

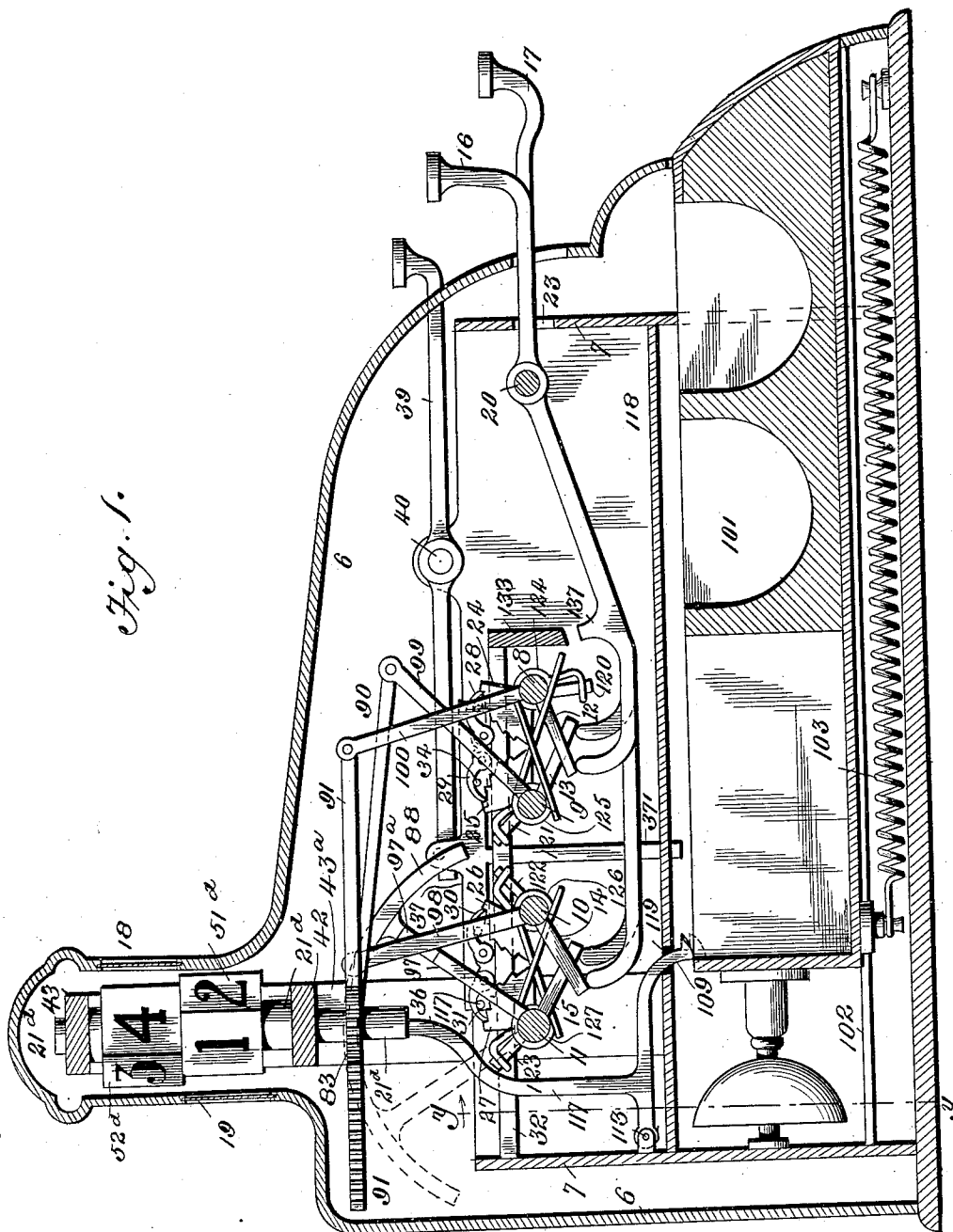
No Model.)

4 Sheets—Sheet 1.

C. PRICE.
CASH REGISTER AND INDICATOR.

No. 547,888.

Patented Oct. 15, 1895.



Inventor:

Cyrus Price,
By Eugene L. Annott,
Attorney.

Witnesses

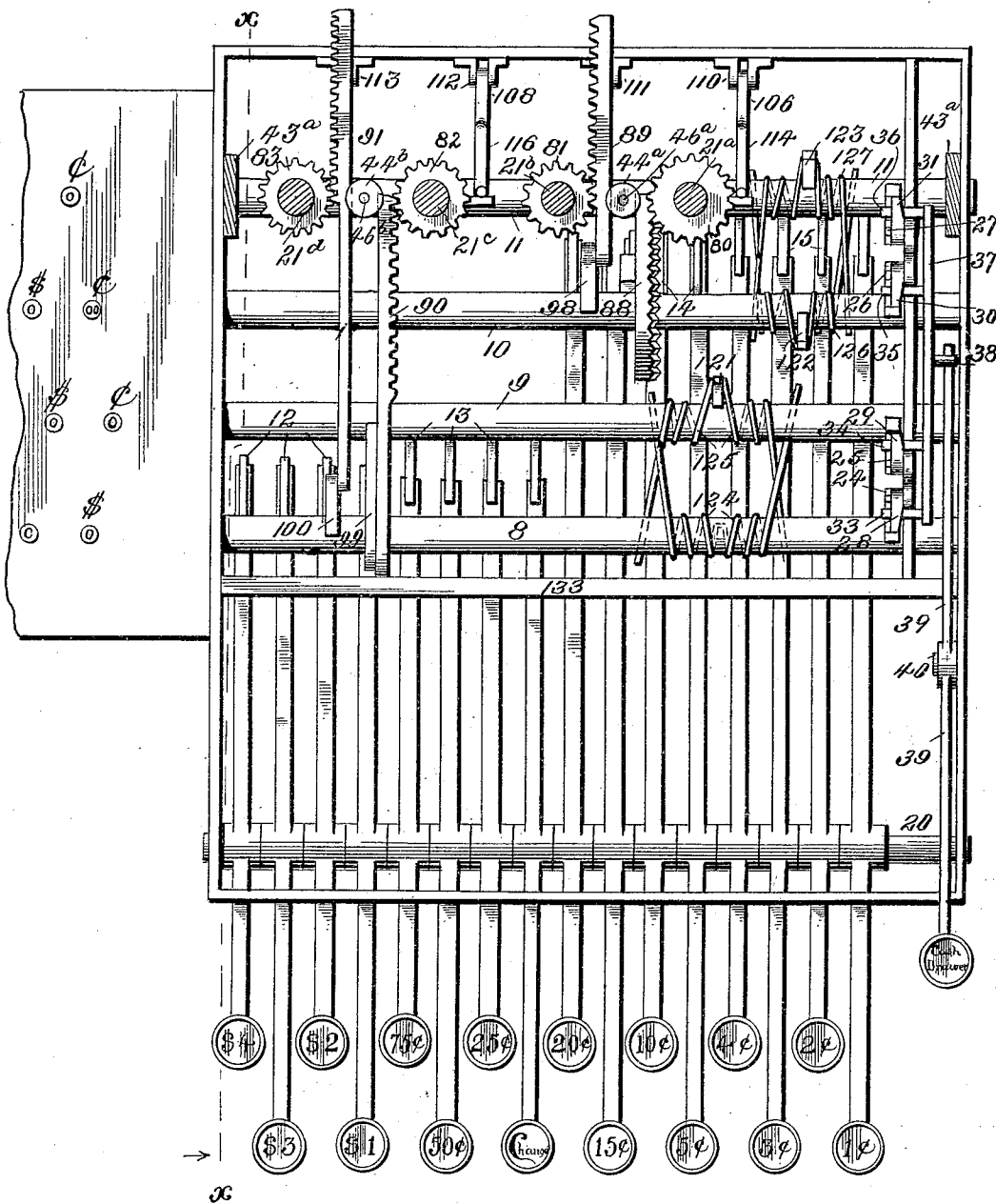
J. S. Annott
R. W. Price

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Fig. 2.



Witnesses

J. A. Smith
A. W. Price

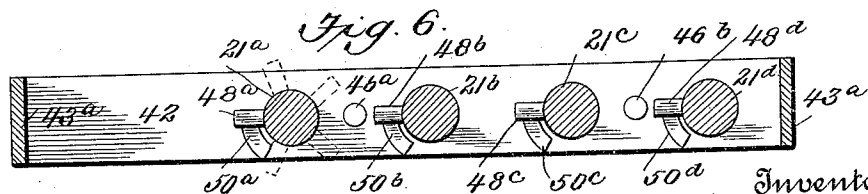
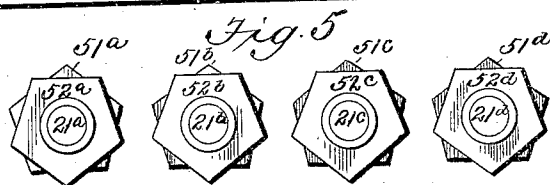
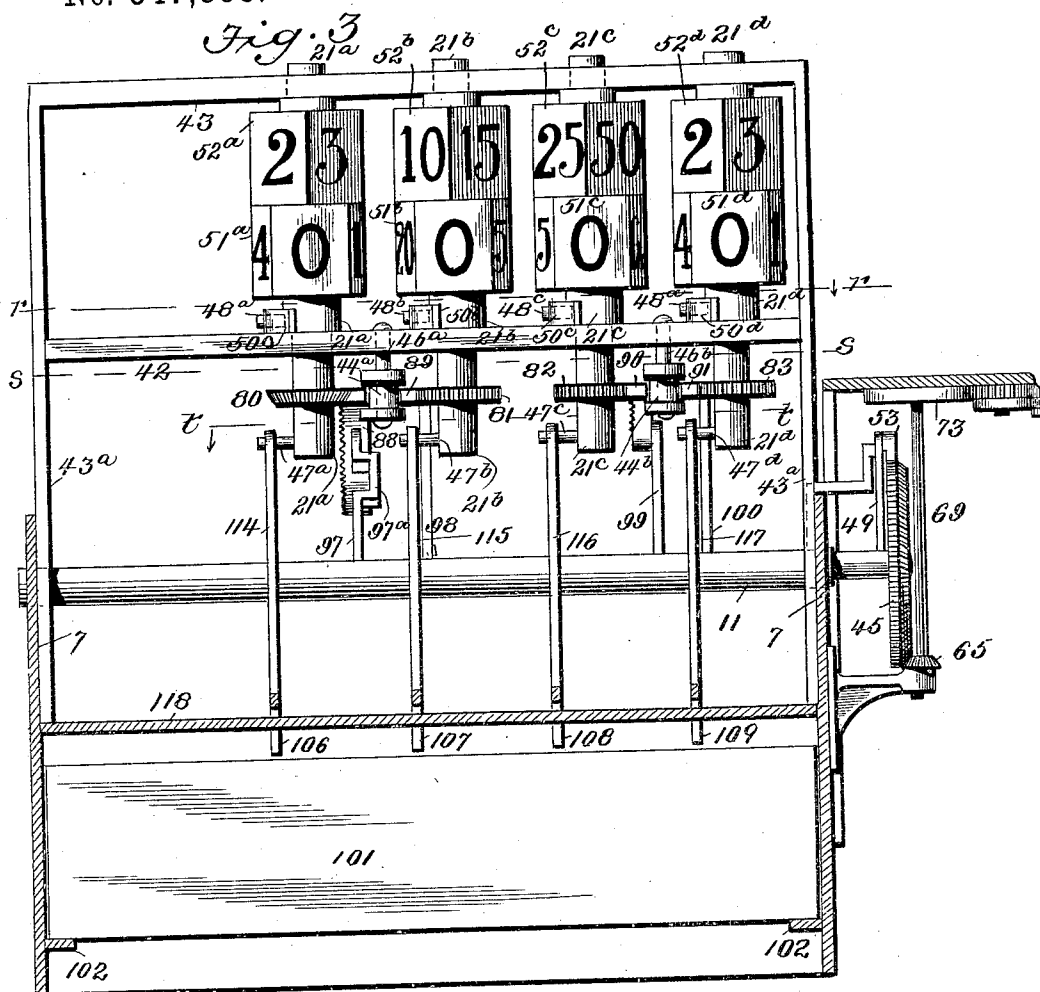
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C. PRICE.
CASH REGISTER AND INDICATOR.

No. 547,888.

Patented Oct. 15, 1895.



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Fig. 4.

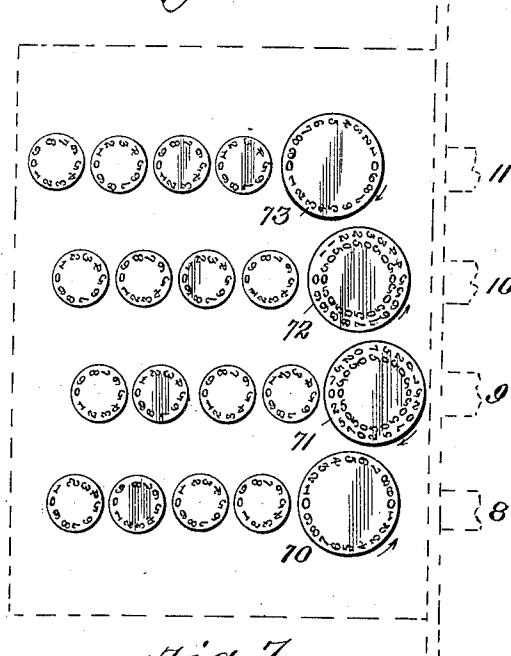


Fig. 7.

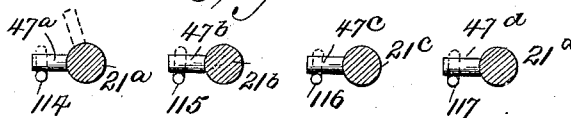


Fig. 8.

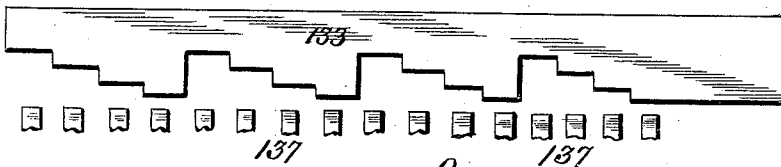
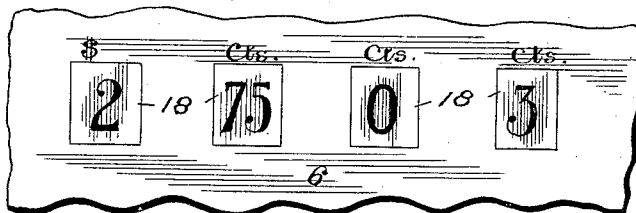


Fig. 9.



Inventor:

Witnesses

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By Eugene L. Arnott,
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UNITED STATES PATENT OFFICE.

CYRUS PRICE, OF GREENFIELD, OHIO.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 547,888, dated October 15, 1895.

Application filed January 7, 1895. Serial No. 534,045. (No model.)

To all whom it may concern:

Be it known that I, CYRUS PRICE, a citizen of the United States, residing at Greenfield, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in Cash Registers and Indicators, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates principally to improvements in indicating devices designed to be used in cash-registers of the character set forth in Letters Patent No. 522,389, granted to me July 3, 1894, for improvements in cash registers and indicators.

The object of my invention is to provide new and improved indicating devices of the character hereinafter set forth, which will have less momentum and will occupy less space and be lighter in weight than the indicating devices set forth in my said Letters Patent. The registering mechanism and operative connections employed in my present machine are similar to those set forth in my said Letters Patent, with various slight modifications rendered necessary to accommodate the mechanism to the indicating devices hereinafter described. It will therefore not be necessary to give a detailed description of all the mechanism shown in the accompanying drawings, since reference may be had to my said Letters Patent for such detailed description.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a cash register and indicator embodying my invention, taken on line *xx* of Fig. 2. Fig. 2 is a top or plan view of the register and indicator, sectioned on line *ss* of Fig. 3 and with the casing removed. Fig. 3 is a cross-section on line *yy* of Fig. 1, the casing being removed and only part of the mechanism in view being represented. Fig. 4 is a top or plan view showing the figured faces of the registering-disks, the cogs being omitted, and the covering-plate and ends of rock-shafts being represented by dotted lines. Fig. 5 is a top or plan view of the indicator-blocks. Fig. 6 is a detail sectional view on line *rr* of Fig. 3. Fig. 7 is a detail sectional view on line *tt* of Fig. 3. Fig. 8 is a detail view showing the transverse bar with

steps or graduations on its under side and the normal positions of the ends of the upward projections on the key-levers relative thereto. Fig. 9 is a detail view showing the figured indicator-blocks through the windows or reading-openings in the casing, the latter being a broken portion.

In the drawings the numeral 6 represents the casing or cabinet, and 7 represents the main frame, which supports the operating parts of the machine.

8 9 10 11 are transverse rock-shafts journaled in frame 7. Shafts 8 and 10 have each a series of short radial arms, designated by 12 and 14, projecting downward and rearward, while shafts 9 and 11 have each a similar series of arms, designated by 13 and 15, projecting downward and forward.

16 17 represent the two rows or banks of keys. These keys are pivotally placed upon a transverse shaft 20. The inner end of each key-lever is curved upward and placed in engagement with one of the said radial arms projected from a rock-shaft. Rock-shafts 8 9 10 11 carry, respectively, toothed segments 24 25 26 27. Pawls or locking-dogs 28 29 30 31 are placed, respectively, in engagement with said toothed segments. These locking-dogs are pivotally attached to lugs projected upward from stationary bar 32. Pins 33 34 35 36 project laterally from the vertically-movable bar 37 and pass, respectively, between said locking-dogs and toothed segments. A pin 38 projects laterally from bar 37 on the side opposite to the pins just mentioned. Bar 37 has an arm 37', which extends vertically downward from its central portion and passes through the horizontal partition 118, having a bearing therein to prevent said bar from tilting. A special key 39, which does not belong to either of the banks mentioned, is pivotally placed upon a short shaft or stud 40, projected from the frame 7, and has its inner end in engagement with the under side of pin 38.

70 71 72 73 are registering-disks, each being the first of a train or series of registering-disks. These disks derive motion from rock-shafts 8 9 10 11, as described in my said Letters Patent. In Fig. 3 I have shown rock-shaft 11, arm 49, and pawl 53 engaging wheel

45, said wheel meshing with wheel 65, vertical shaft 69, carrying-disk 73, and the adjacent disks.

42 and 43 are cross-bars, and the latter has its end portions 43^a bent down, as shown. These vertical end portions 43^a are secured to frame 7. Cross-bar 42 extends between and is secured to the vertical end portions 43^a.

21^a 21^b 21^c 21^d are vertically-disposed shafts shouldered near their upper and lower ends, as shown, and journaled in cross-bars 42 and 43. These shafts carry, respectively, pinions 80 81 82 83.

88 89 90 91 are rack-bars, which are in engagement, respectively, with pinions 80 81 82 83. 88 is a curved rack.

97 98 99 100 are arms carried, respectively, by rock-shafts 11 10 9 8. Arms 98 99 100 are pivotally connected at their outer ends, respectively, with the ends of rack-bars 89 90 91. The curved rack 88 is carried by arm 97. The curved rack 88 and pinion 80 have bevel gear-teeth, as shown in Fig. 3. The arm 97 has a lateral kink or bend 97^a for the purpose hereinafter set forth.

44^a 44^b are spool-shaped pieces consisting of short tubes flanged at either end. These spool-shaped pieces are supported, respectively, by the short pins or rods 46^a 46^b, depending from cross-bar 42, or said pieces may be made integral with said rods. The spool-shaped piece 44^a is placed between rack-bars 88 and 89. The spool-shaped piece 44^b is placed between rack-bars 90 and 91. The flanges of said spool-shaped pieces overlap said rack-bars, as shown, and said pieces hold said rack-bars against lateral or vertical displacement.

47^a 47^b 47^c 47^d are pins or studs projected from the lower ends of vertical shafts 21^a 21^b 21^c 21^d, respectively.

48^a 48^b 48^c 48^d are pins or studs projected laterally from vertical shafts 21^a 21^b 21^c 21^d, respectively.

50^a 50^b 50^c 50^d are lugs or projections extending up from cross-bar 42. Pins 48^a 48^b 48^c 48^d are normally in engagement with said lugs or projections, respectively.

51^a 51^b 51^c 51^d are indicator-blocks, and immediately above these, respectively, are similar indicator-blocks 52^a 52^b 52^c 52^d. These indicator-blocks are carried by vertical shafts 21^a 21^b 21^c 21^d, respectively, or they may be made integral with said shafts. Each indicator-block has five vertical sides or faces with indicating-figures inscribed thereon. Each upper indicator-block has its vertical edges over the centers of the faces of a lower indicator-block, as shown most clearly in Figs. 3 and 5. With this arrangement the upper indicator-block has a face directly forward when the lower indicator-block has a face directly rearward. The usual windows or reading-openings 18 are provided in the front part of the casing opposite the upper indicator-blocks, and similar windows or reading-openings 19 are provided in the rear part of the

casing opposite the lower indicator-blocks. The upper indicator-blocks 52^a 52^b 52^c 52^d have the same indicating-figures, respectively, as the lower indicator-blocks 51^a 51^b 51^c 51^d; but they are so arranged that when an indicating-figure is seen through window 18 on an upper indicator-block a similar figure may be seen through window 19 on the corresponding lower indicator-block. It is obvious that instead of the indicator-blocks wheels or disks might be used with indicating-figures on their peripheries, the same figures on the upper and lower wheels being at diametrically-opposite points; but the figures may be seen more clearly on the faces of the blocks than on the rounding peripheries of the wheels.

101 is a cash-drawer.

102 represents bars or cleats, one at either side, on which the drawer rests.

103 is a spring for propelling the drawer.

106 107 108 109 are catches for holding the drawer closed and are pivoted, respectively, at 110 111 112 113 to lugs projected from frame 7. These catches, respectively, have upwardly-extending arms or projections 114 115 116 117. The upper ends of these arms or projections are in engagement, respectively, with pins or studs 47^a 47^b 47^c 47^d. The catches are thus held normally out of engagement with the cash-drawer until a key is operated, as will be hereinafter explained.

118 is a horizontal partition between the cash-drawer and the operating mechanism. This partition has a transverse slot 119 for the catches.

120 121 122 123 are short radial arms projected, respectively, from rock-shafts 8 9 10 11.

124 125 126 127 are springs. These springs are formed of spring-wire with loops at their central parts adapted to fit around the outer ends of arms 120 121 122 123, respectively. Each spring has its end portions at each side of the loop wound around a rock-shaft, one end portion being wound from left to right and the other from right to left, and the ends of the wires extend across and engage the under side of the adjacent rock-shaft.

133 is a transverse bar with steps or gradations on its under side.

137 represents upward projections, one on each key-lever. These projections contact with the steps on bar 133, and thus limit the motion of the key-levers.

The registering-disk 73 has the figures "0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9." The registering-disk 72 has the figures "00 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95." The registering-disk 71 has the figures "00 25 50 75 00 25 50 75 00 25 50 75 00 25 50 75." The registering-disk 70 has the figures "0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9." Each remaining disk of each train has the figures "0 1 2 3 4 5 6 7 8 9." Disk 70 registers dollars. Disks 71, 72, and 73 register cents. The remaining disks register dollars and, in connection with the disks named, give the total value of each train of disks. Disks 70 71 72 73 derive motion, re-

spectively, from rock-shafts 8 9 10 11. It may be stated that any other suitable system of registering mechanism may be used if preferred. When a key-lever is depressed, the corresponding rock-shaft is operated by means of the radial arm with which the key-lever is in engagement. Rock-shaft 11 is operated by four keys, and the finger-pieces of these keys are marked, respectively, "1c.," "2c.," "3c.," "4c." Rock-shaft 10 is operated by four keys, and the finger-pieces of these keys are marked, respectively, "5c.," "10c.," "15c.," "20c." Rock-shaft 9 is operated by four keys, and the finger-pieces of these keys are marked, respectively, "Change," "25c.," "50c.," "75c." Rock-shaft 8 is operated by four keys, and the finger-pieces of these keys are marked, respectively, "\$1.," "\$2.," "\$3.," "\$4."

The steps or graduations on the under side of bar 133 are so arranged that the keys marked "1c.," "5c.," "Change," "\$1" have about an equal limit of stroke. The keys marked "2c.," "10c.," "25c.," "\$2" have about twice as great a stroke. The keys marked "3c.," "15c.," "50c.," "\$3" have about three times as great a stroke, and the keys marked "4c.," "20c.," "75c.," "\$4" have about four times as great a stroke. This is shown most clearly in Fig. 8.

The indicator-block 52^a has the figures on its faces "0 1 2 3 4." The indicator-block 52^b has the figures on its faces "0 5 10 15 20." The indicator-block 52^c has the figures and word on its faces "0" "Change" "25" "50" and "75." The indicator-block 52^d has the figures on its faces "0 1 2 3 4."

The indicator-blocks 51^a 51^b 51^c 51^d have the same figures, respectively, as 52^a 52^b 52^c 52^d. It will be observed that these figures correspond with the figures on the keys.

The sign "\$" is marked on the casing over indicator-block 52^d, and the sign "Cts." is marked on the casing over indicator-blocks 52^a 52^b 52^c. This is clearly shown in Fig. 9. The sign "\$" is marked on the casing over indicator-block 51^d, and the sign "Cts." is marked on the casing over indicator-blocks 51^a 51^b 51^c, or the signs "\$" and "Cts." may be marked on the indicator-blocks instead of on the casing above them. It is obvious that in looking at the front of the machine the "\$" sign will be at the left, and in looking at the rear of the machine the "\$" sign will be at the right, the sign being preferably placed just above the windows. It is obvious that the "\$" sign may be changed from one side of the machine to the other by changing the corresponding indicator-block and its connections to that side of the machine.

The operation of my register and indicator, so far as not already described, is as follows: Suppose, first, that five cents is to be registered. The "5c." key is depressed, rock-shaft 10 is rotated one space, arm 98 is swung forward, rack-bar 89 is drawn forward with arm 98, shaft 21^b is rotated one space, "5" on indicator-block 52^b appears to view in window

18, and "5" on indicator-block 51^b appears to view in window 19. Disk 72 presents "5" in the reading-opening in the plate above it. When shaft 21^b rotates one space, the stud 47^b is carried away from arm 115, and the latter falls forward to the position shown in dotted lines in Fig. 7. At the same time the catch 107, which is integral with said arm, drops down to the position shown in dotted lines in Fig. 1 to engage and lock the cash-drawer 101. The stud 48^b is carried away from lug 50^b. Suppose, now, that two dollars and seventy-eight cents is to be registered. The special key 39 is first depressed. Bar 37, with pin 35, is elevated, pawl 30 is disengaged from toothed segment 26, and spring 126, which was wound up by the rotation of the shaft, returns the rock-shaft 10, together with the arm 98, rack-bar 89, and vertical shaft 21^b, to their initial positions, respectively, the backward rotation being arrested by stud 48^b, striking against lug 50^b. The "5" will disappear from windows 18 and 19 and "0" will appear. The stud 47^b will engage and return arm 115 to its initial position, thus elevating and disengaging catch 107 from the cash-drawer, whereupon spring 103 will propel the drawer. The amount received, two dollars and seventy-eight cents, will then be deposited in the cash-drawer and the "\$2" key, the "75c." key, and the "3c." key will be depressed. These keys may be depressed simultaneously or successively. Rock-shaft 8 will be rotated two spaces, rock-shaft 9 four spaces, and rock-shaft 11 three spaces. Vertical shafts 21^d, 21^c, and 21^a will be rotated in proportion to their actuating rock-shafts by means of the rack-bars and pinions, and in window 18 "\$2" will appear to view on indicator-block 52^d, "75c." on indicator-block 52^c, and "3c." on indicator-block 52^a. The footing of these amounts will be two dollars and seventy-eight cents. In window 19 "\$2" will appear to view on indicator-block 51^d, "75c." on indicator-block 51^c, and "3c." on indicator-block 51^a. The footing of these amounts will be two dollars and seventy-eight cents. Hence the amount indicated may be seen either from the front or rear of the machine. This arrangement is specially useful when the machine is placed on the counter instead of to the wall. When the keys have been depressed, the drawer may be closed. The catches 106 107 108 109 have their lower ends beveled, as shown, so that they will ride over the engaging portion of the drawer when the latter is closed. Catches 106, 108, and 109 will be lowered to engage the drawer, the studs 47^a, 47^c, and 47^d moving away from arms 114, 116, and 117, respectively, when shafts 21^a, 21^c, and 21^d are rotated. It is obvious that the drawer will not remain closed until a key has been depressed, because the studs projected from the vertical shafts will hold the catches out of engagement with the drawer when the indicator-blocks are in their zero positions. With this arrangement the clerk or attendant

cannot forget to register, because the drawer will not remain closed until a key has been depressed. The registering-disk 70 will move two spaces and show "\$2," the registering-disk 71 will move three spaces and show "75c.," and the registering-disk 73 will move three spaces and show "3c." It is obvious that the second registering-disk of each train should move one space space whenever "0" or "00" of the first registering-disk appears in the reading-opening in the plate. The disks of each train will give the total value registered on the keys operating the corresponding rock-shaft.

In Fig. 6 I have shown in dotted lines the positions which the stud 48^a successively assumes when the "1c." key, the "2c." key, the "3c." key, and the "4c." key are successively depressed. It will be observed that in the last position the arm 48^a contacts with lug 50^a on the side opposite that with which it is normally in engagement, the lug being just large enough for this purpose. In like manner studs 48^b, 48^c, and 48^d contact with lugs 50^b, 50^c, and 50^d, respectively, when shafts 21^b, 21^c, and 21^d reach their limits of rotation. Hence the lugs prevent the shafts from rotating too far by momentum.

In Fig. 7 I have shown in dotted lines the position the stud 47^a assumes when the "1c." key is depressed, and also in dotted lines the positions the arms 114 115 116 117 assume when shafts 21^a 21^b 21^c 21^d are rotated. The lateral kink or bend 97^a on arm 97 prevents the latter from striking against stud 47^a when said stud is carried around to the side of shaft 21^a opposite to its normal position. Suppose, now, that one cent is to be registered. The special key 39 will be depressed to release rock-shafts 8, 9, and 11. Springs 124, 125, and 127 will thereupon return all parts, except the registering-disks, to their initial or zero positions and release the cash-drawer. The "1c." key will then be depressed, which will show "1c." in the indicator-windows. It is obvious that the indicator-blocks could each be provided with ten vertical sides or faces bearing the figures "0 1 2 3 4 5 6 7 8 9." In this case the keys should have the values shown in my said Letters Patent, and the total value of each registration would be indicated in figures, as in my said Letters Patent, as will be readily understood. The indicator-blocks may be made hollow or the shells may be made of sheet metal, in order to secure greater lightness in weight, if desired.

It may be stated that the means described in my said Letters Patent to prevent registration when certain keys marked "Change," "Ticket," &c., are depressed will be used in my present machine only in connection with the rock-shaft operated by the key marked "Change;" but other keys having similar

words may be provided, if desired, in which case such words would be inscribed on the indicator-blocks and the means for non-registration would be employed in connection with such keys, as will be readily understood. It will be observed that two rack-bars move forward and two backward when the operating-keys are depressed. Inasmuch as the outer ends of the arms to which the rack-bars are pivotally attached describe parts of circles when the rock-shafts are rocked it is obvious that the rack-bars will be slightly tilted from a horizontal position and the teeth on the rack-bars may be set somewhat angularly in some cases on this account. The position which the curved rack-bar 88 and the arm 97 will assumewhen the "4c." key is depressed is shown in Fig. 1 in dotted lines.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cash register and indicator, the combination, with the bars 42 and 43, of a vertical indicator-shaft bearing indicating figures and journaled in said bars, two studs projected from said shaft, and a lug projected from said bar 42 to engage one of said studs, of a cash drawer, a spring for propelling said drawer, a catch for holding the drawer closed, an arm projected up from said catch, the remaining stud being in engagement with said arm to hold said catch out of engagement with the drawer until said shaft is rotated, substantially as set forth.

2. In a cash register and indicator, the combination, with the vertical indicator shaft bearing indicating figures, two studs projected from said shaft, and a lug or stop arranged to engage one of said studs, of a cash drawer, and a catch for holding the drawer closed and having an upwardly-extending arm engaging the remaining stud, substantially as set forth.

3. In a cash register and indicator, the combination, with a transverse rock-shaft, keys for operating said shaft, and registering mechanism deriving motion from said rock-shaft, of an indicator shaft also deriving motion from said rock-shaft, said indicator shaft having two studs projected therefrom, one of said studs being normally in engagement with an arm extended up from a catch designed to hold the drawer closed, and the remaining stud being normally in engagement with a lug designed to limit the motion of the shaft, substantially as set forth.

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

CYRUS PRICE.

Witnesses:

J. S. ARNOTT,
R. W. PRICE.