

C. F. CURREY.
KEY POSITIONING DEVICE FOR VOTING MACHINES.
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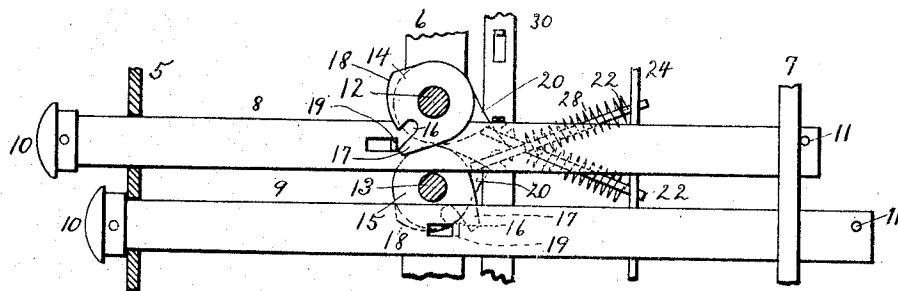


Fig. 1

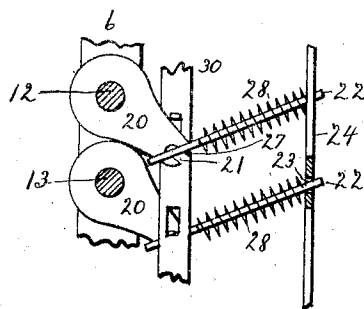


Fig. 2

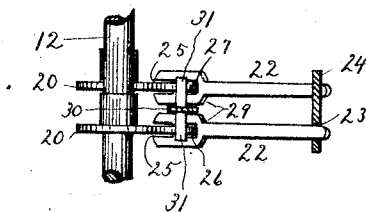


Fig. 3

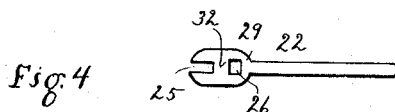


Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

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KEY-POSITIONING DEVICE FOR VOTING-MACHINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES FREMONT CURREY, a citizen of the United States, residing in Topeka, in the county of Shawnee and State of Kansas, have invented a new and useful Improvement in Key-Positioning Devices for Voting-Machines, of which the following is a specification.

My invention relates to voting machines having a series of rock-shafts mounted therein operable by and upon locking-dogs and other elements, and especially operable by and upon the finger-keys, or slides, or rods directly operated by the voter for registering his vote for each particular candidate. These finger-keys or the like are adapted to two positions, a normal non-voting position and a voting position, the key being pressed into its voting position by the voter, and usually returned to normal position automatically.

My invention is a device having a spring adapted to force the rock-shaft and the finger-keys or the like to each of its extreme positions, so that the parts shall thereby positively be brought to and maintained in one of said positions and so that the parts cannot be stopped in any intermediate position where it might interfere with the proper working of the other parts of the machine.

It is the object of my invention to provide a simple and efficient device of this nature which can be made with great economy; and to provide the parts, improvements, and combinations herein described and claimed. And my invention comprises the combination with a frame and a rock-shaft mounted therein of a knuckle-jointed element associated with the frame and a spring for pressing said element in two directions to maintain the shaft and its associated parts in either of their extreme positions. And it further consists of the parts, improvements, and combinations set forth in the appended claims.

In the drawings accompanying and forming part of this specification, and in the description of the drawings, I have shown my invention in its preferred form, and have shown the best mode of applying the principles thereof; but it is to be understood that various changes in form, proportions, and

materials, the transposition of parts, and the substitution of equivalent members, may be resorted to, within the scope of the appended claims, without departing from the spirit of the invention.

Figure 1 is a side elevation of the parts of a voting machine more immediately concerned with my invention, namely, the finger-keys and the rods or slides, parts of the frame, the rock-shafts and the locking-dogs mounted thereon, together with my invention applied thereto, the two finger-keys and associated parts being shown, respectively, in opposite positions. Fig. 2 is a side elevation of the knuckle-jointed element. Fig. 3 is a top view showing the staggered relation in which the knuckle-jointed elements are mounted in the frame. And Fig. 4 is a plan view of one of the members of that element.

Similar reference characters indicate like or corresponding parts throughout the several views.

5, 6, and 7 represent parts of the frame of a voting machine.

8 is a slide or button-rod in normal, or non-voting position; and 9 is a slide or button-rod in voting, or pushed-in position.

10, 10 are the buttons or finger-keys on the ends of the respective button-rods adapted to be engaged by the voter.

11 is a pin in the end of each rod; the movement of the rods being limited by engagement of the button 10 and pin 11 against the parts 5 and 7 of the frame, respectively.

12 and 13 are two rock-shafts in a voting machine, and 14 and 15 are locking-dogs mounted on the respective shafts. Each dog has a slot 16, an extension 17, and a locking face 18, so arranged with relation to a lug 19 on each adjacent button-rod that when the button rod is in normal position, the extension 17 will bear against the one side of the lug 19, and so that the slot 16 will permit the button-rod to be pushed in to the position of rod 9 carrying the dog with it, as shown, and so that when one of the button-rods associated with any shaft is in pushed-in position, the locking-faces 18 on all the other locking-dogs on that shaft will be in the path of the lugs 19 on all other button-rods associated with that shaft and thereby lock all other button-rods for that

shaft against voting, and so that the return movement of the rock-shaft will by engagement of extension 17 against lug 19 also return the button-rod to normal position; all being indicated in the drawings.

20 is an arm rigidly secured to each rock-shaft and slotted at the end as at 21. This arm forms one member of the knuckle-jointed element. The other member 22 extends through a hole 23 in a plate or bar 24 which may be rigidly secured to the frame. Its other end has a slot 25 which engages in the slot 21 of the arm, and also a recess or hole 26 into or through which the ends 27 of the slotted arm 20 may extend when in either of the extreme positions, the part 32 forming a pivot having its bearing in the slot 21.

28 is a compression spring mounted on the stem of the member 22 and bearing between the plate 24 and the shoulder 29 of the member 22. These members are so arranged, as indicated in the drawings, that when the button-rod is in normal position, the pressure of the spring is such as to force the button-rod to its extreme outer position and to maintain it, with its associated parts, especially the rock-shaft and locking-dog, in that position; and when the button-rod is in pushed-in position, the pressure of the spring tends to maintain it and its associated parts in that position; these two positions being shown in Fig. 1; and this effect being accomplished by making the movement so as to spring the central pivot of joint 32 on both sides of the center line between the bearing 23 and the rock-shaft 12, or 13, respectively.

While in theory, there is a dead-center line in which the spring will be in alignment with 23 and 12 and thus be at "dead center," yet in practice I find it almost impossible designedly to manipulate the finger-key so as to set the parts in that position; and much less is there any liability of its accidentally stopping there. And this makes it certain that the parts associated with each key will not be stopped in any intermediate position but will, with even an imperfect manipulation by the voter, be sent to one or the other of its extreme positions, namely, either voting or non-voting position.

In order to assemble the parts in close relation, I prefer to assemble them in staggered relation, as shown, so that adjacent elements will not interfere with each other.

In order to lock the shafts against voting, and to return them all in unison to normal position, I provide a rod 30 with lugs 31, 31 engaging the respective knuckle-jointed elements as shown. This rod is adapted to two positions, that shown in Fig. 2 in which it locks the elements against voting, and that shown in Fig. 1 in which the voting

elements are free to be operated. It may be brought from one position to the other by any suitable means not necessary to be here shown. Obviously, on being returned from the position of Fig. 1 to the position of Fig. 2, it will also return to normal position all the voting elements associated with the pushed-in slides or button-rods.

I claim for my invention a great efficiency in operation, as obviously the compression springs may be made easily to perform the functions herein ascribed to them; and I also claim great economy in manufacture, as the members 20 and 22, as well as 24, may be made from sheet metal with punches and dies, and readily assembled.

What I claim is:

1. In a voting machine, the combination of a frame, a rock-shaft mounted therein, a locking-dog on the shaft, a voting-rod operable by and upon the locking-dog, and a spring-pressed knuckle-jointed element for returning said rock-shaft, locking-dog, and voting-rod to each of two extreme positions.

2. In a voting machine, the combination of a frame, a rock-shaft mounted therein, a reciprocating voting-rod connected with the rock-shaft, and a spring-pressed knuckle-jointed element for returning said rock-shaft and voting-rod to, and maintaining them in, each of two extreme positions.

3. In a voting machine, the combination of a frame, a rock-shaft mounted therein and adapted to two extreme positions, a knuckle-jointed element between the rock-shaft and the frame, and a spring bearing on said element for maintaining the rock-shaft in each of its extreme positions.

4. In a voting machine, the combination of a frame, a rock-shaft mounted therein and adapted to two extreme positions, an arm extending from the rock-shaft, a plate secured to the frame and having a hole or recess in it, a rod pivoted to the arm and extending into said hole or recess, so as to form with said arm a knuckle-joint, and a spring bearing on said knuckle-joint.

5. In a voting machine, the combination with a frame and a rock-shaft mounted therein and adapted to two extreme positions, of a spring-pressed knuckle-jointed element for returning said rock-shaft to and maintaining it in each of said positions, and comprising an arm extending from the shaft and an arm extending from the frame, said second-mentioned arm being pivoted to the frame and movable longitudinally therein, said two arms being pivoted together so as to move, in going from one position to the other across a line extending from the rock-shaft to the pivotal point in the frame, and a compression spring mounted on the second-mentioned arm and bearing between the frame and the center pivot.

6. In a voting machine, the combination

with a frame and a rock-shaft mounted therein and adapted to two extreme positions, of an arm secured to the shaft and having a slot in its outer end, a rod pivoted to the frame and movable longitudinally therein and having a slot, a hole, and a shoulder, said arm and rod being pivoted together by said two slots and said hole and adapted to move to each side of the line between the rock-shaft and the first-named pivot, and a compression spring coiled around said rod and bearing between the frame and the shoulder.

7. In a voting machine, the combination with a frame and a rock-shaft mounted therein, of a spring-pressed knuckle-jointed element for maintaining said rock-shaft in each of two extreme positions, and a rod for

restoring said shaft from one position to the other.

8. In a voting machine, the combination with a frame and a series of rock-shafts mounted therein, of a knuckle-jointed spring-pressed element for returning each rock-shaft to and maintaining it in each of two extreme positions, and a universal rod engaging all said knuckle-jointed elements and cooperating therewith to restore said shafts to normal positions.

In testimony whereof I have hereunto signed my name in the presence of witnesses.

CHARLES FREMONT CURREY.

Witnesses:

J. P. ROBINSON,

HAZEL D. RICHARDSON.