

UNITED STATES PATENT OFFICE

2,628,777

LOCKING MECHANISM FOR ACCOUNTING MACHINES

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Original application September 16, 1949, Serial No. 116,004. Divided and this application June 27, 1952, Serial No. 295,947

8 Claims. (Cl. 235—130)

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This invention relates to improvements in locking mechanism for manipulative devices in accounting machines.

This application is a divisional application of application Serial No. 116,004, filed by Warren P. Loudon on September 16, 1949, now Patent No. 2,628,774.

The invention is shown applied to a machine of the type disclosed in United States Patents No. 2,209,763, issued to Ernst Breitling on July 30, 1940, and No. 2,587,019, issued to Frank R. Werner on February 26, 1952; and in the co-pending applications for United States Letters Patent of Frank R. Werner, Serial No. 46,165, filed August 25, 1948, and Serial No. 58,114, filed November 3, 1948.

The principal object of the invention is to provide a machine of the type disclosed in the above-mentioned patents and applications for use by cooperative societies, and, as illustrated herein, the machine is adapted for use in Great Britain, where cooperative societies are well organized and consist of many cooperating stores.

The object of the invention is to provide an interlock to prevent the adjustment of amount-setting manipulative devices when a special manipulative device is moved into a certain position.

With this and incidental objects in view, the invention includes certain novel features of construction and combinations of parts, a preferred form or embodiment of which is hereinafter described with reference to the drawing which accompanies and forms a part of this specification.

Of said drawing:

Fig. 1 is a side view of an amount manipulative device.

Fig. 2 is a side view of a special transaction lever and an interlock actuated thereby.

Fig. 3 is a detail front elevational view showing the side spacing of the amount and transaction manipulative devices, together with the interlock actuated thereby.

General description

As disclosed in the parent application, the right-hand half of the machine embodying the invention comprises a set of amount setting levers, a transaction lever, and a clerk's lever, together with four machine release keys. In certain business systems, particularly in cooperative stores, as operated in Great Britain, in which members of a cooperative association are entitled to receive rebates, a record is kept of their particular accounts. If a customer who

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is a non-member of the association makes a purchase, it is then desirable to print a code on the perforated strip (illustrated in the parent case) indicating such, so that the data will not be added into an account. In order to control such auditing, a special code is perforated on the perforated strip before the entry of the sale to a non-member is entered into the machine. Setting of the transaction lever to its ninth position controls certain interlocks in the machine, which prevent the adjustment of the amount levers and also prevents operation of a receipt printing and issuing mechanism. Thereafter, upon operation of the machine with the amount levers all set at zero, a code is perforated on the perforated strip adjacent the non-member's account number, which account number may represent an account number of another association, and therefore, when the perforated strip is later analyzed, the special code perforated on the strip controls the analyzing machine to skip the entry of the amount which is entered on the perforated strip immediately following the operation in which the code is printed. After the code is printed, the amount of the purchase is set up on the amount levers and the normal operation of the machine is made, whereupon the data is perforated on the strip.

Amount setting manipulative devices

Loose on the main shaft 37 (Figs. 1 and 3) is as amount lever 70 for each denominational order, an upward extension of which terminates in a finger piece 71, which protrudes through a corresponding arcuate opening in the cabinet of the machine. Each of the levers 70 has a plurality of V-shaped notches 72 cut in a segmental portion thereof. Said notches correspond to the different positions of the levers and are adapted to cooperate with respective rollers 73, each of which is mounted upon a corresponding lever 74, loose on a shaft 75 supported by the frames 29 and 30 (Fig. 3). A spring 76, connected to each lever 74, urges the levers 74 clockwise to maintain the rollers 73 in engagement with the notches 72, thereby providing a means for locating and retaining the amount levers 70 in set positions. Each of the setting levers 70 is connected by a link 77 to a corresponding mechanism for setting an indicator, and each lever is provided with teeth 85 for setting type carriers, and also a stud 96 for actuating a totalizer differential segment in the manner disclosed in the above-mentioned patent to Breitling and in the parent case.

Each of the settable levers 70 has a segmental portion of gear teeth 85, which mesh with a corresponding drive gear to set a corresponding type wheel.

Transaction setting manipulative devices

Adjacent the highest order amount lever 70, a lever 200 (Fig. 2) is provided for controlling certain functions in the machine, as disclosed in the parent case. When this lever is moved into its ninth position, means are adjusted to lock the amount levers against movement. The lever 200 is provided with teeth 207, for setting type carriers; a link 208, for setting an indicator; and a link 201, for actuating a control element, all as fully described in the parent case.

Interlock between transaction and amount manipulative devices

In the system in which the present invention is illustrated, it is necessary to prevent the recording of amounts on the perforated strip when the transaction lever 200 (Fig. 2) is in the lowermost, or "nine," position. To obtain such a result, a means actuated by the transaction lever positions a lock in the path of the lever 74 in each amount bank to lock the respective studs 73 in the notches 72 of the amount lever.

To accomplish this result, the transaction lever 200 is provided with a stud 830, which is moved into the chain-line position when the lever is set into its eighth position. In this position, the stud 830 contacts a lever 831, and, upon movement of the lever 200 into its ninth position, the stud 830 lifts the arm 831 to move around the shaft 37, upon which it is pivoted. The arm 831 is connected to an arm 832 by a link 833. The arm 832 is connected to a second arm 832 by a yoke 834, and the arms 832 are pivoted on a shaft 218. A spring 835 maintains the arm 832 in lowered position, with a toe 836 on the arm 832 against a shaft 369. The arms 832 carry a rod 838, which extends across the planes of all the levers 74 of the six amount banks. When the lever 200 is moved into its ninth position, the rod 838 is lifted into the paths of the lower ends of the levers 74, thus locking the studs 73 in the notches of the amount levers, to prevent any movement thereof.

While the form of mechanism shown and described herein is admirably adapted to fulfill the object primarily stated, it is to be understood that it is not intended to confine the invention to the form or embodiment disclosed herein, for it is susceptible of embodiment in various other forms.

What is claimed is:

1. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a projection on the transaction setting manipulative device; and a linkage having one element located in the path of movement of said projection and another element movable into engagement with the resiliently operable means, said linkage movable by the said projection when the transaction setting manipulative device is moved into one of its setting positions to thereby cause the said another element to

engage and lock the resiliently operable members against manipulation.

2. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a device on the transaction setting manipulative device; a linkage mounted adjacent the transaction setting manipulative device, one element of said linkage being in the path of movement of said device and located in relation thereto so as to be actuated thereby when the transaction setting manipulative device is moved into one of its setting positions; and means connected to the linkage and movable to engage the resiliently operable means when the linkage is actuated by the transaction setting manipulative device to lock the amount setting manipulative devices in set positions.

3. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a device on the transaction setting manipulative device; a linkage mounted adjacent the transaction setting manipulative device, one element of said linkage being in the path of movement of said device and located in relation thereto so as to be actuated thereby when the transaction setting manipulative device is moved into one of its setting positions; means connected to the linkage and movable to engage the resiliently operable means when the linkage is actuated by the transaction setting manipulative device to lock the amount setting manipulative devices in set positions; and a spring to restore the linkage to initial position when the transaction setting manipulative device is moved out of said certain position to unlock the amount setting manipulative devices.

4. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a projection on said transaction setting manipulative device; a pivoted arm normally in the path of movement of said projection so as to be actuated by the projection when the transaction setting lever is moved into one of its setting positions; a link pivoted to said arm; a yoke connected to said link; and a universal rod carried by said yoke, said universal rod movable into paths of movement of said resiliently operable means by said link when the said pivoted arm is actuated by the said projection to thereby lock the resiliently operable means and the amount setting manipulative devices when the transaction setting manipulative device is in said one of its setting positions.

5. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device

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movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a projection on said transaction setting manipulative device; a pivoted arm normally in the path of movement of said projection so as to be actuated by the projection when the transaction setting lever is moved into one of its setting positions; a link pivoted to said arm; a yoke connected to said link; a universal rod carried by said yoke, said universal rod movable into paths of movement of said resiliently operable means by said link when the said pivoted arm is actuated by the said projection to thereby lock the resiliently operable means and the amount setting manipulative devices when the transaction setting manipulative device is in said one of its setting positions; and means to move the yoke and the universal rod out of the paths of movement of the resiliently operable means when the transaction setting manipulative device is moved out of said one position and the projection is withdrawn from actuating engagement with the pivoted arm.

6. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a projection on said transaction setting manipulative device; a pivoted arm normally in the path of movement of said projection so as to be actuated by the projection when the transaction setting lever is moved into one of its setting positions; a link pivoted to said arm; a yoke connected to said link; a universal rod carried by said yoke, said universal rod movable into paths of movement of said resiliently operable means by said link when the said pivoted arm is actuated by the said projection to thereby lock the resiliently operable means and the amount setting manipulative devices when the transaction setting manipulative device is in said one of its setting positions; and a spring connected to the yoke to withdraw the universal rod from the paths of movement of the resiliently operable means when the transaction setting manipulative device is moved out of said one setting position.

7. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount

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setting manipulative devices in their set positions; a projection on said transaction setting manipulative device; a pivoted arm normally in the path of movement of said projection so as to be actuated by the projection when the transaction setting lever is moved into one of its setting positions; a link pivoted to said arm; a yoke connected to said link; a universal rod carried by said yoke, said universal rod movable into paths of movement of said resiliently operable means by said link when the said pivoted arm is actuated by the said projection to thereby lock the resiliently operable means and the amount setting manipulative devices when the transaction setting manipulative device is in said one of its setting positions; a spring connected to the yoke to withdraw the universal rod from the paths of movement of the resiliently operable means when the transaction setting manipulative device is moved out of said one setting position; and means to arrest the yoke and the universal rod in ineffective position when released by movement of the transaction setting manipulative device.

8. In a machine of the class described, the combination of amount setting manipulative devices; a transaction setting manipulative device movable into a plurality of positions; an alining member on each amount setting manipulative device; a resiliently operable means engaging each alining member to maintain the amount setting manipulative devices in their set positions; a projection on said transaction setting manipulative device; a pivoted arm normally in the path of movement of said projection so as to be actuated by the projection when the transaction setting lever is moved into one of its setting positions; a link pivoted to said arm; a yoke connected to said link; a universal rod carried by said yoke, said universal rod movable into paths of movement of said resiliently operable means by said link when the said pivoted arm is actuated by the said projection to thereby lock the resiliently operable means and the amount setting manipulative devices when the transaction setting manipulative device is in said one of its setting positions; means to move the yoke and the universal rod out of the paths of movement of the resiliently operable means when the transaction setting manipulative device is moved out of said one position and the projection is withdrawn from actuating engagement with the pivoted arm; and means to arrest the yoke and the universal rod in ineffective position when released by movement of the transaction setting manipulative device.

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No references cited.