W. SUMNER.

CASH REGISTER.

APPLICATION FILED MAR. 29, 1915.

1,246,178.

Patented Nov. 13, 1917.

8 SHEETS—SHEET 1.

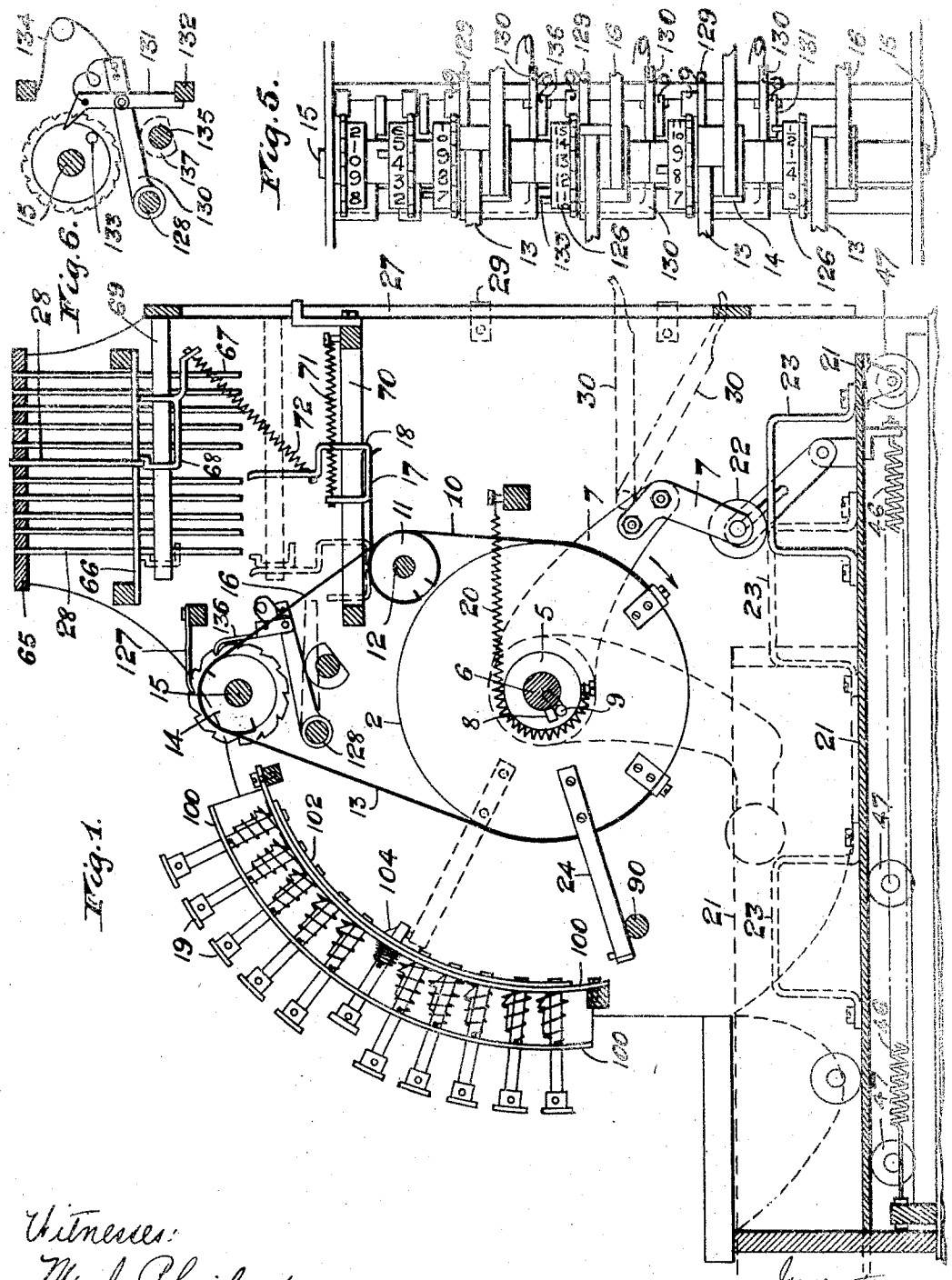


Fig. 1.

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8 SHEETS—SHEET 2.

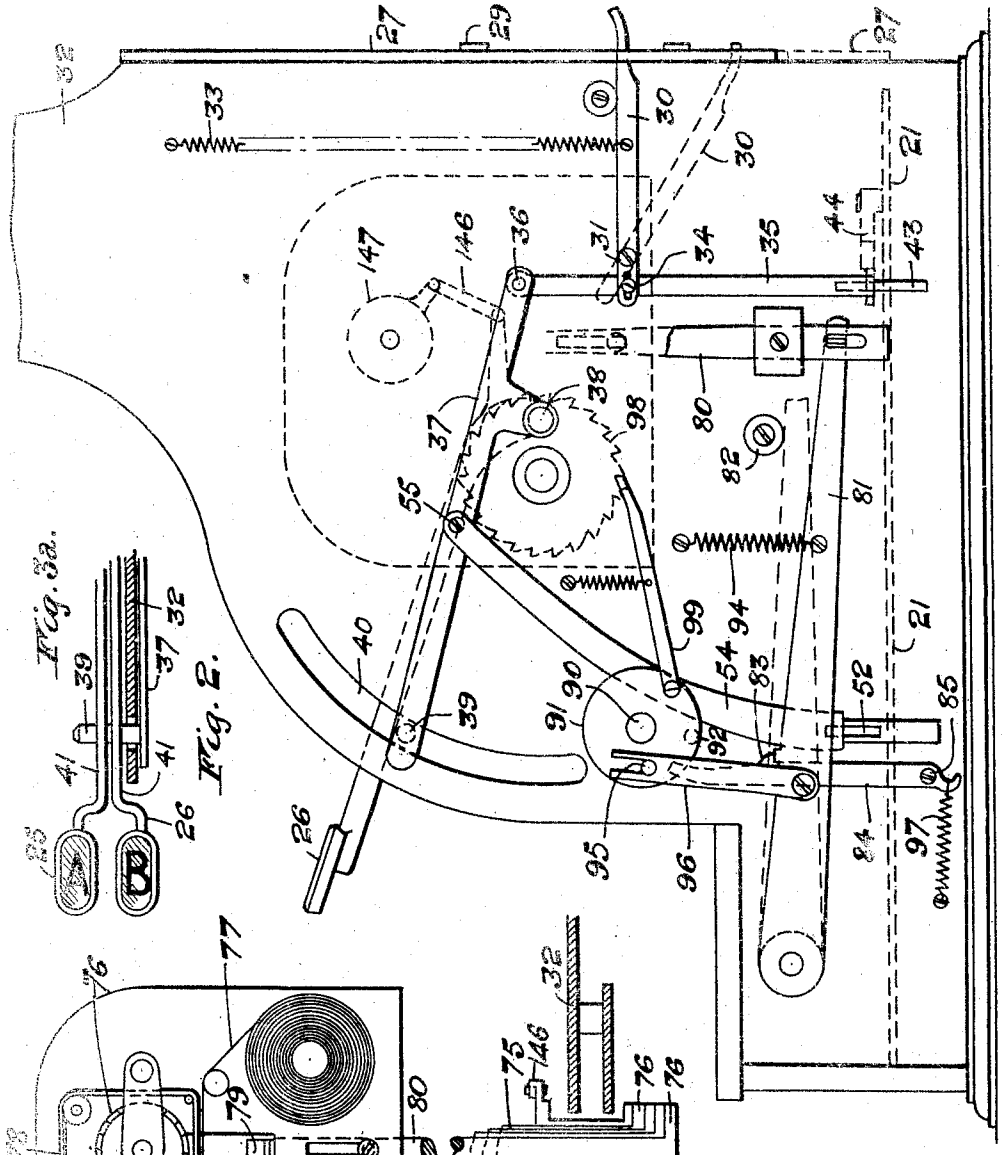


Fig. 2.

Fig. 3a.

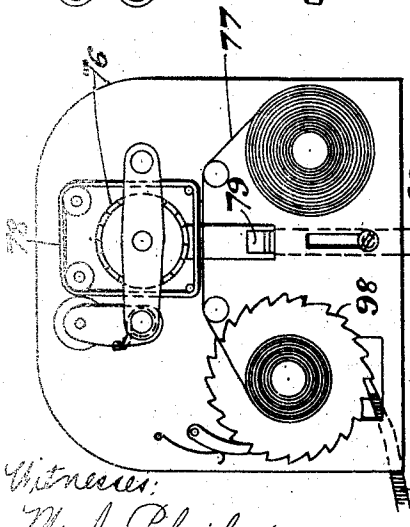


Fig. 9.

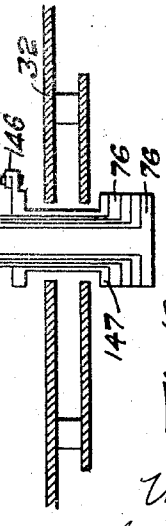


Fig. 10.

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8 SHEETS—SHEET 3.

Fig. 3.

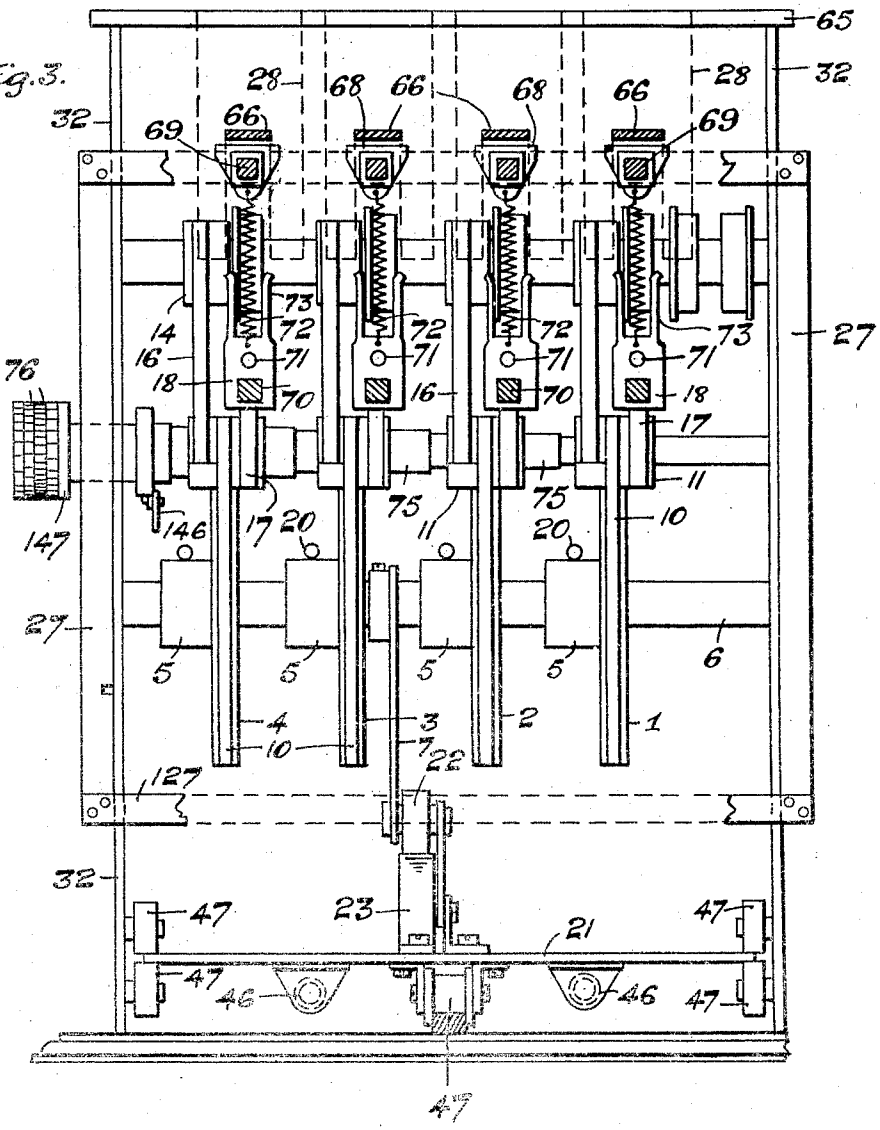
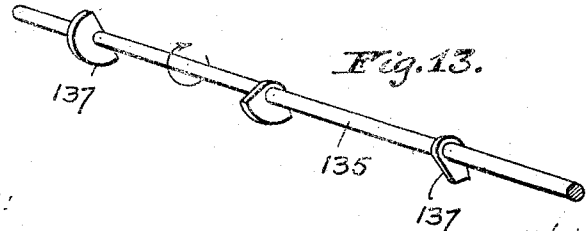


Fig. 13.



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8 SHEETS—SHEET 4.

Fig. 4.

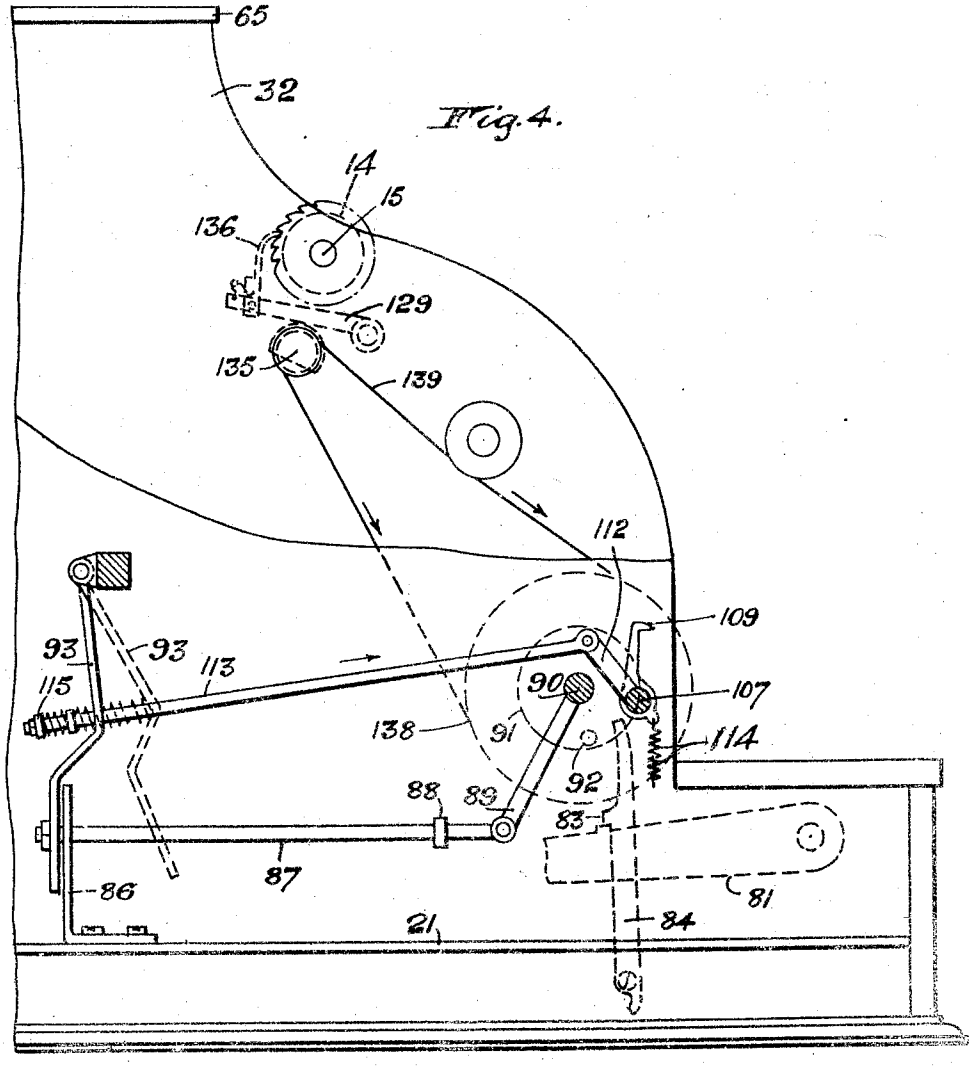
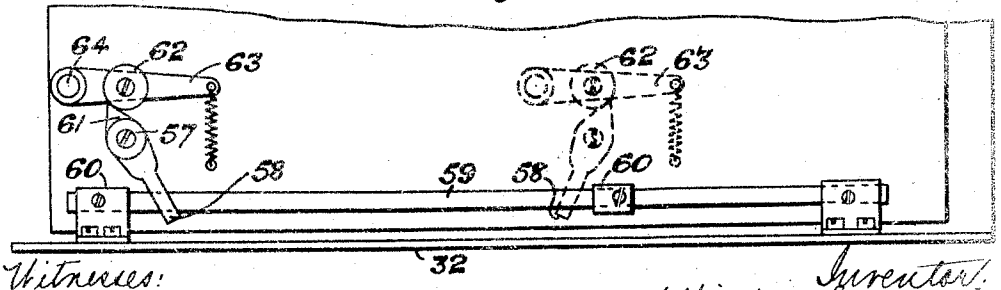


Fig. 12.



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8 SHEETS—SHEET 5.

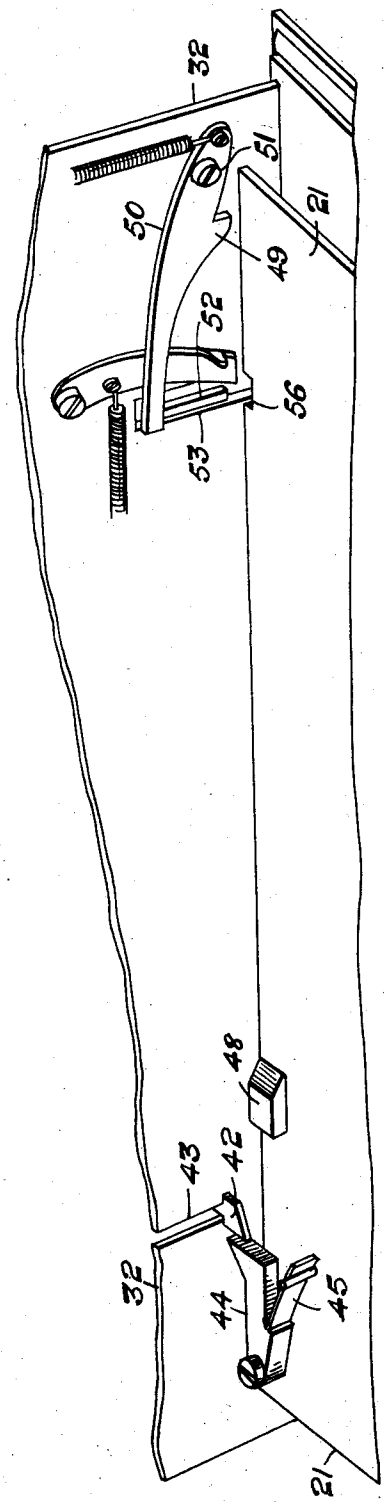


Fig. 11.

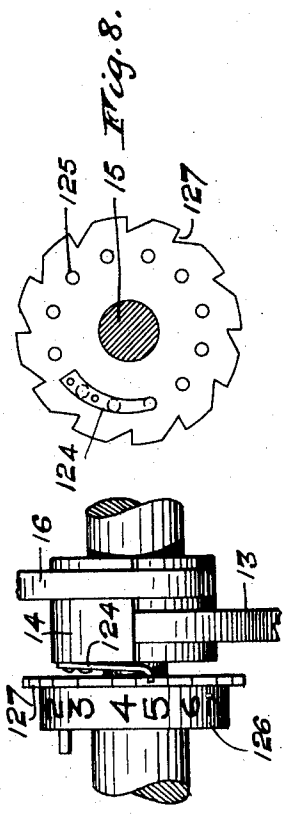


Fig. 8.

Fig. 7.

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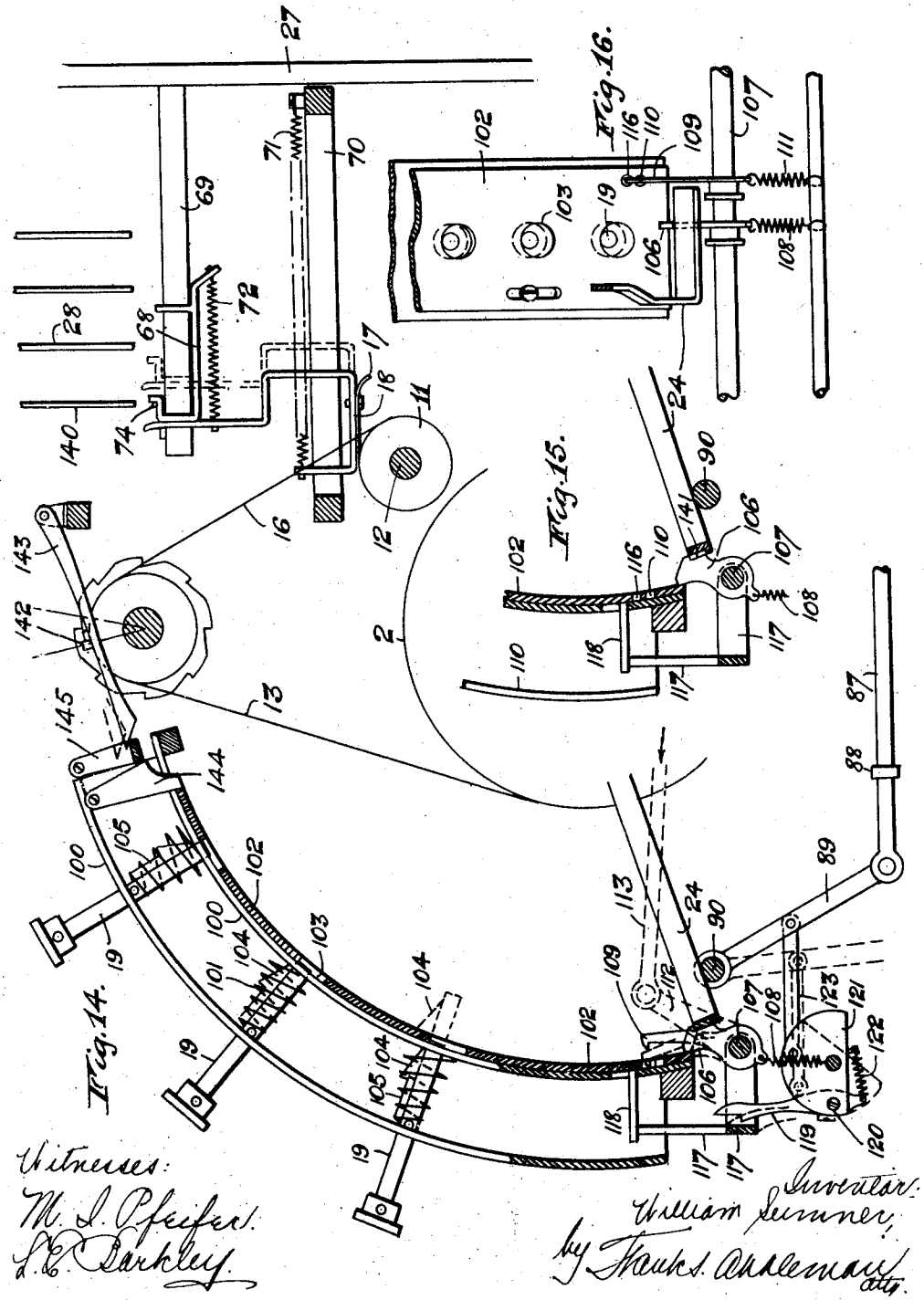
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8 SHEETS—SHEET 6.



W. SUMNER.

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8 SHEETS—SHEET 7.

Fig. 17.

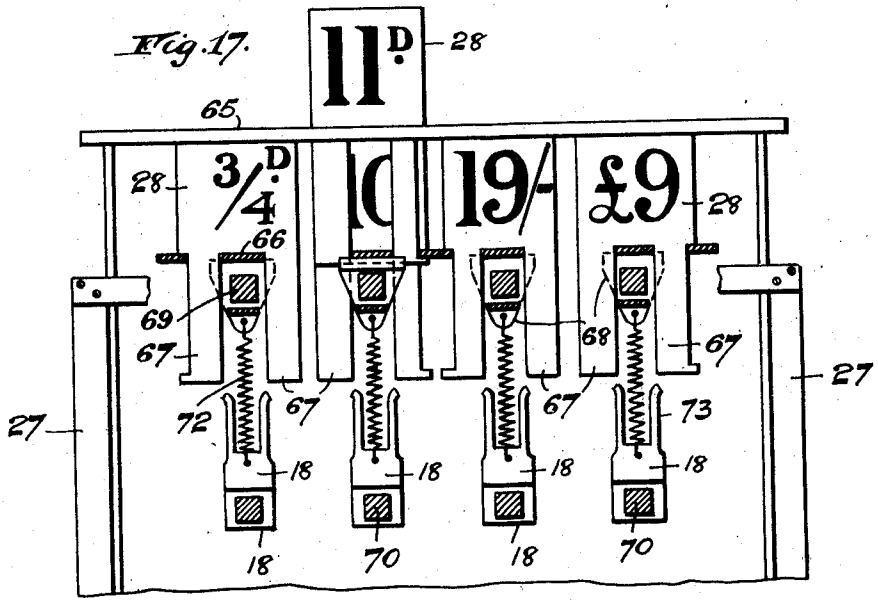
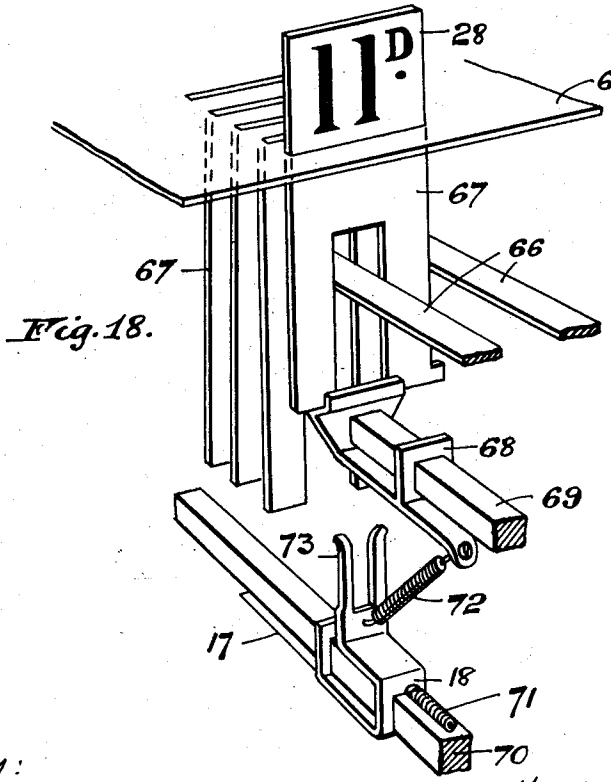


Fig. 18.



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8 SHEETS—SHEET 8.

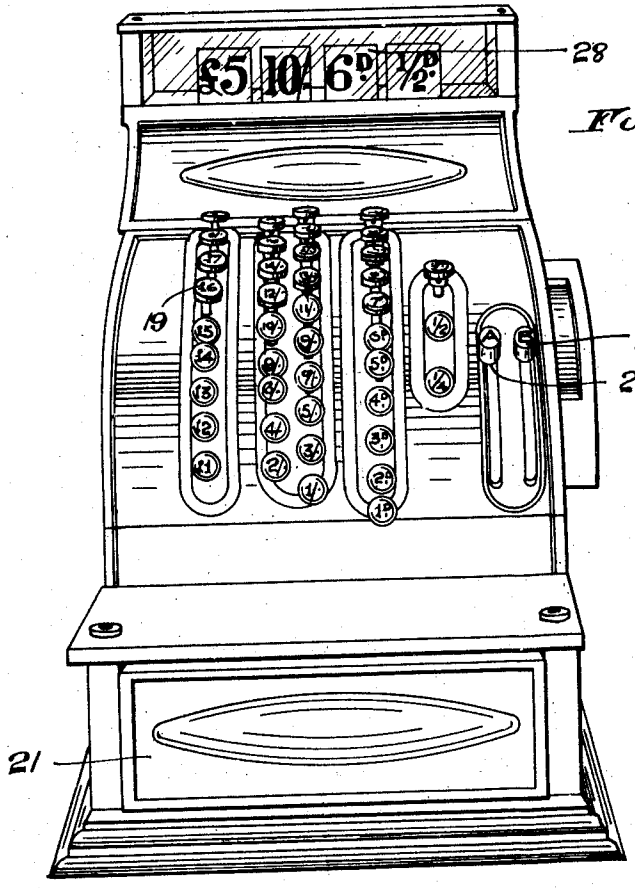


Fig. 20.

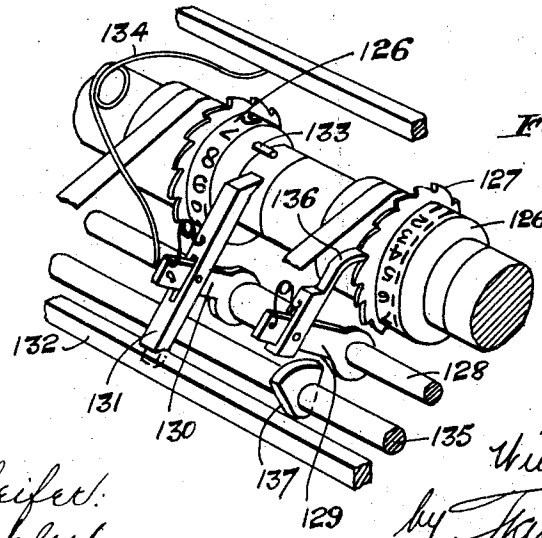


Fig. 19.

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UNITED STATES PATENT OFFICE.

WILLIAM SUMNER, OF LIVERPOOL, ENGLAND, ASSIGNOR TO UNIVERSAL ENGINEERING COMPANY, LIMITED, OF LIVERPOOL, ENGLAND.

CASH-REGISTER.

1,246,178. Specification of Letters Patent. Patented Nov. 13, 1917.

Application filed March 29, 1915. Serial No. 17,824.

To all whom it may concern:

Be it known that I, WILLIAM SUMNER, a subject of the King of Great Britain, and a resident of Liverpool, England, have invented certain new and useful Improvements Relating to Cash-Registers, of which the following is a specification.

This invention relates to improvements in cash registers, the movement of the various devices in which, such as the sales amount totalizer, sales record printing mechanism, and sales indicating tablets, are operated by means of flexible bands coupling such devices to the main setting drums of the machine.

According to this invention, the movement of certain of the various devices in the machine is obtained from the main setting drums by positively coupling drums or the like on the spindles of such devices to the main setting drums by means of flexible bands or the like, the rotary movement of the devices in either direction being thus positively obtained. Further features of the invention relate to an improved arrangement and construction of the key mechanism of the machine; to means whereby the operation of the various parts of the machine in recording a sale is effected by the action of a control key, or keys, which releases a spring controlled cash drawer, the opening movement of which permits the main setting drums to rotate to their determined positions and so position the coördinated devices; to means whereby the carrying over of an increment from one numeral disk in the totalizer to the next higher disk in value is effected on the terminal closing movement of the drawer and after the main operation of the totalizer has been effected; and to means whereby a "no sale" tablet is displayed if no coin keys have been depressed and when the drawer is released by the control key, without any special "no sale" key being provided.

To operate the machine, the keys for the particular sale record are depressed; these act to limit the subsequent angular movement of the setting drums. A control key is then depressed, releasing the spring controlled drawer, which in opening permits the angular movement of the setting drums, and positions the various devices, displays the sale tablets, and prints the sale record, the closing of the drawer returning the setting drums, releasing the keys, operating the summing action of the totalizer, and re-setting the printing mechanism.

A cash register in accordance with this invention is illustrated diagrammatically in the accompanying drawings, in which Figure 1. is a side view, in section, of the register, Fig. 2. being a side view, in elevation, looked at in the same direction as Fig. 1, and Fig. 3. an elevational rear view, partly in section. Fig. 3ª. is a fragmentary plan of the control keys. Fig. 4. is a fragmentary side view, partly in section, showing the method of operating the increment carry-over of the totalizer and the printing release mechanism from the cash drawer. Fig. 5. is a fragmentary plan view of the totalizer train, and Fig. 6. a cross section of Fig. 5. in the zone of the pence unit. Figs. 7. and 8. are a fragmentary plan and sectional end view of the pence unit of the totalizer, showing the trailing pawl connection. Fig. 9. is a side view of the printing mechanism, and Fig. 10. a fragmentary plan of Fig. 9., in section, showing the method of carrying the type faced disks from concentric sleeves on the printing mechanism spindle. Fig. 11. is a perspective detail, to a larger scale, showing the releasing and controlling catch mechanism of the cash drawer. Fig. 12. is a fragmentary plan of the control mechanism for preventing reversed movement of the drawer. Fig. 13. is a perspective view, illustrating the sequential arrangement of the cams for operating the totalizer. Fig. 14. is a section, on an enlarged scale, of a key bank showing the "no sale" tablet indicating mechanism, Fig. 15. being a fragmentary detail of the lower part of the key bank shown in Fig. 14., and Fig. 16. is a rear view of the lower part of one of the key banks and the inner locking plate. Fig. 17. is a rear view of the sale tablet indicating mechanism, Fig. 18. being a fragmentary perspective view showing the sale tablet lifting gear. Fig. 19. is a perspective view of two units of the totalizer train, illustrating the means for carrying

over an increment from one unit drum to the next of higher value, and Fig. 20. is a front view of the cash register.

The setting device comprises, say, four drums 1, 2, 3, 4, for English coinage, corresponding to pounds, shillings, pence, and farthings, but for other denominations of coin the number of setting drums would be varied accordingly. These setting drums are fixed to sleeves 5 mounted loosely upon a main shaft 6, which carries a control arm 7, projections 8 on the main shaft engaging abutments 9 on the sleeves so as to provide for lost motion between the shaft 6 and the setting drums. Flexible bands 10 are led from these setting drums to corresponding drums 11 loose on the shaft 12 of the printing mechanism. Flexible bands 13 are also led, preferably from the other side of the setting drums, to corresponding drums 14 mounted loosely on the shaft 15 of the totalizer mechanism, such totalizer drums being similarly connected by bands 16 to the printing spindle drums 11 so that these three devices are positively coupled by the bands which are pinned or fixed to the setting drums, to the totalizer drums, and the printing drums, the effect being that of a continuous band rotatively and positively coupling all three devices. Flexible bands 17 are led from the printing drums and connected to slidable guides 18 for controlling the sale tablet lifters, to which guides the bands 17 permit spring controlled positioning movement. According, therefore, to the angular movement of the setting drums 1, 2, 3, 4, so will the printing mechanism drums 11, the totalizer drums 14, and the sale tablet lifter guides 18 be adjusted. The setting drums are rotated on their shaft to the positions for which the keys 19 have been set, by springs 20, and are returned against the action of the springs to their initial position positively by the shaft 6, the projections 8 on which engage the abutments 9 on the drums. The rotation of the setting drum shaft 6 to permit and positively effect the rotation of the setting drums is controlled by the opening and closing of the cash drawer 21. The control arm 7 is fixed on the setting drum shaft 6, and is fitted with a roller 22 which engages a cam surface 23 on the drawer base, in such manner, that as the drawer is released and opens, the arm 7 is freed to rotate in the direction of the arrow, permitting the setting drums to rotate and their arms 24 to position themselves against the depressed keys. Each of the setting drums is loosely mounted on the shaft 6, so that they may be capable of relatively different angular movement, according to the positions of the keys depressed in each key bank. The release of the drawer 21 is effected by depressing one of the control keys 25, 26, Figs. 2. and 20., of which several may be fitted, these control keys when operated also actuating a vertically sliding frame 27 operating the sale indicating tablets 28. The frame 27 is vertically guided in any suitable manner, say, by lugs 29, and is engaged by the outer end of a lever 30 pivoted at 31 on, say, one of the side frames 32 of the machine. One end of a spring 33 engages the lever 30, and the other end is anchored to the side frame, as shown in Fig. 2., the action of this spring tending to return the frame to its normal upward position as shown in full lines, Figs. 1. and 2. The other end of the lever 30 is pivotally connected at 34 to a bar 35, the upper end of which is in turn pivotally connected at 36 to a rocking lever 37 pivoted at 38 to the side frame. The other end of this lever 37 is fitted with a stud 39 slidable in a curved slot 40 in the side frame, through which slot the stud 39 inwardly projects. The arms 41 of the control keys 25, 26 normally rest on the stud 39, so that the depression of either of the control keys 25, 26 depresses the stud 39 and raises the bar 35, this action pulling down the lever 30 to the position shown in dotted lines, Fig. 2., and permitting the frame to fall to the dotted position indicated in the same figure. As the bar 35 is raised an abutment 42 thereon, Fig. 11., on the interior of the side frame 32, rides up a slot 43, the abutment clearing the end of a catch 44 pivoted on the drawer 21 and controlled by a spring 45. When the abutment 42 clears the catch, the drawer is opened by the pull of the springs 46, and travels outward on the guide rollers 47. On the outward limit of its travel a projection 48 engages behind a lip 49 on a spring cacth 50 pivoted at 51, and retains the drawer open until the catch 50 is raised. The outer end of the catch normally bears on a rib 52 projecting through a slot 53 and carried on the foot of a bar 54 pivoted at 55 to the rocking lever 37. As the control key is depressed the rib 52 passes a notch 56 in the drawer base, so that while the drawer is opening the rib 52 is held beneath the drawer and the frame 27 retained in its lowered position until, when the drawer is fully open, the rib 52 rises through another notch, not shown, behind the catch 44, permitting the frame 27 to rise, the rising rib 52 lifting the catch 50 and freeing the lip 49 from the projections 48, thus enabling the drawer to be closed.

In order to prevent the movement of the drawer being reversed before completion after once being initiated, a lever pivoted at 57, Fig. 12., is fitted on the drawer, having an eye 58, or the like, slidably engaging a bar 59 fixed on the machine frame or base and having stops 60 at each end. The tail

61 of the pivoted lever is adapted to engage on one or other side of an abutment, such as a roller 62 mounted on a spring controlled lever 63 pivoted at 64, so that the pivoted lever 58, 61 may take up, and be resiliently held in, one of two inclined positions according as to whether the drawer is opening or closing, the lever being retained in the proper inclination for permitting slidable movement on the rod by its tail 61 engaging one or other side of the roller 62 on the spring lever 63. As the drawer reaches its fully opened or fully closed position the eye 58 of the lever is engaged by the end abutments 60 of the bar 59 and the lever canted over to its opposite inclined position, then permitting movement of the drawer in the reverse direction. The two movements of the lever are indicated in full and dotted lines.

The tablets 28 by which the amount of a sale is exhibited are arranged in banks, Figs. 1., 3., and 17., one bank for each denomination of coin to be registered. Each tablet is preferably vertically guided in a frame comprising an upper slotted plate 65 and a lower bar frame the bars 66 of which engage forked ends 67 on the tablets. The tablets are adapted to be raised to the display position above the plate 65 by lifters 68 slidable on bars 69 beneath the tablets, such bars being carried on the vertically movable frame 27 operated by the control keys 25, 26. These lifters 68 when the frame 27 is down, are positioned beneath the tablets to be raised by the guides 18 slidable on lower fixed rods 70 on the machine framework, such guides 18 being controlled by spring 71 and permitted to move under their spring control to correctly position the tablet lifters 68 by means of the flexible bands 17, which are connected to the guides 18 and to the drums 11 on the printing mechanism spindle. Each lifter 68 is itself spring controlled by means of springs 72 connected to the lifter and its guide. If a series of keys be depressed and a control key operated, the frame 27 is lowered, carrying with it the lifters 68 and bringing them into engagement in front of the forked arms 73 of the guides on the lower fixed rods, the guides being in their normal retracted position shown in dotted lines, Fig. 1. Further depression of the control key releases the drawer 21, which in opening retains the frame 27 in its lowered position, also operating the setting drums 1, 2, 3, 4, and unwinding certain amounts of the bands 17 from the printing spindle drums 11, and allowing the control springs 71 of the guides 18 to position the lifter elements 68 beneath the lower edges of the requisite tablets. On the terminal opening movement of the drawer the vertical frame is released from the position in which it has been held during this operation, and rising under the action of the controlling spring 33 raises the tablets to the display position, the lifters 68 being raised by the bars 69 on the frame. When the drawer is closed, the tablet lifters 68 are retained behind the raised tablets by a lip 74 which remains caught behind the tablet edge, so that their controlling springs 72 cannot return them to their initial position until one of the control keys is again depressed to operate the machine, when the frame 27 is again lowered, permitting the tablets to fall and then freeing the lifters 68 from engagement behind their respective tablets, the springs 72 returning the lifters to the normal position shown in dotted lines, Fig. 1., against the guides which had been positively returned by the bands on closing the drawer.

The printing mechanism for the sales record comprises a series of loose drums 11, one for each setting drum and coupled thereto by flexible bands 10, each printing drum 11 being integrally connected, preferably by means of concentric sleeves 75, Figs. 3. and 10., to type faced disks 76. These disks are fixed axially, a recording band 77 being arranged to travel across the disks and below a continuous inking ribbon 78, or the like. A movable platen 79 is arranged to strike the bands 77 against the type disks, the platen being mounted on a vertically movable weighted rod 80, Figs. 2. and 9., operated by a spring controlled lever 81 impinging against a resilient stop 82 and normally retained in its depressed position by a trigger mechanism 83 carried on a spring controlled lever 84 pivoted at 85, but released on the final opening movement of the drawer, and set on the final closing movement. This is effected in the following manner:—On the drawer is a bracket 86, Fig. 4., an aperture in which slides along a rod 87 fitted with a stop 88 and connected to an arm 89 on a rocker shaft 90. The rocker shaft carries a disk 91 fitted with a pin 92, Figs. 2. and 4., adapted to engage the end of the trigger lever 84. The other end of the rod 87 is connected to a hanging lever 93. As the drawer opens, the bracket 86 engages the stop 88, rocking the shaft 90 and causing the pin 92 to engage the lever 84, the trigger 83 being released and the platen lever 81 raised sharply by the spring 94. As the drawer closes the bracket 86 engages the lever 93 and pulls the rod 87 back, rotating the disk 91 in an opposite direction and causing another pin 95 thereon to push down a forked link 96, depressing the lever 81 and enabling the spring 97 to reset the trigger 83. A ratchet wheel 98 on the take-up printing band spindle is also moved step by step on each closing movement of the

drawer, by a pawl lever 99 coupled to the disk 91 on the rocker shaft, so that as the drawer opens it retracts the pawl, causing it to engage behind the next ratchet tooth, the terminal closing movement of the drawer rotating the ratchet 98 and advancing the paper.

The angular movement of the setting drums is limited by the keys 19 when depressed. These are arranged in preferably curved banks corresponding to the denominations of coin, the keys being radially disposed. The keys are slidably mounted in fixed curved plates 100, Figs. 1. and 14., and are held in their normal outward position by springs 101. A curved locking plate 102 is mounted in any suitable manner along the face of the inner fixed plate and controlled by springs or gravity so that it tends to fall and lock the keys when depressed. The locking plate is provided with perforations 103 corresponding to the number of keys, and each key is provided with a cam face 104 and a flat rib 105. As the key is depressed the cam face lifts the locking plate until the peak of the cam has passed the plate, when the latter falls behind the shoulder of the cam and retains the key depressed against the action of its spring. Two keys in one bank controlled by the same locking plate cannot be left down at the same time, the act of pressing down the second key lifting the plate and permitting the first key to fly back through its perforation under the action of the key spring. Engaging with each setting drum arm 24 is a catch 106, Fig. 14., pivoted on a shaft 107 and controlled by a spring 108. In the initial position of the drums a projection on the catch engages the arm as shown, and locks the setting drum against movement, if no key has been depressed. The spring 108 tends to rotate the catches clear of the setting drum arms, but are normally prevented by the lower edge of the locking plate 102. If no key is depressed and the drawer opened by a control key 25 or 26, although the setting drum shaft control arm 7 may oscillate, the setting drums remain stationary, the arms being held by the catches. Should a key be depressed, the locking plate is lifted and the catch of that key bank free to be pulled by its spring clear of the corresponding setting drum arm, the flat rib 105 on the key shank holding the locking plate partially raised. The catch 106 and another hook 109 are, however, prevented from being rotated by their springs 108, 111, until the drawer opens permitting a rod 113 to move in the direction of the arrow. Simultaneously with the rotation of each catch 106 clear from its setting drum arm, the hooked arm 109 pivoted on the catch shaft engages the lower one 110 of two perforations in the raised locking plate by a spring control 111, preventing another key in that bank from being now depressed in substitution, the locking plate being held down. The rotation of the catches 106 and hooks 109 only takes place, however, as the drawer opens. Connected to the shaft 107 is an arm 112 coupled resiliently by a tie rod 113 to the lever 93, Fig. 4., a spring 114 being located behind the lever 93 and retained by a nut 115. When the drawer is closed the spring 114 is partially compressed and in this condition holds the catch 106 and the hook 109, by means of projections engaging these elements, against rotation by their springs 108, 111. As the drawer opens and the spring 114 extends and its compression is reduced, the spring 108, 111 free the catch 106 and engage the hook 109. If no key in a bank is depressed the corresponding hooked arm 109 of that bank engages the upper perforation 116, Fig. 15., and similarly locks the plate against any key being lowered in that bank after the drawer is opened. As the drawer is operated the setting drum arms 24 rise until arrested by the depressed keys, thus permitting the setting drums to rotate. On closing the drawer the drums are positively brought back by the bands, the terminal movement of closing the drawer resiliently actuating the pull rod 113 which re-sets the catches 106 on the drum arms and frees the hooked arms 109 from the locking plate. The locking plate is also lifted on this terminal movement of the drawer to free the keys by the raising of the bar 117, pivoted on the shaft 107, which engages a projection 118 on the curved locking plate 102, and is in turn lifted by a shouldered pawl 119 pivoted at 120 on a rotary disk 121 and controlled by a spring 122, which disk is coupled by a link 123 to the lever 89 on the rocking shaft and operated by the drawer. The pawl 119 is engaged beneath the bar 117, as shown in dotted lines, on the opening movement of the drawer, the link 123 oscillating the disk 121 to the dotted position. The final closing movement of the drawer rocks the pawl disk 121, lifting the pawl which raises the locking plate 102 and releases the keys.

The totalizer mechanism is operated from the setting drums 2 positively by means of flexible bands 13, 16, leading to the totalizer from the setting drums and from the printing spindle drums, which in turn are positively coupled to the setting drums by bands 10. The flexible bands 13 from the setting drums pass on to drums 14 loosely mounted on the totalizer spindle. These drums are fitted with resilient pawls 124, Figs. 7. and 8., adapted to engage with a series of perforations 125 or the like in the numeral disks

of the totalizer. When the machine is operated and the setting drums rotate, the pawl drums 14 of the totalizer train will also be rotated a corresponding amount, causing the spring pawls 124 to trail idly past the perforations 125 in the stationary numeral disks 126 until the backward movement of the pawl drums ceases. On closing the drawer the pawl drums rotate in a contrary direction, the pawl gears now positively rotating the numeral disks a corresponding amount to that which the pawl drums have been previously backwardly rotated. The various amounts are thus added to the total. The numeral disks 126 are provided with ratchet mechanism 127 so that they may only rotate in one direction.

In order to carry over an increment of, say, a penny to the shillings disk, or a shilling to the pounds disk, a shaft 128 is fitted near the totalizer spindle on which shaft are a series of levers 129, 130 coupled in pairs, Figs. 5. 6. and 19., the levers of each pair being integrally connected by a sleeve and the pair elements loosely mounted on a shaft 128 so that they may rock thereon. One lever 130 of each pair is provided with a spring controlled pivoted catch 131 which in its normal position prevents the lever pair from falling by reason of it engaging a fixed abutment such as a bar 132 on the machine. A projection 133 on each numeral disk 126 is so positioned that it deflects the catch when an increment is to be carried over from one disk to the next of higher value, the lever pair 129, 130 then falling a certain angular distance under the influence of a spring 134 on to a cam shaft 135. A pawl 136 on the second lever 129 then engages behind and takes up another tooth of the ratchet 127 on the next disk of higher value. In this way, at every complete rotation of a disk of one denomination, its twin lever fitting is allowed to fall back and its pawl 136 to retreat one tooth on the ratchet of the next higher value disk. The actual forward rotation of the levers 129, 130 to totalize the increment carried over on the train is only effected after the amount of the particular sale has been registered and totalized. Mounted below the increment levers is a cam shaft 135, the cams 137 on which engage and actuate the levers 129 only when the latter fall. Each twin lever mechanism has a separate cam, the cams of the series being sequentially advanced (see Fig. 13.) so that they come into action *seriatim* from the lowest coin denomination drum 126 to the highest. The cam shaft 135 is actuated, Fig. 4., from the lower shaft 90, which is rocked by the terminal movements of opening and closing the drawer. A large drum 138 is mounted on the shaft 90 and coupled by a flexible band or wire 139 to a small drum on the cam shaft 135. A small angular rotation of the shaft 90 thus effects a larger rotation of the cam shaft. On the opening of the drawer the cam shaft is rotated backward and the levers 129 allowed to fall on the flats of the cams, if the catches 131 have been deflected from the bars 132, and on the closing of the drawer the cams are rotated forward and lift those levers 129 which have fallen. This terminal increment movement of the totalizer by the cam shaft is effected only after the ordinary movement of the totalizer imparted by the bands during the primary closing movement of the drawer, by arranging that the cam surface 23 on the drawer engaging the setting drum shaft control arm shall have completed the return movement of such arm after the drawer has been partially closed, the cam 23 being then in the middle position, Fig. 1., the cam shaft being operated while the roller 22 rides along the top of the cam 23.

A "no sale" tablet indicating mechanism is provided which does not require a special key for its actuation. This is fitted in, say, the farthings bank of tablets, Fig. 14. The "no sale" tablet 140 is so positioned that it is raised by the farthings tablet lifter 68 when the latter is not moved, and the farthings setting drum not rotated. Some provision must be made, however, in order that the "no sale" tablet will not be lifted when a sale not embodying a farthings quantity is recorded. A slot 141, Fig. 15 is, therefore, cut in that part of the farthings drum arm 24 engaged by the catch 106, which slot, even when such catch mechanism is not released, as when a farthings key is not actuated, permits a slight rotation of the farthings setting drum, positioning the farthings tablet lifter in an inoperative position, shown in dotted lines, Fig. 14., between the "no sale" and the first farthings tablet 28, so that should a sale be registered not embodying a farthings quantity, the farthings lifter raises no tablet. In order, however, that such partial movement of the farthings setting drum arm shall not take place when none of the keys of the machine have been depressed, and when consequently the "no sale" tablet must be lifted and when the partial movement of the farthings setting drum arm would nevertheless occur, a projection 142 is formed on the farthings drum of the totalizer train, such projection being normally engaged by a trip pawl 143 when none of the keys of any denomination have been depressed, the "no sale" tablet 140 being then displayed by reason of such trip pawl holding the farthings totalizer drum and consequently the farthings setting drum arm against making the partial movement otherwise permitted by the slot 141 in the catch engaged end of its arm. When the

keys are depressed to register a sale not embodying a farthings quantity, the trip pawl 143 engaging the farthings totalizer drum is released, the upward movement of the locking plate 102 of any of the key banks pushing the pivoted catch 144, which swings a pivoted bar 145 which in turn raises the pawl 143, freeing it from the projection 142, and permitting the drum to be partially rotated the distance allowed by the slot 141 in the farthings setting drum arm, the "no sale" tablet being then not lifted. By such an arrangement, the machine does not require a special key for actuating the "no sale" tablet as is usually required, this being a feature of considerable importance.

Where two control keys 25, 26 are fitted, one of the keys, say 26, is connected by a link 146 to a separate printing disk 147, so that when such key is depressed a different type on the disk is brought into the printing position, the record otherwise printing from the normal type on that disk.

Means may be provided for re-setting the totalizer train to zero, and counter mechanisms fitted for indicating how many times the drawer has been opened, or otherwise recording the operations of the various devices of the machine.

I claim:—

1. In a cash registering machine, in combination, indicating keys arranged in groups, a main shaft, setting drums mounted on the main shaft and adapted to move thereon, vertically movable indicating tablets positioned in the register, each of said indicating tablets having a cam face on one end thereof, a locking plate having a plurality of openings adapted to fall in the path of travel of the indicating tablets, whereby the locking plate is moved, a drawer movable in the register, means for moving the drawer outwardly, a rod operated by the drawer, a hook connected to one end of the rod, said hook adapted to engage within one of the openings of the locking plate for moving the locking plate in locked position when the drawer is moved in one direction, and means for releasing the hook upon movement of the drawer in opposite direction.

2. In a cash registering machine, in combination, a main shaft, setting drums mounted on the main shaft and adapted to move therewith, a control arm carried by the main shaft, said control arm having a roller adjacent one end thereof, a drawer movable in the lower part of the register, a cam surface carried by the drawer and adapted to engage the control arm for moving the same in one direction, and means for moving the setting drums in the opposite direction.

3. In a cash registering machine, in combination, a main shaft, setting drums mounted on the main shaft and adapted to move therewith, control keys, a drawer movable in the lower part of the register, a cam face carried by the drawer, an arm mounted on the main shaft abutting the cam face, whereby said shaft is held against rotation, means for moving the drawer in one direction, control keys for releasing the drawer, indicating tablets in the cash register, and means operated by the control keys for moving a predetermined indicating tablet.

4. In a cash registering machine, in combination, a main shaft, setting drums mounted on the main shaft and adapted to move therewith, a drawer movable in the lower part of the register, a catch pivoted in the drawer, control keys, a bar operated by the control keys, an abutment on said bar engaging the catch for preventing movement of the drawer in one direction, means for holding the drawer in its open position, and automatic means for disengaging said drawer holding means to allow the drawer to be closed.

5. In a cash register, in combination, a main operating shaft, a series of setting drums on said shaft, a series of sale indicating tablets for each setting drum, a spring controlled sliding frame for raising predetermined tablets, a tablet engaging device, flexible means for connecting the tablet engaging means to the drums, a bank of keys for each setting drum for restricting the movement thereof, a spring actuated cash drawer indirectly actuating the setting drums, a control key adapted to release the drawer and a rib connected to the frame, said rib passing beneath the drawer on its release, and permitting the frame to rise when the drawer has reached the limit of its open position.

6. In a cash registering machine, in combination, a main shaft, setting drums mounted on the main shaft and adapted to move therewith, a control arm carried by the main shaft, a drawer movable in the bottom of the cash register, means carried by the drawer and engaging the control arm for moving the setting drums, type disks, a removable platen coöperating with the type disks, means for operating the platen, said means comprising a bracket carried by the drawer, a rod coöperating with the bracket, said rod having connection with the platen, a stop on said rod, said bracket adapted to engage said stop on movement of the drawer in one direction for permitting the platen to be moved into engagement with predetermined type disks, and means for returning the platen to its normal position.

7. In a cash register, in combination, a main operating shaft, a series of setting drums on said shaft, indicating tablets, means operated by movement of the setting

drums for moving predetermined indicating tablets, a bank of spring controlled keys for each setting drum, said keys adapted to restrict the movement of said setting drums, a locking plate for each key bank adapted to retain the keys in their displaced positions, a rotatable disk, a pawl on said disk adapted to engage and move said locking plate, and a movable cash drawer for actuating the setting drums and pawl.

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

WILLIAM SUMNER.

Witnesses:
A. J. DAVIES,
M. E. MITCHELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."