

Feb. 15, 1938.

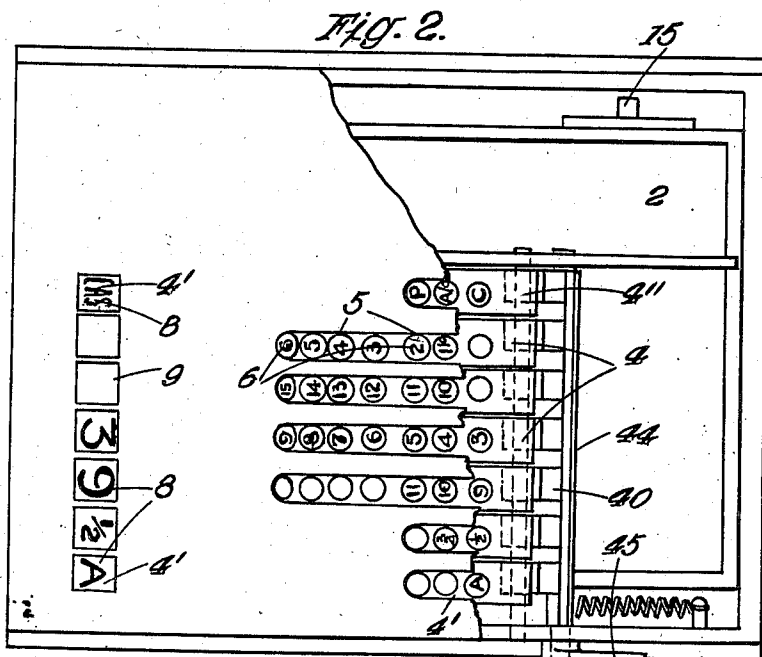
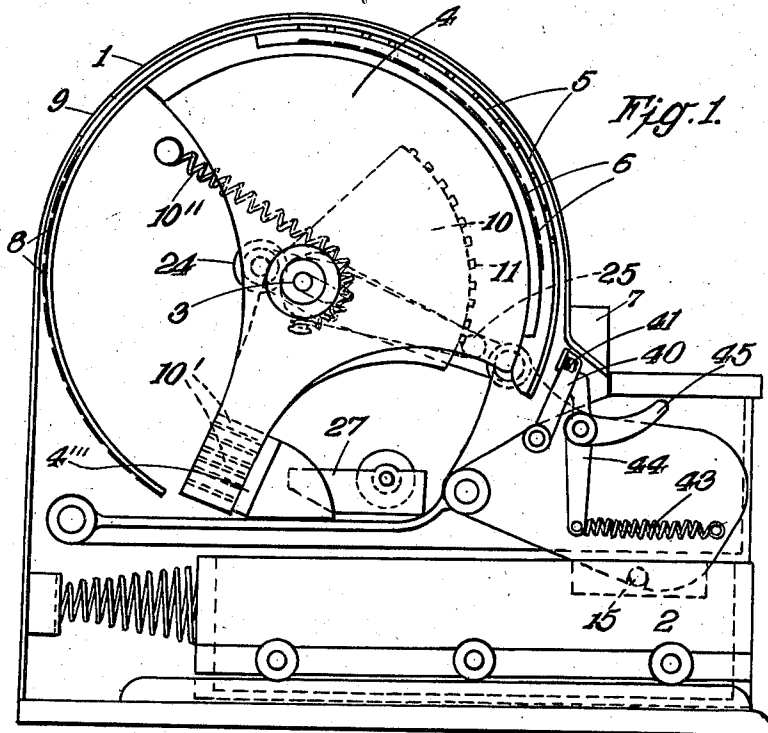
H. BARKER-BLAND

2,108,400

CASH REGISTER

Filed April 21, 1937

3 Sheets-Sheet 1



Harry Barker Bland
by Frank P. Wentworth
Attorney

Feb. 15, 1938.

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CASH REGISTER

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3 Sheets-Sheet 2

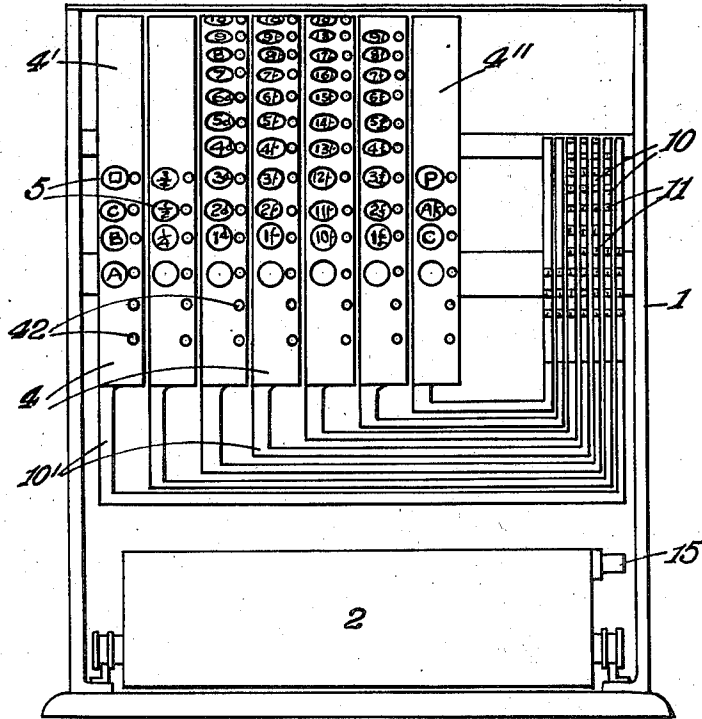


Fig. 3.

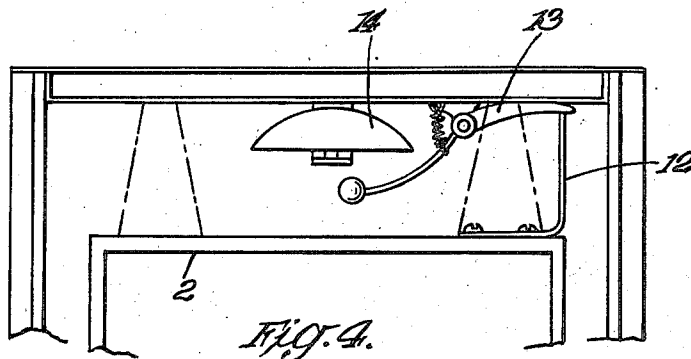


Fig. 4.

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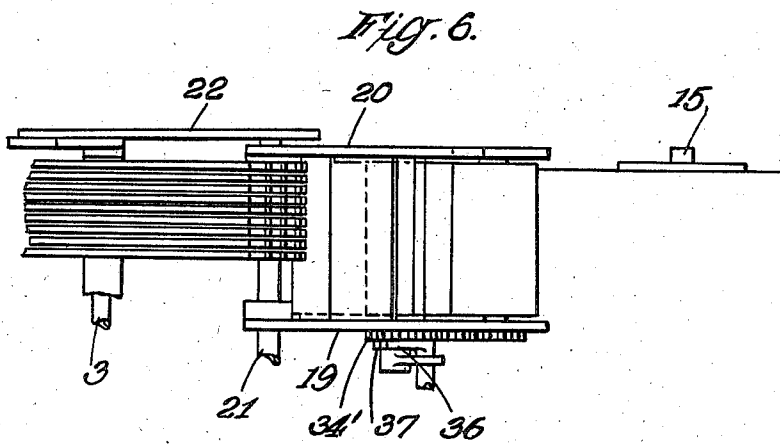
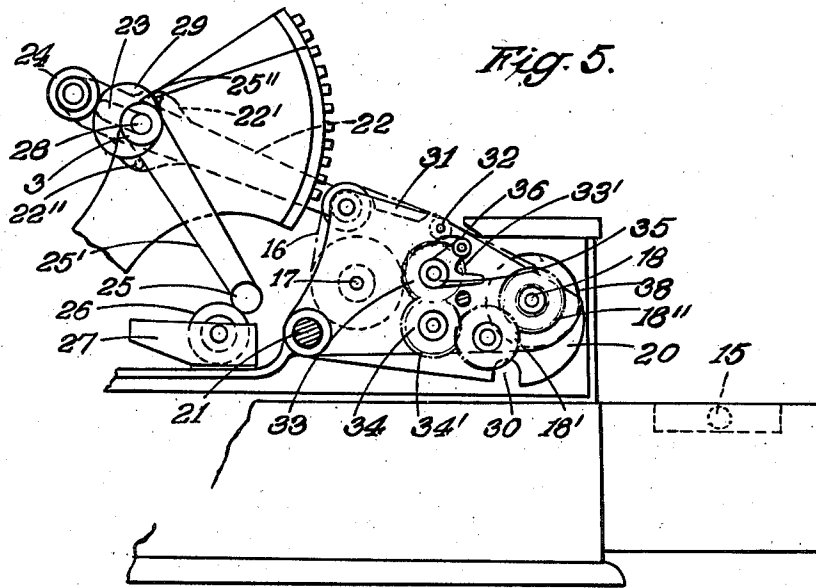
H. BARKER-BLAND

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CASH REGISTER

Filed April 21, 1937

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,108,400

CASH REGISTER

Harry Barker-Bland, London, England

Application April 21, 1937, Serial No. 138,078
In Great Britain July 30, 1935

4 Claims. (Cl. 101—95)

This invention relates to improvements in cash registers and has for its chief object to provide a simple, cheap and efficient construction of such devices which, whilst exposing an indication of the amount of individual purchases to the customer, will also print a record of these purchases.

It has been proposed to construct a cash register provided with a number of rotatable discs, the circumferences of which are each divided into four equal arcs, one of which is provided with operating keys, the next arc having printing types, and the remaining two arcs having a number of counter operating pawls and a number of stops respectively; a movable ribbon bearing figures corresponding to the figures on the operating key is attached to the periphery of the disc and positioned at the back of the vertical plane passing through the axis of rotation of the disc, the operating keys being positioned at the front of such plane, the figure ribbon being associated with means whereby the operator who stands at the front of the register and consequently reads off the numbers on the keys from left to right can adjust the numbers on the opposite side of the ribbons so that the customer standing at the back of the register is enabled also to read the figures off from left to right; means are provided for locking the discs in set position, in which position the printing mechanism is actuated to bring a check slip up against the types on the discs.

The cash register according to this invention comprises a manually operable drum or drums and a like number of printing segments or discs separate from the drum or drums and associated with printing means for printing a record on a recording strip of each purchase set up on the cash register, the printing segment or disc or each of them being operated by its associated drum, the drum or each of them being adapted to be rotated through an arc, preferably of 90° or less, and being provided along an arc of its periphery normally located at the front of the vertical plane passing through the axis of rotation of the disc with a plurality of recesses or finger dialing grips marked to represent certain money values or the like, and, a further arc of the periphery of said drum normally located at the back of said plane carrying on its surface complementary markings corresponding to the markings on the finger grips, said complementary markings being appropriately displayed to a customer standing at the back of the register to indicate the amount set up by actuation of the drum or drums.

As above stated, the manually operable drum or each of them is associated with a printing disc or segment, means being provided to cause a printed record of each purchase set up on the cash register to be made and the till drawer is preferably locked in a manner hereinafter described to prevent the same being opened until such time as a printed record has been made.

An embodiment of the present invention is illustrated in the accompanying drawings, wherein:—

Fig. 1 is a side elevation of the machine with the end portion of the cover removed;

Fig. 2 is a plan of the machine with the casing broken away and the printing drums or segments removed;

Fig. 3 is a front elevation with the casing broken away and showing the monetary and printing drums;

Fig. 4 is a plan of the rear of till and bell operating mechanism;

Fig. 5 is a side elevation of the paper feed and printing mechanism; and

Fig. 6 is a plan of Fig. 5.

Referring to the drawings the cash register comprises a suitably shaped casing 1 at the bottom of which is arranged the till drawer 2. Horizontally disposed across the casing and above the drawer towards the rear of the machine is a hollow shaft 3 on which are freely mounted a plurality of discs, segments or drums 4, one for each denomination or monetary value which it is desired to register on the cash register. Thus, for example, there may be provided one drum for farthings, one for pence, one for single shillings, one for tens of shillings and one for pounds. Each one of these drums is provided around a suitable arc, say not more than 90°, and on that side of its periphery facing the shop assistant with a plurality of recesses 5, the bases 6 of which are provided with markings indicating the individual monetary values of the particular drum in question; thus, for example, the farthings drum may be provided with three recesses marked respectively $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$, the pence drum is provided with eleven recesses marked successively 1 to 11 and so on. Each drum is revolved through an arc dependent upon the particular monetary value to be registered by inserting the finger in the particular recess and then revolving the drum round until the finger meets a conveniently located stop bar 7 disposed transversely across the front of the machine.

In addition to the drums adapted for operation in accordance with the monetary value of the

purchases to be registered, further auxiliary drums may be provided for any desired purpose, say, one drum 4', the recesses of which are serially numbered in order that a record may be made of the particular assistant effecting the sale, and a further drum 4'' to indicate the nature of the sale effected or the nature of the payment made, i. e. whether it is a cash sale, a payment in respect of an account, and so on.

Each drum has the operating finger recesses 5 located round an arc of its periphery, the arc being located in front of the vertical plane passing through the axis of rotation of the drum. A further arc on the periphery of the drum located on the opposite or rear side of said plane carries complementary money values or other markings 8 corresponding to the markings on the finger recesses, the said complementary markings being adapted when the drum is actuated to be appropriately positioned behind an aperture 9 in the back of the casing, i. e. that part exposed to the customer, so that a visual record or indication may be given to the customer of the amount registered by the operator.

Each one of the drums, or at least each one of the monetary value indicating drums, is associated with an appropriate printing disc 10 or segment carrying on its periphery type figures or characters which are, of course, positioned according to the movement of the finger or like operated drums, these printing discs or segments being appropriately connected by suitable cross members 10' with their respective finger operated drum so as to move therewith. These printing discs or segments are also freely mounted on the hollow transverse shaft and are enclosed within the casing 1.

Each drum and its associated printing disc or segment is associated with a releasable locking device to retain it in any particular recording position, each drum being weighted or spring-controlled, conveniently by spring 10'', so that, after the desired registering has been effected, the same is returned automatically to its initial or zero position to abut against a stop 4''' after the release of the locking device.

A convenient releasable locking device for each of the said drums comprises a pivoted stop lever 40 carrying a spring controlled ball 41 adapted to co-act with indentations 42 on the drum, the stop lever 40 being resiliently retained in its locking position as shown in Fig. 1 by means of a spring 43 acting through a pivoted trigger lever 44, the trigger 45 of which is adapted to be depressed by the operator to displace the lever 44 about its pivot and release the stop lever 40.

The till drawer 2 is provided with an arm 12 or the like which is adapted to operate on a bell arm 13 to ring a bell 14 when the drawer is opened and the drawer is also provided with a pin 15 or the like, the purpose of which will now be explained.

Printing is effected on to a strip of paper 16, Fig. 5, which is stored on a rear store roller 17 and fed on to a front receiving roller 18. Both rollers are carried by a pivoted frame constituted by spaced side members 19 and 20 which are pivoted at 21 to the main frame. The rear of the pivoted frame is provided with an upstanding arm 22 which, at its upper end, is slotted at 23 and takes about the horizontal hollow shaft 3, it being provided above the hollow shaft with a roller 24, pin or the like. In order to secure a printed record of the amount set up and any other information indicated by appropriate

manipulation of the drums, it is necessary to move the pivoted frame up about its pivot, the paper strip being located directly under the printing discs or segments. Thus, when the pivoted frame is moved up, the paper on the same is brought into contact with the printing surface of the printing discs or rollers, which have been inked by an ink roller 25, means being provided to remove the ink roller from the type when the pivoted frame is moved upwardly. The arrangement may be such that when the inking roller is moved away from the type it is engaged with a roller 26 in an ink bath 27.

Conveniently, the ink roller 25 is carried on an arm 25' having its upper end mounted on the hollow spindle 3, the arm 25' being located in its lower or inoperative position as shown in Fig. 6, by means of a lug 25'' on the upper end of the lever abutting against a stop 22' on the lever 22. The arm 25' is moved about its pivot to its operative position, shown in dotted lines in Fig. 1, to cause the ink roller thereon to ink the type on the printing discs by means of a pin 22'' carried on the lever 22 when this lever is downwardly displaced to the position shown in Fig. 1 to lower the pivoted frame and lock the till drawer.

For this purpose a spindle 28 is disposed within the hollow shaft 3, this spindle projecting outside the casing at one end where it is provided with an operating knob or handle and, at its other end, being provided with a cam 29 adapted to operate on the roller 24 of the arm 22 carried by the pivoted frame. Thus, as the knob is given a half turn, the pivoted frame is swung about its pivots, due to the engagement of the cam with the pin on the arm to bring the paper strip into engagement with the type segments, as shown in Fig. 6. A further half turn of the knob allows the pivoted frame to return to its initial position, as shown in Fig. 1, under the action of gravity or a spring. Hence every time the knob is turned a printed record of the position of the drum is obtained.

The pivoted frame, at least as to one side member 20, is extended forwardly and is provided with a detent or slot 30, which, when the pivoted frame is in its normal position, engages with the pin 15 on the till drawer to hold the same closed. When, however, the knob is turned to cause a printed record to be obtained, the swinging of the pivoted frame frees the slot from the pin and hence the till drawer may be opened. When the knob has been fully turned and the till closed, the till will be held closed as before.

In passing from the store roller to the receiving roller, the paper strip 16 is taken outside the casing over a suitable platform 31 so that a printed record of the last few sales recorded is exposed to view and if necessary additional matter may be written on the strip by the operator. From the platform 31 the paper strip is passed over a guide roller 32, between two rubber coated feed rollers 33 and 34 in frictional engagement and then on to the take up roller. The two feed rollers 33 and 34 are operatively connected with each other and the store roll by gears 33', 34', 18' and 18''.

Means are provided for advancing the paper strip one step each time the pivoted frame is moved to secure a printed record, and such means conveniently comprise a bell crank lever 35 freely pivoted on the spindle of the upper feed roller 33 and having a spring controlled pawl 36 engaging a circular ratchet 37 secured to the gear 34'. One arm of the bell crank is connected to

the main frame by a tension spring. The arrangement is such that as the pivoted frame is raised about its pivot the pawl 36 rides freely over the ratchet but on the return movement of the pivoted frame the lower bell crank arm engages with a stop 38 on the main frame to displace the bell crank about its pivot and cause the pawl to engage and displace the ratchet and feed the paper strip one step.

The machine according to the present invention, it will be seen, is thus comparatively simple and very flexible since it may be readily adapted for the individual needs of any particular trade.

I claim:

1. A cash register embodying therein a casing, a manually operable drum mounted in said casing, one arc of said drum having a plurality of finger grips representing different money values respectively accessible from one side of said casing, and an opposite arc upon said drum having complementary money value representations thereon, said casing having a sight opening therein adjacent said last named arc of the drum, means limiting the movement of said drum to a partial revolution coinciding with the arcuate portion thereof having said money representations, a segment having printing characters thereon, connections between said segment and said drum whereby movement of said drum will impart similar simultaneous movement to said printing segment, a printing mechanism associated with said segment, means carrying and actuating a recording strip, a locking member co-operating with said drum to hold it and its printing segment against return movement after they have been set and during the actuation of said printing mechanism, and means whereby said locking member may be released to permit the free rotation of said drum.

2. A cash register embodying therein a casing, a manually operable drum mounted in said casing, one arc of said drum having a plurality of finger grips representing different money values respectively accessible from one side of said casing, and an opposite arc upon said drum having complementary money value representations thereon, said casing having a sight opening therein adjacent said last named arc of the drum, means limiting the movement of said drum to a partial revolution coinciding with the arcuate portion thereof having said money representations, a segment having printing characters thereon, connections between said segment and said drum whereby movement of said drum will impart similar simultaneous movement to said printing segment, a printing mechanism associated with said segment, an oscillatory frame, supply and rewind reels carried thereby, a platen roller over which a recording strip passes, means for imparting oscillatory movement to said frame, means actuating said rewind roller and imparting feeding movement to said recording strip following the making of each impression, a locking

member co-operating with said drum to hold it and its printing segment against return movement after they have been set and during the actuation of said printing mechanism, and means whereby said locking member may be released to permit the free rotation of said drum.

3. A cash register embodying therein a casing, a manually operable drum mounted in said casing, one arc of said drum having a plurality of finger grips representing different money values respectively accessible from one side of said casing, and an opposite arc upon said drum having complementary money value representations thereon, said casing having a sight opening therein adjacent said last named arc of the drum, means limiting the movement of said drum to a partial revolution coinciding with the arcuate portion thereof having said money representations, a segment having printing characters thereon, connections between said segment and said drum whereby movement of said drum will impart similar simultaneous movement to said printing segment, a printing mechanism associated with said segment, means carrying and actuating a recording strip, each finger grip having associated therewith a socket, a pivotal stop lever having a bolt adapted to enter a socket in said drum, means normally urging said stop lever toward said drum, and a release lever to disengage said bolt from a socket.

4. A cash register embodying therein a casing, a plurality of manually operable drums mounted in said casing, one arc of each drum having a plurality of finger grips representing different money values respectively accessible from one side of said casing, and an opposite arc of each drum having complementary money value representations thereon, said casing having a sight opening therein adjacent said last named arc of said drums, means limiting the movement of each drum to a partial revolution coinciding with the arcuate portion thereof having said money representations, a plurality of segments each having printing characters thereon, connections between each said segment and an associated drum whereby movement of said drums will impart similar simultaneous movement to said printing segments, a printing mechanism associated with each segment, an oscillatory frame, supply and rewind reels carried thereby, a platen roller over which a recording strip passes, means for imparting oscillatory movement to said frame, means actuating said rewind roller and imparting feeding movement to said recording strip following the making of each impression, a locking member co-operating with each drum to hold it and its printing segment against return movement after they have been set and during the actuation of said printing mechanism, and means whereby said locking members may be released to permit the free rotation of said drums.

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