

COUNTER.

1,044,710.

2 SHEETS—SHEET 1.

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 COUNTER.

APPLICATION FILED NOV. 10, 1910.

Patented Nov. 19, 1912.

2 SHEETS—SHEET 2.

1,044,710.

Fig. 3.

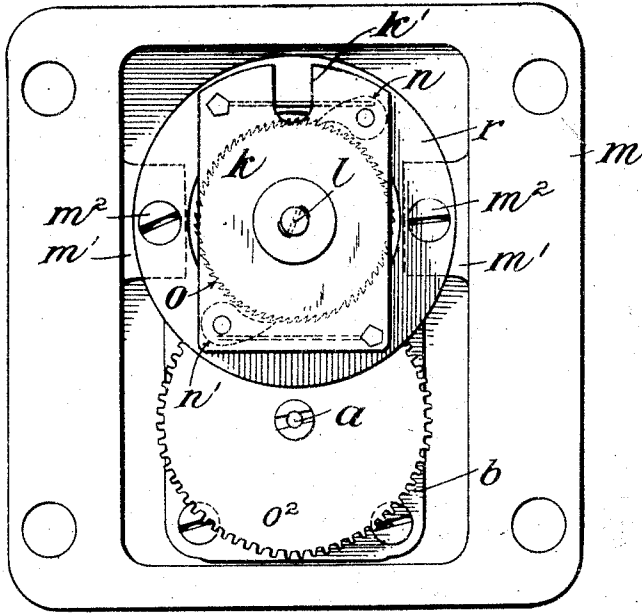
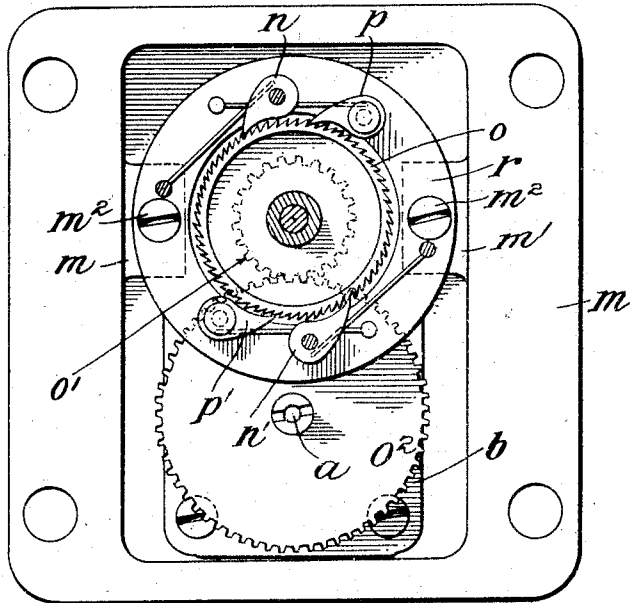


Fig. 4.



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UNITED STATES PATENT OFFICE.

CURTIS HUSSEY VEEDER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE VEEDER MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

COUNTER.

1,044,710.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed November 10, 1910. Serial No. 591,737.

To all whom it may concern:

Be it known that I, CURTIS HUSSEY VEEDER, a citizen of the United States, residing in the city of Hartford, in the State of Connecticut, have invented certain new and useful Improvements in Counters, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to registers or counters in which the several index or number wheels or rings are mounted upon a common axis and are actuated, one from another, through suitable transmitting mechanism, the wheel of the lowest denomination being actuated from some external source.

One object of the invention is to improve the construction, with a view to a reduction in the cost of manufacture, this feature of improvement being generally applicable to counters of the class referred to, and another object of the invention is to improve the devices for actuating the number wheel of the lowest denomination, this feature of the invention being especially applicable to counters which are actuated directly from a rotary or rotary oscillating shaft.

The invention will be more fully explained with reference to the accompanying drawings in which it is illustrated and in which—

Figure 1 is a top view, partly broken out, of a counter which embodies the present improvements, the actuating shaft being also shown. Fig. 2 is a view in longitudinal section on the plane indicated by the line 2—2 of Fig. 1, but on a larger scale. Fig. 3 is a view in elevation as seen from the right hand in Fig. 2. Fig. 4 is a view in section on the plane indicated by the line 4—4 of Fig. 2, looking in the direction of the arrows.

The counting mechanism comprises a central shaft *a*, which is also, in the construction shown, the driving shaft for the wheel of the lowest denomination, end plates *b* and *b'* in which the shaft *a* is mounted, index or number wheels or rings *c*, *c'*, &c., which are mounted on the shaft *a*, transmitting mechanism *d*, *d'*, &c., between successive index rings, shells or frames *e*, *e'*, &c., each of which carries the corresponding transmitting mechanism *d*, *d'*, &c., and receives the corresponding index rings *c*, *c'*, &c., and means to secure together, in axial

series, the several sectional units, each of which, being made up of the parts enumerated, is complete in itself and, as to all except the end units, is identical with every other.

In the construction shown in the drawings, particularly in Figs. 1 and 2; the means provided for the purpose of securing the sectional units together consist of an outside shell *f* into which the several units are forced, but obviously other equivalent means may be employed for the purpose.

The invention is not concerned with the particular construction of the index rings and the transmitting mechanism and as any usual or suitable form and arrangement of such devices may be employed no attempt is made herein to illustrate or to describe such devices in detail. Since each intermediate unit is identical with every other it is possible to make up at any time a counter with any desired number of index or number rings or wheels, without requiring any great stock of parts to be carried or different tools for the production of different parts to be provided. The outside shell may be made from ordinary tubing, cut off at any desired length, with a hole, as at *g*, milled at one side for a window *h* and the only other variable parts required are the center shaft and the screws which bind all parts together.

Any suitable means may be provided for driving the index ring of the lowest denomination from the center shaft *a*. As shown, the shaft is provided with a transverse pin *a'* which is adapted to engage the internal gear teeth *c** of the first index ring. The driving mechanism, through which movement is imparted to the center shaft *a*, as shown in the drawings, has been devised with special reference to use of the counter in connection with a pump which may have a variable throw, the special purpose in view being to prevent the operation of the pump by short strokes without counting. As shown, a rotary oscillating shaft *i*, connected with the pump mechanism, is provided with an arm *i'* which engages a plate *k* notched, as at *k'*, and mounted on a stud *l* which is secured in the frame or casing *m*. On the inner face of the plate *k* are mounted spring-pressed pawls *n*, *n'* on opposite sides of the axis. These pawls engage a fine toothed ratchet wheel *o* which is also mounted on the stud *l*. Spring-pressed hold pawls

5 p, p' also engaging the teeth of the ratchet wheel o , are mounted on a ring r which encircles the ratchet wheel o and is supported by lugs m', m' on the frame or casing m , being secured thereto by screws m^2 . The ratchet wheel o has secured thereto or formed therewith a pinion o' which meshes with a gear o^2 fast on the center shaft a . It will be observed, by inspection of Fig. 4, not only that the teeth on the ratchet wheel o are fine but that the opposite pawls are offset with respect to diametrically opposite teeth of the ratchet wheel, so that when the pawl at one side is at the bottom of the ratchet tooth the pawl at the other side is half way up the corresponding ratchet tooth, whereby the pawl carrying plate k is moved through only one half of the angular space of a ratchet tooth to secure a fresh hold and a very slight movement of the actuating shaft i is therefore sufficient to produce a forward movement of the counting mechanism.

25 It will be understood that the form of the parts may be varied to suit different conditions of use and that the invention is not restricted to the precise details of construction shown and described herein.

30 I claim as my invention:

35 1. In a counter, the combination with an index ring and a supporting frame or casing, of driving mechanism comprising a ratchet wheel, transmitting devices between the ratchet wheel and the index ring, and a pawl carrying plate mounted on the same axis

with the ratchet wheel and having opposite pawls engaging the teeth of the ratchet wheel.

2. In a counter, the combination with an index ring and a supporting frame or casing, of driving mechanism comprising a ratchet wheel, transmitting devices between the ratchet wheel and the index ring, and a pawl carrying plate mounted on the same axis with the ratchet wheel and having opposite pawls engaging the teeth of the ratchet wheel, the opposite pawls being offset with respect to diametrically opposite teeth on the ratchet wheel so that the pawl at one side is at the bottom of the corresponding ratchet tooth while the pawl on the opposite side is half way up the corresponding tooth.

3. In a counter, the combination with an index ring and a supporting frame or casing, of driving mechanism comprising a ratchet wheel, transmitting devices between the ratchet wheel and the index ring, a pawl carrying plate mounted on the same axis with the ratchet wheel and having opposite pawls engaging the teeth of the ratchet wheel, a ring secured on the frame or casing and encircling the ratchet wheel and hold pawls carried by said ring and engaging the ratchet wheel.

This specification signed and witnessed this seventh day of November, A. D., 1910.

CURTIS HUSSEY VEEDER.

Signed in the presence of—

AMASA TROWBRIDGE,
 E. BARRIE SMITH.