

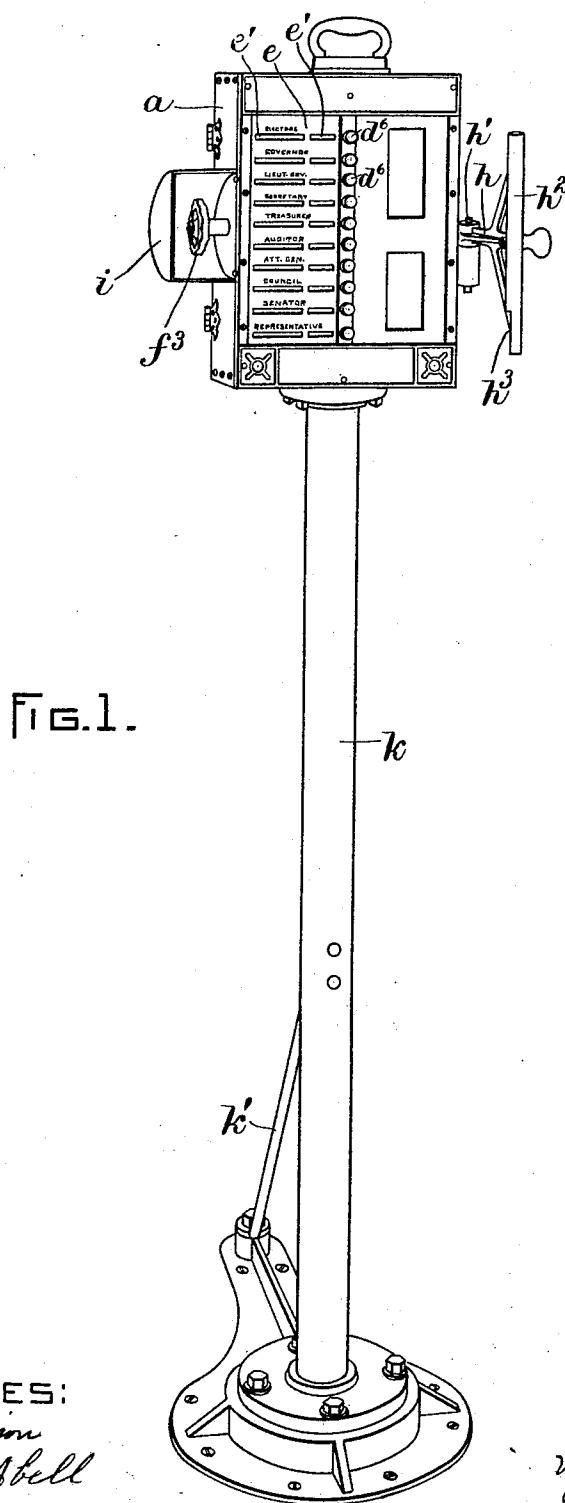
(No Model.)

5 Sheets—Sheet 1.

J. McTAMMANY.
VOTING MACHINE.

No. 550,055.

Patented Nov. 19, 1895.



WITNESSES:
A. D. Harrison
Rollin Abell

INVENTOR:
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Atty.

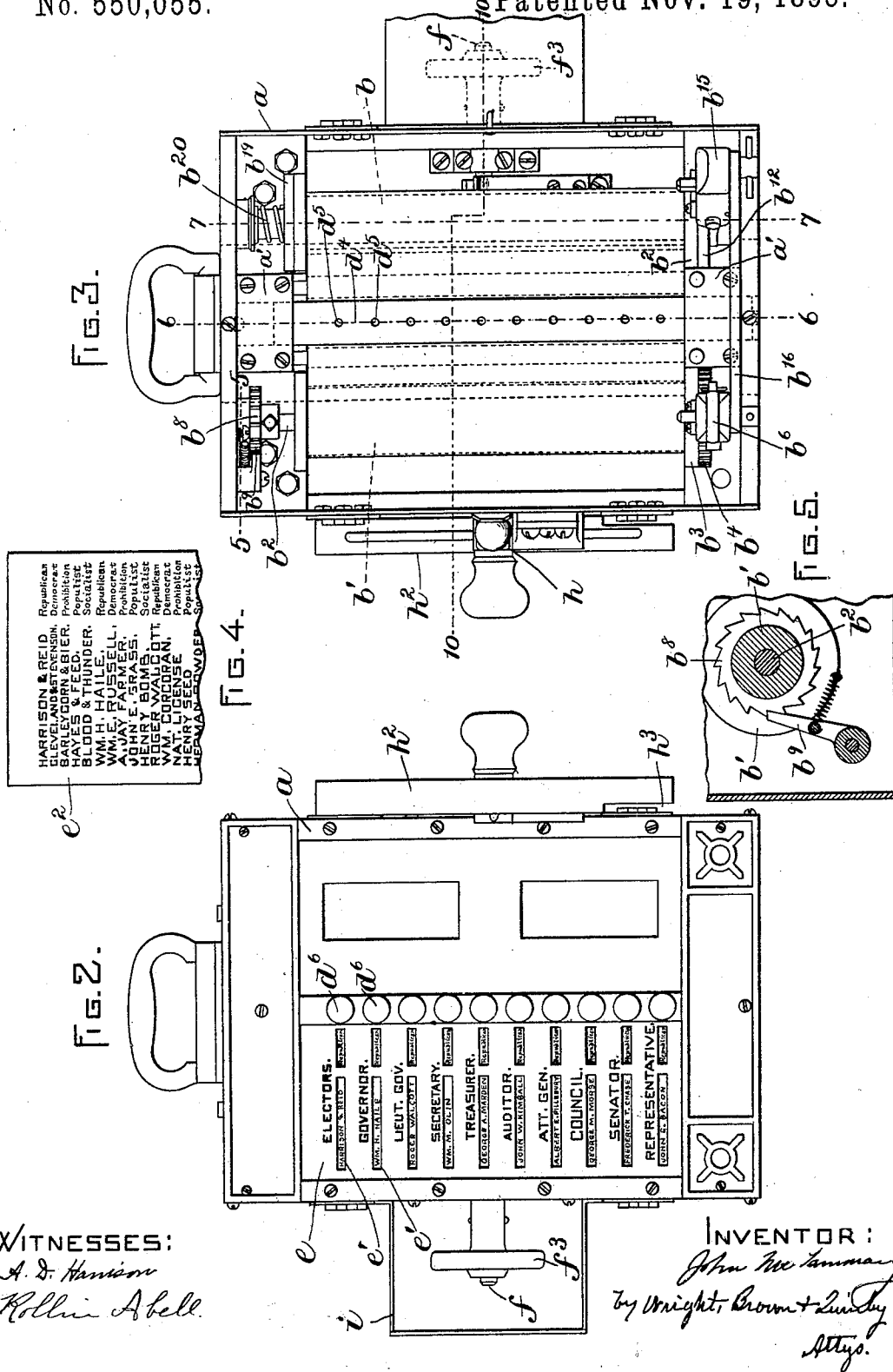
(No Model.)

5 Sheets—Sheet 2.

J. McTAMMANY.
VOTING MACHINE.

No. 550,055.

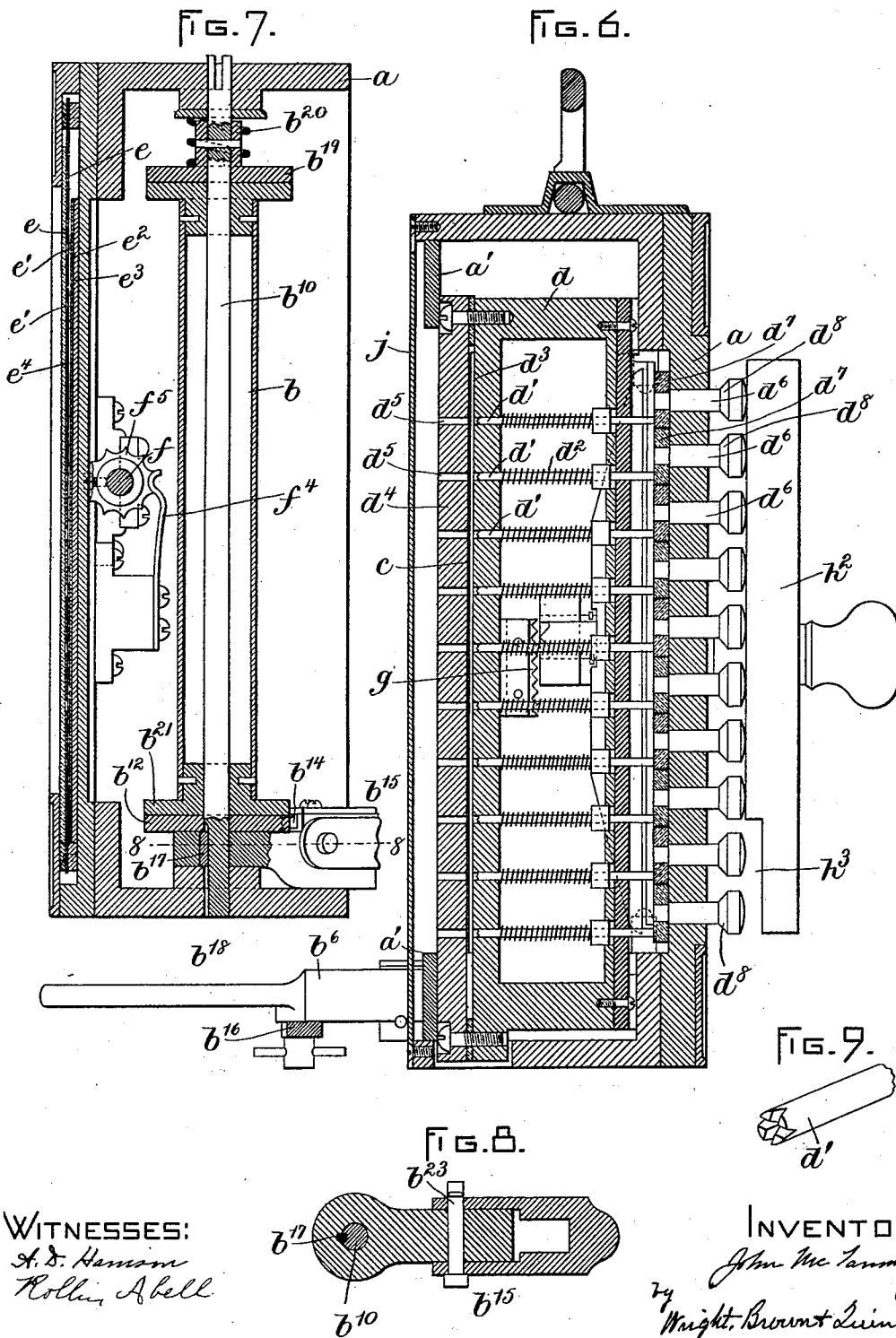
Patented Nov. 19, 1895.



J. McTAMMANY.
VOTING MACHINE.

No. 550,055.

Patented Nov. 19, 1895.



WITNESSES:
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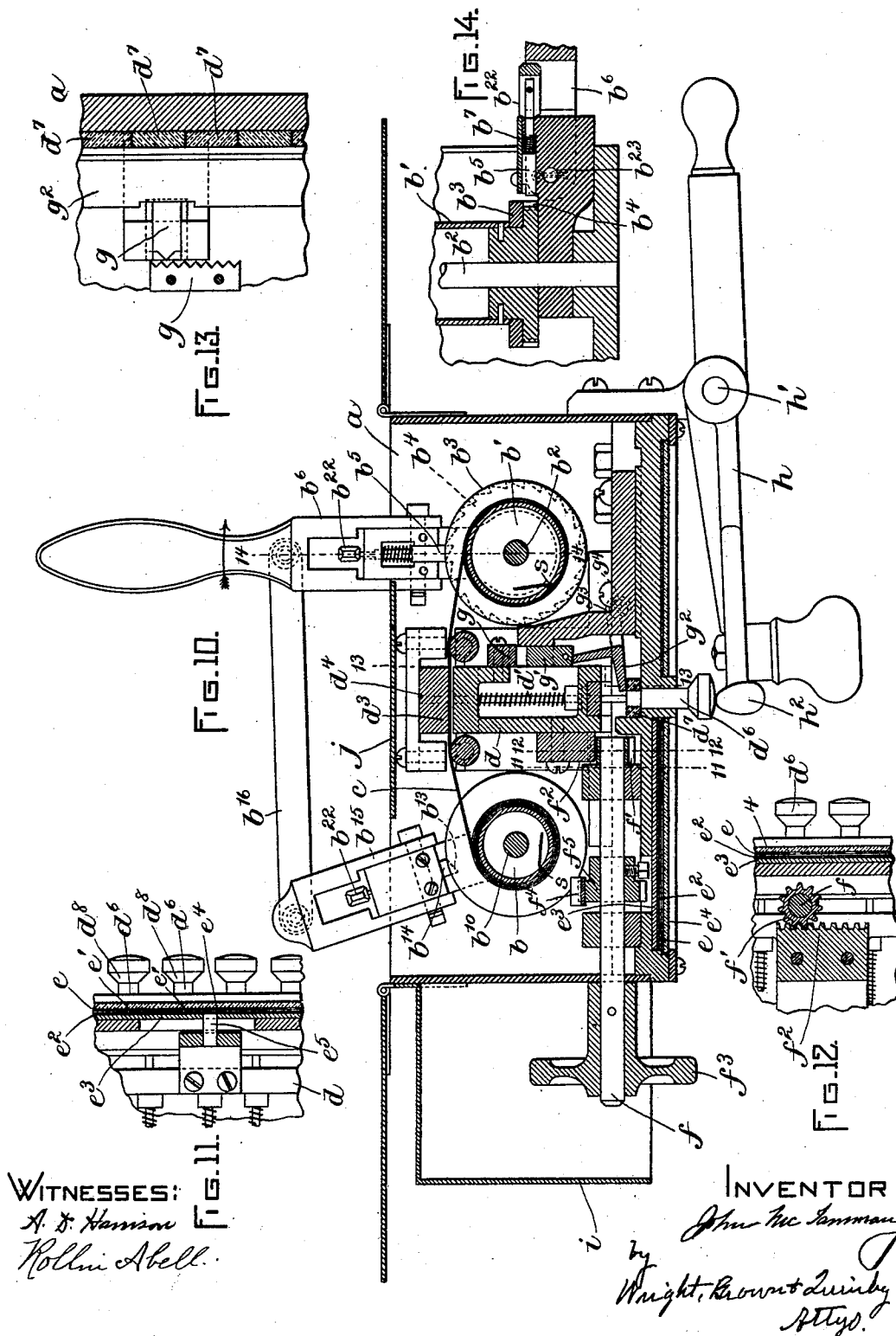
(No Model.)

5 Sheets—Sheet 4.

J. McTAMMANY.
VOTING MACHINE.

No. 550,055.

Patented Nov. 19, 1895.



UNITED STATES PATENT OFFICE.

JOHN MCTAMMANY, OF SPENCER, MASSACHUSETTS.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 550,055, dated November 19, 1895.

Application filed February 11, 1895. Serial No. 537,986. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCTAMMANY, of Spencer, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

This invention has for its object to provide a simple, reliable, and effective voting-machine adapted to be operated by the combined efforts of a number of voters and an election official to produce on a single tally-sheet an accurate record of the votes of all of said voters, the record being in such form that it may be counted either mechanically by a machine provided for that purpose or by hand.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this application, Figure 1 represents a perspective view of a voting-machine embodying my invention. Fig. 2 represents a front elevation, and Fig. 3 a rear elevation, of the same. Fig. 4 represents a view of a portion of the movable ballot sheet or section. Fig. 5 represents a section on line 5 5, Fig. 3. Fig. 6 represents a section on line 6 6, Fig. 3. Fig. 7 represents a section on line 7 7, Fig. 3. Fig. 8 represents a section on line 8 8, Fig. 7. Fig. 9 represents a perspective view of one of the punches. Fig. 10 represents a section on line 10 10, Fig. 3. Fig. 11 represents a section on line 11 11, Fig. 10. Fig. 12 represents a section on line 12 12, Fig. 10. Fig. 13 represents a section on line 13 13, Fig. 10. Fig. 14 represents a section on line 14 14, Fig. 10. Fig. 15 represents a view of the tally-sheet.

In the drawings, *a* represents the casing, in which are journaled two vertical rolls *b b'*, with which the ends of the tally-sheet *c* are engaged. Means are provided whereby an official designated for that purpose may partially rotate said rolls after each voter has recorded his vote on the tally-sheet, as hereinafter described, and thus move the sheet endwise to a position to receive the perforations made by the next voter.

d represents a vertically-movable punch-carrier or carriage having a series of punches *d'*, which are movable horizontally in orifices in said carriage and are normally retracted

from the tally-sheet by springs *d²*. The punch-carrier is composed of a frame movable vertically in guides *a' a'*, at the upper and lower ends of the casing, and provided with a vertical slot or guide *d³*, Fig. 10, for the tally-sheet, the portion of the frame forming the rear side of said slot being a bar *d⁴*, provided with holes or female punches *d⁵*, Fig. 6, registering with the punches, the said bar constituting a punch-bed co-operating with the punches in cutting out small disks from the tally-sheet and thus forming clean-cut perforations therein, adapted to co-operate with a pneumatically-operated vote-counting apparatus, through which the tally-sheet is passed after its completion, each perforation admitting air to a pneumatic device which operates a registering mechanism.

d⁶ d⁶ represent a series of push-pieces which are movable in orifices in the front of the casing, each having an elongated inner end or head *d⁷*, Fig. 6, adapted to bear on one of the punches and force the same into the tally-sheet when the push-piece is pushed inwardly, the elongation of the head *d⁷* enabling each push-piece to act on the accompanying punch when the same is in any position to which it may be adjusted by vertical movements of the punch-carrier, as hereinafter described.

At the front of the casing is a divided or two-part ballot composed of a fixed sheet *e*, Figs. 2, 7, and 11, affixed to the casing and bearing the names of the offices, candidates which are to be voted for, and having slots *e' e'*, Figs. 4 and 11, and a movable ballot-sheet *e²* behind said fixed sheet *e* and on which are printed the names of the candidates and the names of the parties they represent, so that the same may show through the slots of sheet *e*. The movable ballot-sheet *e²* is affixed to a holder or slide *e³*, fitted to move vertically in a guide or way at the front of the casing behind a glass guard or protector *e⁴*, which prevents access to the two-part ballot and permits inspection of the same. Said holder or slide is engaged with the punch-carrier *d* by means of a stud or pin *e⁵*, Fig. 11, affixed to the said carrier and entering an orifice *e⁶* in the holder or slide *e³*. There is a punch and a punch-operating push-piece for each office, the said push-pieces being arranged in line with the slots in the fixed bal-

lot-sheet and having no vertical movement, while the punches operated by said push-pieces are vertically movable, as stated, with the movable tally-sheet.

5 f represents a shaft which is journaled in the casing and is provided within the casing with a pinion f' , Figs. 10 and 12, meshing with a rack f^2 on the punch-carrier and with an external operating-handle f^3 , whereby it
10 may be rotated by the voter to raise or lower the punch-carrier and the movable part or section of the ballot. The voter is thus enabled to move the movable section of the ballot, so that the names of the candidates of
15 any party represented will appear through the slots e' . Thus in one adjustment of the said movable section the names of all of the Republican candidates will appear, while in another adjustment the names of all the Democratic
20 candidates will appear, and so on. The punch-carrier and punches are adjusted with the movable section of the ballot, so that the punches always maintain the same relation to the said movable section. A yielding
25 detent device is provided which yieldingly detains the carriage in each position in which it is operative, said device comprising a spring-dog f^4 , Figs. 7 and 10, with a curved
30 free end, and a wheel f^5 affixed to the shaft f , said wheel having a series of concavities on its perimeter arranged to engage the dog f^4 when the carriage is in each of its operative
35 positions, so that some added force will be required to move it to the next position.

35 The tally-sheet c , Fig. 16, is divided into sections representing the different offices, there being in this instance one section for votes for governor, another for votes for lieutenant-governor, and so on, the number of
40 said sections being equal to the number of punches. Each section is subdivided by longitudinal ruled lines into spaces representing the different candidates for the same office, as Republican, Democratic, &c. Said sections
45 and spaces are so arranged relatively to the punches that the punches will act on the spaces devoted to the Republican candidates when the carrier is in one operative position, and on the spaces devoted to the Democratic
50 candidates when the carrier is in another operative position, and so on, provision being made for holding the punch-carrier in as many operative positions as there are parties represented on the ballot.

55 The tally-sheet-receiving roll b' is affixed rigidly to the shaft b^2 that supports it and is provided at its lower end with a head or flange b^3 , Fig. 10, on which is formed a ratchet b^4 , which co-operates with a spring dog b^5 , movable in a guide in the feed-operating handle
60 or lever b^6 , said dog being pressed yieldingly against the ratchet by a spring b^7 , Fig. 14. The lever b^6 projects from the rear of the casing and is intended to be manipulated by an
65 official whose duty it is to feed the tally-sheet along after each voter has made his record by punching the sheet, as above described.

When said lever is moved in the direction indicated by the arrow in Fig. 10, the dog b^5 engages the ratchet b^4 and partially rotates
70 the receiving-roll in the same direction, thus causing an endwise movement of the tally-sheet, and when the lever is moved in the opposite direction the said dog slips over the ratchet, backward rotation of the receiving-roll, excepting to a limited extent for a purpose
75 hereinafter described, being prevented by a ratchet b^8 , Fig. 5, affixed to the shaft of the receiving-roll above the latter and a spring-pressed pawl b^9 , pivoted to the casing and engaging said ratchet.
80

The shaft b^{10} , Fig. 7, of the delivering-roll is provided with a flange b^{12} , mounted loosely on said shaft, said flange having a notch or recess b^{13} , (see dotted lines in Fig. 10,) adapted
85 to engage a spring-pressed dog b^{14} , mounted on a lever b^{15} , which is connected by a rod or link b^{16} with the operating-lever b^6 . Said lever b^{15} has at its inner end a socket receiving the shaft b^{10} , which supports the delivering-roll, the lever being connected with said shaft
90 by a spline b^{17} , Figs. 7 and 8, and groove b^{18} , which permit a slight vertical endwise play of the shaft b^{10} . The delivering-roll is mounted to rotate independently of the shaft
95 b^{10} and is located between the flange b^{12} and another flange b^{19} , Figs. 3 and 7, which is affixed rigidly to the shaft above the delivering-roll, the heads of the said roll being in contact with the flanges b^{12} and b^{19} . A spring b^{20} ,
100 interposed between the upper flange b^{19} and the casing a , exerts downward pressure on the flange b^{19} and through the latter on the shaft b^{10} , and the delivering-roll thus pressing the lower head b^{21} of said roll against the
105 flange b^{12} , this pressure being permitted by the described endwise play of the shaft b^{10} . The head b^{21} and flange b^{12} therefore act as friction-clutch members, which cause the delivering-roll to rotate with the flange b^{12} when
110 the latter is rotated by a movement of the lever b^{15} .

When the operating-lever b^6 is moved in the direction indicated by the arrow in Fig. 10 the receiving-roll is rotated positively in the same
115 direction by the pawl b^5 , and the delivering-roll is also rotated in the same direction by the intervening portion of the tally-sheet, the frictional connection between the delivering-roll and its shaft permitting said roll to slip
120 to the extent required to compensate for the constantly-increasing variation between the diameters of the two rolls. The said movement of the lever b^6 is imparted through the link b^{16} to the lever b^{15} , and the contact between the dog b^{14} on the lever b^{15} and the loose
125 flange b^{12} causes said flange to move in the same direction with the rolls. When the lever b^6 is moved in the opposite direction, it positively rotates the flange b^{12} backwardly through the link b^{16} , lever b^{15} , and dog b^{14} , said
130 flange by its frictional connection with the delivering-roll rotating the latter backwardly. The delivering-roll, acting in turn through

the intervening portion of the tally-sheet, rotates the receiving-roll backwardly as far as the stop-pawl b^9 and ratchet b^8 will permit, said pawl and ratchet being adjusted, as above stated, to permit a limited backward rotation of the receiving-roll. When the backward rotation of the receiving-roll is stopped by the engagement of said pawl and ratchet, the backward rotation of the delivering-roll is also stopped by the intervening portion of the tally-sheet, so that the rolls are stationary during the latter part of the backward movement of the levers b^6 and b^{15} and flange b^{12} . The said levers b^6 and b^{15} , link b^{16} , dogs b^5 b^{14} , ratchet b^4 , and flange b^{12} constitute a roll-operating mechanism whereby the rolls are rotated alternately forward and backward, so that the tally-sheet is moved alternately in opposite directions and is given a longer movement in the direction that winds it onto the receiving-roll than in the opposite direction, to the end that the sheet may be gradually transferred to the receiving-roll and yet be moved backward after every forward movement sufficiently to prevent the record made by any voter from following the record made by the preceding voter in regular numerical order. I thus prevent an observer from identifying the record made by any voter by counting his number in the procession of voters and then counting the columns in vertical rows of perforations until the same number is reached. It will be seen that by providing for the alternate forward and backward movements of the tally-sheet, the backward movements being shorter than the forward movements, the records made by the different voters are so irregularly disposed that identification of any voter's record by the method above described is practically impossible, because the record made by a voter after the longer or forward movement of the sheet is moved backwardly by the shorter or backward movement of the sheet and therefore occupies a position nearer the initial or starting end of the sheet than the record made by the next voter, whereas if the sheet were moved progressively in one direction each successive record would be farther from the initial end of the sheet. The difference between the length of the forward and backward feed movements prevents more than one record being made in one place and insures the necessary progressive movement of the sheet.

To prevent a voter from pressing in a push-piece while he is moving the punch-carrier I provide a safety device which is actuated by any movement of the punch-carrier to force outwardly any push-piece that may at any time be pressed inwardly. Said safety device consists of a serrated plate g , Figs. 10 and 13, affixed to the punch-carrier, a slide g' , movable in a fixed guide toward and from the front of the casing and provided with a spur arranged to bear on the serrated edge of the

plate g , and a vertical angular plate g^2 , having ears g^3 , Fig. 10, connected by pivots g^4 with the casing a , one wing of said plate bearing against the inner ends or heads of the push-pieces and the other end against the slide g' , as shown in Figs. 10 and 13, the said angular plate g^2 being arranged so that outward pressure on the slide g' will exert outward pressure on the push-pieces through said plate.

It will be seen that an inward pressure on either of the push-pieces will press the slide g' against the serrated plate g on the punch-carrier, so that if the voter attempts to raise or lower the punch-carrier while pressing in a punch the movement of the carrier will cause the serrated plate to force the pressed push-pieces outwardly far enough to prevent it from engaging the accompanying punch with the tally-sheet.

h represents a "straight-ticket" lever, which is pivoted at h' to an ear on the exterior of the casing and is provided with a head h^2 , arranged to bear on all the push-pieces and press the same simultaneously, thus enabling the voter to make his record by a single movement if he desires to vote a straight ticket. Said lever may be displaced, as shown in Fig. 1, when its use is not required. The lower end of the head h^2 may be provided with a depression h^3 in its acting face, Fig. 6, said depression coinciding with the two lower push-pieces in case one of said two push-pieces represents "Yes" and the other "No" on any general question requiring a "Yes" and "No" vote, such as a constitutional amendment or the license question. Said depression prevents the "Yes" and "No" pieces from being operated by the lever. When the ballot does not contain such question, the depression h^3 may be filled with a suitable filling-piece, or another lever may be employed without a depression in its head.

The operation is or may be as follows: A voter desiring to vote a straight ticket first adjusts the movable part of the ballot to bring the names of his party candidates into the slots of the fixed part, the punches being correspondingly adjusted by the same operation, and then presses the push-pieces inwardly either by the use of the lever or separately, thus making a vertical series of holes in the tally-sheet, said holes constituting the record of his vote. The official in charge then feeds the tally-sheet along and the next voter makes his record, and so on. In case a voter desires to vote a "split ticket" he adjusts the movable part of the ballot while making his record so that his vote for the candidate for one office may be in the Republican space, while his vote for the candidate for another office may be in the Democratic space, and so on.

After the closing of the polls the tally-sheet may be quickly removed by first winding it entirely onto one roll and then unwinding it

from that roll, the shaft of each roll being formed at one end to engage a crank that may be used to wind up the sheet. The dogs b^5 b^{14} on the levers b^6 b^{15} are adapted to be held out of engagement, respectively, with the ratchet b^4 and flange b^{12} by means of cam-levers b^{22} , one of said levers being pivoted to the rear end of each of the said dogs and formed to bear on the end of the casing which contains the dog. When the lever is turned to the position shown in Fig. 14, it retracts the dog.

The tally-sheet may be conveniently engaged with the rolls by means of slots s s , Fig. 10, formed in the rolls for the reception of the ends of the sheet.

The levers b^6 b^{15} are made in sections, the outer section of each lever being pivoted at b^{23} to the inner section, so that the levers may be swung upwardly into the casing when not in use.

The heads of the push-pieces d^6 are provided with conical inner faces d^8 , which are intended to prevent a limitation of the inward movement of the push-piece and punch by a rubber band or other like obstruction which might be interposed maliciously between the head of the push-piece and the front of the casing. The conical face d^8 would nullify the effect of such obstruction by entering it and displacing it outwardly.

A shield i , Figs. 1, 2, and 10, is attached to the casing in position to screen the hand-wheel f^3 and the hand of the voter, and thus prevent bystanders from noting the manipulation of the said wheel and ascertaining the nature of the vote.

To further insure secrecy I provide a shield j , Fig. 10, at the back of the casing, covering the back of the punch-carrier and preventing observation of its position, said shield being a plate detachably secured to the back of the casing, so that it can be readily removed.

It will be observed that my machine is provided with a two-part vote-recording mechanism, one part of which includes the tally-sheet and the mechanism for feeding it, while the other part includes the punches and the means for operating them, one of said parts being adjustable by the voter, so that the same set of punches may be used to record the votes for all parties and candidates.

In Fig. 1 I show the machine mounted on a supporting-standard k , having a brace k' arranged to resist the pressure exerted on the push-pieces.

Each punch d' is of a cylindrical form and is provided on its acting end, as shown in Fig. 9, with intersecting V-shaped grooves d^{10} d^{10} , which form teeth or serrations, enabling the punch to perforate the paper with less resistance than if the cutting-end of the punch were a flat surface.

I claim—

1. In a voting machine the combination of a casing, supports therein for a tally-sheet,

mechanism for feeding the latter, a punch carrier movable transversely of the sheet and having a series of punches to act on the latter, means for adjusting the punch-carrier to change the transverse relation of the sheet and the punches, and means for causing the punches to puncture the sheet, substantially as and for the purpose set forth.

2. In a voting machine the combination of a casing, supports for a tally-sheet within the casing, mechanism for feeding said sheet, a movable punch-carrier within the casing having a series of punches, mechanism controlled by the voter for adjusting the punch-carrier and its punches, a series of push knobs movable in fixed guides in the casing, and adapted to operate said punches, substantially as and for the purpose set forth.

3. In a voting machine, the combination of a casing, supports for a tally-sheet within the casing, mechanism for feeding said sheet, a punch-carrier within the casing having a series of punches arranged to perforate the tally-sheet, said carrier being movable transversely of the sheet, mechanism controlled by the voter for adjusting the punch carrier to determine the character of his vote by the transverse location of the punch-holes in the sheet, and a series of push-knobs one for each punch movable in guides in the casing, and each having an inner face extended over the full area of movement of the punch with which it cooperates, whereby an operative relation between it and the accompanying punch is maintained throughout all the adjustments of the latter, substantially as and for the purpose specified.

4. In a voting machine, the combination of a casing, having a slotted face-plate, supports for a tally-sheet within the casing, mechanism for feeding said sheet, a punch-carrier within the casing having a series of punches arranged to perforate the tally-sheet, said carrier being movable transversely of the sheet, mechanism controlled by the voter for adjusting the punch carrier to determine the character of his vote by the transverse location of the punch-holes in the sheet, a series of push-knobs movable in guides in the casing, and co-operating with the punches, respectively, said push knobs being located opposite the slots in the face-plate respectively, and a movable ballot engaged with the punch-carrier and adapted to indicate through the slots of the casing the position of said carrier, substantially as and for the purpose specified.

5. In a voting-machine, the combination of a casing, supports for a tally-sheet within the casing, mechanism for feeding said sheet, a movable punch-carrier within the casing having a series of punches, mechanism controlled by the voter for adjusting the punch-carrier and its punches, a series of push-knobs movable in fixed guides in the casing and adapted to operate said punches, and a two-part indicating ballot composed of a slotted part af-

fixed to the casing and a pointed part engaged with the punch-carrier and movable with the latter behind the slotted part.

6. In a voting machine, the combination of a casing, supports for a tally-sheet within the casing, mechanism for feeding said sheet, a punch-carrier within the casing having a series of punches, an operating shaft journaled in the casing and provided with a pinion meshing with a rack on the punch-carrier, and a yielding detent device whereby the carrier may be yieldingly arrested in each of the operative positions to which it may be adjusted.

7. In a voting machine, the combination of a casing, supports for a tally-sheet, mechanism for feeding said sheet, a punch-carrier movable cross-wise of the sheet and having a series of retracted punches, punch-operating push-knobs movable in fixed guides in the casing, means for moving the punch-carrier cross-wise of the sheet, and push-knob retracting means actuated by movement of the punch-carrier for preventing contact of the punches with the sheet while the carrier is in motion, substantially as and for the purpose specified.

8. In a voting-machine, the combination of a casing, supports for a tally-sheet, mechanism for feeding said sheet, a punch-carrier movable crosswise of the sheet and having a series of retracted punches, punch-operating push-knobs movable in fixed guides in the casing, means for moving the punch-carrier crosswise of the sheet, and means for preventing contact of the punches with the sheet while the carrier is in motion, said means comprising a series of teeth or inclines affixed to the carrier, a slide adapted to be forced outwardly by one of said teeth when the carrier is in motion and a pressure device between said slide and the push-knobs through which either push-knob may be pressed outwardly, as set forth.

9. A voting-machine comprising a tally-sheet, a series of punches adapted to perforate ballot records in said sheet, and means for feeding the sheet endwise first in one direction and then in the opposite direction, one feed movement being longer than the other, whereby the order of the ballot records is made irregular.

10. A voting-machine comprising a tally-sheet, a series of punches adapted to perforate ballot records in said sheet, a delivering and a receiving roll with which the ends of the sheet are engaged, an oscillatory lever having means for positively turning the receiving-roll in one direction to give the sheet a forward feed movement, a back stop whereby a limited backward movement of the receiving roll is permitted, a driver or actuator frictionally connected with the delivering roll, and a connection between said actuator and the oscillatory lever, whereby a backward movement of said lever is caused to rotate the actuator backwardly and thus rotate the de-

livering roll backwardly as far as the said back stop will permit, the sheet being thus given a backward feed movement which is shorter than its forward movement.

11. A voting-machine comprising a tally-sheet, a series of punches adapted to perforate ballot records in said sheet, a delivering roll and a receiving roll with which the ends of the sheet are engaged, a swinging lever having a dog engaging a ratchet on the receiving roll, a back stop arranged to permit a limited backward rotation of the receiving roll, an actuator frictionally engaged with the delivering roll, a swinging lever having a dog adapted to engage said actuator, and a link connecting the two levers.

12. A voting machine comprising a tally-sheet, a series of punches adapted to perforate ballot records in said sheet, a sheet delivering roll and a sheet receiving roll, connected swinging levers having dogs for operating said rolls, and means for holding said dogs retracted and thereby permitting the free rotation of the rolls for the quick transfer-ence of the sheet from one roll to the other.

13. A voting-machine comprising a sheet-delivering roll and a sheet receiving roll, and connected swinging levers having means for actuating said rolls, each lever being composed of jointed sections whereby the levers may be folded within the casing of the machine.

14. A voting-machine comprising in its construction a face-plate provided with slots, a ballot-adjusting hand-wheel f^3 , and a shield i secured to said machine about the wheel f^3 constructed and arranged to conceal said wheel from the view of all except the operator but to permit the hand of the operator to be inserted to manipulate said wheel, substantially as and for the purpose set forth.

15. In a voting machine, the combination of an adjustable ballot having the names of candidates grouped according to office, a series of recorders one for each group of candidates for the same office and each adjustable to cooperative position with any name of the group, a single stationarily located button for each recorder, and means for adjusting the recorders independently of the buttons whereby a single button at one location can be employed to vote for all candidates for the same office, substantially as and for the purpose described.

16. In a voting machine, the combination of a casing, sheet-feeding mechanism therein, a longitudinally subdivided tally-sheet engaged with said mechanism and adapted to be moved endwise thereby, a series of punches arranged crosswise of the sheet and adapted to act on the same, means controlled by the voter for changing the relative positions of the sheet and punches transversely of the sheet, and an adjustable ballot having the names of candidates arranged in a row alongside the series of punches and grouped ac-

ording to offices, the groups corresponding
with the subdivisions of the tally sheet and
there being one punch for each group,—the
several names of one group cooperating with
5 the same punch under different adjustments,
substantially as and for the purpose de-
scribed.

In testimony whereof I have signed my

name to this specification, in the presence of
two subscribing witnesses, this 8th day of 10
February, A. D. 1895.

JOHN MCTAMMANY.

Witnesses:

A. D. HARRISON,
ROLLIN ABELL.