

No. 839,975.

PATENTED JAN. 1, 1907.

C. M. WARNER.
VOTING MACHINE.

APPLICATION FILED AUG. 12, 1905.

3 SHEETS—SHEET 1.

FOR LIEUTENANT GOVERNOR
JOHN DOE.

Fig. 7.

Fig. 1.

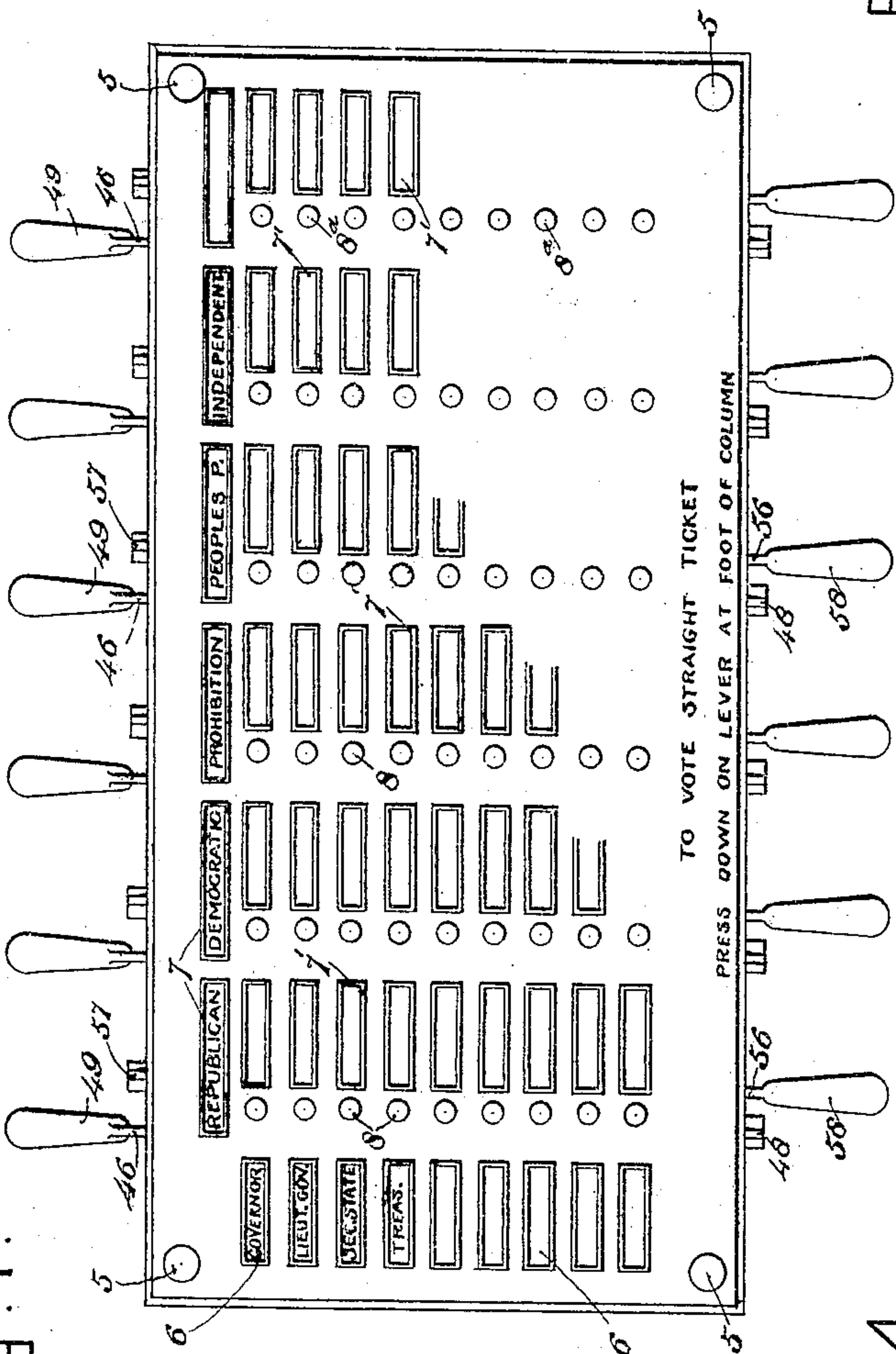


Fig. 6.

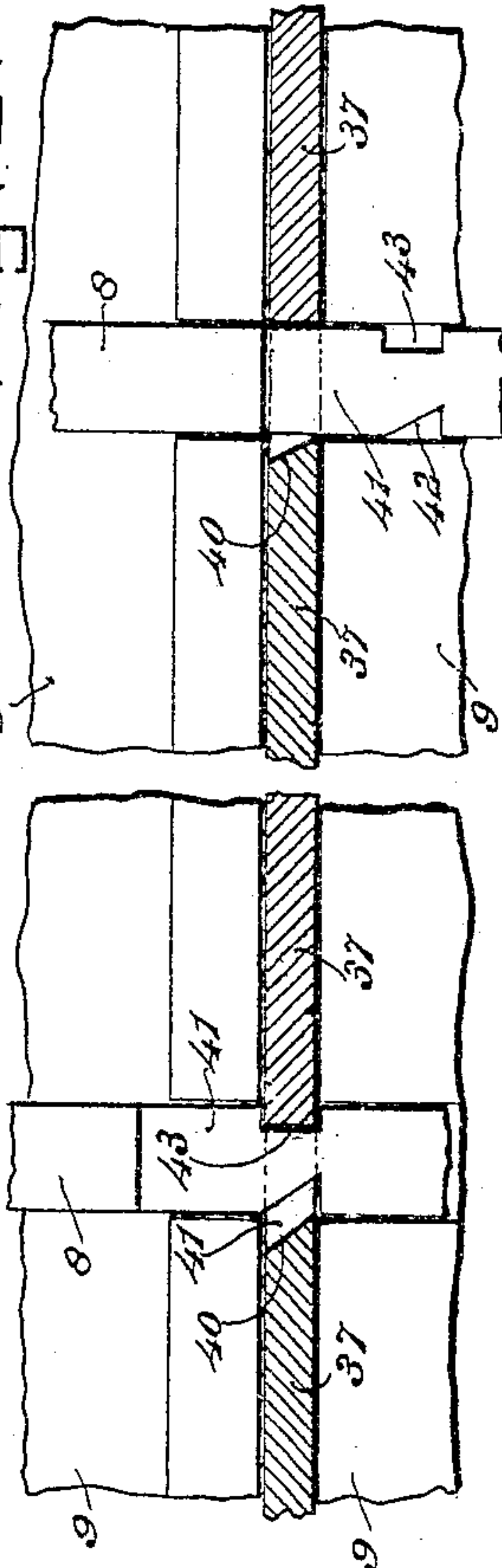
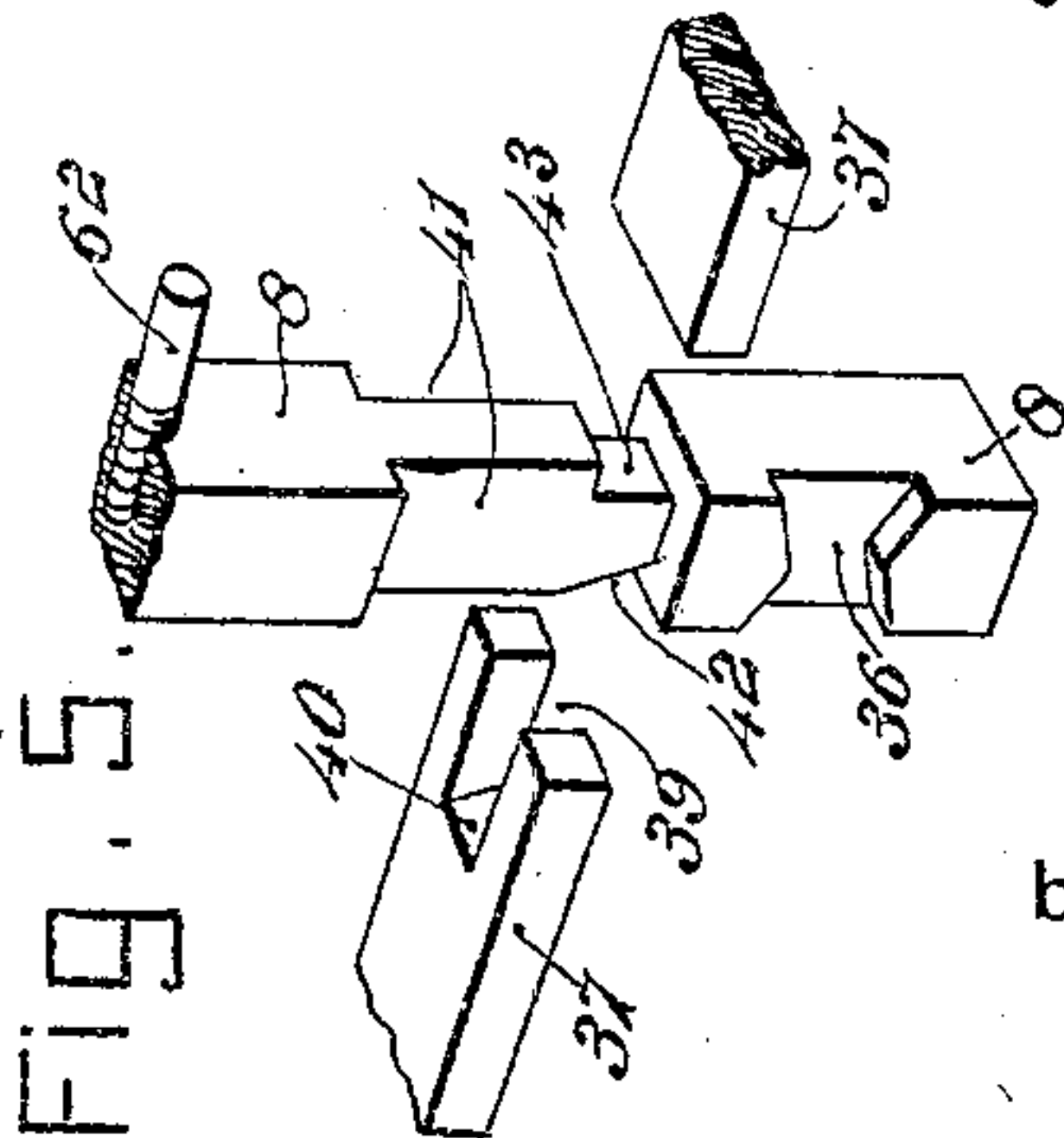
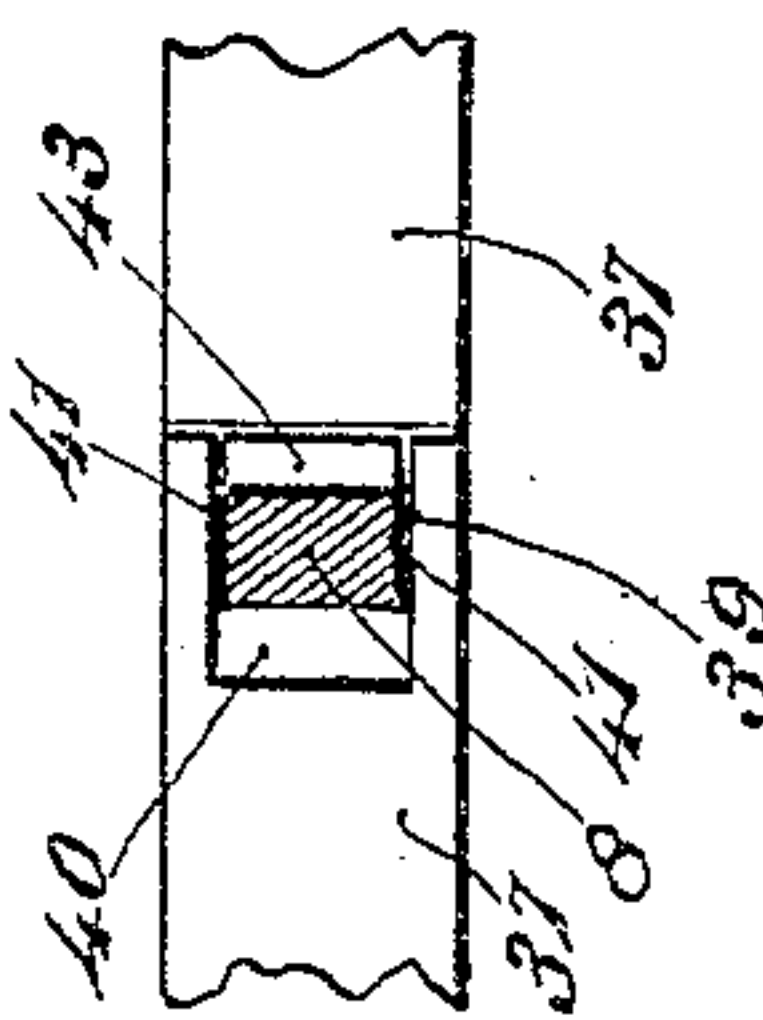


Fig. 4.



Witnesses
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Fig. 5.

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3 SHEETS—SHEET 2.

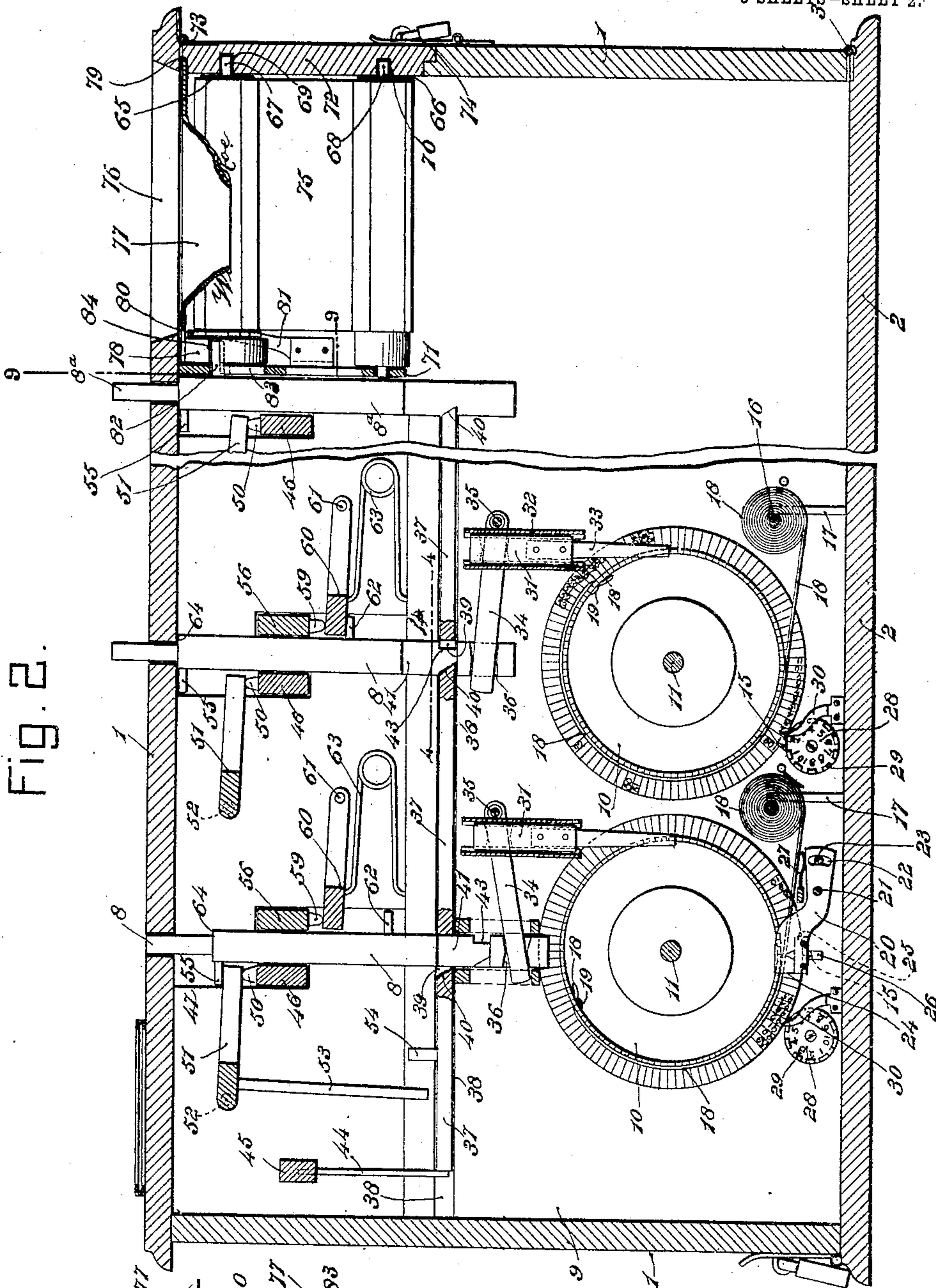
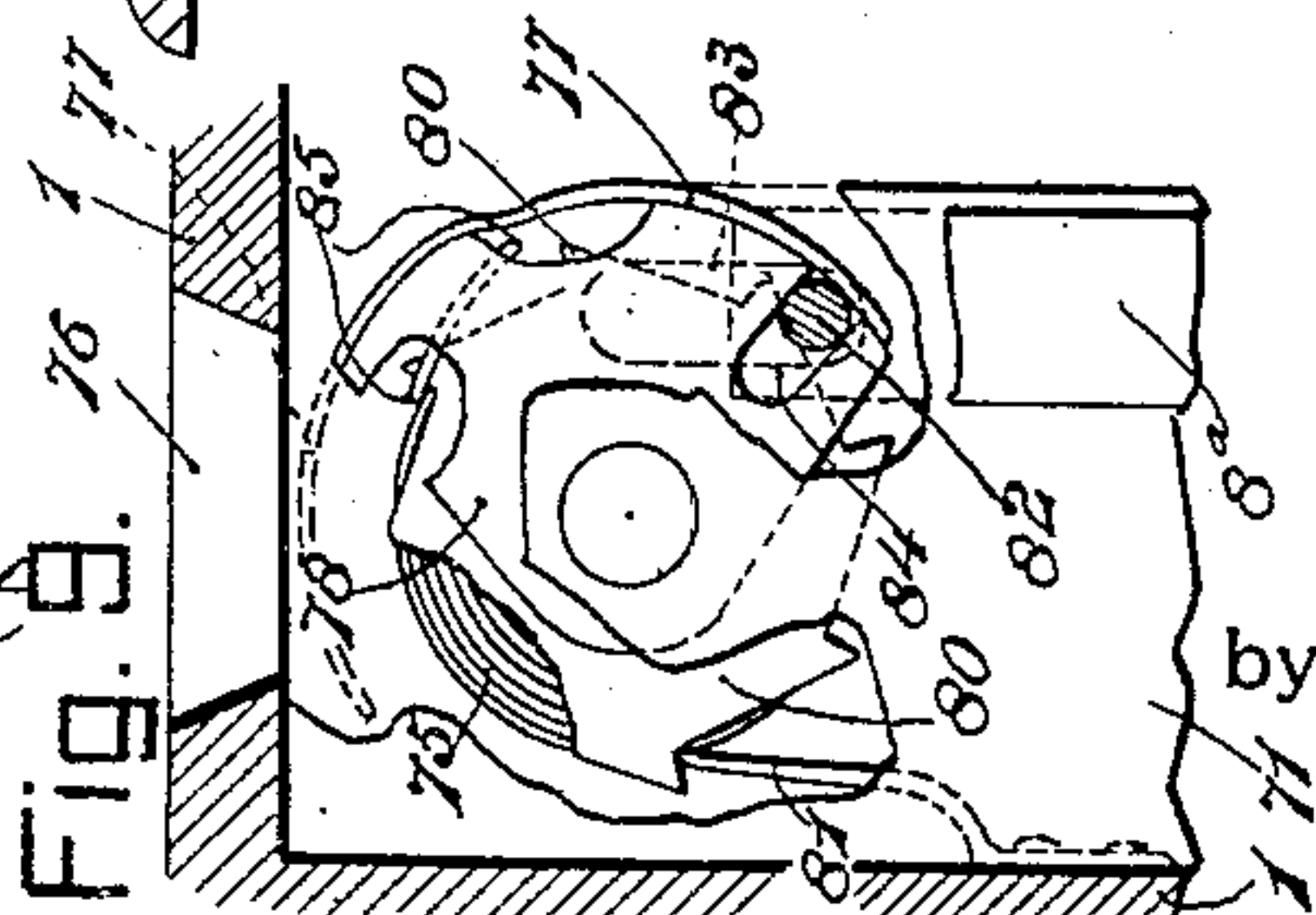


Fig. 2.

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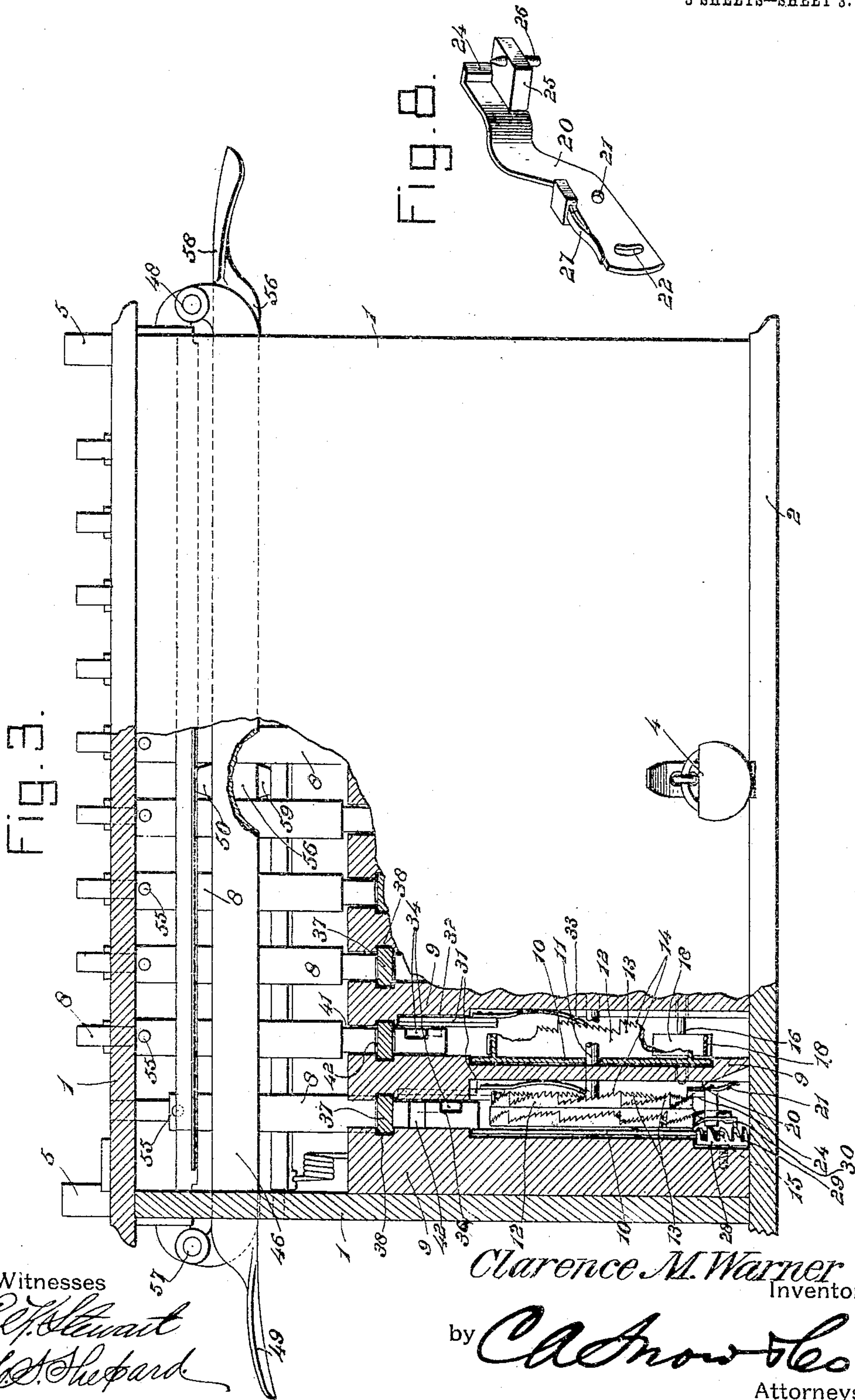
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

CLARENCE MORRIS WARNER, OF CAMBRIDGE, ILLINOIS.

VOTING-MACHINE.

No. 839,975.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed August 12, 1905. Serial No. 273,927.

To all whom it may concern:

Be it known that I, CLARENCE MORRIS WARNER, a citizen of the United States, residing at Cambridge, in the county of Henry and State of Illinois, have invented a new and useful Voting-Machine, of which the following is a specification.

This invention relates to voting-machines, and has for its object to provide certain new and useful improvements in this class of devices so as to enable the convenient manipulation thereof to vote a straight ticket, to vote for individual candidates of different political parties, and to permit the casting of votes for independent candidates not embraced in the list of candidates embodied in the machine.

It is also proposed to provide novel mechanism for registering each vote and for indicating the total vote polled by each and every candidate.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a plan view of a voting-machine embodying the features of the present invention. Fig. 2 is an enlarged longitudinal sectional view thereof. Fig. 3 is an end view of the machine with parts broken away to show the recording mechanism. Fig. 4 is a detail sectional view on the line 4 4 of Fig. 2. Fig. 5 is a fragmentary perspective view of the adjacent ends of two locking-slides and the cooperating part of a voting-key. Fig. 6 is a fragmentary sectional view illustrating the manner of locking one of the voting-keys. Fig. 7 is a detail view of a portion of one of the record-tapes. Fig. 8 is a detail perspective view of the tape-marking element.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

For housing and protecting the mechanical mechanism of the present invention there is provided a case or cabinet 1, preferably in the nature of a rectangular box of

suitable proportions and provided with a flat bottom 2, upon which the cabinet is designed to rest during the successive voting operations. It is proposed to have this bottom hinged to the body of the cabinet, as shown at 3 in Fig. 2 of the drawings, and normally locked by means of any suitable or appropriate locking means—such, for instance, as a hasp, staple, and padlock, as shown at 4 in Fig. 2—whereby tampering with the mechanism within the case or cabinet is effectually precluded, while it is possible to quickly open the bottom of the case to give access to the registering mechanism, so as to determine the number of votes cast for each candidate immediately upon the completion of the voting. It is of course desirable to invert the case or cabinet for the purpose of opening the bottom thereof, and therefore posts or projections 5 are provided upon the top of the case at the four corners thereof in order that the case may rest upon these posts as supports when inverted, thereby to space the top of the case above the table or other support, and thus prevent actuation of the controlling-keys when the case is inverted.

Upon reference to Fig. 1 of the drawings it will be seen that a series of card-holders 6 is provided upon the top of the case, preferably at the left-hand side thereof, and extending in a row or column from the front to the rear of the case for the reception of cards or the like bearing the titles of the offices for which the votes are to be cast. At the back of the top of the cabinet is a series of card-holders, (designated 7) which extend in a row from the left to the right of the cabinet and are designed to receive cards or the like bearing the names of the several political parties. In alinement with the name of each political party and extending from front to rear of the cabinet is a series of card-holders 7', which are successively arranged in alinement with the titles of the offices and designed to receive the names of the candidates of the different political parties. To the left of the names of the candidates for each political party there is a series of voting-keys 8, one for each candidate, which normally project above the top of the case or cabinet and are designed to be pushed downwardly to actuate the recording mechanism within the cabinet.

The interior of the case or cabinet is di-

vided by a series of longitudinal partitions 9, as best shown in Figs. 2 and 3 of the drawings, into a series of compartments, the tops of the partitions terminating about midway of the depth of the case. These partitions extend from left to right of the case and are arranged so that each longitudinal compartment lies directly beneath the name or title of one of the offices and the names of the candidates of the several political parties for this particular office and is designed to contain the several registering mechanisms for said candidates in order that these registering mechanisms may be locked when a vote has been cast for any candidate for the same office.

For each voting-key 8 there is a registering mechanism consisting of a wheel or disk 10, mounted to rotate loosely upon a shaft 11, piercing the successive partitions 9. This wheel or disk has a rim or annular flange 12 disposed at a suitable distance inwardly from the outer peripheral edge of the wheel, the outer peripheral edge of the flange being notched to provide a peripheral series of cams 13, the inclined edges of which are provided with ratchet-teeth 14. That portion of the face of the registering-wheel which lies at the outer side of the flange 12 is divided into an annular series of radial spaces, which are consecutively numbered from "1" to "100," there being a radially-disposed tooth or projection 15 at the No. 1 space of the wheel. At one side of the wheel a roller 16 is suitably supported between the partitions 9, preferably by having each end received within a transverse branch of the inner end of a slot 17, formed through the adjacent partition and intersecting the bottom end thereof, whereby the roller may be applied and removed when the bottom 2 is open. Upon this roller there is a roll of tape 18, which extends therefrom and is wound around the flange 12 of the wheel 10, the tape being connected to the flange in any suitable manner—as, for instance, by being pierced by a prong or spur 19, cleft from the flange 12, whereby the tape may be conveniently connected to and removed from the wheel. The registering-wheel is of course rotated with a step-by-step movement through the actuation of the adjacent voting-key 8, as will be hereinafter explained.

The record-tape 18 is blank when placed in the machine, and it is designed to provide marking mechanism actuated by the wheel 10 to mark or indicate upon the tape for each and every operation of the adjacent voting-key. This marking mechanism consists of a swinging arm or dog 20, (shown in detail in Fig. 8 of the drawings,) which is pivoted intermediate of its ends, as at 21, and has one end provided with an arcuate slot 22, struck from the pivotal point 21 as a center, and receiving a guide-pin 23, carried by the adja-

cent partition 9. This dog or arm is located beneath the rim of the adjacent wheel 10 and has its free end provided with a lateral tooth 24, engaging the toothed periphery of the flange 12, there also being a substantially horizontal shoulder or projection 25 upon the free end portion of the dog and disposed beneath the flange of the wheel for the support of an upstanding pencil or other marking element 26, which has its upper end in engagement with the record-tape upon the flange of the wheel. A suitable spring 27 bears downwardly against what will be termed the "rear" end of the dog 20, so as to maintain the front end of the dog in proper operative relation with respect to the wheel 10 and the record-tape.

It will here be explained that the dog 20 is pivoted and spring-pressed to permit of its yielding as the diameter of the roll of tape upon the flange 12 increases. In addition to its pivotal movement the dog 20 has a lateral or sidewise movement to permit of the cams or teeth of the flange 12 wiping past the tooth 24, and therefore the dog is formed of spring plate metal.

During the rotation of the wheel 10 its toothed or cam flange 12 moves the member 20 back and forth, whereby the pencil or marker 26 produces a zigzag mark upon the tape, as indicated in Fig. 7, each zigzag mark indicating one vote. It will here be explained that the flange 12 is provided with ten long cams or teeth 13, and the inclined edge of each long cam or tooth is provided with ten smaller notches or teeth, whereby the zigzag marks or lines upon the tape are divided into groups, whereby the total number of votes may be quickly determined by counting the groups of zigzag lines. It will here be explained that the tape 18 is designed to preserve the record rather than to indicate the total vote at the completion of voting, it being designed to remove the tape from the machine for the purpose of preserving it.

For the purpose of clearly indicating the total vote, an indicator-wheel 28 is rotatably mounted upon one of the partitions 9 and provided with a series of teeth 29, disposed in the path of the tooth or projection 15 of the wheel 10, whereby the indicator-wheel is rotated one notch at a time when the wheel 10 has made one complete rotation. The indicator-wheel is of course numbered from "1" upwardly, and as the wheel 10 makes one complete rotation under the influence of one hundred operations of the adjacent voting-key one rotation of the indicator-wheel would indicate that one hundred votes have been cast. In addition to the indicator-wheel there is a fixed index or finger 30, which has its free end overlapping the dial portion of the wheel 10, so as to indicate the number of total votes cast less than one hun-

dred. By this means the total number of votes cast may be quickly determined by reference to the indicator-wheel 28 and the index 30 without any reference whatsoever to the tape.

The means for rotating the wheel 10 consists of a plunger 31, mounted in a guideway 32 upon one of the partitions 9 and carrying at its lower end a spring dog or finger 33, co-operating with the ratchet-teeth of the flange of the wheel 10. The upper end portion of the plunger is provided with a lateral notch or seat loosely receiving a substantially horizontal lever 34, which is terminally fulcrumed, as at 35, and has its free end portion received within a seat or notch 36 in the lower end portion of the adjacent voting-key 8. When the voting-key is depressed, the lever 34 and the plunger 31 will likewise be depressed and the dog 33 will press downwardly upon one of the teeth of the wheel 10 and rotate the wheel one notch, thereby feeding the tape from the roller 16 to the flange of the wheel and actuating the pencil-holder 20 to produce one zigzag mark upon the tape.

It is of course necessary to lock each voting-key and also the other voting-keys in the same series after any one of the keys has been depressed in order to prevent repeating of the vote and the voting for more than one candidate for the same office. This feature is accomplished by means of a series of locking-slides 37, which are mounted in corresponding longitudinal guideways or grooves 38 in the upper portions of the partitions 9. As best indicated in Figs. 4, 5, and 6, it will be seen that each slide is provided at its forward end with a longitudinal bifurcation 39, the back 40 of which is beveled or inclined downwardly and forwardly, the bifurcation serving to straddle the adjacent locking-key, with the front end of the slide in engagement with the rear end of the next-in-front slide. The locking-key 8 is notched at opposite sides, as at 41, so as to reduce the same sufficiently to fit within the bifurcated portion 39 of the locking-slide, and the back edge of this reduced portion is provided with a downwardly and forwardly beveled portion 42, against which the beveled portion 40 of the slide normally engages. In the front of the reduced portion of the voting-key there is a seat or notch 43, opposite which the rear end of the next-in-front slide is normally seated. With the locking-key and the locking-slides in their normal positions, as shown at the middle of Fig. 2 of the drawings, when the key is depressed, as at the right-hand side of Fig. 6, the beveled or cam portion 42 of the key slides downwardly across the beveled or cam portion 40 of the rear slide and moves the same rearwardly into the seat or notch 43 of the next-in-rear key, thereby locking the latter. As all of the locking-slides abut, all of the slides in rear of the key which is de-

pressed are moved into the locking-notches of the respective keys, and therefore all of the keys in rear of the depressed key are locked. When the locking-key is depressed, its locking notch or seat 43 passes down below the next-in-front locking-slide, wherefore said slide is prevented from moving rearwardly, and as this slide and the other front slides have the backs of their bifurcations in engagement with the backs of the keys the slides will be held against endwise movement by the keys and the keys in turn held against endwise movement by the slides, wherefore all of the keys are locked, and further voting for the same office is prevented. For the purpose of holding all of the slides yieldably at their forward limits there is a spring 44 supported by a cross-bar 45 between adjacent partitions 9, with the free end of the spring bearing against the rear end of the rearmost slide, as best shown in Fig. 2 of the drawings.

To provide for resetting the voting-keys of each political party, there is provided a resetting-lever 46, which passes through an opening 47 in the back of the case and pierces the front of the case, with its front end hinged to the case, as at 48, while its rear end is provided with a suitable handle 49 for convenience in manipulating the lever. At about the middle of this lever there is an upstanding projection 50, which lies in coöperative relation with the under side of a rock-bar 51, terminally pivoted, as at 52, at opposite sides of the case. This rock-bar is provided with a pendent arm or projection 53, which lies in rear of an upstanding shoulder or projection 54 upon the adjacent rearmost locking-slide 37. Upon the voting-key there is a lateral shoulder or projection 55, which lies above the free edge of the rock-bar 51 and in the path thereof. When a voting-key has been depressed and it is desired to reset the same, the appropriate resetting-lever is swung upwardly by means of its handle 49, thereby rocking upwardly the bar 51, which engages the shoulder 55 and elevates the key, after which the arm 53 comes into engagement with the shoulder 54 and pushes the locking-slide 37 forwardly into its normal position, whereby the voting-key will be reset and the means for rotating the wheel 10 will also be reset or returned to its normal position. Whatever locking-slides 37 in front of the rearmost slide have been moved rearwardly will of course be moved forwardly under the forward movement of the rearmost slide.

For simultaneously depressing all of the voting-keys for any political party to vote a straight ticket there is provided a straight-ticket-voting lever 56, which works through suitable slots in the front and rear of the case and is hinged to the rear of the case, as at 57, while its front end is provided with a handle

58 for use in depressing the lever. At about the middle of the lever 56 there is a depending projection 59, designed to engage the free edge of a rock-bar 60, which is pivoted at each end upon the case, as at 61, each voting-key being provided with a lateral shoulder or projection 62 in the downward path of the free edge of the rock-bar 60, whereby all of the keys for one political party will be depressed when the lever 56 is depressed. A suitable spring 63 is employed to force the rock-bar 60 and the lever 56 upwardly when pressure is relieved from the lever in order that these elements may return to their original positions in readiness for use.

Each voting-key is reduced at its upper end to form a finger-piece and an annular stop-shoulder 64, designed to engage against the top of the case and limit the upward movement of the key. When each voting-key is supported in its normal elevated position by reason of the shoulders at the top of the reduced lower portion of the key resting upon the top of the adjacent locking-slide, the finger-piece of the key is accessible for convenience in depressing the key, and when the key is depressed to its limit the top of the finger-piece is flush with or below the upper surface of the top of the case, and therefore cannot be withdrawn.

For the convenience of voters who desire to vote for a candidate not embraced in the list provided in the card-holders on the top of the machine there is provided additional voting mechanism for each office, as best shown in Fig. 2 of the drawings. Each of these mechanisms consists of upper and lower rollers 65 and 66, which are located within the upper portion of the case and are provided at their outer ends with journals 67 and 68, mounted in the respective bearing-sockets 69 and 70 in the adjacent end of the case. The other ends of these rollers are provided with suitable journals mounted in a hanger or bracket 71, depending from the top of the case. By preference the end section 72 of the case, in which the rollers are journaled, is in the nature of a door hinged to the top of the case, as at 73, and normally locked by a suitable lock 74, whereby the door portion 72 may be open for the purpose of inserting and removing the rollers. A web or tape 75 of suitable width is carried by the lower roller and is designed to be fed therefrom to the upper roller, that portion of the tape which passes over the upper roller being exposed through an opening 76 in the top of the case, through which the name of any proposed candidate may be written upon the web or tape 75 by the voter. That portion of the web or tape which lies directly beneath the opening 76 is normally covered by a substantially semicylindrical shield 77, which is carried at one end by a head 78, rotatable

upon the inner end of the roller 65, the other end of the shield working in an arcuate guideway 79 in the end portion 72 of the case. Upon the inner end portion of the roller 65 and at the inner face of the head 78 there is a ratchet-disk 80, which is fixed to the roller and engages a dog or pawl 81, carried by the hanger 71, so as to prevent backward rotation of the roller 65. There is a voting-key 8^a for this mechanism substantially corresponding to the form of key hereinbefore described, so as to be locked by the locking-slides, and it is also provided with a lateral pin or projection 82, working in a longitudinal slot 83 in the hanger 71 and engaging a radial slot 84 in the head 78, whereby the latter is controlled by the key 8^a to rotate loosely upon the adjacent journal of the roller 65. When the voting-key is pushed downwardly, the head 78 is rotated without rotating the roller 65, which is held by the dog 81, whereby the shield 77 will move with the head and uncover that portion of the tape or web 75 which passes over the top of the roller 65, whereupon the voter can write upon the tape the name of any desired candidate. After the voter has voted the adjacent resetting-lever 46 is manipulated to elevate the key 8^a, whereby the head 78 will be rotated in a backward direction and the shield 77 returned to close the opening 76, and thereby cover the web or tape to prevent further writing thereon. Upon the inner face of the head 78 there is a dog or pawl 85, which coöperates with the ratchet-disk 80 to rotate the roller 65 one step for the purpose of feeding the tape from the lower roller to the upper roller and bringing a new portion of the tape into alinement with the opening 76 for the use of another voter.

In practice the voting-machine is placed in a booth or the like under the charge of the proper authorities. When the voter enters the booth, he proceeds to vote by depressing one key for each office, and if he desires to vote a straight ticket he simply depresses the handle 58 of that lever 56 which corresponds to the ticket which he desires to vote. After the voter leaves the booth and before the next voter enters the resetting lever or levers 46 are manipulated by the authorities in charge of the machine so as to reset all of the keys which have been depressed. The depression of each key of course actuates the registering mechanism, as hereinbefore described, so as to produce the successive zigzag marks upon the respective record-tapes 18. After the voting has been completed the machine is turned upside down and supported upon the posts 5, whereupon the lock 4 is unlocked and the door 2 swung open upon the hinge 3, whereby the result of the election may be quickly determined by reference to the successive indicating mechanism.

The record-tapes are removed, so as to preserve the record of the election, and new tapes are replaced for the next election.

Having thus described the invention, what is claimed is—

1. A voting-machine comprising a cabinet having a bottom which is capable of being opened, recording mechanisms within the cabinet, individual voting-keys piercing the top of the cabinet and associated with the respective recording mechanisms, and posts upon the top of the cabinet and rising above the voting-keys, the cabinet capable of being inverted and supported upon the posts to permit opening of the bottom of the cabinet, and the recording mechanisms being located for access to enable reading thereof when the bottom is open.

2. A voting-machine having a voting-key associated therewith, a locking-slide for the voting-key, resetting means common to the key and the locking-slide and including a swinging member having an element associated with the voting-key and another element associated with the locking-slide, and means to actuate the swinging member to reset the key and the locking-slide.

3. A voting-machine having a voting-key, a locking-slide therefor, a resetting means connected to the key and the slide and including a bell-crank having one arm associated with the voting-key and its other arm associated with the locking-slide, and means to swing the bell-crank for simultaneously resetting the key and locking-slide.

4. In a voting-machine, the combination of an endwise-movable voting-key, a locking-slide associated directly with the key and working at substantially right angles thereto, and resetting means common to the key and the slide and including a pivotal member having elements disposed at substantially right angles to one another and associated respectively with the key and the slide to simultaneously reset the same.

5. In a voting-machine the combination of a voting-key, a locking-slide therefor, resetting mechanism including a swinging member associated with the key and provided with an arm associated with the slide, and a controlling-lever mounted to simultaneously move the swinging member and its arm to reset the key and the locking-slide.

6. In a voting-machine, the combination of an endwise-movable voting-key, a locking-slide therefor, resetting mechanism including a swinging member associated with the key and provided with an arm associated with the slide, and a controlling-lever mounted to simultaneously move the swinging member and its arm to reset the key and the locking-slide.

7. In a voting-machine, the combination of a voting-key having a lateral projection, a

locking-slide therefor provided with a lateral projection, resetting mechanism including a swinging member associated with the projection of the key and provided with an arm associated with the projection of the slide, and a controlling-lever mounted for engagement with one of these members to move the swinging member and the arm into engagement with the respective projections and reset the key and the slide.

8. In a voting-machine, the combination of a voting-key provided at opposite sides with projections, a voting-lever located in rear of the path of movement of one of the projections and capable of being moved into engagement with the projection to actuate the key, a resetting-lever located at the opposite side of the key in the path of the adjacent projection and capable of being moved against the latter to reset the key, and a locking-slide adapted to be engaged and moved by the resetting-lever.

9. In a voting-machine, the combination with a series of voting-keys provided at opposite sides with projections, a straight-ticket lever located in rear of the paths of one set of projections and capable of being moved into engagement with the same to simultaneously actuate all of the keys, a resetting-lever located at the opposite side of the series of keys in the paths of movement of the adjacent projections and capable of being moved against the latter to simultaneously reset one or more of the keys, and locking-slides adapted to be engaged and moved by the resetting-lever.

10. In a voting-machine, the combination with a series of voting-keys, of locking-slides for the keys, a straight-ticket lever associated with the keys, and a resetting-lever adapted to engage and move the keys and the locking-slides therefor.

11. In a voting-machine, the combination of a voting-key, a locking-slide cooperating with the key intermediate of its ends, recording mechanism located at one side of the slide and associated with the voting-key, and resetting mechanism adapted to engage and move the key and the slide at the opposite side of the latter.

12. In a voting-machine, the combination of a voting-key, a locking-slide associated with the key intermediate of the ends thereof, recording mechanism associated with the key at one side of the locking-slide, resetting mechanism adapted to engage and move the key and the slide at the opposite side of the latter, and a voting-lever associated with the opposite side of the key.

13. In a voting-machine, the combination of a series of voting-keys, locking-slides associated with the keys intermediate of their ends, recording mechanisms associated with the respective keys at one side of the slides, resetting mechanism adapted to engage and

move the keys and the slides at the opposite side of the latter, and a straight-voting lever associated with the opposite side of the keys from the resetting mechanism.

5 14. In a voting-machine, the combination with a voting-key and tally mechanism including a ratchet-wheel, of a slidable dog co-
operating with the ratchet-wheel and work-
ing in substantial parallelism with the key,
10 and a lever fulcrumed independently of the key and the dog and engaged with the key and the dog.

15 15. In a voting-machine, the combination with a slidable key and tally mechanism including a ratchet-wheel, of a slidable dog working in substantial parallelism with the key and coöperating with the ratchet-wheel, the key and the dog being provided with seats, and a lever fulcrumed independently

of the dog and engaging the seats of said 20 members.

16. In a voting-machine, the combination with a voting-key and tally mechanism including a ratchet-wheel, of a slidable dog 25 working in substantial parallelism with the key and coöperating with the ratchet-wheel, and a lever terminally fulcrumed independently of the key and the dog and engaging said members to move the dog in the same direction with the key. 30

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

CLARENCE MORRIS WARNER.

Witnesses:

C. L. STARR,

GEORGE W. ROGERS.