No. 613,164. Patented Oct. 25, 1898.

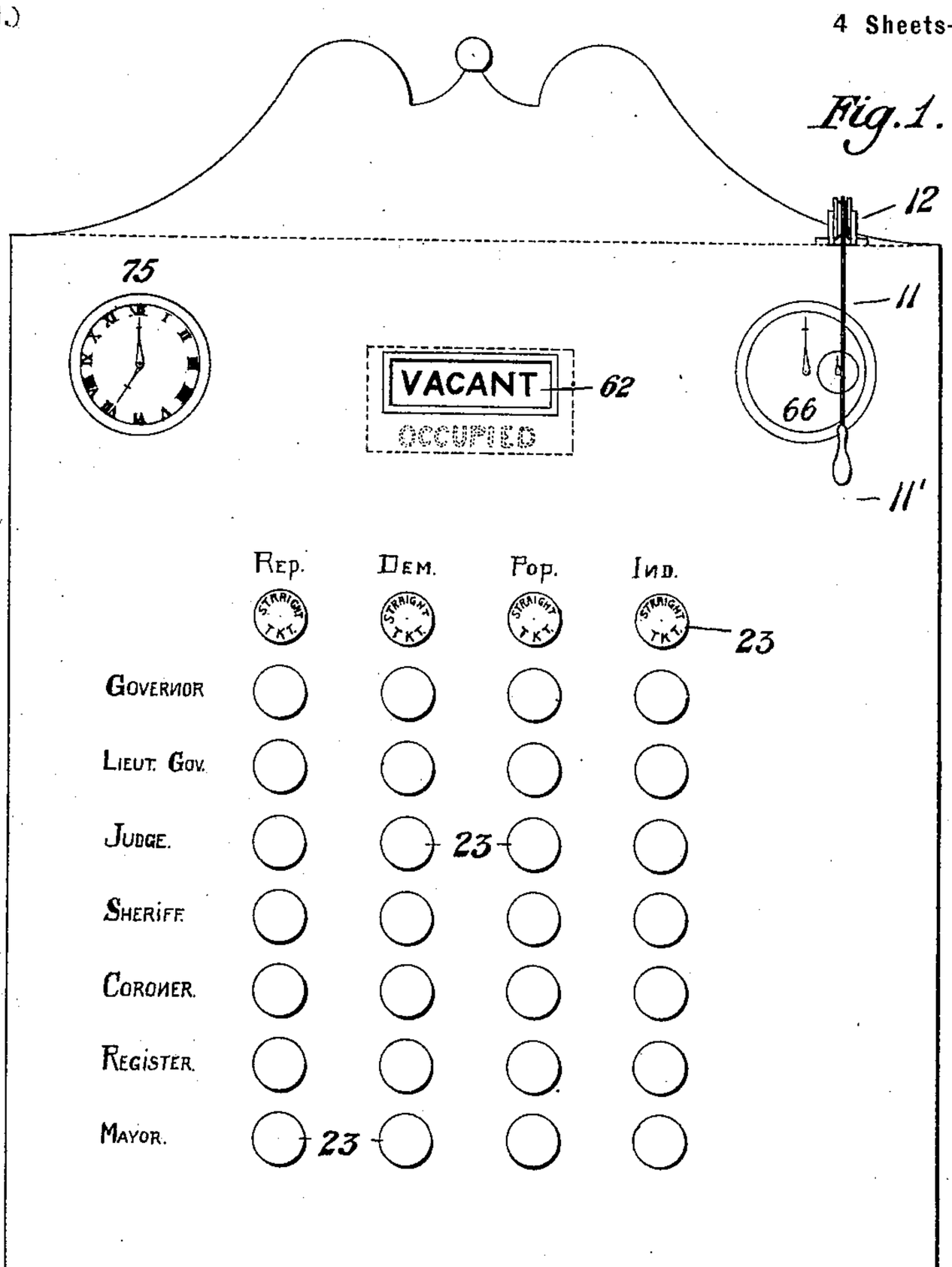
G. W. MacKENZIE.

VOTING MACHINE.

(Application filed Oct. 28, 1897. Renewed Sept. 7, 1898.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



Witnesses:
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J. H. Edwards.

Inventor:
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his Attorney.

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(No Model.) 4 Sheets—Sheet 2.

Fig. 2.

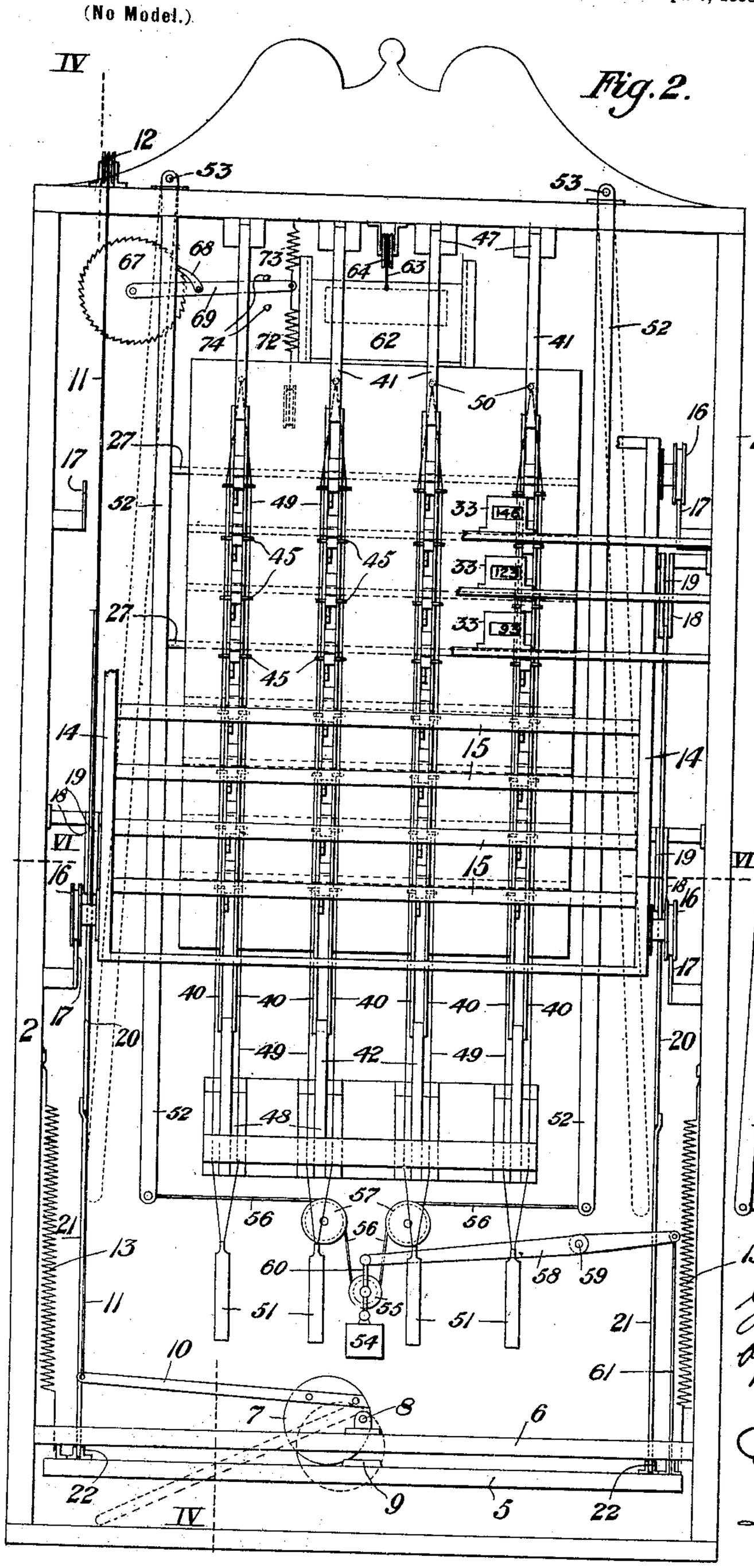
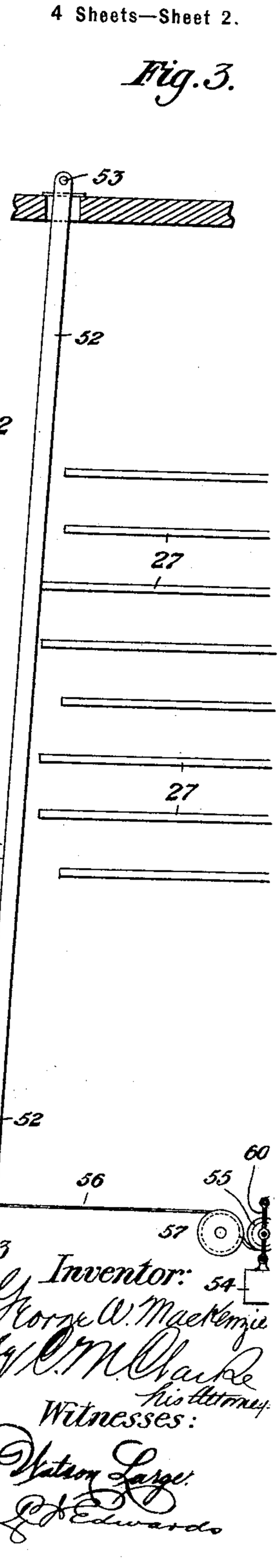


Fig. 3.



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(No Model.) 4 Sheets—Sheet 3.

Fig. 4.

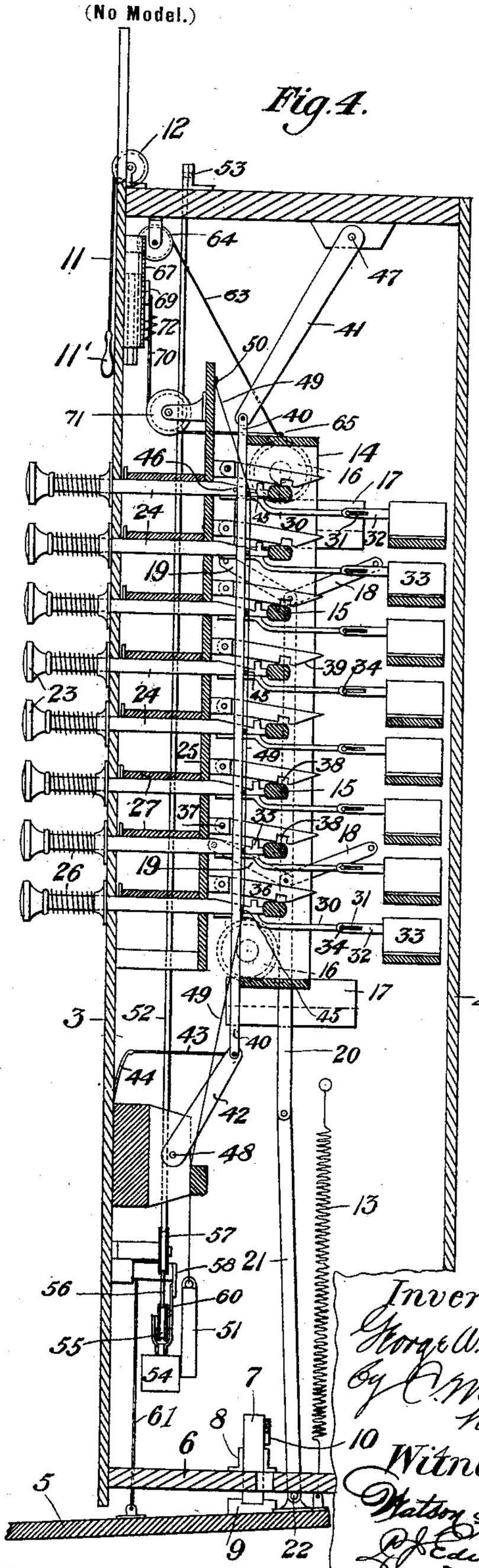
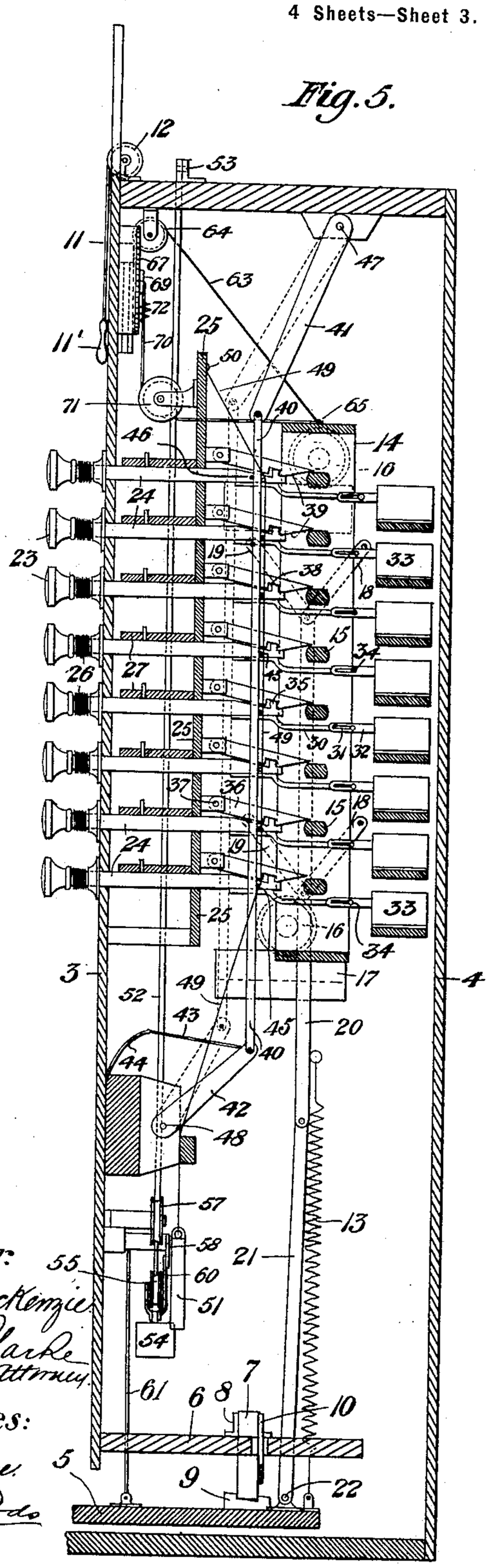


Fig. 5.



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(No Model.) 4 Sheets—Sheet 4.

Fig. 6.

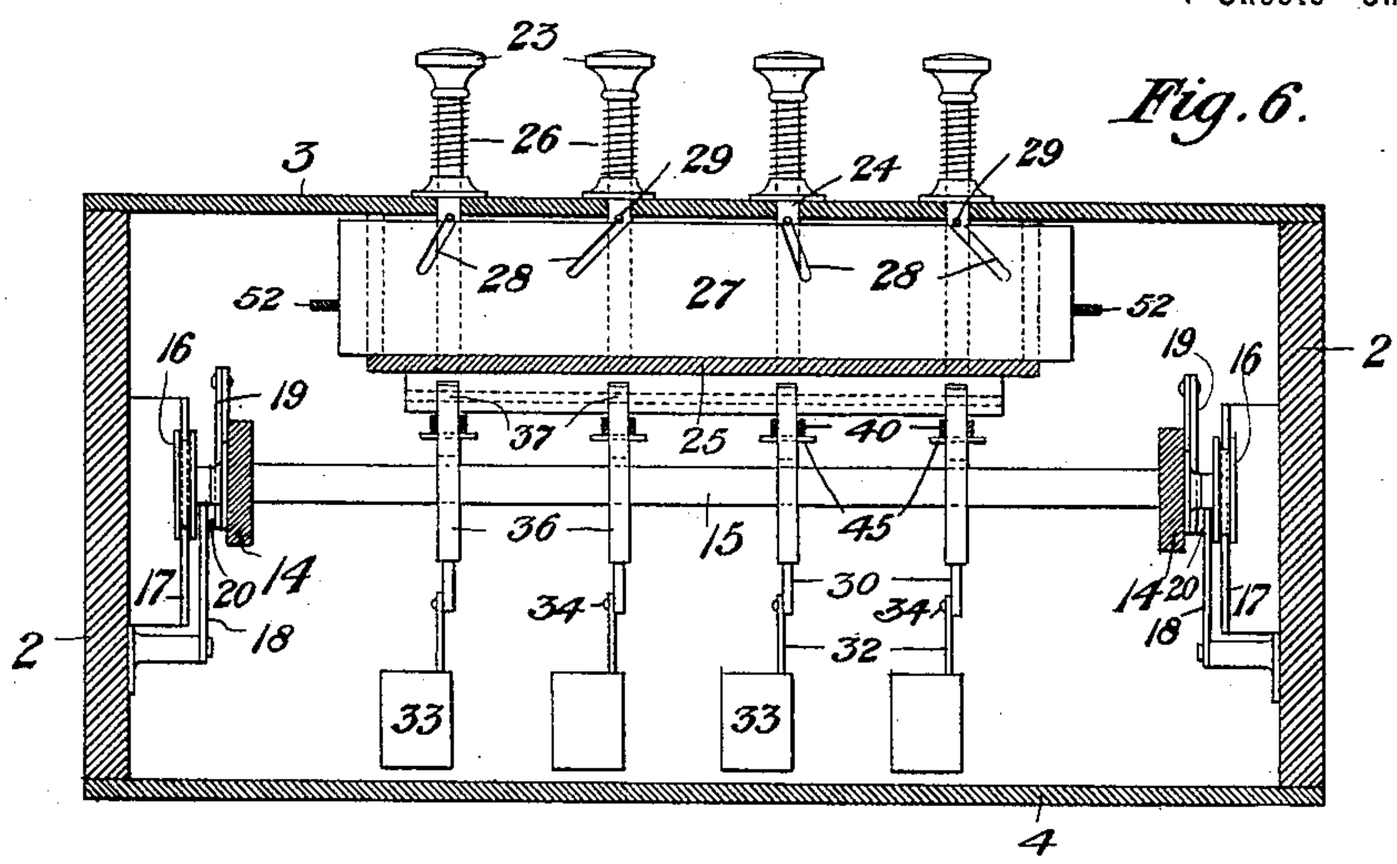


Fig. 7.

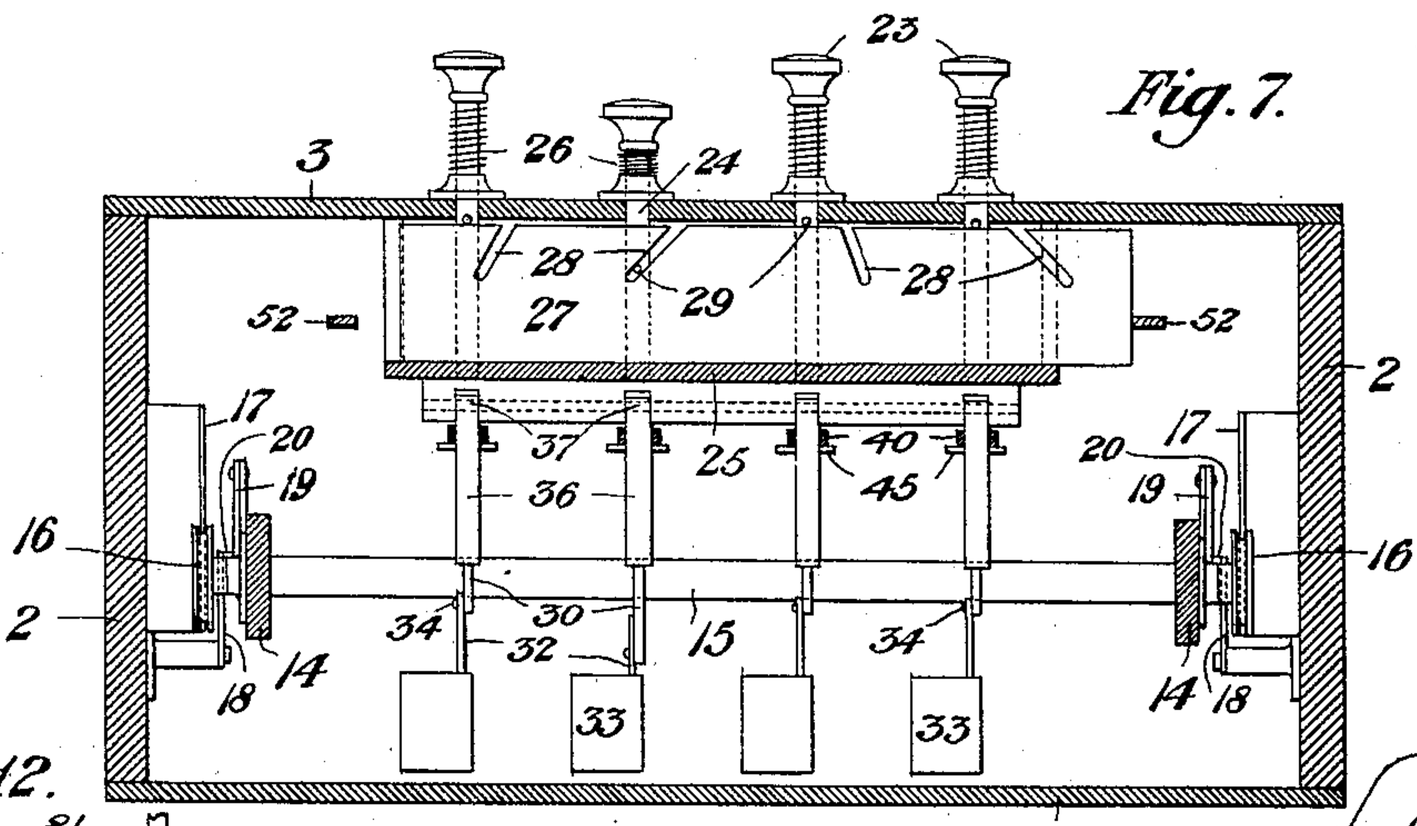


Fig. 12.

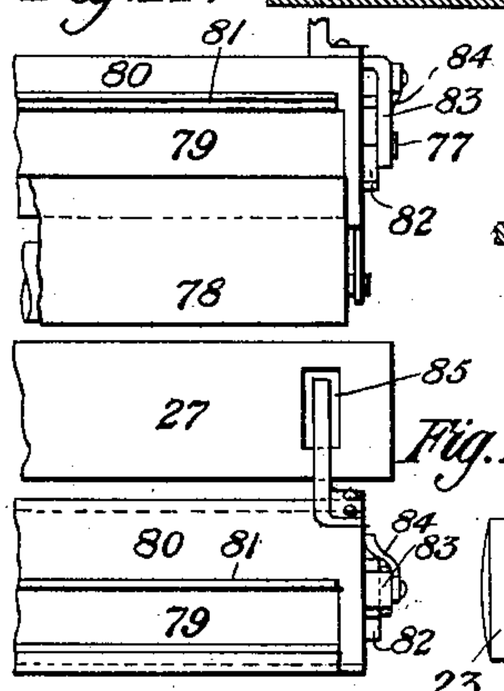


Fig. 13.

Fig. 8.

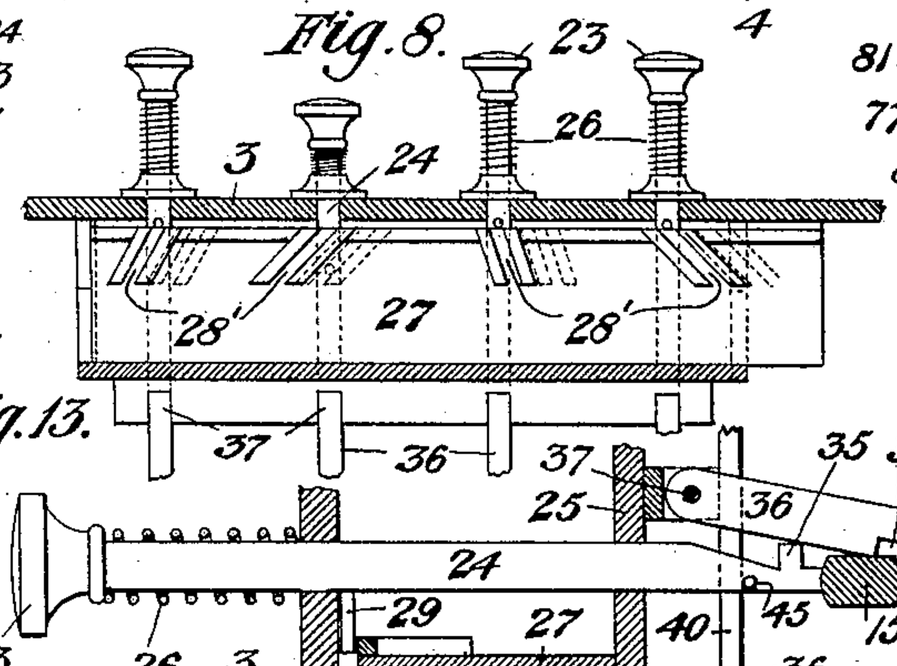


Fig. 10.

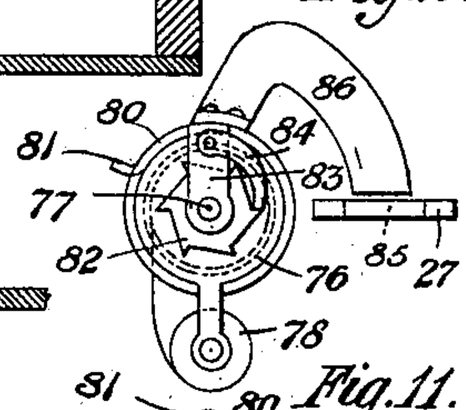
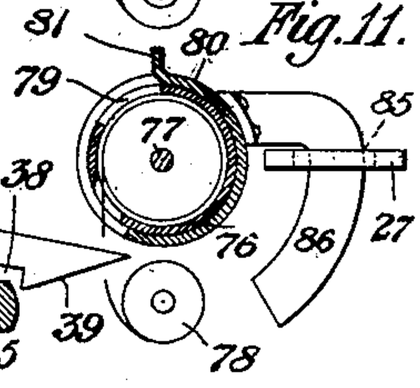


Fig. 11.



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UNITED STATES PATENT OFFICE.

GEORGE W. MACKENZIE, OF BEAVER, PENNSYLVANIA.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 613,164, dated October 25, 1898.

Application filed October 28, 1897. Renewed September 7, 1898. Serial No. 690,452. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MACKENZIE, a citizen of the United States, residing at Beaver, in the county of Beaver and State of Pennsylvania, have invented or discovered a new and useful Improvement in Voting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of my machine. Fig. 2 is a back elevation with the back wall removed and a portion of the mechanism broken away. Fig. 3 is a detail view of the slide-replacing bar extended. Fig. 4 is a vertical longitudinal section taken on the line IV IV of Fig. 2. Fig. 5 is a similar view showing the push-bars thrust in. Fig. 6 is a cross-section on the line VI VI of Fig. 2. Fig. 7 is a similar view showing one of the push-bars thrust in. Fig. 8 is a detail view showing a modified construction of slide. Fig. 9 is a detail view in vertical section further illustrating such modified construction. Fig. 10 is a detail view, in end elevation, of an attachment for voting for a candidate not included in any of the regular tickets and provided with means for locking the slide for the corresponding office. Fig. 11 is a cross-sectional view of such attachment, showing it in position for operation, the slide being locked. Fig. 12 is a partial end elevation of such device. Fig. 13 is a partial plan view thereof.

The object of my invention is to provide mechanical means for voting whereby the voter may act with entire freedom, secrecy, and ease, the operation requiring but ordinary intelligence, and at the same time to prevent repeating, either intentional or otherwise, while leaving the machine within the control of the election officer to record the vote that has been cast.

It also comprises means for registering and counting the vote in such a manner that the result is known immediately after closing the polls, with other features of advantage which I shall hereinafter describe.

Referring to the drawings, 2 2 are the side walls of an inclosing case, within which the operative mechanism is placed, provided with a front 3 and a back 4, preferably hinged or removably attached. The upper portion of a lower forwardly-projecting base consists of a hinged platform 5, upon which the voter steps when advancing to the front of the machine, his weight depressing the platform to the position shown in Fig. 5.

A cross-partition 6 extends above the platform, in which is mounted a locking-cam 7 of any desired form, pivoted at 8 and adapted to fall upon the platform, resting in a shoe 9, and locking it in the lowered position. The cam is provided with a lever 10, to the end of which is attached a cord or chain 11, passing upwardly and over a sheave 12 and out to the front of the machine, terminating in a handle 11′. This cord may conveniently be led to any point, concealed and protected, if desired, and when pulled upon the cam will be raised, allowing the hinged platform 6 to assume its original position. For the purpose of raising it I have shown the retracting-springs 13, secured to the platform and to the interior of the case, although suitable counterweights may be used with good results.

Midway of the machine is located a frame 14, having a series of cross-bars 15, upper and lower grooved wheels 16 being secured to the side of the frame running on tracks 17, mounted in each side of the case, and upon which the entire frame is supported and capable of forward and back travel. It is one of the functions of the hinged platform to so operate the frame, and to that end I have employed the toggle-levers 18 and 19, the levers 18 being pivoted to the case and levers 19 being pivoted to the frame or an extension thereof. Each lever is pivoted to a vertical bar 20, having a hinged connection 21 extending downwardly and attached to the platform at 22, so that downward action of the platform will close the toggle-joint and draw the frame backwardly, while upward movement of the platform will open the joint and return it to the first position. These two positions are very clearly shown in Figs. 4 and 5. This traveling frame accomplishes in its return movement the completion of the operation of voting and, as will be seen, is under the control of the officer operating the cord 11, the platform 5 in its upward travel communicating reverse movement to the frame 14 through arms 20 21 and the toggle-levers 18 19.

The fundamental idea embodied in my machine is to accomplish by the pressure of but-

tons upon push-bars either the voting of a straight ticket in any party, thereby voting for each candidate simultaneously and at the same time locking all the other bars, or to enable the voter to split the ticket and vote for individual candidates in any party for any office, the bars for all other candidates for the same office being thereby also locked against movement, and to render the operation so simple that the act of voting is rendered extremely easy and certain alike to all of whatever degree of intelligence.

Referring to Fig. 1, I have therein illustrated an arrangement of buttons or keys 23, which it will be understood may be increased or amplified to any required extent, the number shown being sufficient to illustrate the principle. It is designed that the top row of buttons shall represent the master-bars for each vertical row, and when either one of such top buttons is pushed all of the corresponding row is operated and all of the others locked. Each of the buttons 23 is mounted on the outer end of a horizontal bar 24, mounted in the front of the machine and in a suitable supporting-wall 25 and provided with a suitable retracting-spring 26 or other means for throwing the bars outwardly after being pushed in.

Arranged transversely across each horizontal row of bars is a locking-plate 27, provided with a series of cross-slots 28 for a portion of the width of the plate, all of the slots being in register with pins 29, projecting upwardly from the bars 24, one pin to each bar. Each of the slots 28 is cut at a different angle, either to the right or left, and when in the normal position (shown in Fig. 6) each of the slots will register at its outer end with one of the pins 29. When either of the bars on the same horizontal row, representing the same office, is pushed inwardly, the pin 29 will engage the oblique slot 28 and will cause the plate to travel to the right or left a distance proportionate to the angle of the slot, whereby all of the other slots are thrown out of register and the rest of the bars thereby locked against movement. Likewise it is manifest that no two or more bars on the same horizontal row can be pushed in at the same time due to the difference in angle of the slots. Each bar projects through and beyond the wall 25 and is provided with an extension 30, having connection through a slot 31 with a bar 32, connected with the actuating mechanism of a consecutive numbering or counting box 33. The slot 31 is of a length somewhat less than the stroke of the bar, and a bolt or rivet 34 passes through the slot, connecting the end of the extension thereto. In the inward stroke the bolt strikes against the inner end of the slot, throwing the bar 32 inwardly without operating the registering mechanism, while on the return stroke of the extension 30 the bolt engages the outer end of the slot and by means of a ratchet-wheel and pawl on the numbering-box (not shown) the box is made to indicate one additional vote, the votes being counted consecutively, so that each box will indicate immediately the total number of votes cast by its particular corresponding push-button. This feature of my invention is illustrated partially in Fig. 2, wherein three of the numbering-boxes are shown with numbers registered thereon, the other boxes not being shown for the purpose of illustrating the construction in front.

Each of the push-bars 24 is provided at its end with an upwardly-projecting lug 35, and above each bar is a backwardly-extending latch 36, pivoted at 37 and provided with a recess 38, which engages the lug 35 when pushed in, thereby holding it against forcible withdrawal until released.

Each of the pivoted latches 36 is provided with an under beveled face 39, which is engaged by the cross-bar 15 of the movable frame 14 in its forward travel, due to the release of pressure upon the platform 5 by weight of voter, so that the latches are raised out of engagement with the lugs 35, permitting the retraction of the push-bars by the springs 26, all of the push-bars being released simultaneously.

When the top push-bar is operated to vote a straight ticket, the other bars are also operated through the pair of bars 40 40, pivoted above to a hinged arm 41 and below to a similar hinged arm 42, the lower arm being connected by a wire 43 to a retracting-spring 44. The rods 40 are hung vertically and bear against cross-pins 45, projecting out on each side of the bar 24, the top rod being also provided with an additional pin 46, which bears against the front edges of the bars 40, so that when such top rod is pushed in the vertical bars will be thrown forward, maintaining their perpendicularity by reason of the arms 41 42 swinging in the arc of a circle around their pivotal bearings 47 48 and carrying with them all of the lower push-rods by reason of the pins 45.

While I have shown springs 26 for retracting the rods, these may be dispensed with, and for the purpose of retracting any or all of the rods I have employed pairs of cords 49, secured at 50 to the back 25, disposed on each side of the bars 40, bearing against the pins 45 and having attached at the bottom a weight 51, which by its downward tension on the cords draws them taut against the pins 45, and thus throwing the rods outwardly. For the purpose of assisting such operation and of returning the slides simultaneously with the action of the rods I have employed the bars 52 52, pivoted at 53 and vertically hung, bearing against the ends of the slides 27 and held thereto by the stress of weight 54, supported by sheave 55 in the middle loop of a cord 56, secured to the ends of the bars 52 and passing over sheaves 57. Normally this weight exerts its downward strain; but for the purpose of relieving the tension on the bars during the time when the voter is in position for operating the push-rods I have em-

ployed a pivoted lever 58, fulcrumed at 59 to the frame and attached at its outer end to a link 60, connecting with the sheave 55, while the other end is attached by a connecting-rod 61 to the platform 5. It will be seen that when the platform is depressed the weight will be raised and the bars 52 may be thrown outwardly by the slides, as indicated by dotted lines in Fig. 2.

For the purpose of indicating whether or not the voting-booth is occupied I have employed a vertical slide 62, bearing the words "Vacant" and "Occupied" or others sufficiently indicative and so arranged as to expose either of the names through an opening in the front of the machine. The slide 62 is connected by a cord 63, passing over sheave 64 and attached to the frame at 65. When the frame is thrown back, as has been described, when the voter is in position, the slide is raised and the word "Occupied" is exposed, the slide falling by gravity when pressure is released and showing the word "Vacant." It will be understood that such indicator may be placed at a relatively considerable greater height than that shown, so as to be readily seen from outside of the booth.

66 is a total-registering dial for recording the entire number of votes cast, located in the upper corner of the machine. It is made so as to register a number equal to the greatest possible capacity of the machine, and the sum total of all the votes cast as recorded by the individual instruments 33 should tally with the number recorded on the dial 66.

A ratchet-wheel 67 is operated by a pawl 68, pivoted to a lever 69 and operated by means of a cord 70, attached to the frame 14, passing around sheave-wheel 71, with intervening springs 72 73 below and above the lever 69 to permit of excess travel and retraction, while limiting-stops 74 regulate the travel of the lever, so as to engage but one tooth of the ratchet-wheel.

A clock 75 occupies a position corresponding to the registering-dial.

I have found that occasions will arise where it is necessary to provide two candidates for the same office, in which case it is necessary to have separate sets of push-rods adapted to operate on the same slide by two independent actions. For this purpose I have used the form of slide shown in Figs. 8 and 9, in which the slides are not slotted, but are provided with upper and lower grooves 28′, made by securing strips to the upper and lower surface, with the grooves so set in relation to each other that when either one of the rods is operated above or below and pressed inwardly its pin 29 will engage the groove 28′, moving the plate 27, and the opposite grooves will be brought into register with the pins of the other row of push-bars, so that an additional vote may be cast for the second candidate or any additional ones for the same office by pushing in one of the oppositely-located bars. It is evident, however, that none of the other bars in the same row can be operated after one has been pushed in, by reason of interference of the front edge of plate 27 with the pins 29, due to the shifting of the plate by action of the pin 29 on the first-operated bar, in a manner similar to the slotted plates, as has been already described. This is clearly shown in Figs. 8 and 9.

When a voter desires to cast a vote for a candidate not on any of the regular tickets, I have provided an attachment to be secured to one side of the case opposite each of the horizontal rows of regular candidates for each office. This consists of a cylindrical case 76, in which is mounted a roll of paper mounted on a shaft 77 and wound from a magazine-roll 78. The case 76 is provided with a slot 79, and a surrounding casing 80 is adapted to open or close the slot by shifting the projection 81.

A ratchet-wheel 82 is secured to the shaft 77 at one end, and to an arm 83 of the casing 80 is pivoted a pawl 84, adapted to engage the ratchet-wheel and rotate it a fraction of a revolution sufficient to carry forward the written ballot and expose fresh paper. For the purpose of locking the shifting plate 27 it is extended a sufficient distance and provided with a slot 85, through which passes a curved arm 86, secured to the casing 80 when the casing is operated. Likewise the plate when operated will ride under the end of such arm 86 and effectually prevent the rotation of the casing.

The advantages of my improved apparatus are obvious and will commend it to those familiar with the art to which it relates, and while the various parts and details of construction may be varied to suit varying requirements of use I desire to include all such changes as within the scope of my invention as embodied in the following claims.

I claim—

1. In a voting-machine, a series of horizontally-disposed plates provided with oblique slots disposed at varying angles, a series of push-bars arranged on the same plane with the plates and provided with pins adapted to engage the slots, a series of pivoted latches adapted to engage and lock the bars at the end of their movement, means for releasing the latches and returning the bars, and pivotally-supported bars hung at each end and adapted to bear against the plates, with means for retracting the bars and returning the plates to normal position, substantially as set forth.

2. In a voting-machine, a series of horizontally-disposed plates provided with oblique slots disposed at varying angles, a series of push-bars arranged on the same plane with the plates and provided with pins adapted to engage the slots, a series of pivoted latches each provided with an under recess adapted to engage a lug on the end of each bar and having an under beveled face, and a traveling frame provided with cross-bars adapted

to engage the beveled faces of the latches and to release the bars, substantially as set forth.

3. In a voting-machine, a series of horizontally and vertically arranged push-bars, with pairs of vertically-supported bars embracing each bar of the vertical row, and in engagement with pins thereon, whereby when the top bar is pushed inwardly, motion is transmitted to all of the bars, substantially as set forth.

4. In a voting-machine, a series of horizontally and vertically arranged push-bars, with pairs of vertically-supported bars embracing each bar of the vertical row, and in engagement with pins thereon, whereby when the top bar is pushed inwardly motion is transmitted to all of the bars, and means for locking the horizontal bars against movement, substantially as set forth.

5. In a voting-machine, a series of horizontally and vertically arranged push-bars provided with an upwardly-extending lug at the extremity, a pivoted latch having an under beveled face mounted in alinement with each bar and adapted to engage the lug at the end of the stroke, a traveling frame provided with cross-bars adapted to engage the beveled faces of the latches and to release the bars, a registering-box corresponding to each bar provided with a slotted operating-bar, and a bolt on the end of the push-bar extension in engagement with such slotted operating-bar, substantially as set forth.

6. In a voting-machine provided with a treadle adapted to be depressed by the voter when in position to vote, a series of horizontally and vertically arranged push-bars provided with an upwardly-extending lug at the extremity, a pivoted latch having an under beveled face mounted in alinement with each bar and adapted to engage the lug at the end of the stroke, a horizontally-traveling frame provided with cross-bars adapted to engage the beveled faces of the latches and to release the bars, toggle-jointed levers connected to the traveling frame and frame of the machine respectively, and connecting-bars attached to the treadle, substantially as set forth.

7. In a voting-machine provided with a treadle adapted to be depressed by the voter, and provided with a series of push-bars having an upwardly-extending lug and a pivoted latch having an under beveled face mounted in alinement with the bar; a horizontally-movable, slidingly-mounted frame provided with cross-bars adapted to engage the beveled faces of the latches and release the bars, and toggle-jointed levers connected to the movable frame and frame of the machine respectively, connecting-bars attached to the treadle, and means for raising the treadle, substantially as set forth.

8. In a voting-machine provided with a treadle adapted to be depressed by the voter, and provided with a series of push-bars having an upwardly-extending lug and a pivoted latch having an under beveled face mounted in alinement with the bar; a horizontally-movable, slidingly-mounted frame provided with cross-bars adapted to engage the beveled faces of the latches and release the bars, and toggle-jointed levers connected to the movable frame and frame of the machine respectively, connecting-bars attached to the treadle, and means for locking the treadle when depressed and for releasing and raising it after departure of the voter, substantially as set forth.

9. In a voting-machine provided with a horizontally-movable frame, a vertically-movable treadle, and connecting operative mechanism by which motion of the treadle operates the frame, an indicating-slide located in the front of the machine-frame and connected to the movable frame, whereby the slide will be raised and lowered for each movement of the treadle, substantially as set forth.

10. In a voting-machine provided with a treadle adapted to be depressed by the voter, a series of push-bars, mechanism for locking such bars, and connections to register-boxes whereby such boxes are operated by backward motion of the push-bars; a traveling frame having a rolling support, provided with bars adapted to disengage the push-bars, toggle-jointed levers connected to the rack and frame of the machine respectively, and connecting-bars attached to the treadle, and an indicating-slide mounted on the machine and adapted to be actuated by each operation of the traveling frame, substantially as set forth.

11. In a voting-machine the combination of a series of push-bars provided with pins and a series of plates having oblique slots adapted to be engaged by the pins; a slotted case attached to the side of the machine, containing a roll of paper, a cover adapted to open the slot and revolve the roll, and an arm attached to the cover adapted to engage one of the plates, substantially as set forth.

12. In a voting-machine provided with a treadle and the treadle adapted to be depressed by the voter, the combination, with a series of horizontally-disposed sliding plates actuated longitudinally by push-bars provided with pins in engagement with oblique slots in the plates, of vertically-suspended bars adapted to bear against the ends of the plates to return them to normal position, retracting-cords and a weight, and a pivoted lever attached to the weight and connected to the treadle, substantially as set forth.

In testimony whereof I have hereunto set my hand this 28th day of June, 1897.

GEORGE W. MACKENZIE.

Witnesses:
PETER J. EDWARDS,
C. M. CLARKE.