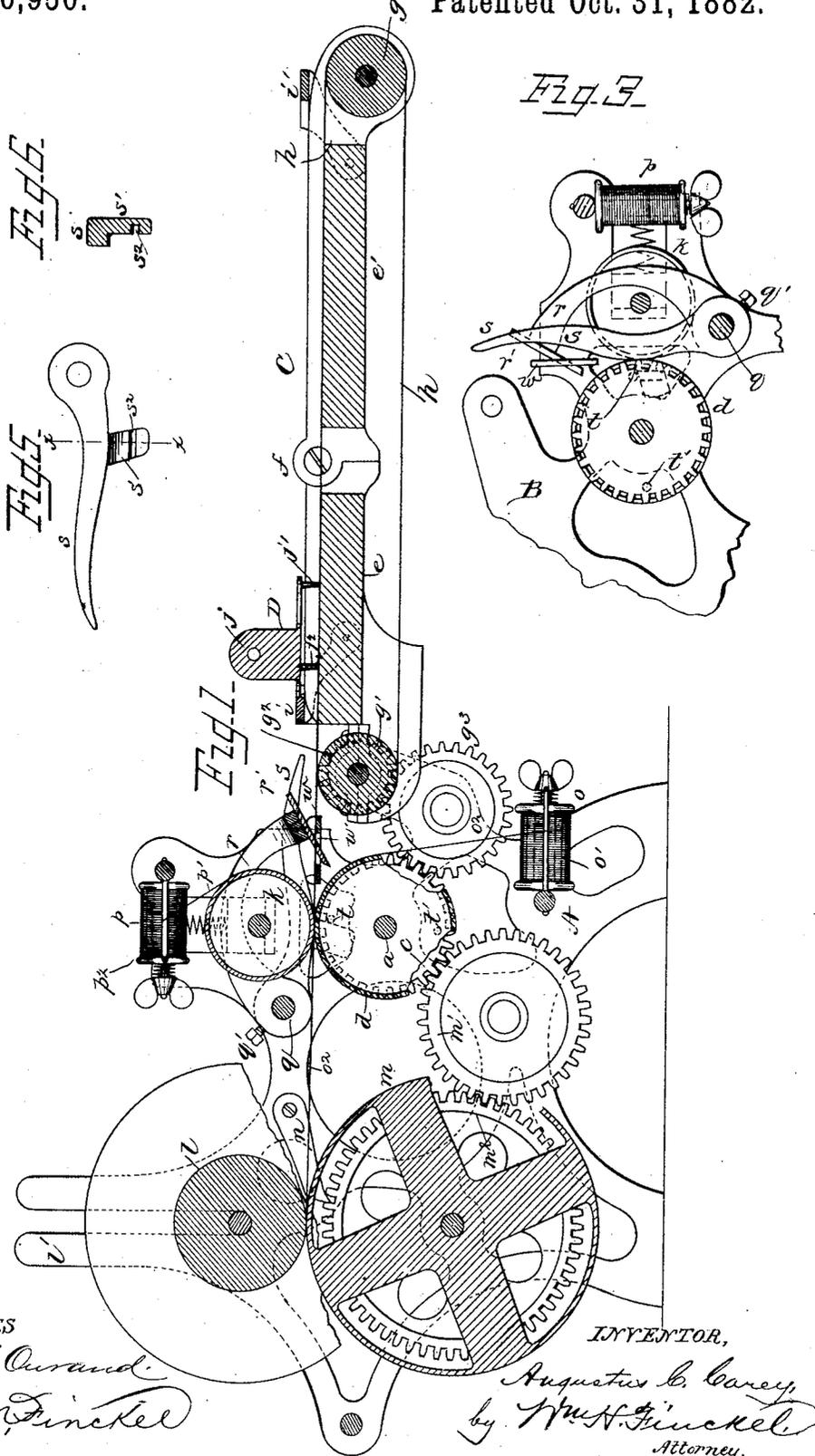


A. C. CAREY.  
VOTING MACHINE.

No. 266,950.

Patented Oct. 31, 1882.



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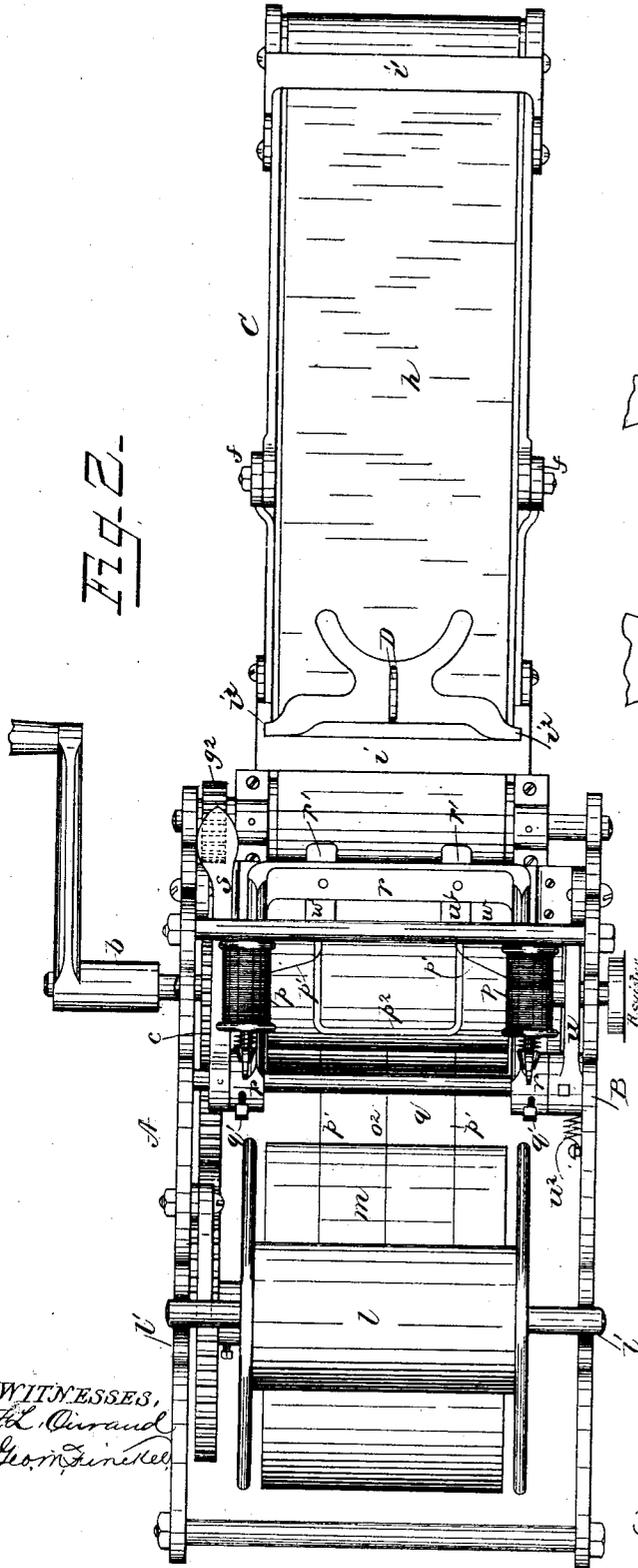


Fig. 2-

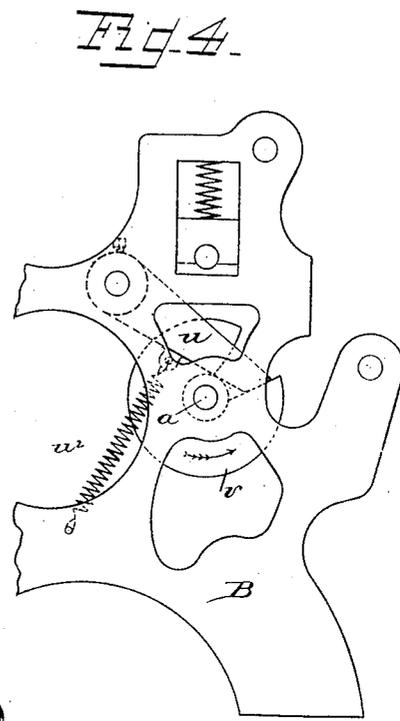


Fig. 4.

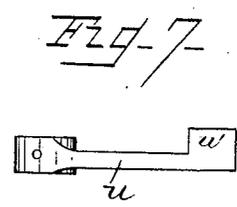


Fig. 7.

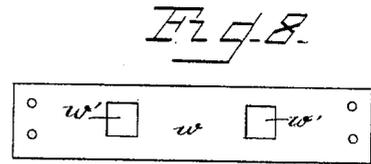


Fig. 8.

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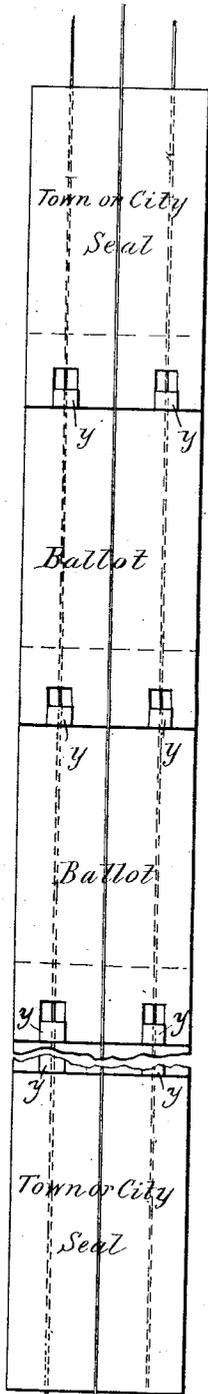
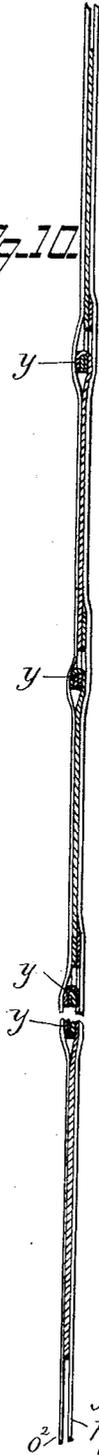


Fig. 9.

Fig. 10.



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# UNITED STATES PATENT OFFICE.

AUGUSTUS C. CAREY, OF BOSTON, MASSACHUSETTS.

## VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,950, dated October 31, 1882.

Application filed July 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS C. CAREY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Voting-Machines, of which the following is a full, clear, and exact description.

This invention is in the nature of means for receiving ballots in voting at elections or otherwise in such manner as to prevent fraud in depositing and in counting the ballots.

The invention consists, broadly stated, in a traveling apron to receive the ballots, each successive ballot overlapping the previous one thereon, means to unite such overlapped ballots, as they are deposited, in a connected series or strip, and means to secure such connected ballots, whereby if two or more ballots are deposited on the apron by one voter in an effort to defraud all of said ballots will be connected in the strip as one and the fraud thereby discovered, and in the count the counter is absolutely precluded from slipping in unauthorized and fraudulent votes, inasmuch as they cannot be attached in the strips save by the machine, which is then out of his control.

The invention consists, also, in forming separately-deposited ballots into a connected series or strip to prevent fraud in depositing and counting the same.

The invention consists, also, in a method of voting, the same consisting in depositing the votes or ballots separately, so that each successive ballot will overlap its predecessor, and connecting such overlapped ballots, as they are deposited, into a continuous united strip.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a central vertical longitudinal section of an apparatus embodying my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a side elevation inside the frame of the ballot-connecting device and its operating mechanism. Fig. 4 is a side elevation outside the frame of the opposite side of the mechanism co-operating in the actuating of the ballot-connecting device. Fig. 5 is a side elevation of the lever for controlling the operation of the ballot-connecting device, and

Fig. 6 a section on the line  $xx$  of said Fig. 5. Fig. 7 is a top plan view of the trip-lever for the ballot-connecting device, and Fig. 8 a plan view of the bed-plate for said device. Figs. 9 and 10 are respectively views in plan and longitudinal section of the connected ballots, illustrating my method of voting.

The frame-work of the machine, as shown in the drawings, is composed of suitably-shaped side pieces, A B, connected by tie-rods and adapted to receive or form bearings for the parts hereinafter specified.

$a$  is the main or driving shaft in said frame-work, provided with a hand-crank,  $b$ , a pinion,  $c$ , and a drum or roller,  $d$ .

$C$  is a table hinged or jointed to said frame-work, and composed of two parts,  $e e'$ , secured together by rule-joints  $f$ , so as to be capable of being folded back upon the frame-work in order that the whole may be compactly inclosed in a suitable case or cover. The part  $e'$  of the table has a transverse roller,  $g$ , and the part  $e$  carries a similar roller,  $g'$ , which latter may be mounted on a shaft which forms the hinge securing the table to the frame-work. The shaft of the roller  $g'$  is provided with a pinion,  $g^2$ , deriving motion from the main pinion  $c$  through an intermediate gear-wheel,  $g^3$ . The rollers  $g g'$  support an endless apron,  $h$ , of suitable material, which apron is rotated over the table toward the drum  $d$  by means of the gearing just described, it being positively moved by the roller  $g'$ , as will be understood. This table is designed to be sufficiently long to receive an ordinary ballot, which is deposited upon the apron and held in place thereupon by the upwardly-projecting side pieces of the table (see Fig. 1) and the hinged clips or cross-guides  $i i'$ . In the inner sides of the cross-guide  $i$  are made recesses or ways  $i^2 i^2$  to receive a paste-depositing device, D, herein shown as a frame provided with a handle,  $j$ , and a series of points,  $j' j^2$ . The rule-joints connecting the parts  $e$  and  $e'$  of the table are so constructed as to hold the table extended horizontally when supported at its end nearest the frame-work of the machine, and, as before said, permit the table to be turned on its hinge and folded backwardly down over the machine within its case or cover. This case or cover may form the support for the table next the frame-work, and as such a

case or cover is of obvious mechanical structure it is thought not necessary to herein show the same.

A top or pressure roll, *k*, is arranged in suitable spring-bearings in the frame-work in the vertical plane of the drum *d*, substantially as herein shown, and derives motion from said drum by frictional contact therewith, induced by its said spring-bearings, and any suitable device—as, for example, set-screws—may be employed to regulate the pressure of said spring-bearings upon said top roll. The drum *d* and pressure-roll *k* constitute feeding devices for taking the ballots from the apron and delivering them to a spool, *l*, upon which they are wound. This spool *l* is loosely arranged in bearings *l'* in the frame-work, and is rotated to wind the ballots thereupon by a drum, *m*, deriving motion from the gear-wheel *c* through an idler-pinion, *m'*, meshing with the gear-wheel *m*<sup>2</sup> on the shaft of said drum *m*, this latter shaft having bearings in the frame-work in line with the bearings of the spool. Pivoted to the frame-work is a pawl or other detent, *n*, to engage the gear *m*<sup>2</sup>.

*o* is an ordinary spool of thread, secured, by a suitable tension device to regulate the unwinding of the thread, to, for example, one of the lower front tie-rods of the frame-work. The thread *o*<sup>2</sup> passes from this spool through an eye, *o'*, up over the drum *d* and back to the spool *l*, to which it is fastened. Similar spools, *p p*, are similarly fastened—as, for example, to one of the upper tie-rods of the frame-work, above the top roll, said spools *p p* being arranged at opposite sides of the machine. The threads *p' p'* pass from the spools *p p* through an eye, *p*<sup>2</sup>, on one of the tie-rods, down under the roll *k*, and pass backwardly between roll *k* and drum *d*, at some distance from and on opposite sides of the thread *o*<sup>2</sup>, to the spool *l*, to which they are made fast.

A rock-shaft, *q*, is secured in the frame-work in the rear of roll *k*, and has secured to it, as by set-screws *q'*, a frame, *r*, which frame bears upon its forward end teeth, *r'*. The frame or yoke *r* is rectangular in plan view, and in end view is curved, so as to clear the shaft of the roll *k*. The teeth *r' r'* are blades having their lower ends serrated. I usually employ two such blades, but do not limit my invention to any number.

On the shaft *q* is loosely arranged a lever, *s*, having a depending lug, *s'*, provided with a transverse groove, *s*<sup>2</sup>. (See details, Figs. 5 and 6.) The pinion *c* has two or more preferably movable pins, *t t'*, arranged on its inner face, which pins, in the rotation of the pinion, engage the grooved lug of the lever *s*, in the manner and for the purpose hereinafter explained. This lever *s* is arranged between the side A and the yoke *r*.

Between the side B and the yoke I arrange upon the rock-shaft, by a set-screw or otherwise, a lever, *u*, provided with a finger, *w'*, at right angles thereto, adapted to engage a cam,

*v*, on the driving-shaft *a*. This lever *u* is drawn into engagement with the cam by a spring, *u*<sup>2</sup>. (See Figs. 4 and 7.)

On the frame-work, in line with the meeting edges of the roll *k* and drum *d*, is arranged a bed-plate, *w*, having openings *w' w'*, corresponding in number and size with the teeth *r' r'* of the yoke *r*, this plate being shown detached in Fig. 8.

The operation is as follows: In Fig. 1 the parts are in position for uniting the ballots. The lever *s* is now lifted until the pin *t* enter the slot *s*<sup>2</sup>. A paper is then deposited upon the apron, face down, which paper may contain any official or other authority or mark of authority—as, for example, a corporation seal. The paster D is then brought down onto the bottom end of the paper, said paper having been brought into position for this by the rotation of the drum *d* and roll *k*, the parts being held in this position by the engagement of the pin *t'* with the lug of the lever *s*. A ballot is now laid, face down, upon the apron, with its end overlapping the paste-containing portion of the preceding paper. The lever *s* is again lifted sufficiently far to permit the pin *t'* to enter and pass through the groove of said lever. The crank is turned so as to set the parts in motion and forward the paper between the drum *d* and roll *k*, and consequently between the threads *o*<sup>2</sup> and *p p'*, by which threads the paper is supported to the spool *l*, about which it is eventually wound. As the pasted ends of the paper are brought toward the bed-plate *w* the cam *v* will have reached a position to have acted upon the finger *w'* of and lifted the lever *u*, and through said lever's connection with the rock-shaft raised the yoke *r* and its teeth. Upon the completion of the rotation of the cam the spring *u*<sup>2</sup> draws down the lever *u*, and with it the yoke and its cutters or teeth. At this time the pasted end of the paper will be fairly on the bed-plate, and the teeth *r' r'*, with a quick blow, passing through the paper in the arc of a circle of which the rock-shaft is the center, will form tongues of paper, which, as the yoke is again raised, will be bent back upon the paper by their contact with the edges of the holes *w' w'* in the bed-plate. To insure the formation of the tongues, the lever *s* is engaged by one of the pins to hold the parts temporarily; but as soon as said lever is raised and the crank turned the teeth rise to clear the paper and permit it to be forwarded. These tongues (shown at *y y*, Figs. 9 and 10) will serve as locking devices for connecting the ballots, as they are separately deposited, into a continuous strip, and after the voting has been completed another certificate or seal is attached at the end of the strip as an evidence thereof. The ballots are connected thus to each other by paste, locking-tongues of their own material, and top and bottom threads, and a strip of such ballots is authenticated at each end. To remove a ballot from this strip will necessitate the severance of the threads,

any attempt at shortening which or the slack incident to the leaving of them uncut after the removal of a ballot will serve to detect the fraud. It is perfectly obvious that nothing can be added to the sealed strip.

I propose to make a future application for a patent for counting the ballots in such sealed strips, and the broad principle of the mechanism I shall employ therein may be stated as consisting in taking the spool *l* of wound ballots from the voting-machine and placing them in position in which the ballot-strips may be unwound therefrom onto another similar spool and the ballots of one party counted, and the ballot-strips unwound from this second spool onto the first and the votes of the other party counted, and so on back from one spool to the other, according to the number of tickets in the field. The voting at elections and the counting may thus be absolutely insured against fraud. The voter, even if he deposit more than one ballot at a time, cannot obtain any advantage, since all of his ballots will be connected as one ballot in the strip, and it has been shown that the counter cannot insert any ballots in or remove any from the strip after said strip has been formed without detection.

The total of votes cast may be readily obtained by connecting with the shaft *a* any suitable registering mechanism.

The office of the pawl *n* is to prevent back motion, and said pawl is arranged inside the machine, out of access of unauthorized persons.

The machine will be operated by an attendant at the crank, who will see that the ballot is properly deposited upon the apron between the guides *i* *i'*, and so that each succeeding ballot shall have one edge sufficiently overlap the paste-containing portion of its predecessor, and said attendant can also apply the paste, which may be contained in a dish in convenient reach, with the paster *D*.

The cam *v* may be a circular disk having a notch in its periphery, into which the lever *u*, hereinbefore called the "trip-lever," is drawn by the spring *u*<sup>2</sup> to permit the descent of the cutters in the forming of the locking-tongues. In the instance here shown two threads are arranged at the back of the ballots and one at the face, it being understood that the ballots are fed in between said threads, as clearly shown.

While I regard the threads as very useful, my machine is operative without them, and they may be dispensed with, in which case a suitable table may be arranged to conduct the ballots from the feeding device *dk* to the spool. The paste and locking-tongues will be found efficient in securing the objects of my invention when the threads are omitted.

I also regard the feature of pasting the ballots as advantageous in the direction of safety, although it may be dispensed with, and the locking-tongues solely may be relied upon, or the locking-tongues and threads may be used.

After the tongues have been formed the bal-

lots are immediately forwarded to the spool, and as they pass between the drum *d* and roll *k* said tongues are completely turned back and flattened upon the ballots by the pressure of the roll *k*.

What I claim is—

1. A voting-machine composed of a moving carrier, upon which the ballots are deposited with overlapped ends, means to form tongues in such overlapped ends to connect said ballots in a continuous strip, feeding devices for such connected ballots, and a spool upon which they are wound, substantially as shown and described.

2. The combination of a table having an endless revolving carrier, upon which ballots are laid end for end, and with each successive ballot overlapping the end of its predecessor and pasted thereto, and a cutting device for forming tongues in such overlapped ends to connect or lock the ballots, and a bed-plate having holes corresponding in number with the number of tongues to be formed, means to actuate such cutter, supporting-threads for such connected ballots, feeding devices and a spool upon which said connected ballots are wound for counting, substantially as shown and described.

3. In a voting-machine in which the successive ballots are attached to each other to unite them in a continuous strip, threads fed in with and supporting the strip as it passes to a spool upon which it is wound, substantially as shown and described.

4. In a voting-machine in which the successive ballots are attached to each other to unite them in a continuous strip, threads arranged above and below said strip and fed in with and supporting the strip as it passes to a spool upon which it is wound, substantially as shown and described.

5. In a voting-machine, a ballot-receiving table and carrier, a ballot-connecting device for uniting said ballots into a connected strip, feed-rolls, and a receiving winding-spool, combined with spools of thread, and thread-guides arranged above and below said feed-rolls, and having threads therefrom leading between the feed-rolls to the spool to support the strip of ballots and be wound upon the spool with the same, substantially as shown and described.

6. In a voting-machine, a table to receive the ballots, provided with an endless carrier-apron upon which the ballots are deposited, and also constructed with rule-joints to permit the folding of the table and to insure its horizontality when extended, substantially as shown and described.

7. In a voting-machine in which the separately-deposited ballots are united in a continuous strip, a rock-shaft, a cutter thereupon, and means timed to properly actuate the same, substantially as and for the purpose described.

8. In a voting-machine in which the separately-deposited ballots are united in a continuous strip, a rock-shaft, a rectangular curved yoke fixed thereupon and provided with ser-

rated blades, and actuating means therefor, combined with a bed-plate to co-operate with the blades in forming tongues in the ballots to lock the same together, substantially as shown and described.

5 9. In a voting-machine in which the separately-deposited ballots are united in a continuous strip, a rock-shaft, a rectangular curved yoke fixed thereupon and provided with serrated blades, and actuating means therefor, 10 combined with a bed-plate to co-operate with the blades in forming tongues in the ballots to lock the same together, and feed-rollers to finally lay said tongues back upon the strip and 15 deliver said strip to its place of final deposit, substantially as shown and described.

10. In a voting-machine in which the separately-deposited ballots are united in a continuous strip, a rock-shaft, a cutter thereupon, a 20 trip-lever, an operating-cam therefor on the main shaft, and a retracting-spring, substantially as shown and described.

11. In a voting-machine in which the separately-deposited ballots are united in a continuous strip, a rock-shaft, a cutter thereupon, a 25 trip-lever, an operating-cam therefor on the main shaft, and a retracting-spring, combined with an operating-crank on the main shaft,

pins on the main driving-pinion, and a starting and stopping lever, substantially as shown 30 and described.

12. The method of preventing fraud in voting herein described, the same consisting in interlocking the first deposited ballot and a suitable election authorization, then interlocking 35 each successive ballot with the end of its predecessor, and at the end of the voting attaching a final certificate of authority, the said several parts being permanently attached to one another to form a continuous strip of connected 40 ballots, whereby fraud in the voting and counting is made impossible.

13. The continuous strip formed of interlocked and connected ballots, substantially as shown and described. 45

14. The combination, with the forwarding-drum of a voting-machine, of a vote-registering mechanism, substantially as shown and described.

In testimony whereof I have hereunto set my 50 hand this 24th day of July, A. D. 1882.

AUGUSTUS C. CAREY.

Witnesses:

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C. S. LILLY.