

No. 644,103.

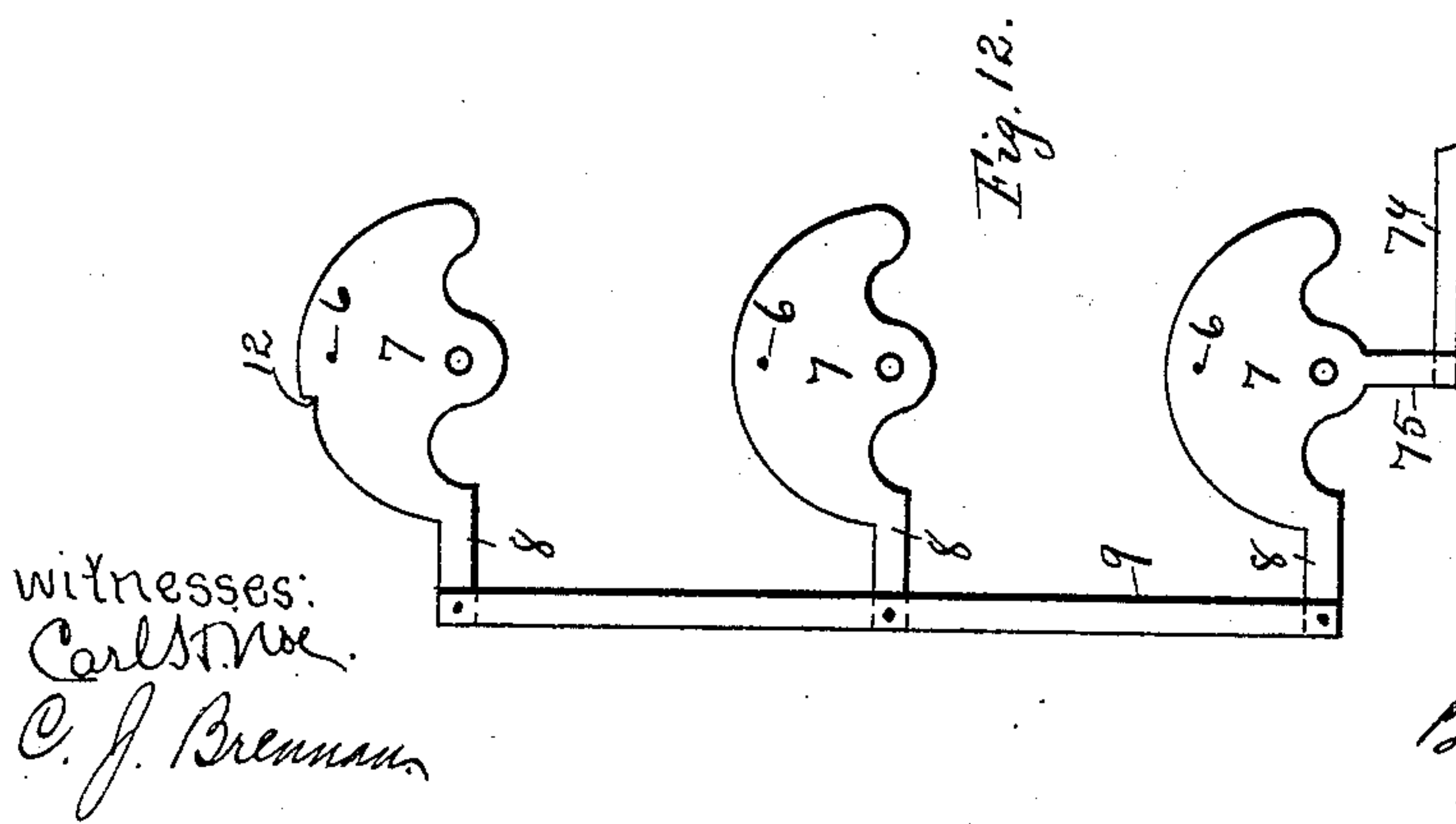
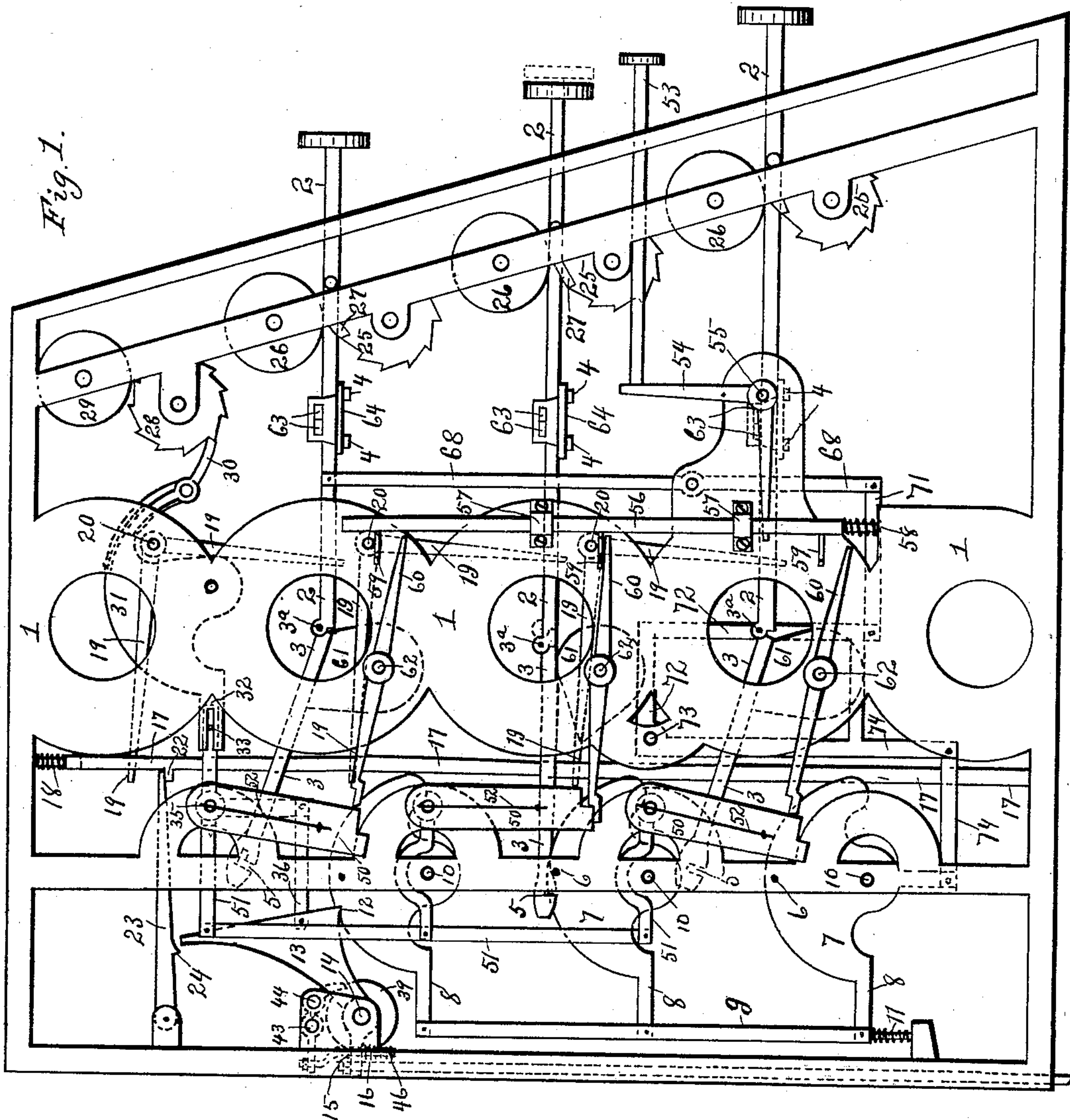
Patented Feb. 27, 1900.

A. E. SINGER.
VOTING MACHINE.

(Application filed Dec. 15, 1898.)

(No Model.)

3 Sheets—Sheet 1.



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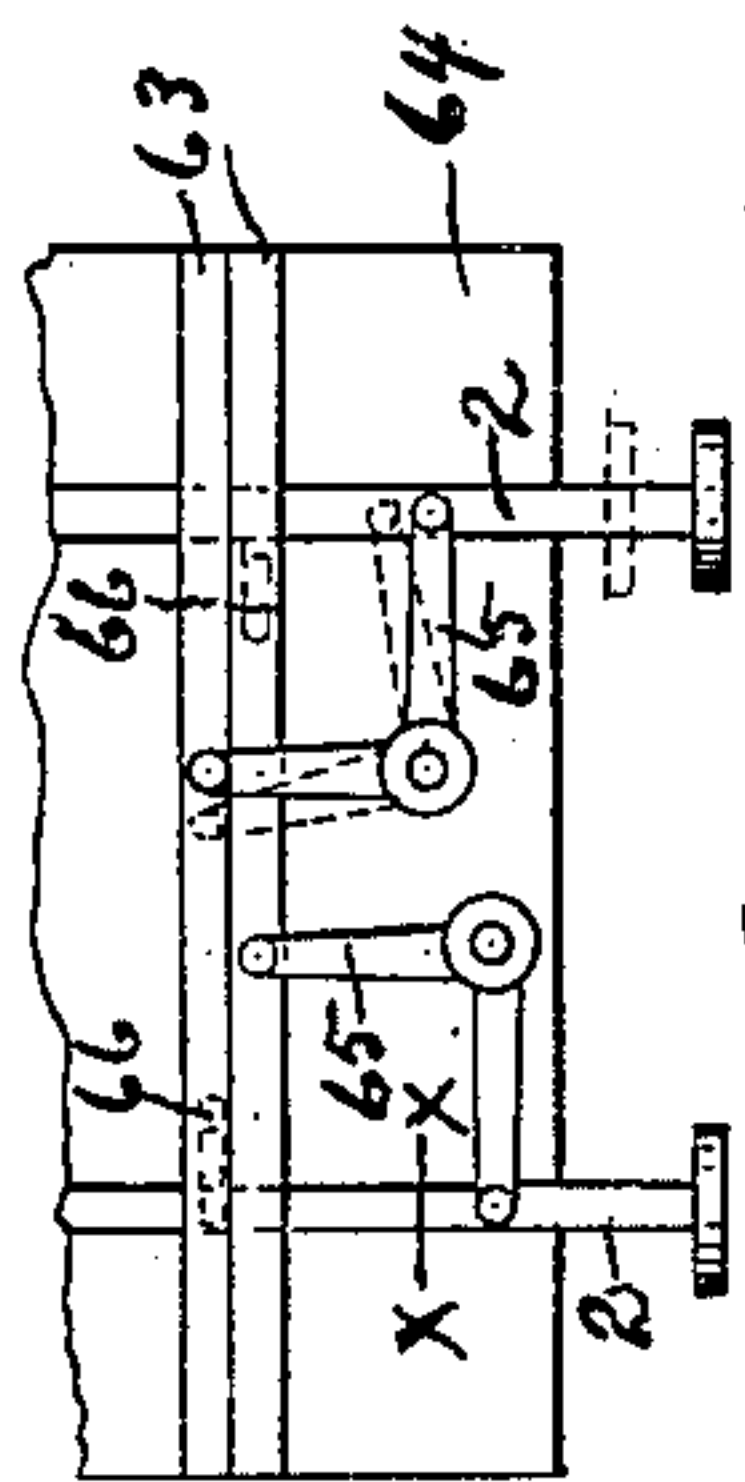
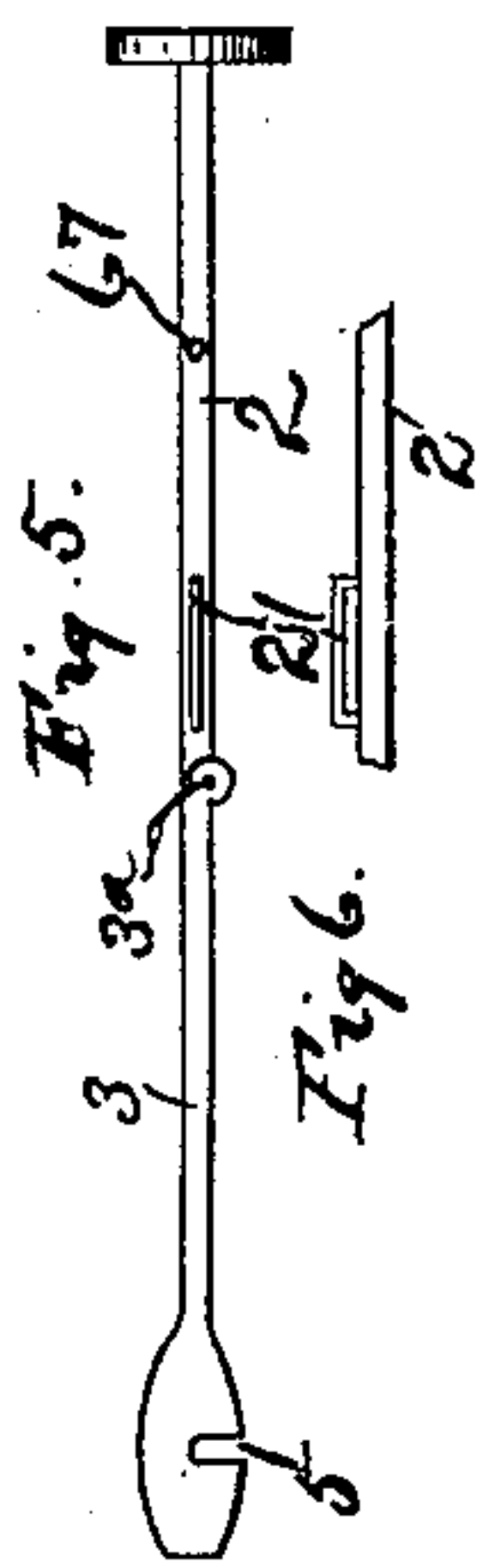
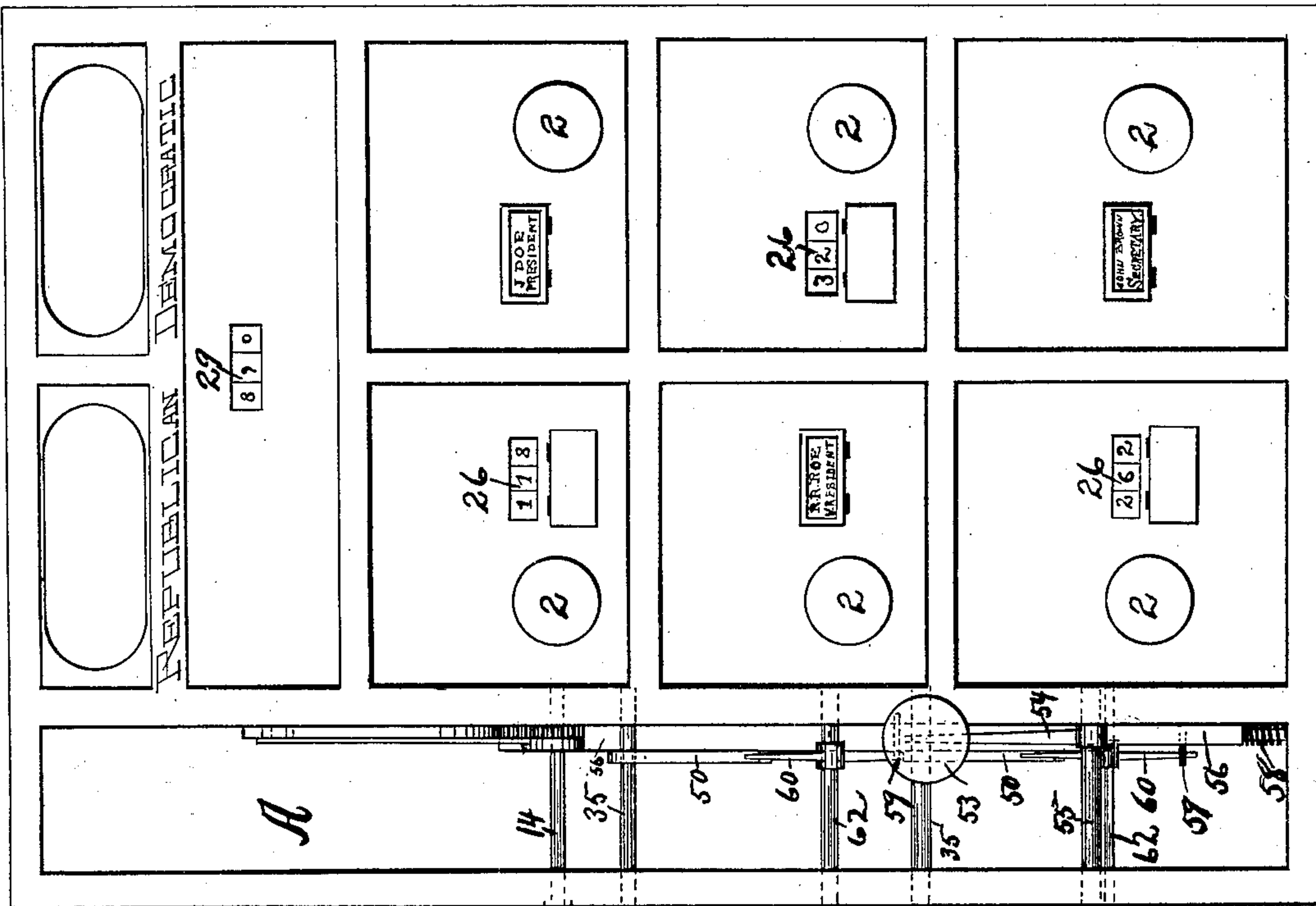


Fig. 8.

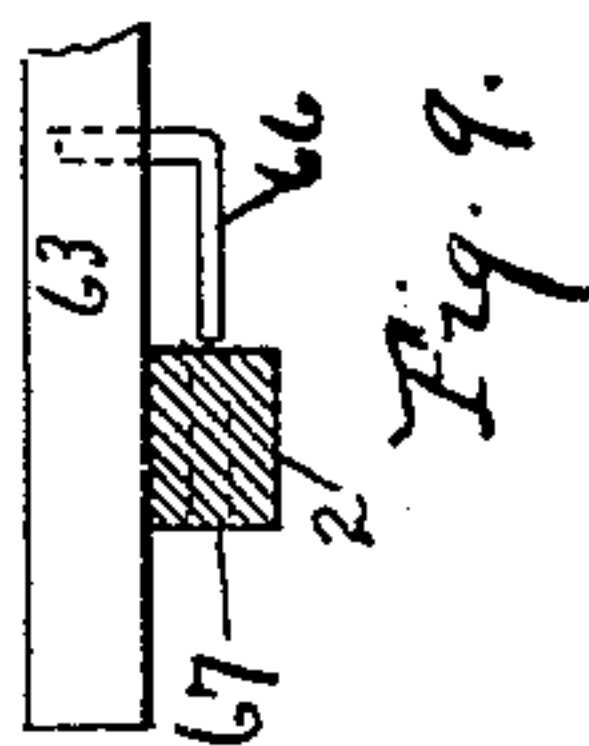


Fig. 9.

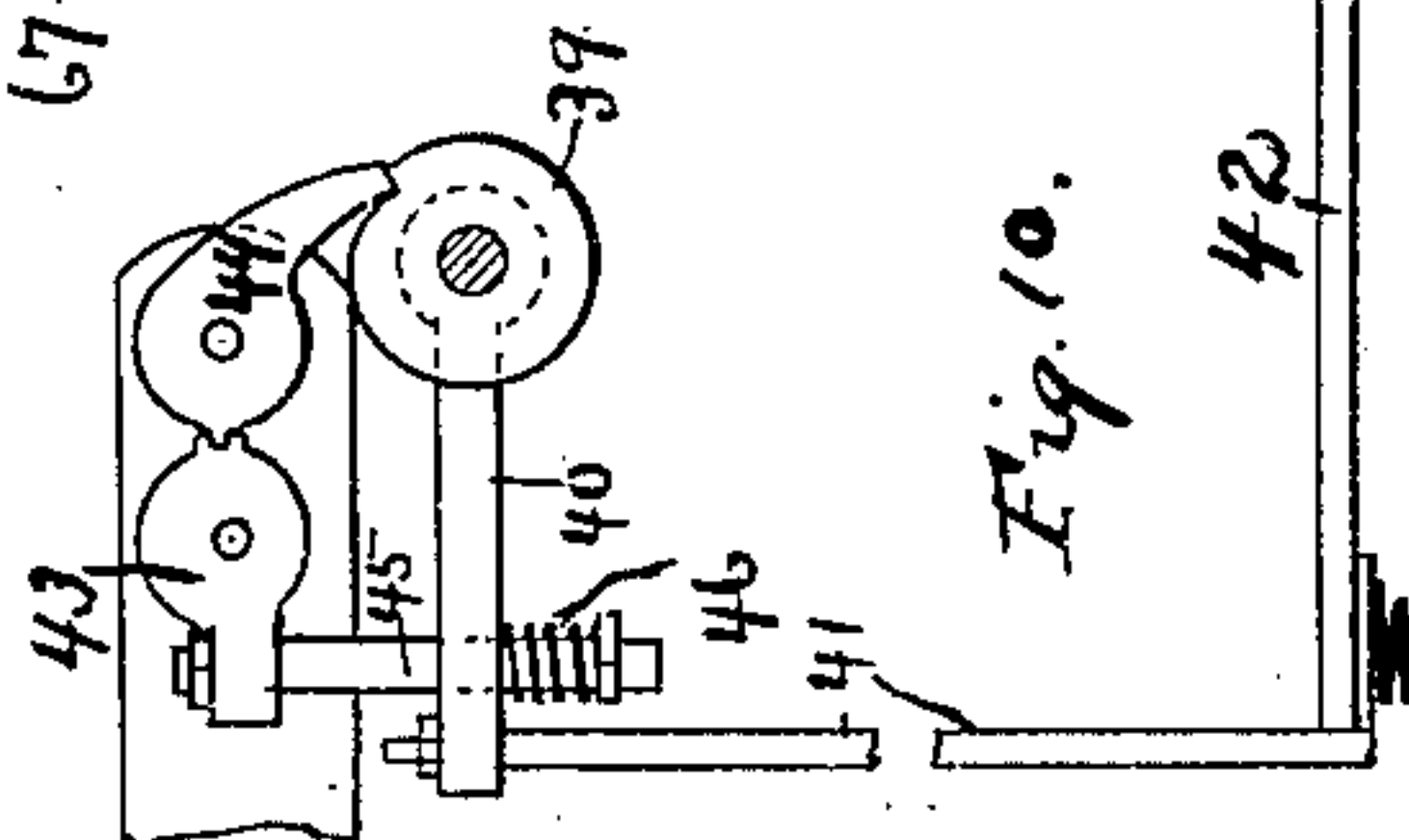


Fig. 10.

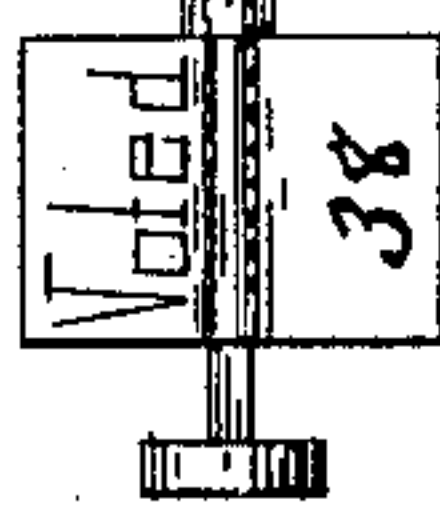


Fig. 2.

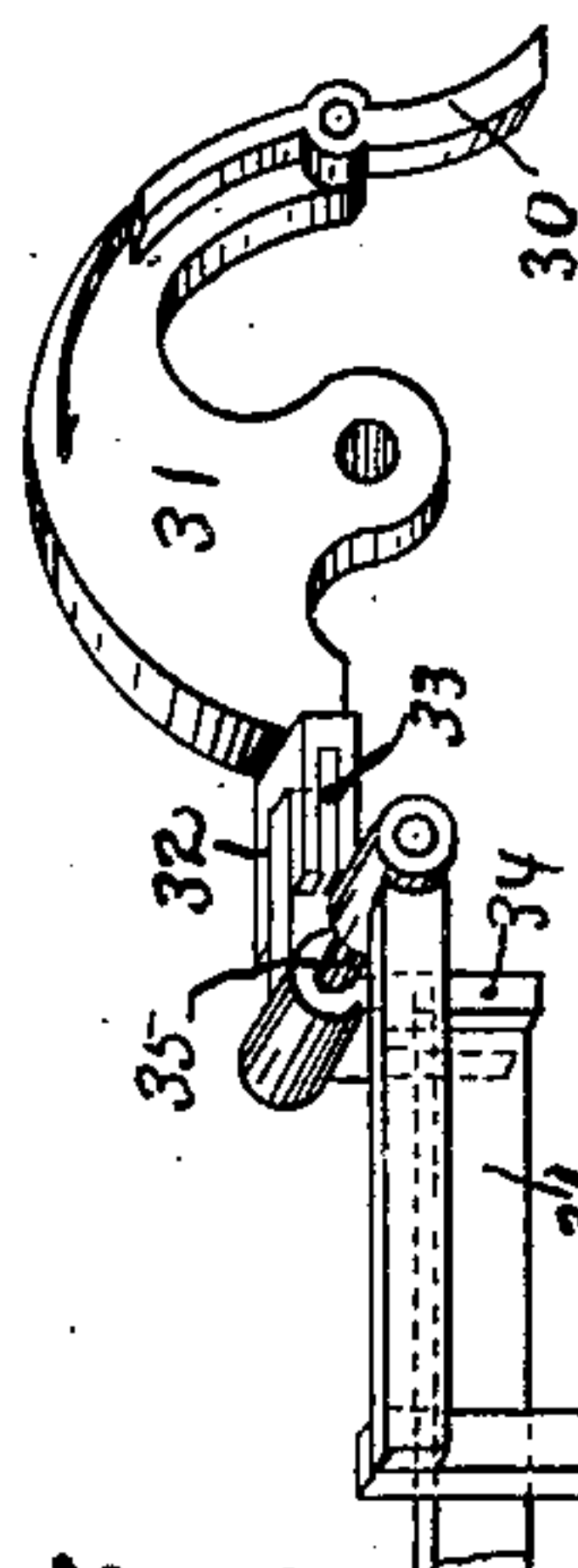


Fig. 3.

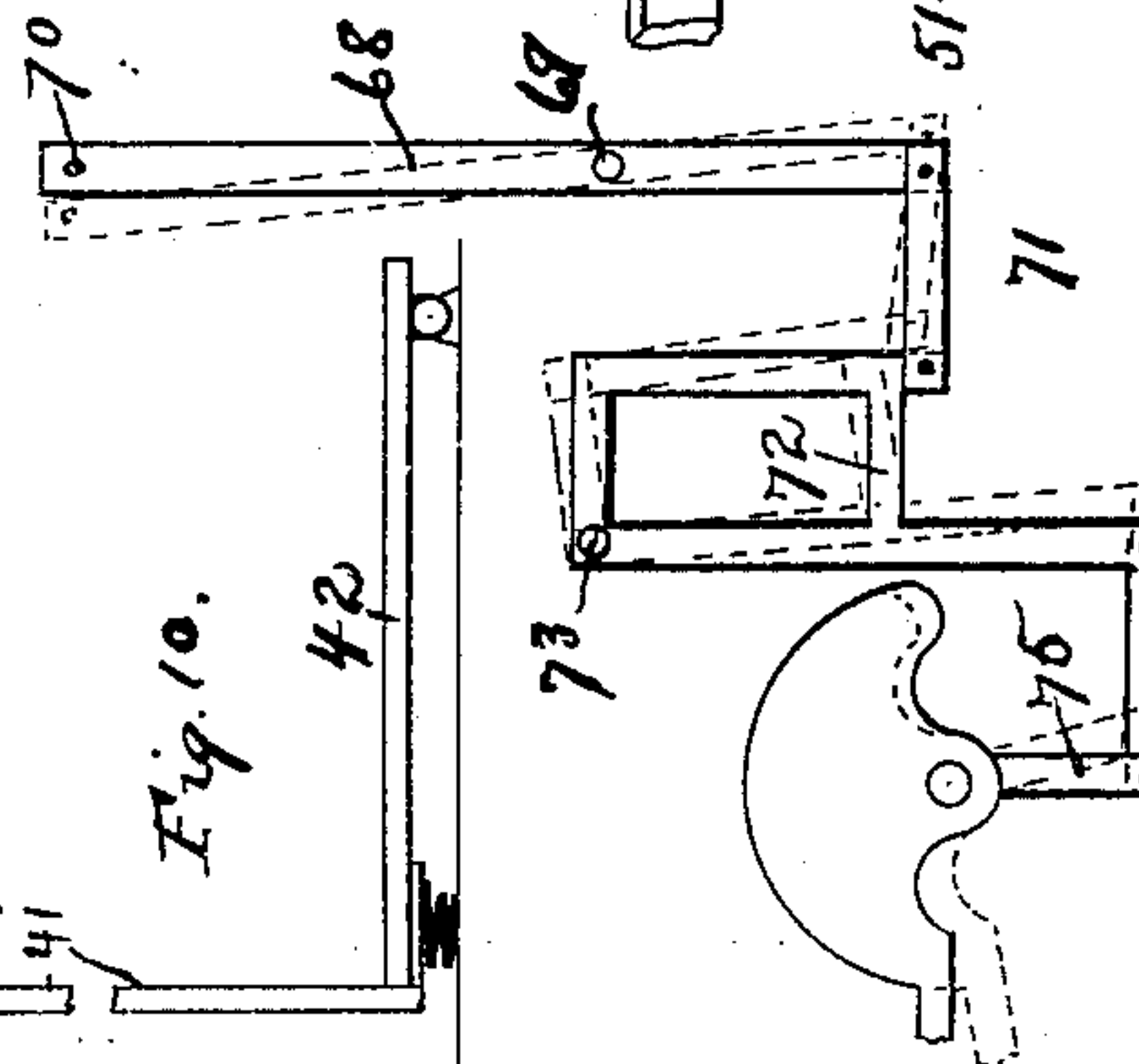
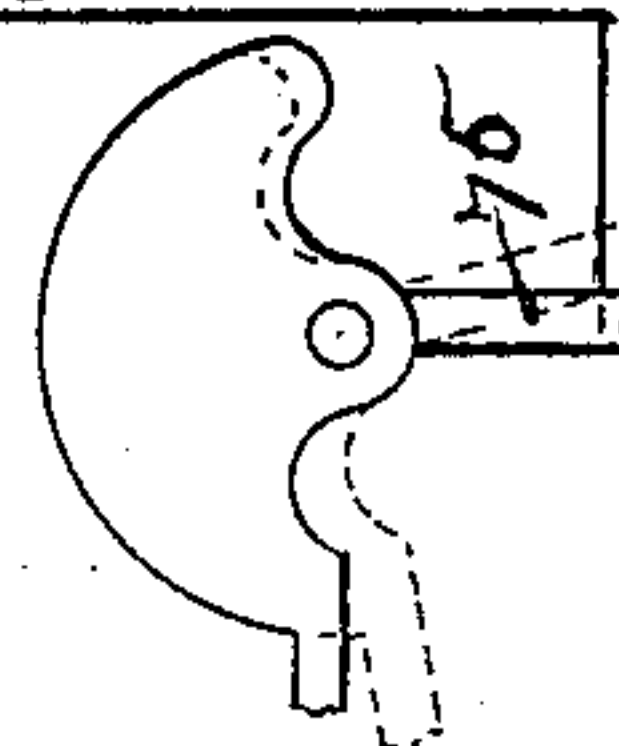


Fig. 4.



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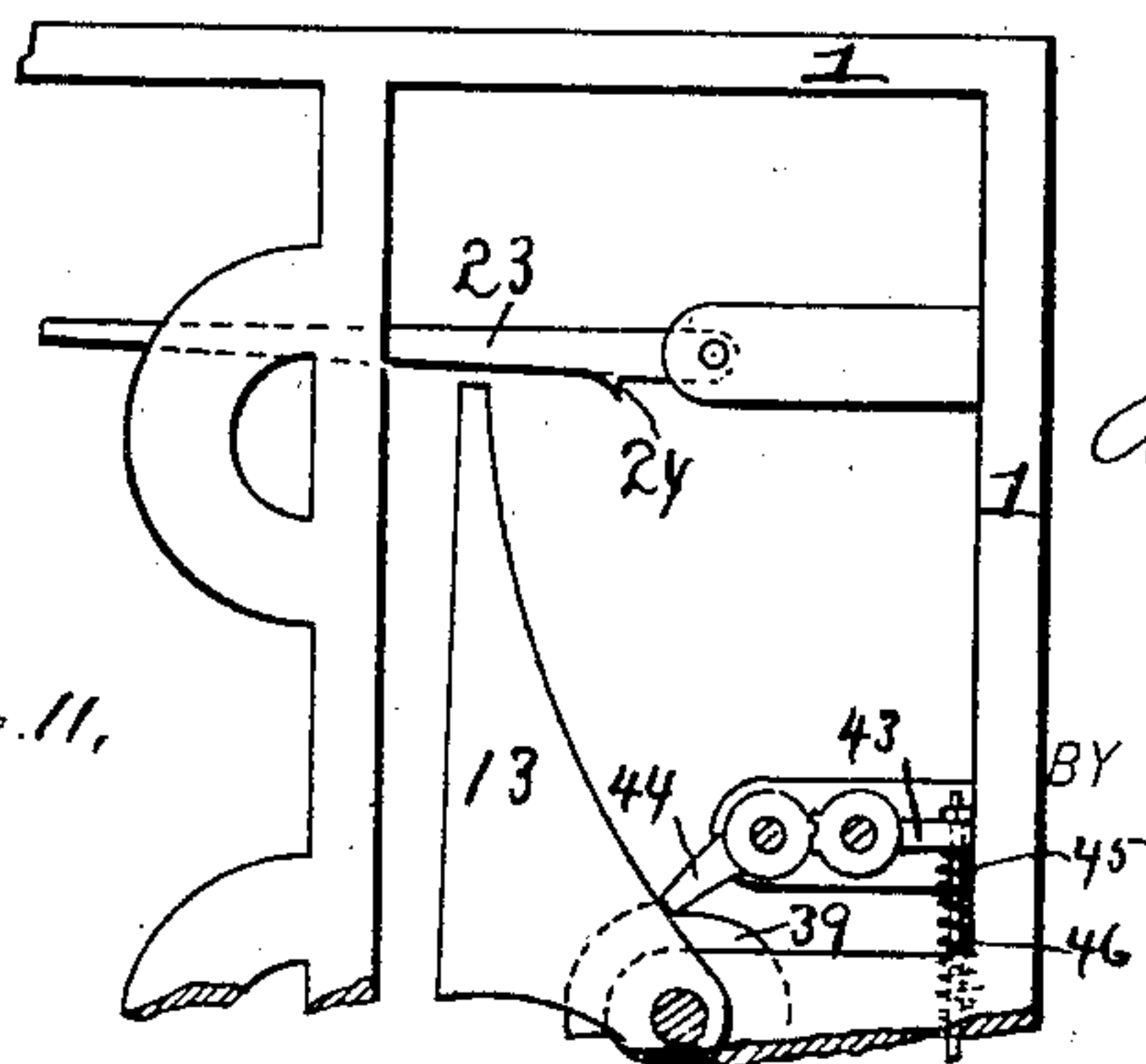
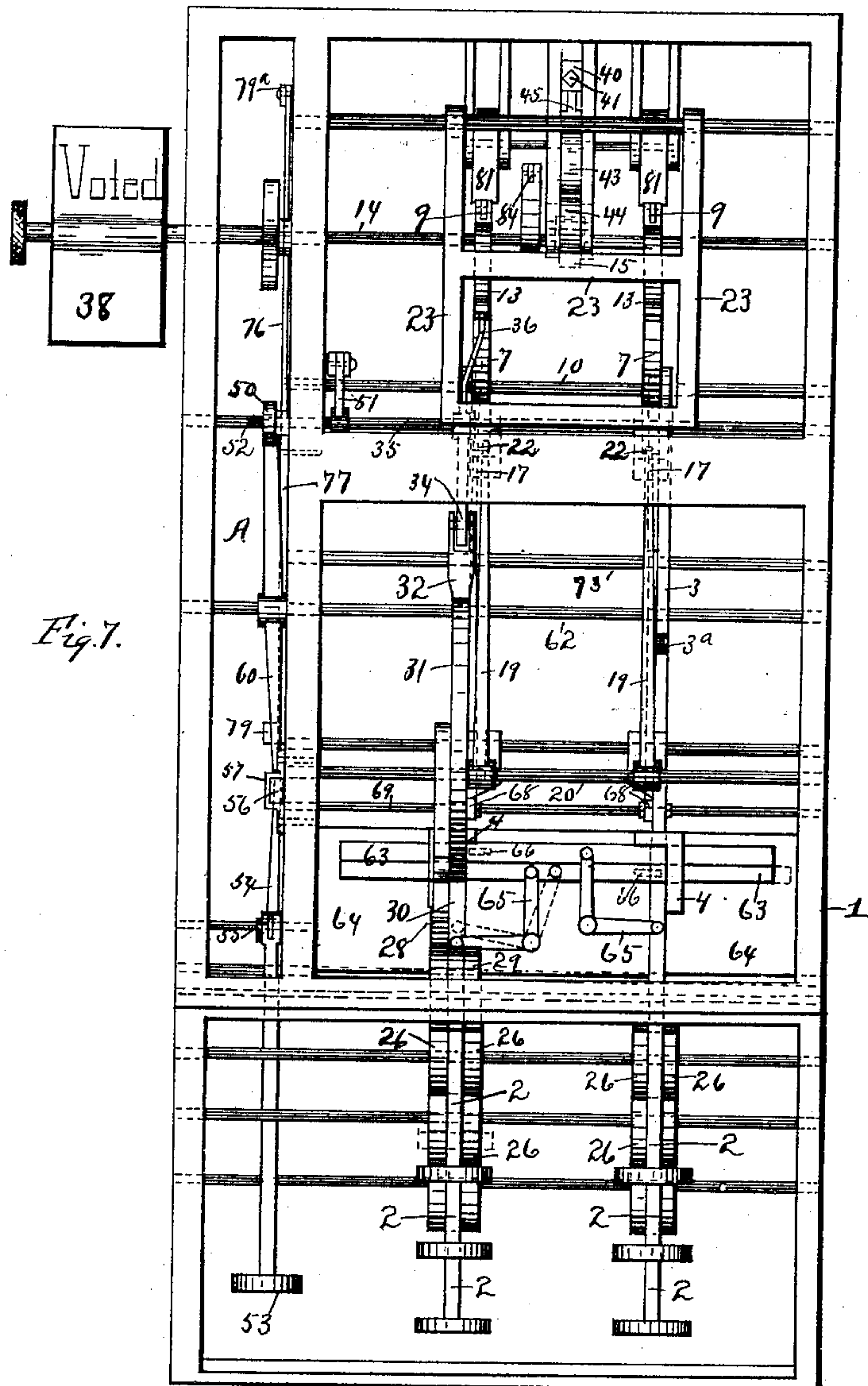
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(No Model.)

3 Sheets—Sheet 3.



WITNESSES :

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UNITED STATES PATENT OFFICE.

ALBERT E. SINGER, OF LEWISBURG, OHIO.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 644,103, dated February 27, 1900.

Application filed December 15, 1898. Serial No. 699,325. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. SINGER, a citizen of the United States, residing at Lewisburg, in the county of Preble and State of Ohio, have invented certain new and useful Improvements in Voting-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in voting-machines; and it consists of mechanism, hereinafter described, for enabling the voting to be done mechanically by means of the novel construction shown in the drawings and which will be described in detail.

Figure 1 is a side elevation of my improved voting-machine, the inclosing case being removed; Fig. 2, a front elevation; Fig. 3, a perspective view of a portion of the mechanism for locking the machine after a vote is taken to prevent a repetition of the same vote by the same voter. Fig. 4 is a detail of the system of levers for enabling a "straight" vote to be cast. Fig. 5 is a detached view of a push-key. Fig. 6 is a view of a portion of a push-key; Fig. 7, a top view of the machine; Fig. 8, a detached view of the mechanism for locking the push-keys in order to compel the operation of but one key at a time and to allow the key operated to return to its normal position immediately after voting; Fig. 9, a sectional view on the line *x x*, Fig. 8; Fig. 10, a detail view of the mechanism for preventing the judge or supervisor from opening the machine to give the voter an opportunity to vote more than once while in the booth; Fig. 11, a detail of the mechanism for preventing the judge from opening the machine while the voter is in the booth; Fig. 12, a detail of the connected disks.

Throughout the specification similar reference characters indicate corresponding parts.

Referring to Fig. 1, the mechanism there shown is mounted in a framework 1 and consists as follows: 2 designates the push-keys, of which there is one for each candidate. These keys, with the exception of the top ones

for each candidate, have lower portions 3 for the purpose of adjusting the machine for taking a mixed vote. The said keys have suitable bearings in guides 4. In casting a mixed vote the parts 2 and 3, constituting the lower keys, are broken at the joint 3^a. The lower ends of parts 3 have slots 5, that engage with pins 6 on the two lower segments 7. These disks or segments 7 are fixed to the framework consisting of bars 8, pivotally connected to a vertical bar 9, and also have a pivotal connection at their axes 10 to the cross-piece or frame 1. The bar 9 has an extension for receiving a spring 11, which exerts a pressure to keep the disks in position. The top disk 7 has a notch for receiving the pawl 13 immediately after a key is pushed in. The pawl 13 is tight on shaft 14, as is also an arm 15, which is pressed by a spring 16. The pawl 13 and notch 12 coöperate to prevent the duplication of a straight vote by the same person. Pawl 13 only moves once in voting and locks the machine from voting. In casting a straight vote all of the disks 7 are moved and at no other time.

17 is a vertically-sliding bar which is kept normally down by a spring 18.

19 are bell-crank levers pivoted on shafts 20, extending through the machine. The vertical arm of each of said levers projects into a keeper 21 on the push-keys. (See Figs. 5 and 6.) The horizontal arm of each of said levers projects loosely into openings in the rod 17. As each key is pressed in its respective bell-crank lever is actuated and the bar 17 is raised. A pin 22 on said bar, coming in contact with a pivotal arm 23, raises the latter, and thereby frees the part 24 on said arm from engagement with the pawl 13, allowing said pawl to engage with the notch 12, and thereby preventing any further movement of the disks 7.

25 and 26 are primary and secondary adding-wheels, the former transferring to the latter in a well-known manner. The wheels 25 are turned upon each operation of their respective push-keys by pawls 27, which are pivoted on said keys. When a key is depressed, it records in detail the vote on wheel 26 and also adds one to the total vote on wheels 28 and 29. The latter wheels are moved by pawl 30 on disk 31, the lower arm

32 of which has a flexible connection with a bell-crank lever 34 on shaft 35. The lower arm of said bell-crank lever is loosely connected to the pawl 13 by a rod 36. When any one of the bell-crank levers 19 is actuated by a key, the bar 17 is moved and the pin 22, engaging arm 23, raises it and frees the pawl 13. At this time the said pawl 13 actuates the bell-crank lever 34 through the rod 36 and moves the disk 31 with its pawl 30, the latter turning wheel 28 to make a record of one on the total count. A straight vote can also be made on any of the lower keys as follows: By depressing any one of the said keys pawl 13 is freed from arm 23 and engages notch 12 on disk 7, which locks the machine against any further voting. In pressing any one of said lower keys all the disks 7 will be actuated, and all the keys being on the pins 6 the movement of said disks will draw all the keys alike, and thereby make a record for each candidate. To make a straight vote, however, in accordance with the above would require the pressure of too much weight. Therefore the first or upper key is preferable for such voting. The keys return to their normal positions after each operation; but the first key operated throws pawl 13 into notch 12. It will be understood that the system of levers shown in Fig. 4 is operated only in making a straight vote, imparting to the segments 7 the necessary movement to affect the keys connected to them. The shaft 14 is turned by the judge or supervisor to unlock the machine before a voter enters the booth. By "unlocking" is meant the removal of the pawl 13 from the notch 12. When thus unlocked, the tablet 38 is made to indicate that the machine is ready for voting. After each voter has voted the indicator displays the word "Voted." This occurs when the pawl 13 is released and permitted to move forward, as hereinbefore described.

Attached rigidly to shaft 14 is a toothed wheel 39. 40 is an arm the rear end of which loosely incloses said shaft and the outer end of which is connected to a rod 41, extending down in the rear of the booth to a spring-platform 42, upon which the voter stands. 43 and 44 are toothed pawls, one of which engages wheel 39 and the other of which has an extension 45, that passes through the bar 40 and is pressed by a spring 46. When the voter steps upon the platform 42, the bar 40 is depressed to move the gear 43 down and throw the pawl 44 in the cog on wheel 39. This prevents the judge from moving the pawl 13 away from notch 12 to allow a second vote to be cast by a voter. Fig. 1 shows one key pressed in, also the mechanism operated by the judge—to wit, pawl 13, bell-crank lever 34, disk 31, pawl 30, pendants 50, connecting-bars 51, &c.

In order to place the machine in a condition for mixed voting, a series of pawls or pendants 50, loose on shafts 35, are provided. 51 designates a frame the horizontal bars of

which are rigidly connected to shafts 35. The connections between the horizontal bars and the vertical bars of this frame are pivotal. When the pawl 13 is moved back by the judge, the bell-crank lever 34 is actuated. This causes the shafts 35 to turn and the pendants 50 to move back to the slanting positions in Fig. 1 by the pressure of the springs 52, said springs having one end fixed to the shafts 35, and the other ends fixed to the pendants. When said pendants are so moved back, the machine is prepared for mixed voting. 53 is a push-rod engaging with bell-crank lever 54, mounted on a cross-shaft 55. (See Fig. 1.) The lower arm of said lever projects into an opening in a vertically-sliding bar 56, that is supported in guides 57 and has a spring 58 at its lower end to keep the bar in a normally-raised position. Projecting from said bar 56 is a series of angular arms 59, the rear ends of which are adjacent to levers 60. The rearward movement of pawls or pendants 50 releases the rearward ends of the levers 60. When the push-rod 53 is pressed in, these levers 60 are depressed through the movement of slide-bar 56 and arms 59. There is a cam 61 tight on the shaft 62 of each of the levers or arms 60. When any one of said levers 60 is moved down, all of the cams 61, attached to levers 60 by rod 62, are raised, and sections 3 of the keys are raised by that system of cams from the pins 6 on disks 7. Rod 62 passes through the entire machine and the cams 61 for each ticket are on the same rod. The cams 61, coming in contact with the rear sections 3 of the keys, break the joints, and the rear ends of said keys are moved from the pins 6. In this condition of the mechanism any one of the keys may be depressed without affecting the keys for the other candidates on the same ticket, and thus any candidate may be selected and voted for. It is to be borne in mind that there is for each ticket a duplicate of all the mechanism described with the exception of the push-rod 53, lever 54, sliding bar 56, arms 59, levers 60, pendants 50, and frame 51. The parts 50, 51, and 60 adjust all the mechanism on the inside of the machine for mixed voting by elevating the ends of all the keys through the cams 61 throughout. When a key is pushed in in voting, as shown in Fig. 1, the cam 61 of such key is pressed and turned by the end of section 2 of the key. This also turns shaft 62 of said cam and therewith the lever 60. This permits the pendant 50 to find its vertical position, and said detent locks the lever 60, so that no other key in that row can be operated the second time by the same voter. It will be observed that the interlocking mechanism between all the keys are the pawl 13 and notch 12 in straight voting. This last-named mechanism is located on the side of the machine in a separate compartment or space A, as seen in Fig. 2.

In making a mixed vote the voter presses rod 53. This raises the cams 61, by which sections 3 of the keys are raised throughout

any one of the rods 62 in the machine. In voting, for example, the Democratic ticket, with the exception of, say, one candidate, begin at the key having the first candidate's name—for example, the second key—and press each one of the keys down to the candidate to be scratched. Then go to the next ticket and press the key corresponding to the candidate on the ticket scratched. Then complete the pressing of the keys on the rest of the Democratic ticket. This completes the voting of a scratched ticket. Just as fast as the keys are depressed the candidates for the same office are locked against repetition of the voter. By depressing the keys the cams 61 are thrown back and the keys allowed to catch on the pins 6 on the disks 7, which locks said keys against being pushed again. Mechanism for returning the levers 60 to their normal positions will be described.

I provide mechanism for preventing two or more keys from being operated at once. This is shown in Figs. 7, 8, and 9, and consists of a series of bars 63, moving in opposite directions in support 64. Each of the keys is pivotally connected to one of said bars 63 by a bell-crank lever 65, which is pivoted to the support 64. 66 is a bent pin fixed to the bottom of each of the bars 63 and adapted to enter an opening 67 in each key. (See Fig. 9.) When a key is depressed, the bar 63, to which said key is attached, is moved in a direction from said key and the pins 66 on said bars will enter the openings 67 in the other keys. Therefore said other keys cannot be depressed until the return of the key first operated. Referring to Figs. 1, 4, and 12, 68 is a lever pivoted at 69 and having a pivotal connection 70 to the upper push-key. This lever 68 runs entirely through the machine and has a pivotal connection with a link 71, which in turn has a pivotal connection with a square lever 72. The latter lever has a pivotal connection at 73 to the frame 1. The square lever 72 has a pivotal connection to a link 74, which is likewise connected to an extension 75 on the lower disk 7. In pushing in the top key the levers just described are turned on the fulcrums 69 to throw said lever 68 out. Through the link 71 the square lever 72 is actuated on its fulcrum 73 to throw the lower portion of said square lever outward, and thereby moving through the link 74 all the disks 7 which are connected by bar 9. Thus in making a straight vote the uppermost key is pushed in, which moves all the disks 7 alike through 74 and 75. This pulls the keys which are attached to disks 7 by pins 6 and makes a record of "1" on wheels 26.

The lids or covers for the wheels 26, as shown in Fig. 2, have a place for receiving a card, which may be slipped into position with the candidate's name thereon.

Having described my invention, I claim—
1. In a voting-machine, the combination with push-keys, of a series of disks 7 with pins thereon engaging with said push-keys

when the mechanism is in a condition for straight voting, a movable frame to which said disks are attached, an extension 9 with a spring thereon to keep said disks in position and to return the push-keys to their normal positions, and a pawl to engage with one of said disks after each vote, to prevent a repetition of said vote by the same voter, substantially as described.

2. In a voting-machine, the combination with push-keys, and counting-wheels actuated thereby, of a series of disks having pins thereon engaging with said push-keys, a frame consisting of bars 8 and 9 to which said disks are connected, a pawl 13 engaging with one of said disks after each vote, total-adding wheels 28 and 29, a disk 31, a pawl 30 on said disk 31 and engaging with said wheels, a bell-crank 34 to which said pawl 30 is connected, said bell-crank lever being also connected to the pawl 13, a bar 17, bell-crank levers 19 actuated by the push-keys, and a pin 22 on said bar 17, an arm 23 engaged by said pin and adapted to free the pawl 13, substantially as and for the purposes specified.

3. In a voting-machine, the combination with a series of jointed push-keys, and counting-wheels actuated by said keys, of cams 61 by which the lower portions of said keys are raised, mechanism actuated by the push-keys for moving said cams, levers 60, sliding bar 56, and arms 59 for moving said levers, and means for sliding said bar 56, substantially as herein shown and described.

4. In a voting-machine, the combination with jointed push-keys, of cams 61 for breaking the joints of said keys, levers 60 for causing the movement of said cams, a slide-bar 56, with arms 59 thereon engaging with said levers 60, a bell-crank lever 54, and push-rod 53 for actuating said slide-bar 56, and pawls 50 for controlling said levers 60, substantially as and for the purposes specified.

5. In a voting-machine, the combination with push-keys each consisting of two hinged parts, of disks 7 with pins thereon adapted to engage with the rear end of each of said keys when said keys are in a position for straight voting, cams 61 for engaging with the lower portions of said keys to remove them from connection with the pins on said disks, levers 60 for actuating said cams, and mechanism for moving said levers prior to an operation of the push-keys, substantially as and for the purposes specified.

6. In a voting-machine, the combination with a push-key, consisting of two parts united by a hinge-joint, of a series of disks 7, and a system of differential levers between one of said disks and the push-key, substantially as and for the purpose specified.

7. In a voting-machine, the combination with a series of push-keys, of a series of locking-bars movable in opposite directions, hooks 66 projected from said bars and adapted to enter openings in said keys, and bell-crank levers 65 connected to said keys and bars,

substantially as and for the purposes specified.

8. In a voting-machine, the combination
with the shaft 14, of a toothed wheel 39 on said
5 shaft, an arm 40 loose on said shaft, a plat-
form 42, a connection 41 between said plat-
form and the arm 40, and pawls 43 and 44
actuated by the arm 40 to engage the wheel
39 when a voter stands on the platform 42,
10 and which pawls release said wheel 39 when

the voter leaves the said platform, substan-
tially as and for the purposes specified.

In testimony that I claim the foregoing as
my own I hereto affix my signature in pres-
ence of two witnesses.

ALBERT E. SINGER.

Witnesses:

GEORGE H. WOOD,
R. J. McCARTY.