

No. 688,424.

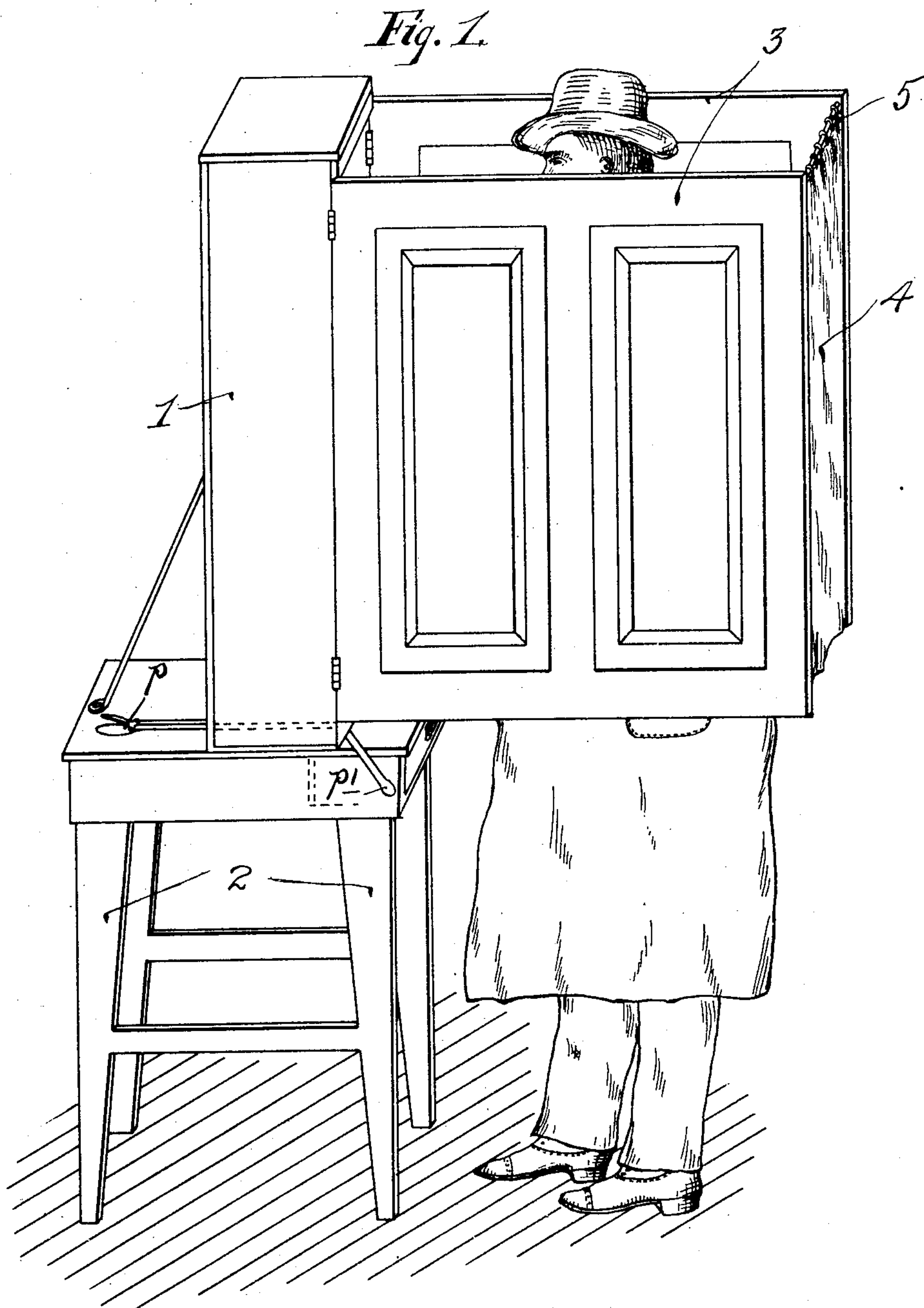
Patented Dec. 10, 1901.

S. LOE.
VOTING MACHINE.

(Application filed May 23, 1901.)

(No Model.)

7 Sheets—Sheet 1.



Witnesses
Harry Kilgus,
Robert Otto.

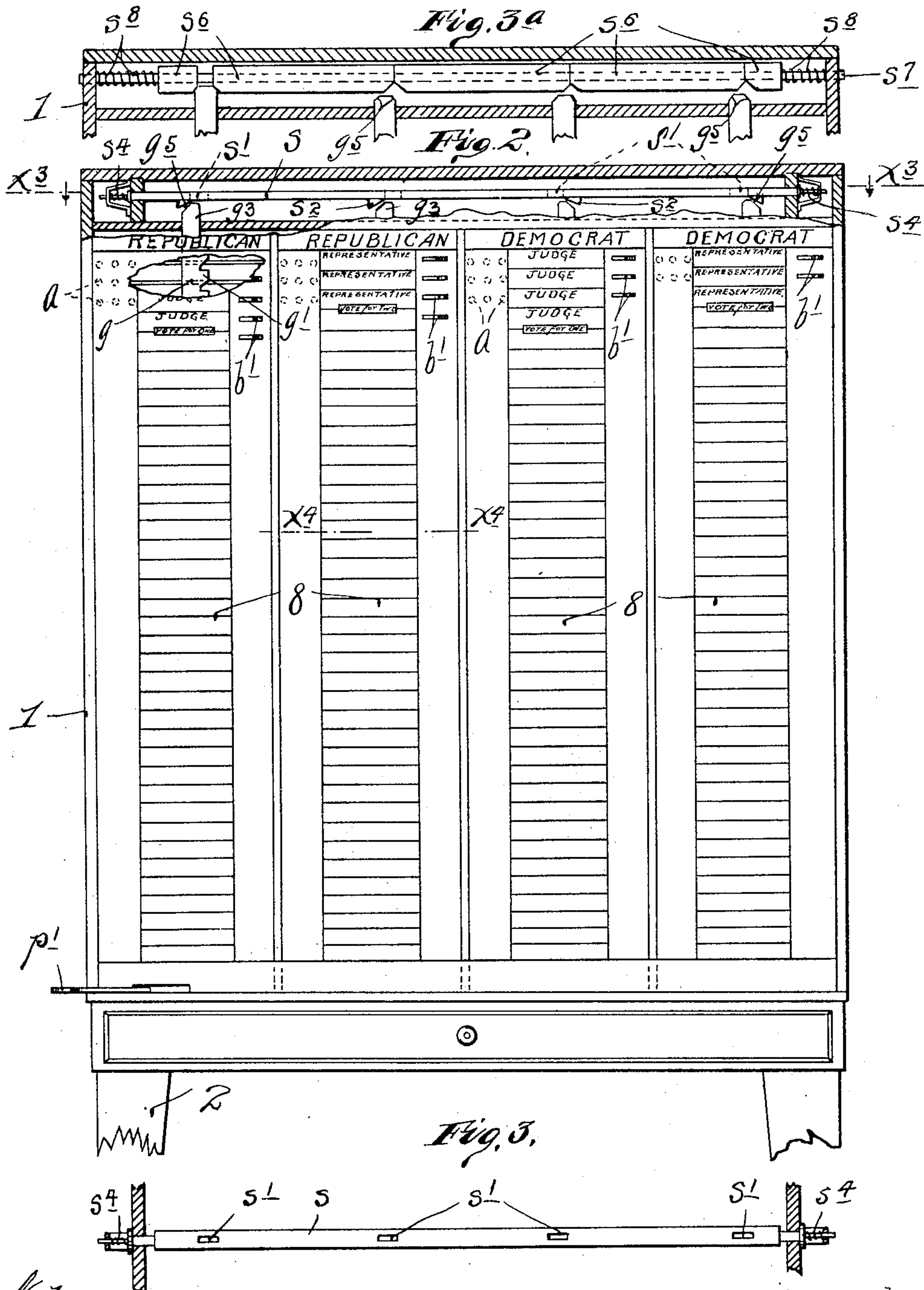
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By his Attorneys.
Williamson Merchant

S. LOE.
VOTING MACHINE.

(Application filed May 23, 1901.)

(No Model.)

7 Sheets—Sheet 2.



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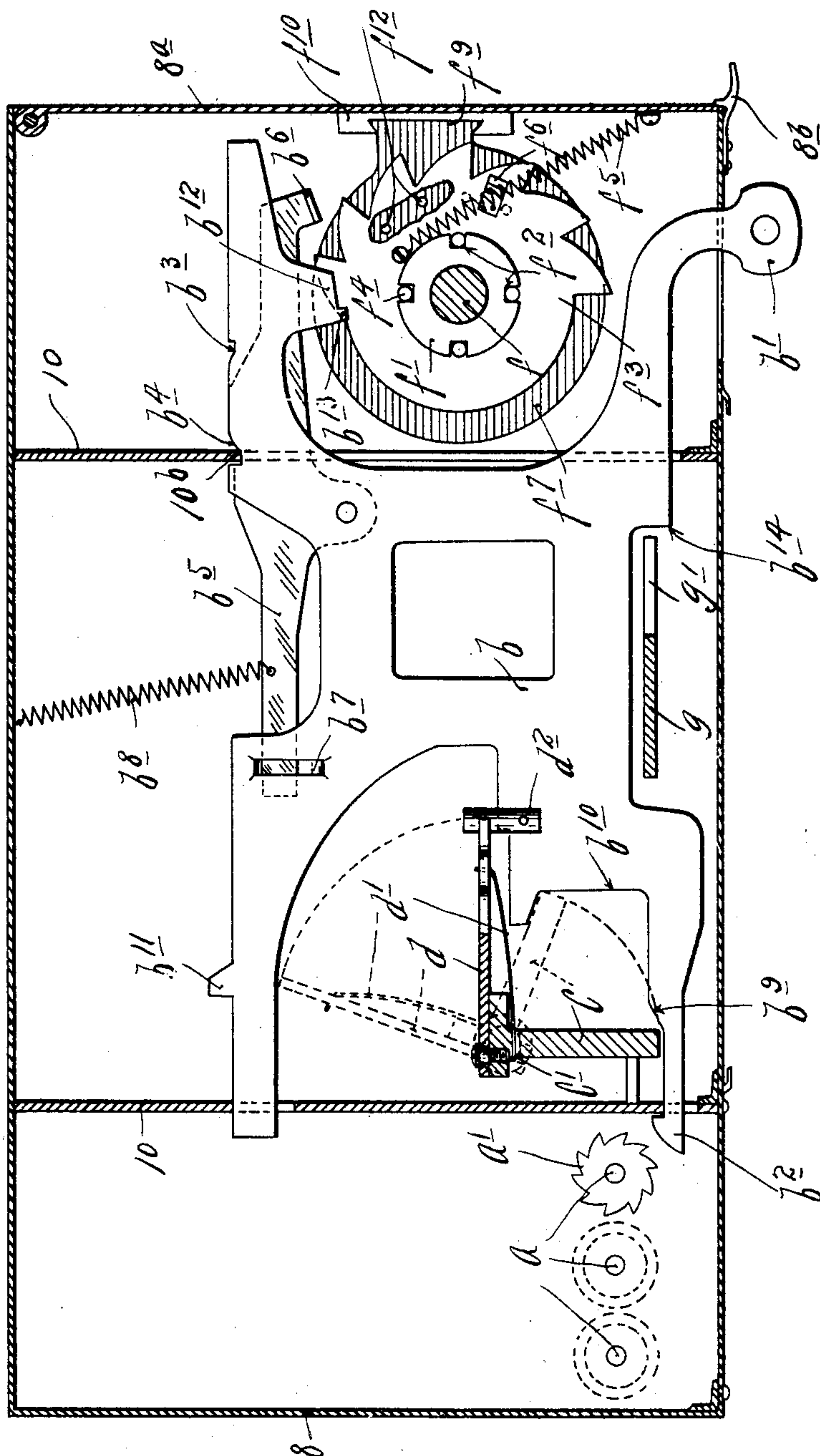
S. LOE.
VOTING MACHINE.

(Application filed May 23, 1901.)

(No Model.)

7 Sheets—Sheet 3.

Fig. 4.



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No. 688,424.

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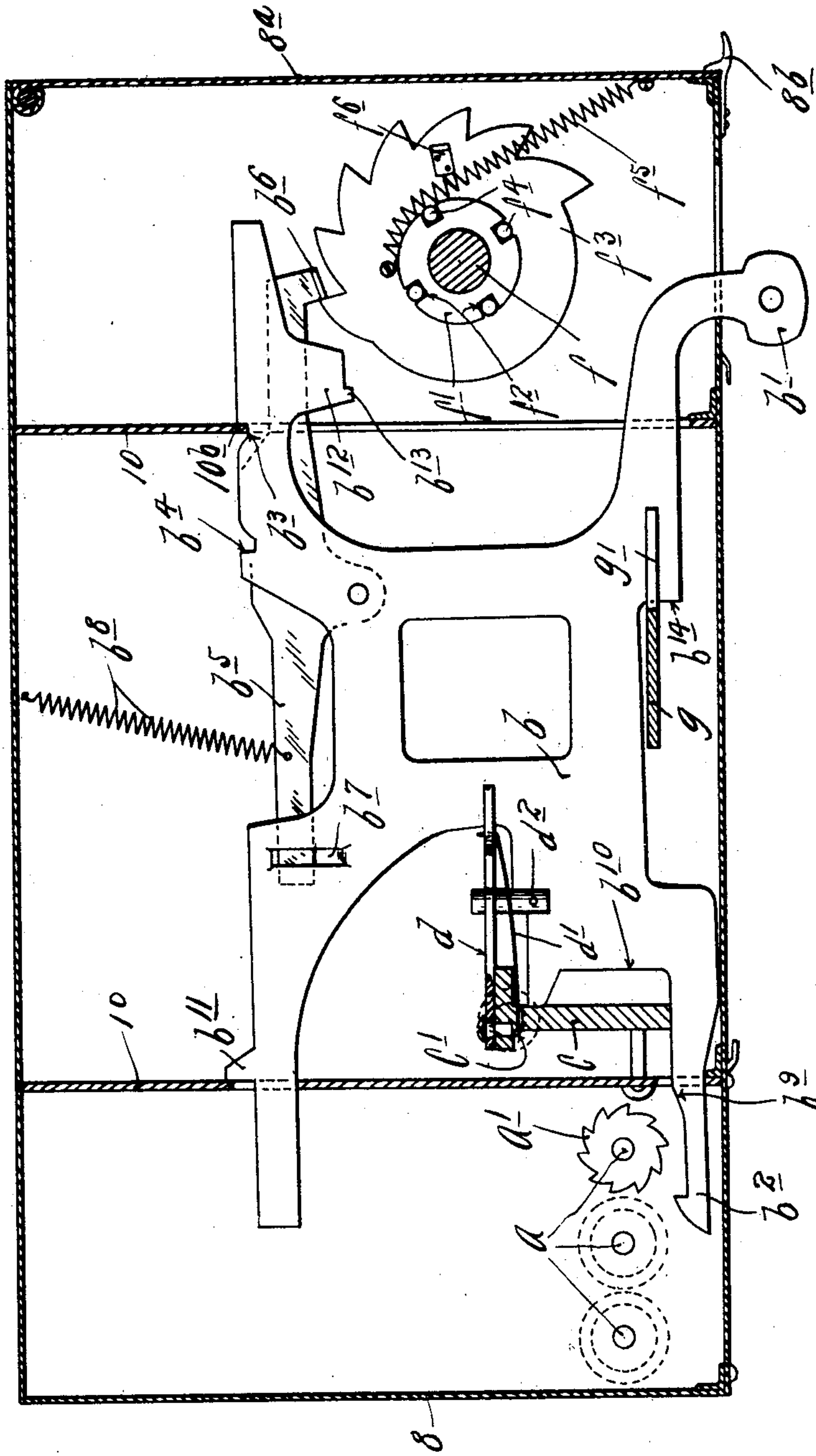
S. LOE.
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(No Model.)

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Fig. 5.



Witnesses.
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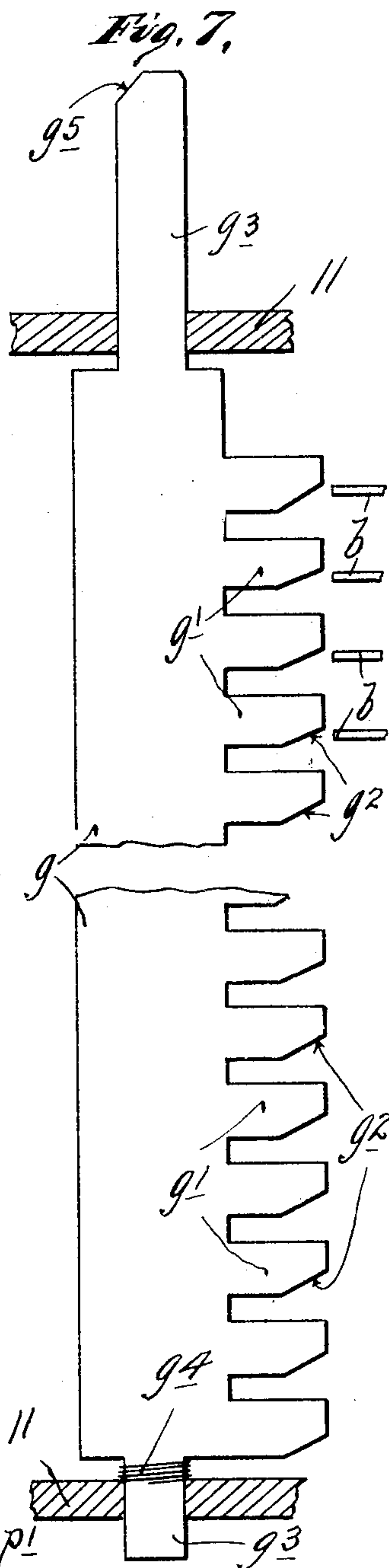
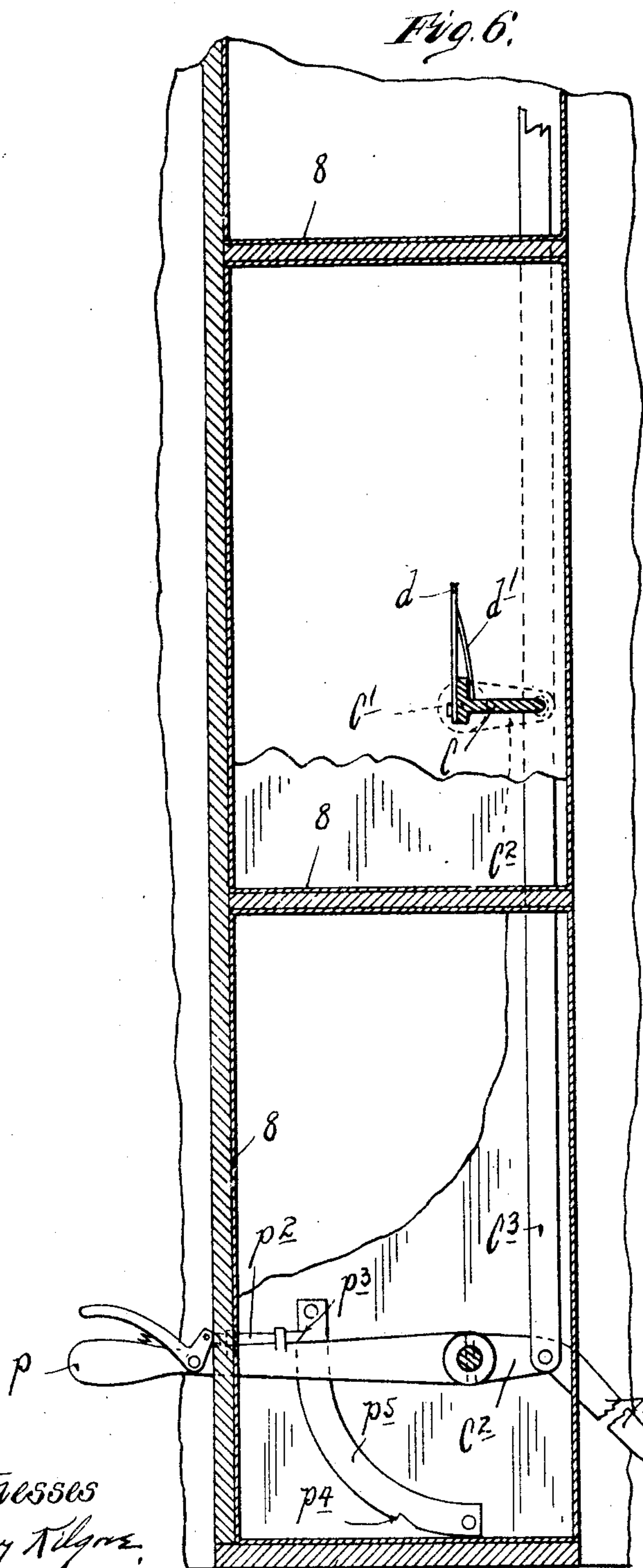
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S. LOE.
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(Application filed May 23, 1901.)

(No Model.)

7 Sheets—Sheet 5.



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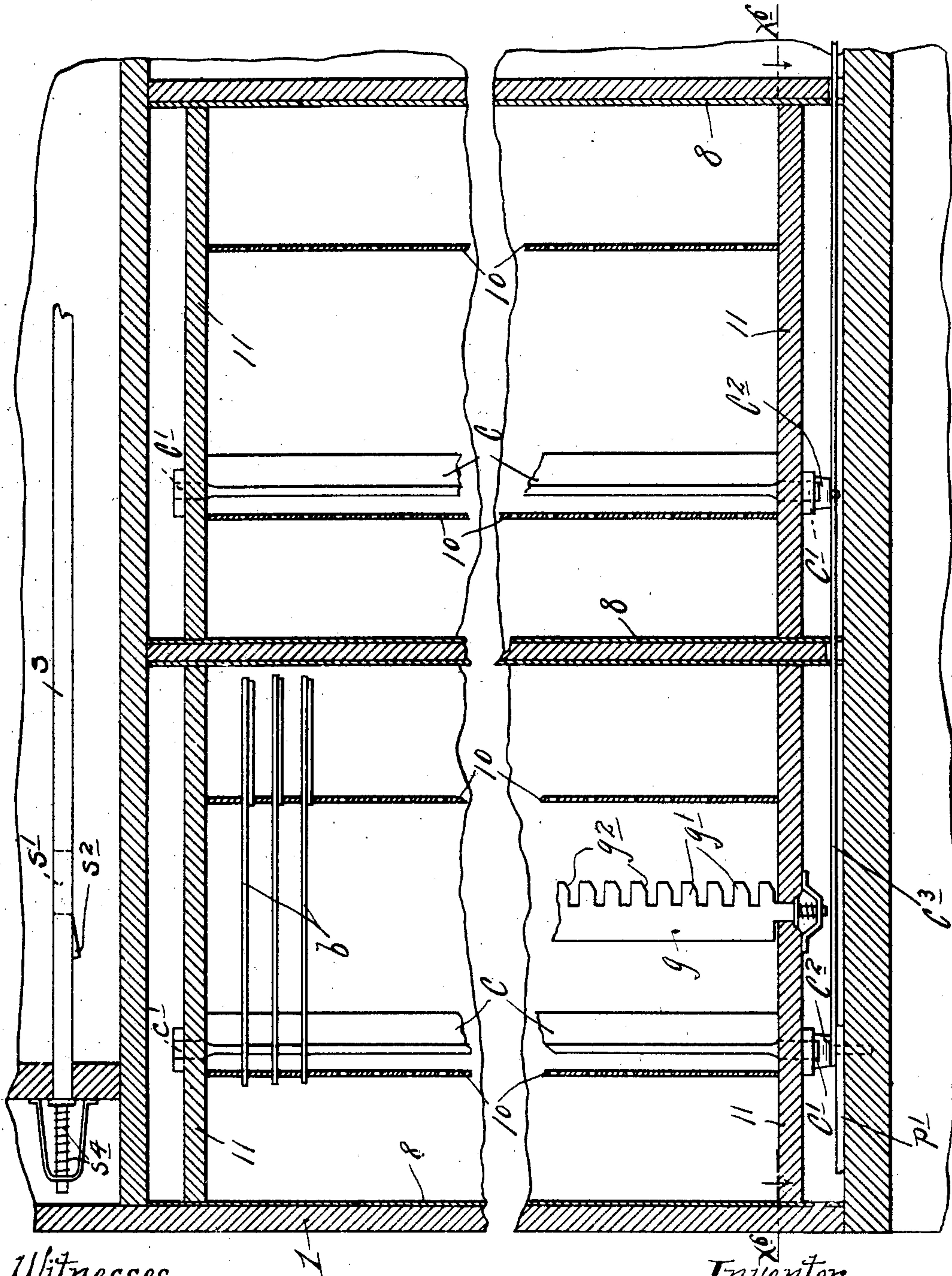
Patented Dec. 10, 1901.

**S. LOE.
VOTING MACHINE.**

(Application filed May 23, 1901.)

(No Model.)

7 Sheets—Sheet 6.



Witnesses,
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Fig. 8.

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No. 688,424.

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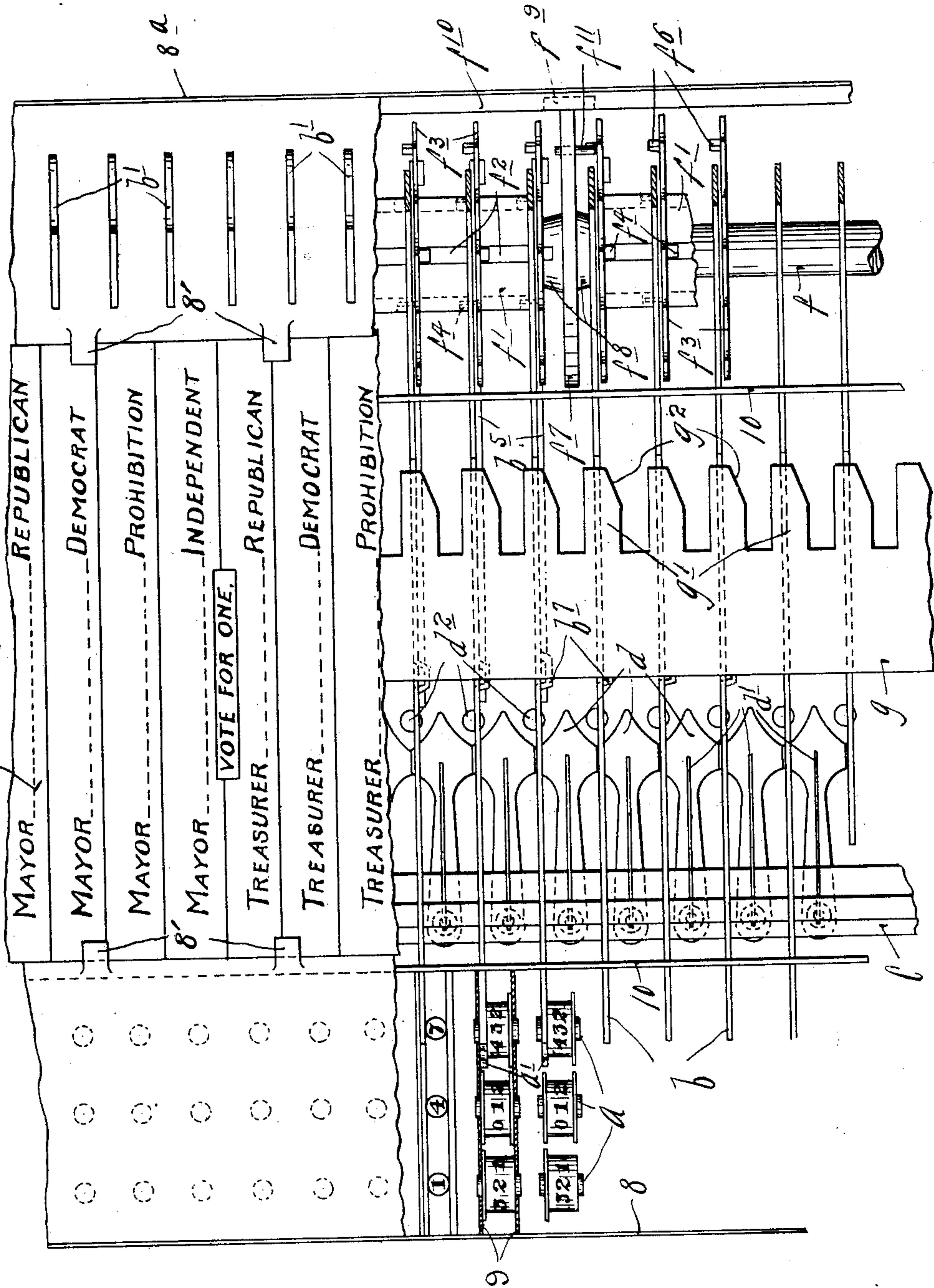
S. LOE.
VOTING MACHINE.

(Application filed May 23, 1901.)

7 Sheets—Sheet 7.

(No Model.)

Fig. 9.



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UNITED STATES PATENT OFFICE.

SYVER LOE, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO
OLAF HOFF, OF MINNEAPOLIS, MINNESOTA.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,424, dated December 10, 1901.

Original application filed March 25, 1901, Serial No. 52,755. Divided and this application filed May 23, 1901. Serial No. 61,590. (No model.)

To all whom it may concern:

Be it known that I, SYVER LOE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Voting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to voting-machines, and has for its object to improve the same with a view of securing certain important results hereinafter noted; and to such ends it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

This application is filed as a division of my pending application, Serial No. 52,755, filed March 25, 1901, entitled "Voting-Machines," and much of the mechanism shown in this application in order to make the machine complete is shown and claimed in my said prior application.

The principal object of my present invention is to provide a machine adapted for use at primary elections, which in many districts and in some States are required to be carried out on the so-called "Australian system" of voting. More specifically stated, at these primary elections the candidates for the various offices must be determined beforehand by certain rules, not necessary here to consider, and they must be represented on a prepared ticket and the voter must cast his vote within a booth or in private. The chief difference in the manner of voting at a primary election and at a final election is that the voter in the former instance must select his political party and must then vote only for candidates for nomination belonging to that party, while at a final election the so-called "split ticket" may be voted. I have, as will hereinafter be made clear, provided a voting-machine which will meet all the requirements of the primary-election laws or rules. A machine capable of such use I believe to be broadly new, and hence it will of course be

understood that it is my intention in this application to claim, broadly, the features of construction and combination of parts which make such use possible.

A machine in complete form capable of use at primary elections and embodying my invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a perspective view of my improved voting-machine with a folding-booth attachment in working position and showing a voter within the booth. Fig. 2 is a view in front elevation, with some parts broken away, looking at the keyboard or face of the cabinet and voting-machine proper. Fig. 3 is a detail view, in horizontal section, approximately on the line $x^3 x^3$ of Fig. 2. Fig. 3^a is a detail in vertical section illustrating a modified construction of the so-called "cut-out bar." Fig. 4 is a horizontal section through one of the compartments of the machine on the line $x^4 x^4$ of Fig. 2. Fig. 5 is a view corresponding to Fig. 4, but illustrating different positions of certain of the parts and some parts being broken away. Fig. 6 is a horizontal section approximately in the line $x^6 x^6$ of Fig. 8, some parts being broken away and others removed. Fig. 7 is a detail in front elevation showing one of the cam lock-bars, portions of some of the register-actuators, and portions of the plates in which said bar is mounted, the latter being shown in sections. Fig. 8 is a skeleton view, some parts being removed and others being broken away, showing parts of the cabinet or case in transverse vertical section; and Fig. 9 is a view in front elevation showing the separate portion of one of the compartments of the machine, some parts being broken away and others being sectioned.

The cabinet or case 1, which is of rectangular box-like form and is open at its front face, is shown as supported by a suitable table 2. At its sides and at its open face the cabinet 1 is provided with hinged leaves 3, which when folded are adapted to overlap the one with the other and to cover and close the open face of the said cabinet. A suitable

booth is afforded when the leaves 3 are opened up by the coöperation therewith of a curtain 4, which is suspended from a spacing-rod 5, suitably secured at its ends to the outer and upper part of the leaves 3, as shown in Fig. 1.

In the machine illustrated four rectangular compartment-boxes 8 are placed side by side, extending from the top approximately to the bottom thereof. Each compartment-box 8 has mounted within it a series of registers or tallies and the corresponding series of register-actuating slides, together with coöperating devices. The registers or tallies, which may be of any suitable construction, are indicated as entireties by the character *a*. As shown, these registers comprise each three numerals mounted between spacing-plates 9 of the box 8. The front wheel of each tally has a ratchet *a'* for a purpose which will hereinafter appear, and any ordinary, well-known, or suitable device may be provided for causing the one numeral-wheel of the tally to carry on to the other.

The register-actuating slides *b* are located in horizontal planes one over the other, and they are mounted with freedom for operative movements transversely of the machine and for limited movements from front to rear thereof in suitable seats formed in vertically-extended partitions 10 of the box 8. Each slide *b* has a finger-piece or key-head *b'*, which works outward through a suitable slot in the front of the box 8 and by means of which the slide may be manipulated by the voter. Each slide has a ratchet-pawl *b²*, which at the proper time engages the ratchet-teeth *a'* of the corresponding register. Each actuating-slide *b* has two detents, shown in the form of notches *b³* *b⁴*, which are engageable with a shoulder 10^b of one of the partitions 10. Also each slide *b* in the preferred construction is provided with a pivoted lock-actuating dog *b⁵*, formed at one end with a nose *b⁶* and mounted for a limited movement at its other end within a slotted keeper *b⁷* of the slide *b*, to which the said dog is pivoted. A spring *b⁸*, applied to the dog *b⁵* and to one side of the box 8, as shown in Figs. 4 and 5, acting through the dog *b⁵*, yieldingly holds the one or the other of the notches *b³* *b⁴* in an engagement with the shoulder 10^b and the actuating-slide either in its normal or its set position, as the case may be. It may be here further remarked that in its preferred construction each actuating-slide *b* is provided with a cam-surface *b⁹*, a bearing-surface *b¹⁰*, a stop *b¹¹*, and a lock-lug *b¹²*, having a shoulder *b¹³*, all as shown in Figs. 4 and 5 and for the purposes which will hereinafter appear.

For coöperation with each series of actuating-slides *b* is a so-called "restoring-bar" *c*, which extends from top to bottom of the box 8 and is mounted for pivotal movement on vertically-projecting trunnions *c'*, that project through horizontal bottom and top partition-plates 11 of the box 8. Normally the restoring-bar *c* stands as indicated by full

lines in Figs. 4, 5, and 6, and it is adapted to move into the position indicated by dotted lines in Fig. 4, as will hereinafter more fully appear in the description of the operation. To the laterally-projecting flanges of the bar *c* is pivotally secured a series of cam-heads *d*, having pointed outer ends and normally held in quite close contact, as best shown in Fig. 9, by light springs *d'*, secured to said bar *c*.

Each actuating-slide *b* is provided with a cam stud or projection *d²*, which normally stands between the beveled ends of two adjacent cam-heads *d*. The series of cam-heads *d* act as an escapement to permit the movement of only one actuating-slide at a time. When one of the actuating-slides is moved toward its set position, its cam-stud *d²* will force its way between the adjacent slides in their normal positions. When, however, an actuating-slide has been moved completely to its set position, its cam-stud *d²* will have passed clear of the wide portions of the coöperating cam-heads *d*, as shown by full lines in Fig. 5, and any other actuating-slide may then be moved to its set position. When the restoring-bar *c* is moved into its resetting position, the escapement cams or heads *d* will be raised into inoperative positions, as indicated by dotted lines in Fig. 4.

The limiting lock mechanism is best indicated in Figs. 4, 5, and 9, wherein the character *f* indicates a vertical shaft or spindle, which need not be rotary, but is suitably supported at its upper and lower ends in the horizontal partition-plates 11 of the compartment-box 8. On this spindle *f* is placed a series of loose thimbles *f'*, which, as shown, are provided with longitudinal grooves *f²*. Between the thimbles *f'* are placed thin ratchet-wheels *f³*, which are provided with reversely-projecting pins *f⁴*, as shown, two projecting in each direction and engaging the grooves *f²* of adjacent thimbles *f'*. In this way a whole group of thimbles *f'* and ratchet-wheels *f³* are locked together for rotation. The thimbles *f'* and ratchet-wheels *f³* are grouped to correspond to the grouping of the registers and register-actuating slides. To illustrate, suppose the particular group to be appropriated to the office of the judge of the district court, there being twelve candidates and four judges to be elected. In this case a group of twelve ratchet-wheels *f³* will be connected by the thimbles *f'* for common rotation. At least one ratchet-wheel of each group is connected by a spring *f⁵* to a suitable portion of the box 8, as best shown in Figs. 4 and 5. Each ratchet-wheel of the group is provided with a circumferentially-adjustable lock-lug *f⁶*, which when moved to its limit will pass under the lug *b¹²* of the coöperating slide *b* and against the stop-shoulder *b¹³* thereof, and thereby lock the said slide in its normal position by preventing disengagement of its detent *b⁴* from the coöperating shoulder 10^b.

In the concrete illustration just assumed it will require four steps of movement to

throw the lock-lugs f^6 into their locking positions. As is evident, whenever an actuating-slide b of the group is moved the nose b^6 of the dog b^5 of the said slide will engage with a tooth of the cooperating ratchet-wheel f^3 and will impart a step movement thereto. It is also evident that the actuating-slides of the group may be operated in any order and that when the fourth has been moved to its set position all of the rest of the slides of the group will be locked in their normal positions, as just indicated.

The groups of limiting-stops or ratchet-wheels f^3 are separated by spacing-brackets f^7 , which, as shown, have hubs f^8 surrounding the spindle f and are provided with dovetailed projections f^9 , which work adjustably in the dovetailed groove of a vertically-disposed retaining-bar f^{10} , secured on a hinged side 8^a of the box 8. The side 8^a is normally held by a spring-latch 8^b , and when it is swung outward it affords easy access to the internal mechanism and particularly to the ratchet-wheels f^3 . Each bracket f^7 is provided with a stop-pin f^{11} , (see Figs. 4, 5, and 9,) which is adapted to engage with the lock-lug f^6 of the adjacent ratchet-wheel f^3 of one of the groups, and to thereby determine the normal positions of the entire group of said wheels f^3 . By moving the stop-pin f^{11} into different holes f^{12} in the bracket f^7 , the ratchet-wheels of a particular group may be so set that their lock-lugs f^6 will be moved into locking positions by one movement or by a greater number of movements, according to the number of votes which may be properly recorded for the particular office to which the group is appropriated.

The lower trunnion c' of each restoring-bar c is provided with an arm c^2 , which arms are connected by long link c^3 , as best shown in Fig. 6. To one of the said arms c^2 (left member, as shown in Fig. 6) is connected a double-ended hand-lever $p p'$. The end p' of said lever projects into the booth and the end p projects outside of the same and is provided with a latch p^2 , which is engageable with one or the other of a pair of notches $p^3 p^4$ of a latch-segment p^5 , suitably secured on the bottom of the lower-compartment border 11.

For cooperation with each series of actuating-slides b is a notch lock-bar g , which is provided with lock-lugs g' , having beveled edges g^2 , which extend in the common direction. As shown, the reduced ends g^3 of the said bar g work through the horizontal partition-boards 11, and a light coil-spring g^4 , placed on the lower end g^3 , yieldingly holds the bar g upward with freedom for a slight downward movement when force is applied thereto. The upper ends g^5 of the said lock-bars g are provided with cam portions g^5 . Extending horizontally just above the cam ends g^5 of the lock-bars g is a so-called "selecting-bar" s , which, as shown, has perforations s' , through which the said ends g^4 and g^5 are adapted to be passed. When the lock-bars

g are in normal positions, the beveled portions g^2 of the lugs g' on the bars g stand in line, one with each of the shoulders b^{14} of the actuating-slides b , as best illustrated in Figs. 7 and 9. As best illustrated in Fig. 2, the cam ends g^5 all stand normally out of line with the perforations s' of the cut-out bar s . The selecting-bar s is further provided with depending cam-lug s^2 , which operates, as hereinafter described. Springs s^4 yieldingly hold the bar s central.

In the illustration given in Fig. 2 only the Republican and Democratic parties are shown as represented at the primary election, and hence two series of registers and register-actuators are assigned to each party. By reference to Fig. 2 it will be noted that the cam ends g^5 of the lock-bars which are assigned to the Republican party are beveled in one direction, while those assigned to the Democratic party are beveled in the other direction.

With the above-described arrangement it is evident that when one of the actuating-slides b is moved into a set position its shoulder b^{14} engages one of the beveled lugs g^2 of the cooperating lock-bar and will force upward that particular lock-bar. Under its upward movement the said raised lock-bar by a camming action on the selecting-bar s will move the same endwise and enter the cooperating perforation therein, thus locking down such of the lock-bars as are appropriated to the other political party. This makes it impossible for the voter to vote a split ticket. However, the said movement of the selecting-bar causes certain of the cam-lugs s^2 to engage the cam ends g^5 of such of the lock-bars as belong to the party not selected by the voter in his manipulation of the first actuating-slide, and thereby forces downward such lock-bars and moves the lugs g' thereof directly in front of the shoulders b^{14} of the corresponding actuating-slides, and thus prevent even slight movements of the said slides.

In Fig. 3^a the so-called "selecting-bar" is formed in sections s^6 , mounted to slide on a fixed supporting-rod s^7 , and the said sections are yieldingly held in their normal intermediate positions by a pair of coiled springs s^8 . In this arrangement the upper ends g^5 of the lock-bars g are beveled in both directions, and the adjoining edges of said bar-sections s^6 are beveled in reverse directions, as at s^9 , for cooperation with said reversely-beveled ends g^5 . With this arrangement when any one of the bars g is raised all of the other lock-bars g will be locked down by the said sections s^6 . This construction therefore adapts the machine for use where three, four, or more political parties are represented at the primary election.

The several printed tickets indicated by the character z may be held in proper position on the faces of the several compartment-boxes 8 by means of projecting clips 8^a . The tickets will of course be so adjusted that the names of the candidates thereon will stand opposite

to or in line with the key-heads b' of the slides b which are appropriated to the said candidates.

When an actuating-slide b is moved from its normal into its set position, its cam-surface b^9 , acting on the edge of the restoring-bar c , throws the pawl b^2 out of engagement with or in the line of movement of the ratchet-teeth a' of the corresponding register, and should the said actuating-slide be returned individually to its normal position said pawl will by the said cam be again carried out of the path of movement of the said ratchet-teeth. After the voter has set such of the actuating slides as represent all of the votes to which he is entitled he takes hold of the end p' of the double-ended hand-lever $p p'$ and moves the same until its latch p^2 locks with the notch p^4 of the segment p^5 . This movement of the said hand-lever simultaneously rocks the several restoring-bars c , so that the swinging edges of the same engage the bearing-surfaces b^{10} of the set-slides b and force the said slides back to their normal positions, under which movement the pawls b^2 are rendered operative on the respective registers.

When the limiting-ratchets f^7 are released from the dogs b^5 , they fly back to their normal positions under the action of their springs f^5 . Attention is here called to the fact that while the beveled detents $b^3 b^4$ do not positively lock the said actuating-slides to the lock-shoulder 10^b they do, nevertheless, under the springs b^8 prevent the said slides from being thrown back to their normal positions under the action of the springs f^5 .

From what has above been said it will be understood that I consider the so-called "party-selecting" device a broadly-new feature and desire to claim the same as such. In what I consider the best form of machine keys which perform other functions are used as parts of the party-selecting device; but it will of course be understood that it would be within the scope of my invention to operate the party-selecting device by keys provided solely for that purpose. It will also be understood that various other alterations may be made within the scope of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A voting-machine adapted for use at elections where it is necessary to select one of the political parties, which mechanism is provided with means whereby the selection of the desired party secures or renders inoperative the voting mechanisms appropriated to the other political party, substantially as described.

2. The combination with several series of registers and register-actuators appropriated to different political parties, of means whereby, when any one of the actuators of the one series is operated, all of the actuators of the other series will be locked, substantially as described.

3. The combination with several series of

registers and register-actuators, appropriated to different political parties, such as the Republican and Democratic, and subgrouped for the different offices, and a party-selecting device comprising a lock for each series of actuators, and means whereby, when one of said locks has been selected as an inoperative member, all of the other locks will be secured in operative or locking positions, substantially as described.

4. The combination with several series of keys and key-actuators, appropriated to different political parties, such as Republican and Democratic, and subgrouped for the different offices, of a normally operative lock-bar for each series of actuators, and a cut-out bar operated by the movement of one of the said locking devices, to lock the other said locking devices in their operative positions.

5. The combination with several series of registers and register-actuators, appropriated to different political parties, such as Republican and Democratic, and subgrouped for different offices, of a locking device for each series of actuators normally standing in position to render the same inoperative, and means whereby, when one of the said locking devices is moved from its operative position, the other is locked in its operative position.

6. The combination with several series of registers and register-actuators appropriated to different political parties, such as Republican and Democratic, and subgrouped for different offices, of a locking device for each series of actuators, normally standing in position to render the same inoperative, but movable into operative positions by any one of the several actuators of the corresponding series, and means whereby, when one of the said locking devices is moved from its operative position, the other is locked into its operative position.

7. The combination with a series of registers and register-actuators, subgrouped for the different offices, of a locking device normally standing in position to render said actuators inoperative, and a key or finger-piece by means of which said locking device may be moved into an unlocking position.

8. The combination with several series of registers and register-actuators appropriated to different political parties, such as Republican and Democratic, and subgrouped for different offices, of a notched locking-bar for each series of actuators, normally locking the same, means for moving said locking-bars into inoperative positions, and means whereby the movement of the one lock-bar, locks the other lock bar or bars in their operative positions.

9. The combination with several series of registers and register-actuators appropriated to different political parties, such as Republican and Democratic, and subgrouped for the different offices, of a notched lock-bar for each series of actuators movable into inoperative positions by the movement of any one of the several actuators of the corresponding se-

ries, and a cut-out device operated by the movement of one of the lock-bars into its operative position, to lock the other locking-bars in their operative position.

- 5 10. The combination with several series of registers and register-actuators appropriated to different political parties, such as the Republican and Democratic, of a lock-bar for each series of actuators having stop-lugs normally out of the paths and cam-surfaces normally in the paths of said actuators, and intermediate connections between the several lock-bars whereby, when one of the said lock-bars is moved, under the action of an actuating-slide of the coöperating series, certain
10 other of the said lock-bars will be so moved that their lock-lugs will stand directly in the paths of the corresponding actuators, substantially as described.

11. The combination with several series of registers and register-actuating slides appropriated to the different political parties, such as Republican and Democratic, of a lock-bar r for each series having the lock-lugs r' with cam-surfaces r^2 , and having also the cam ends r^4 , of the selecting-bar yieldingly held in an intermediate position overlying the said ends r^4 and provided with cam-surfaces for coöperation therewith, so arranged that when one lock-bar is raised, the other will be lowered, substantially as described. 20 25 30

In testimony whereof I affix my signature in presence of two witnesses.

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Witnesses:

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F. D. MERCHANT.