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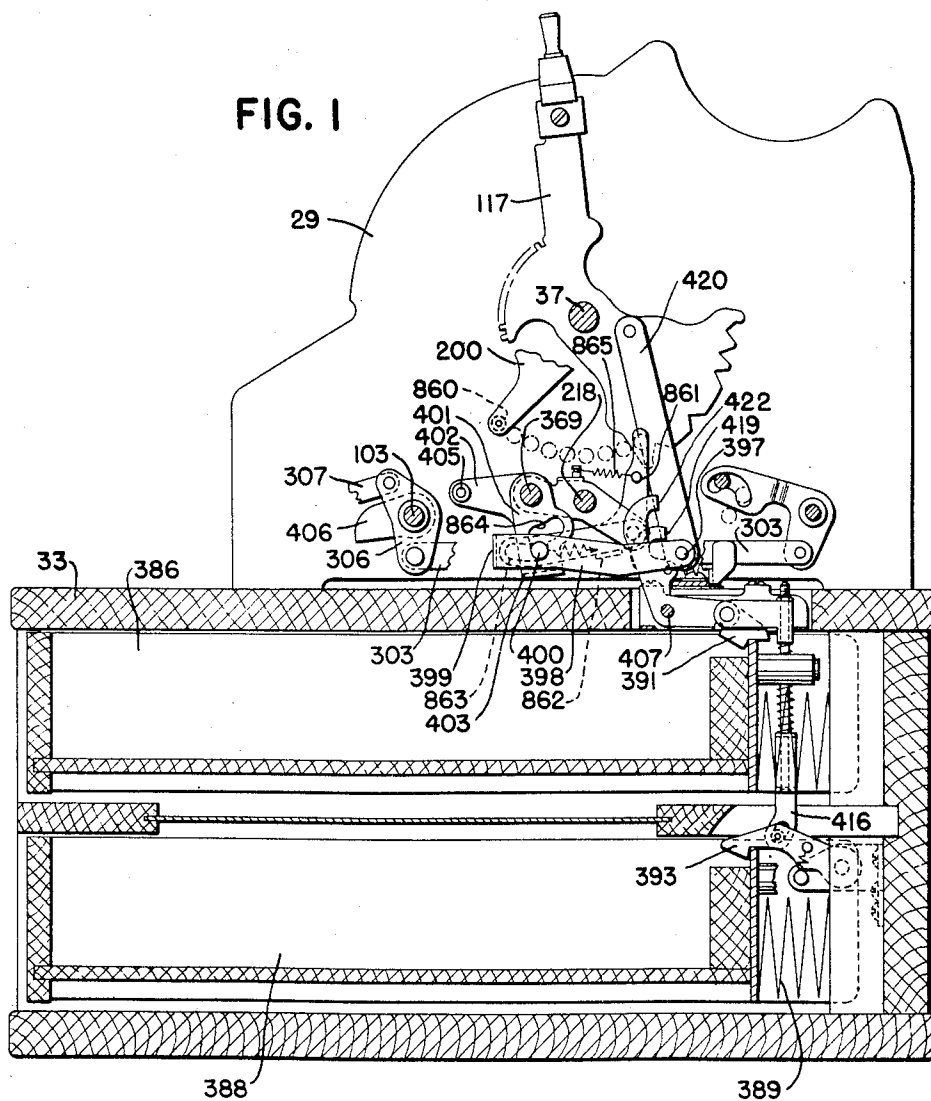
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2,628,775

CASH DRAWER OPERATING MECHANISM

Original Filed Sept. 16, 1949

3 Sheets-Sheet 1



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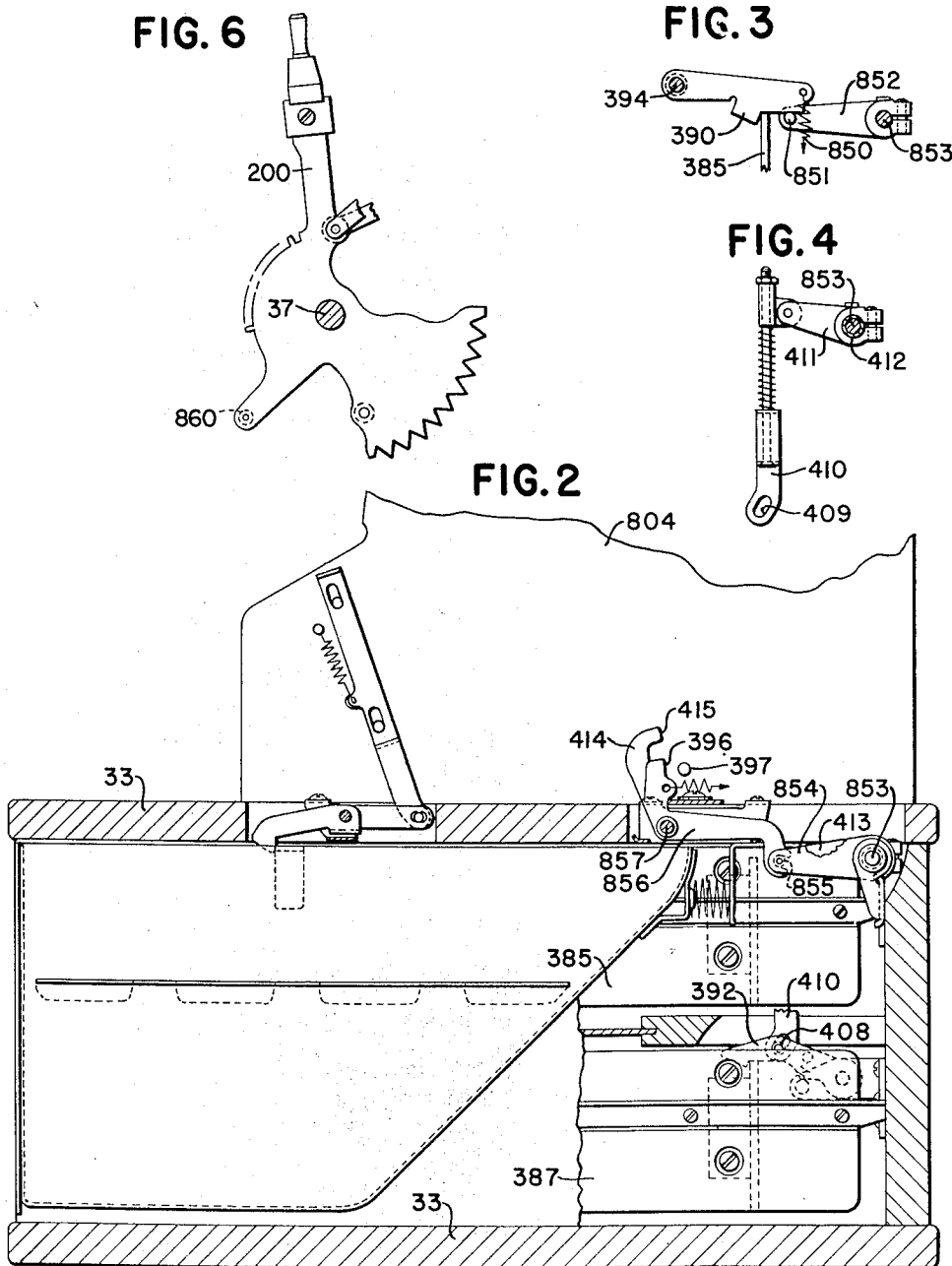
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## CASH DRAWER OPERATING MECHANISM

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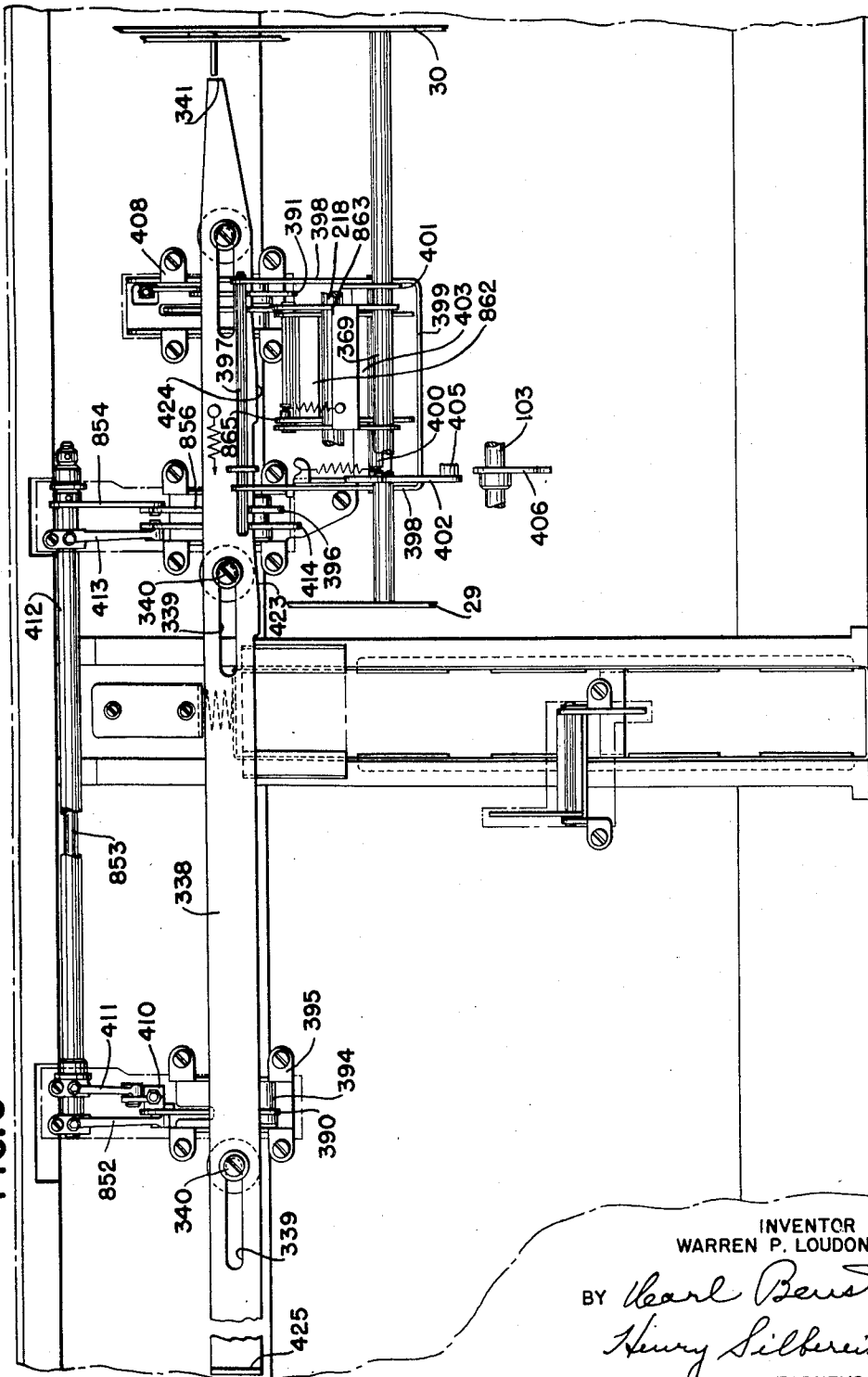
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FIG. 5



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## UNITED STATES PATENT OFFICE

2,628,775

## CASH DRAWER OPERATING MECHANISM

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Original application September 16, 1949, Serial No. 116,004. Divided and this application June 27, 1952, Serial No. 295,948

2 Claims. (Cl. 235—22)

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This invention relates to improvements in cash drawer operating mechanism for cash registers and accounting machines.

This application is a division 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 United States patent applications of Frank R. Werner, Serial No. 46,165, filed August 25, 1948, and Serial No. 58,114, filed November 3, 1948.

As pointed out in the above-named parent case, the invention is illustrated in a machine adapted for use by cooperative societies, and, as illustrated therein, 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 a cash drawer operating mechanism which is disabled by a setting device on the keyboard to prevent release of the cash drawer when certain kinds of entries are made in the machine.

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 drawings which accompany and form a part of this specification.

Of the drawings:

Fig. 1 is a cross sectional view taken through the right-hand tier of cash drawers and illustrates the cash drawer releasing mechanism.

Fig. 2 is a cross sectional view illustrating the cash drawer latch mechanism located in the left-hand tier of cash drawers.

Fig. 3 is a detail view of a part of the cash drawer releasing mechanism.

Fig. 4 is a detail view of another part of the cash drawer releasing mechanism.

Fig. 5 is a top plan view showing the cash drawer releasing mechanism and shows both the automatic and the manual release mechanisms for the cash drawers.

Fig. 6 is a detail view of a transaction manipulative device.

*General description*

The cash drawer release mechanism disclosed herein is illustrated to be controlled by manipulative devices of a keyboard illustrated in the above-mentioned parent case. In such machines, the selective release of cash drawers is normally

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under control of a differentially settable manipulative device, which, as illustrated in the parent case, controls the entry of items by different clerks, since each clerk has a separate cash drawer allotted to her, the manipulative device controls the release of the clerk's allotted cash drawer.

The illustrated machine also embodies a transaction manipulative device, and, when certain transactions not representing cash taken in are entered, this manipulative device disables the release of all the cash drawers.

*Cash drawer mechanism*

15 The cash drawer cabinet 33 (Figs. 1 and 2) houses four cash drawers, 335, 336, 337, and 338. One cash drawer is allotted for each of four clerks; that is, one for each of the four positions of the clerks' selecting lever 117. The cash drawers are suitably mounted on tracks on which rollers carried by the cash drawers run for each operation of the drawers when the drawers are released to move out of the cabinet 33. Each cash drawer is impelled outwardly by a spring 339 when released. Normally, latches 390 (shown in Fig. 3), 391, 392, and 393 maintain the respective drawers in their inaccessible position. The latches 390, 391, 392, and 393 (Figs. 1, 2, and 3) are selectively operated under control of the clerks' selecting lever 117.

30 The cash drawers are arranged in two tiers, the drawers 335 and 337 being in the left-hand tier, and the drawers 336 and 338 being in the right-hand tier.

35 The latch 390 for the upper left-hand cash drawer 335 is pivoted on a shaft 394 (see also Fig. 5), carried by a bracket 395, supported in the top of the drawer cabinet 33. The latch 390 is spring-urged, by a spring 350, into engagement with a stud 851 carried on an arm 852 secured to a shaft 853 journaled in bearings on the drawer cabinet 33. The right-hand end (Fig. 5) of the shaft 853 carries an arm 854 (Fig. 2) provided with a stud 855 projecting into a notch in the free end of a drawer release arm 856, pivoted on a shaft 857. The arm 856 is provided with an upwardly-extending arm 396, which lies in the path of a rod 397 (Figs. 1 and 5) carried between the two arms 398 of a yoke 399 when the clerks' selecting lever 117 is in its upper position. The yoke 399 is pivotally mounted on the shaft 359, supported in the frames 29 and 30. The arm 492 is provided with a roller 405, which lies in the path of movement of a cam 406 secured to the shaft 103.

55 When the machine is operated with the clerks'

selecting lever 117 in its uppermost position, the rod 397 moves into engagement with the arm 396 and rocks the arms 396 and 856, together with the connections including arm 854, shaft 853, and arm 852, to rock the latch 390 counter-clockwise (Fig. 3) to release the upper left-hand cash drawer. The rod 397 is moved into engagement with the arm 396 when the cam 406 is rotated and engages the roller 405 to rock the yoke 403 clockwise. Clockwise movement of the yoke 403 moves the yoke 399, together with the rod 397, to the left (Fig. 1) to engage the arm 396 of the latch mechanism to rock the latch 390 counter-clockwise to release the upper left cash drawer.

The latch 391 for the upper right-hand cash drawer 386 is pivoted on a stud 407 (Fig. 1) carried by a bracket supported on the top of the cabinet 33. The latch 391 is provided with an upwardly-extending arm having a face 419, which lies in the path of the rod 397 when the clerk's selecting lever 117 has assumed its second position. The lever 117 has pivoted thereto a link 420, the lower end of which is pivoted to the rod 397, by means of which the rod 397 is positioned.

When the clerk's selecting lever 117 is moved counter-clockwise into its second position (Fig. 1), the link 420 lifts the rod 397 into the path of the face 419. Thereafter, during machine operation, when the cam 406 rotates to rock the yoke 403 clockwise, the yoke 399, pulling on the rod 397, rocks the latch 391 to release the second cash drawer.

The lower left-hand cash drawer 387 is held in closed position by a latch 392 (Fig. 2) having a stud 408 projecting into a slot 409 of a link 410. The link 410 is connected to an arm 411 (see also Fig. 4) clamped to a sleeve 412 on shaft 853. The sleeve 412 extends toward the right (Fig. 5), where an arm 413 is secured thereto, adjacent the beforementioned arm 854. The arm 413 is provided with a stud, like stud 855 (Fig. 2), projecting into a notch in the end of a bell crank 414, similar to the bell crank 856 but having a face 415 one step higher than the face 419 on the latch 391. When the clerk's lever 117 is moved into its third position, the rod 397 is moved opposite the face 415, and therefore, during the machine operation, when the rod 397 is moved by the cam 406, the rod 397, acting on the face 415, rocks the train of mechanism including the bell crank 414, the arm 413, the sleeve 412, the arm 411, the link 410, and the latch 392 to release the lower left-hand cash drawer.

The lower right-hand cash drawer 388 is provided with mechanism like that for lifting the latch 392. The latch 393 for the drawer 388 is connected to a link 416, which is connected to a bell crank having a surface 422 (Fig. 1). As the clerk's selecting lever 117 is moved into its fourth position, the rod 397 is moved opposite the surface 422. When the rod 397 engages the surface 422, the lower right-hand cash drawer 388 is released by the mechanism including the cam 406 and the yokes 403 and 399.

A manual release is provided for releasing all of the cash drawers when the proprietor wants to check the cash in the cash drawers without operating the machine. For this purpose, a slide 338 (Fig. 5) is provided. The slide 338 has formed thereon two cam surfaces, 423 and 424, which lie adjacent the bell cranks normally operated by the rod 397 during machine operation. When the proprietor operates the control lock, described in the parent case, to remove a flange 342 from the right end 341 of the slide 338 in

preparing the machine for printing totals, the slide 338 is free to be moved rightwardly (Fig. 5). When the flange 342 is out of the path of the slide 338, the proprietor grasps a finger piece 425, formed on the left end of the slide 338, and shifts the slide 338 to the right. Movement of the slide 338 to the right causes the cam surfaces 423 and 424 to wipe against the rear ends of the drawer-releasing bell cranks, rocking them counter-clockwise to lift all of the latches 390, 391, 392, and 393, thus releasing all the cash drawers simultaneously without operating the machine.

#### *Drawer release control by transaction lever*

The machine as disclosed in the parent case is provided with a setting lever 200 (Figs. 1 and 6) for controlling the machine for various transactions. One of the functions of the lever 200 is to control the cash drawer release mechanism.

An operation of the machine with the transaction lever 200 (Fig. 1) in its ninth position results in the cash drawers all remaining latched in closed position. To accomplish this result, the connection between the cam 406 and the rod 397 is disabled when the transaction lever is moved into the ninth position.

The drawer release mechanism is disabled by the transaction lever 200 by a stud 860 mounted on an extension thereof. The various positions assumed by the stud 860 are shown in chain lines in Fig. 1. Lying in the path of the stud 860 is an arm 861 forming an upwardly-projecting extension of one arm of a yoke 862. The left ends (Fig. 1) of the two arms of the yoke 862 are provided with clearance slots 863, through which the shaft 400 passes. The two arms 401 and 402 of yoke 403 are provided with the beforementioned L-shaped slots 864, through which the shaft 400 also passes. A spring 865 normally maintains the shaft 400 in a notch comprising the vertical section of the L-shaped slot 864, so that the shaft 400 is normally effective to actuate the rod 397 in the manner hereinbefore described. When the transaction lever 200 is moved into its lowermost, or ninth, position, the stud 860 engages the arm 865 and rocks the yoke 862 to lift the shaft 400 out of the vertical section of the L-shaped slot 864. Thereafter, when the cam 406 actuates the yoke 403, the horizontal section of the slot 864 moves over the shaft 400; therefore the rod 397 is not moved, and the selected cash drawer latch is not actuated to release a cash drawer.

While the form of mechanism shown and described herein 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 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 a cash drawer, a manipulative device, a latch for normally maintaining the cash drawer in inaccessible position, an operating member engageable with the latch when operated to actuate the latch to thereby release the cash drawer for movement into an accessible position, a coupling rod carried by the operating member, a main shaft, a cam on the main shaft, a driving element actuated by the cam, a notch formed in the driving member to receive said coupling rod whereby the operating member is coupled to the driving member, a bell crank having a slot engageable with the coupling rod, and means on the manipulative device

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to actuate the bell crank and thereby withdraw the coupling rod from engagement with the said notch.

2. In a machine of the class described having a transaction control differentially adjusted manipulative device movable into a plurality of positions, the combination of a cash drawer; a latch to normally maintain the cash drawer in inaccessible position; an operating member consisting of a pivoted yoke having a bar thereon engageable with the latch to operate the latch and release the cash drawer for movement into accessible position; a rod on which the yoke is pivoted; a driving element for the operation of the operating member, said driving element

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provided with a notch in which the rod normally rests; a cam to actuate the driving element; a lever having a slot into which the rod projects; and a means on the manipulative device engageable with the lever when the manipulative device is moved into one position of adjustment to actuate the lever and through the slot withdraw the rod from engagement with the notch to disconnect the operating member from the driving member to render the operating member inactive.

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No references cited.