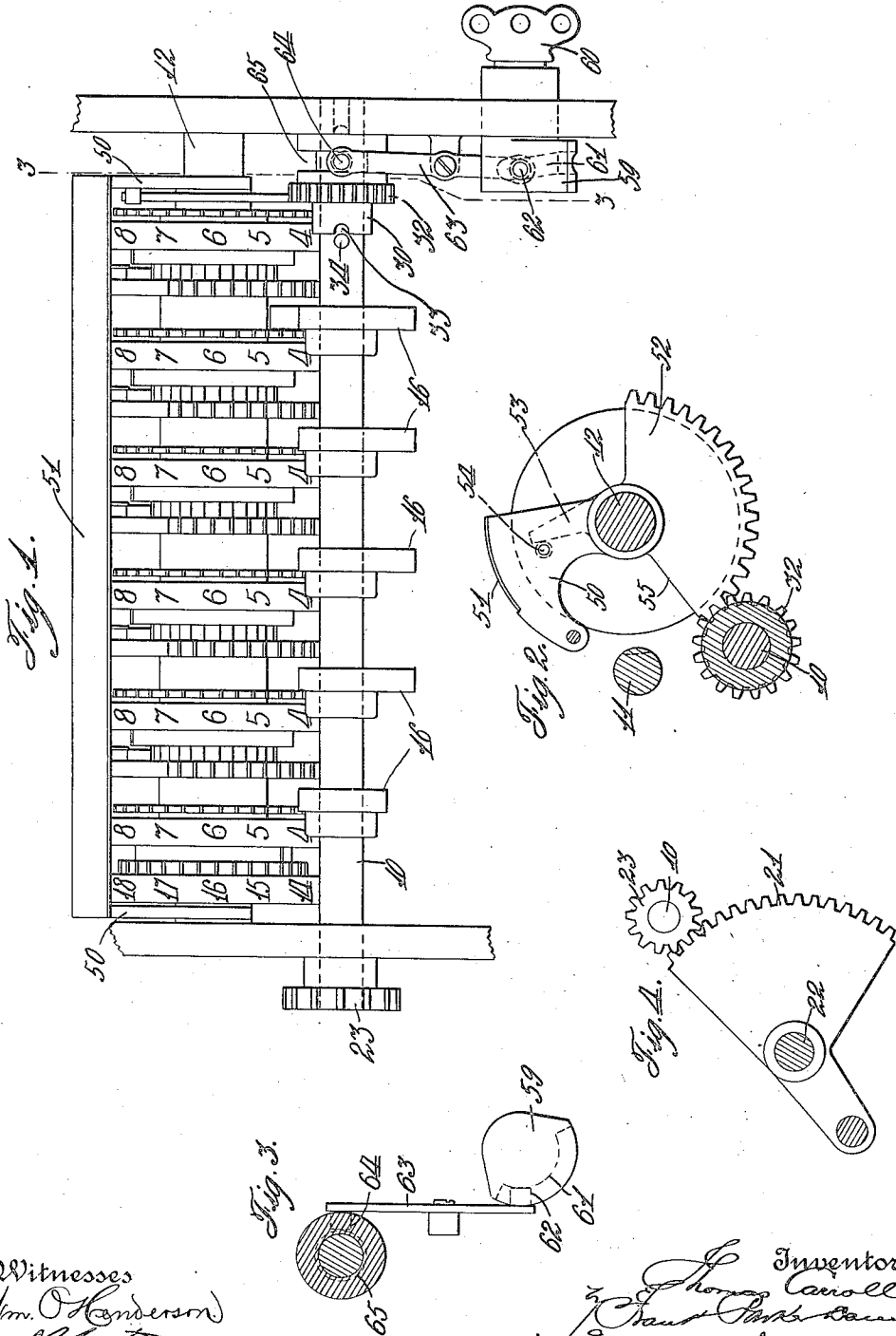


T. CARROLL.
CASH REGISTER.

APPLICATION FILED JUNE 9, 1905.

951,266.

Patented Mar. 8, 1910.



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UNITED STATES PATENT OFFICE.

THOMAS CARROLL, 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.

951,266.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed June 9, 1905. Serial No. 264,411.

To all whom it may concern:

Be it known that I, THOMAS CARROLL, 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.

The present invention relates more particularly to that portion of the mechanism of cash registers known as the transfer mechanism for the counters and has among its objects to provide improved devices for insuring the accumulations upon the counter of all of the amounts which have previously been entered upon the machine, before the proprietor of the machine may take a reading from the counter. Such a device is particularly applicable to that class of machines wherein the transfers are one operation behind, that is, the transfers which have been tripped in the last transaction are not turned in until the first part of the next operation of the machine, so that if the proprietor should forget to give the machine an extra operation at the end of the day when he desires to take the final reading from the counter, he might thereby secure an erroneous reading from the fact that some of the transfers have not been turned in as above described; and it is the purpose of the present improvement to prevent any such reading of the counter until all the transfers have been turned in.

More specifically stated, the present invention embodies a shutter for concealing the registering wheels with means for operating said shutter by the operation of the transfer mechanism, this mechanism being under the control of a key and adjustable at will so as to cause the operation of the transfer mechanism to also operate the shutter to expose the registering wheels when the connection between the transfer mechanism and the shutter is established, so that by this means the transfers are all certain of being turned in before the registering wheels are exposed to view.

The present application embodies certain features which are common to two other and copending applications filed by the same applicant, one of which applications Serial No. 264,229, filed June 8, 1905 will be designated as case "A", and the other of which,

Serial No. 264592, filed June 10, 1905 will be designated as case "C", and the present application will be designated as case "B", in said two other applications; it being intended to claim broadly in case "A" the subject matter which is common to these three cases; these three cases represent different specific ways of accomplishing the same general broad results, the specific nature of the improvements set forth in the present application being as indicated above.

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 preferred forms of embodiment of which are hereinafter specifically described with reference to the drawings which accompany and form part of this specification.

Of said drawings: Figure 1 represents a top plan view of the counter of the machine to which these improvements are applied. Fig. 2 represents a detail view of the counter shutter and gearing for operating the same. Fig. 3 represents a detail sectional view of the portion of the lock mechanism taken on the line 3—3 of Fig. 1, and Fig. 4 represents a detail view of the gearing for operating the transfer shaft.

These particular improvements are shown as applied more specifically to the counter of a cash register set forth in English Letters Patent issued to Frederick L. Fuller, No. 22535 and bearing application date of October 19, 1904, and reference may be had to said patent for a complete and detailed description of the general construction of the cash register. In this patent an operating lever is first given a complete oscillation back and forth to release any previously depressed keys and store up power in the spring motor and then the desired keys are depressed according to the amount to be registered and finally a special key depressed which effects the release of certain operating segments which move to differential positions determined by the keys and these differential movements are transmitted to the counter. This operation of the machine merely effects the tripping of certain transfer elements and the actual turning in of these transfers does not take place until the next operation of the operating lever. This

being the general operation of the machine as disclosed in the aforesaid patent the particular operation of the parts involving the transfer mechanism and forming part of the present improvements will now be described.

In Fig. 1 the various counter wheels are shown having numerals on their periphery in the ordinary manner, and in front of said counter is a horizontally extending shaft 10 which may be called a transfer shaft and which carries a series of transfer cams 16 which when rotated by the rotation of the shaft 10 operate or turn in all of the transfers which have been tripped by the previous operation of the machine. The operation of this transfer shaft 10 is effected by means of a gear 21 (see Fig. 4) fast to the driving shaft 22 to which is attached the oscillating operating lever as described in the aforesaid Fuller patent, and this gear 21 meshes with a pinion 23 (see also Fig. 1) fast upon the end of said shaft 10, so that when said lever is oscillated and the driving shaft 22 oscillated therewith the gear 21 will turn the pinion 23 and shaft 10 through a complete revolution sufficiently to revolve all of the transfer cams 16 and turn in the transfers all as set forth in said Fuller patent.

The shutter mechanism for concealing the counter wheels will now be described. The counter wheels are mounted upon the transverse shaft 12, and upon this same shaft are pivoted two arms 50 between which extends a bar 51 constituting a flash or shutter to conceal the counter wheels and prevent a reading being taken therefrom. Adjacent to the right hand arm 50 and also loosely pivoted upon the shaft 12 is a segmental gear 52 which has an upwardly extending arm 53 adapted to engage a pin 54 projecting from the side of the right hand shutter arm 50. The gear 52 meshes with a double width pinion 32 which is fast upon a sleeve 30 which sleeve loosely surrounds the aforesaid shaft 10. This sleeve is adapted to be shifted to the left laterally as will presently be described, and when so shifted, a notch 33 formed in said sleeve engages a pin 34 projecting from the shaft 10 and thereby locks said sleeve 30 to said shaft 10. Thereby when the transfer shaft 10 is rotated to turn in the transfers as above described, the gear wheel 32 now being coupled to the shaft 10 will also rotate and will thus operate the gear 52 so that its forward edge (see Fig. 2) strikes the aforesaid pin 54 and carries the shutter backward (against its own weight or against suitable spring tension if desired) and thus by so raising the shutter exposes the counter wheels so that the reading may be taken therefrom; and upon the reverse rotation of the shaft 10, gear 52 is restored to normal position and

the arm 53 strikes the pin 54 and positively restores the shutter to normal concealing position. This shifting of the sleeve 30 for coupling up the shutter to the transfer shaft is effected by means of the rotation of the barrel 59 of an ordinary key-lock operated by an ordinary key 60. This key barrel is formed with an inclined and peripheral groove 61 into which projects a pin 62 formed on the forward end of a lever 63 pivoted at its middle point and at the rearward end carrying a similar pin 64 which projects into an annular groove 65 formed on the aforesaid sleeve 30, these parts being shown in Figs. 1 and 3. This key-lock is arranged to have a limited oscillating movement and when so turned, the inclined groove 61 acts upon the pin 62 to rock the lever 63 and thereby through the pin 64 slide the sleeve 30 laterally to the left to couple the sleeve up to the shaft 10 as above described and thereby permit the shutter to be operated by the driving shaft 22 to expose the counter-wheels. This key-lock of course may be under the control of the proprietor since it may be of the ordinary Yale lock construction and it is thus obvious that when the proprietor desires to read the counter, as for example at the end of a day's business, he can only lift the shutter by first turning the key 60 which effects the coupling of the shutter operating mechanism and the transfer shaft 10, and then by oscillating the shaft 22 by the aforementioned operating lever, the transfer shaft 10 is rotated and the shutter 51 is raised, but this very operation of raising the shutter to expose the counter wheels turns in all of the transfers which have been tripped on the previous transaction and this therefore insures a correct reading of the counter.

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.

Having thus described my invention what I claim is:

1. In a registering machine, the combination with a series of registering wheels, of a transfer operating mechanism therefor, a shutter normally concealing said wheels, and manipulative means for connecting said shutter to said transfer operating mechanism so that an operation of said transfer mechanism will withdraw said shutter.

2. In a registering machine, the combination with a series of registering wheels, of a transfer operating mechanism therefor; a shutter for said wheels; and means under lock and key for establishing and disestablishing at will a connection between said

transfer operating mechanism and said shutter whereby operation of the former will operate the latter when desired.

3. In a registering machine, the combination with a series of registering wheels, of a transfer operating shaft therefor; a shutter for said wheels; an intermediate means for connecting said shaft to said shutter to cause the former to operate the latter; and a key lock and connections for adjusting said intermediate means to cause the operation of said shutter by said transfer shaft when desired.

4. In a registering machine, the combination with a series of registering wheels, of a transfer operating shaft therefor; a main operating element for the machine with connections for operating said transfer shaft; a shutter for said wheels; gearing for operating said shutter; and a shiftable pinion mounted loosely on said transfer shaft, with provisions for connecting said pinion to said shaft when the pinion is moved into alignment with a shutter operating gear, whereby to cause the operation of said main operating element to raise said shutter upon the operation of the transfer shaft.

5. In a registering machine, the combination with a series of registering wheels, of a transfer operating shaft therefor; a shutter for said wheels; gearing for operating said shutter; a shiftable collar carried upon said shaft and bearing a pinion for engaging said shutter operating gear, means for locking said collar to said transfer shaft when the pinion is carried into engagement with its shutter operated gearing; a key lock including its revoluble barrel; and means connected with said barrel for shifting said pinion carrying collar to simultaneously carry the pinion into mesh with the shutter operating gearing and also cause the locking of said collar to said transfer shaft.

6. In a registering machine, the combination with a series of registering wheels, of a transfer and operating devices therefor, a shutter for said wheels normally in concealing position, and a means for connecting said shutter to said transfer operating device for operation thereby.

7. In a registering machine, the combination with a registering mechanism, of a transfer and operating devices therefor, means for concealing said registering mechanism and detachable manipulative means for connecting and disconnecting said con-

cealing means to said transfer operating devices for operation thereby.

8. In a registering machine, the combination with registering members, of a transfer mechanism and a controlling device therefor, means for concealing said registering member, and manipulative means for connecting said concealing means to said transfer controlling device for operation thereby.

9. In a registering machine, the combination with main operating devices, registering members, a shutter for concealing same, and means for connecting and disconnecting said shutter from the main operating devices of the machine when actuation of said shutter is desired.

10. In a registering mechanism, the combination with main operating devices, registering members controlled thereby, and a transfer operating mechanism actuated by said main operating devices, of a shutter for concealing said registering members, and means compelling a complete operation of said transfer operating mechanism by said main operating devices to withdraw said shutter from concealing position.

11. In a registering machine, the combination with a series of registering wheels, of a transfer operating mechanism therefor; a shutter normally concealing said wheels, the concealing position of said shutter being independent of the position of said transfer operating mechanism; and means for operating said shutter to expose the wheels by the regular operation of said transfer mechanism.

12. In a registering machine, the combination with a series of registering wheels, and a transfer mechanism comprising transfer tripping elements, transfer actuating devices tripped by said elements, and a revoluble transfer operating member for engaging said transfer actuators and turning in the transfers by the revoluble movement of said member; of a shutter normally concealing said wheels; and means for connecting said shutter to said transfer operating member, whereby the revoluble movement of the latter will operate said shutter to expose the registering wheels.

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

THOMAS CARROLL.

Witnesses:

J. B. HAYWARD,
CARL W. BENST.