(No Model.)

C. J. ROOT.

COUNTING REGISTER.

No. 450,039. Patented Apr. 7, 1891.

Fig. 1.

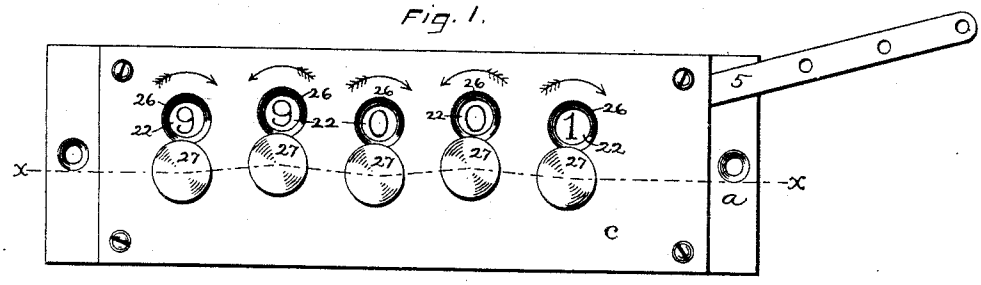


Fig. 2.

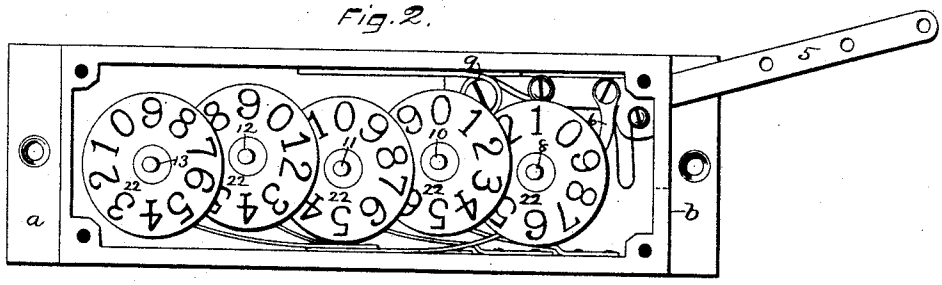


Fig. 3.

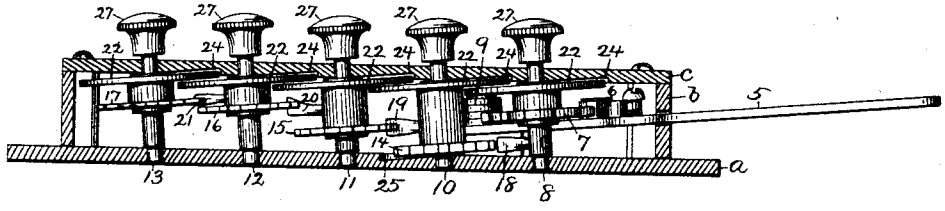
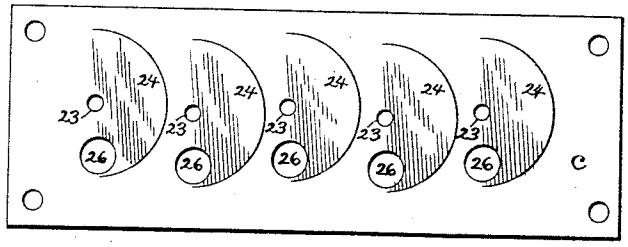


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES J. ROOT, OF BRISTOL, CONNECTICUT.

COUNTING-REGISTER.

SPECIFICATION forming part of Letters Patent No. 450,039, dated April 7, 1891.

Application filed October 27, 1890. Serial No. 369,429. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. ROOT, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Counting-Registers, of which the following is a specification.

My invention relates to improvements in counting-registers; and the objects of my improvement are convenience of construction and a better and more uniform arrangement of the parts.

In the accompanying drawings, Figure 1 is a front elevation of my counting-register. Fig. 2 is a like view with the turning-knobs and cap-plate removed. Fig. 3 is a longitudinal section, partly in elevation, on the line *x x* of Fig. 1; and Fig. 4 is a reverse plan view of the cap.

A counting-register consisting of a series of shafts having mounted upon them numbered disks, gear-wheels, and projections on each wheel or shaft, in connection with suitable frictional devices and an operating mechanism, so that when the first shaft has completed one revolution it will move the next shaft a fractional part of a revolution, and so on throughout the entire series, is old and well known.

My improvements relate to the construction and arrangement of the shafts, the disks, and the cap-plate.

a designates the rear plate, *b* the sides of the box or case, and *c* the cap-plate secured to the sides or box by means of suitable screws.

5 designates the operating-lever, having a spring-pressed pawl 6, that engages with the ratchet-teeth of the wheel 7 on the shaft 8 and moves said shaft one fraction of a revolution at each reciprocation of the lever. The lever is designed to be moved in one direction by the stroke of the machine, whose motions are to be counted, and in the opposite direction by means of the spring 9. As shown, the lever 5 is pivoted to the post or screw about which the coils of the spring 9 are wound. One arm of this spring bears against one wall of the box or case, and the other arm bears against the under side of a screw or pin on the lever, so as to throw the lever up, as shown. (See Fig. 2.)

The base-plate *a* and cap *c* are perforated to form bearings for the respective shafts 8, 10, 11, 12, and 13; but instead of boring these holes directly opposite each other and at right angles to the surface of said plate and cap I form oblique bearings, as shown most clearly in Fig. 3.

The shafts 10, 11, 12, and 13 are provided, respectively, with toothed wheels 14, 15, 16, and 17, and all, with the exception of the shaft 13, with projections or wings 18, 19, 20, and 21 for engaging said toothed wheels and moving the same one fraction of a revolution for every revolution of each shaft, the same as in prior counters.

Near the front end of each shaft I secure the series of disks 22, each bearing in regular order the nine digits and a cipher. These disks are secured at a uniform distance from the front end of the shafts, so that they are all alike, excepting that the numbers on each two adjoining disks run in reverse directions, because in moving one disk is turned toward the right and the next succeeding disk toward the left, and so on. When arranged within the case, the oblique arrangement of the shafts brings the disks overlapping each other, as shown in Figs. 2 and 3. The cap *c* is counterbored upon its inner face concentric with the oblique holes or bearings 23 for the respective shafts, the depth of the counterboring being such as to form a semicircular recess 24 upon one side of each of the shafts to accommodate the most projecting side of the disks 22, as shown in Figs. 3 and 4. I also make a like counterbore 25 upon the base-plate *a* to accommodate the wheel 14 on the shaft 10, which comes near the end of said shaft.

The cap-plate is provided with as many openings 26 as there are disks, said openings being formed at the junction of the inner face of the cap and the semicircular recesses or counterborings 24. As in other counting-registers, the numbers on the disks are seen one by one through these openings.

The several shafts are provided at their front ends with knobs 27 for resetting when it is desired to begin a fresh count.

By my improvements the disks and front ends of the shafts may all be made exactly alike, so that they are more conveniently constructed. The parts are readily assembled

and all of the disks sustain the same relation to the openings in the cap.

I am aware of the Patents No. 288,976 to Cyrus Chambers, Jr., November 27, 1883; No. 297,670 to the same, April 29, 1884; No. 180,165 to John A. Stenberg, July 25, 1876; No. 72,033 to H. F. Hart, December 10, 1867, and No. 430,910 to H. M. Aldrich, June 24, 1890, and I hereby disclaim all that is fully and clearly shown and described therein.

I claim as my invention—

1. The herein-described counting-register, consisting of a box or case *b*, the base-plate *a* and cap *c*, provided with oblique bearings, and the respective shafts set obliquely to the case within said bearings, a series of disks uniformly set at the front ends of said shafts within said case, and operating-knobs without said case and connected to said shafts, substantially as described, and for the purpose specified.

2. The herein-described counting-register, consisting of a box or case, the base-plate and cap having the oblique bearings, the latter having also the semicircular depressions or counterborings on its inner face and the perforations 26, and the series of shafts having a series of disks set at their front ends, with one side received in said recesses or counterborings, substantially as described, and for the purpose specified.

CHARLES J. ROOT.

Witnesses:
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