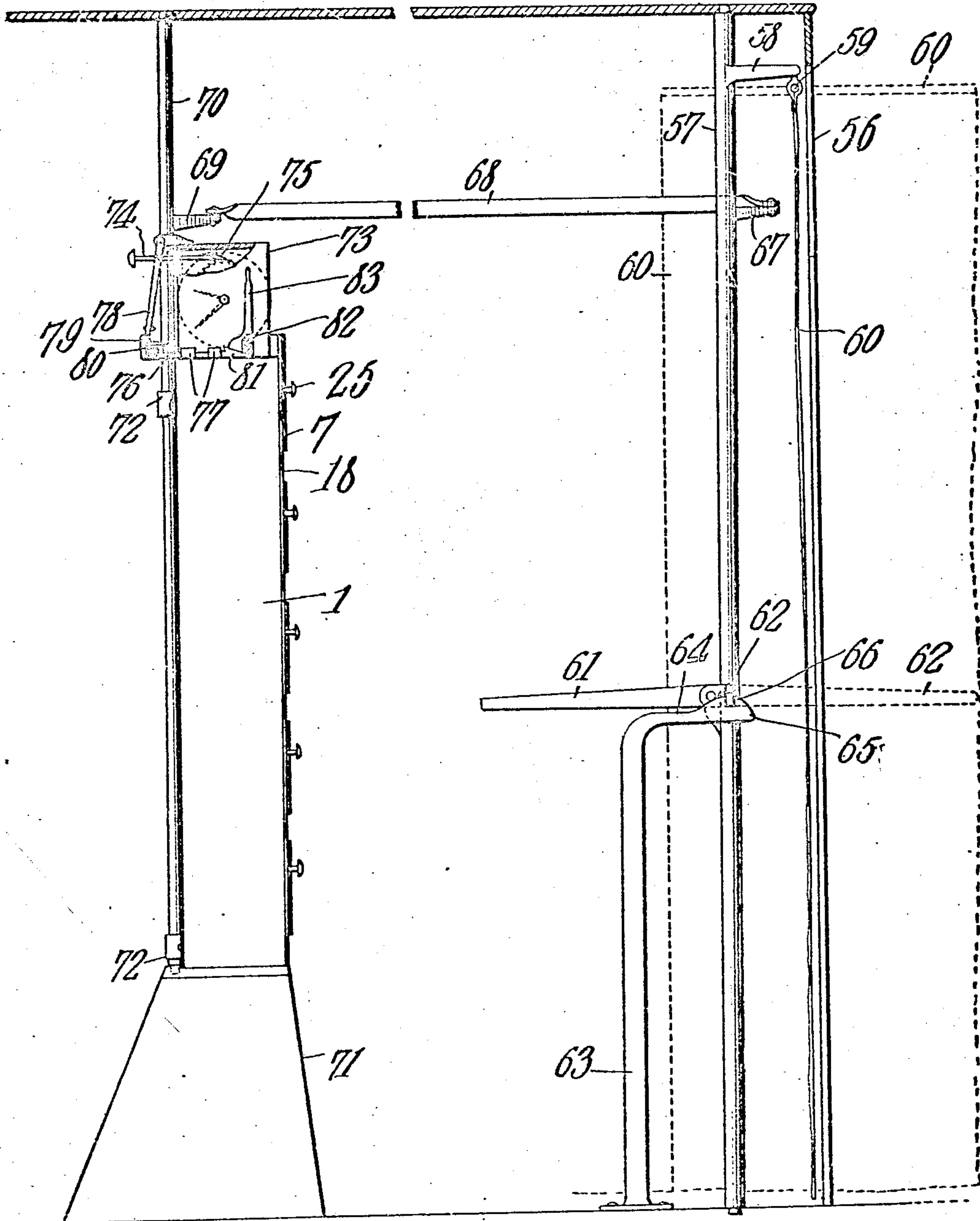


Fig. 4.

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4 SHEETS—SHEET 4.

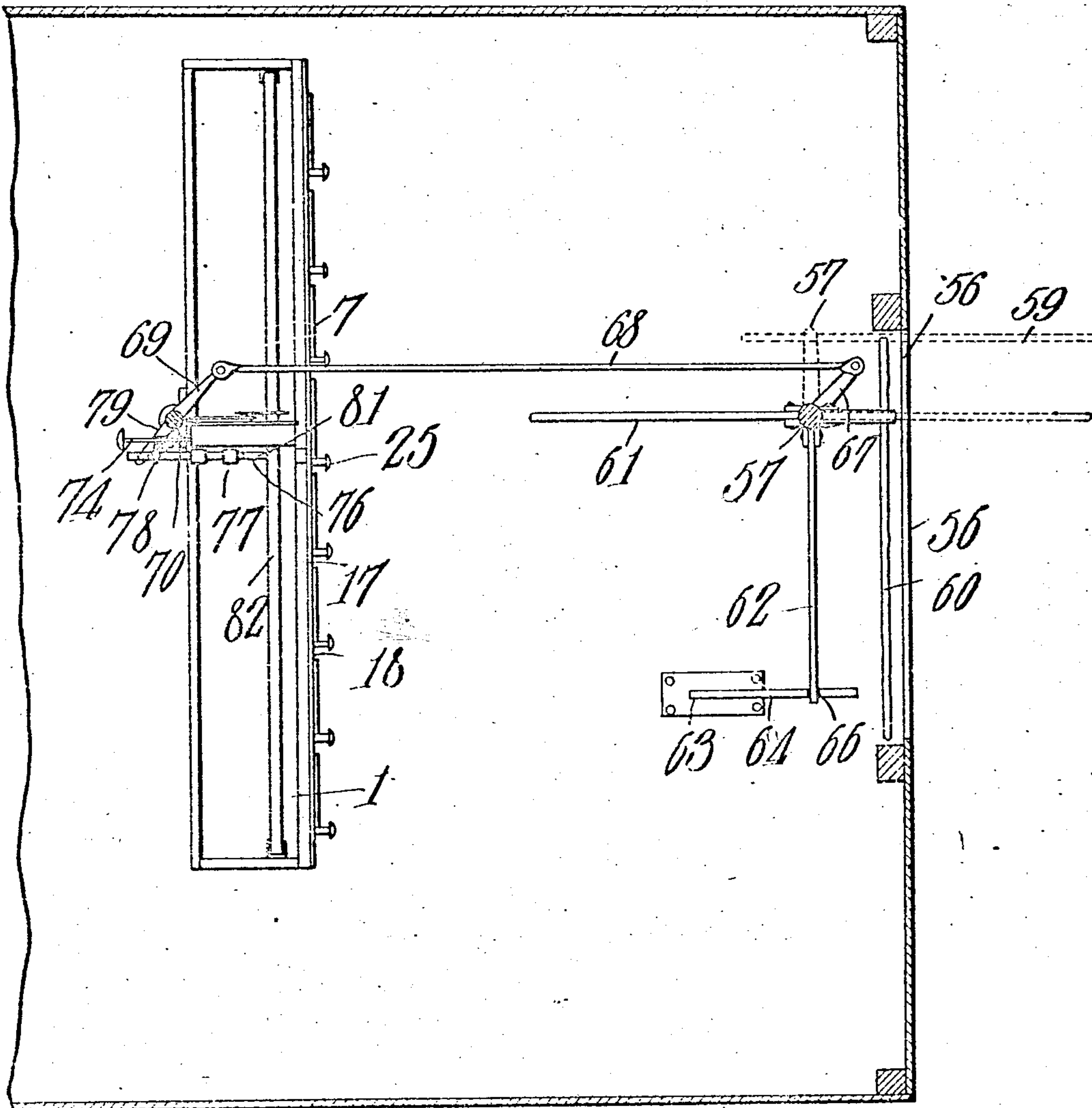


Fig. 5.

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UNITED STATES PATENT OFFICE.

ELI McCLAIN, OF PARIS, TEXAS.

VOTING-MACHINE.

No. 898,910.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed October 25, 1907. Serial No. 339,176.

To all whom it may concern:

Be it known that I, ELI McCLAIN, a citizen of the United States, residing at Paris, in the county of Lamar and State of Texas, have
5 invented a new and useful Voting-Machine, of which the following is a specification.

This invention has reference to improvements in voting machines, and its object is to provide means whereby a voter may, by
10 pushing an appropriate button, register his vote for the particular candidate desired for the particular office, there being a separate push-button for each candidate and office.

The invention comprises essentially a
15 means whereby the voter may register his choice, comprising push bars accessible from the exterior of the machine, each push bar having an individual lock comprising a rock-shaft having a finger in the path of a notch
20 in the push bar and an arm also on the shaft out of the path of the push bar with means for restoring all the push bars to normal position after being operated upon, said means comprising rods each of which is in contact
25 with all the arms of the rock shafts of the series, together with connections between all the rods so that they may be moved simultaneously to in turn move all the rock shafts to release all the actuated push bars, the
30 latter being spring-retained so that when released they are returned to normal position by their springs.

The invention also comprises means whereby a properly authorized person may
35 lock the entire machine against further manipulation, as when the time for voting is past and no more registering of the votes is to be done. By this means both surreptitious and accidental registering of votes is
40 prevented.

The invention will be best understood by reference to the following detailed description, taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is a face view of a portion of a machine constructed in accordance with the present invention, with some parts broken
50 away and others in section; Fig. 2 is a vertical section through a portion of the machine on the line $x-x$ of Fig. 1; Fig. 3 is a cross section through a portion of the machine on the line $y-y$ of Fig. 2; Fig. 4 is a side elevation, with parts in section, of the voting booth;
55 and Fig. 5 is a horizontal section through the same above the voting machine.

Referring to the drawings, there is shown a casing 1 in which are a number of spaced upright partitions 2. Between the uprights 2 are located frames 3 in which are mounted
60 the individual registering mechanisms for showing the number of votes cast for any particular candidate. Each of these mechanisms comprises a shaft 4 journaled near one end in a support 5 formed on the frame 3 and at the other end carrying a hand or
65 pointer 6 exterior to the front of the casing and in operative relation to a dial 7. That end of the shaft 4 to which the hand 6 is attached also carries the hub 8 of a ratchet
70 wheel 9, said hub passing through the front of the casing and being journaled therein and also constituting the journal support for the corresponding end of the shaft 4. The
75 hub 8 carries another hand 10 in operative relation to the dial 7. The two hands 6 and 10 are of different lengths and the dial is provided with two annular series of numbers to which the hands point. As will presently
80 appear, the hand 6 makes a complete revolution and thereby causes the hand 10 to move but a small fraction of a revolution. For instance, the hand 6 is moved step by step
85 through one revolution, say in forty steps, and thereby moves the hand 10 one-fortieth of a revolution. The index for the hand 10 is therefore arranged in multiples of forty, that is, the forty steps embrace numbers
90 from forty to sixteen hundred. These numbers are simply indicative and any other arrangement of numbers for the index may be adopted.

Upon the shaft 4 back of the ratchet wheel 9 there is mounted a plain disk 11 having one
95 peripheral notch 12, and also upon the shaft 4 there is mounted a ratchet wheel 13 having its teeth in the same sense as the ratchet wheel 9. The disk 11 and ratchet wheel 13 are fixed upon the shaft 4 for rotation
100 therewith, while the ratchet wheel 9 may be rotated with the disk by a means to be described later and may be held against rotation without stopping the rotative movement of the shaft 4.

Fixed to the frame 3 is a spring arm 14
105 terminating in a tooth 15 normally in the path of the teeth of the ratchet wheel 9, and this spring 14 has another tooth 16 in frictional engagement with the periphery of the disk 11, thus holding it against accidental
110 rotation. Means are provided, as will hereinafter appear, so that when the ratchet

wheel 13 is rotated until the notch 12 in the disk 11 is brought into coincidence with a pawl 90, mounted on a lever arm 91, to be hereinafter referred to, this pawl will fall into said notch. The pawl 91 is wide enough to also engage the teeth of the ratchet wheel 9, but is normally held out of engagement therewith by the disk 11. When, however, the pawl 90 falls into the notch 12, it also falls into engagement with the ratchet teeth on the wheel 9. Now, if the pawl 90 be moved back and forth, it will engage the ratchet wheel 9, to actuate the same only when permitted to move into engagement therewith by falling into the notch 12. Thus, on each complete rotation of the ratchet wheel 13, the ratchet wheel 9 will be moved a distance equal to the length of one tooth. This movement, however, carries the notch 12 from under the pawl 90, so that as the ratchet wheel 13 and shaft 4 continues to turn in the further operation of the machine the ratchet wheel 9 remains stationary, being engaged and held against movement by the spring 15. Thus the hand 6, assuming that it starts at the index numeral one and assuming that the several parts are properly related, will move about the index until it reaches the last number thereon, say the number forty, and when this number is reached the notch 12 will under-ride the pawl 90 and thus cause it to engage the ratchet wheel 9 and the hand 10 will be rotated a distance to bring it coincident with, say, the lowest number on the index plate apportioned to said hand; that is to say, on the index shown in the drawing the hand 10 will point to the number forty. When the hand 6 is again moved about the index until it reaches the number forty, the hand 10 will be moved to the number eighty, and so on. Of course, the highest number that can be registered on the index plate will always exceed the total number of voters in the precinct or voting district in which the voting machine is to be used.

The front of the casing may be constructed in the manner already indicated with the dials formed directly thereon, or the front of the casing may be made of a wooden or other plate 17 faced with metal plates 18 upon each of which is formed a dial 7 and each of which may have adapted thereto a frame 19 suitably shaped to receive a card 20 containing the names of the candidates, while the name of the office may be engraved or otherwise placed upon the plate.

In the arrangement shown in Fig. 1 it is assumed that the names of the party candidates are arranged in vertical rows, while the names of the offices are arranged in horizontal rows.

Adjacent to each dial plate is a push-bar 21 extending through a suitable perforation 22 in the plate 18 and having its other end

resting on a ledge or shelf 23 extending horizontally and fastened to the back wall of the machine so that the push-bar 21 is supported at its rear end by the shelf 23 and at its front end by the plate 18. The push-bar 21 is made rectangular in cross section so as not to turn in the perforation 22 which is of like shape, and the front end is of reduced width so as to form shoulders 24 which will abut against the inner face of the plate 18 and so prevent the push-bar 21 from projecting too far beyond the front of the plate 18. The push-bar 21 is provided with a push-button 25 exterior to the front of the machine.

To the inner end of the push-bar there is secured one end of a spring 26, the other end of which is fast at an appropriate point on the adjacent partition 2, the tendency of the spring being such that the push-bar is normally maintained thereby in the projected position.

On one side of the push-bar 21 there is formed a wedge or cam projection 27 in the path of which is the upper end of an arm 28, the lower end of which is pivotally supported on the frame 3, as indicated at 29. The arm 28 has at its free end an angle extension 30 to which is secured one end of a spring 31, the other end of which spring is fast at an appropriate point on the adjacent partition 2. The arm 28 has a side stud 32 to which is pivoted the arm 91 which also carries a pawl 33 engaging the teeth of the ratchet wheel 13. This pawl may be a gravity pawl, as indicated, or it may be held against the teeth of the ratchet wheel 13 by a spring in the ordinary manner. Now, when a push-button is moved against the action of the spring 26, that is, when it is pushed into the casing 1, the wedge or cam 27 engaging the arm 28 will move the same progressively farther and farther away from the plane of movement of the push-bar 21, at the same time extending the spring 31. Since the pawl 33 is in engagement with some one of the teeth of the ratchet wheel 13 this ratchet wheel will be rotated as the arm 28 is moved away from the push-bar 21 and thus move the hand 6. The parts are so proportioned that the entire extent of movement of the arm 28 and pawl 33 under the action of the cam 27 is equal to the length of a tooth of the ratchet wheel 13, which means a movement of the hand 6 from one index number to the next.

In the upper edge of the push-bar 21, in that portion of the length of the push-bar always contained within the casing 1, there is formed a notch 34 in the path of a finger 35 projecting from a rock-shaft 36 extending horizontally across the frame 3 and journaled at its ends therein. This shaft 36 has also projecting therefrom an arm 37 in the path of a rod 38 extending horizontally across the machine through vertical slots 39 in the

partitions 2 and at its ends connected to upright side bars 40 held to the sides of the casing 1 by clips 41, so that these side bars may move up and down but are prevented from moving in any other direction. There is a rod 38 for each horizontal series of push-bars and all these rods are connected to the same side bars 40. Now, when a push-bar is pushed into the machine it is ultimately caught and there held by a corresponding finger 35 engaging in a notch 34, each spring 36 being then under tension and each arm 37 resting on a bar 38 which, under the conditions then existing, is at the bottom of the slots 39. Let it be assumed that a voter has pushed in all the push-buttons corresponding to the various candidates said voter selects, then in order to set the machine for the next succeeding voter the rods 38 are all raised and engage those arms 37 which have dropped down upon the rods 38 because of the dropping of the fingers 35 into the notches 34 of the pushed in bars 21, the notches 34 being so located as to be engaged by the fingers 35 only when the bars 21 have been pushed in to the proper extent. As the rods 38 are moved upwardly the fingers 35 ultimately escape from the notches 34 and all those bars 21 which were pushed into the machine are projected by the action of the springs 26, so that after the rods 38 have been lifted all the push-bars are in the normal or operative position. When the rods 38 are allowed to return to the lowermost position the arms 37 follow them until arrested by the engagement of the fingers 35 with the upper edges of the push-bars 21. For the movement of the fingers to cause them to drop into the notches 34 the action of gravity may be relied upon, or a suitable spring may act upon each finger or upon each shaft 36. Now, since there are usually two or more candidates for each office to be voted for, it is necessary to provide means that will lock all the other push-bars of a series when one has been pushed in to register the choice of a voter, so that if a voter be at all inclined to be dishonest and should attempt to vote for more than one candidate for the same office he will find all the other push-buttons controlling the registers for recording votes for the other candidates for the same office locked against movement. To accomplish this I provide upon the shelf 23 on each side of the corresponding end of the push-bar 21 a grooved roller 42, and extending along the shelf from end to end is a strand in the form of a chain 43 or a cord or flexible band, while the corresponding end of the push-bar is formed with a loop 44 through which the chain passes, this loop being either integral with the bar and made by simply punching out a hole through the bar or the loop may be made separate from the bar and secured thereto. Within the perforation in the loop

there is mounted another roller 45 which when the bar 21 is pushed inward will engage the chain and force the same toward the rollers 42 in a direction at right angles to the length of the chain. Now, the ends of the chain are secured, say, to the end walls of the casing or to the end partitions 2, and there is enough slack in the chain so that one of the series of push-bars 21 under the control of the chain may be moved into the casing until caught by the corresponding finger 35. Then the chain is rendered taut by the taking up of the slack and because of the chain being forced between the rollers 42 by the movement of the push-bar under consideration. If, now, an attempt is made to manipulate any other one of the push-bars under the control of the particular chain, it will be found that these bars are locked against any movement sufficient to operate the register, and, therefore, are inoperative to register a vote. Should it transpire, as is sometimes the case, that a voter has the privilege of casting his vote for two or more candidates for the same office, then the chain will have sufficient slack to permit the pushing in of two or more bars 21 in the same series, but when the limit of permissible voting for the one office is reached then the rest of the push-bars are locked. It may also be of advantage under certain conditions that the vertical tiers of push-bars have locking means applied thereto. For this purpose there are other vertically disposed strands in the form of chains 46, which, of course, may be replaced by flexible bands or cords, and adjacent to each of these chains there are two rollers 47—48 mounted upon brackets 49—50 fast on an adjacent partition 2. The brackets 49 may be so shaped as to inclose the chain and thus serve to guide the same, and in this case the roller 47 need not be flanged, while the bracket 50 need not embrace the chain, in which case, however, the roller 48 should be flanged to act as a guide for the chain.

Mounted in each push-bar 21 is a roller 51 similar to the roller 42, but at right angles thereto so as to engage the chain 46, the push-bar 21 being slotted as shown at 52, to permit the passage of the chain and to receive the roller 51.

When the bar 21 is pushed into the casing the chain 46 is engaged by the roller 51 and carried laterally between the rollers 47 and 48, thus correspondingly taking up the slack of the chain in like manner to the taking up of the slack of the chain 43. The chains may be divided into several active portions by being engaged by suitable clamps 53 fast at the proper locations on the partitions 2 or ledges 23, as the case may be.

In Figs. 4 and 5 there is shown a voting booth having a door or opening 56 inside of which there is located a vertical shaft 57 journaled at one end in the floor and at the

other end in the ceiling of the booth. This upright shaft has a short projecting arm 53 carrying a horizontal rod 59 upon which hangs a curtain indicated by dotted lines at 50, the curtain being of sufficient width and length to close the opening in the booth.

Fast upon the shaft 57 at a convenient height from the floor are two arms 61 and 62 at right angles one to the other and of sufficient length to bar the passageway into or out of the booth. The shaft 57 is located near one side of the opening and an upright 63 is located near the other side of the opening, the said upright having its upper end formed into a horizontally-projecting arm 64 formed at its free end with a head 65 in which is formed a notch 66 toward which the upper edge of the head 65 gently slopes in each direction. The arms 61 and 62 are hinged to the shaft 57 so that when the shaft is rotated the free end of the arm 61 or 62 coming in contact with the sloping upper edge of the head 65 will be guided and lifted by the same until the notch 66 is reached, when the said arm will gravitate thereinto.

Near the upper end of the shaft 57 is another arm 67 connected by a link or strap 68 to an arm 69 on an upright shaft 70 at the back of the casing 1 of the machine, which latter may be set upon a support 71 rising from the floor of the booth. The shaft 70 is journaled at its upper end in the ceiling or roof of the booth, while its lower end may be journaled in the support 71 and straps 72 may confine the voting machine to the shaft 70.

On the top of the casing 1 is a register 73 which may be in all respects similar to the registers already described and contained in the machine, but this register is operated by a push-bar 74 which, however, is devoid of locking mechanism and may operate the ratchet wheel 13 directly by means of a pawl 75.

Mounted to slide on the top of the casing 1 is a bar 76 held thereto by clips 77, and this bar is connected by a rock-lever 78 to the push-bar 74, so that the bar 76 and push-bar 74 will always move in the same sense.

Upon the shaft 70 and projecting therefrom in a direction opposite to the direction of projection of the arm 69 is another arm 79 engaging in an eye 80 formed on the corresponding end of the bar 76. The other end of the bar 76 is formed into a wedge or inclined shoulder 81 engaging under a cross bar 82 joining the upper ends of the side bars 40 before referred to. Likewise each side bar 40 which projects at its upper end through the top of the casing 1 has pivoted thereto a cam lever 83, the cam face of which is in engagement with the top of the casing so that when the levers 83, one for each bar 40, are moved about their pivots the bars 40 will be raised or lowered as the case may be.

Let it be supposed that the shaft 70 with its arm 79 is absent. Then in order to reset the machine after a voter has manipulated it an election judge or other authorized person can, by pushing the bar 74, cause the bar 76 to be moved longitudinally so that its wedge end 81 will pass under the connecting bar 82 and thus elevate the side bars 40 and reset the machine in the manner already described.

When the voting time has expired the judge or other authorized person will turn the cam levers 83 into a position to raise the bars 40 and thus lock the machine against further manipulation, since when these cam levers are turned to the horizontal position the cams are so locked as to retain the bars 40 in the raised position, thus locking all the push bars 21 against movement. For this purpose each push-bar 21 is provided with two spaced lugs 84 so located that when the push-bars are projected into their normal working position the lugs 84 are in a position to straddle the rods 38 when elevated, and the push-bars are therefore effectually locked against being pushed into the machine.

Every time the bar 76 is moved in a direction to reset the machine the register 73 is operated one indicating space and thereby shows on its face the number of voters who have used the machine. This latter operation is rendered automatic when the machine is installed in a booth such as shown in Figs. 4 and 5. In this case it is to be assumed that the arm 62 is in the dotted line position and the arm 61 is in the notch 66. Under these circumstances the passageway into the booth is barred by the arm 61 and the curtain with its supporting rod 59 is in the position shown in dotted lines in Figs. 4 and 5, that is, so as to leave the opening into the booth free for inspection, thus giving visible evidence that the booth is empty. Now, when a voter approaches the booth he must first raise the bar 61 in order to enter the booth and as he enters the latter he pushes against this bar and thus turns the shaft 57 upon its axis until the arm 62 engages the notch 66 and the shaft is locked against further rotative movement. In the meantime, however, the curtain 60 has been carried by the arm 58 and bar 59 into a position to close the opening 56, and the arm 67, link 68 and arm 69 have caused the shaft 70 to rotate for a distance sufficient to draw the bar 76 so that its head 81 is withdrawn to a sufficient extent from under the bar 82 to permit the side bars 40 to drop to their normal position, thereby releasing all the push-bars 21 to operation. The voter then pushes in such push-bars as he may desire to register his vote, and then on going from the booth he lifts the bar 62 from the notch 66 and pushes the same to turn the shaft 57 in the reverse direction from that in which it was turned when the voter entered the booth. This

will carry the curtain 60 from the path of the voter as he leaves the booth and will bring the bar 61 across the opening 56 until its end is engaged by the notch 66. At the same time the movement of the arm 67, link 68 and arm 69 acting on the shaft 70 causes the bar 76 to be moved in a direction to force the head 81 under the bar 82 and thus lift the side bars 40 to unlock all the push-bars 21 and allow them to return to their normal position, and concurrently with this movement the register 73 is operated to record the fact that a voter has entered and left the booth, thus registering the number of votes.

15 The dials 7 are all located at the front of the machine, although they may be elsewhere located if desired, and these dials when so located are in practice covered with a heavy glass face plate, so that the hands 6 and 10 may not be tampered with. This, however, is a structural feature and has not been shown in the drawings.

I claim:—

1. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar consisting of a rock shaft having a projecting finger in the path of a notch in the push bar and an arm on the rock shaft out of the path of the push bar, and means for restoring all of the push bars to normal position after being operated comprising rods each in contact with all of the arms on all of the rock shafts of a series and connections between all the rods whereby they may be moved simultaneously, to move all of the rock shafts to release all the actuated push bars, to the action of their springs.

2. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar consisting of a rock shaft having a projecting finger in the path of a notch in the push bar and an arm on the rock shaft out of the path of the push bar, and means for restoring all of the push bars to normal position after being operated, comprising rods movable to and from the push bars and rock shafts and engaging the arms on the latter and causing the shafts to rock to release the said push bars when said rods are moved towards the shafts.

3. In a voting machine, a bar movable in a direction at right angles to its length, rock shafts each having an arm in the path of the bar, also a projecting finger, and push bars each controlled by a spring and in operative relation to the finger on its respective rock shaft and provided with means in the path of the bars controlling the rock shaft to engage said bar and to be locked thereby.

4. In a voting machine, a bar movable in a direction at right angles to its length, rock shafts each having an arm in the path of the bar, also a projecting finger, and push bars

each controlled by a spring and in operative relation to the finger on the respective rock shaft and provided with spaced lugs arranged to receive the bars, controlling the rock shafts, between them and to be locked thereby against movement.

5. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar consisting of a rock shaft having a projecting finger in the path of a notch in the push bar, and an arm on the shaft out of the path of the push bar, and means for restoring all of the push bars to normal position after being operated, comprising rods movable to and from the push bars and rock shafts, and engaging the arms on the latter and causing the shafts to rock to release the push bars when the said rods are moved toward the shaft, common connections for all the rods, and cam levers controlling the common connections.

6. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar, consisting of a rock shaft having a projecting finger in the path of a notch in the push bar, and an arm on the rock shaft out of the path of the push bar, and means for restoring all the push bars to normal position after being operated comprising rods movable to and from the push bars and rock shafts and engaging the arms on the latter and causing the shafts to rotate to release the push bars when the said push bars are moved toward the shaft, common connections for all the rods, and a sliding wedge controlling the common connection of all of the rods simultaneously.

7. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar consisting of a rock shaft having a projecting finger in the path of a notch in the push bar, and an arm on the shaft out of the path of the push bar, and means for restoring all the push bars to normal position after being operated comprising rods movable to and from the push bars and rock shafts and engaging the arms on the latter and causing the shaft to rock to release the push bars when said rods are moved toward the shaft, common connections for all the rods, cam levers controlling the common connection and locking the rods in operative position, and a sliding wedge also acting on the common connection to operate the rods.

8. In a voting machine, a series of push bars, one for each candidate to be voted for, a spring for each push bar, an individual lock for each push bar consisting of a rock shaft having a projecting finger in the path of a notch in the push bar and an arm on the rock shaft out of the path of the push bar, and means for restoring all the push bars to nor-

mal position after being operated comprising rods movable to and from the push bars and rock shafts and engaging the arms on the latter and causing the shafts to rock to release the push bars when said rods are moved toward the shaft, cam levers controlling the common connections to lock the rods in operative position, and a sliding wedge also acting on the common connection to operate the rods, the said cam levers and sliding wedge

being exterior to the machine and accessible to authorized persons only.

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

ELI McCLAIN.

Witnesses:

J. M. LONG,

CHAS. W. WORTHY.