

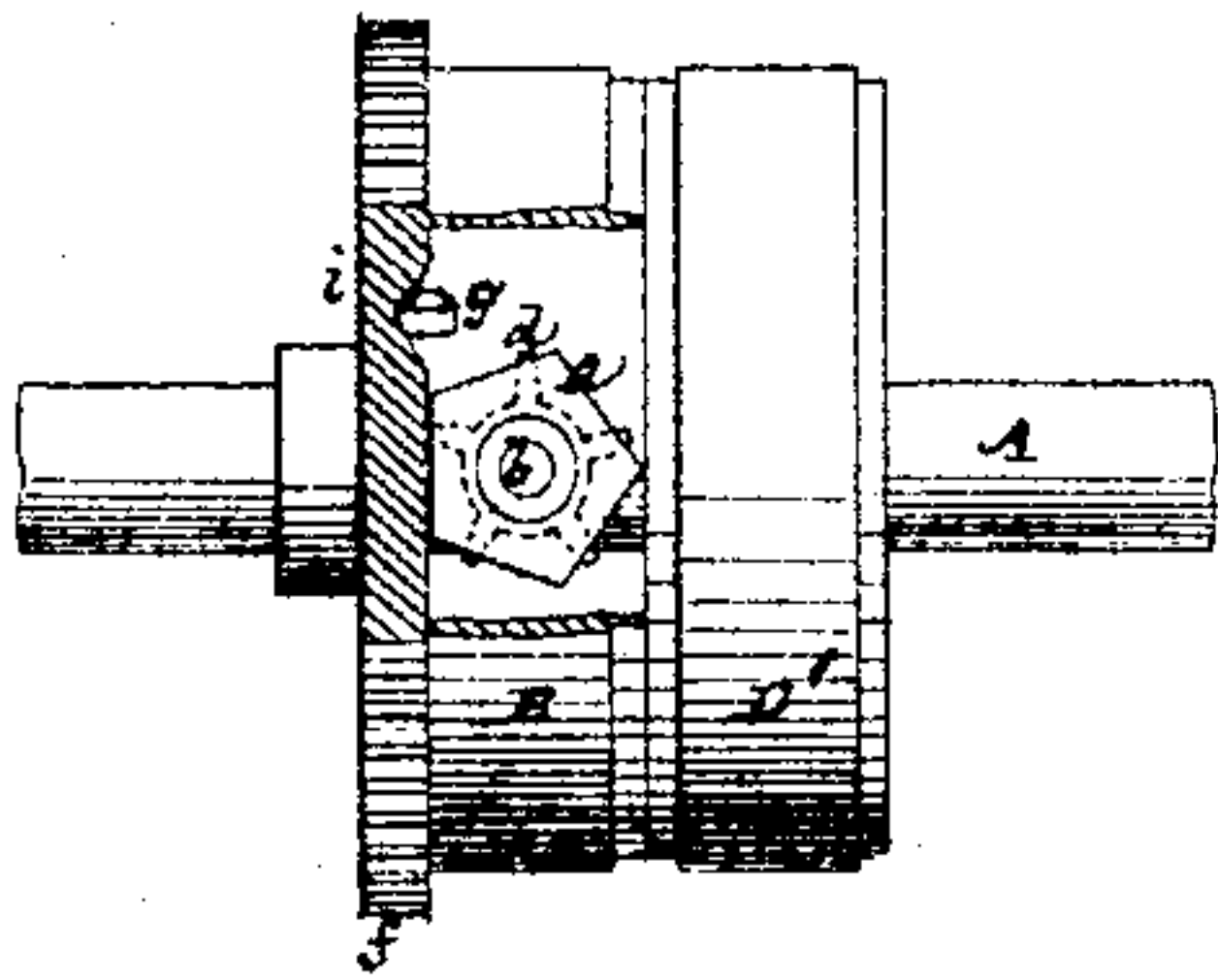
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Improvement in Counting Registers.

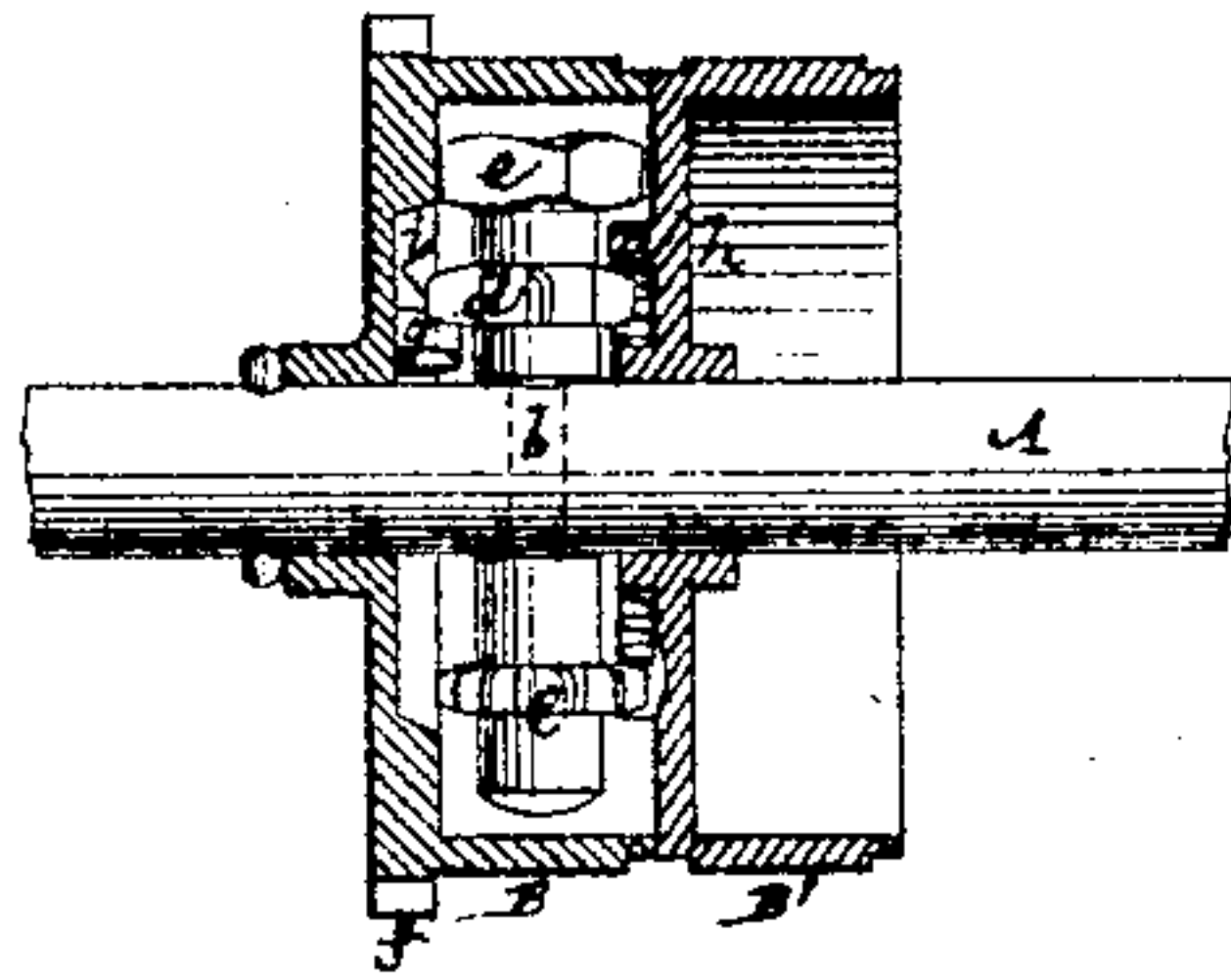
No. 126,361.

Patented April 30, 1872.

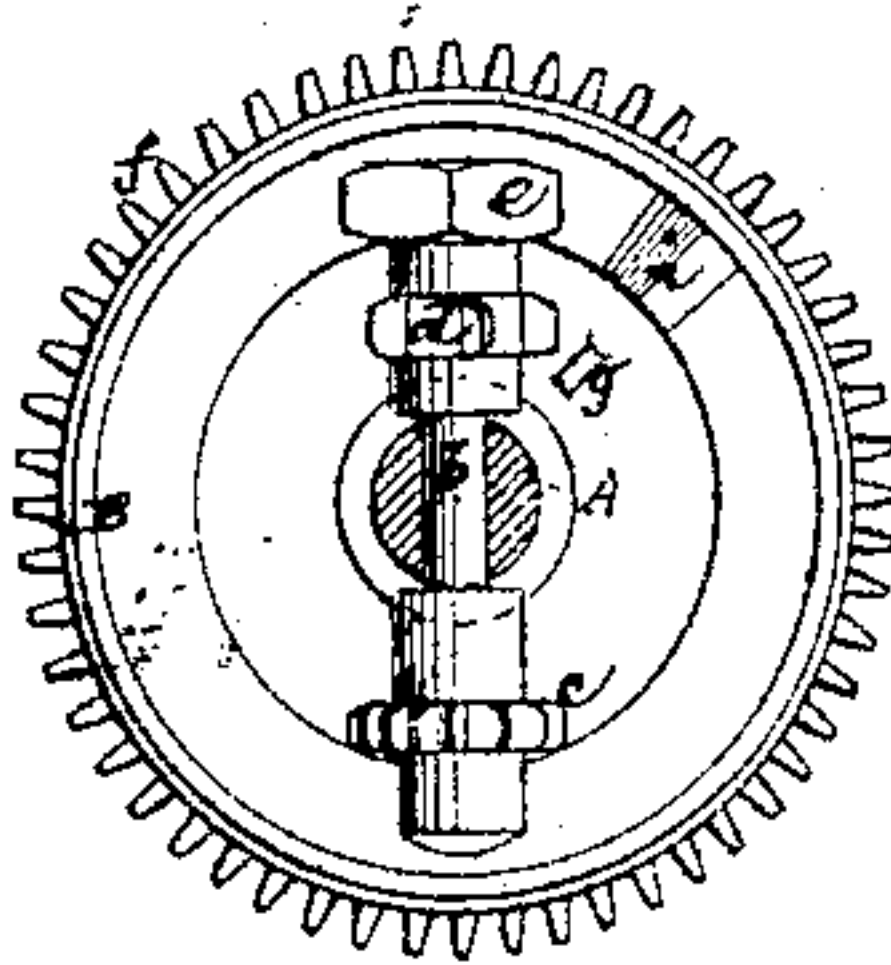
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN COUNTING-REGISTERS.

Specification forming part of Letters Patent No. 126,361, dated April 30, 1872.

Specification describing an Improved Mechanical Movement, invented by ALBERT M. WHITE, of Bridgeport, in the county of Fairfield and State of Connecticut.

This invention consists in certain novel features or elements that, combined, constitute a new or improved mechanical movement for transmitting motion from a primary revolving wheel or driver to another wheel, or any number of wheels in succession, arranged side by side on the same shaft or axis, and deriving regular progressive motions in successive order, one from the other, at intermittent periods; said wheels—or cylinders, as they may be termed—being hollow, and containing the mechanism by which motion is communicated from one to the other within them, and forming, among other purposes or uses, a convenient arrangement of cylinders for counting devices or indicators, applicable to meters and other purposes.

In the accompanying drawing, which forms part of this specification, Figure 1 represents an exterior longitudinal view of my invention with one of its cylinders broken away, for the purpose of exposing certain mechanism; Fig. 2, a longitudinal section of the same; and Fig. 3, an interior face view of one of the cylinders used in the movement.

Similar letters of reference indicate corresponding parts throughout the several figures of the drawing.

A is a stationary shaft, on which are arranged any number of loose hollow cylinders, B B', placed side by side, or with the back of one cylinder against the mouth of the next cylinder. Two cylinders, however, will suffice to explain the invention. Arranged so as to be capable of free rotation within the stationary shaft A, and in transverse relation thereto, within the cylinder B is a pin or spindle, *b*, that has fast to it on its one end a pinion, *c*, and has attached to its other end a toothed driver, *d*, and polygonal stop *e*, the sides or acting surfaces of which latter correspond with the number of teeth in the driver *d*. The cylinder B may be rotated either continuously or intermittently by an outside spur-gear, *f*, or by any other means, according to the purpose to which it is required to apply the mechanical

movement. Fast to the interior of the back of said cylinder is a stud, *g*, that, as the cylinder completes a revolution, strikes a tooth of the driver *d* and moves the latter the distance of a tooth, and with it the spindle *b* and pinion *c*.

The intermittent revolving motion thus communicated to the pinion *c* is conveyed to the next cylinder B' by the gear of the pinion *c* with a spur-gear, *h*, on the back of said cylinder. Thus, supposing the driver *d* to have five teeth, then the spindle *b* and pinion *c* will only revolve once to every five revolutions of the cylinder B; and supposing the pinion *c* to be only half the diameter of the gear *h*, then the cylinder B' will only be revolved once for every ten revolutions of the preceding cylinder B. The polygonal stop *e* serves, by its sides successively resting on the interior of the back of the cylinder B as the latter is revolved, to hold the spindle from being unduly or accidentally turned; but when the stud *g* comes round to move the driver *d*, then the polygonal stop *e* is at liberty to enter a recess, *i*, in the cylinder B, and to turn, in common with the spindle *b*, driver *d*, and pinion *c*.

In this way a positive progressive motion at regular intervals only is communicated from the cylinder B to the cylinder B'; and by repeating the mechanism *b*, *c*, *d*, and *e* within the second cylinder B', and providing the latter with a driving-stud, *g*, and recess *i*, to correspond with the construction shown for the cylinder B, then such second cylinder B' may be made to transmit a positive progressive motion at regular intervals to a third cylinder, and so on indefinitely for any number of cylinders in succession, each succeeding one moving at a slower velocity or making a fewer number of revolutions within a given time than its preceding one. Thus the second cylinder, making only one revolution for every ten revolutions of the first cylinder, may operate the third cylinder at a proportionately slower speed, or once for every ten revolutions of it, which will be once for each hundred revolutions of the first cylinder.

By the arrangement of the cylinders and the disposition of the mechanism within them, the outer peripheries of the cylinders form convenient surfaces for numerical divisions in the



same reading line as regards the several cylinders, thus admitting of the mechanical movement being transformed into a very simple and convenient counter, indicator, or calculating device.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination, with a series of two or more cylinders or wheels, B B', arranged as described, of the stationary shaft A, the transverse revolving spindle *b*, the pinion *c*, gear *h*,

the driver *d*, and stud *g*, substantially as specified.

2. The stop *e*, in combination with the recess *i* in the plain surface of the cylinder or wheel, the stud *g*, the driver *d*, and spindle *b*, for operation in relation with each other, essentially as shown and described.

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