

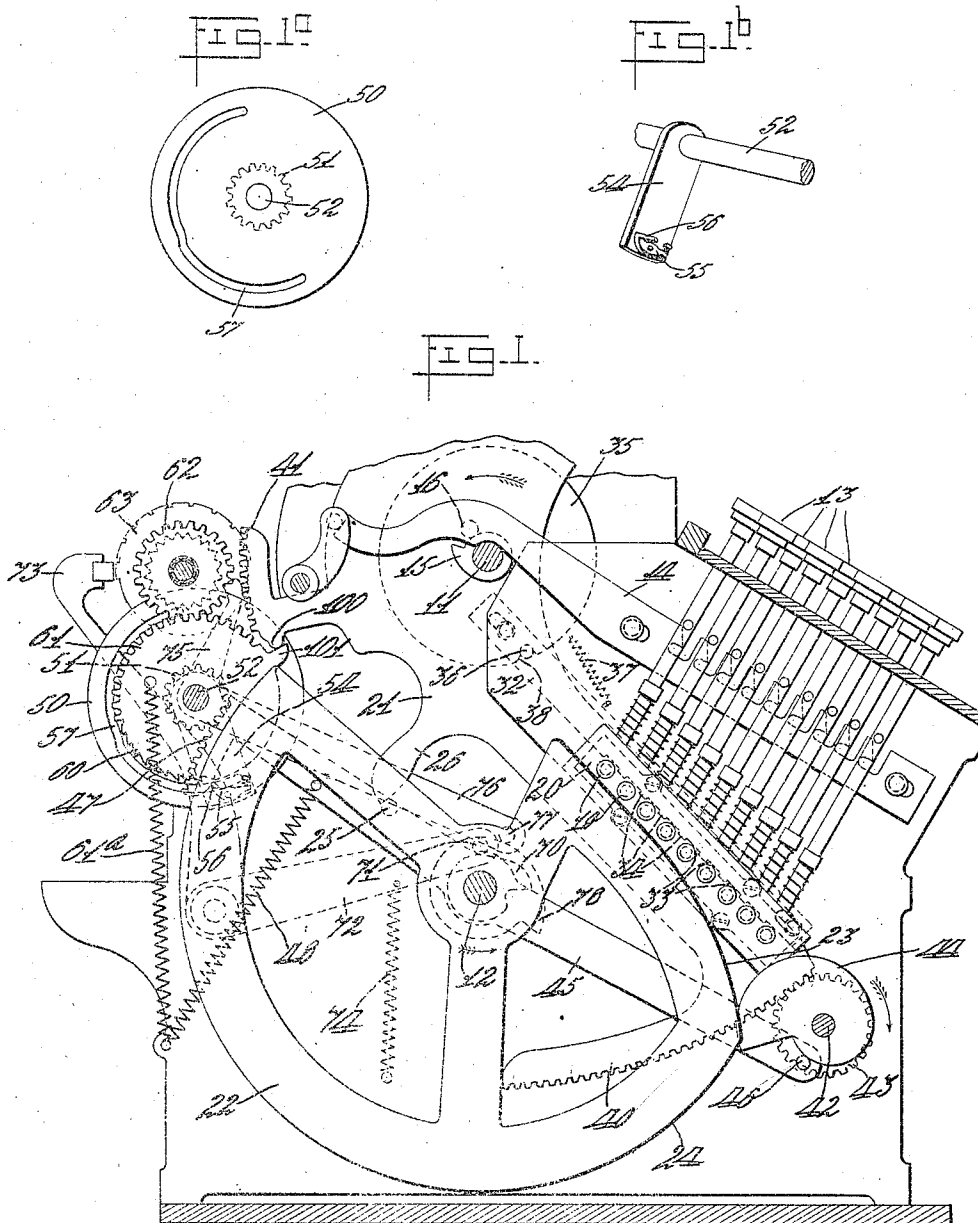
J. P. CLEAL.
CASH REGISTER.

APPLICATION FILED JULY 24, 1905.

1,043,804.

Patented Nov. 12, 1912.

3 SHEETS—SHEET 1.



Witnesses
Wm. O. Henderson

Inventor
Joseph P. Cleal
James Parker Davis
J. B. Hayward
Attorneys

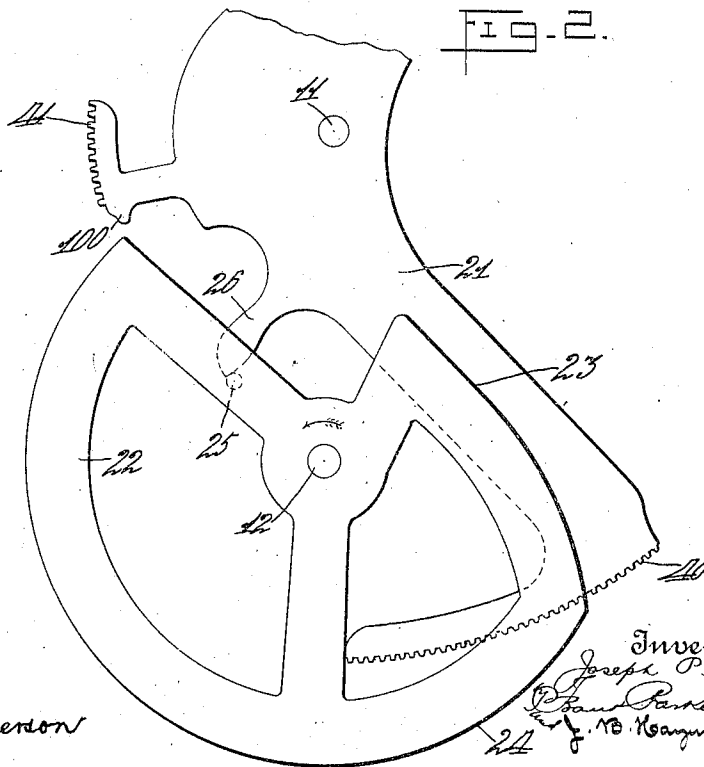
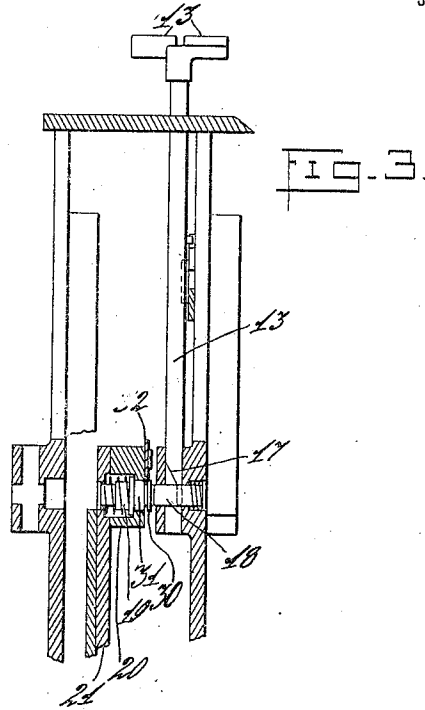
J. P. CLEAL.
CASH REGISTER.

APPLICATION FILED JULY 24, 1905.

1,043,804.

Patented Nov. 12, 1912.

3 SHEETS—SHEET 2.



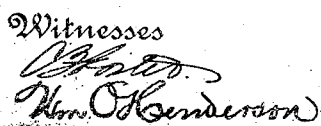
Witnesses
[Signature]
Wm. Henderson

Inventor
Joseph P. Cleal
[Signature]
f. B. Hayward
Attorneys

CASH REGISTER.

1,043,804.

3 SHEETS—SHEET 3.



Joseph P. Chal
Inventor
James B. Kears
J. M. Hayward
Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH P. CLEAL, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

CASH-REGISTER.

1,043,804.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed July 24, 1905. Serial No. 270,907.

To all whom it may concern:

Be it known that I, JOSEPH P. CLEAL, 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 that class of cash registers in which printing devices are employed for printing a detailed record of the various transactions and it is among the objects of these improvements to provide an improved form of device for setting up the type carriers, and also to provide certain novel mechanism in connection with the printing of the totals of the amounts previously entered upon the machine.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations 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 fragmentary vertical section of the cash register to which these improvements are applied. Figs. 1^a and 1^b represent detail views of parts of the mechanism connected with the printing of totals. Fig. 2 represents a fragmentary detail view of one of the actuating segments and its corresponding main actuating cam. Fig. 3 represents a detail sectional view of a portion of the key-board showing the connection between the keys and the actuating segments. Fig. 4 represents a detail view of certain locking devices in connection with the bank of special keys and a totalizing handle. Fig. 5 represents a detail view of mechanism for latching the totalizing handle in operated position and for restoring the same.

The general type of cash register to which these inventions relate is similar to that shown and described in a copending application filed by the same applicant on July 19, 1905, Serial No. 270324 which co-pending application illustrates certain devices

for printing the detail of individual transactions and also printing the total thereof, the setting mechanism comprising a novel form of cam motion in which the actuating or setting segments are positioned by main operating cams having a complete revolution at each operation of the machine; and it is the purpose of the invention described in the present application to provide certain improvements connected with this setting mechanism and also to provide another form of device for the printing of totals.

Referring to the accompanying drawings, in Fig. 1 are shown an upper main driving shaft 11 and a lower main driving shaft 12, these shafts being given one complete revolution at each operation of the machine by means of any suitable driving device such as a crank handle and connected gearing. A series of amount keys 13 are provided which keys are held in depressed position by a detent plate 14 and released by a cam 15 carried by the upper operating shaft 11 and acting upon a pin 16 on the detent plate 14. As shown in Fig. 3 the lower ends of these amount keys are beveled as at 17, and project through slots in spring-pressed plungers 18. For each bank of amount keys there is a series of nine of these plungers 18, namely one for each key. Each plunger 18 abuts against a corresponding spring-pressed plunger 19, there being nine of these plungers 19 mounted in a box or casing which as shown in Fig. 1 is carried upon the side of an actuating segment 21, the general contour of which segment is shown most clearly in Fig. 2, although in Fig. 2 this plunger box 20 is omitted for the sake of clearness. This actuating segment 21 is adapted to be given differential setting movements by means of the main operating cam 22, the periphery of which cam comprises an actuating portion 23 and a holding portion 24.

The movement of the segment 21 through the cam 22 is effected by means of the engagement of said cam with one or the other of the aforesaid segment plungers 19. It will be observed from Fig. 1 that these plungers 19 are differentially positioned along the segment 21, and when any particular key is depressed, the lateral displacement of

its corresponding plunger 18 will force outward the corresponding plunger 19 so as to cause the same to project laterally from the side of the segment 21 and thus be brought into the path of the operating cam 22. This cam 22 is mounted fast upon the lower revolution shaft 12 and is given one complete revolution in the direction of the arrow (Figs. 1 and 2) at each operation of the machine; so that when any plunger 19 is projected laterally in the manner above described, the actuating portion 23 of said cam will engage the plunger and the camming movement will carry the plunger and its segment 21 upward to a certain extent dependent upon the position of the plunger with respect to the actuating portion 23 of the cam. That is the 1 key would be situated in the lower part of the bank so that its corresponding plunger would be nearest to the lower part of the actuating portion of the cam and as soon as the cam has begun to operate it would act upon this unit plunger and thereby move the segment 21 a unitary distance and then the plunger would have reached the holding portion 24 of the cam 22, which holding portion is concentric to the axis of rotation of said cam so that there would be no further camming action upon the operated plunger and its segment, and the segment would be held in this constant position until the cam had been moved far enough to bring the discontinued portion of the cam opposite the plunger and then the segment would be free to return to normal position. The 9 key being situated at the upper end of the bank, its corresponding plunger would be nearest to the upper end of the cam actuating portion 23 so that this actuating portion would begin to act immediately upon the 9 plunger and the plunger would slide along this actuating portion of the cam until the holding portion 24 is reached, so that in this manner the segment would be given nine degrees of movement by the actuating cam. This general operation of the operating cam and the differential segment is similar in principle to that set forth in the aforesaid co-pending application, but in the present device, means are employed for positively restoring the segment to normal position, this means comprising a pin 25 carried by the cam 22, which pin near the end of the complete revolution of the cam 22, strikes an arm 26 projecting rearward from the segment 21 and restores said segment to normal zero position from whatever differential position it has previously been moved to.

Since the key plungers 18 abut against their corresponding segment plungers 19 only when the segment is in normal zero position, it becomes desirable to latch the operated plunger 19 in operated position so that it will remain in this operated position

as soon as the segment has moved away from normal position. To accomplish this, the plunger 19 is formed, (as shown in Fig. 3) with two flanges 30 and 31, between which when the plunger is in normal position, there extends a locking plate 32 carried upon the side of the aforesaid box or casing 20. As shown in Fig. 1 this plate 32 is formed with alternate notches 33 and projections 34, and in the normal zero position of the segment, the notches stand opposite the plungers 19 so that any one of the plungers is free to be laterally shifted without the contacting of the collar 30 with the locking plate 32. As soon as the machine is started in its operation however a disk 35 (see Fig. 1) fast upon the upper operating shaft 11 acts upon a pin 36 fast upon the side of the slide 32 and forces forward the slide 32 against the tension of a spring 37, the pin 36 normally resting in a notch 38 formed in said disk 35. This shifting forward of the slide 32 carries all of the projections 34 in between the flange rings 30 and 31 of the unoperated plungers 19, and in case any plunger 19 has been operated to be shifted laterally, the corresponding projection 34 of the locking slide 32 will then be slid along the side of the flange 30 so as to hold this operated plunger in operated position. The locking slide 32 of course is mounted on and moves with the actuating segment 21 so that in this manner all of the unoperated plungers are locked and the particular operated plunger is also locked in operated position and cannot be returned to normal position until the complete operation of the machine when the notch 38 of the disk 35 is again brought into alinement with the pin 36, and by this means the segment 21 is sure to be moved a proper distance by its actuating cam without any possibility of releasing the operated plunger and freeing the segment from engagement with the operated cam. The above described latching device also constitutes an improvement over the devices shown in the aforesaid co-pending application.

There is a separate actuating segment 21 and operating cam 22 for each bank of keys, and each segment 21 is formed at its lower end with a counter operating rack 40 and at its rearward and upper side a printer actuating rack 41, it being understood that these segments 21 swing loosely upon the upper shaft 11. The counter wheels or accumulating devices are mounted upon a transverse shaft 42 (Fig. 1). Each counter wheel carries upon its side a gear wheel 43, and there is mounted side by side with each gear wheel 43 a companion gear wheel with which the counter operating rack 40 meshes, and by means of an idle pinion (not shown herein) the gear wheel 43 and its companion gear wheel are coupled together upon the 120

forward operative movement of the rack 40 and are uncoupled upon the rearward movement of restoration to normal position so that the counter will thereby be actuated in only one direction of movement of the rack 40. This construction of the idle pinion for effecting the operation of the counter wheels or accumulating devices is set forth in detail in said co-pending application and need not be further described as the construction is a well known one in the art, and in fact any other suitable form of clutch mechanism might as well be utilized to actuate the counter wheel in one direction by the reciprocatory movement of the rack 40.

Each counter wheel carries a snail cam 44 the purpose of which is to assist in the preparation for the printing of totals according to the amount accumulated upon the counter, it being understood that the counter wheels may either have numbers upon their periphery in the ordinary manner or may simply be without numbers and simply act as accumulating devices for permitting the printing of totals, the total of course being determined by securing a printed record of the same instead of by an inspection of the counter wheels.

Pivoted loosely about their middle points on the lower shaft 12 are a series of levers 45, one for each counter wheel. At the forward end of each lever 45 is a pin 46, and at the rearward end of the lever 45 there is formed a segmental rack 47, and a spring 48 normally draws the rearward end of the lever 45 downward so as continually to maintain the pin 46 in engagement with the snail cam 44 of the corresponding counter wheel. Thus it will be seen that as the counter wheel revolves and assumes different positions according to the amount added thereon, the snail cam 44 will also revolve and will gradually force the pin 46 downward and thereby move the lever 45 to different positions according to the position of the counter wheel. This movement of the lever 45 is utilized to set a controlling disk 50 shown in detail in Fig. 1^a, there being a gear wheel 51 on the side of this disk which meshes with the aforesaid segmental rack 47 so that the disk 50 will be set differentially according to the position of the corresponding counter wheel. These disks 50 are mounted loosely upon a totalizing shaft 52, upon one end of which there is made fast a totalizing handle 53 (see Fig. 5), this handle being adapted to be drawn forward and then rocked backward for the purpose of preparing for the printing of a total as will now be described. For each controlling disk 50, there extends downward from the shaft 52 an operating arm 54 which at its lower end carries an actuating pawl 55 formed with a laterally projecting lug 56 which projects through a cam slot 57 formed in the con-

trolling disk 50, this cam slot 57 as shown in Fig. 1^a being shaped so that one portion of the slot is at a certain radial distance from the central shaft 52, and the upper portion of the slot is at a less radial distance from the shaft. The purpose of this cam slot is to control the effectiveness of the aforesaid actuating pawl 55 according to the position which the controlling disk 50 assumes. This actuating pawl 55 is adapted to engage ratchet teeth 60 formed in the lower side of gear wheels 61 which are mounted loosely upon the aforesaid shaft 52. Each gear wheel 61 meshes with a corresponding gear wheel 62 upon the side of a type wheel 63, the gear wheels 61 constituting intermediate gear wheels for setting the type carriers 63. The operation of these parts is, as follows: When the counter wheel rests at its zero position, the position of the controlling disk 50 is such that when the totalizing handle 53 is pulled downward and the shaft 52 and actuating arm 54 thereby rocked, the lateral projection 56 of the actuating pawl 55 simply runs in the lower portion of the cam slot 57 and thereby the pawl 55 is maintained constantly out of mesh with the ratchet teeth 60 of the gear wheel 61, it being understood that the totalizing handle is given a pull forward of only about 90° so that in such extent of movement the actuating pawl 55 would not reach the upper portion of the slot 57.

When however the counter wheel has been moved to a certain extent, the controlling disk is thereby shifted to a corresponding extent so as to bring the upper portion of its slot into such position that the actuating pawl 55 may now be cammed into engagement with the ratchet teeth 60 over a certain extent of movement of the actuating pawl 55, this extent of movement of course corresponding to the degrees of movement through which the counter wheel has been actuated; and as soon as the actuating pawl 55 engages the ratchet teeth 60 to move the gear wheel 61, the corresponding type wheel 63 will thereby also be moved differentially to an extent exactly corresponding to the amount through which the counter wheel has been turned, so by this operation of the totalizing handle, all of the type wheels are moved so that they now are set to differential positions exactly representing the amount registered upon the counter or accumulating devices, and this sets the type wheels preparatory to the printing of a total. This printing of the total is now effected by the operation of the machine in which case the revolution of the lower shaft 12 causes a cam 70 to act upon a pin 71 carried by an arm 72, which arm is connected with a platen arm 73 so that the platen is first forced away from the type and then upon the discontinuance of the cam 70 a

spring 74 causes the platen to spring back against the type wheels 63 and take an impression of the amount set up thereon. Alining pawls 75 are operated by an arm 76 carrying a pin 77 acted upon by a cam 78 to aline the type wheels 63 during the printing.

The totalizing handle 53 is arranged to be latched in its operated position and to be unlatched and positively restored to normal position upon the operation of the machine. This mechanism is shown in Fig. 5, and comprises a pinion 80 fast to the total shaft 52, meshing with a segment 81 carrying a pin 82, this segment being pivoted upon a stub shaft 83 and having an extension 84 carrying an anti-friction roller 85. A latch arm 86 pivoted to the frame at 87 is formed with a latching shoulder 88, the latch arm being normally drawn rearward by a spring 89. When the handle 53 is pulled down in the direction of the arrow (Fig. 5) the gear wheel 80 acts upon the segment 81 to carry the pin 82 downward so that the latching shoulder 88 engages over the same, and latches the totalizing handle in its downward position representing about a 90° turn of the same. In this latching position of the arm 86, a rearward extension 91 thereof is brought into the path of a cam 92 carried by the lower revolution shaft 12, so that upon the operation of the machine the cam 92 strikes the extension 91 and forces the same upward to unlatch the shoulder 88 from engagement with the pin 82, and then another cam 93 upon the revolution shaft 12 strikes the roller 85 and positively restores the segment 81 to normal position thereby also rocking the totalizing handle 53 back to normal upper position. This of course also carries the totalizing shaft 52 back to normal position and thereby restores the actuating arms 54 and actuating pawls 55 back to normal position shown in Fig. 1, and as soon as the actuating pawls are free from engagement with the ratchet teeth 60 of the gear wheels 61 springs 61^a (see Fig. 1) draw said gear wheels back to normal position thereby restoring the type wheels to normal zero position.

In order to print the details of the individual transactions as they are entered upon the machine, the aforesaid printer setting racks 41 of the actuating segments 21 are utilized to set the same type carriers 63. At the lower end of each printer rack 41 is a projection 100 which when the segment 21 is in its normal zero position, rests upon a corresponding projection 101 extending from the aforesaid intermediate gear wheel 61, this projection 101 being situated at the last tooth of said gear wheel. When any particular segment 21 is operated differentially by its operating cam 22 in the manner heretofore set forth, the printing segment 41

is thereby carried downward and the projection 100 bears on the projection 101 of the gear wheel 61 and then the teeth of the rack 41 contact and mesh with the teeth of the gear wheel 61 so that the gear wheel 61 and the type wheel 63 will be set differentially to positions corresponding to the differential movement of the rack 41 so that in this manner the type wheels are set to positions corresponding to the individual amounts entered upon the machine. It will thus be apparent that the racks 41 are normally out of mesh with the gear wheel 61 so as to permit the actuation of said intermediate gear wheels for the purpose of printing totals, and the resting of the projection 100 upon the projection 101 insures that the rack 41 will mesh properly with the gear wheel 61 when said gear wheel is to be actuated by said rack for the positioning of the type wheels for the detail amounts.

A series of special keys 110 (see Fig. 4) is provided, and upon normal operations of the machine one of these keys must first be depressed in order to unlock the machine. This locking mechanism comprises a locking disk 111 fast upon the upper operating shaft 11, and formed with the locking notch 112 engaged by a projection 113 upon a locking lever 114. A rocking detent plate 115 pivoted loosely upon the shaft 11 carries a pin 116 which engages the forward extension of the lever 114 and when the plate is rocked upward, the pin 116 rocks the lever 114 about its pivotal point 117 and withdraws the projection 113 from locking engagement with the disk 111 so as to permit the operation of the machine. This rocking of the plate 115 to release the machine, is effected by means of pawls 118 projecting between pins 119 formed on the side of said plate 115, and pin 120 formed on the side of each special key, acts upon a beveled nose 121 on the pawl 118 so that upon the depression of any key, its corresponding pawl 118 will be rocked upon its pivot (these pawls 118 being pivoted to a stationary side plate of the machine) and thereby the plate 115 will be rocked to release the machine. The pins 120 latch below the noses 121 to hold the keys in depressed position, and upon the operation of the machine, a cam 122 fast upon the lower operating shaft 12 acts upon a pin 123 carried upon the lower end of a link 124 the end of which link is attached to an arm 125 extending rearwardly from the plate 115 so that the downward movement of the link 124 gives the plate 115 a further rocking movement in such manner that the pins 119 now act upon the pawls 118 to rock the same upon their pivots and cause the latching noses 121 to be rocked out of engagement with the pins 120 of the depressed keys so as to release said keys and to allow the same to return to

normal position under suitable spring tension. A spring 114^a normally holds the lever 114 in locking position so that the machine again can be locked at the end of a complete operation.

Fast upon the aforesaid totalizing shaft 52 is a disk 130 formed with a locking notch 131. When any one of the special keys 110 is depressed and the plate 115 is rocked slightly to release the machine in the manner above described, this rocking of the plate 115 also rocks the arm 125 downward so as to carry the rearward end thereof into the notch 131 and thereby lock the disk 130 from movement, and this of course locks the totalizing handle so that the same cannot be operated when one of the special keys is operated preparatory to the normal operation of the machine for printing the ordinary details. When however a total is to be printed, it will be necessary to release the machine by the operation of the totalizing handle, and this is effected by means of a pin 132 fast upon the side of the disk 130, so that when the totalizing handle 53 is rocked downward its quarter turn, the pin 132 strikes the hook end 133 of the locking arm 114 and thereby forces said arm downward to withdraw the projection 113 from engagement with the disk 111 and thereby unlock the machine so that the same may be operated to print a total, and of course the rocking of the disk 130 moves the notch 131 out of alinement with the arm 125 and brings the full portion of the disk under said arm so that no special key can now be operated while the totalizing handle is disabled.

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

The invention having been described what is claimed as new is as follows:

1. In a cash register, the combination with a differentially movable setting element, and a type carrier controlled thereby, of an operating cam having a uniform excursion at each operation of the machine; differentially positioned projections carried by said setting element and engaged by said cam to impart differential setting movements to said setting element; and means connected with said cam for positively restoring said setting element to normal position.

2. In a cash register, the combination with a setting element, and a type carrier controlled thereby, of differentially spaced projections carried by said setting element; an operating cam for said setting element, said cam being formed with an operating edge

for operating said element differentially according to the projection engaged, and said cam also having a holding edge for maintaining the setting element in its adjusted position during a certain period of movement of said cam; and means connected with said cam for positively restoring the setting element to normal position.

3. In a cash register, the combination with a differentially movable setting element, and accounting devices operated thereby, of a main operating mechanism; an operating cam moved by said operating mechanism and having a uniform excursion at each operation of the machine; differentially positioned movable projections carried by said setting element; manipulative means for causing any desired one of said projections to be carried into the path of said operating cam; and latching means to hold the operated projection in operated position.

4. In a cash register, the combination with a differentially movable setting element, and accounting devices operated thereby, of a main operating mechanism; an operating cam moved by said operating mechanism and having a uniform excursion at each operation of the machine; differentially positioned movable projections carried by said setting element; manipulative means for causing any desired one of said projections to be carried into the path of said operating cam; latching means for holding any operated projection in operated position and the remaining unoperated projections in normal position; and means for releasing said latching means at each operation of the machine.

5. In a cash register, the combination with accumulating devices, of a main operating mechanism, a lock for said operating mechanism, manipulative devices for controlling the accumulating devices and unlocking the operating mechanism, printing devices which normally print details upon the operation of the machine, and a special manipulative device for unlocking the operating mechanism and causing the printing devices to print totals upon the operation of the machine.

6. In a cash register, the combination with accumulating devices, and printing devices for printing the total accumulation, of a main operating mechanism; a manipulative device for causing the printing of totals upon the operation of said operating mechanism; a lock for said operating mechanism; a series of special keys with connections for operating said lock to release the operating mechanism upon ordinary operations of the machine; and means connected with said manipulative device for operating said lock to unlock the operating mechanism prior to the printing of totals.

7. In a cash register, the combination with

accumulating devices, and printing devices for printing the total accumulation, of a main operating mechanism; a manipulative device for controlling the printing of totals; 5 a lock for said operating mechanism; a series of special keys for releasing said lock; and means for locking said manipulative device when any one of said special keys is operated.

10 8. In a cash register, the combination with accumulating devices, and a series of type carriers, of a manipulative device and means connected therewith for setting said type carriers to positions corresponding to the 15 positions of the accumulating devices whereby the type carriers will be set for printing the total amount accumulated; means for latching said manipulative device in operated position when the same is adjusted to 20 set the type carriers; and means for releasing said latch at each operation of the machine.

9. In a cash register, the combination with accumulating devices, and a series of type 25 carriers, of a manipulative device and means connected therewith for setting said type carriers to positions corresponding to the positions of the accumulating devices whereby the type carriers will be set for printing 30 the total amount accumulated; means for latching said manipulative device in operated position when the same is adjusted to set the type carriers; means for releasing said latch at each operation of the machine; 35 and means for positively restoring the manipulative device to normal unoperated position subsequent to its release.

10. In a cash register, the combination with a series of setting elements and counter 40 wheels actuated thereby, of type carriers controlled by said setting elements for printing amount details; gear wheels intermediate said setting elements and said type carriers for setting the latter by the former; a 45 manipulative device for actuating said gear wheels to set said type carriers for totals independently of said setting elements; and means controlled by the position of said counter wheels for determining the extent 50 of movement of said intermediate gear wheels by said manipulative device.

11. In a cash register, the combination with a series of setting elements and counter 55 wheels actuated thereby, of type carriers controlled by said setting elements for printing amount details; gear wheels intermediate said setting elements and said type carriers for setting the latter by the former; a totalizing handle for preparing for the printing 60 of totals; actuating pawls connected with said totalizing handle and engaging said intermediate gear wheels to cause the setting of said type carriers upon the movement of said handle; differentially movable control-

ling elements cooperating with said pawls 65 to determine the extent of engagement between the pawls and their intermediate gears; and means connected with said counter wheels for controlling the positions of said differential controlling elements. 70

12. In a cash register, the combination with a series of setting elements and counter 75 wheels actuated thereby, of type carriers controlled by said setting elements for printing amount details; gear wheels intermediate said setting elements and said type carriers for setting the latter by the former; a totalizing handle for preparing for the printing 80 of totals; actuating pawls connected with said handle and arranged to engage said intermediate gear wheels; a differentially movable disk adjacent to each intermediate gear wheel and formed with a cam slot for controlling the extent of engagement of its 85 pawl with the corresponding intermediate gear wheel; and means connected with said counter wheels for positioning said disks according to the position of said counter wheels whereby the operation of said totalizing handle will actuate said type carriers 90 to positions corresponding to the amounts accumulated on the counter wheels.

13. In a cash register, the combination with a series of setting elements and counter 95 wheels actuated thereby, of type carriers controlled by said setting elements for printing amount details; a totalizing manipulative device for actuating said type carriers for the printing of totals; differentially movable controlling elements for determining 100 the extent of movement of said type carriers by said totalizing manipulative device; and means connected with said counter wheels for positioning said controlling elements whereby the operation of said manipulative device will actuate the type carriers 105 to amounts corresponding to the amounts set up upon their respective counter wheels.

14. In a cash register, the combination with a series of setting elements and counter 110 wheels actuated thereby, of type carriers controlled by said setting elements for printing amount details; a totalizing handle and actuating pawls connected therewith for setting said type carriers for the printing 115 totals; controlling disks having cam slots for controlling the extent of operative movement of said pawls relatively to said type carriers; and means connected with said counter wheels for positioning said controlling 120 disks to predetermine the setting positions of said type carriers upon the operation of said totalizing handle.

15. In a cash register, the combination with an accumulating device, and control- 125 ling mechanism whose position is constantly determined by the accumulating mechanism, of printing mechanism, and manipulative

means for adjusting the printing mechanism to a position regulated by the position of the controlling mechanism.

16. In a cash register, the combination
5 with an accumulating device, and determining mechanism having its movement controlled by said accumulating device, of printing devices and manipulative means for moving said printing devices to a position
10 regulated by the said determining mechanism.

17. In a cash register, the combination
with registering mechanism and camming
15 disks moved by said mechanism, of printing wheels and manipulative devices for moving said wheels to an amount controlled by the camming disks.

18. In a cash register, the combination
with registering mechanism and printing
20 mechanism, of controlling disks each having a cam slot and moved by said registering mechanism, and a handle and pawls movable

in said slots controlled by said handle, for setting the printing mechanism to print the total on the registering mechanism. 25

19. In a cash register, the combination with a normally locked operating mechanism, of a total printer, and a handle controlling the total printing and serving to unlock said operating mechanism. 30

20. In a cash register, the combination with total printing mechanism, of a handle for setting said mechanism, means for locking said handle when depressed, and an operating mechanism for said printing
35 mechanism and serving to unlock and restore the handle.

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

JOSEPH P. CLEAL.

Witnesses:

WM. O. HENDERSON,
CARL W. BEUST.