S. W. POTTS.

REGISTER.

APPLICATION FILED MAY 21, 1909.

950,601. Patented Mar. 1, 1910.

FIG. 1.

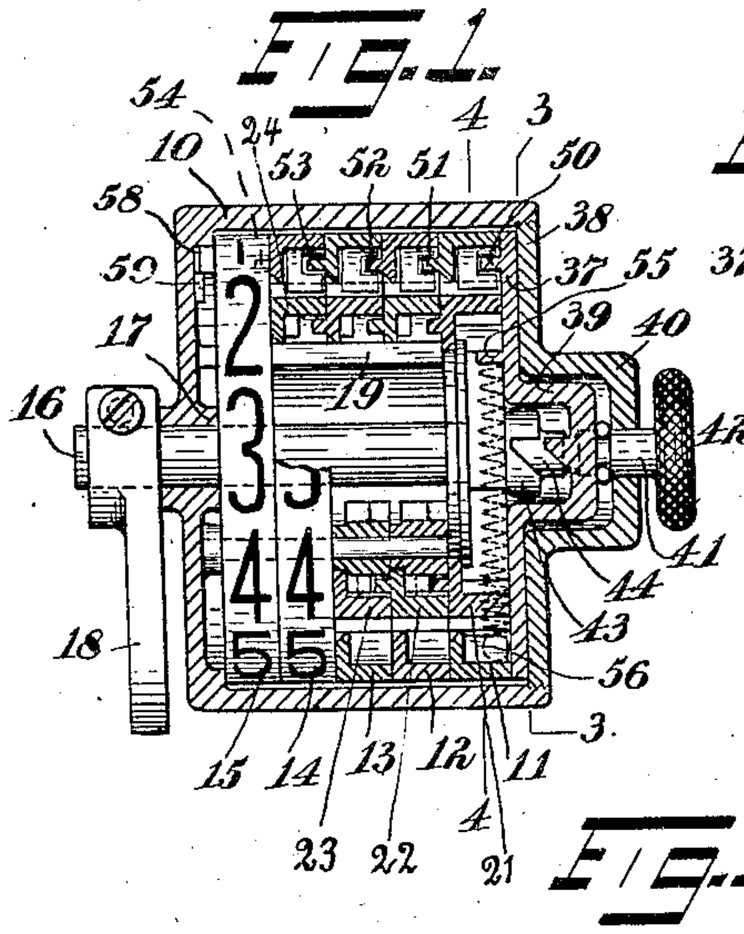


FIG. 2.

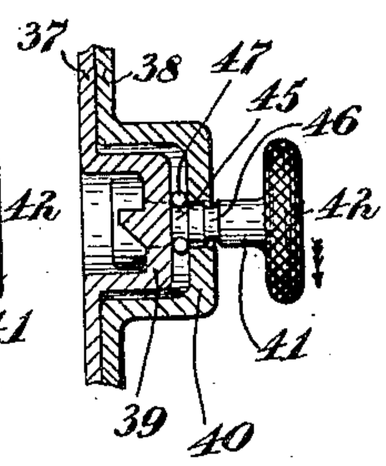


FIG. 3.

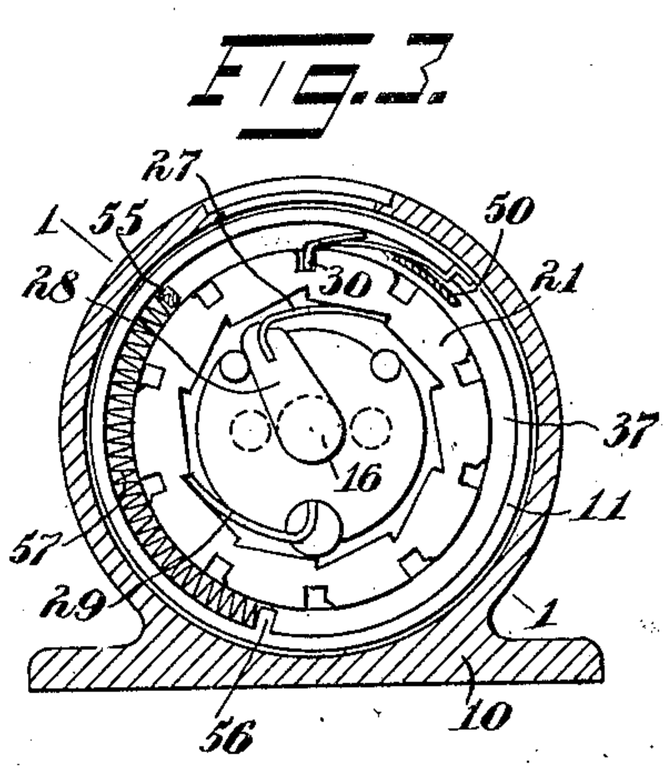


FIG. 4.

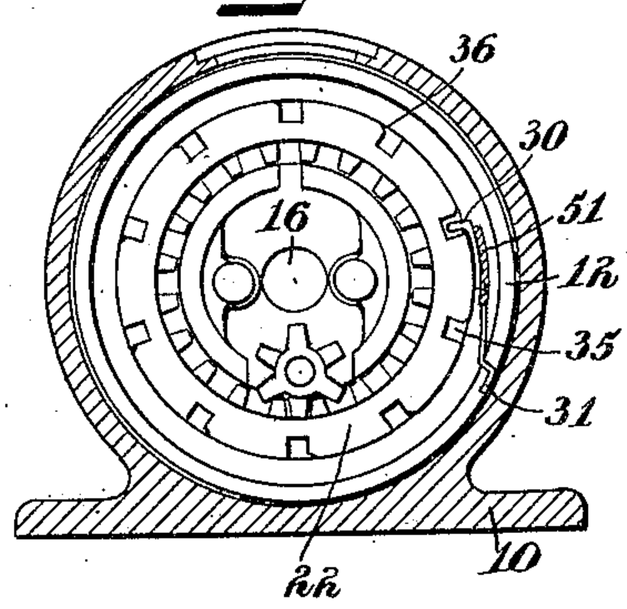


FIG. 5.

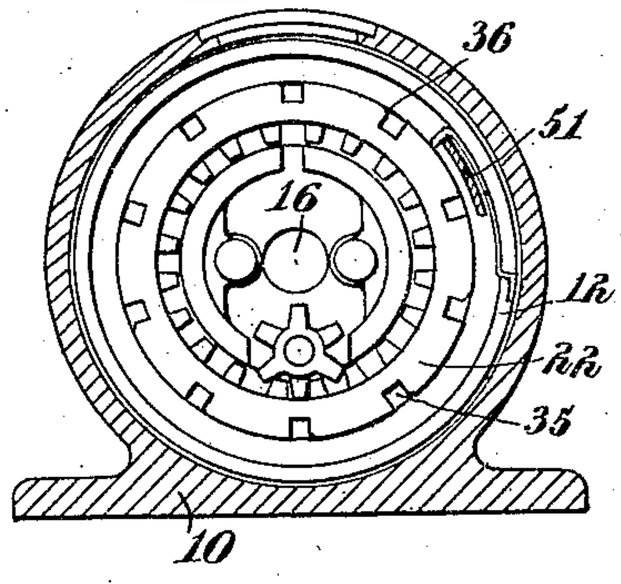


FIG. 6.

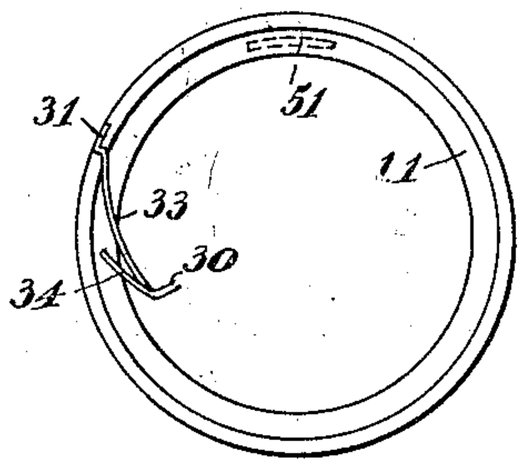


FIG. 7.

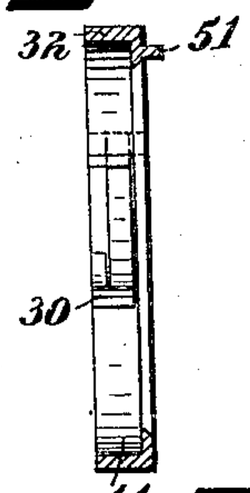


FIG. 8.

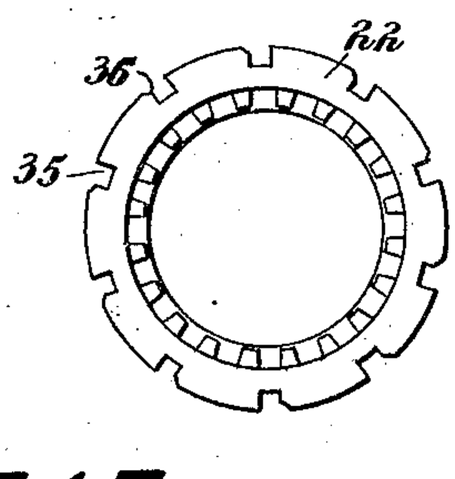


FIG. 9.

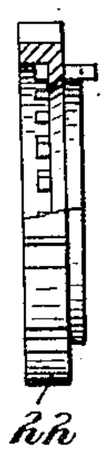
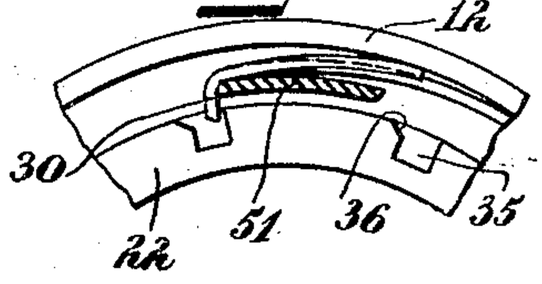


FIG. 10.



Witnesses:

S. Truman

Chas. L. Russell.

Inventor:

Samuel Warren Potts.

UNITED STATES PATENT OFFICE.

SAMUEL WARREN POTTS, OF NEW YORK, N. Y., ASSIGNOR TO THE VEEDER MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

REGISTER.

950,601. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed May 21, 1909. Serial No. 497,401.

To all whom it may concern:

Be it known that I, SAMUEL WARREN POTTS, a citizen of the United States, residing in the borough of Manhattan, of the city, county, and State of New York, have invented certain new and useful Improvements in Registers, of which the following is a specification.

This invention relates to registers or counters and has for an object to provide improved means for setting the number-wheels at zero.

In the drawings accompanying and forming a part of this specification Figure 1 is a longitudinal sectional view of a practicable embodiment of a form of my improvement, this section being taken on a plane represented by the line 1—1 in Fig. 3. Fig. 2 is a detail view illustrating the clutch mechanism; which is illustrated in Fig. 1 in its open position; in its clutching position. Fig. 3 is a cross section taken on the line 3—3 of Fig. 1, looking toward the right. Fig. 4 is a cross section taken in a plane at about the line 4—4 of Fig. 1 looking toward the right. Fig. 5 is a view similar to Fig. 4 showing the catch or spring pawl member in a different position relative to its actuator than the position which is illustrated in Fig. 4. Fig. 6 is an end view of one of the number-wheels removed. Fig. 7 is a cross sectional view of the number-wheel shown in Fig. 6. Fig. 8 is an end view of one of the driving wheels. Fig. 9 is an edge view thereof partly broken away in cross section; and Fig. 10 is an enlarged detail of one of the catches and its actuator.

There is illustrated a casing 10 which partly constitutes the frame work of the device. Mounted within the casing is a series of number-wheels 11, 12, 13, 14 and 15. The general form of the device is such as that illustrated in United States Letters Patent 634,074 issued to Curtis Hussey Veeder, October 3rd, 1899 for "Registering counter" and, as in such patent, the present improvement is shown in connection with such a counter as will be operated by an oscillatory or rock shaft movement, there being shown a rock shaft 16 mounted in a bearing 17 of the casing 10, and adapted to be actuated from some moving device by the arm 18. The casing or framing member supports interiorly a hub or boss 19 which forms a bearing for supporting the driving-wheels four of which 21, 22, 23 and 24 are shown in Fig. 1, the fifth wheel is hidden from view in this figure by the number wheel 15. The driving wheels are rotated in the well known manner. One of the differences between this structure and that shown in the patent above referred to is: in the patent the number-wheels find a bearing on the said boss or hub, whereas herein each of the number-wheels finds a bearing upon the driving wheel which is within it.

In operation the first of the driving wheels 21 will be rotated step by step by means of the pawl 27 carried by the rock arm 28 which is on the shaft 16, and this driver is prevented from being moved backwardly by the detent 29, as in said patent. The connection between each of the drivers and its number wheel is effected by means of a catch 30, in the present instance the catch is shown as a spring member which has a portion 31 suitably bent and set in a slot in the flange portion 32 of the number wheel, the intermediate portion 33 of the member is resilient and carries a by-pass spring finger 34, presently to be described. The catch portion 30 will seat in notches 35 in the driving wheel. These notches at their lower portion are provided with walls of such formation that the catch will remain seated without a tendency to ride out of the notch. One of the side walls, as 36, of each notch is, however, shown as chamfered from a point considerably above the bottom of the notch to the top thereof for permitting the catch to ride out of the notch when raised by its actuator in the manner described when the number-wheels are being returned to their zero position.

For the purpose of setting the number-wheels to zero position a plate 37 is shown mounted inside of the end plate 38 of the casing and which plate has a hub 39 mounted inside of the hub 40 of the plate 38. The hub 40 supports a short shaft 41 which has on its outer end a knurled head 42 and on its inner end a clutch member 43 provided with a recess for engaging with a projection 44 upon the plate 37. These clutch members will be moved into and out of engagement one with the other upon the reciprocation of the shaft 41, which shaft is provided with a number of grooves 45 and 46 for the engagement of a spring ring 47 which, by virtue of the fact that it is held

between portions of the end plates 37 and 38 will slide upon the shaft 41 and occupy one or the other of the grooves 45 and 46.

When the clutch member is in the position illustrated in Fig. 2 and the head 42 is turned in the direction of the arrow thereon the plate 37 will be rotated and a projection 50 thereon will pass under the spring finger 34 and engage and flex the resilient portion 33 and raise the catch 30 sufficiently high in the notch 35 that it will slide up upon the chamfered portion 36 and will then pass over the periphery of the driver until it comes to the next notch when it will drop into such notch, and if the movement of the member 51 is continued the catch will be ratcheted out of such notch. When the projecting member or actuator 50 is under the finger 34 and in engagement with the catch 30 this and the notches of the driving member are caused to assume the relations and functions of a pawl and ratchet, since the chamfering is only upon one side of the notches and permits the catch to move in that direction around the driver wheel but the walls on the opposite sides of the notches being unchamfered will act as detents to prevent a reverse movement of the catch.

The first driving wheel 21 will be held during the setting from backward or reverse movement by means of the detent 29, and the well known form of pinions which connect one driver with the other will lock the respective drivers from reverse movement. The number-wheels 11, 12, 13, and 14 are respectively provided with projections 51, 52, 53 and 54. The actuator projection 50 upon the plate 37 will act upon the catch of the number-wheel 11. The actuator projection 51 of the number-ring 11 will act upon the catch of the driving ring 12, and so on through the series.

Referring to Fig. 3 it will be noted that the actuator projection 50 and a projection 55 are carried by the plate 37 and that the catch 30 and a projection 56 are carried by the number-ring 11. Between the projections 55 and 56 is inserted a compression spring 57 which will immediately upon release of the head 42 by the hand of the operator move the projection 50 out from under the finger 34 and permit the catch to sink into the lower portion of the notch 35, so that after the device has been set back the parts will be automatically put in such a position that they can only be moved from such position by the oscillation of the arm 28.

As the parts are being moved around in registering or counting the projections 50 etc. will pass over the by-pass spring fingers 34 without interfering with the proper working of the mechanism. In Fig. 4 this by-pass movement is being illustrated. In Fig. 5 the receding movement of the projection is illustrated and the catch 30 is shown as riding upon the periphery of the driving wheel between two notches. And in Fig. 10 the projection is shown as holding the catch in its ratcheting relation to the notches of the driving wheel.

The number-wheel 15 has a projection 58 for engaging a detent 59 when all the wheels are returned to zero. The detent 59 is in the form of a spring so that it will permit the detent to pass it on the forward movement of the wheel.

Having thus described my invention, I claim:

1. The combination with a casing provided interiorly with a hub, of a series of driver wheels mounted on the hub and means for actuating the driver wheels, a number-wheel mounted upon each driver wheel and a catch for causing the number-wheel to rotate with its associated driver wheel, and means for releasing the catches and reversely rotating the number-wheels.

2. The combination with a series of drivers and means for actuating the drivers, a number-wheel mounted adjacent to each driver, a catch for causing the number-wheel to rotate with its associated driver, and means for engaging and releasing the catches and reversely rotating the number-wheels.

3. The combination with a series of number-wheels, of a spring pawl provided with a by-pass mounted on each number-wheel, a driving wheel mounted within each number-wheel and provided with a series of notches for the engagement of the pawl of the associated driver wheel, and means for rotating the driver wheels, and a member carried by each number-wheel for disengaging the pawl of the next wheel upon reverse rotation and located for riding over the by-pass upon forward rotation.

4. The combination with a series of number-wheels, of a spring member provided with a by-pass mounted on each number-wheel, a driving wheel mounted within each number-wheel and provided upon its perimeter with a series of notches for the engagement of the spring member of the associated driving wheel, one wall of each notch being chamfered adjacent the periphery of the wheel, an actuator member carried by each number-wheel for raising the spring member of the next wheel to a position to ratchet over the chamfered portions of the notch walls.

5. The combination with a series of number-wheels, of a driver wheel mounted within each number-wheel and means for actuating the driver wheels, means of engagement between the driver-wheel and its associated number-wheel, means for engaging and releasing the engaging means between the first number-wheel of the series and its

driver wheel and reversely rotating said number-wheel, and means carried by each of the number-wheels with the exception of the last of the said series for engaging and releasing the engaging means between the number wheel next in the series and its driver-wheel, and a by-pass detent for stopping the last number-wheel of the series upon the same being reversely rotated to zero.

6. The combination with a series of number-wheels, of a driver wheel mounted within each number-wheel and provided upon its perimeter with a series of notches having the bottom of the walls at each side abrupt and the top of the wall on one side abrupt and the top of the wall at the other side chamfered, and means for actuating the driver wheels, a by-pass engaging means carried by each number-wheel for running upon the perimeter of the driver wheel associated therewith and for entering the said notches, an actuator for each said engaging means for holding the same in a position to ratchet with said chambered notch walls and for reversely rotating said number-wheels, when moving in one direction and to pass through the said by-pass when moving in the opposite direction, and means for stopping the number-wheels upon the same being reversely rotated to a predetermined point.

7. The combination with a series of number-wheels, of a driver wheel mounted within each number-wheel and provided upon its perimeter with a series of notches having the bottom of the walls at each side abrupt and the top of the wall on one side abrupt and the top of the wall at the other side chamfered, and means for actuating the driver wheels, engaging means carried by each number wheel for running upon the perimeter of the driver wheel associated therewith and for entering the said notches, an actuator for each said engaging means for holding the same in a position to ratchet with said chamfered notch walls and for reversely rotating said number-wheels.

SAMUEL WARREN POTTS.

Witnesses:
CHAS. LYON RUSSELL,
FRED. J. DOLE.