

J. S. ELLIOTT.

Gas Meter.

No. 33,300.

Patented Sept. 17, 1861.

Fig. 1.

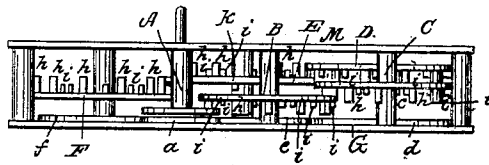


Fig. 2.

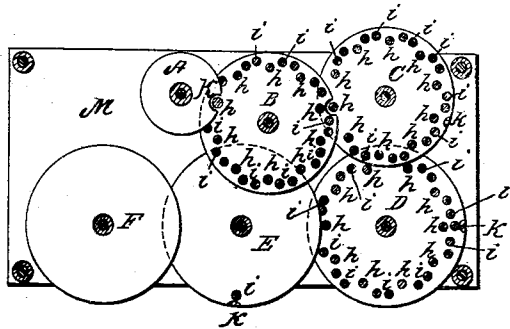
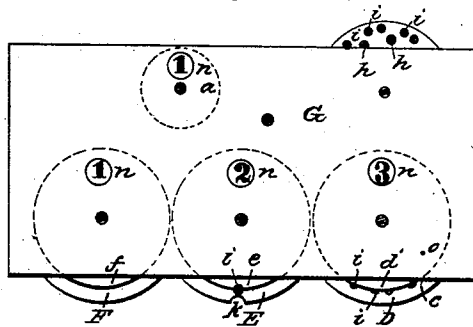


Fig. 3.



Witnesses:

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JOSEPH S. ELLIOTT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED REGISTER FOR GAS-METERS.

Specification forming part of Letters Patent No. 33,300, dated September 17, 1861.

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 Gas-Meters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to the construction of the registers of gas-meters, and especially to that class of registers which effect an instantaneous movement of the numeral-disks.

Letters Patent bearing date the 26th day of March, 1861, were granted to me for a certain improvement in the gearing of this class of meters; but in manufacturing under the patent it is found that so much accuracy and care are required in the construction both of the stop and gear teeth and in the subsequent adjustment of the wheels in relation to each other that the most skillful and costly labor must be employed in their production, and to avoid this difficulty, and consequent expensive cost, without diminishing the superior accuracy and advantages of these registers is the principal object of the present invention.

It consists in constructing and arranging both the stop and the gear teeth to project perpendicularly around on one side of the disk of each of the driven wheels, as hereinafter described, and a driving stud or tooth on the opposite side of the disk of each of the driving-wheels, together with a recess in the edge of the latter, as hereinafter described, the said wheels being arranged to operate together in the manner hereinafter described.

In combination therewith, my invention also consists in placing the numeral-disks directly behind the front frame-plate, as hereinafter described.

In the drawings, Figure 1 represents a side view, Fig. 2 a plan of the interior, and Fig. 3 a front view, of a gas-meter register having the said invention applied.

A B C D E F are the several driving and driven wheels, the wheels B C D E serving the double purpose of drivers and driven, the wheel A as a driver only, and the wheel F as a driven wheel only. The shaft of the wheel

A and those of the three last D E F carry, respectively, the figure or numeral disks *a d e f*, the numbers thereon being exposed singly through appropriate holes *n n* made in the front frame-plate G, as seen in Figs. 3 and 1, the said front plate being dispensed with in Fig. 2 in order to expose the wheels. The stop-teeth *h h* are cylindrical in form and project as studs around from and perpendicularly to the one side of the wheels B C D E F in concentric circles within other circles of shorter teeth *i i*, which project in the same perpendicular manner concentrically around near the edges of the said wheels and form the gear-teeth thereof, as seen in Figs. 1 and 2.

The outer circle or the gear-teeth *i i* of each wheel are represented in the drawings as in pairs; but as each pair virtually serves as one tooth, as will hereinafter appear, the space between each of the two said teeth may be filled up solid in casting, if preferred.

In the edge of each of the wheels that act as drivers—viz., the wheels A B C D E—there is made a recess *k*, and just in the rear of the said recess a short cylindrical driving tooth or stud *l* also projects perpendicularly from the side of the disk of the wheel, as seen in the drawings, and the several wheels are arranged between the front and back plates G M, so as to overlap each other in their respective order sufficiently to bring their respective studs *l* into their line of gear and the outer edge of each wheel acting as a driver almost in contact with any two of the stop-teeth *h h* of the respective wheel to be driven thereby, or in such approximation as will prevent the rotary motion of the latter until in the operation of the machine the recess *l* in the edge of the former comes round and receives the nearest stop *h*, the driving-stud *l* in rear of the recess *k* of the driving-wheel at the same time coming against its nearest one of the pair of gear-teeth *i i* of the driven wheel, and thereby moving the latter wheel around until the next succeeding pair of stop-teeth or studs *h h* thereon come against the edge of the driver and is thereby held locked or stopped, while the driver is free therefrom to rotate once round, it only slightly touching either the one or the other of the two said stop-studs *h h* of the former wheel with its smooth edge. It will therefore be perceived that as the stops *h h* are cylindrical in

form they are not liable to catch on any slight obstruction, hollow, or scratch which might be on the edge of the driver in contact, so as to arrest its motion, nor to rapid wearing away, as would sometimes be the case were the teeth made radial and sharply pointed at their ends, as is required in my former invention. Besides, in the present invention the stop-studs *h h*, not being required to serve also as gear-teeth, afford more space between them, and therefore a more extended and effective grasp of the same upon the edge of the driver, (by widening the gear-teeth *i i* between,) and so admit of more play between the said wheel and stops for the rotary motion of the former than can be obtained by any other construction.

Another advantage in point of economy in construction arises from the fact that in consequence of the simple form and arrangement of both the stop and gear teeth, as described and set forth herein, they can be readily cast on simultaneously in casting the disks of the wheels, and in a perfectly-finished condition for use, while the radial pointed teeth of my former invention require the nicest dressing with a cutter, which, as before said, adds greatly to the cost of construction and increases their liability to wearing off, so as to become too short.

The numeral-disks *a d e f* are permanently fixed on the shafts of their respective wheels A D E F, as seen in Figs. 1 and 3, so as to be

within the frame-plates G M, the plate G being the front of the index and having the openings *n n*, through which the figures are singly seen, thus rendering the use of the extra plate heretofore required for the purpose entirely unnecessary, and in so far also economizing in the cost of construction without in the least diminishing the accuracy and efficiency of the apparatus.

Having thus fully described my improvement and pointed out its utility, what I claim as new therein of my invention, and desire to secure by Letters Patent, is—

1. The construction and arrangement described of the concentric rings of perpendicular cylindrical stop teeth or studs *h h* and the perpendicular gear-teeth *i i* on the driven wheels, together with the recesses *k* and perpendicular driving-studs *l* in the drivers, the whole operating together in the manner described and set forth, and for the purpose specified.

2. In combination with the subject-matter of the above claim, arranging the numeral-disks *a d e f* upon the shafts of their respective wheels A D E F, so as to operate behind the perforated front plate G of the frame, as described and set forth, and for the purpose specified.

J. S. ELLIOTT.

Witnesses:

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