No. 693,039. Patented Feb. 11, 1902.

L. W. LUELLEN.

VOTING MACHINE.

(Application filed Aug. 8, 1901.)

(No Model.)

Fig. 2.

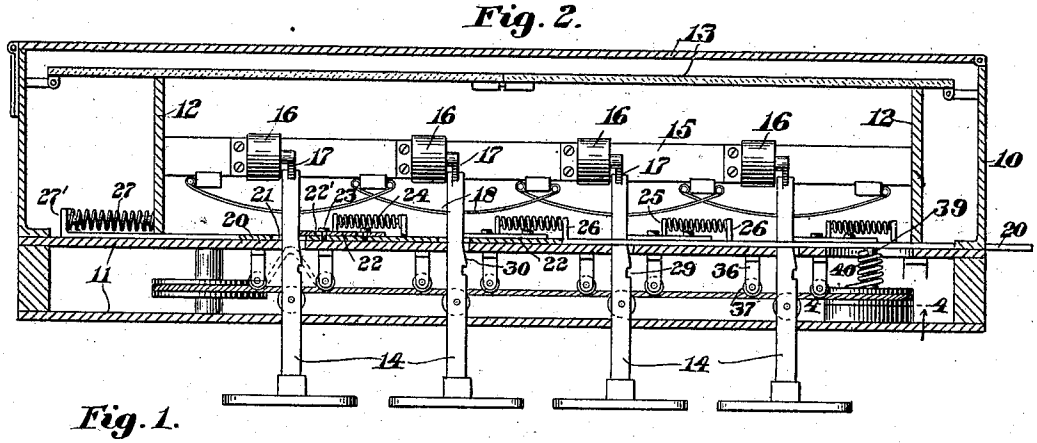


Fig. 1.

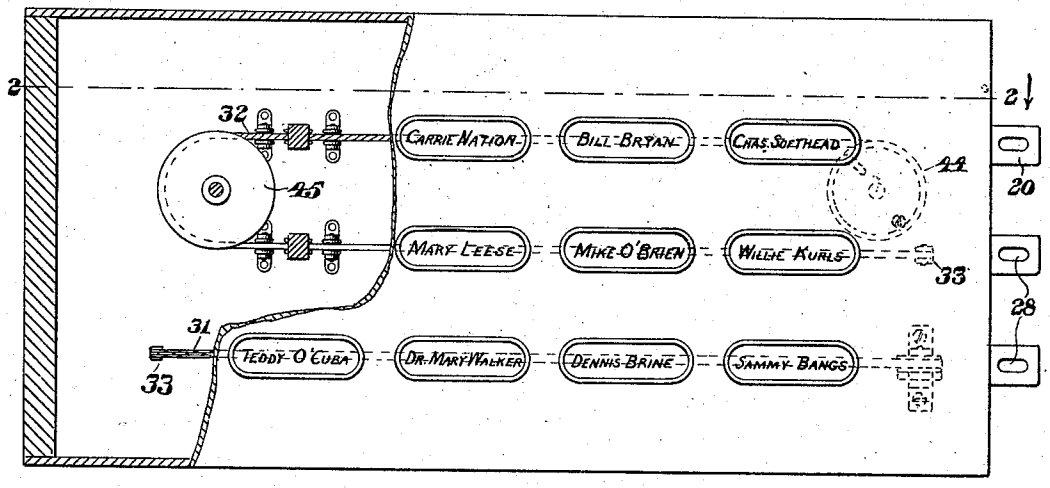


Fig. 4.

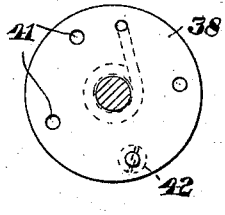


Fig. 3.

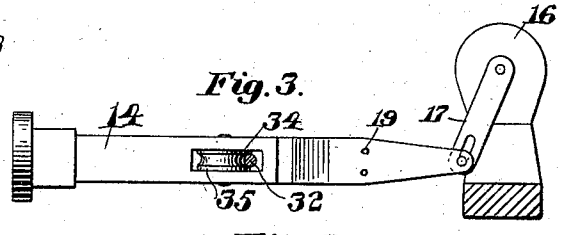


Fig. 5.

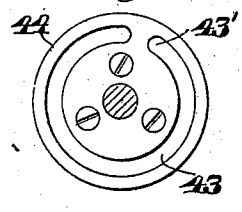


Fig. 6.

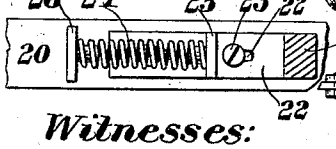


Fig. 7.



Fig. 8.

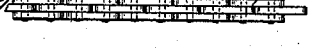
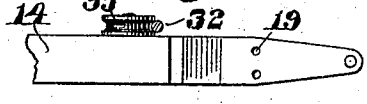


Fig. 9.



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UNITED STATES PATENT OFFICE.

LAWRENCE W. LUELLEN, OF OLATHE, KANSAS.

VOTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 693,039, dated February 11, 1902.

Application filed August 8, 1901. Serial No. 71,337. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE W. LUELLEN, a citizen of the United States of America, and a resident of Olathe, in the county of Johnson and State of Kansas, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

My invention relates to improvements in voting-machines, and more particularly to that type in which voters may record their votes by moving keys representing their chosen candidates, these keys being commonly arranged in series corresponding to offices to be filled. While for many offices the voters can elect but a single candidate and are therefore privileged to move but one key in a series, there are others—as, for example, that of county commissioners—which are held by a group of officials. It therefore becomes desirable to provide a machine permitting the voting by a single voter for a plurality of candidates for the same office, and this is the principal object of the present invention.

In the accompanying drawings, Figure 1 is a front elevation of a voting-machine embodying one form of my invention, parts being broken away. Fig. 2 is a horizontal section thereof on the line 2 2 of Fig. 1 looking in the direction of the arrow. Fig. 3 is a detail in side elevation of one of the keys with its coacting register. Fig. 4 is a vertical sectional detail on the line 4 4 of Fig. 2 looking in the direction of the arrow. Fig. 5 is a similar view looking in the opposite direction. Fig. 6 is a detail in front elevation of the locking-bar. Figs. 7 and 8 show two forms of flexible member for coaction with the keys to control group voting; and Fig. 9 is a detail in side elevation of a portion of a key, illustrating another arrangement of contact-roll thereon.

Similar characters designate like parts throughout the several figures of the drawings.

A suitable casing 10 is provided at its front with a keyboard 11, conveniently double, inner side walls 12 12, and rear doors or closures 13. Through openings in the keyboard extend the shanks of keys 14, which are preferably arranged in a plurality of substantially horizontal rows or series, each row corresponding to an office to be filled and each key in the row being designated by the name of a candidate for that office. At the rear of each row of keys is shown a horizontal bar 15, preferably mounted upon the side walls, these bars carrying registers 16, serving to record the total number of votes cast for each candidate, a register-actuating lever 17 being pivotally connected to the end of each key. Springs 18 may be supported upon the bar 15 and extend through openings 19 in the keys, exerting their tension to hold the keys normally outward.

To lock the keys in their vote-recording position to prevent a person from voting twice for one candidate, there is provided, preferably coacting with each office row, a locking device, here shown as consisting of a metal strip or bar 20, sliding upon the rear of the keyboard. In these bars are openings 21, through which pass the shanks of the keys, and upon the bars, adjacent to these openings, are latches 22, through slots 22′ in which extend studs 23, mounted upon the bar and serving to support and permit a longitudinal movement of the latches over the openings 21. These latches may be normally held toward the keys by spiral springs 24, situated between lugs or abutments 25 26 on the latches and bars, respectively. Springs 27, which may be situated between one of the walls 12 and lugs 27′ on the bars, maintain a contact of the ends of all the latches with the keys without exerting sufficient force to press them back from the openings. In each key is a recess 29 for engagement by a latch situated at a distance from said latch equal to the distance through which the key must move to actuate its register. To the rear of this recess is shown a cam-face or an incline 30, which forces back the latch as the key is depressed. All of the locking-bars are extended at one end beyond the side of the casing and are there provided with openings 28, which may be engaged by some device, such as a connection with the door of the booth in which the machine may be situated, to draw them all to one side to permit the locked keys to be released and retracted by their springs to their normal position.

To permit a definite number of candidates

for a single office to be voted for by each voter, each office row of keys or group of rows is provided with a device common to all the keys in such rows, serving to limit the number of keys which may be operatively depressed by a single person. This device may be conveniently supported between the double walls of the keyboard and may consist of a flexible and inextensible member coöperating with the keys of a single row, as is shown at the lower portion of the keyboard, or with a plurality of rows, as is shown at the upper portion. In the former instance the member is in the form of a chain 31, made up of side links and transverse pins, as is more particularly illustrated in Fig. 8, and in the latter is shown as a wire rope or cord 32. At one end the member is secured to a suitable fastening member or support 33, from whence it runs in contact with all the coacting keys, preferably against a roll 34, either situated within an opening 35, through the key, as is illustrated in Figs. 1, 2, and 3, or upon the upper side thereof, as is shown in Fig. 9. Between the keys are preferably placed supports 36, carrying rolls 37, with which the member also contacts, the adjacent faces of these rolls being substantially in horizontal alinement with the key-rolls. At its other extremity the member is engaged by an adjusting and take-up device, which permits a greater or less amount of slack or free cord or chain to be drawn off by the movement of the keys, but which prevent it from hanging loosely between said keys. This consists of a support shown as a grooved wheel 38, about which the member passes, turning upon a stud 39. This stud beyond the wheel may be encircled by a spiral spring 40, attached thereto and to the wheel and tending to rotate the latter to yieldably exert a tension upon the member. Through the wheel are a series of threaded openings 41, into which a screw 42 may be turned, furnishing a projection on the opposite side and there entering a parti-circular curved groove 43 in a relatively stationary plate or disk 44, secured to the keyboard. The openings 41 are so spaced that the distance between them is substantially equal to the travel of the key in its vote-recording movement, and the end of the member is attached to the wheel at such a point that when the screw is placed in the opening in which it is shown in Fig. 4, for example, a movement is permitted before its point reaches the end of the slot at 43′ equal to the sum of the movement of two of the keys, thus permitting two votes to be recorded in the group which come under the control of this member before all the slack is taken up by the contact-rolls 34 pressing it back between the rolls 37, as is shown in dotted lines at the left of Fig. 2. If the screw had been placed instead in the opening toward the end 43′ of the groove, but one of said keys could have been so depressed, and if in that on the other side a movement of three would have been permitted. When the member operates in connection with two of the rows, it will be carried from its fastening member along the keys of one row, then over a suitably-grooved pulley 45, supported upon the keyboard, then along the second row to the adjusting device. It will be seen that in this way any number of rows can be so controlled by a single number by turning over a pulley at alternate ends. While with the flexible member in the shape of a rope the adjusting device may be conveniently placed vertically parallel to the face of the keyboard with that in the form of a flat link chain it should be horizontal, as illustrated at the bottom of Fig. 1, to prevent the kinking of the chain.

The operation of the machine is as follows: Prior to the opening of the polls the proper official adjusts the position of the screws 42 to leave the wheels 38 free to rotate for a sufficient distance to permit every key belonging to one office to draw off a certain amount of the slack of the coacting member, this being the whole if the office is to be filled by but one official or some fraction of the whole if there is to be a plurality or group of officials. Then when the election begins and a voter depresses a key to its vote-recording position it is there retained by its latch, and its roller pressing against the member draws off and holds a definite portion corresponding to the distance between the two adjacent openings in the adjusting device. The voter continues to thus depress the keys for each office, as desired, until he has exhausted the number of candidates for which he is permitted to vote for that office. At this time all the slack will have been drawn off the support and the adjusting-screw will be in contact with the end of the groove, the member being held tightly stretched between the keys. This contacting with the rolls of the other keys of this office group will prevent their movement far enough to record a vote upon a register, and thus effectively limit the number of candidates to be voted for. On account of the independence of the locking-latches any one of the keys may be locked without releasing any of the others previously depressed; but when the latch-bars are moved they withdraw all the latches from the recess, permitting the keys to be retracted by their springs to the normal position and leaving the slack in the member free to be automatically taken up by the spring of the adjusting device.

Having thus described my invention, I claim—

1. In a voting-machine, the combination with a series of keys, of a flexible member coöperating with all the keys of the series, and supports for the member at the ends of the series one of which is adjustable to vary the effective length of the member.

2. In a voting-machine, the combination with a series of keys, of a flexible member coöperating with all the keys of the series, supports for the member at the ends of the

series one of which supports is movable, and an adjustable projection carried by the movable support adapted to enter a groove in a relatively stationary element.

3. In a voting-machine, the combination with a series of keys, of a flexible member coöperating with all the keys of the series, and supports for the member at the ends of the series one of which supports is rotatable, and a screw adapted to enter one of a plurality of openings in the support and a groove in a relatively stationary element.

Signed by me at Boston, Massachusetts, this 11th day of June, 1901.

LAWRENCE W. LUELLEN.

Witnesses:
WALTER E. LOMBARD,
EDWIN T. LUCE.