

J. S. ELLIOTT.
REGISTERING APPARATUS.

No. 177,928.

Patented May 30, 1876.

Fig. 1.

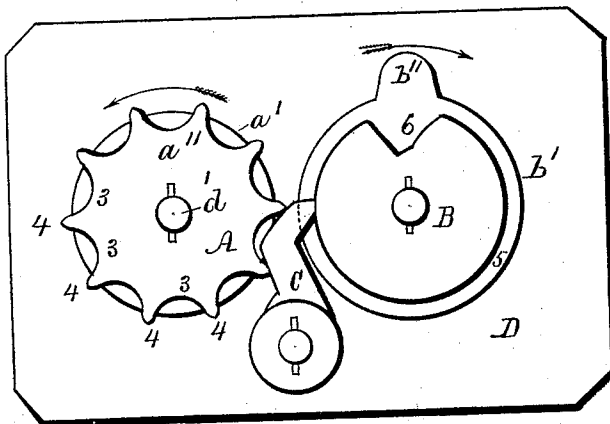
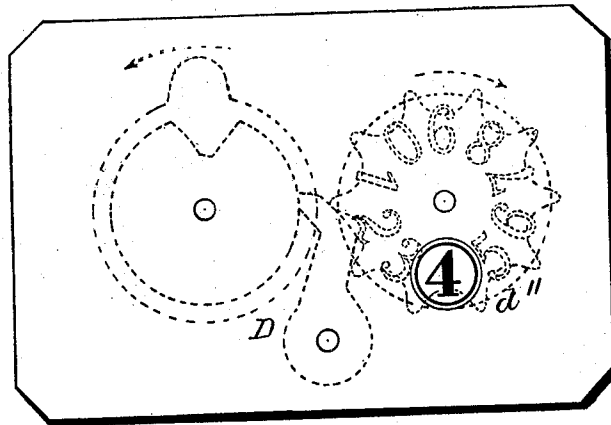
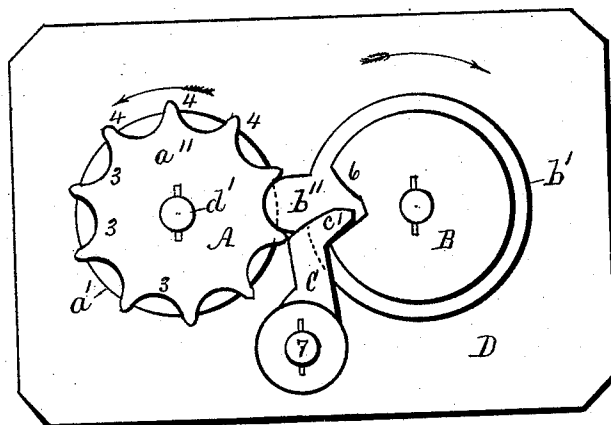


Fig. 2.

Fig. 3.



Witnesses:

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IMPROVEMENT IN REGISTERING APPARATUS.

Specification forming part of Letters Patent No. **177,928**, dated May 30, 1876; application filed April 27, 1876.

To all whom it may concern:

Be it known that I, JOSEPH S. ELLIOTT, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Register-Gear for Gas-Meters and other Registering-Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a short portion of the front of the register-plate, with the opening through which the ten single numerals of the first registering-disk are intended to be successively shown; Fig. 2, a plan view of the rear side of said section of the register-plate, showing the said first registering-disk and its actuating-disk, with a locking-lever between and in position to hold the registering-disk stationary, while the actuating-disk is left free to continue its proper rotary motion; and Fig. 3, a like view of the same parts shown in Fig. 2, but in their relative positions only at the time that the actuating-disk is about completing the periodical movement of the registering-disk the distance of one-tenth of its complete rotary motion, and causing the swinging end of the locking-lever to enter the next succeeding recess in the periphery of the registering-disk, and thus holding it stationary, while the actuating-disk continues its regular rotary motion until it again encounters and moves the registering-disk and locking-lever.

The object of my invention is to afford a more simply-constructed, easy-working, durable, and reliable register-gear.

Referring to Figs. 2 and 3, A is the first registering-disk; B, the actuating-disk thereof; C, the locking-lever, and D the short section of the face-plate, to which the gearing is attached, and, through appropriate holes therethrough, the exact registration shown, as represented at *d'* in Fig. 1. The registering-disk A consists of two circular plates of equal diameters, the one plate, *a'*, being made thin and provided with ten numerals, from 1 to 0, at equal distances apart, in a circle around near the outer edge of the disk, and has its opposite side soldered or otherwise fixed immovably to the under side of and concentric with the other plate, *a''*, which is about three-eighths of an inch thick, and has

its periphery accurately divided into ten equidistant semicircular recesses, 3 3, which leave between them ten solid, radially-projecting points or teeth, 4 4, substantially as represented in Figs. 2 and 3.

The two plates A and *a'* are so arranged and fixed together that the ten numerals on the flat face of the thin plate *a'* (which may be called the first dial-plate) shall be directly beneath or opposite to the respective semicircular recesses 3 3. The disk A, with its attached plate *a'*, is secured to the rear side of the main face-plate D by means of a cylindrical post, *d'*, which is fixed permanently in the said plate so as to project perpendicularly through a corresponding central hole in the disk A *a'*, which latter is kept thereon by a cross-pin through the projecting post, so that the same may be freely, yet accurately, rotated around the said post.

The actuating-disk B consists of two plates soldered or riveted together, the one, *b'*, being of about the same diameter as the thin plate *a'* of A, and the other or thicker one, B, about a quarter or three-sixteenths of an inch less in diameter, thus causing an annular recess, 5, around B. The thinner plate *b'* has a radially-projecting tooth, *b''*, the outer end of which nearly corresponds in size and form with any one of the semicircular recesses 3 3 in the periphery of A, while the thicker plate B has an angular recess, 6, which corresponds in width and depth with the width and length of the tooth *b''*, and is located nearly opposite to said tooth, (see Figs. 2 and 3,) and the said actuating-disk B is secured to the main face-plate D, so as to be rotated around the central post fixed in the said plate D, substantially in the same manner as described for the registering-disk A.

The two disks are arranged and secured upon the main plate D, so that when the disk B is put in rotary motion the tooth *b''* will enter the nearest recess of the series 3 3 in A, and consequently move the latter around to the extent of one space at every complete rotation of said disk B, provided the disk A remain stationary until the tooth *b''* comes around to enter the succeeding recess in A; but, as the disk A is applied to move with the least friction possible, there must be a stopping device

applied to hold it precisely in the position in which it may be left by the tooth of B, or there could not be any reliable registration-exhibition through the special opening d'' in the main plate D; and this very important result I accomplish in a most perfect and simple manner by the construction and application of a locking-lever, C, operated by the tooth b'' and recess 6 of the disk B, in connection with the opposite recesses in the registering-disk A. The locking-lever C swings easily on a post, 7, which is fixed perpendicularly in the main face-plate D, so that the single arm thereof projects upward between the disks A and B, and has its upper end c' pointed and bent toward B in such a manner as to be always in contact either with the face of the tooth b'' or with the face and edge of the recess 5 of B, as the disk B is rotated in the direction of the arrow V. The width, bend, length, thickness, and location of the said arm is such that, as soon as the tooth b'' , during the rotary movement of the disk B, has left the registering-disk A, the said bent and pointed end of the arm of C will rest in contact with the face and side of the recess 5, (see Fig. 2,) and as the tooth again encounters the disk A, it enters the next succeeding recess of A and moves the disk around exactly one-tenth of its circumference, and thus brings the required numeral exactly opposite to the opening d'' in the main face-plate D, (see Fig. 1;) and during this movement of the tooth the lower projecting edge of said recess pushes the pointed bent end c' of the lever-arm into the recess 6 of B, and, immediately passing out of contact with the said lever, the lower edge of the recess 6 pushes the salient angle of said arm of the lever back into the next succeeding recess of A, and thus firmly holds the disk A stationary, or prevents the possibility of its being moved until the tooth b'' of B again encounters the disk A in the same manner just described.

In applying the disks and locking-lever to the main face-plate, the registering-face of disk A is applied directly to the back surface of said plate, the disk B supported by a suitable collar sufficiently above the said plate to cause the tooth and edge of plate of b' to be above the plane of the upper surface of the plate a' of A, and the locking-lever C supported by a suitable collar sufficiently above the upper surface of the projecting edge 5 of b' and of tooth b'' and recess 6 of the disk B, and thus avoid as much as possible all binding pressure of one moving surface upon another.

In extending this registering-gear to hundreds, thousands, &c., the actuating-disk for each succeeding registering-disk must be rigidly fixed to the immediately-preceding registering-disk, and thus the first actuating-disk B of the series governs the movements of all the succeeding ones, as heretofore.

Having thus fully described my improvement in registering-gear, I wish it to be understood that I do not intend to confine myself to the precise form described and shown of the recesses and points 3 and 4 of the disk A, nor of the tooth b'' and recess 6 of the disk B, nor of the bent and pointed end of the arm of the locking-lever C, as these may be varied in form without varying in function; but

I claim as my invention—

The combination, in a register-gear, substantially as described, of the locking-lever C with the disks A and B, the said parts being constructed and arranged to operate together, substantially as and for the purpose set forth and described.

JOSEPH S. ELLIOTT.

Witnesses:

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WM. H. MORISON.