

No. 876,776.

PATENTED JAN. 14, 1908.

F. & R. DEGENHARDT.

CASH REGISTER.

APPLICATION FILED SEPT. 19, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

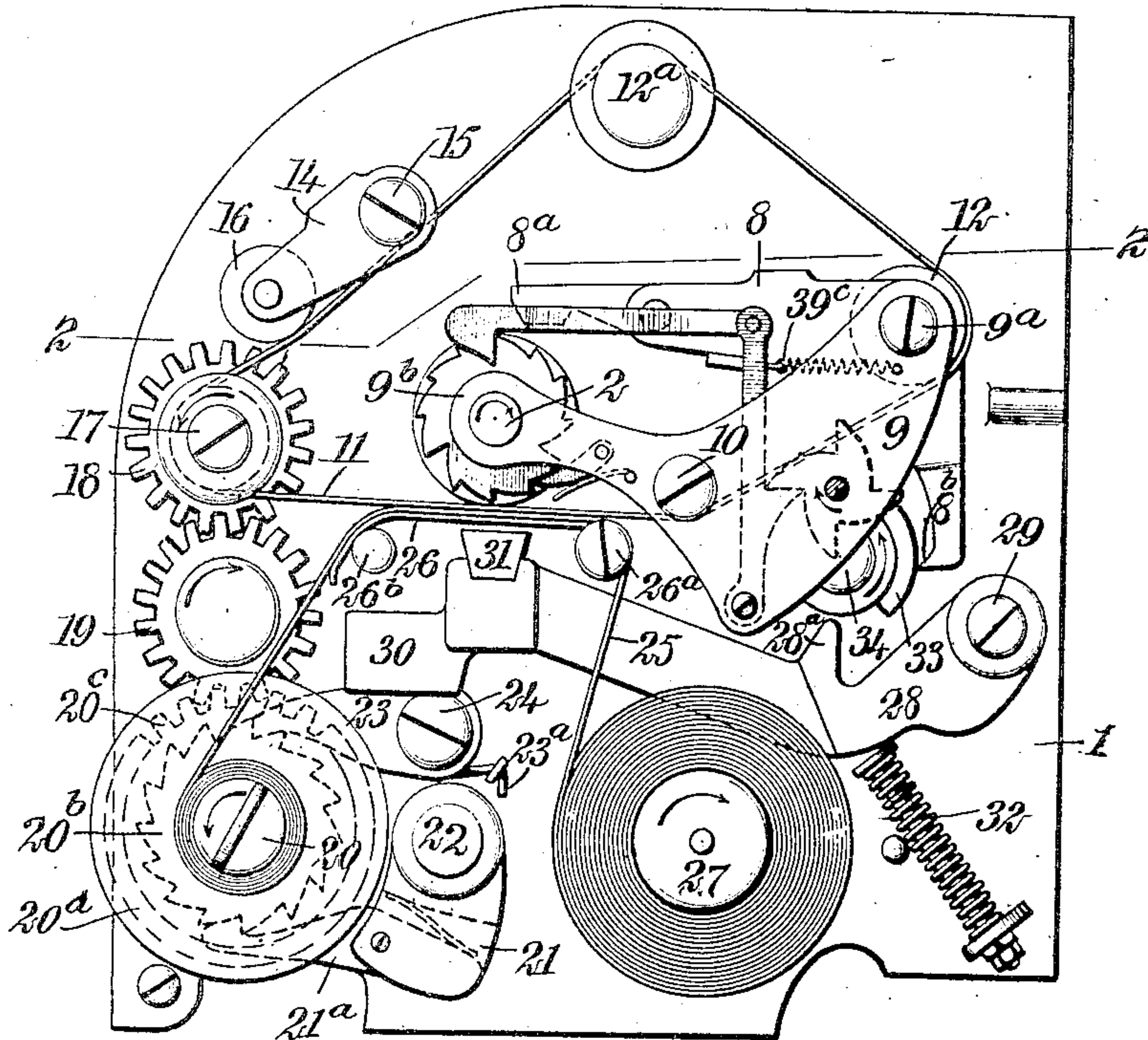
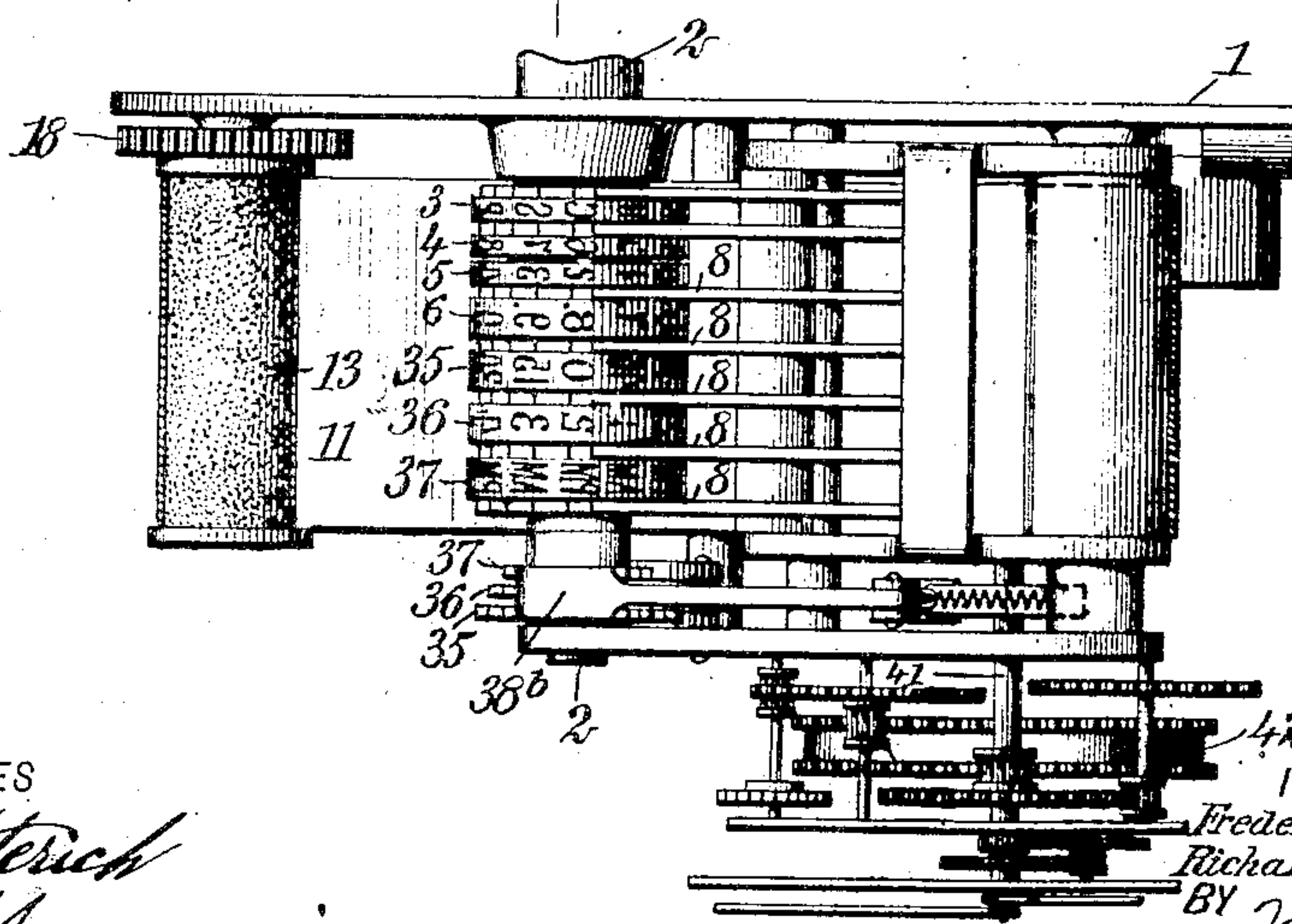


Fig. 2.



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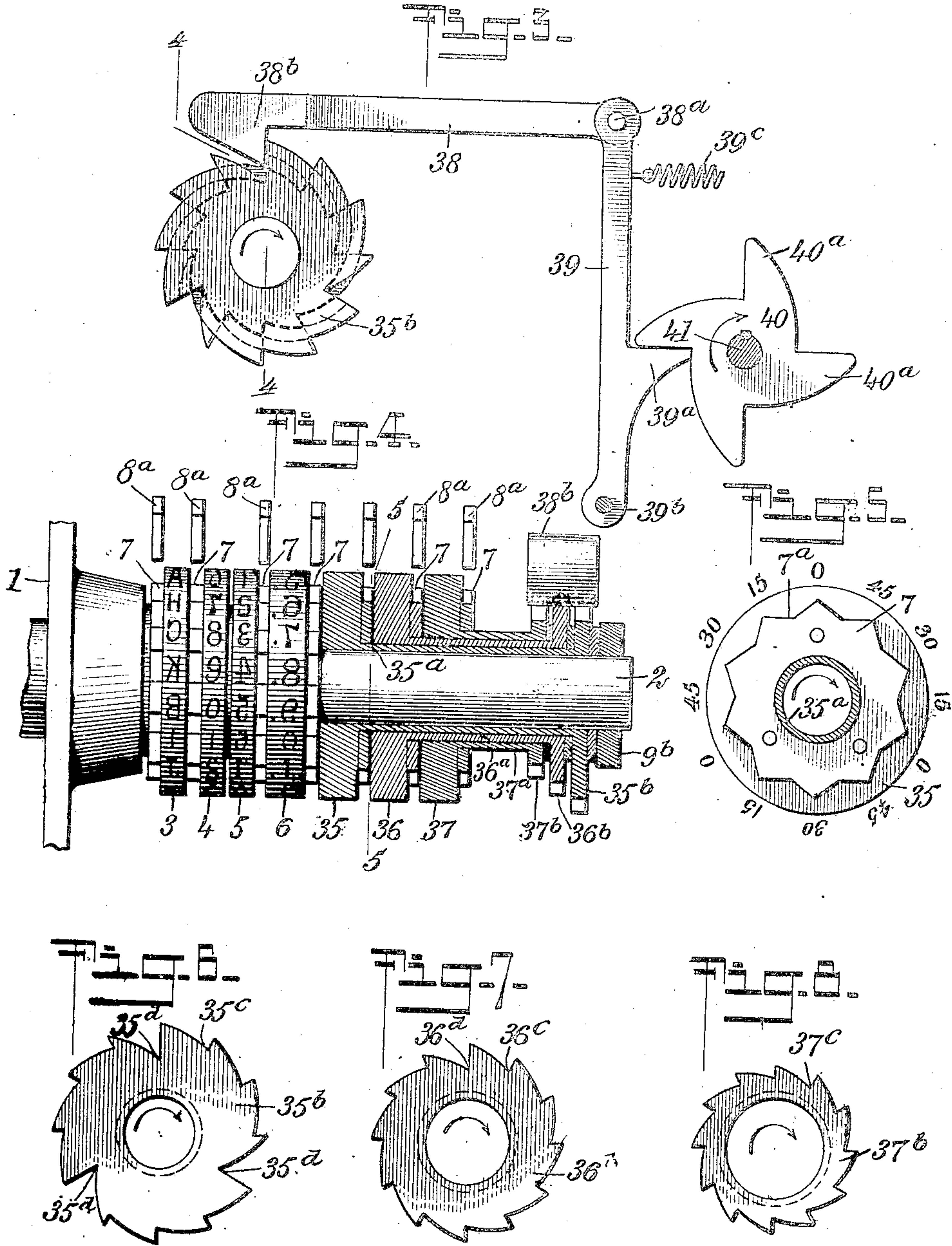
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UNITED STATES PATENT OFFICE.

FREDERICK DEGENHARDT AND RICHARD DEGENHARDT, OF NEW YORK, N. Y.

CASH-REGISTER.

No. 876,778.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed September 19, 1906. Serial No. 335,216.

To all whom it may concern:

Be it known that we, FREDERICK DEGENHARDT and RICHARD DEGENHARDT, citizens of the United States, and both residents of the city of New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Cash-Registers, of which the following is a full, clear, and exact description.

Our invention has for its object to provide means capable of being attached to a cash register and adapted to record the time within which individual deposits are made therein. This we accomplish by the means illustrated in the accompanying drawings, in which

Figure 1 is an end view of the upper portion of a cash register embodying our invention; Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary side elevation of operating disks having a reciprocating pawl connected therewith and a tappet adapted to operate the pawl; Fig. 4 is a side elevation partly in section, of recording disks mounted upon a shaft and taken on the line 4—4 of Fig. 3; Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4; and Figs. 6, 7 and 8 are detached operating disks.

As illustrated in the drawings, 1 represents a casing provided with a bearing for a shaft 2 which extends at one end through the wall of the casing as shown in Fig. 4. Registering disks 3, 4, 5 and 6 are mounted upon said shaft and separated from each other by means of disks 7 which are provided with V-shaped or symmetrical notches 7^a formed on their periphery as shown in Fig. 5. The notches of the spacing disks 7 are adapted to receive the inner end 8^a of levers 8 which are pivotally mounted upon a hub or sleeve arranged between the upper end of a plate 9 and the end wall of the casing, and held in position by means of a stud screw 9^a. The opposite end 9^b of the plate 9 is provided with an aperture adapted to form a bearing for the outer end of the shaft 2 which engages therewith. The plate 9 is also connected with the end of the casing by means of a bolt 10 adapted to serve as a guide-bar for an endless ribbon 11 which bears directly against said bolt, or a sleeve loosely mounted thereon and extends around idler wheels 12 and 12^a and ink roll 13 shown in Figs. 1 and 2. A tensioning device may be attached to

the end of the casing, and consists of side bars 14 pivotally attached to the casing by means of a stud 15 and provided with a roller 16 as shown in Fig. 1.

The ink roller 13 is mounted upon a stud 17 connected with a spur gear 18 which meshes with a similar spur gear 19 rotatably mounted on the end of the casing. The spur gear 19 meshes with a similar gear 20^c attached to a shaft 20 journaled on the end of the casing. The shaft 20 is rotated by means of a pawl 21 fixedly secured to a shaft 22 and pivotally connected to a finger 21^a which is adapted to engage a ratchet-wheel 20^b mounted on the shaft 20 and rotate said shaft intermittently.

A back pawl 23 is provided with a spring 23^a and pivotally secured to the end of the casing by means of a stud 24 and adapted to bear at its free end against the ratchet-wheel 20^b mounted upon the shaft 20 and thereby prevent a backward rotary motion of the shaft 20. The end of the shaft 20 is provided with a flange 20^a and is thereby adapted to serve as a spool around which is wound a recording tape 25 which is passed over a spring platen 26 and around a spool 27 pivotally mounted upon the end of the casing. The platen 26 is secured to the end of the casing by means of a stud screw 26^a and supported at one end by means of a stud 26^b.

A lever 28 is pivotally mounted upon a stud 29 secured to the end of the casing and is provided on its forward end with a balancing-weight 30. The lever is also provided with a striker 31 adapted to bear against the under side of the platen 26 and raise the free end of said platen so as to bring the recording tape 25 thereon and the ribbon 11, in contact with the registering disks mounted upon the shaft 2.

The striker 31 of the lever 28 is held in close proximity to the platen 26 by means of a spring 32 bearing against the lower edge of the lever 28, and said lever is pressed downward at its free end so as to remove the striker 31 from contact with the platen 26, by means of a cam 33 mounted upon a shaft 34.

The shaft 22 is connected with keys arranged in the front of the register, and whenever one of said keys is depressed a partial rotary motion is given to said shaft and the pawl 21 connected therewith, which,

by means of the finger 21^a engaging the ratchet-wheel 20^b secured to the shaft 20, imparts an intermittent rotary movement to said shaft, and transfers the recording tape from the spool 27 to the shaft 20, intermittently.

The shaft 20, by means of the gear 20^c, mounted thereon, operates the idle gear 19 and the train of mechanism connected with the inking ribbon 11. The shaft 34 is also connected with the keys of the register, and when one of said keys is depressed the shaft 34 is rotated intermittently and is adapted to impart a similar movement to the lower arm of the levers 8 by means of a spur attached to a disk mounted upon the shaft 34 which is adapted to bear against the finger 8^b formed on the lower arm of the lever 8. The backward movement of the lower arm of the levers 8 depresses the forward end 8^a of the levers 8, so as to engage the notches 7^a of the separating disks 7 and thereby lock the recording disks against rotary movement in either direction when the recording ribbon is pressed against the registering disks.

The means hereinbefore described and referred to for operating the shaft 2 and the train of mechanism connected therewith, including the recording tape and inking ribbon, are of the ordinary well-known construction now in common use, and, therefore, are not illustrated and described in detail. The special construction and mode of operation of said parts may be modified without departing from our invention, and other devices having similar capabilities may be substituted in their stead.

Registering disks 35, 36 and 37 are connected with operating disks 35^b, 36^b and 37^b by means of sleeves 35^a, 36^a and 37^a respectively nested together and mounted upon the shaft 2 so as to rotate together or independently of each other. The disk 35 is provided with numerals indicating fractions of an hour, and the disk 36 with numerals indicating hours, arranged in regular order, while the disk 37 is provided with meridional characters arranged alternately as shown in Fig. 2. The outer operating disk 35^b is provided with equally spaced ratchet teeth formed by means of notches 35^c and 35^d. The notches 35^d are made deeper than the notches 35^c for the purpose hereinafter described. The operating disk 36^b is provided on its edge with notches 36^c spaced equally apart, and one notch 36^d made deeper than the notches 36^c, and the operating disk 37^b is provided with a plurality of notches 37^c of equal depth. The distance from the center of the respective disks to the innermost portion of the notches 35^d, 36^d and 37^c is the same, whereby the inner portions of said notches are adapted to register with each other in a transverse

line and receive a pawl 38^b formed on the free end of a lever 38 which is pivotally connected with a vertical lever 39 by means of a pivot pin 38^a. The lever 39 is pivoted at its lower end to the casing of the register by means of a pin 39^b, and said lever is provided with a spur or finger 39^a adapted to be operated upon by a tappet 40 which is keyed or otherwise fixedly secured to a shaft 41 as shown in Fig. 3. The shaft 41 is connected with a train of clock mechanism 42 and is thereby rotated continuously. As shown in the drawings, the shaft 41 is designed to make one revolution an hour, and the tappet is provided with four fingers 40^a regularly spaced so as to strike the spur 39^a and move the upper end of the lever 39 forward four times in an hour.

By increasing the number of fingers on the tappet 40 the upper end of the lever 39 may be moved forward as often as desired during a predetermined period of time. As the upper end of the lever 39 is moved forward, the pawl 38^b formed on the lever 38 is moved forward and depressed by its own weight into one of the notches 35^c of the operating disk 35^b. As the fingers 40^a leave the spur 39^a of the lever 39, the upper end of said lever is drawn backward and held in its normal position by means of a spring 39^c connected therewith, and secured at one end to the casing 1 of the register. Such backward movement of the upper end of the lever 39 rotates the operating disk 35^b and registering disk 35 in step-like order, and arranges one of the numerals on the periphery of said disk in line with the striker 31 of the printing lever 28 so as to record said numeral on the tape 25.

The tappet 40 being constructed to operate the pawl 38^b at intervals of 15 minutes, the disk 35^b will be moved one notch at said interval, thereby bringing the pawl 38^b into engagement with the deeper notches 35^d every hour. The operating disk 36^b is provided with twelve notches corresponding to hours, and as the pawl 38^b therefore engages the notches 35^d of the minute-operating disk 35^b, the pawl will engage one of the notches 36^c of the hour-operating disk 36^b and partially rotate said disk and the registering disk 36 connected therewith. After the disk 36^b has been partially rotated eleven times by the pawl 38^b, it is operated the twelfth time by means of the pawl 38^b engaging the deeper notch 36^d of the hour disk 36^b. When the pawl 38^b is in engagement with the notch 36^d of the operating wheel 36^b, it also engages one of the notches 37^c of the operating disk 37^b and moves said disk one notch on its bearings, thereby bringing the meridional characters A.M. and P.M. in alinement with the hour and minute characters of the registering disks 36 and 35, and adapting said disks to register upon the tape 25 which is

progressively moved from the spool 27 to the shaft 20 intermittently whenever the keys of the register are operated.

By means of the construction herein shown and described the amount of the sales, or deposits made in the register, are recorded on the tape 25, and said tape marked with equal sub-divisions of time indicating between what periods of time the records of said sales or deposits were made on the tape.

What we claim as new and desire to secure by Letters Patent is:

1. The combination of a plurality of rotatably mounted nested sleeves, each provided on one end with a registering disk, and on the opposite end with a ratchet wheel, detents mounted on the said sleeves adjacent to said disks, pivoted levers adapted to engage said detents, and clock operated mechanism adapted to engage and rotate said ratchet wheels.

2. The combination of a plurality of rotatably mounted nested sleeves provided on one end with registering disks, and on the opposite end with ratchet wheels, detent wheels

having V-shaped notches mounted on said sleeves adjacent to said disks pivoted levers adapted to engage said detents, and clock operated mechanism adapted to engage and rotate said ratchet wheels.

3. The combination of a plurality of rotatably mounted nested sleeves, each having a different diameter from the other, registering disks attached to the end of said sleeves adjacent to each other, detent wheels connected with said registering disks, pivoted levers adapted to engage and hold said detent wheels against rotary movement in any direction, ratchet wheels attached to the opposite ends of said sleeves, and a pivoted clock operated pawl adapted to engage the teeth of said ratchet wheels.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRED'K DEGENHARDT.

RICHARD DEGENHARDT.

Witnesses:

JNO. M. RITTER,

ROBERT W. HARDIE.