

948,768.

Patented Feb. 8, 1910.

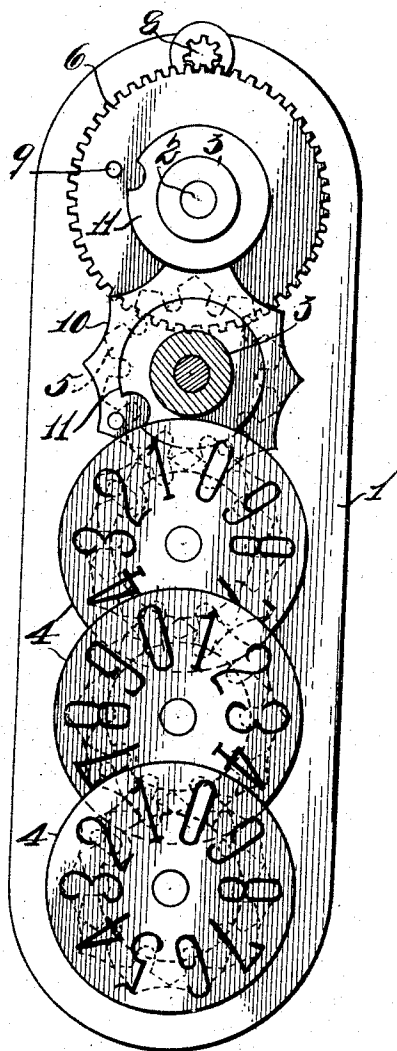


Fig. 1.

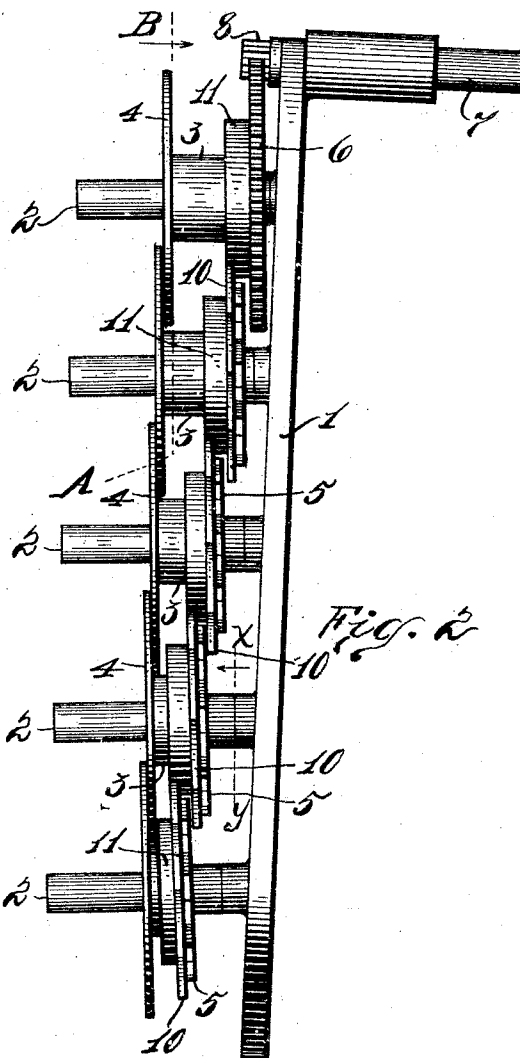


Fig. 2.

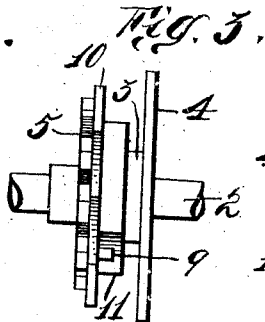


Fig. 3.

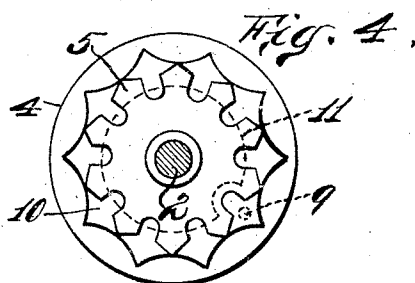


Fig. 4.

Witnesses:
C. A. Jarvis.
C. T. Neal

Inventor
Frank E. Northrop.
Emerson R. Newell
attorney

UNITED STATES PATENT OFFICE.

FRANK E. NORTHROP, OF BRISTOL, CONNECTICUT, ASSIGNOR TO THE C. J. ROOT COMPANY, A CORPORATION OF CONNECTICUT.

COUNTER DEVICE.

948,768.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed August 26, 1908. Serial No. 450,271.

To all whom it may concern:

Be it known that I, FRANK E. NORTHROP, a citizen of the United States, residing at Bristol, Connecticut, have invented certain new and useful Improvements in Counter Devices, of which the following is a clear, full, and exact description.

My invention relates to an improvement in counter devices, and its object is to improve and simplify the construction of the same.

My invention will be defined in the claim.

In the preferred embodiment shown in the drawings, Figure 1 is a top plan view of the entire mechanism having two of the indicator dials removed as shown through line A—B Fig. 2; Fig. 2 is a side elevation of the entire mechanism; Fig. 3 is a detached fragmentary view of one of the indicators; and Fig. 4 is a section of one of the indicators along X—Y Fig. 2; looking in the direction of the arrow.

In the drawings 1 represents a base plate on which are mounted several supporting spindles 2. These spindles are parallel but inclined with respect to the base plate. Removably mounted on each of the spindles is an indicator which is constructed in the form of a bearing sleeve 3 and having an indicator dial 4 at its outer end. This dial 4 extends above the adjacent dial to the right and below the adjacent dial to the left, which lapping-over arrangement is more compact and brings the indicating numerals more closely together and yet the indicators may all be at the same height due to the inclined mounting of the supporting spindles 2. Each of the indicators is similarly constructed except that at the extreme right hand side or the units indicator, which has slightly different mechanism to enable it to be driven by the main driving shaft. At the lower end of the bearing sleeves 3 of the indicators is a toothed wheel 5 whereby the same may be driven from the adjacent indicator to the right. The units indicator or the one at the extreme right-hand side has an ordinary gear wheel 6 in place of one of the toothed wheels 5, and this gear wheel 6 is driven by the main driving shaft 7 through pinion 8. The proportion of teeth in the pinion 8 to the teeth of gear 6 is one to 10, whereby a complete revolution of the driving shaft 7 causes the dial 4 to advance one-tenth of a revolution or the space between two of its numbers.

Above the toothed wheel 5 of each indicator, except the units indicator, is a locking wheel 10 constructed as shown in Fig. 4 with reëntranly curved portions, and above this locking wheel 10 is a circular boss portion 11. The extreme right-hand indicator is not provided with a locking wheel, but, however, has one of the circular boss portions 11 to coöperate with the locking wheel 10 of the adjacent indicator to the left for the purpose of locking this indicator against movement, as shown clearly in Fig. 1. It will be understood that the circular boss portions of each indicator coöperate in this manner with each of the locking wheels of the adjacent indicator to the left in order to effect this locking result. As shown in Fig. 1, a reëntranly curved portion of the locking wheel is curved to fit the periphery of the boss portion of the adjacent indicator and allow this boss portion with its indicator to revolve but preventing the locking wheel and its indicator from moving in either direction.

A pin 9 is carried on the gear 6 of the right-hand or units indicator for the purpose of engaging with the toothed wheel 5 of the next adjacent or tens indicator and operating the same a single step after every complete revolution of the units indicator. Such a pin which I call a "carrying pin" is also mounted on the tens indicator to engage with the toothed wheel 5 of the next adjacent or hundredths indicator. Similarly all of the indicators are provided with these carrying pins. As shown in Figs. 1 and 3, these pins are mounted on the upper side of the locking wheel. Adjacent the pin of each indicator a notch is formed in the boss of that particular indicator, as shown in Fig. 1. The purpose of this notch in the boss is to release the adjacent locking wheel 10 from its engagement with the boss when the pin engages with and operates the toothed gear 5. Thus it will be seen that although each of the indicators is locked through the locking wheel 10 with the boss of the adjacent indicator, nevertheless when the carrying pin of the adjacent indicator arrives in position to actuate the next higher indicator, the locking wheel thereof is released to permit the same to move.

It will be noticed that the preferred driving means for my counter mechanism consists of gears which are constantly in en-

gagement and are therefore constantly actuating the lowermost or units indicator. Several advantages result from the employment of such driving means, among which is the fact that the load of the mechanism is more evenly distributed upon the driving shaft, and that there is less liability of breakage which often occurs in intermittent or reciprocating driving devices.

- 10 It will be obvious and I am aware that many changes may be made in the construction illustrated and described without departing from the spirit of my invention, and I therefore do not desire to be limited to the particular embodiment herein disclosed.

15 What I claim is:

- In a counting mechanism in combination, a base plate, a plurality of parallel supporting spindles projecting outwardly therefrom, a plurality of indicators for different denominations rotatably and detachably supported on said spindles comprising bearing sleeves having indicating dials fixed to their outer ends, said spindles and sleeves being inclined relatively to said base plate for maintaining said overlapping indicating dials at equal heights at their peripheries,

gear wheels fixed to said bearing sleeves and separate locking wheels also fixed thereto above said gear wheel, said locking wheels having peripheries with reëntranly curved portions, circular boss portions formed on each bearing sleeve separate but adjacent the said locking wheels adapted to engage the reëntranly curved portions of the locking wheels of the next adjacent sleeve of higher denomination to interlock with the same, carrying pins on said sleeves for actuating the gear of the next adjacent sleeve of higher denomination one space for every complete revolution of said carrying pin, a notch in the boss portion of each sleeve located adjacent its carrying pin to thereby release said locking wheel of the adjacent sleeve and indicator simultaneously with the actuation thereof by the carrying pin, a constantly rotating shaft for driving the right hand or units indicator.

Signed at Bristol, Conn., this 24th day of August 1908.

FRANK E. NORTHROP.

Witnesses:

EPAPHRODITUS PECK,
JOHN T. CHIDSEY.