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CASH REGISTER

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2 Sheets-Sheet 2

FIG. 2

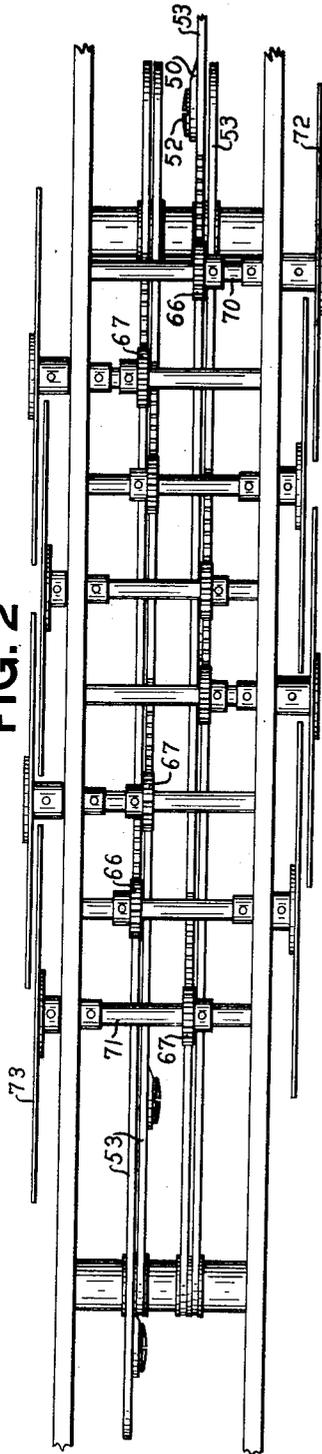
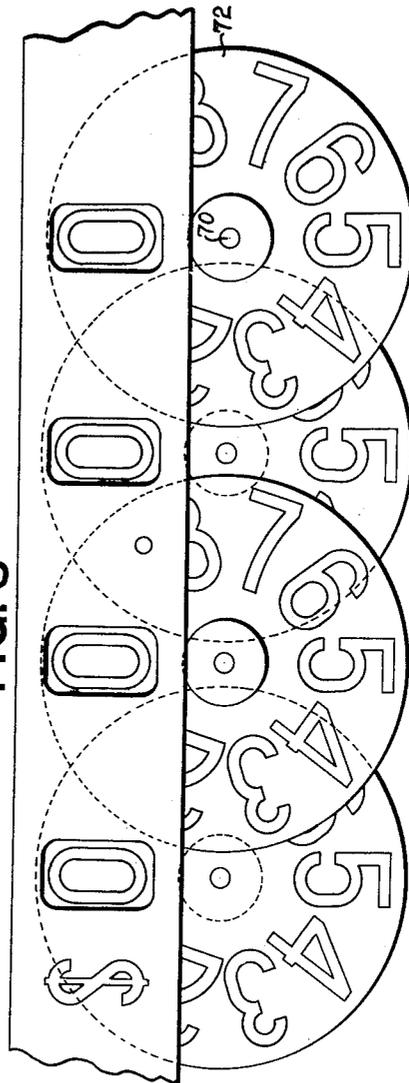


FIG. 3



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# UNITED STATES PATENT OFFICE

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## CASH REGISTER

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Serial No. 503,054

6 Claims. (Cl. 235—23)

This invention relates to indicating mechanism, and more particularly to that type used in connection with cash registers, such as shown in Letters Patent of the United States, No. 1,034,500, issued to E. J. Von Pein on August 6, 1912, in connection with which this device is conveniently illustrated.

In machines of this type, the customary means of indication for such types of machines, has been by the use of what is known in the art as tablet indicators. These tablets are small signs, each displaying a numeral, which are pushed into view upon the depression of a key representing that numeral. When an amount involving more than one decimal order is displayed, it becomes necessary to show as many of such signs as that number has digits. The signs show the number on both their front and back, so that it may be seen by both the cashier standing in front of the machine, and the customer standing behind the machine.

In this form of indication, however, there is a distinct disadvantage, in that when an amount such as \$12.64 is displayed to the cashier, it is displayed reversely to the customer in this manner, .04 .60 \$2 \$10. Such an indication is troublesome to read and leads to confusion, and it is therefore an object of this invention to provide an indicating means for this type of machine which will be readable in the proper order from both the front and back of the machine.

It is a further object to provide an indicator mechanism using disks containing ten numerals, instead of the customary tablets containing only one numeral.

Another object is to provide a shock absorbing driving means for the disks to prevent their being damaged by rapid actuation of the key levers.

With these and incidental objects in view, the invention includes certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims and a preferred form or embodiment of which is hereinafter described with reference to the drawings which accompany and form a part of this specification.

Of said drawings:

Fig. 1 is a perspective of the indicator operating mechanism.

Fig. 2 is a plan view of the indicators and their operating bars.

Fig. 3 is a front elevation of the dials.

### General description

Described in general terms, this invention provides two sets of indicator dials, one facing the front of the machine, and the other facing the rear. Each set is so positioned that the numerals read in their proper denominational sequence from left to right, the two dials of any one de-

nomination being actuated from the depressed key of that denomination.

### Detailed description

Lifting rods 30 (Fig. 1) are supported for sliding movement by slots 31 in a stationary bracket 32 and apertures 33 in a stationary support 34. A spring 35 holds the rods 30 in their lower positions, with a nose 36 of each rod resting on the bracket 32. When a key is depressed the customary key levers 37 raise the lifting rods 30 to their upper positions, which movement lifts differential slides 40. A latching bar 41 holds the rods 30 in their upper positions by the nose 36 overlying the upper flange 42 of the bar.

There is provided one differential slide 40 for each denomination intended to be indicated, the units and tens slides being shown in Fig. 1. The slides each have a stepped surface 43 along their lower edge, which abuts the lifting rods 30. The steps on this surface are so graduated that for an equal throw of all the lifting rods, the slides 40 are raised a distance proportional to the value of the key depressed. For example, as seen in Fig. 1, the rod 30 on the extreme right is raised by the 1-cent key, the second by the 2-cent key, etc., the rods 30 all being raised an equal distance, raising the slide 40, different distances.

The differential slide 40 is guided in its movement by rods 44 and 45, which pass through parallel slots 46 and 47 cut in the slide. A third slot 48 is cut at an angle to slots 46 and 47, and acts as a cam to move a lever 50, which has a stud 51 projecting into the slot.

The lever 50 is pivoted at 52 to a bar 53, and is normally held in the position shown in Fig. 1, with its upper arm 54 resting against the bottom surface of the bar 53, by a spring 55 fastened at one end to a stud 56 on the lever 50, and at the other end to a stud 57 on the bar 53.

The bar 53 is mounted to slide horizontally on stationary rods 60 and 61 which pass through slots 62 and 63 cut in the bar 53.

Racks 64 and 65 on the bar 53 mesh with pinions 66 and 67 fastened to shafts 70 and 71, on the other ends of which are pinned the dials 72 facing the front of the machine and 73 facing the rear.

As seen in Fig. 2, each bar 53 has one dial facing front and one facing the rear of the machine, the dials being situated in their proper denominational positions on each side.

When a key is depressed, its lifting rod 30 is raised, the nose 36 swinging the latching bar 41 and allowing any previously raised rods 30 to drop. The raised rod lifts its differential slide 40, moving the lever 50 to the left and rotating the dials 72 and 73.

If the key is depressed slowly, the spring 55 will not be disturbed, but if it is quickly de-

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pressed, the inertia of the bar 53 and the disks 72 and 73 will tend to retard the movement of the bar, causing the lever 50 to swing clockwise, stretching the spring 55, which in turn slides the bar 53 to rotate the dials. This spring arrangement acts as a shock absorbing means to prevent the dials from being rotated by the keys at a greater rate than the spring 55 is capable of imparting to them.

10 A spring 74 exerts pressure in a clockwise direction on an arm 75 loosely mounted on the rod 45. A stud 76 is fixed to the arm 75 and bears against the slide 40 to hold the slide against the raised lifting rod 30. This prevents the dials from coasting beyond their proper indicating positions, and also rotates them from an indication displaying a large numeral, to one displaying a smaller numeral.

20 While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form or embodiment herein disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow:

What is claimed as new, is:

30 1. In a machine of the class described, in combination with lifting rods; an indicator mechanism, including a bar connected to two indicating dials one dial facing the front of the machine and the other facing the rear, operating means for said bar including a differential slide having a stepped surface for engagement with the lifting rods of one denomination of keys; and a cam slot for operating said bar.

40 2. In a machine of the class described, a differentially movable slide including a stepped surface and a slot cut at an angle to the direction of movement of the slide, an indicator, means cooperating with the indicator and with the slot

to cause the movement of the slide to move the indicator, means cooperating with said stepped surface for determining the differential movement imparted to the slide, and means for guiding the slide in a linear path.

80 3. In a machine of the class described, a differentially movable slide, means to move the same in a linear path, the means including a plurality of steps on the slide and a plurality of lifting rods, each step being adapted to contact with a lifting rod, a bar, an indicator, and a camming slot in said slide adapted to move the bar to set the indicator when the slide is moved by a lifting rod.

90 4. In a machine of the class described, an indicator, a shock absorbing driving means therefor, including a cam slide, a lever, and a bar, the lever having a connection with the cam on the slide and with the bar, and a resilient means connected to the lever and to the bar to move the bar when the lever is moved by the cam slide.

95 5. In a machine of the class described, an indicator including a differential slide, a lever, and lifting rods, the slide having a stepped surface adapted to contact with the lifting rods and a cam slot to move the lever, means to guide said slide in a linear direction, and means connected to said lever to rotate two dial wheels, said wheels displaying the same numeral and being driven by a pinion engaging a rack on said rotating means.

100 6. In a machine of the class described, an indicator mechanism including a longitudinally movable bar connected to two indicating dials, one dial facing the front of the machine and the other facing the rear, propelling means for the dials including lifting rods, connecting means between the lifting rods and the bar, and means to cause the different lifting rods to impart different movements to the bar.

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