April 28, 1942. J. W. KELLY 2,280,958

CASH REGISTER

Filed May 20, 1939

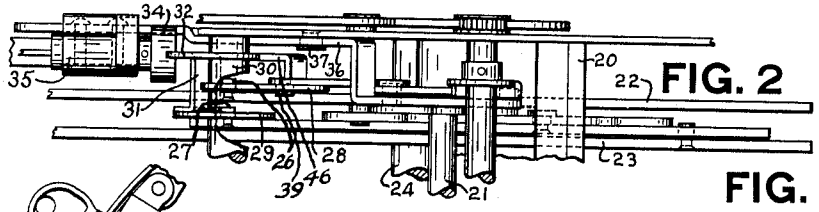


FIG. 2

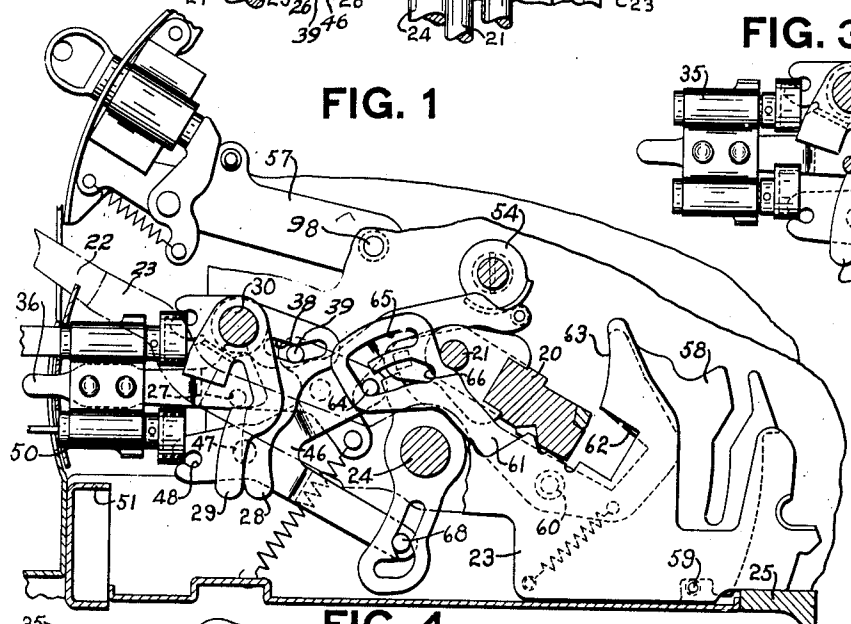


FIG. 1

FIG. 3

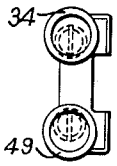


FIG. 7

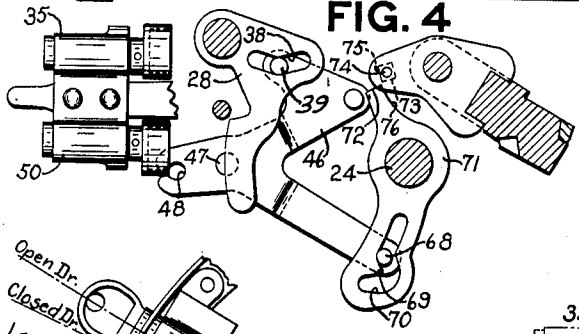


FIG. 4

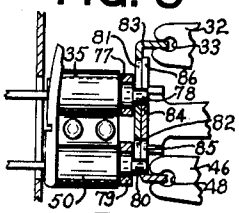


FIG. 8

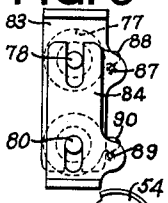


FIG. 9

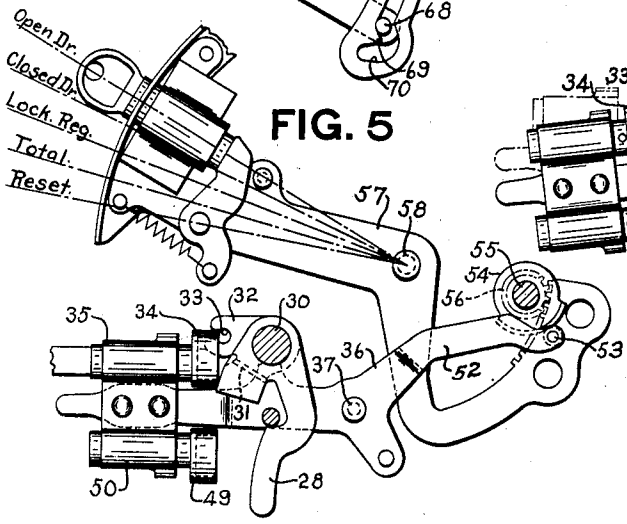


FIG. 5

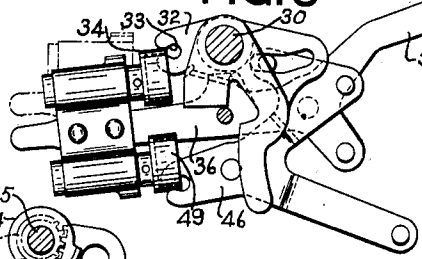


FIG. 6

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UNITED STATES PATENT OFFICE

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CASH REGISTER

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Application May 20, 1939, Serial No. 274,675

3 Claims. (Cl. 235—27)

This invention relates to departmental cash registers and like machines and more particularly to locks controlling their operation.

The principal object of the invention is to provide novel, individual locking means for each registering department of such a machine.

Another object of the invention is to provide novel means whereby the effectiveness of the individual departmental locks may be superseded by a master control lock.

With these and incidental objects in view, the invention includes certain novel features of construction and combinations or parts, the essential elements of which are set forth in appended claims and 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 elevation, as viewed from the right, showing the individual departmental locks, the control lever, and the mechanism for automaticalliy coupling a department key to the key coupler.

Fig. 2 is a plan view of part of the mechanism shown in Fig. 1.

Fig. 3 is a detailed showing of the individual departmental locks in locked condition.

Fig. 4 is a detailed showing of the means for locking the main operating means while a departmental lock is being manipulated and for preventing the departmental lock from being manipulated during a machine operation.

Fig. 5 is a detailed showing of the mechanism for superseding the individual departmental locks.

Fig. 6 shows the individual departmental locks as superseded by the rocking of their supporting member.

Fig. 7 is a detail of the locking cams.

Fig. 8 is a side view of a modified form of the individual departmental locks.

Fig. 9 is a rear view of the locking cams shown in Fig. 8.

The novel mechanism which forms this invention is embodied in the key lever operated type of cash register having an operations control lever, disclosed generally in United States Letters Patent, No. 1,920,374, issued to Charles W. Green, August 1, 1933. The particular embodying machine is disclosed more specifically in the application for United States Letters Patent, Serial No. 226,690, filed August 25, 1938, by Daniel K. Hughes, and in the application for United States Letters Patent, Serial No. 207,244, filed May 11, 1938, by Frank Werner, to which patent and applications attention is directed.

General description

The particular cash register in which this invention is embodied has two registering departments each of which has associated therewith a registering department selecting key. For the purposes of this disclosure each registering department will be presumed to represent a clerk in an accounting system where each clerk registers his transactions separately, and therefore the two registering department selecting keys will be denominated the "A" and "B" clerk's keys. By means well known in the art, it is made compulsory for one of these clerk's keys to be used before a transaction may be registered, reference being made to the United States Letters Patent, No. 1,920,374, issued to Charles W. Green, for one such method.

In Figs. 1 and 2, the main operating mechanism of the cash register is represented by a weighted key coupler **20** caused to make an excursion up and down around its supporting rod **21** each time a key is operated. Of the keys, only the two departmental selecting keys are shown, the "A" clerk's key **22** (Fig. 2) and the "B" clerk's key **23** (Figs. 1 and 2). These keys are rockably mounted on the key shaft **24** and are held by the weight of the key coupler in the position shown in Fig. 1 where the rear ends seat on frame member **25** (Fig. 1). On operation of the register, whether the "A" or "B" clerk's key is depressed, the key coupler is oscillated, which movement drives the main operating mechanism, not shown.

The "A" clerk's key has a stud **26** (Fig. 2) and the "B" clerk's key has a stud **27**, by which the keys may be latched in home position by lever hooks **28** and **29** (Figs. 1 and 2) respectively. Lever hooks **28** and **29** are rockably mounted on shaft **30**. Lever **29** is fastened by a yoke **31** (Figs. 1 and 5) to a lever **32** also rockably mounted on shaft **30** and has a notch **33** on its forward edge which is engaged by an eccentric rimmed cam **34** pinned to the barrel of a lock **35** secured on a rockable lever **36** (Figs. 1 and 5) mounted on a frame supported stud **37**. Lever **28** (Fig. 4) has a cam slot **38** cooperating with a stud **39** extending from a lever **46** pivotally mounted on frame supported stud **47**, said lever **46** having a notch **48** on its forward end to cooperate with the rim of an eccentric cam **49** pinned to the barrel of a second lock **50**, also mounted on lever **36**.

As seen in Figs. 3 and 5, the rocking of either of the lever hooks 28 and 29 to their most clockwise position engages the stud on the associated clerk's key, latching that key in inoperative position. In Fig. 1 the "B" key is shown locked and the "A" key is shown unlocked. By turning the barrel of the associated lock 180 degrees the levers 28 and 29 are moved from effective to ineffective position or vice versa.

If lever 36 be rocked counter-clockwise slightly from the position shown in Fig. 1 until arm 52 comes to rest against shaft 55, as shown in Fig. 6, levers 32 and 46 are rocked counter-clockwise to the position shown in Fig. 6, or farther in the event they are either of them were in unlatched position before lever 36 is rocked. Thus, control of the movement of lever 36 supersedes the individual control of locks 35 and 50.

An arm 52 of lever 36 (Fig. 6) has a stud 53 which cooperates with a broken rimmed cam 54 secured on a frame supported shaft 55. A pinion 56 (Fig. 5) is secured to shaft 55 and by it turned through the rocking of a toothed control lever 57 pivotally mounted on a frame supported stud 98. Stud 52 is held on the inside or outside of the rim of cam 54 unless a broken away portion of the rim is positioned adjacent to it as shown in Fig. 6. Thus, the lever 36 is rockable only when the cam 54 is in an ineffective position like that shown in Fig. 6, which it assumes when the control lever is in the "reset" position indicated by the broken line so named in Fig. 5.

Mounted pivotally on shaft 24 and to the immediate left of the "B" clerk's key 23 is an auxiliary key cam plate 58 (Fig. 1) which is carried upward by stud 59 projecting from the "B" clerk's key whenever that key is operated, and returned with it to home position by the weight of the key coupler 20. Pivotally attached to plate 58 by stud 60 is a lever 61 having a notch 62 designed, when the lever 61 is rocked counterclockwise, to hook over the rear edge of the key coupler so as to be carried upward with the key coupler upon its being operated, carrying with it the cam plate 58 without moving the "B" key 23 from rest position. The "B" key is prevented from moving by reason of its arcuate surface 63 contacting the rear edge of the raised key coupler. Whenever the "A" lock 50 is turned 180 degrees from the position shown in Fig. 1, lever 46 is rocked clockwise which, through stud 64, rocks lever 61 counterclockwise hooking said lever over the key coupler, thus rendering the "B" key auxiliary cam plate 58 operative each time the key coupler is oscillated, even though the "B" clerk's key 23 is not depressed by the operator. The stud 64 will normally move in the raceway 66 as the cam plate 58 and lever 61 are oscillated. If lever 36 is depressed, stud 64 will idle in raceway 65 as the cam plate 58 and lever 61 are oscillated. If, when the barrel of the "A" lock 50 is turned 180 degrees from its position in Fig. 1 and has caused the lever 61 to be hooked over the key coupler, the lever 36 is moved downwardly it will cause lever 46 to rock counter-clockwise to a position where it releases lever 61 from the key coupler.

Movement of lever 46 around stud 47 (Fig. 4) causes stud 68 on an arm of lever 46 to move to one side or another of a high point 69 in a cam slot 70 cut in a lever 71, pivotally mounted on key shaft 24, so as to rock lever 71 slightly clockwise as the stud 68 hits the point 69. When this occurs a surface 72 on lever 71 engages surface 73 on stud 74 extending from a plate attached to the key coupler, thus keeping the key coupler from moving while the lock 50 is being turned from locked position to unlocked position and vice versa. When the key coupler is out of home position, surface 75 on stud 74 engages surface 76 on lever 71 preventing the operation of lock 50 while the machine is being operated.

Figs. 8 and 9 disclose a modified form of lock control of levers 32 and 46 which requires a 360 degree movement of the barrels of locks 35 and 50 to move the levers 37 and 46 from effective to ineffective position. The barrel of lock 35 has mounted on it, near its rear end, a collar 77 (Figs. 8 and 9), the extreme end of the barrel ending in a stud 78. Likewise, the barrel of lock 50 has mounted on it near its rear end a collar 79, with the extreme end of the barrel ending in a stud 80. Shiftably mounted on stud 78 by means of a slot 81 and straddling stud 80 by means of a bifurcated lower end 82, is a slide 83 having its upper end bent rearward to engage notch 33 in lever 32. A second slide 84 is shiftably mounted on studs 78 and 80 by means of a slot 85 and a bifurcated upper end 86. Slide 84 has its lower end bent rearward to engage notch in lever 46. Upward movement of slide 83 locks the "B" clerk's key and downward movement unlocks the "B" clerk's key, whereas upward movement of slide 84 locks and downward movement unlocks the "A" clerk's key. Slide 83 has a pin 87 adapted to be engaged by a nose 88 on collar 77 so as to move slide 83 upward when the barrel of lock 35 is turned to its extreme counter-clockwise position from the down position as seen in Fig. 9, and slide 84 has a pin 89 adapted to be engaged by nose 90 on collar 79 so as to move slide 84 upward when the barrel of lock 50 is turned in its extreme counter-clockwise position from the down position as seen in Fig. 9. A 360 degree clockwise turn of either lock from the position shown will cause the associated slide to be forced upward. The 360 degree movement of the lock barrels allows withdrawal of the keys in either open or closed position in that type of lock having but one position of the barrel in which the key may be withdrawn.

While the form of the mechanism herein 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 or embodiment herein disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed is:

1. In a cash register having two registering departments, one of which is normally selected on each operation of the machine, the combination of a selecting key which when operated selects for the next machine operation the department not normally selected; a lock for the key; an auxiliary member which when operated selects the department as if the selecting key were operated; means for operating said auxiliary member; a second lock; means operated by the second lock to connect the auxiliary member to its operating means so as to be operated each machine operation; and a movable support for both of said locks, which support if moved renders the first-mentioned lock ineffective and causes the means operated by the second lock to be moved with the second lock and disconnect the auxiliary member from its operating means.

2. In a cash register having a frame plate, a

key lever, an operations control means, and a movable member having a normal position and a moved position in either of which positions it may be locked under control of said operations control means, the combination of a stud on the key lever; a hooked member pivotally mounted on the frame plate adjacent said stud so that the hook thereof may be moved into contact with the stud to lock the key lever in an unoperated position; a lock mounted on the movable member; a cam mounted on the movable member, operated by the lock, and cooperating with the hooked member so that when the movable member is in normal position the lock and cam may be operated to render the hooked member effective or ineffective to lock the key lever in said unoperated position, said cam moving the hooked member out of the path of the stud when the movable member is moved from its normal position to its moved position; and connnections between the operations control means and the movable member to control the operation of the movable member.

3. In a cash register, the combination of a stationary frame; a control key; a hooked member pivoted on said frame and cooperable with a part of said key to lock the key against movement; a shiftable support; a lock carried by said support; an eccentrically mounted cam carried by the support, rotated by the lock, and cooperable with the hooked member so that the lock can operate the cam and move the hooked member into and out of engagement with the part of said key when the support is in one position; and means for shifting the support and the lock and cam bodily therewith linearly to another position so that the cam, by its movement with the support, can move the hook to a position where it will be out of engagement with the part on the key regardless of operation of the hooked member by the lock.

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