C. F. CURREY.

COUNTER CONSTRUCTION FOR VOTING MACHINES.

APPLICATION FILED OCT. 24, 1908.

939,674. Patented Nov. 9, 1909.

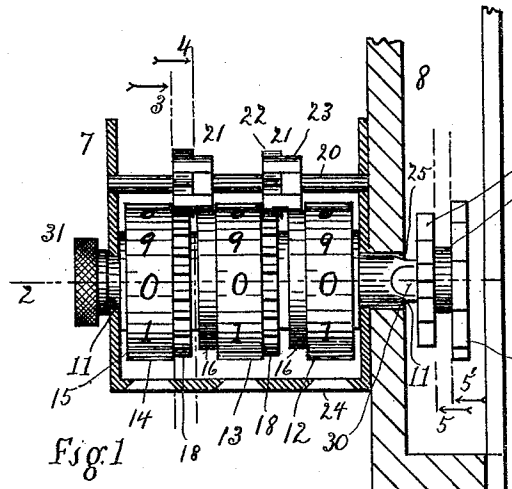

Fig. 1

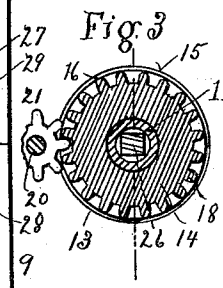

Fig. 3

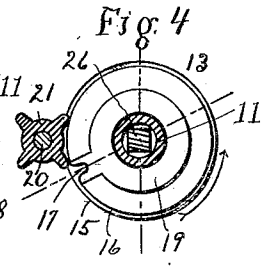

Fig. 4

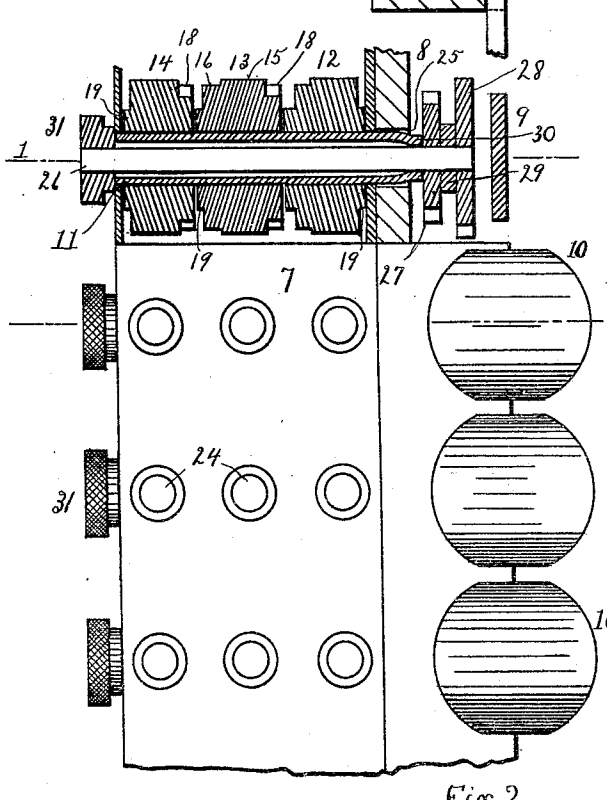

Fig. 2

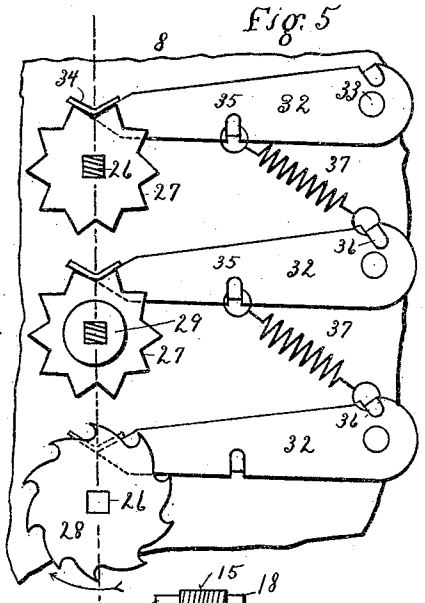

Fig. 5

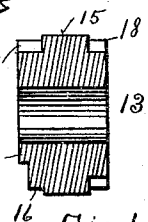

Fig. 6

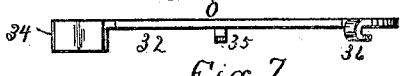

Fig. 7

Witnesses

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UNITED STATES PATENT OFFICE.

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COUNTER CONSTRUCTION FOR VOTING-MACHINES.

939,674. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed October 24, 1908. Serial No. 459,326.

To all whom it may concern:

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

My invention relates especially to the individual counters for a series of voting elements, as in a voting machine where there are vertical party columns and horizontal rows of interlocking voting elements, a voting element being provided in each row for each party candidate for the same office.

The object of my invention is to improve generally upon the construction of the counters or counter mechanism; to simplify the construction of the counters and the means for mounting them so that they may be most economically made and assembled; to provide a simple construction of the counters in which the main portion, or all, of the parts in each vertical column may be assembled together, being mounted in one frame or channel, or tube, and then secured to or in the frame of the voting machine with each individual counter in its proper relation to the other parts of its voting element; and to provide the parts and improvements hereinafter set forth and claimed.

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 the invention itself is not confined to the exact details of the drawing and of the description of the drawing, and that I contemplate changes in form, proportions, materials, the transposition of parts, and the substitution of equivalent members, within the scope of the appended claims, without departing from the spirit of the invention.

Figure 1 is a top view of the counter mechanism of a single voting element, the adjacent portions of the frame, and the channel, being shown in cross section on a plane indicated by the line 1, of Fig. 2. Fig. 2 is a front view of the said channel and the adjacent frame with three push buttons; the upper counter being shown, however, in central vertical section on a plane indicated by the line 2 of Fig. 1. Figs. 3 and 4 are, respectively, sectional views of the counters through the lines 3 and 4 of Fig. 1. Fig. 5 is a side view of the devices shown in Figs. 1 and 2, with the star-wheel pawl in place, the upper element being shown in section through the line 5, and the middle element being shown in section through the line 5′, of Fig. 1. Fig. 6 is a sectional view of a counter-disk. Fig. 7 is a top or edge view of the said star-wheel pawl.

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

I provide a long channel 7 of brass or other suitable metal, in which to mount all the counters for each vertical row, so that when assembled in the machine it may range alongside of the party column of voting slides or keys 9, being preferably secured to a partition, standard, or stud 8, which is ordinarily provided for supporting the various other parts included in or associated with the several voting elements.

10, 10 represent the buttons whereby the respective voting slides are operated by the voter.

11 is a hollow shaft mounted in holes in the side walls of the channel.

12, 13, and 14 are three counter-disks mounted on the hollow shaft as follows: The shaft is first inserted through one of the holes, the left-hand one for instance, and the disks 14 and 13 are strung thereon loosely; then the shaft is pressed through the disk 12 until its left-hand end is even with the outer side of the channel wall and the right-hand end projects beyond the opposite wall, as shown in the drawings; it being understood that the shaft has its bearings in these holes through the walls, that the disk 12 is fitted tightly on the shaft and the disks 13 and 14 are mounted loosely thereon. Each disk has a face 15 on which are inscribed numerals from 1 to 9 and 0, inclusive. Disks 12 and 13 also have adjacent to that face a face 16 of less diameter with a single notch 17. The disks 13 and 14 also have, formed integrally therewith, each a gear 18 adjacent to the face 16 of the adjacent disk. And each of the disks may have either one or two hubs 19, 19.

20 is a shaft or pin secured between the side walls of the channel, and loosely mounted thereon between each two disks is a pinion 21 adapted to engage the notch 17 of the one disk and the gear 18 of the adjacent disk, so that as the first disk makes one complete turn it will progress the second disk a distance equal to two teeth. Preferably, in the form shown, there are twenty teeth in the gear (two corresponding for each numeral), and there are eight teeth in that part of the pinion engaging the gear and four teeth in that part 23 engaging the face 16 and notch 17. There is a hole 24 in the channel in front of each disk through which the numeral thereon is visible. The parts just described may obviously all be assembled, one for each voting element, before the channel is placed in the main frame of the voting machine, they being properly spaced apart so as to be brought into proper register with the respective voting elements. There is a hole or opening 25 through the partition 8 at each voting element, and the channel may be placed alongside said partition so that the projecting ends of the several hollow shafts 11 project through said holes or openings, and the channel may be then bolted or screwed or otherwise secured (preferably in a detachable manner) to said partition.

On one end of a shaft or pin 26, which is angular, and preferably square, in cross section, I press a star-wheel 27, a washer or separator 29, and a propelling ratchet 28, in the manner shown. I insert the square shaft or pin 26 through the hollow shaft 11, as indicated in the drawings, and press a nut or head 31 on the other end. The end 30 of the hollow tube has previously been squared, so that the shaft or pin or stem 26 fits non-rotatably in said shaft 11. There are ten teeth in the ratchet, so that obviously as the ratchet is progressed at the rate of one notch at a time, the counter will indicate one higher number for each such progression in the usual manner of counters.

In order to hold the counters in their properly spaced positions, I provide for each star-wheel a pawl 32 pivoted to the frame at 33 and having a bent-over lug 34 engaging in the notches of the star-wheel. The lug 34 is V-shaped and is rigid with the pawl. Each pawl also has a hook 35 and a hook 36, arranged as shown, so that a spring 37 may be extended between each two adjacent pawls in a series to hold each pawl in close engagement with its star-wheel. The peculiar advantage of this pawl is that it can be stamped and formed from sheet metal, with great economy.

It is a distinct advantage to have the counters in such form that the main portion of the assembling can be done before they are set up in the frame, and this advantage I secure by the arrangement herein described. Each channel constitutes a sub-frame for supporting the individual counters.

What I claim is:

1. In a voting machine and the like, the combination of a main frame, a sub-frame comprising a channel, and a series of counters mounted in the sub-frame; each counter comprising a hollow shaft mounted in the side walls of the channel, counter disks on said shaft between the side walls, and a ratchet and stem, said stem fitted non-rotatably in said hollow shaft.

2. In voting machines and the like, the combination of a main frame, a sub-frame comprising a channel detachably secured to the main frame, and a series of counters mounted in the sub-frame; each counter comprising a shaft mounted in the side walls of the channel, counter disks on said shaft between the side walls, and an operating ratchet outside said side walls and fitted detachably and non-rotatably to said shaft.

3. In voting machines and the like, the combination of a main-frame, a sub-frame independent of the main frame and attachable thereto, a series of hollow shafts mounted in the sub-frame, a series of counting disks mounted on each shaft and intermediate mechanism between adjacent counting disks, a stem fitted non-rotatably on each shaft and a ratchet and a star-wheel secured on each stem, and a spring-pressed pawl for each star-wheel.

4. The combination of a main frame, a channel attachable thereto, a series of hollow shafts mounted in the side walls of the channels and having squared ends, a series of suitably inscribed counting disks on each shaft, intermittently-operated gearing between the adjacent disks on each shaft, a square stem extending through each hollow shaft, a star-wheel and a ratchet secured to one end of said stem and a head on the other end, and a spring-pressed pawl engaging each star-wheel.

5. The combination of a main frame, a channel attachable thereto, a series of hollow shafts mounted in the side walls of the channel and having squared ends, a series of suitably inscribed counting disks on each shaft, intermittently-operated gearing between the adjacent disks on each shaft, a square stem extending through each hollow shaft, a star-wheel and a ratchet secured to one end of each stem and a head on the other end, a spring-pressed pawl engaging each star-wheel, each pawl comprising a single piece of sheet-metal with a bent-over V-shaped lug, and an extension spring between each two adjacent pawls for holding said pawls pressed against the respective star-wheels.

6. In voting machines, the combination of

a frame, a series of counters mounted therein, a star-wheel for each counter, a pawl for each star-wheel, and an extension spring between each two adjacent pawls for holding said pawls pressed against the respective star-wheels.

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

CHARLES FREMONT CURREY.

Witnesses:
JNO. A. HULIT,
HAZEL D. RICHARDSON.