

C. MARTIN.
NUMBERING DEVICE.
APPLICATION FILED JAN. 29, 1912.

1,062,783.

Patented May 27, 1913.

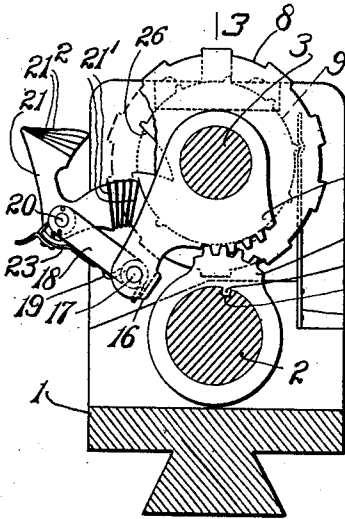


FIG. 2

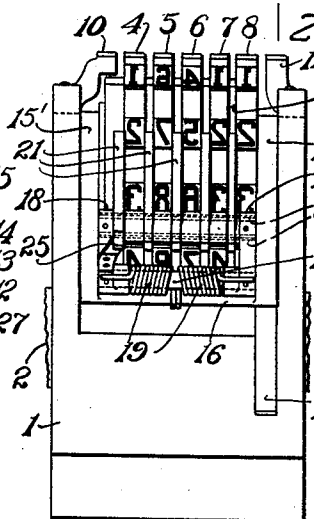


FIG. 1

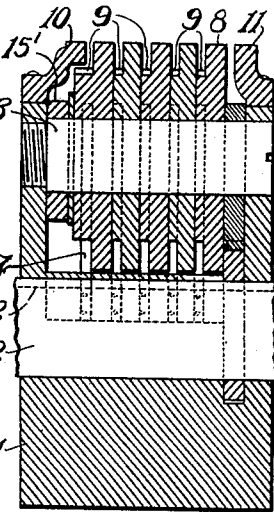


FIG. 3

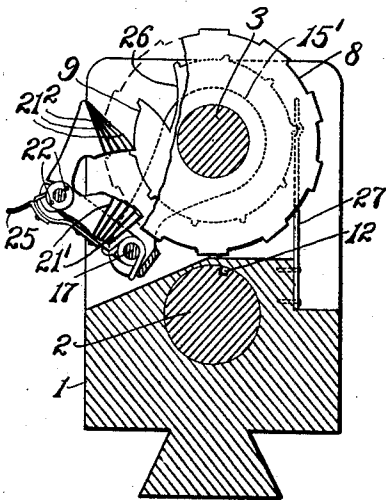


FIG. 4

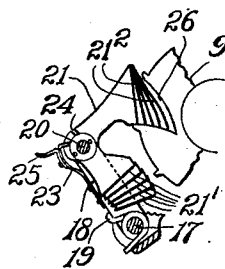


FIG. 5

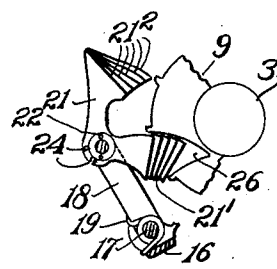


FIG. 6

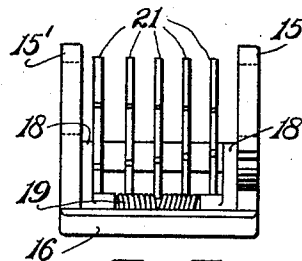


FIG. 7

WITNESSES
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UNITED STATES PATENT OFFICE.

CALVIN MARTIN, OF PEABODY, MASSACHUSETTS, ASSIGNOR TO CARTER TICKET COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

NUMBERING DEVICE.

1,062,783.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed January 29, 1912. Serial No. 674,170.

To all whom it may concern:

Be it known that I, CALVIN MARTIN, a citizen of the United States, residing at Peabody, county of Essex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Numbering Devices, of which the following is a specification.

This invention relates to numbering devices and particularly to a reversible unit capable of numbering in either ascending or descending series.

While my invention is particularly adapted for use in a rotary numbering head in which a plurality of my units are arranged for the printing of a series of tickets, coupons or the like, it is also capable of individual use.

In the specification which follows I shall have particular reference to a form of my invention which may be used in a rotary numbering head, but it will be understood that it is merely an illustrative embodiment introduced to show an operative form of my invention.

Throughout specification and drawings like reference numerals are employed to indicate corresponding parts and in the drawings: Figure 1 is a front elevation of a numbering unit in accordance with my invention. Fig. 2 is a sectional view on the line 2—2, Fig. 1. Fig. 3 is a transverse section on the line 3—3, Fig. 2. Fig. 4 is a section just inside the numbering wheel 8 with portions broken away to disclose the reversed position of the pawls as compared with their position as shown in Fig. 2. Figs. 5 and 6 are details of the pawls in their two positions, and Fig. 7 is a rear elevation of the pawls as seen in Fig. 4.

My numbering unit comprises a suitable base 1 having a transverse operating shaft 2 journaled therein and a numbering wheel shaft 3 similarly journaled above the same. On the shaft 3 are rotatably mounted a plurality of numbering disks 4, 5, 6, 7 and 8, supplied with suitable peripheral characters as illustrated in Fig. 1.

The numbering wheel 4 operates in the tens column preferably and is so shown in the illustrative embodiment set forth in the drawings, the unit column being supplied by a fixed number 10 removably secured to a lateral wall of the base 1. The wheels 5, 6, 7 and 8 each depend upon the operation of

the wheel 4 for their actuation, by means which will be hereinafter described. The form shown in which the unit number is stationary is adapted specially for ticket printing from a revolving drum such as is set forth in my prior application, 669,513, filed January 4th, 1912. On the opposite wall of the base 1 I provide a fixed character corresponding in position and mounting to the fixed numeral 10. This character is indicated at 11 and may be either a figure, letter or other character having its proper place in the desired series.

On each of the numbering wheels 4 to 8 inclusive is an operating ratchet 9 operated by either of the two sets of pawls or fingers 21. These double operating pawls 21 are properly alined and loosely mounted upon a rod 20 but are pinned together by pins 22. The ends 21' are each adapted to engage its respective ratchet 9 for the purpose of advancing its corresponding numbering wheel through one number, space or tenth of a revolution.

Fig. 2 shows the tens pawl in engagement with the tens ratchet, the numbering wheel 8 being partly indicated by dash lines as it is cut away to show the ratchet. The corresponding edges of the remaining pawls are seen in the same figure, being likewise numbered 21'. These pawls in succession are each shorter than its predecessor so that only one will be operatively engaged as is customary in devices of this sort.

At a predetermined point on the ratchets 9, there is formed a recess or pocket 26 which permits its pawl 21 to drop farther between the ratchet teeth so as to bring the next shorter pawl into engagement with its respective ratchet, for the purpose of advancing those pawls, say for example the pawls 4 and 5, simultaneously with the numeral 1 on the tens pawl 4 when it has been printed. In Fig. 2 the pawl ends 21' have so advanced that these wheels are in position for the next advance, and so on for nine numeral changes. These parts last described are old in the art and are merely set forth as introductory to the reversible feature which I will now describe.

The pawls 21 are fast in a pair of links 18 which are pivotally mounted on a pin 17 and are held toward the ratchets 9 by springs 19. The pivot pin 17 is fast in a pair of ears 16 formed on the sector arm 15

as is shown in Fig. 2. The finger ends 21' which are adapted to engage the ratchets 9 in reverse position act on the return movement of the sector arm 15 instead of on its forward movement as in the case of the ends 21'. Their arrangement is similar to that described previously so as to secure the same sequence of operation in the numbering wheels 4, 5, 6, 7 and 8 as described but in the opposite direction. They are also adapted to operate with the same recesses 26 during this operation, with this difference that in this reverse operation the next higher numbering wheel must be brought into action with the zero as printed instead of before it.

For the purpose of reversing the pawls 21 I preferably provide a spring latch 23 fastened to one of the links 18, and having a free end which is adapted to engage with either of the slots 24 as shown in Figs. 5 and 6. The finger piece 25 is secured to the spring to lift the end out of the recess 24 as shown in Figs. 4 and 5. Upon this release, the pawls 21 may be swung in the opposite direction from that in which they originally were, in which position they may be rocked by the engagement of the spring end with the other slot 24.

On the opposite side of the numbering wheels 4, 5, 6, 7 and 8 I preferably mount a series of spring fingers 27 secured to the base 1 and each alined to engage one of the teeth of the ratchet 9 for the purpose of holding it in position to secure an accurate registry of the numbering wheels. I find these leaf springs satisfactory for the purpose, but they might obviously be replaced by any other suitable checking means as by spring controlled pawls or any other form of stock devices.

The operation of my device is therefore as follows: Supposing that it be desired to number in ordinary increasing sequences. The pawls will be adjusted in the position shown in Fig. 2 and will be locked in that position by the spring 27. After the first number is printed, the shaft 2 is rocked, thereby rocking the shaft 3 through the engaging segmental gears 14 and 15. This advances the pawl series 21 for a stroke, carrying the teeth of the ratchet 9 which was in engagement with the locking spring

27 past the point which yields to permit it to go by, until the next tooth is brought into engagement with the spring. After the printing of the number thus presented, the shaft 2 is rocked again and so on through the series, the numbering disks being rotated and the numbers advanced, through the successive action of the wheels until the last number of the series has been printed. When it is desired to number reversely, the spring 23 is disengaged by pressing upon the finger contact 25 and the pawls rock into the position shown in Fig. 4, in which position they are held locked by the end of the spring 23 which occupies the other slot 24. The oscillation of the shaft 2 will thereupon rock the pawls 21 which will act upon the ratchet 9 to successively advance the different numbering disks to bring the series from its highest to its lowest number.

Various modifications in the form and arrangement of the various parts may obviously be made, all without departing from the spirit of my invention if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A numbering device comprising a base, a plurality of numbering disks journaled therein, an arm journaled concentric therewith, means for rocking said arm, a pawl support on said arm, means for yieldingly holding said pawl support toward said disks, a plurality of oppositely acting sets of pawls mounted on said support and means for holding either one or the other of said sets in operative disk engaging position.

2. A numbering device comprising a base, a plurality of numbering disks journaled therein, a rocker arm journaled concentric therewith, means for rocking said arm, a pawl support pivoted to said rocker arm, a plurality of oppositely acting sets of pawls pivoted on said support, and means for holding either one or the other of said pawl sets in operative position.

In testimony whereof I affix my signature in presence of two witnesses.

CALVIN MARTIN.

Witnesses:

GEORGE S. CUSHMAN,
JESSE H. STAMPER.