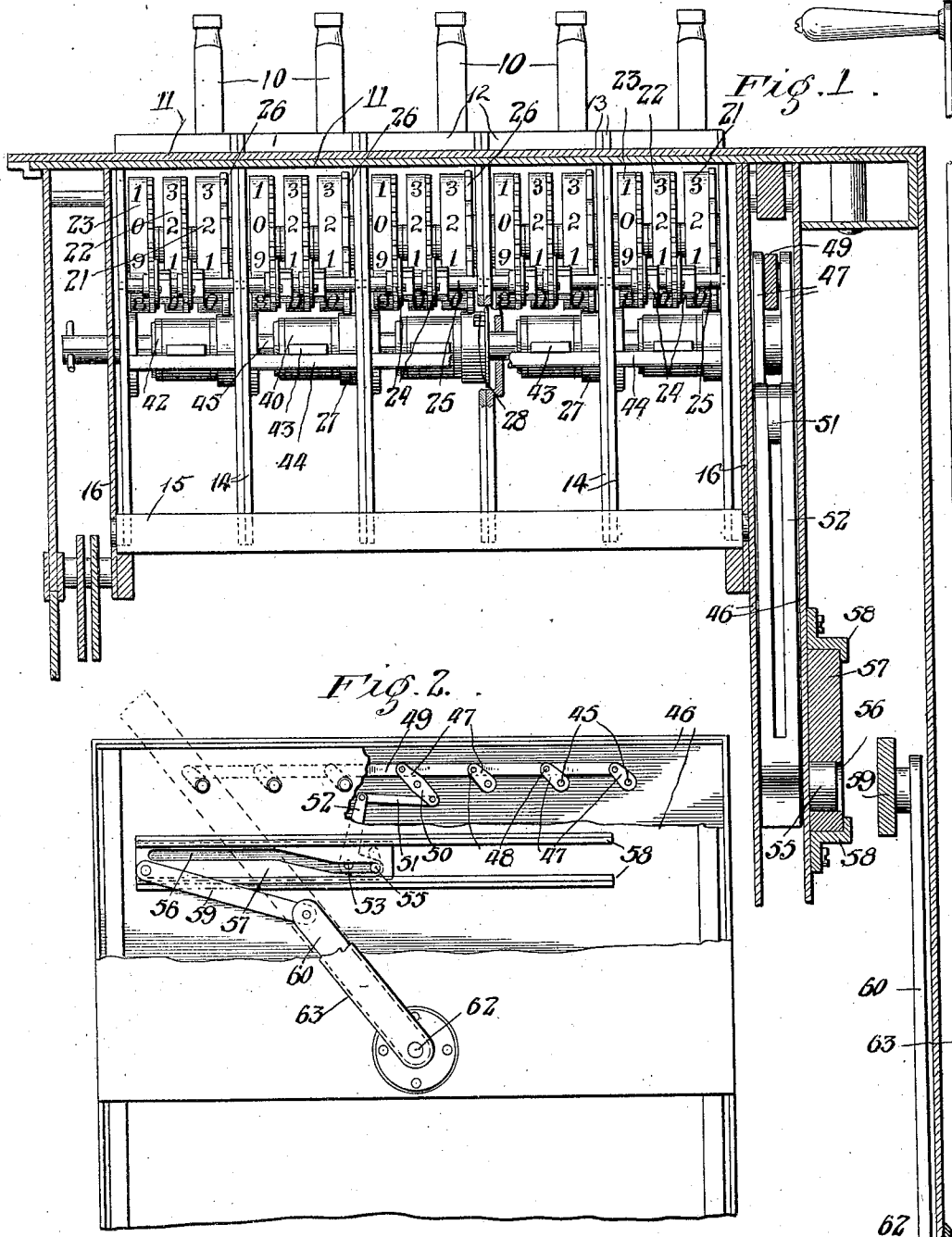


J. H. DEAN.
VOTING MACHINE.
APPLICATION FILED APR. 23, 1906.

938,412.

Patented Oct. 26, 1909.

2 SHEETS—SHEET 1.



Witnesses:
C. O. Skewey,
J. H. Alfndr

Inventor:
James H. Dean
by Pierce & Fisher
Attys.

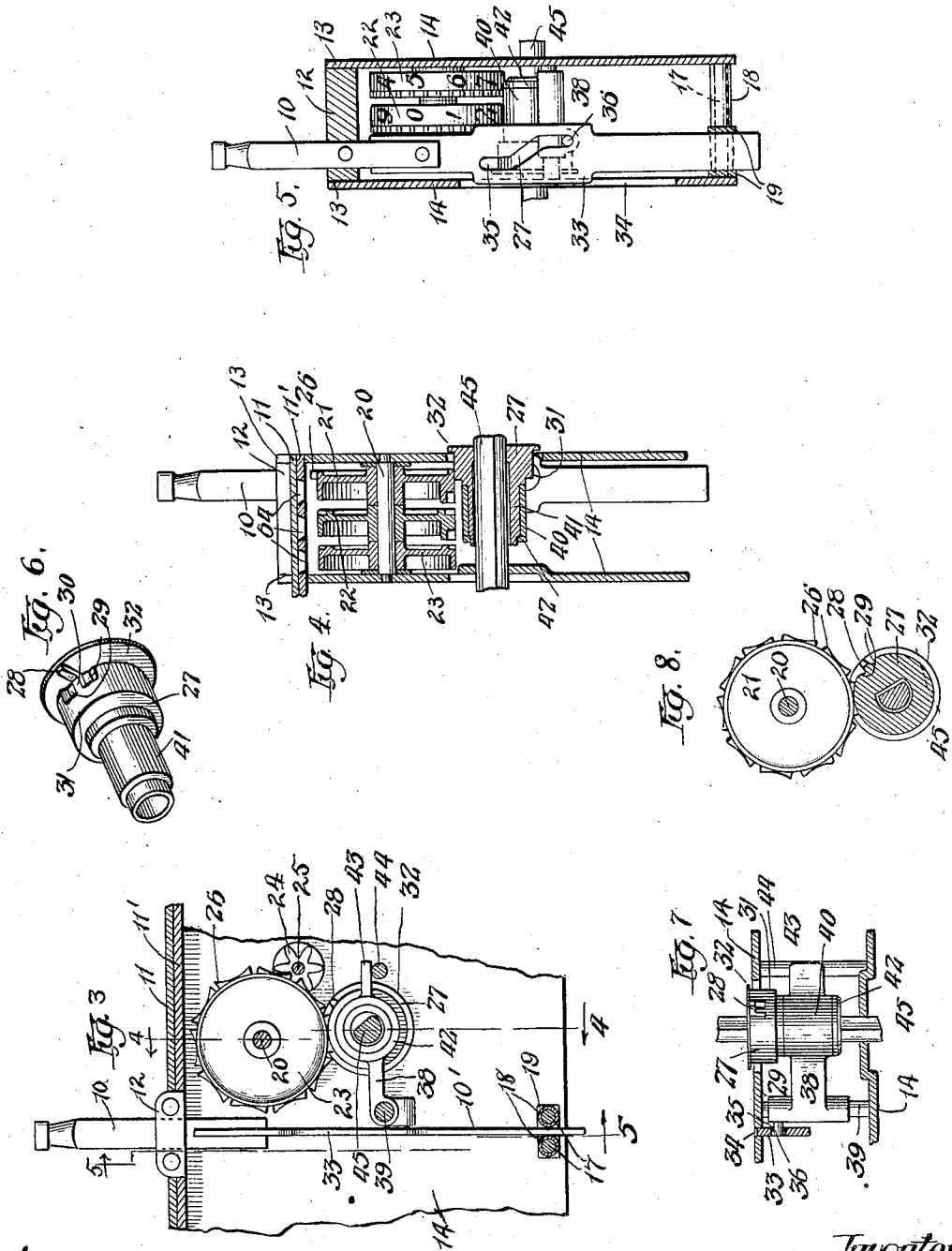
J. H. DEAN.
VOTING MACHINE.

APPLICATION FILED APR. 23, 1908.

Patented Oct. 26, 1909.

2 SHEETS—SHEET 2.

938,412.



Witnesses:
J. H. Alfons
C. O. Sherry

Inventor
James H. Dean
by Peirce & Fisher
Attys.

UNITED STATES PATENT OFFICE.

JAMES H. DEAN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
EMPIRE VOTING MACHINE COMPANY, A CORPORATION OF NEW YORK.

VOTING-MACHINE.

938,412.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Original application filed December 27, 1904, Serial No. 238,388. Divided and this application filed April 23, 1906. Serial No. 313,223.

To all whom it may concern:

Be it known that I, JAMES H. DEAN, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Voting-Machines, of which the following is a specification.

The present application is a division of the prior application on voting machines filed by me December 27, 1904, Serial No. 238,388 and relates to the arrangement of the counters and key-controlled counter actuators.

The invention consists in the features of improvement hereinafter described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a sectional view of the machine showing a series of counters and key-controlled actuators therefor. Fig. 2 is a view of one end of the machine with parts broken away and parts shown in section. Fig. 3 is a view in elevation of one of the counters and its actuator. Figs. 4 and 5 are sections on lines 4-4 and 5-5 respectively of Fig. 3. Fig. 6 is a perspective view of the actuator. Fig. 7 is a plan view thereof showing the manner of mounting the actuator and Fig. 8 is a detail view partly in section and partly in elevation, showing the units wheel of the counter and the actuator.

The ballot keys 10 project through the face plates 11 and 11' of the machine and slide longitudinally through the key guides 12 that are bolted between extensions 13 of the side plates 14 of the counter sections. These counter sections are arranged side by side adjacent the face plates of the machine and are supported on cross rods 15 extending between the frame plates 16. The keys 10 are provided with thin, flat stem portions 10'. Rivets 17 extending between the side plates 14 of the counter sections carry sleeves 18 and guide plates 19 and the inner ends of the key stems extend between and are guided by the sleeves 18 and plates 19.

A shaft 20 extending between the side plates 14 carries a group of three counter wheels 21, 22 and 23 adapted to register respectively units, tens and hundreds. The gear mechanism whereby revolution is transferred from the units wheel to the tens

wheel and from the tens wheel to the hundreds wheel, is of familiar construction and need not be specifically described, although by reference to Figs. 1 and 3, the transfer star wheels 24 for this purpose are shown upon shafts 25, these shafts being mounted between the side plates 14 of the counter sections.

The units wheel 21 is provided about its rim at one side with teeth 26 having curved faces adapted to ride upon the periphery of the actuator pinion 27, the periphery of this pinion or actuator being upon the pitch line of the tooth 28 with which said pinion or actuator is formed. On each side of the tooth 28 is a slot 29 which receives the teeth 26 of the units wheel when the tooth 28 enters an interdental space of such wheel. These slots are longer than the width of the tooth 28 so that the teeth of the units wheel may enter the same, even though the voter failed to move the actuator 27 longitudinally on its shaft (in a manner to be presently defined) a sufficient distance to bring the tooth 28 into full engagement with the teeth 26 of the units wheel. At one side of the tooth 28 the slots 29 are separated by a wall or half-tooth 30 which prevents any shift of the units wheel while its teeth are in the slots 29 independently of the actuator. The plain inner portion 31 of the actuator pinion with which the teeth 26 of the units wheel normally engage, serves to lock the counter wheels against rotation. The actuator pinion is preferably formed at one end with a flange 32 which serves to reinforce the tooth 28.

The key stem is provided with an extension 33 that slides in a slot 34 in the adjacent side plate 14. The engagement with the ends of the slots limits the movement of the key. The key stem is also provided with a cam slot 35 into which extends a pin 36 that projects from the pivoted end of the actuator supporting bar 38. This bar is mounted in a manner free to slide upon a stud 39 extending between the side plates 14 of the counter section. The bar is formed with a sleeve portion 40 that encircles the reduced barrel 41 of the actuator pinion 27, the end of such barrel being further slightly reduced and fitted with a retainer washer 42 held in position by upsetting the end of the barrel. The actuator bar is preferably

provided with an arm or tongue 43 that rests upon a rivet 44 extending between the side plates of the counter section. When assembled in the machine, the actuators of one row or group are in line and each group of actuators is rotated by a common shaft 45 extending therethrough. The shaft is preferably formed of a flattened portion that will be engaged by a correspondingly shaped portion of the actuator pinion, so that the actuator pinions will be rotated by the movement of the shaft.

When the voter depresses the ballot key 10 the cam slot 35, by the engagement of its upper inclined wall with the pin 37 on the actuator bar 38, will shift the bar and actuator pinion 27 longitudinally on the actuator shaft 45 until the tooth 28 of the actuator pinion is brought into position to engage the tooth 26 of the units wheel, it being understood that in normal idle position, the tooth 26 of the units wheel rests upon the plate portion 31 of the actuator pinion and in which position the tooth 28 is out of line with the teeth 26, as shown at one point in Fig. 1. When the actuator is thus shifted to bring the tooth 28 into the plane of the tooth 26 of the units wheel, the units wheel is not of course turned but the parts are in such position that, when the actuator pinion is turned in the manner hereinafter described, the tooth 28 will engage the teeth of the units wheel and will advance the same one step to register the voter's ballot. This registering shift of the actuator by means of the actuator shafts 45, is effected after the voter has cast his entire ballot and as he is about to leave the booth. It is obvious that he may retract any ballot key and the actuator operated thereby to correct or change his vote. At one end of the machine the actuator shafts 45 extend between a pair of frame plates 46 and a series of crank arms 47 are mounted on the actuator shafts between the plates 46. These arms are arranged in pairs and are connected by pins 48 to a common connecting bar 49 that serves to link all the cranks and actuator shafts together.

One pair of crank arms (see Fig. 2) is provided with an extension 50, the end of which is pivotally connected to a link 51. The opposite end of the link is pivoted to the upper bifurcated end of a bell crank 52, that is pivotally supported on a stud 53 between the frame plates 46. The other arm of the bell crank is provided with a pin 55 that is preferably provided with a friction roller and projects through a slot in the outer frame plate 46 into engagement with a cam slot 56 in the cam plate 57. The cam plate is mounted to slide between guides 58 on the outer face of the outer frame plate 46 and is connected by a link 59 to the upper end of an arm 60. Arm 60 is arranged be-

tween the outer frame plate 46 and the frame plate 61 which forms the end of the machine casing, and this arm is mounted upon a stud 62 which extends through the end plate 61 and is provided with an operating arm or handle 63. By shifting the handle the actuator shafts 45 and actuator pinions 47 may be oscillated back and forth by the mechanism described.

When the voter is admitted to the machine the actuators are all at the end of their forward movement with the teeth 28 thereof out of line with the teeth 26 of the units wheel. The voter then removes the arm or handle 63 from the position shown in Fig. 2 over to the right. This moves all the actuator pinions backward but does not shift the counters. The voter then shifts the actuators through the medium of the ballot keys to bring the teeth thereon in line with the teeth on the units wheel of the counters and by returning the operating arm 63 the counters corresponding to the voted keys are advanced one step.

The counter wheels 21, 22 and 23 are provided with numerals on their peripheries which are exposed through sight openings 64 in the inner face plate 11' when the outer face plate 11 is removed. The wheels of each counter are arranged upon a common axis and the keys are arranged at right angles to the axis of the counter and to the axis of the actuator.

Any suitable form of interlocking mechanism may be employed for limiting the number of keys and any suitable form of return mechanism may be employed for returning the keys and actuators, but these features form no part of the present invention.

It is obvious that numerous changes may be made in the details set forth without departure from the essentials of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a voting machine a single axis counter, the wheels of which carry the numerals on the cylindrical surfaces of said wheels with a Geneva stop movement actuator therefor having direct engagement with the units wheel, said actuator having an oscillating movement to drive the counter, means for producing said oscillating movement, and a movement along the counter to renew its engagement therewith, and a key movable parallel to the planes of the counter wheels and at right angles to the axis of said counter to renew its engagement therewith.

2. A voting machine comprising a single axis register, a Geneva stop actuator mounted on an axis parallel to the axis of the register and movable on said axis into and out of actuating position relatively to said

register and a vote indicator movable at right angles to the axes of the register and actuator and operative to move said actuator into and out of actuating position relatively to said register.

3. In a voting machine, the combination of a single axis counter, the wheels whereof are arranged at right angles to the face of the machine and carry the numerals on their peripheral surfaces, an actuator for said counter constantly interlocked with the units wheel thereof, means for oscillating said actuator to advance the counter and a key extending through the face of the machine and connected to shift said actuator longitudinally into and out of operative relation with said counter.

4. In a voting machine, vote registering mechanism comprising a plurality of ballot keys, individual counters for said keys, actuator mechanism constantly interlocked with said counters for determining the movement thereof, cam mechanism uniting said individual keys to said actuator mechanism and means independent of said cam mechanism for operating said actuator mechanism to advance said counters.

5. In a voting machine, vote registering mechanism comprising a plurality of ballot keys, individual counters corresponding to said keys, individual actuators constantly interlocked with said counters for determining the movement thereof, each of said keys

being provided with cam surfaces for setting said actuators and counters into and out of operative relation and mechanism independent of said keys for effecting the operation of said actuators upon said counters.

6. In a voting machine, vote registering mechanism comprising a plurality of ballot keys, each provided with a cam slot extending lengthwise thereof, individual counters for said ballot keys and individual actuators constantly interlocked with said counters for determining the movement thereof, each of said actuators being provided with a part entering the cam slot of its corresponding ballot key.

7. In a voting machine, vote registering mechanism comprising a ballot key, counter mechanism for said key, having a gear wheel, an actuator pinion and shaft, said pinion being longitudinally movable along said shaft and being provided with a tooth to engage said gear wheel, and with a peripheral portion to prevent independent movement of said gear wheel, an actuator support secured to said actuator pinion and whereby said pinion may be shifted longitudinally, and a connection between said actuator support and the ballot key.

JAMES H. DEAN.

Witnesses:

C. G. HANSON,
JOHN S. FILLMORE.