

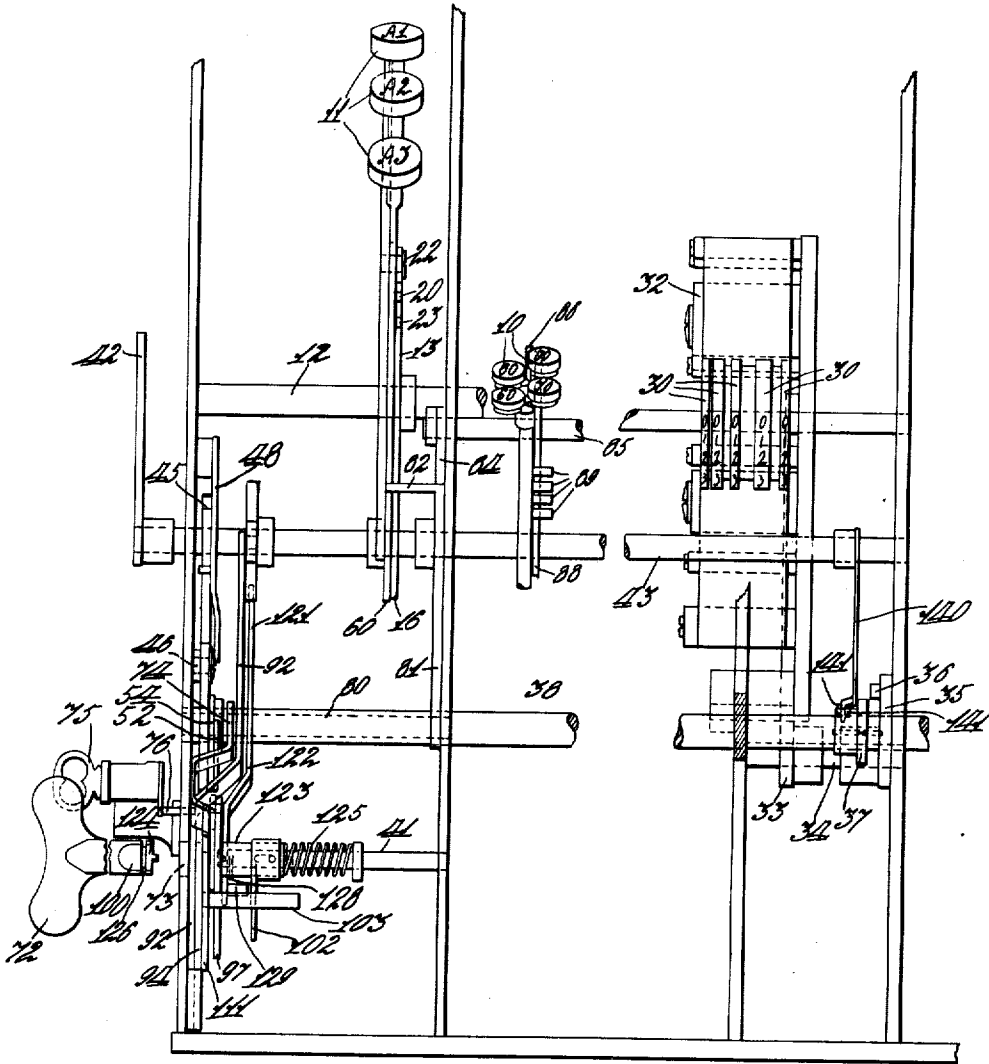
J. P. CLEAL.
CASH REGISTER.
APPLICATION FILED JULY 29, 1906.

970,798.

Patented Sept. 20, 1910.

3 SHEETS-SHEET 2.

FIG. 2.



Witnesses
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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.

970,798.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed July 29, 1905. Serial No. 271,728.

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 cash registers or calculating machines or other machines of this nature, and has more particular relation to improvements connected with the printing of totals of the various transactions which have been previously entered upon the machine by successive operations thereof.

It is among the primary objects of this invention to provide devices which shall necessitate a certain correlation of operation between the total printing devices and the zero-resetting means for the accumulating devices of the machine; these devices comprising in the present instance interlocking devices between the total printing mechanism and the mechanism associated with the zero-resetting means whereby to compel the printing of a total before the resetting means can be actuated, and also a device for preventing the printing of a total without an attendant clearing of the machine by the operation of the zero-resetting means.

Another object is to provide a device connected with the total printing mechanism whereby the printing platen is actuated only upon the printing of a total.

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 detail elevation of certain parts of a cash register to which these particular improvements are applied, a number of the ordinary parts of the machine being omitted for the sake of clearness. Fig. 2 represents a front elevation of those parts of the machine involved in Fig. 1. Fig. 3 represents a detail view of the locking mechanism for the total-

izing handle. Fig. 4 represents a detail view of the latch for the totalizing handle. Fig. 5 represents a detail perspective view of the shifting device for the platen operating cam; and Fig. 6 represents a detail view of a portion of the zero-resetting means for the counter wheels.

The particular machine to which these improvements are applied is of the type set forth in a co-pending application filed by the same applicant on July 24, 1905, Serial No. 270907, but inasmuch as the present improvements relate to the total printing devices it will not be necessary to describe the general construction of this cash register in detail. It is sufficient to say that this machine is one in which amounts are entered upon the machine by the depression of the usual amount keys, the completion of the operation of the machine being effected by the rotation of a crank handle or other driving means, and printing devices are provided which may print the detail of the different transactions and also upon certain manipulations of the machine may be used to print the total of the amounts previously entered.

Referring to said drawings, in Fig. 1 the amount keys are represented by the numerals 10 and there is also provided a series of special keys 11 which are arranged to unlock the machine. The driving power of the machine is applied to a main driving shaft 12, this power being applied by a crank handle or other suitable means to perform the various functions which are customarily performed in cash registers. Fast upon this shaft 12 is a locking disk 13 formed with a notch 14 into which there projects a nose 15 of a locking lever 16 pivoted at 17. A curved detent plate 18 is pivoted loosely about the shaft 12 and carries a pin 19 engaging the forward end of the lever 16 so that the rocking movement of the plate 18 will cause the pin 19 to act upon the lever 16 to withdraw the nose 15 from locking engagement with the notch 14 and thereby unlock the machine. This rocking movement of the plate 18 is effected by means of any one of the special keys, which keys carry pins 20 which when the key is pressed in will strike a pawl 21 pivoted to the side frame of the machine at 22 and extending

between two pins 23 formed on the detent plate 18, so that as any key is depressed its pin 20 will act upon the pawl 21 to cause the plate 18 to be rocked rearward slightly by means of the pawl 21 striking on its upper pin 23, this movement unlocking the machine as above explained; and the pin 20 latches in under a nose 24 on the pawl 21 and holds the special key in depressed position, thus leaving the machine permanently unlocked, and then upon the operation of the machine the detent plate 18 is given a further movement by mechanism not shown, and these special keys are thereby released and all of the parts return to normal position.

The amount keys 10 control the setting positions of certain type wheels 30, which type wheels are set up at each operation of the machine to print the details of the particular transaction entered by the depression of the amount keys; this particular means for controlling the setting of the type carriers by the amount keys may be any one of the various well known forms known in the art at the present time, one example of such controlling means being shown in the co-pending application heretofore referred to. The paper 31 for taking an impression from the type carriers is led between the usual two rollers 32 and an impression is taken by means of a platen 33 pivoted at 34 and carrying a forwardly extending arm 35 upon the forward end of which is a pin 36 arranged to be operated upon by a cam 37 splined upon the lower operating shaft 38 which is given a complete revolution at each operation of the machine. The purpose of this splined construction is to permit a lateral shifting of this cam 37 for the purpose of disabling the platen as will later be described.

The accumulating devices of the machine comprise a series of counter wheels 40 which are mounted to turn loosely upon a counter shaft 41 (see Figs. 2 and 6). These counter wheels of course accumulate the total of the individual amounts separately entered upon the machine by successive operations thereof, and suitable mechanism is provided intervening between these counter wheels and the aforesaid type carriers 30 so that said type carriers may be when desired, set to positions exactly corresponding to the amounts accumulated upon the counter wheels 40, so that upon the subsequent operation of the machine the operation of the platen 33 would cause the printing of the total amount accumulated upon the counter wheels. Various forms of devices are at present well known in the art for setting type carriers to positions predetermined by the operated positions of the various counter wheels, but no particular form of mechanism is shown herein for effecting this set-

ting of the type wheels since the present inventions concern the total printing mechanism and not the means for setting up the totals from the counter. The precise form of mechanism, however, which is utilized in the present instance is that shown in the aforesaid co-pending application, in which application, it may briefly be stated, each counter wheel has fast to it a snail cam so that these various snail cams are positioned differentially according to the position to which the counter wheels are moved, and these cams then furnish stops to limit the movements of certain setting elements which bear against them, so that these setting elements will be set differentially according to the position of the counter wheels, and these setting elements predetermine the position of the type carriers for printing the totals. That is in machines of the type to which the present improvements are applied, the printing of totals is prepared for, not by the resetting of the counter wheels or accumulating devices to zero, but by the operation of some controlling device which sets up the printer wheels to positions exactly corresponding to the amounts shown on the various counter wheels, the counter wheels of course remaining set in their operated positions to afford the stops for predetermining the setting positions of the type carriers. In the present machine this setting up of the type carriers 30 for the printing of totals, according to the position of the counter wheels 40, is controlled by means of a totalizing handle 42, fast upon a transverse shaft 43. This totalizing handle is arranged to be rocked forward and downward (see Fig. 1) and then rocked back again to normal position, this downward rocking movement of the handle effecting the setting of the printer wheels to totalizing positions so that the total may be printed by the operation of the machine. This handle however is latched in its lowermost position and unlatched and returned by the operation of the machine, by mechanism shown in Fig. 4. The shaft 43 carries a pinion 44 meshing with a segment 45 pivoted at 46 and having a downwardly extending arm carrying at the end thereof an anti-friction roller 47. A latch 48 suitably pivoted to the side frame of the machine has a locking shoulder 49 arranged to engage a pin 50 formed on the segment 45, so that when the handle 42 is pulled downward in the direction shown by the arrow in Fig. 4, the segment 45 will be rocked downward until its pin 50 comes opposite the locking shoulder 49, when the spring 51 will pull the latch into latching position and prevent the segment 45 returning and thereby locking the handle 42 in its lower position. Now upon the operation of the machine, the main operating shaft 38 is revolved and this shaft

has formed upon it two cams one of which 52 strikes the forwardly projecting arm 53 of the latch 48 and lifts the same so as to unlatch the segment 45; and the other cam 54 strikes the anti-friction roller 47 and positively forces the segment 45 back to normal position thereby positively restoring the handle 42 to normal upper position. The totalizing handle 42 is also arranged to unlock the machine by the following mechanism. The same shaft 43 upon which the handle 42 is mounted, carries a disk 60 (see Fig. 2) which has formed on the side thereof a pin 61 (see Fig. 1) which when the handle 42 is pulled downward, strikes the lever 16 and forces the same downward enough to withdraw the aforesaid nose 15 from engagement with the locking notch 14, so that this operation of the totalizing handle 42 will unlock the machine so that the subsequent operation thereof will print the total.

The interlocking mechanism between the totalizing device and the mechanism associated with the resetting of the counter wheels to zero, will now be described. For the purpose of resetting the counter wheels to zero, the wheels are each provided with spring pawls 70 as shown in Fig. 6, which pawls engage a groove 71 formed in the turn-to-zero shaft 41 upon which the counter wheels are mounted, so that by the rotation of this shaft, the various counter wheels will be picked up and restored to normal zero position all in the manner well known in the art. This rotation of the turn-to-zero shaft 41 is effected by means of a key 72 (see Fig. 2), and this key is arranged to be inserted through an aperture 73 formed in the side frame of the machine so that the key may thereby engage the end of the turn-to-zero shaft and permit the rotation of the shaft by means of the key, the shaft of course being suitably slotted at its end in a well known manner to be engaged by a corresponding projection on the key 72 for turning purposes. Access to the shaft 41 by the key 72, however, is normally prevented by means of a guard 74 (see Fig. 1) which is pivoted loosely about the shaft 38 and is operated to be raised out of locking position, by means of an ordinary key 75, the barrel of the lock of which key carries a pin 76 playing in a slot 77 formed in the arm 74 so that upon the rotation of said key 75, the guard 74 will be raised and will no longer block the space between the aperture 73 and the end of the shaft 41, so that the turn-to-zero key 72 will thereby be free to be inserted to engage the turn-to-zero shaft. The arm 74 has a rearwardly extending segment 78 meshing with a similar segment 79 carried upon a shaft 80 (see also Fig. 2), from which shaft there extends upwardly an arm 81 having at its top a laterally extending horizontal portion 82 which extends

under the arm 83 which projects rearward from the aforesaid special key detent plate 18, and the lateral projection 82 also extends in under an arm 84 mounted upon a shaft 85 which shaft has a forwardly extending curved arm 86 carrying a pin 87 projecting into the path of a detent plate 88 which is operated by means of any one of the pins 89 carried upon the amount keys 10. From this construction it will be obvious that when the guard 74 is lifted, the segments 78 and 79 will be operated to carry the lateral projection 82 in under each of the arms 83 and 84 and thereby lock the special keys because of locking the plate 18, and also lock the amount keys by locking the arm 84 and thereby preventing the backward movement of the detent plate 88 which normally through the pin 87 tends to rock the shaft 85.

It is of course desirable to insure the printing of the total amount which has been registered upon the counter wheels before the counter is reset to zero so that thereby the total shall not be lost by the inadvertence of the operator of the machine in turning the counter to zero without first printing the total. This mechanism will now be described. Attached to the shaft 43 upon which the totalizing handle 42 is carried, is a disk 90 (see Figs. 1 and 2), which disk carries a pin 91 which plays in a slot formed in the rearward end of a lever 92 pivoted at its middle point loosely about the shaft 38 and extending forward and at its forward extremity there is pivoted at 93, a pawl 94 formed with a nose 95 adapted to engage with a shoulder 96 on a sliding blocking plate 97, the pawl 94 being forced rearward by means of a spring 98. The said blocking plate 97 is slotted as shown in Fig. 1 to receive two guide pins extending from the side frame of the machine and is normally drawn to upper position by means of a spring 99. In this normal upper position of the plate 97, the rearward edge thereof stands partially blocking the passage way from the key aperture 73 (see Fig. 2) to the turn-to-zero shaft 41; the turn-to-zero key 72 however is flattened on one side as at 100 (see Fig. 2) so that the key 72 can nevertheless be inserted through the aperture 73 (provided the guard plate 74 has previously been lifted in the manner above described) and can be made to engage the turn-to-zero shaft 41 ready for resetting the counter to zero, but in this position the flattened portion 100 of the key 72 lies against the rearward edge of the blocking plate 97 so that the key cannot be turned to reset the counter to zero although it is pushed inward to its fullest extent ready for said turning to zero. In order to permit this resetting to zero, the totalizing handle 42 must be pulled forward, whereupon the pin 91 acts upon the lever 92 to swing the forward end of the same up-

ward whereupon the nose 95 catches over the shoulder 96 and then upon the operation of the machine, when the handle 42 is positively restored to normal upper position as above explained, the lower end of the lever 92 would be returned to normal lower position and the blocking plate 97 will be pulled downward by the nose 95 and thereby the recessed portion 101 of the blocking plate will now be opposite the turn-to-zero key so that the key is free to be turned to reset the counter wheels to zero. The operation of resetting the counter wheels to zero by the rotation of this shaft 41 also effects the rotation of a cam 102 projecting from and turning with said shaft which cam strikes a pin 103 projecting laterally from the aforesaid pawl 94 so as to force said pawl forward and release the nose 95 from engagement with the blocking plate 97 near the end of the operation of resetting the counter wheels to zero, and thereupon the plate 97 springs back to normal upper position as soon as the key has made one complete revolution and its flattened portion is again in alinement with the rearward edge of the plate 97. The turn-to-zero key may then be withdrawn and the total having been printed, the machine is in condition to receive further entries preparatory to the printing of a new total, and of course the blocking plate 97 is again effective to prevent the resetting of the counter wheels to zero without an attendant and prior printing of the total. Of course if the totals are in every case to be printed the counter wheels may be simply gear wheels without numerals on their peripheries, the printing of the amount serving in place of the usual counter wheel numerals, and it is to be understood that any form of accumulating device may be used from which the totals may be set up for printing in any suitable manner.

It will be understood from the above, that the counter wheels cannot be reset to zero without first raising the guard 74 to permit the insertion of the turn-to-zero key, which raising of the guard 74 effectually locks both the special keys and the amount keys, but even though the turn-to-zero key has been inserted, it cannot be turned to reset the counter to zero because of the blocking plate 97, and it is then necessary to pull down on the totalizing handle 42, and even then the turn-to-zero key cannot be turned since the pawl 94 has simply been elevated for engagement with the blocking plate 97, and it is not until the machine has been operated to restore automatically the totalizing handle 42 to a normal upper position and thereby pull downward on the pawl 94, that the plate 97 is lowered to permit the rotation of the turn-to-zero key, so that in this manner the total must be printed before the counter can be reset to zero.

It might of course be desirable to permit the printing of the total amount shown on the counter wheels at any time without clearing the machine, this being a so-called sub-total and permitting the retention of the previous total so that the newly entered amounts are simply added thereto. Since the printing of such totals is controlled by a totalizing handle 42 and since each printing in this manner causes the reciprocation of the pawl 94, it is necessary to hold this pawl out of engagement with the blocking plate 97 except at such times as the counter is to be reset to zero. This is effected by means of a pin 110 projecting from the forward end of the aforesaid guard lever 74 which pin strikes against a bevel ended plate 111 riveted upon the side of the aforesaid pawl 94, so that so long as the guard 74 is in normal lower position preventing access to the turn-to-zero shaft, the pawl 94 will be held disabled in its forward position so that it cannot engage the blocking plate 97 upon the reciprocation of the lever 92 when the totals are printed; but when the guard 74 is raised to permit the insertion of the turn-to-zero key, the pin 110 is then out of the path of the plate 111 and the pawl 94 may spring forward to perform its usual function of pulling downward the blocking plate 97.

As above stated this mechanism so far as described permits the printing of totals without necessitating the clearing or resetting to zero of the counter wheels, but it is sometimes desirable to compel such clearing of the machine each time that a total is printed and if such a construction is desired the following additional mechanism may be utilized. As shown in Fig. 3, the aforesaid disk 90 which is fast on the shaft for the totalizing handle 42, has formed in it a locking notch 120 which is engaged by the rearward end of a locking lever 121 so that the totalizing handle 42 cannot be pulled downward. This lever 121 extends forward and its forward end 122 extends under a laterally shiftable collar 123 (see Fig. 2) surrounding the turn-to-zero shaft 41. When the turn-to-zero key 72 is inserted to engage the shaft 41, a collar 124 on the end thereof slides over the shaft 41 and forces backward the collar 123 against the tension of a spring 125 until the groove 126 formed in the key is brought just over the aforesaid lever end 122 whereupon the spring 127 (see Fig. 3) attached to the other end of said lever, immediately pulls the forward end of said lever up into engagement with the groove of the key so as to lock the key in this position and at the same time unlock the totalizing handle 42 by unlocking the disk 90. In this position of the parts the turn-to-zero key is held locked against withdrawal in its inserted position but it still

cannot be turned because of the blocking plate 97 above described; and then of course to reset the counter wheels to zero the same operation is necessary as above described, namely the totalizing handle 42 must first be actuated and the machine operated to print a total, and thereupon the turn-to-zero key is free to be turned to reset the counter wheels to zero. Now in order to free the turn-to-zero key from the locking lever 122, a cam 128 is provided which is fast on the collar 123 which turns with the turn-to-zero shaft 41, and this cam 128 strikes a pin 129 on the lever end 122 and depresses the lever to carry the rearward end of the same again into position to lock the totalizing handle 42, and since the lever end 122 has been depressed in this manner by the rotation of the turn-to-zero key, this lever end is latched in its depressed position by means of a pawl 130 depending from the aforesaid guard lever 74, which pawl 130 is formed with a latching shoulder 131 which pawl when the guard lever 74 is raised as it has to be to permit the insertion of the key springs rearward to cause its shoulder 131 to engage the pin 132 projecting from the lever end 122 so as to latch the lever end in depressed position when it is carried downward by the rotation of the turn-to-zero key; and this holds the locking lever 122 out of engagement with the groove in the key 72 so as to permit the key to be withdrawn, and as soon as it is withdrawn the guard 74 may be lowered to close the aperture again, in which case the pawl 130 is carried downward and its locking shoulder 131 is so formed that it simply slides off the pin 132 and the locking lever end 122 would then be free to return to upper position but it is held in lower position by reason of its engagement with the underside of the aforesaid shifting collar 123 which collar has moved outward again under its spring tension as soon as the key has been withdrawn so that thereby the end 122 of the locking lever is still maintained depressed thereby maintaining the totalizing lever locked until the turn-to-zero key is again inserted to force the collar 123 laterally and bring the groove 126 into the path of the lever end 122. In this manner it will be seen that the total cannot be printed without an attendant clearing of the machine, that is the resetting to zero of the counter wheels.

The above described platen 33 may be utilized to take an impression from the type carriers 30 at each operation of the machine when details are to be printed, but this present machine also embodies a construction whereby the platen will be actuated only upon the printing of a total and will not be actuated upon other operations of the machine when separate entries are made

thereon. This mechanism comprises an arm 140 (see Figs. 2 and 5), which arm extends downward from the aforesaid totalizing handle shaft 43 and as shown in Fig. 5 at its lower end is bent at an angle to exert a camming effect by engagement with two pins 141 on either side of this bent portion, which pins are fast to the collar carrying the previously described laterally shiftable platen operating cam 37 which is splined on the lower operating shaft 38. Thus when the totalizing handle 42 is pulled downward preparatory to the printing of a total, the bent end of the arm 140 acts to shift the operating cam 37 laterally so as to bring the cam into lateral alinement with the pin 36 on the platen operating arm 35 so that upon the revolution of the shaft 38, when the machine is operated, the cam 37 will operate the platen to take an impression of the total; but upon the automatic return of the totalizing lever to normal upper position the arm 140 is again carried back to normal position and the cam 37 shifted back again laterally so that it is out of alinement with the pin 36 and consequently upon ordinary operations of the machine will not be operated to print the detail amounts.

While the form of mechanism here 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 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 registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of means for resetting the accumulating devices to zero independently of the total printing operation; and means for preventing such resetting to zero of the accumulating devices without an attendant printing of the total accumulated thereon.

2. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of a manipulative device for controlling the printing of totals; means for resetting the accumulating devices to zero; and means for preventing the resetting of the accumulating devices to zero until the manipulative device has been operated to prepare for the printing of the total.

3. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of means for controlling such printing of totals; means for resetting the accumulating devices to zero; a lock for normally preventing such resetting to zero; and means

connected with the total printing means for disabling said lock to permit resetting to zero.

4. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of means for controlling such printing of totals; means for resetting the accumulating devices to zero; a lock for normally preventing such resetting to zero; means connected with the total printing means for disabling said lock to permit resetting to zero; and means connected with said resetting means for enabling said lock.

5. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of means for resetting the accumulating devices to zero; and means for compelling the printing of a total before the resetting means can be actuated.

6. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of an operating mechanism; means for preparing for the printing of the total by the subsequent operation of said operating mechanism; means for resetting the accumulating devices to zero; and means for preventing the operation of said zero resetting means until the operating mechanism has been operated to print a total.

7. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of means for controlling such printing of totals; means for resetting the accumulating devices to zero; a lock for normally preventing such resetting to zero; lock controlling means connected with the total printing means for releasing said lock to permit resetting to zero; and independent means for permanently disabling said lock controlling means whereby to permit the operation of the total printing devices without the accompanying release of said lock.

8. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of a manipulative device for controlling the printing of totals; means for resetting the accumulating devices to zero; a series of amount keys for entering individual amounts upon the accumulating devices; a guard for preventing access to the zero resetting means; locking devices intermediate said manipulative device and said zero resetting means; and means for locking said amount keys when said guard is operated to permit access to the zero resetting means.

9. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, of a manipulative device for controlling the printing of totals; means for resetting the

accumulating devices to zero; a guard for preventing access to the zero resetting means; a main operating mechanism and a lock therefor; a series of special keys for releasing said lock; means connected with said manipulative device for also releasing said lock for the operating mechanism; and means connected with said guard for locking said special keys when the guard is operated to permit access to the zero resetting means.

10. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, including total printing setting means whose positions are determined by the operated positions of said accumulating devices independently of any resetting movement of the latter; of means for resetting said accumulating devices to zero; and means for preventing the printing of a total without an attendant operation of the resetting means to reset the accumulating devices to zero.

11. In a registering machine, the combination with accumulating devices, and printing devices for printing the totals therefrom, including total printing setting means whose positions are determined by the operated positions of said accumulating devices independently of any resetting movement of the latter; of a manipulative device for controlling the printing of totals; a lock for said manipulative device; means for resetting the accumulating devices to zero; and means connected with said resetting means for controlling said lock for the manipulative device.

12. In a registering machine, the combination with accumulating devices, and printing devices for printing the totals therefrom, including total printing setting means whose positions are determined by the operated positions of said accumulating devices independently of any resetting movement of the latter; of a manipulative device for controlling the printing of totals; a lock for said manipulative device; means for resetting the accumulating devices to zero; means connected with said zero resetting means for operating said lock to release said manipulative device; and means also connected with said zero resetting means for restoring said lock to locking position.

13. In a registering machine, the combination with accumulating devices, and printing devices for printing the totals therefrom, including total printing setting means whose positions are determined by the operated positions of said accumulating devices independently of any resetting movement of the latter; of a manipulative device for controlling the printing of totals; a lock for said manipulative device; means for resetting the accumulating devices to zero; a key for operating said zero resetting means; means

acting in cooperation with said key to release said lock for said manipulative device; and means controlled by the operation of the zero resetting means for restoring the lock to locking position.

14. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, said printing devices including a platen, of a manipulative device for controlling the printing of totals; and means connected with said manipulative device for enabling and disabling said platen.

15. In a registering machine, the combination with accumulating devices, and printing devices for printing totals therefrom, said printing devices including a platen, of a manipulative device for controlling the printing of totals, a platen operating means; and means connected with said manipulative device for shifting said platen operating means to cause the operation of said platen only when a total is to be printed.

16. In a cash register, the combination with accumulating devices and means for printing totals therefrom, of means for reprinting of totals, a platen operating means; setting said accumulating devices, means adapted to be unlocked by the resetting means and itself serving to lock said resetting mechanism.

17. In a register, the combination with accumulating devices and devices for printing totals therefrom, of means for controlling the resetting of said accumulating devices and means preventing such resetting until the total has been printed.

18. In a register, the combination with accumulating devices, and devices for printing totals therefrom, of a key for resetting said accumulating devices, means locking the accumulating devices against being reset and means operated after a total has been printed for withdrawing said locking means.

19. In a register, the combination with accumulating devices and devices for printing totals therefrom, of means normally locking said printing devices, means for resetting said accumulating devices to normal position, the resetting means serving to unlock the total printing means by adjustment of said resetting means.

20. In a register, the combination with accumulating devices and means for printing totals therefrom on an operation of the machine, of means for preparing for printing totals, normally locked means for resetting said accumulating devices to normal position, and means for releasing said resetting

means by the operation of the preparing means and an operation of the machine to print a total.

21. In a register, the combination with accumulating devices and means including a platen, for printing totals therefrom, of an operating mechanism for the accumulating devices, and means for connecting said platen to the operating mechanism only when the total printing means is to be operated.

22. In a register, the combination with accumulating devices and means, including an impression mechanism for printing totals therefrom, of an operating mechanism, and means controlled by the total printing mechanism for shifting the impression mechanism to connect it to the operating mechanism only when the total is to be printed.

23. In a register the combination of a counter with a turn to zero device, of means normally preventing the operation of the turn to zero device, printing mechanism and means under the control of the printing mechanism for permitting the operation of the turn to zero device.

24. In a machine of the class described, the combination with a totalizer and a zero setting means therefor, of a shiftable plate normally preventing actuation of said zero setting means, a hand lever and connections therefrom constructed to withdraw said plate, and a lock-controlled arm positioned normally to prevent said hand lever connections from withdrawing said plate.

25. In a machine of the class described, the combination with a totalizer and a zero setting key therefor, of a shiftable plate normally blocking said key from rotation, a hand lever and a pawl operated thereby and constructed to withdraw said plate from blocking position, and a lock-controlled arm positioned normally to prevent said pawl from engaging said plate.

26. In a machine of the class described, the combination with a totalizer, and a detachable zero setting key therefor, of a shiftable plate normally blocking said key from rotation, a hand lever and a pawl operated thereby and constructed to withdraw said plate from blocking position, and a locking device for said hand lever constructed to be displaced by insertion of said key.

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

JOSEPH P. CLEAL.

Witnesses:

MM. O. HENDERSON,
CARL W. REUST.

It is hereby certified that in Letters Patent No. 970,798, granted September 20, 1910, upon the application of Joseph P. Cleal, of Dayton, Ohio, for an improvement in "Cash-Registers" an error appears in the printed specification requiring correction as follows: Page 7, lines 27-28, the words "printing of totals, a platen operating means; setting said accumulating devices, means" should be stricken out and the words *setting said accumulating devices, means normally locking said total printing means*, inserted instead; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 18th day of October, A. D., 1910.

[SEAL.]

E. B. MOORE,

Commissioner of Patents.