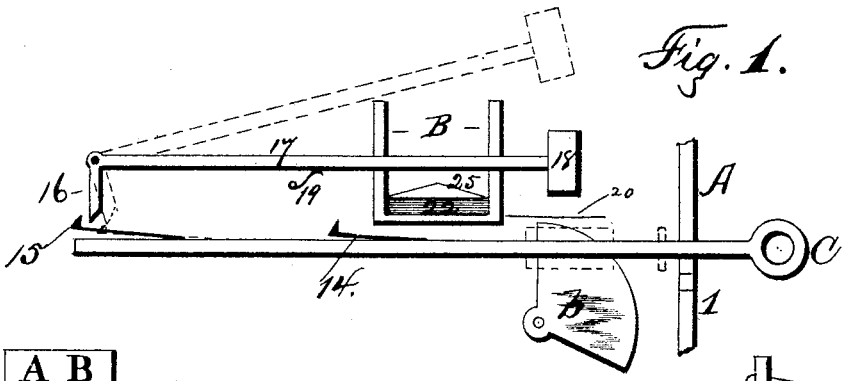
(No Model.) 5 Sheets—Sheet 1.

W. L. BUNDY.

CARD PRINTING ATTACHMENT FOR CASH REGISTERS.

No. 457,766. Patented Aug. 11, 1891.

Fig. 1.



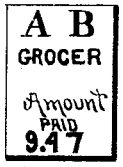


Fig. 5.

Fig. 2.

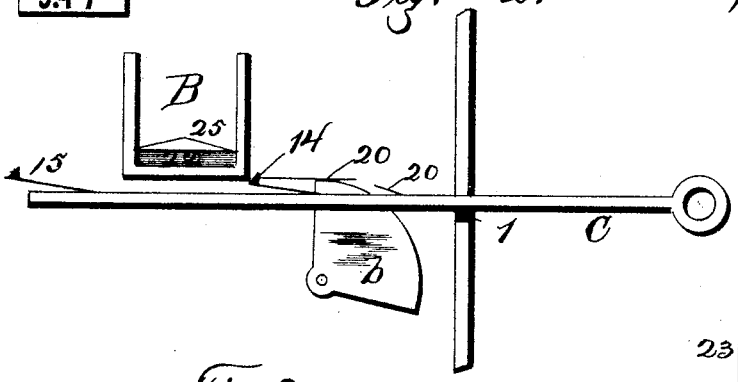


Fig. 4

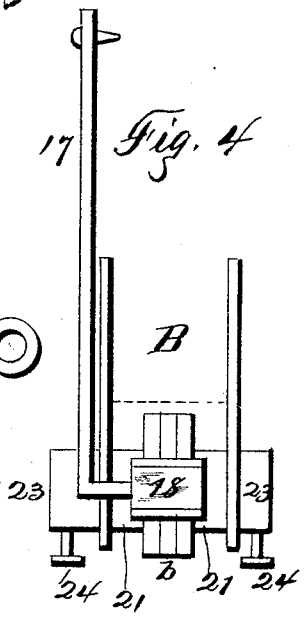
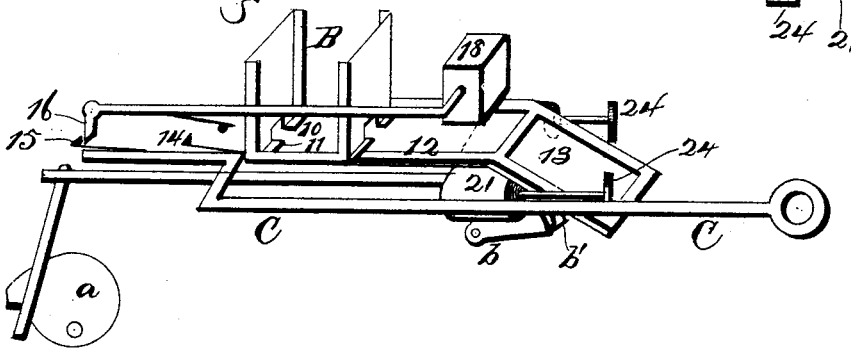


Fig. 3.



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No Model.) 5 Sheets—Sheet 2.

W. L. BUNDY.

CARD PRINTING ATTACHMENT FOR CASH REGISTERS.

No. 457,766. Patented Aug. 11, 1891.

Fig. 6.

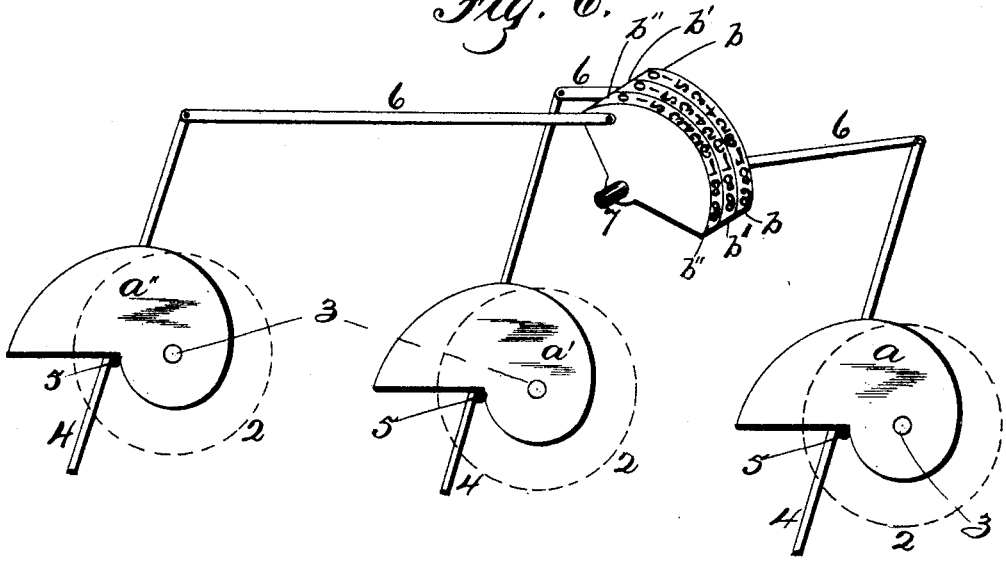
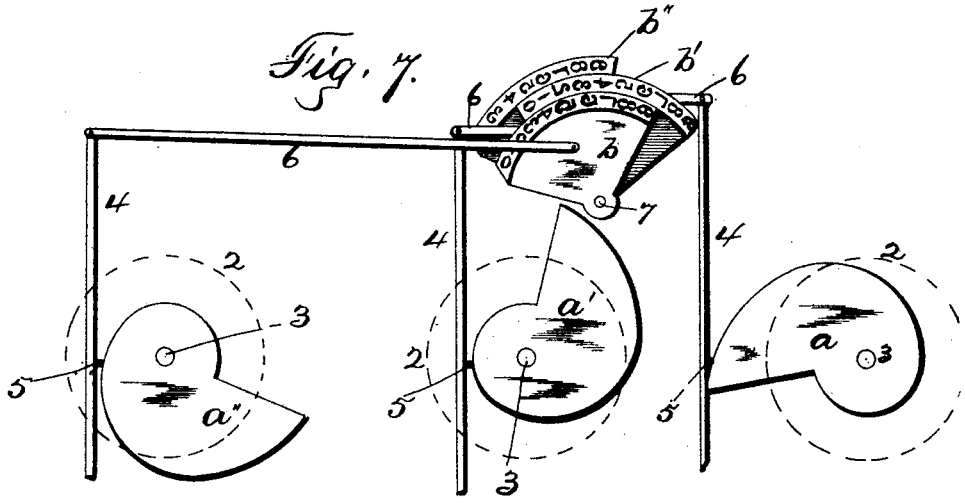


Fig. 7.



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CARD PRINTING ATTACHMENT FOR CASH REGISTERS.

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Fig. 8

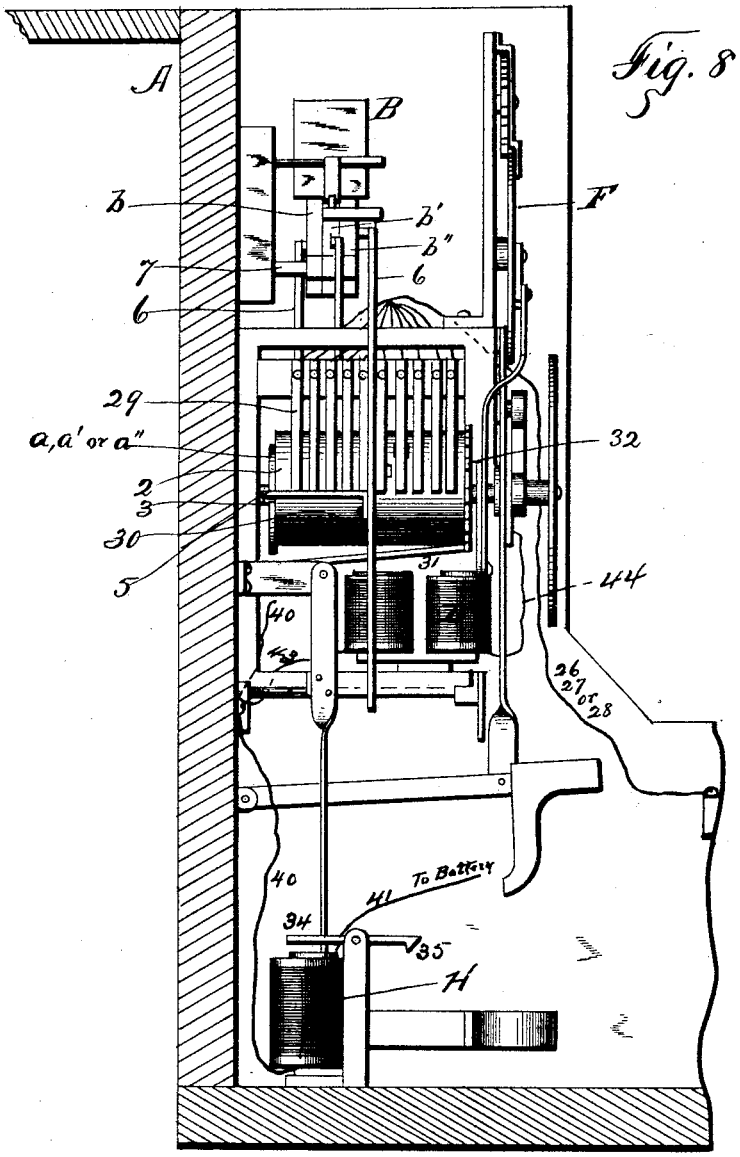

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Fig. 9.

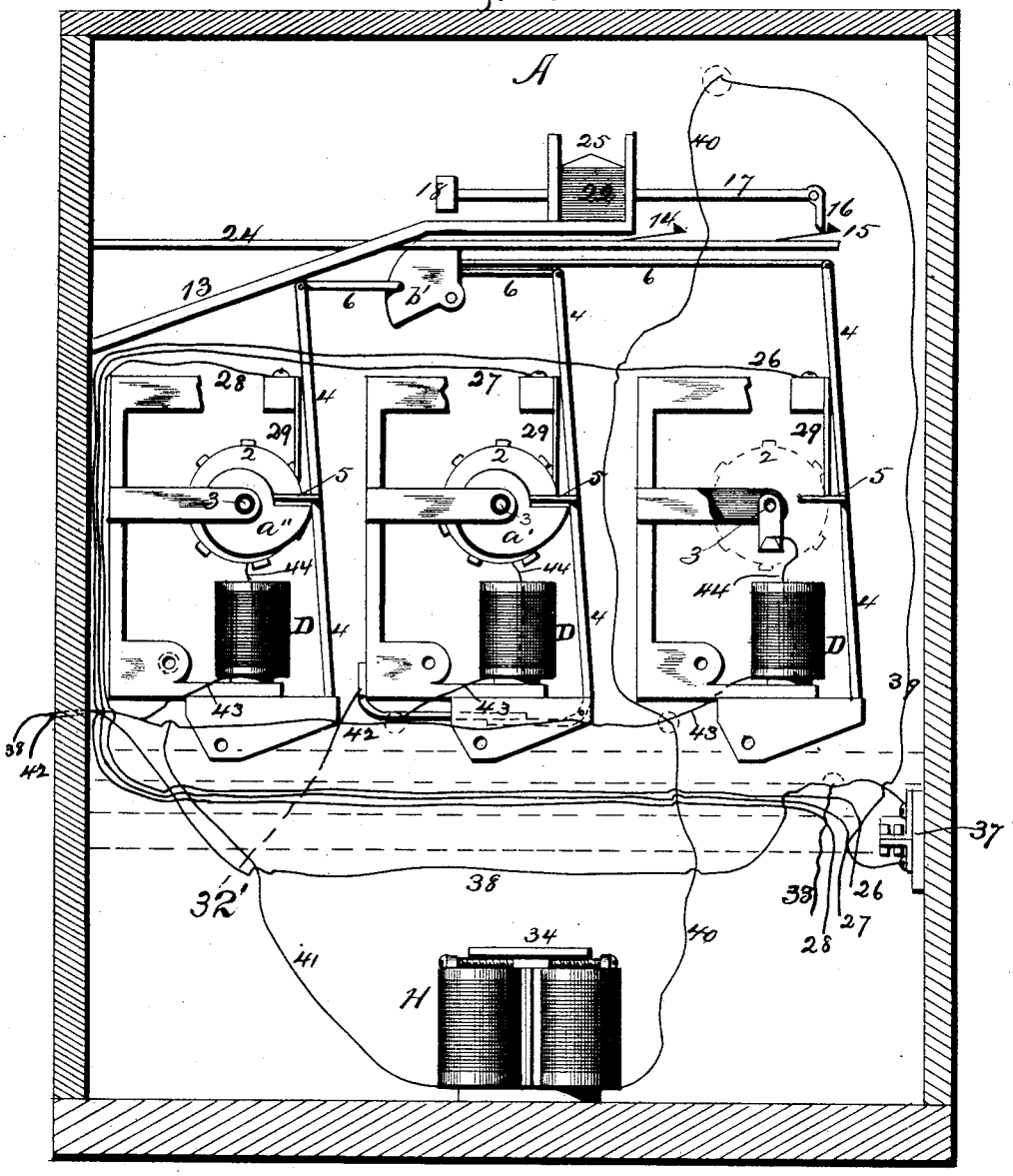

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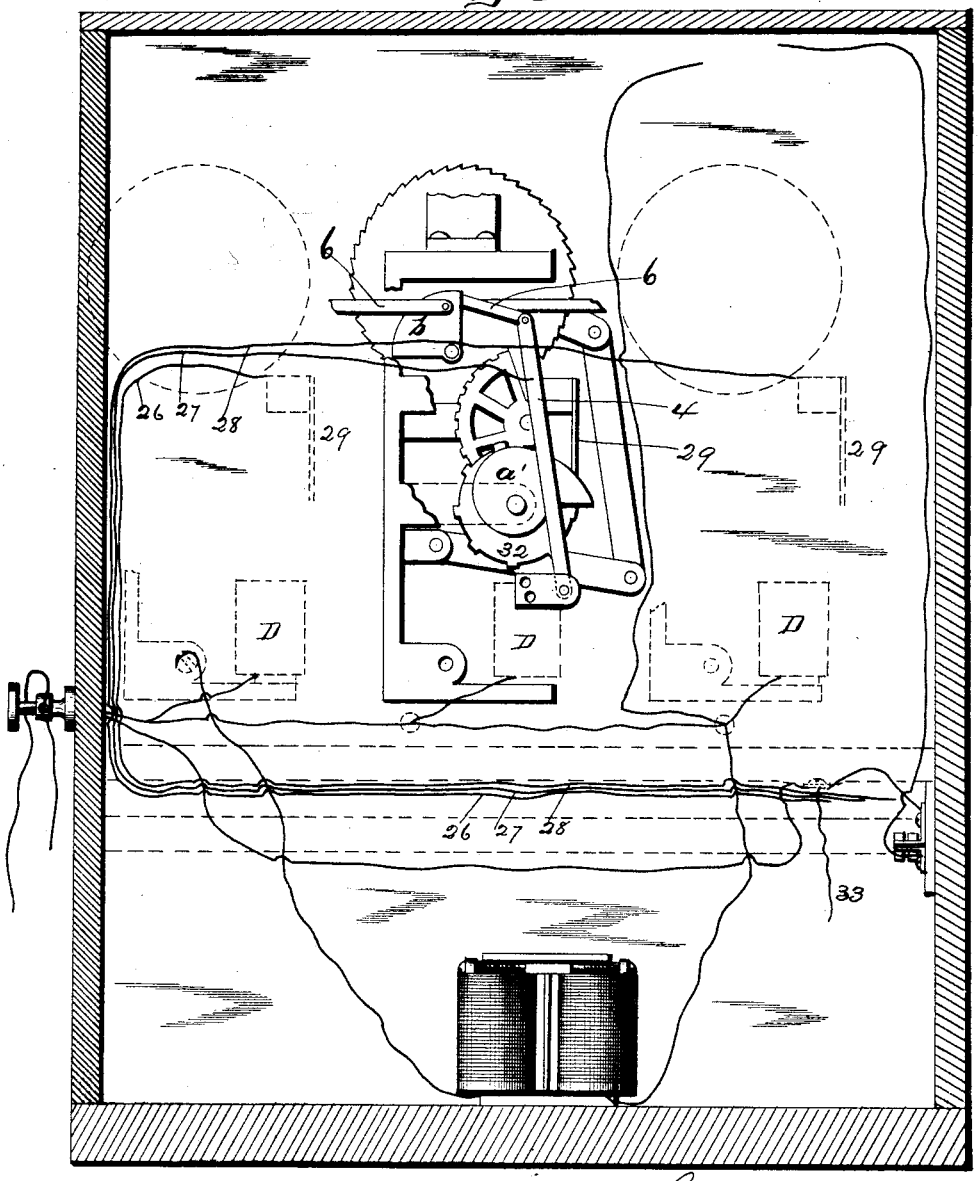
Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLARD L. BUNDY, OF AUBURN, NEW YORK.

CARD-PRINTING ATTACHMENT FOR CASH-REGISTERS.

SPECIFICATION forming part of Letters Patent No. 457 766, dated August 11, 1891.

Application filed October 21, 1889. Serial No. 327,624. (No model.)

To all whom it may concern:

Be it known that I, WILLARD L. BUNDY, of Auburn, in the county of Cayuga, in the State of New York, have invented new and useful Improvements in Card-Printing Attachments for Cash-Registers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to cash-registers which are adapted to display the amount of each purchase, and more especially to attachments to such registers whereby the amount of each purchase is printed upon a card in dollars and cents, and the card is discharged from the machine to be delivered to the customer, or is passed into a locked receptacle and retained as a check upon the employés.

My object is to provide a cash-register with means for printing the total of each purchase and the amount placed in the drawer, in dollars and cents, or units, tens and hundreds, and so on, upon a card automatically and ejecting the printed card from the machine to be handed to each customer as a voucher, or depositing it in a closed receptacle, if desired.

My invention consists in the several novel features of construction and operation, hereinafter described, and which are specifically set forth in the claims hereto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the printing-machine detached and ready to operate, the dotted lines indicating the throw of the printing-hammer. Fig. 2 is a side elevation of the same, omitting the hammer, after one card has been printed and another card placed in position ready for printing. Fig. 3 is an isometrical elevation showing the card-holder, the hammer, and other mechanism. Fig. 4 is a top plan view. Fig. 5 is a plan of a card printed. Fig. 6 is an elevation of the printing disks or quadrants and their connections to levers to shift the quadrants, so as to bring into proper alignment the proper units, tens and hundreds. Fig. 7 is an elevation of the same, showing the several cams rotated, so as to bring the figures 9 4 7 on the quadrants into transverse alignment upon the printing-quadrants. Fig. 8 is a side elevation of one of the registering mechanisms in my cash-register, showing also a part of the card-printing mechanism in place above the rotary switch. Fig. 9 is a rear elevation of the same, showing also some of the prominent features of the registering mechanism in dotted lines. Fig. 10 is another rear elevation showing part of the printing mechanism and an elevation of one of the cams upon the switch-arbor, and also the electrical circuits.

The cash-registering mechanisms, upon which no claim is made in this application, and which actuate the card-printing mechanisms, are constructed as follows, each registering apparatus actuating its printing-quadrant: Each registering mechanism is actuated by the operation of one of a series or bank or decimal set of buttons mounted in a suitable key-board (not shown) and adapted to make an electrical contact by the depression of any button upon one of the bunches of wires 26, 27, or 28, which lead from the button-board to the rotating switch mechanism, there being ten wires in each bunch, and one bunch for every set of buttons, and each wire connected to a spring-contact finger 29, which fingers are arranged to bear upon the periphery of the rotating switch 2, and each to come into contact with its shunt 30 thereon. The periphery of this switch being a conductor and the shunts being non-conductors, whenever a circuit is made by operating a button, when the finger corresponding to that button reaches its shunt the circuit through the switch is broken, and then the armature 31 of the electro-magnet D is thrown upward by a spring under it and engages with the tooth of the gear 32, which corresponds in number to the finger and button operated, and locks the switch against further rotation. This rotating switch or shunt and the means for actuating it is the same as that patented by me March 1, 1887, No. 358,645. Hence I will not here described the same, but refer to said patent for a full and explicit description thereof.

A is the casing of the register, omitting the button-board, which is upon the lower front projection, and 1 is an opening or slotway in the side, through which the printed cards are discharged, as hereinafter described. The rotating switch 2 is mounted upon a shaft 3,

and upon each shaft I secure a graduated cam $a\,a'\,a''$. A vertical lever 4, pivotally mounted at its lower end, is erected adjacent to each cam, and each lever is provided with a stud or pin 5, engaging with the periphery of one of the cams. A rod 6 is hinged to each lever 4 and pivotally connected to each of the quadrants $b\,b'\,b''$, which are loosely pivoted upon one common shaft 7, so that the rotation of the switch rotates the cam. The rotation of each cam pushes or pulls over the quadrant to which it is connected, bringing to the printing-point the figure upon the quadrant which corresponds with that of the button operated. Upon the periphery of each quadrant I mount my figures 0 1 2 3 4 5 6 7 8 9, the quadrant b representing units or cents, the quadrant b' representing "tens" or tens of cents, and the quadrant b'' representing hundreds or dollars, and in Fig. 8 I show the cams rotated so as to bring the figures 9 4 6 in line, indicating nine dollars and forty-six cents. These several quadrants are thrown back to their normal positions by the operation of a spring 32', with which the lower end of the lever engages. The switches are also rotated back to their normal positions at naught, carrying the cams back also simultaneously with the return of the cams. Each cam operates separately from the others; but all three may operate simultaneously, or substantially so, or two may operate together, all according to the manipulation of the buttons in the different decimal sets.

B is a card rack or holder consisting of an open-top box with a flange 10 across its inner end at the bottom and projecting outwardly, and a slot 11 is cut through this wall at the bottom and through the flange and also through the bottom of the wall on the opposite side. The body of the holder also has inwardly-projecting flanges 12 along its inner edges, extending back to the foot of the inner wall of the holder and outward to and down along the inner edges of the chute 13.

C is a pull-rod mounted in the front of the case, of angular form, as shown, in order to bring the inner end in line with the slots in the card-holder, and provided with spring-hooks 14 and 15, secured thereto, the hook 15 engaging with the crank-arm of the helve 17, carrying the impression-hammer 18, the helve and hammer being supported by the spring 19 in their normal position, so that when the rod is pulled out the hook 15 will engage with the crank 16 and raise the hammer, as shown by the dotted lines in Fig. 1, until it passes out of such engagement, when the hammer will fall upon the back of the card 20, throwing it and the ribbon 21 down upon the faces of the numbers upon the quadrants, thereby imprinting such numbers upon the card as are then in the printing-line. At the same time the continued drawing outward of this rod brings the hook 14 into the slotway in the bottom of the card-holder and into engagement with the bottom card in the pack 22, and pulls that card outward, and this pushes the printed card out into the chute or away from the printing-point, and then, when the rod is pushed back, a new card is left in position ready for an impression. The printing-point is normally on the naught-line on the quadrants under the hammer. The ribbon 21 is carried upon and between the reels 23, and is operated by the finger-buttons 24 and extends under the frame of the holder B and the printing-point of the quadrants and close thereto. A weight 25 holds the cards in position, they being supported by the flanges 10 and 12.

In Fig. 10 I show adding-dials having one hundred peripheral teeth, which are rotated by a pawl mechanism actuated by the rotation of the switch, but which are not here specifically described, as they and their mechanisms are not a part of this invention.

The cam a is the "units-cam." a' is the "tens-cam," and a'' is the "hundreds" or "dollars" cam; and it will be observed that this printing mechanism can be operated entirely independent of or in conjunction with an adding mechanism, footing up the several amounts as they are successively placed in the drawer.

A suitable receptacle can be provided to catch and hold the printed cards for future reference.

The wire 33 conducts a current to the bottom board, (not here shown,) so that when a button is depressed a circuit is made between this wire and one of the wires in either of the bunches 26, 27, or 28, according to the button and the row of buttons. I do not show or describe this fully, because this mechanism is all comprised and described in a patent granted to me for an electric cash-register, No. 443,475, dated December 23, 1890. For the same reason I will simply say that the magnet H at the bottom of Figs. 8 and 10 is used to unlock the drawers, the armature 34 being provided with a hook 35 upon the back of the drawer.

A switch 37 is secured at one side of the casing. 38 is the wire leading to it from the battery. 39 is a wire leading from it to the bell and thence to the wire. 40 leads to the battery H, and thence the wire 41 leads back to the battery, being connected to the other return 42. A wire 43 connects the magnet D to the wire 42, and the wire 44 connects each switch 2 to its magnet D.

In Fig. 8 I show the ten wires in each bunch 26, 27, or 28, spread out and connected each to its finger 29.

When a circuit is made by the depression of a button, the bell rings, the hook on the armature of the magnet H is raised out of engagement with a latch on the back of the drawer, thus unlocking it, and the switch is rotated, as aforesaid. No circuit is made through the bell, the magnet H, or the rotary switches or magnet D until a button is depressed, so as to make a circuit from the wire 33 to the wire 39 and one of the wire bunches

26, 27, and 28, so that there is no circuit established or existing until a button is depressed.

What I claim as my invention is—

1. The combination, with a rotating switch and a cam mounted upon the switch-arbor, of a rotating quadrant having figures upon its periphery and mounted upon a shaft, and a lever connected to the quadrant and engaging with the cam in its rotation, as set forth.

2. The combination, with the rotating switch and a cam mounted upon the switch-arbor, of a lever engaging with the cam and connected to a quadrant carrying digital figures upon its periphery, a rotating quadrant and ink-ribbon across the face of the quadrant, a card above the ribbon, and an impression-hammer actuated by a draw-rod mounted upon the casing, as set forth.

3. The combination, with a rotating switch-cam mounted upon its arbor, a lever engaging with the cam and connected to a quadrant, and a quadrant pivotally mounted and having digital figures upon its periphery, of an ink-ribbon transverse to the face of the quadrant, a card above the ribbon, an impression-hammer having a crank upon its helve, a pull-rod mounted in the casing and engaging with the crank to raise the hammer, a card-holder, and a hook upon the pull-rod engaging with the lowermost card in the pack and drawing it out to the printing-point, and a discharge-chute connected to the card-rack in front of the printing-point, as set forth.

4. A series of quadrants pivotally mounted side by side, each carrying digital figures upon its face and operated independently or jointly by the joint or the separate rotations of cams mounted upon the arbors of rotary electric switches, each cam engaging with a lever connected to a quadrant, and rotary switches and means for rotating them, as set forth.

In witness whereof I have hereunto set my hand this 10th day of October, 1889.

WILLARD L. BUNDY.

In presence of—

HOWARD P. DENISON,

C. W. SMITH.