

W. M. McCARTHY.

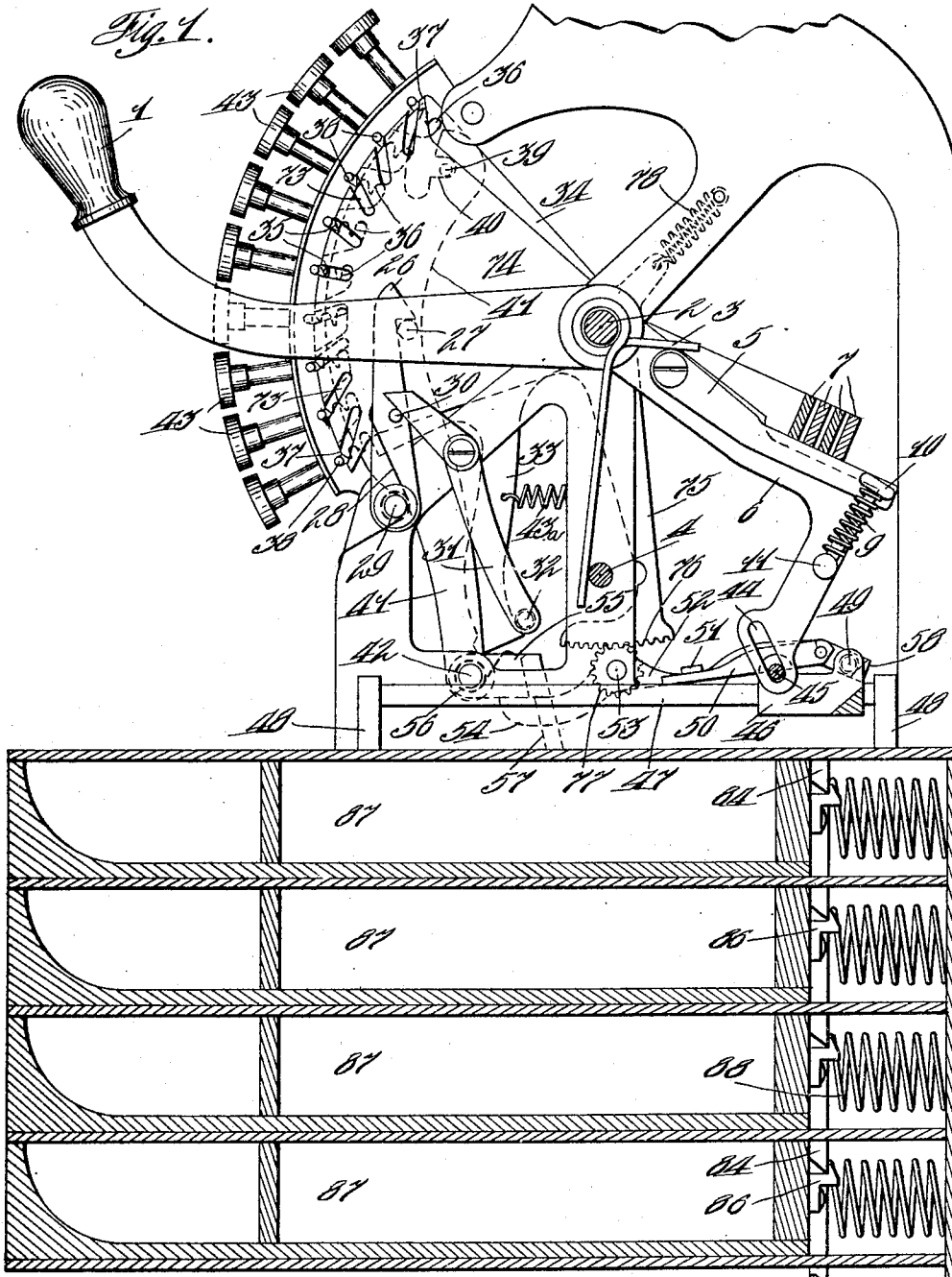
CASH REGISTER.

APPLICATION FILED OCT. 27, 1906. RENEWED FEB. 16, 1910.

1,006,251.

Patented Oct. 17, 1911.

3 SHEETS-SHEET 1.



Witnesses

W. M. McCarthy

Carl Meust

Inventor

Wm M McCarthy

by J B Hayward

and R C Lane

Attorneys

W. M. McCARTHY.

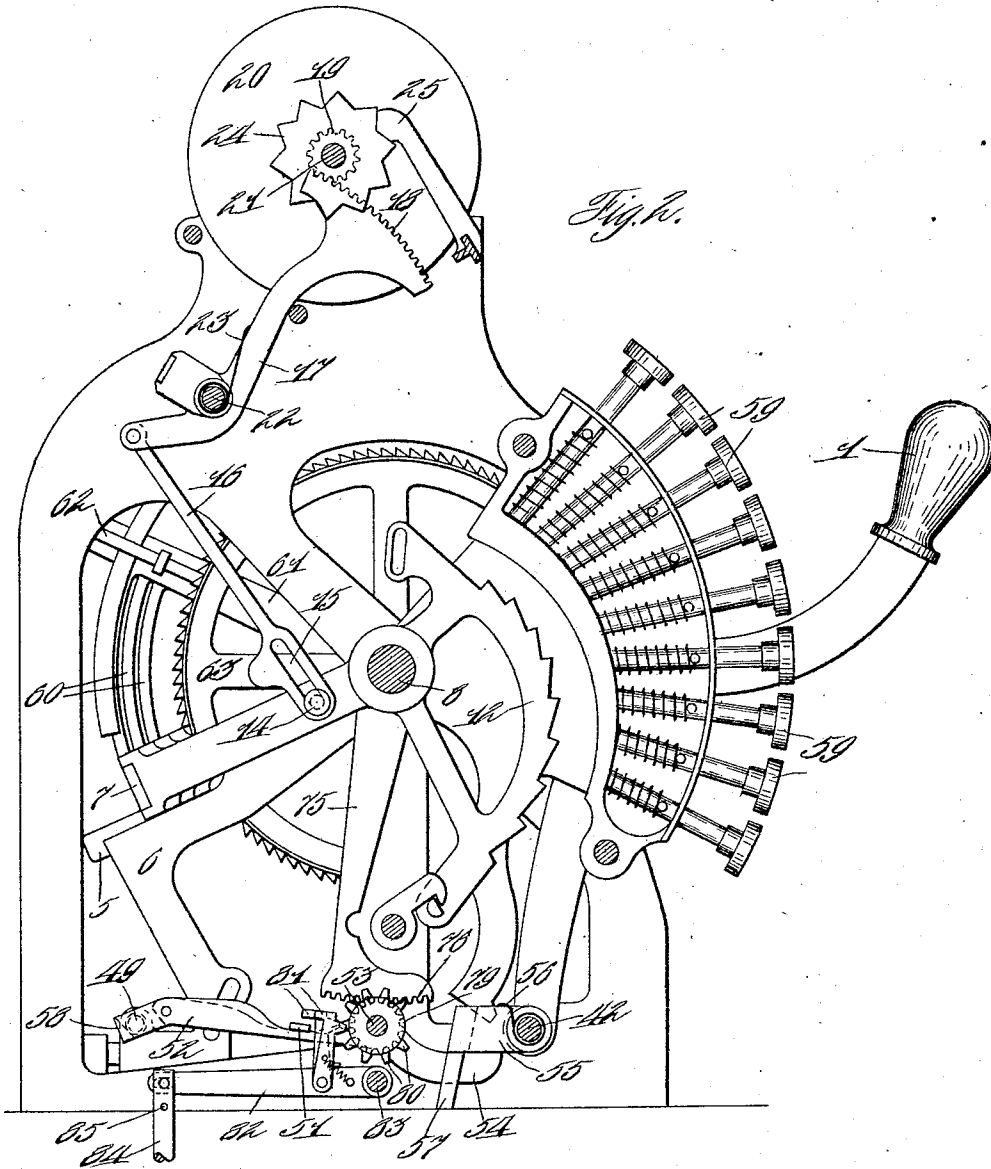
CASH REGISTER.

APPLICATION FILED OCT. 27, 1906. RENEWED FEB. 16, 1910.

1,006,251.

Patented Oct. 17, 1911.

3 SHEETS—SHEET 2.



Witnesses

Charles

Carl Menst.

Inventor
Wm M McCarthy
by J B Hayward
& Kellogg
Attorneys

W. M. McCARTHY.

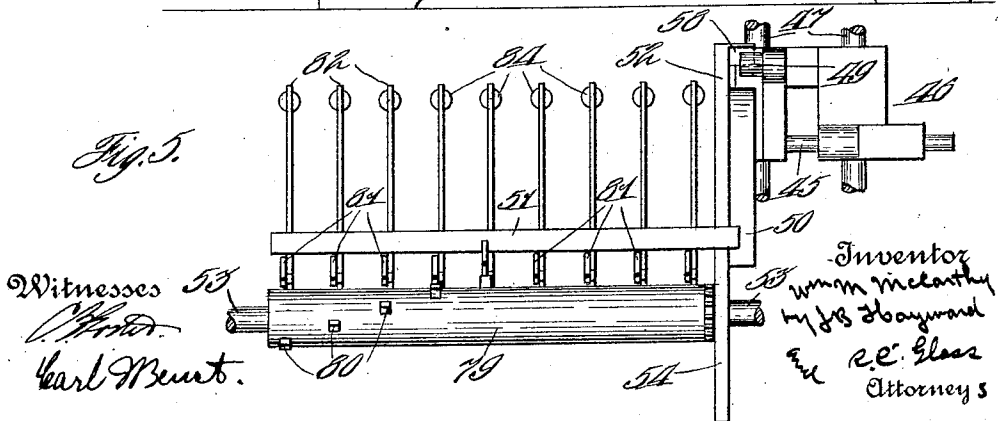
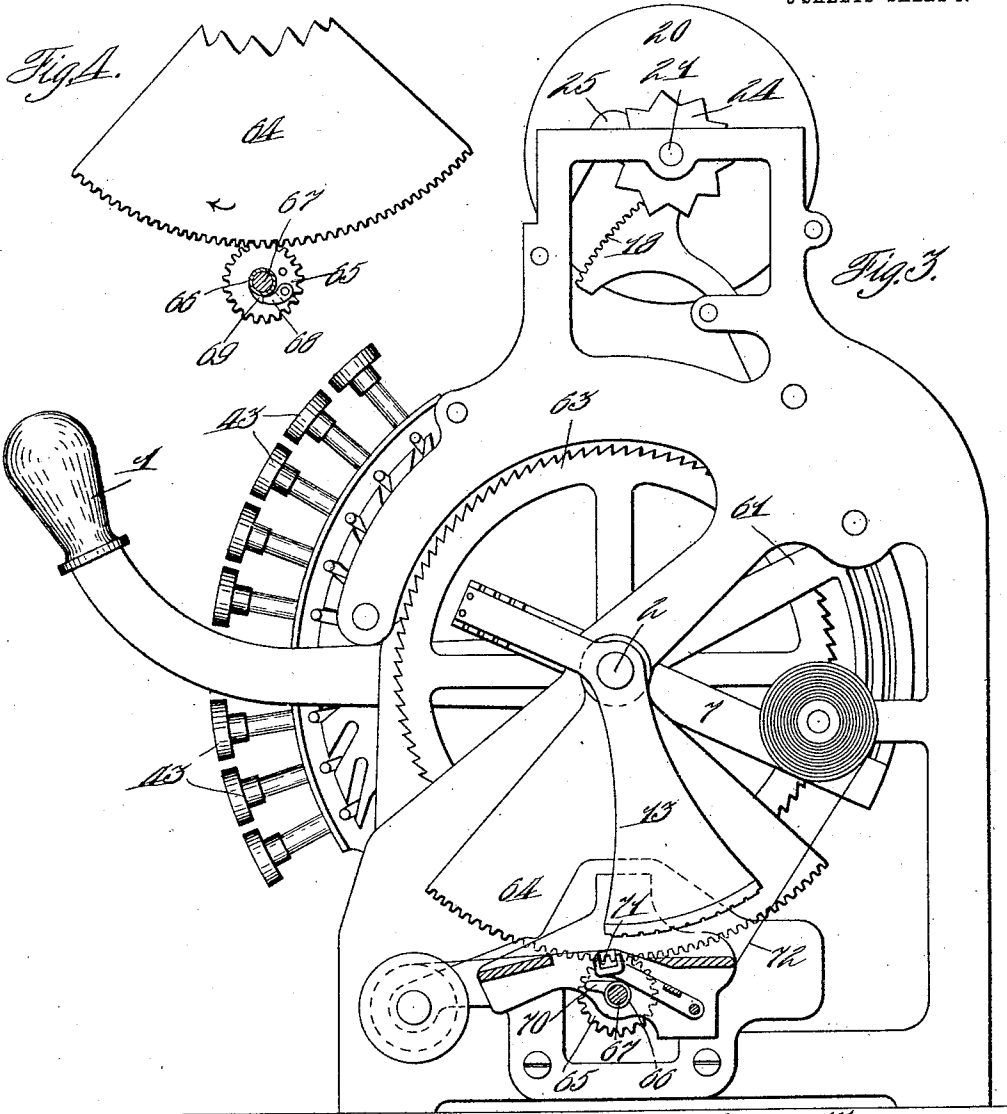
CASH REGISTER.

APPLICATION FILED OCT. 27, 1906. RENEWED FEB. 16, 1910.

1,006,251.

Patented Oct. 17, 1911.

3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

WILLIAM M. McCARTHY, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

CASH-REGISTER.

1,006,251.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed October 27, 1906, Serial No. 340,906. Renewed February 16, 1910. Serial No. 544,325.

To all whom it may concern:

Be it known that I, WILLIAM M. McCARTHY, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash registers and more particularly to that class of machines provided with a plurality of cash receptacles.

The principal object of this invention is to employ a series of setting elements for controlling the opening of any desired receptacle upon the operation of the machine.

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

Of said drawings: Figure 1 represents a vertical transverse section of the machine with the indicators and a part of the cash receptacles omitted. Fig. 2 is a similar section looking in the opposite direction with all of the cash receptacles omitted. Fig. 3 represents an end elevation of the machine showing the printing mechanism. Fig. 4 represents a detail side view of the gearing for operating the printing platen. Fig. 5 represents a detail top plan view of the setting and operating mechanisms for the drawer release plungers.

While the improvements have been shown as applied to a type of machine as shown and described in British Letters Patent No. 4543 of 1903 granted to H. S. Hallwood, they may with equal facility be applied to any of the well known makes of machines now upon the market.

The operating handle 1 is made fast to a central transverse shaft 2 around which is coiled a stout spring 3, one end of which abuts against a horizontal rod 4 and the other end rests upon the top of an arm 5 pivoted to a rearwardly extending portion 6 of the operating handle 1.

Yokes 7 which are pivoted upon the shafts

2 and 8, the latter being mounted in the same plane as the former, rest upon the arm 5. A spring 9 is interposed between an ear 10 projecting from said arm and a stud 11 mounted upon the rearwardly extending portion 6 of the operating handle 1 so as to absorb any shock given to the yokes 7 by a violent operation of the handle. One end of each of the yokes is attached to a step frame 12 which is controlled by its respective series of keys, while the other ends of said yokes extend through the right hand side frame of the machine and have pinned to them type carriers 13 which are loosely mounted upon a continuation of the shaft 2.

The rearwardly extending arm of each step frame (Fig. 2) to which is attached its respective yoke, is provided with a pin 14 which plays in an elongated slot 15 of a link 16. The upper end of each link is pinned to one end of an arm 17, the other end of said arm being provided with a segmental rack 18 which meshes with a pinion 19 fast to an indicator 20 mounted upon a shaft 21. The arm 17 is loosely mounted upon a shaft 22 around which is coiled a spring 23, one end of which bears upon the arm 17 and the other end is secured to the shaft thereby tending to hold the indicator in the position shown. Attached to each pinion 19 is a star wheel 24 which is engaged by an alining pawl 25. These alining pawls, of which there is one for each star wheel, are rocked into and out of engagement with said star wheels by means not shown here but which are fully shown and described in the aforementioned patent.

The operating handle is latched in the position shown in Fig. 1 by a pawl 26 which engages a pin 27 mounted upon the handle 1, the pawl being held in such engagement by a light spring 28 coiled about a stub shaft 29 which acts as a fulcrum for said pawl. A laterally projecting pin 30 extends from said pawl and is arranged to be engaged by the upper end of a pivoted arm 31, the lower end of said arm being provided with an anti-friction roller 32 which extends into the path of a depending arm 33 of a detent plate 34 which is loosely mounted upon the shaft 8.

The detent plate 34 at its forward edge is provided with two series of hook fingers

35 and 36, the former for latching the keys in a partially depressed position and the latter when they are fully depressed. In the former position a key that has been wrongly depressed may be released by depressing any other key of the series, but when a key is fully depressed the blunt ends 37 of the detent plate pass under the laterally projecting pins 38 of the unoperated keys, because the slots formed by the fingers 36 are of a greater depth than those formed by the fingers 35, thereby locking said keys from operation.

The detent plate 34 is normally held in the position shown in Fig. 1 by a laterally extending pin 39 projecting from the said plate 34, which engages with a shoulder 40 formed on a plate 41 pivoted on a transverse shaft 42. The plate 41 is arranged to be engaged by the laterally extending pins 38 of the clerks' keys 43, so that when any one of said keys is fully depressed the shoulder 40 will have been carried from under the pin 39 allowing the detent plate 34 to be drawn downwardly by its spring 43^a, so that the depending arm 33 of said plate will rock the arm 31 by contacting with the roller 32, the arm 31 in turn rocking the pawl 26 thereby releasing the operating handle 1. As the handle 1 moves upwardly and rearwardly the part 6 moves downwardly and forwardly. The lower end of the part 6 is provided with an elongated slot 44 which straddles a rod 45 mounted within a slide 46, which in turn is mounted upon two rods 47 that extend from the front to the rear of the machine and which are supported at their ends by lugs 48 extending up from the base. As the slide 46 moves forwardly an anti-friction roller 49 carried thereby engages the under incline side of a pivoted arm 50 and elevates same. As the operating handle is returned home the slide 46 is carried rearwardly, the roller 49 riding on the upper incline side of the arm 50. The latter is provided with a laterally extending arm 51 which rests upon the upper side of a lever 52 to which the arm 50 is pivoted. The lever 52 is pivoted upon a shaft 53 and is provided with a forwardly extending arm 54 which lies under a frame 55. As the roller 49 rides on the upper side of the arm 50 it depresses same and by means of the lateral extension 51 of said arm the lever 52 is also depressed, thereby elevating the forward extension 54 which in turn rocks the frame 55 to elevate the detent plate 34, to release the depressed key, by means of the arm 33. The above described frame also releases the detent frames of the amount key banks. When the roller 49 passes off the upper side of the arm 50 the parts actuated through means of said roller are returned to their normal position by a spring 56 coiled about the shaft 42, one end being fastened

to said shaft and the other end bearing on the upper portion of the frame 55. The latter is limited in its downward movement by an extension 57 contacting with the base plate of the machine, while the lever 52 is limited in its upward movement by a flange 58 formed thereon coming in contact with the roller 49.

The step frames 12 and the type carriers 13 connected to the yokes 7 are controlled by the clerks' keys 43 and the amount keys 59. Resting upon the three outermost yokes 7, which are controlled by the amount keys, are depending arms 60 of levers 61. It will be seen as these yokes drop to a position determined by the keys depressed, they will be followed by the levers 61. These levers 61 carry pawls 62 which, when the levers are returned to their normal position by the operating handle, will register upon the adding wheels 63 the sum represented by the keys depressed. Just before the yokes 7 start to descend the alining pawls 25 are rocked out of engagement with the star wheels 24 allowing the indicators to be brought to a position to indicate the amount represented by the operated keys. As the handle is drawn downwardly to return the yokes to their normal position the pawls 25 are rocked into engagement with the star wheels to lock the indicators in their adjusted position while the elongated slots 15 in links 16 allow the yokes to be returned, all of which is fully shown and described in the aforementioned patent.

The shaft 2, to which is fastened the operating handle, has also secured to it a segmental rack 64 (Figs. 3 and 4) which meshes with a pinion 65 loosely mounted upon a sleeve 66 which in turn rotates about a shaft 67. This pinion carries a pawl 68 spring pressed into engagement with a raised portion 69 of the sleeve 66. As the segment is oscillated upon each operation of the machine the pinion 65 is given a complete revolution in both directions; when moving in the direction of the arrow in Fig. 4 the pawl rides idly about the sleeve 66, but when moving in the opposite direction the pawl 68 engages the nose 69 and rotates the sleeve 66.

A cam 70 is carried by the sleeve 66, and as said sleeve is rotated, forces the platen 71 against the type carriers 13 thereby making an impression upon the record strip 72 which is fed over said platen in any suitable manner. Any of the well known inking devices may be employed to ink the type.

Referring now to Fig. 1 it will be seen that the laterally projecting pins 38 of the clerks' keys 43 are arranged to engage differentially inclined slots 73, slanting in opposite directions, formed upon a plate 74 loosely mounted upon the shaft 8. This plate is equipped with a downwardly ex-

tending arm 75 provided at its end with a segmental rack 76 which engages with a pinion 77 mounted upon the shaft 53. A spring 78 normally holds the plate 74 and the arm 75 in the position shown.

The pinion 77 (Figs. 2 and 5) is secured to a sleeve 79 loosely mounted on the shaft 53. This sleeve 79 carries a series of spirally arranged lugs 80 which contact with spring drawn pawls 81, pivoted to arms 82 when said sleeve is rotated, and force same over the lateral projection 51 of the arm 50.

The arms 82 are pivoted upon a shaft 83 and extend rearwardly, and are connected to the drawer plungers 84 by slot and pin connections. The plungers 84 are limited in their downward movement by pins 85 mounted thereon coming into contact with the base plate.

When the plate 74 is in its normal position one of the lugs 80 on the sleeve 79 is in engagement with its respective pawl 81, and holds the latter in the path of movement of the extension 51 of the arm 50. This is required on account of the middle key of the clerks' bank not affecting the plate 74, as the slot 73 corresponding to said key is cut parallel to the movement of the key. When any other key in the clerks' bank is operated the sleeve will be rotated so as to bring the desired lug 80 in contact with its pawl and force the upper end of said pawl rearwardly, so that upon the elevation of the extension 51 of the arm 50 by the roller 49 of the slide 46 as hereinbefore described, the pawl in the path of movement of said extension will also be raised which will raise its respective drawer plunger 84, by means of its arm 81, out of engagement with its drawer latch 86, one of which is secured to each drawer 87, allowing said drawer to be ejected by its spring 88.

From the above description it will be seen that the clerks' keys set the drawer release mechanism and simultaneously release the operating mechanism, during the movement of which the proper drawer is released.

While the form of mechanism here shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that the invention is not confined to any form of embodiment of the invention here disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed is as follows.

1. In a cash register, the combination with a plurality of keys, of an element differentially adjusted by said keys, an operating mechanism given a constant excursion at each actuation of the machine, a plurality of cash receptacles and latching means therefor, and adjustable elements

carried by said latching means and adapted to be connected to the operating mechanism according to the position of the key adjusted element.

2. In a cash register, the combination with a plurality of keys, of an element differentially adjusted by said keys, a plurality of cash receptacles and separate means for latching each receptacle, an operating mechanism, and connecting devices on said latching means adapted to be brought over said operating mechanism by the movement of said key adjusted element.

3. In a cash register, the combination with a plurality of keys and a corresponding number of cash receptacles, of an operating mechanism and means normally locking same, latching means for said receptacles, means operated by said keys for connecting any one of said latching means to said operating mechanism, and means also operated by said keys for unlocking said operating mechanism.

4. In a cash register, the combination with a plurality of special keys and a corresponding number of cash safes having movable parts, of an element set differentially by said keys, latching means for said movable members, an operating mechanism, means controlled by said element for connecting any desired latching means to the operating mechanism, and means operated by the actuation of a key for unlocking said operating mechanism.

5. In a cash register, the combination with a plurality of keys and an element positively operated differentially thereby, of a plurality of cash safes having movable parts, latching means for said movable parts, an operating mechanism normally locked, devices on said latching means for connecting same to the operating mechanism and adapted to be operated by said key operated element, and key operated means for releasing said operating mechanism.

6. In a cash register, the combination with a plurality of keys and a determining element operated differentially thereby, of an operating mechanism for the machine including a hand operated lever, means normally locking said lever, a plurality of cash safes having each a movable part, latching means for said movable parts, means controlled by said determining element for connecting any desired latching means to the operating mechanism, and key operated means for unlocking said lever.

7. In a cash register, the combination with a plurality of special keys and a corresponding number of cash safes having movable parts, of means for latching said movable parts, an operating mechanism including a hand lever and means for locking same controlled by said keys, an element

actuated differentially by said keys, and means carried by each latching means for connecting same to the operating mechanism and adapted to be controlled by said differential element.

8. In a cash register, the combination with a plurality of keys and a plurality of cash safes having movable parts, of an operating mechanism, means for locking said mechanism and for latching each movable part, and means operated by each key for connecting one of said latching means to the operating mechanism and for unlocking said mechanism.

9. In a cash register, the combination with a plurality of special keys and a plurality of cash safes having movable parts, of an operating mechanism and means for locking same, means for retaining said movable parts in concealing position and means controlled by said keys for releasing said locking means and connecting said retaining means to the operating mechanism.

10. In a cash register, the combination with a plurality of keys and a corresponding number of normally closed independently movable cash receptacles, of a normally locked operating mechanism including a reciprocating member, means controlled by any one of the keys for releasing the operating mechanism, and means controlled by the reciprocating member of the operating mechanism for opening the cash receptacle corresponding to the key operated.

11. In a cash register, the combination with a plurality of keys and a corresponding number of normally closed independently movable cash receptacles, of a normally locked operating mechanism including a reciprocating member, means controlled by any one of the keys for releasing the operating mechanism, and means actuated by the reciprocating member of the operating mechanism for opening the cash receptacle corresponding to the key operated.

12. In a cash register, the combination with differentially movable elements, of means for limiting the movements of the elements in one direction, a normally locked oscillatory operating mechanism for moving said elements in the opposite direction, a plurality of normally closed cash receptacles, means for releasing the operating mechanism and predetermining which receptacle is to be opened, and means con-

trolled by said operating mechanism for opening the predetermined receptacle.

13. In a cash register, the combination with differentially movable elements, of means for limiting the movements of the elements in one direction, a normally locked oscillatory mechanism for moving said elements in the opposite direction, a plurality of normally closed cash receptacles, a series of keys for releasing the operating mechanism and predetermining which receptacle is to be opened, and means controlled by said operating mechanism for opening the predetermined receptacle.

14. In a cash register, the combination with a plurality of keys and a corresponding number of normally closed independently movable cash receptacles, of an operating mechanism, latching devices for said receptacles, and a differentially adjusted member actuated by the keys for rendering the latching devices operable by the operating mechanism, the said member preventing the simultaneous operation of a plurality of keys.

15. In a cash register, the combination with a plurality of keys and a corresponding number of normally closed independently movable cash receptacles, latching devices for said receptacles, an operating mechanism, and a member differentially adjusted by the keys for connecting the latching devices to the operating mechanism, the said member having inclined slots of different angles which prevent the simultaneous operation of a plurality of keys.

16. In a cash register, the combination with a plurality of keys and a corresponding number of normally closed independently movable cash receptacles, of a rotary member constructed to be differentially adjusted by the keys, spirally arranged lugs projecting from said member, latching devices for the cash receptacles, an operating mechanism, and elements carried by the latching devices and constructed to be connected to the operating mechanism by the spirally arranged lugs of the rotary member upon the rotation of the latter by the keys.

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

WILLIAM M. McCARTHY.

Witnesses:

ROY C. GLASS,
CARL I. BEUST.