No. 851,251. PATENTED APR. 23, 1907.

F. D. POWELL & C. S. ELLIS.

COIN REGISTERING MECHANISM.

APPLICATION FILED JUNE 22, 1904.

2 SHEETS—SHEET 1.

Fig. 3.

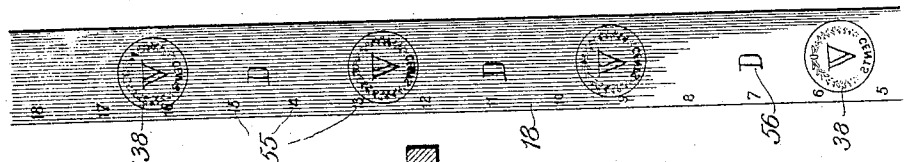
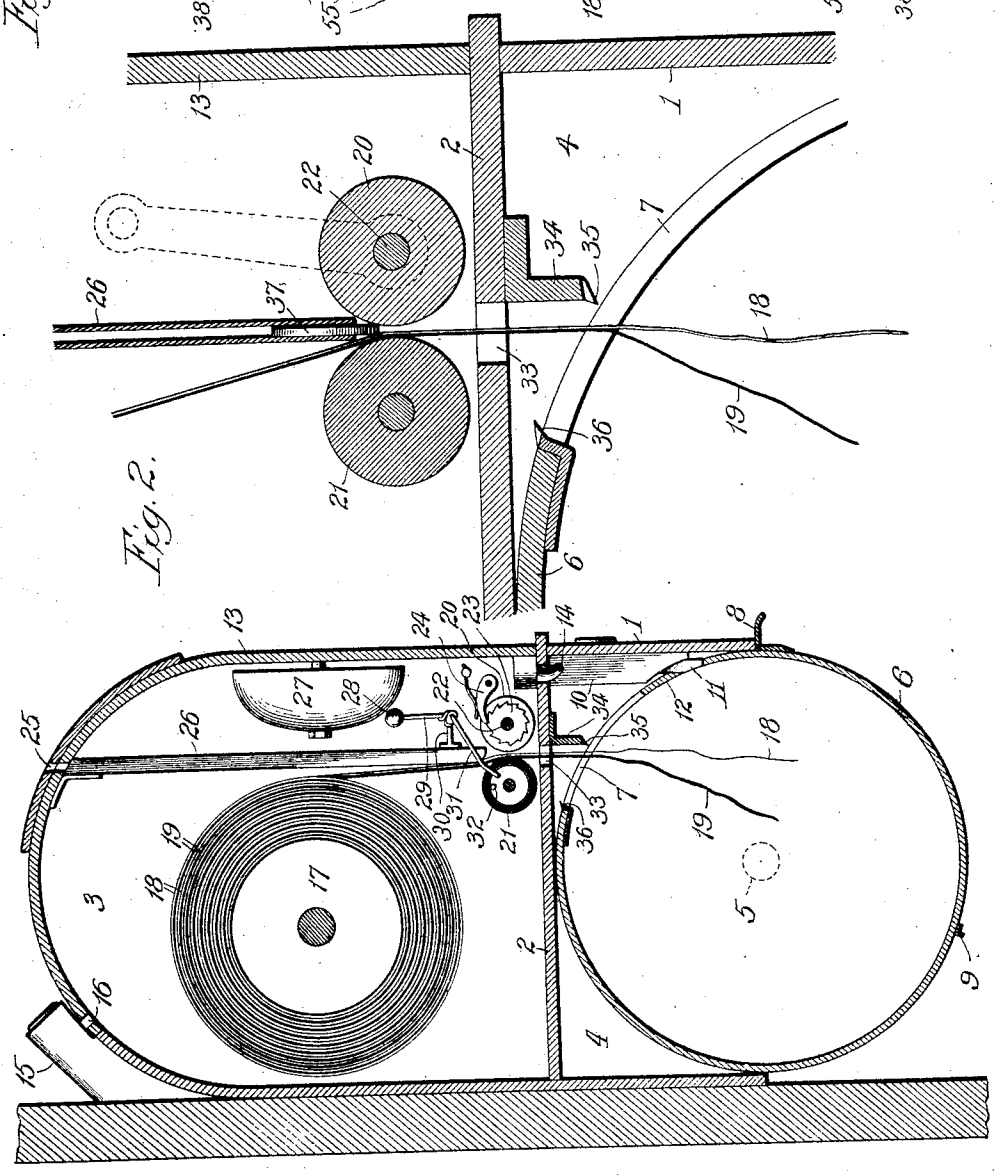


Fig. 2.



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John Enders.

Fig. 1.

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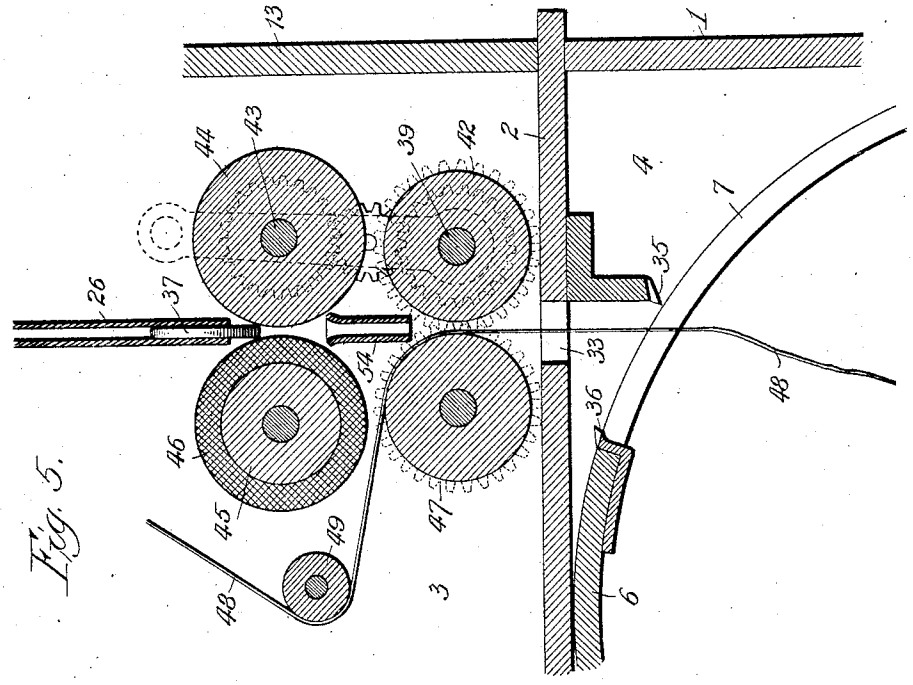


Fig. 5.

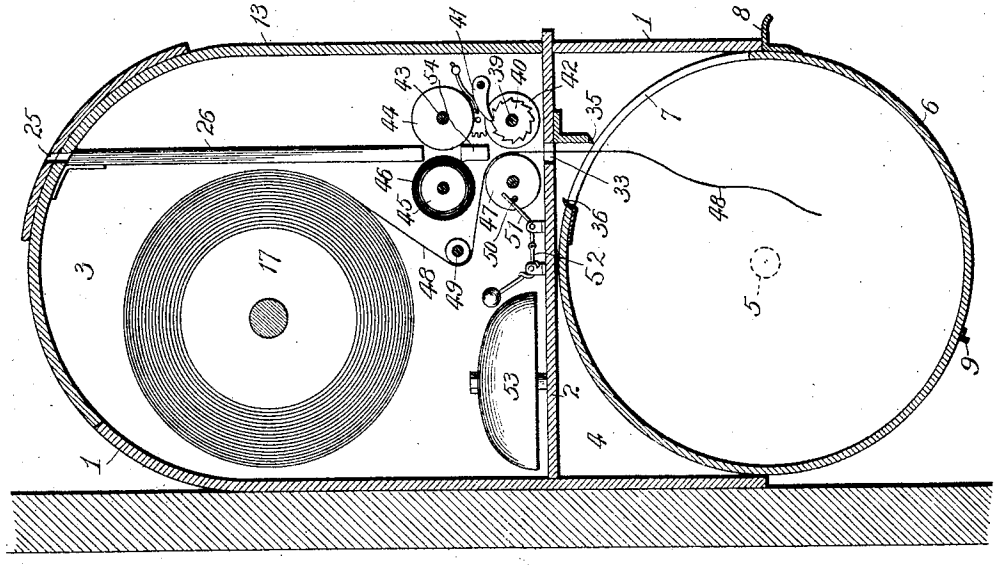


Fig. 4.

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UNITED STATES PATENT OFFICE.

FRANK D. POWELL AND CHARLES S. ELLIS, OF CHICAGO, ILLINOIS, ASSIGNORS TO AMERICAN COIN REGISTER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COIN-REGISTERING MECHANISM.

No. 851,251. Specification of Letters Patent. Patented April 23, 1907.

Application filed June 22, 1904. Serial No. 213,670.

To all whom it may concern:

Be it known that we, FRANK D. POWELL and CHARLES S. ELLIS, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new, useful, and Improved Coin-Registering Mechanism, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding letters of reference in the different figures indicate like parts.

The object of our invention is to so construct a coin registering mechanism for use in connection with telephones, vending devices or for other analogous purposes, that a print, impression or stamp of the several coins may be made upon a suitable registering strip and the coins, together with such portion of the registering strip as bears the corresponding impressions or prints thereof, may be passed into a sealed or locked coin receptacle to be removed together by an authorized person, while the impression mechanism is secured from unauthorized manipulation.

To these ends, our invention consists in the combination of elements hereinafter more particularly described and definitely pointed out in the claims.

In the drawings: Figure 1, is a vertical sectional view, from front to rear, of a case containing registering mechanism together with a separate coin receptacle. Fig. 2, is a similar view enlarged, of a portion of the compartment containing the registering mechanism, a part of the coin receptacle and the coin actuating and impression rolls. Fig. 3, is a face view of a portion of the registering strip as it would appear with the coin imprints thereon. Fig. 4, is a like sectional view to that shown in Fig. 1, showing a modification of said invention, and Fig. 5, is an enlarged sectional view similar to that shown in Fig. 2, representing corresponding portions of said modified mechanism.

Referring to the drawings, 1 indicates a hollow closed metal case divided by means of a horizontal partition 2, into two compartments 3 and 4, into the latter of which is mounted upon a horizontal axis 5, a hollow cylindrical coin receptacle 6, the lower portion, preferably about half, of which is arranged to protrude from beneath the chamber 4, the bottom of which is open. Said cylindrical receptacle serves to fully close said opening and is arranged to partially rotate upon its axis, being provided with an opening 7, which is normally within the enclosure 4, as shown. Stops 8 and 9 are formed upon or attached to the periphery of the receptacle, the former being arranged to abut against the lower end of the front wall of the case when the receptacle is closed, and the latter against the rear wall to limit its movement when open. The former also serves as a finger-piece to grasp in opening and closing the receptacle. A lock 10 is secured within the case and is provided with a bolt 11 adapted to engage a lug 12 upon the cylinder and lock the receptacle in a closed position. A removable plate 13, curved over the top to fit the contour of the case, is provided to give access to the interior of the compartment 3. Said plate is provided with hook-shaped dowel-pins 14 at the bottom, which enter corresponding holes in the plate 2, while a lock 15 secured to the top of the case, is provided with a bolt 16 adapted to engage with a hole in said removable plate to lock it in position, it being understood that the key which is intended to unlock the coin receptacle will not fit the lock 15.

Within the compartment 3 is mounted, in suitable bearings, a roller 17, adapted to hold a roll or strip of paper 18 wound thereon in conjunction with a corresponding strip of carbon or impression paper 19, the carbon face of which is next to the strip 18 so that an impression may be made therefrom upon the latter as, and for the purpose herein described.

Below the paper roll and close to the partition 2, are located in suitable bearings two horizontal rollers 20 and 21, the axes of which are parallel to each other. The shaft 22 of the roller 20 is extended outside of the case and is provided with a suitable crank as indicated in dotted lines in Fig. 2. A ratchet 23 is rigidly attached to the shaft 22 and is adapted to be engaged by a spring-controlled pawl 24 to prevent the roller from being turned backwards. Both of said rollers are preferably provided with friction surfaces, and the roller 21 is preferably covered with india rubber or other yielding material. The

faces of said rollers are so placed as to receive a coin and cause it to be passed between them with the requisite degree of pressure as hereinafter stated. A coin opening 25 at the top of the case is in communication with a coin chute 26, the lower end of which extends into the bight of the rollers 20, 21.

Supported within the case is a bell 27, the hammer 28 of which is mounted upon a bent lever 29 pivoted to the bracket 30. An arm 31, of said lever is adapted to be actuated by a pin 32 upon the end of the roller 21, so that with each revolution of said roller the hammer is caused to strike the bell.

Directly beneath and in alignment with the space between the rollers 20, 21, and the coin chute above, is a slot 33 formed in the horizontal partition 2 of sufficient area to permit the free passage of the two strips of paper, together with a coin. Upon the front side of said slot and extending below the same is a lip 34 provided with a serrated edge 35 located in close proximity to the arc described by the cylindrical coin receptacle. A corresponding cutter 36, having a serrated edge arranged to co-act with the part 35, is rigidly attached to the upper face of the opening in the cylinder, so that when the latter is rotated the part 36 will pass the part 35 and thereby shear the paper strips in the manner hereinafter described.

The operation of said device is as follows: The paper strips 18, 19, are adjusted between the rollers and extended through the slot 33, when the machine is ready for use. A coin 37, being placed in the slot 25, falls through the chute 26 and rests in the bight of the rollers 20, 21, with one edge in contact with the former and the other in contact with the paper strip 18, as shown in Fig. 2. Upon turning the crank attached to the shaft 22, the roller 20 engages one face of the coin and causes it to pass between the rollers, thereby pressing its opposite face against the paper strip 18 with sufficient force to cause its imprint to be made upon the back of the paper strip 18, which I term the registry strip, as shown at 38, Fig. 3. The diameter of the rollers is such that a single revolution of the roller 20 will be more than sufficient to cause the passage of the coin between them. The complete movement indicating the passage of the coin is announced by the ringing of the bell, and when the coin is freed from the rollers, it falls through the slot 33 into the coin receptacle.

It should be borne in mind that the drawings are not drawn to scale which accounts for the apparent discrepancy between the diameter of the coin and that of the rollers as shown in Fig. 2.

The roller 21 is normally at rest, being preferably disconnected from its fellow; and, in the absence of a coin, the rotation of the driving roller 20 produces no effect upon it or the strip. As soon, however, as a coin intervenes, the frictional contact thereof between the two, causes the roller 21 to move in unison with its fellow; and, inasmuch as the paper strips are pressed between the coin and the roller 21, the strips are advanced with the coin,—a section of the strips bearing a coin imprint being fed into the coin receptacle with the passage of each coin. When it becomes necessary to remove the coins from the receptacle the rotation of the cylinder, in opening the latter, causes the cutter 36 to pass the part 35, thereby severing the strips 18 and 19 leaving the severed portion in said receptacle and at the same time barring access to that which is connected with the roll 17. It is obvious that the imprints upon the severed strip 18 must, of necessity, correspond to the number of coins found in the receptacle and hence, if the person removing the coins is prevented from having access to the registering mechanism, the marked strip deposited within the receptacle must serve as a complete and reliable check upon the person having to account for them. As the actuating roller is prevented from backward rotation, it follows that a coin cannot be withdrawn by a backward movement after its engagement with the rollers and the consequent imprint upon the tape.

While I prefer to employ a carbon strip, as indicated, for making the impression of the coin, I do not wish to be limited thereto, as it is obvious that such impression may be made in other ways without departing from the general principles involved. In Figs. 4 and 5 I have shown a modified construction in which the carbon strip is dispensed with, and the impression is made upon the registering strip by causing one face of the coin to be inked before it is brought into contact therewith. In the construction referred to, 39 represents the driving shaft which is prevented from backward rotation by means of a ratchet 40 and pawl 41, a roller 42 being mounted upon said shaft. The shaft 39 is connected by means of gears as indicated in dotted lines in Fig. 5, with a parallel shaft 43 above, upon which is mounted a similar roller 44, which, by means of said gears, is caused to rotate in the same direction with the roller 42. Opposite the roller 43 upon a suitable shaft is mounted an inking roller 45 having a surface 46, of felt or other absorbent material, while opposite to the roller 42 is located a roller 47 having a face of yielding material. The registering tape or strip 48 is carried downwardly from the roll 17, around a guide roller 49, which is interposed to prevent it from being brought into contact with the ink-roller, thence over the top of the roller 47 and downwardly between it and the roller 42 into the coin receptacle.

When the coin is deposited in the chute it is brought into contact with the rollers

44 and 46, and as the shaft 39 is rotated the coin is passed between said rollers, thereby causing one face of the coin to be inked. It then falls between the rollers 42, 47, with the inked face against the registering strip. A further rotation causes it to be passed between the second set of rollers, thereby making its imprint upon the tape and falling into the receptacle, while a section of the tape is advanced into the receptacle ready to be severed by the cutters in the manner above described.

A p'n 50 upon the roller 47, engages a pivoted lever 51 in connection with a secondary lever 52 having a hammer upon its free end in operative proximity to the bell 53.

In order to guide the coin with certainty after leaving the rollers 45, 46 into contact with the rollers 42, 47 I interpose a short coin chute 54, Fig. 5, between the upper and lower rollers, which device may be supported by means of a bracket, not shown, in any approved way. If preferred, both the carbon and inking devices may be omitted, in which case a mere imprint or indentation of the shape of the coin may be made upon the strip. In such case a quality of paper should be used such as would readily receive and retain the indentation or mark made by the coin.

So far as we are aware, no means have heretofore been provided for preventing the insertion of "slugs" in place of coins in this class of machines. This has led to the practice by dishonest collectors of abstracting a portion of the good coins, substituting slugs therefor, and then reporting a larger number of the latter than were actually found. Our improved device renders such fraud impossible inasmuch as it registers the slugs as well as the coins, by making an exact imprint thereof.

In order to prevent deception by destroying a portion of the registering strip, each strip is numbered consecutively from end to end as shown at 55, Fig. 3, besides bearing an arbitrary number or character 56, corresponding to the machine in which it is placed. This feature constitutes a reliable check upon the collector, in that it enables every part of the tape to be accounted for by the proper auditor.

Should a carbon strip be used to produce the impression, it is obvious that it may be placed upon either side of the registering strip, but if placed upon the opposite side from that shown in Fig. 1, the result would be negative instead of positive.

I prefer, as suggested, that there should be no positive connection between the rollers 20 and 21, depending upon the interposition of the coin to drive the secondary roller; yet, inasmuch as it is necessary to prevent a backward rotation of the driving roller it is obvious that connecting gears, as indicated in dotted lines in Fig. 5, might be used to cause the rollers to rotate together, but in such case they should be sufficiently separated to prevent them from actuating the tape when no coin is passing.

Having thus described our invention, we claim:

1. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receiving receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, one face of the coin being thereby brought into contact with said tape, said rollers being arranged to cause a pressure of the coin against the tape, when passing, whereby an impression of the coin may be made upon the tape and a section of the latter advanced with the coin into the coin receptacle.

2. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin-receiving receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, one face of the coin being thereby brought into contact with said tape, and means for causing an imprint of the coin to be made upon the tape.

3. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, one of said rollers being actuated from without while the other is adapted to be actuated by the interposition of a passing coin, and means for passing a coin between said rollers into said coin receptacle, one face of said coin being caused to act upon said tape to produce an impression of said face thereon.

4. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between opposing faces of said rollers into a coin receiving receptacle, separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of said coin upon said tape while passing, and means for severing the section of tape which is passed into said coin receptacle.

5. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between opposite faces of said

rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of said coin upon said tape while passing, and means for automatically severing the section of tape which is passed into said receptacle by the opening of the latter.

6. The combination with a coin receptacle and juxtaposed rollers of coin registering mechanism comprising a sealed or locked enclosure, a coin chute leading therein, juxtaposed rollers mounted therein with their meeting faces in the plane of said coin chute, a registering tape arranged to pass between said rollers, a separate coin receptacle having a receiving opening registering with the pass between said rollers for the passage of said coin and tape, and means for actuating one of said rollers from without.

7. A device of the class described in which is combined a sealed or locked enclosure, a coin chute leading therein, juxtaposed rollers mounted therein with their meeting faces in the plane of said coin chute, a registering tape arranged to pass loosely between said rollers, a separate coin receptacle having a receiving opening registering with the pass between said rollers for the passage of said coin and tape and means for actuating one of said rollers from without, whereby the interposition of a coin may serve to press the loosely suspended tape against one of said rollers, thus causing the tape to move with the coin to pass a section of the tape into the coin receptacle with the passage of each coin.

8. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape and impression strip arranged together to pass between opposing faces of juxtaposed rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, and means for passing a coin between said rollers into said coin receptacle to press said tape against said impression strip during said passage.

9. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between adjacent faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle, said rollers being adjusted to cause a pressure of the coin upon the tape, and means for preventing a backward movement of said rollers.

10. A device of the class described in which is combined a case having primary and secondary sealed or locked enclosures separated from each other, a registering tape and juxtaposed rollers enclosed within said primary enclosure, said tape being passed loosely between said rollers and thence through an opening into said secondary enclosure, means for passing a coin into said primary enclosure between said rollers into said secondary enclosure, means for pressing said coin against said tape during its passage, and means for actuating said rollers in one direction only.

11. The combination with a coin receptacle and juxtaposed rollers of a coin registering mechanism comprising a registering tape arranged to pass between the opposing faces of said rollers into a coin receptacle separated therefrom, said tape and rollers being protected against unauthorized manipulation, means for passing a coin between said rollers into said coin receptacle to press against said tape during its passage, means for actuating said rollers from without, and means for indicating the full pre-determined movement of said rollers.

12. The combination with a coin receptacle and means for taking the impression of a coin upon a registering tape, of a registering tape protected against unauthorized manipulation, said tape being provided with a series of ordinate characters extending throughout its length to enable the same to be identified in its entirety when separated into fragments or sections.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses, this 20th day of June, 1904.

FRANK D. POWELL.
CHARLES S. ELLIS.

Witnesses:
D. H. FLETCHER,
C. E. JORDAN.