

H. CHANDLER.

Improvement in Counting-Register.

No. 130,017.

Patented July 30, 1872.

Fig. I.

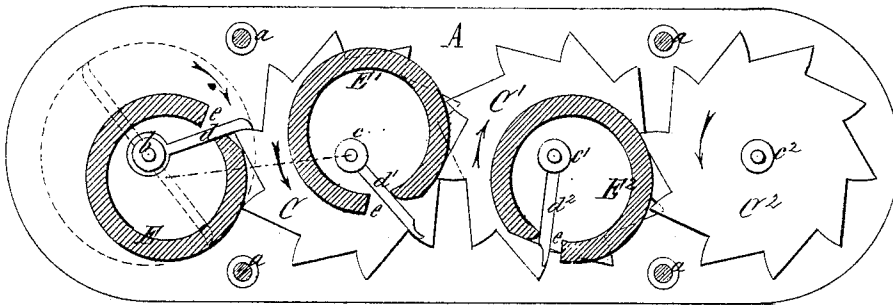


Fig. II.

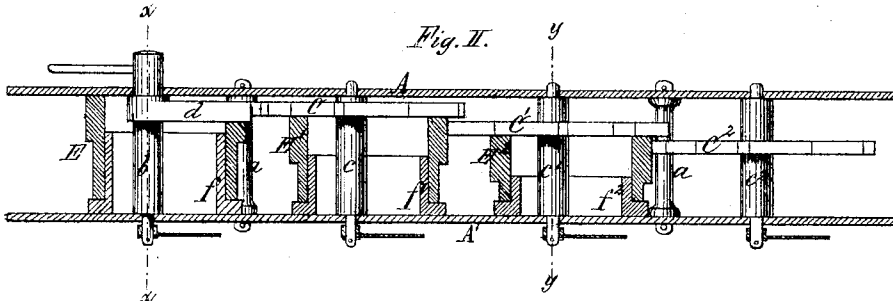


Fig. III.

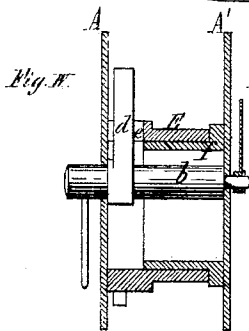
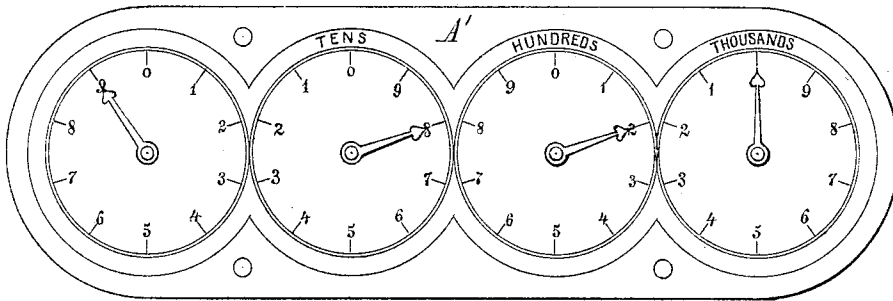


Fig. V.

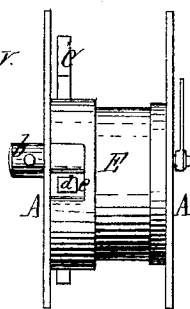


Fig. VI.

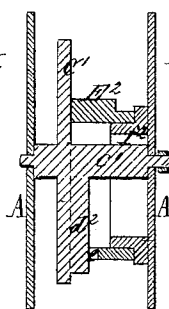
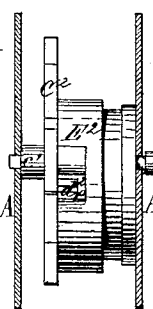


Fig. VII.



Edward Wilhelm
John J. Bonner
Witnesses

Henry Chandler, Inventor.
by Jay Hyatt Att'y.

UNITED STATES PATENT OFFICE.

HENRY CHANDLER, OF BUFFALO, NEW YORK.

IMPROVEMENT IN COUNTING-REGISTERS.

Specification forming part of Letters Patent No. **130,017**, dated July 30, 1872.

SPECIFICATION.

I, HENRY CHANDLER, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Counting-Machines, of which the following is a specification:

Previous to my invention counting or registering machines have been constructed with a driving-wheel having a single tooth projecting from its periphery, which engages with the notches of the numbering-wheel and turns the latter the distance of one notch or tooth for every revolution of the driving-wheel. After the counting-wheel has been moved one degree it is held stationary during the remainder of the revolution of the driving-wheel by the latter, which fits and turns in hollows or curved recesses formed in the periphery of the numbering-wheel between the notches thereof. To insure the turning of the numbering-wheel the proper distance each time, and to hold it stationary until the driving-wheel has completed its revolution preparatory to moving it a second time, requires such an accurate construction and nice adjustment of the parts as to render the device objectionable for cheap counting or registering machines, especially those which are subjected to considerable jarring, as is the case with such mechanism when attached to skid-ways, &c. The object of my invention is the construction of a registering mechanism which will be reliable in its operation without requiring such nice construction and adjustment of the parts.

The invention consists, first, in the combination, with a ratchet numbering-wheel, driving-shaft, and radial actuating-arm attached thereto, of a locking rim or wheel, provided with a notch or recess for the passage of said arm, and arranged eccentrically with the driving-shaft, which it surrounds, and by which it is rotated in such a manner that at the time the actuating-arm leaves the tooth of the numbering-wheel the face of the locking-wheel will be flush with the end of the arm, and will have engaged between the tooth just released and the one next behind, thereby insuring the locking of the numbering-wheel and the holding of the same stationary until the actuating-arm has completed its revolution and engaged with another tooth; second, in the combination of two or more eccentrically-arranged locking-wheels,

actuating-arms, and numbering-wheels, as hereafter described.

In the accompanying drawing, Figure I is a sectional elevation of my improved registering mechanism. Fig. II is a sectional plan view thereof. Fig. III is an elevation of the same, showing the dial-plates. Fig. IV is a vertical section on line *xx*, Fig. II; and Fig. V is a corresponding elevation. Fig. VI is a vertical section on line *yy* of Fig. II, and Fig. VII a corresponding elevation.

Like letters designate like parts in each of the figures.

A A' represent the side plates, and *a* the connecting-stays, forming the frame of the registering-machine. *b* is the driving-shaft, supported in the plates *A*, and receiving its motion from the apparatus to which the device is attached. *C C¹ C²* are three counting-wheels, arranged in an ordinary manner on the shafts *c c¹ c²* supported in the plates *A*, and each provided in its periphery with ten teeth or notches. *d d¹ d²* are the radial arms, secured to the shafts *b c c¹*, respectively, (the arms *d¹ d²* being also fastened to the wheels *C C¹*), so as to actuate the counting-wheels one degree for every revolution of the respective driving-shafts. As is usual in such machines, *E E¹ E²* are the locking rims or wheels, arranged eccentrically around the shafts *b c c¹*, respectively, and each provided with a notch, *e*, in its rim, through which the actuating-arm projects. The locking-rims *E E¹ E²* are arranged on hubs *f f¹ f²*, secured to the inner side of the plate *A'*, as clearly shown in Fig. II, and are revolved thereon by the actuating-arms *d d¹ d²*, which project through the notches thereof. The locking-wheels *D* are so arranged with reference to their counting-wheels that a straight line drawn through the center of both passes equidistant between the two teeth or notches in contact with the locking-wheel, as clearly shown in Fig. I, this being the most favorable position for the locking-wheel to hold the counting-wheel in place. The centers of the locking-wheels are so arranged with reference to the driving-shafts that the actuating-arms are gradually withdrawn into the locking-wheels as the counting-wheels are rotated, and entirely disengaged from the notch or tooth of the latter when the same have been moved exactly one degree, as indicated by the

dotted circle in Fig. 1. A solid portion of the locking-wheels, revolving with the actuating-arms, engages between the adjacent notches of the counting-wheels before the actuating-arm leaves the latter, whereby the same are securely held in place until the driving-shaft has completed its revolution. The rim of the locking-wheels is cut away adjacent to the notch *e* in front of the actuating-arms to enable the tooth of the counting-wheel, with which the arm engages, to pass by the locking-wheel, while the rearedge of the notch *e* is made nearly radial to insure the prompt engagement of the solid portion of the locking-wheel between the notches of the counting-wheel before the actuating-arm entirely disengages therefrom. As the locking-wheel may thus engage with the counting-wheel before the actuating-arm has become disengaged therefrom, it is obvious that a slight inaccuracy in the shape of the locking-wheel, or its adjustment a little further

from the counting-wheel, or a slight reduction in the length of the actuating-arm, will not obstruct or prevent the proper and reliable operation of the parts.

What I claim as my invention is—

1. The combination, with a ratchet numbering-wheel, driving-shaft, and actuating-arm thereof, of a revolving locking-wheel provided with the notch *e*, and arranged eccentrically with the driving-shaft, so as to engage between the ratchets of the numbering-wheel for holding it in place, substantially in the manner hereinbefore set forth.

2. The combination and arrangement of the shafts *b c*, radial arms *d d'*, eccentric locking-wheels *E E'*, and ratchet counting-wheels *C C'*, substantially as hereinbefore set forth.

HENRY CHANDLER.

Witnesses:

EDWARD WILHELM,
JOHN J. BONNER.