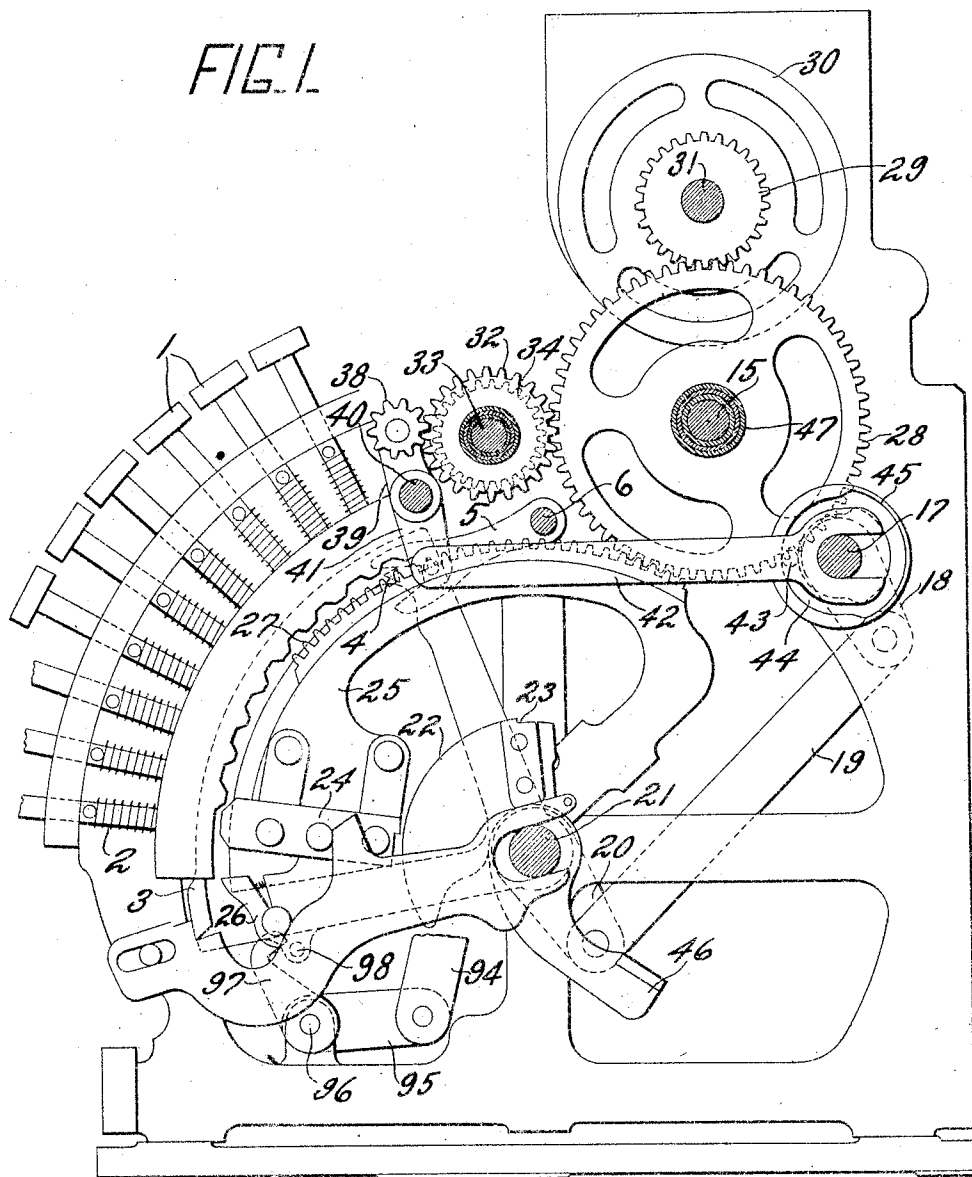


F. L. FULLER.
 TOTAL PRINTING CASH REGISTER.
 APPLICATION FILED JUNE 6, 1910.

1,022,230.

Patented Apr. 2, 1912.

8 SHEETS—SHEET 1.



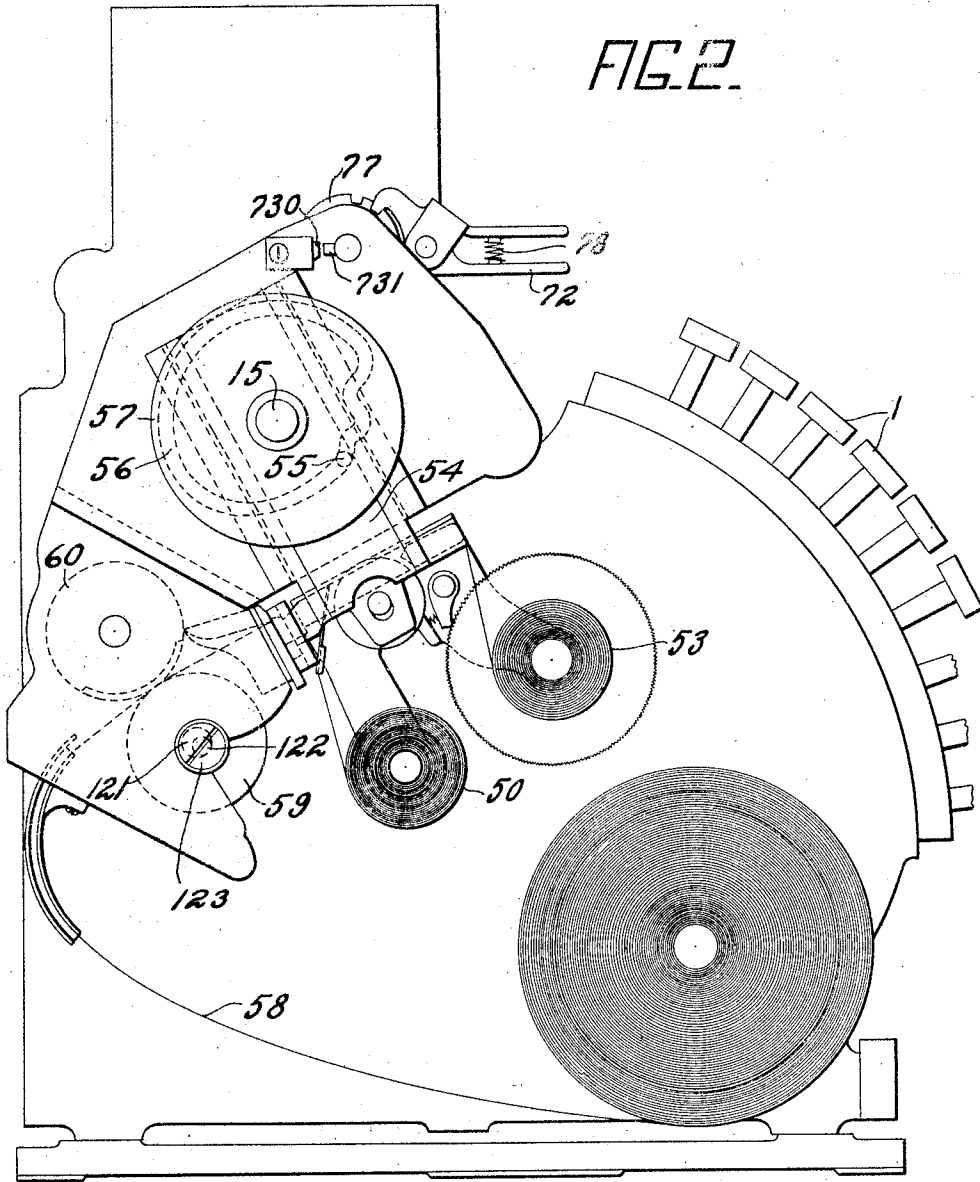
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8 SHEETS—SHEET 2.



WITNESSES:

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INVENTOR

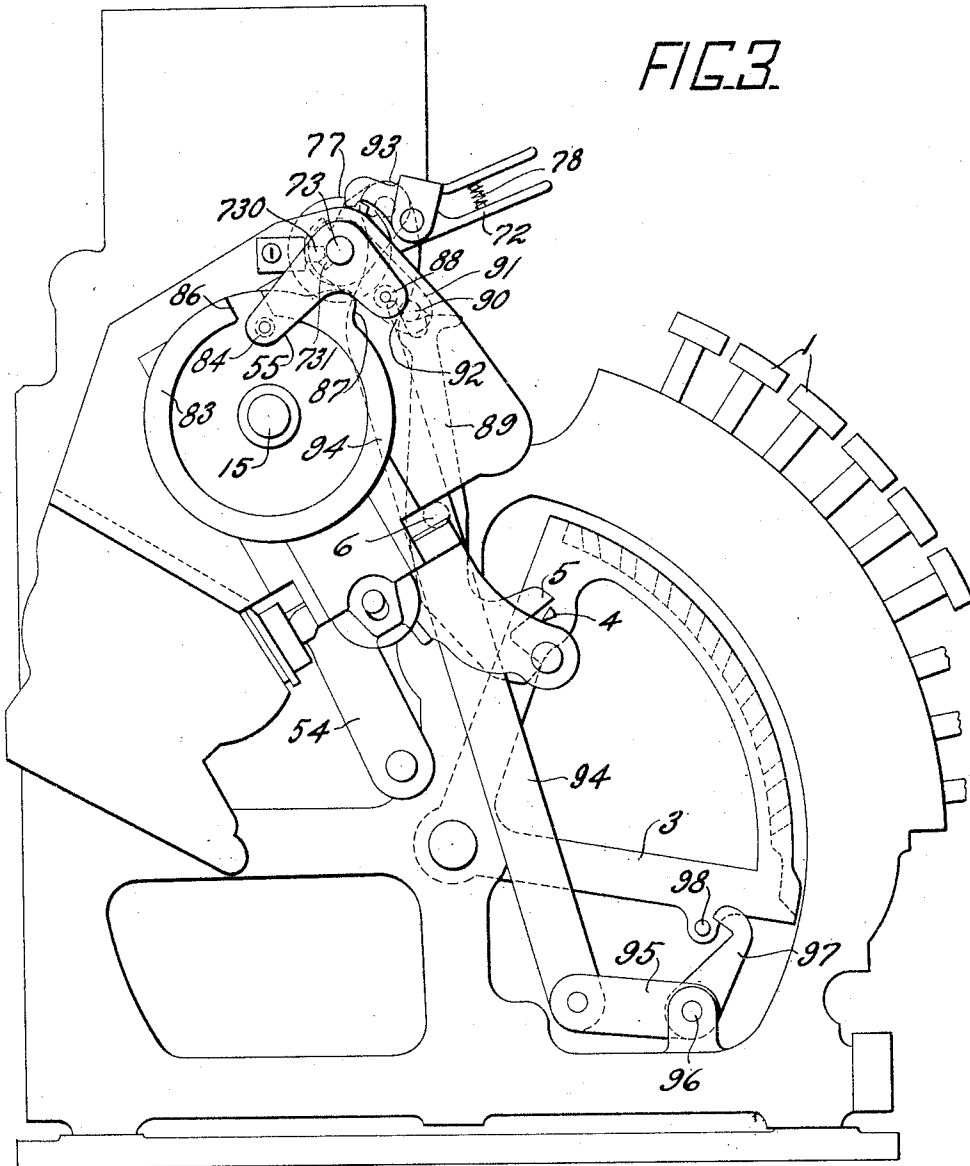
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8 SHEETS—SHEET 3.



WITNESSES:

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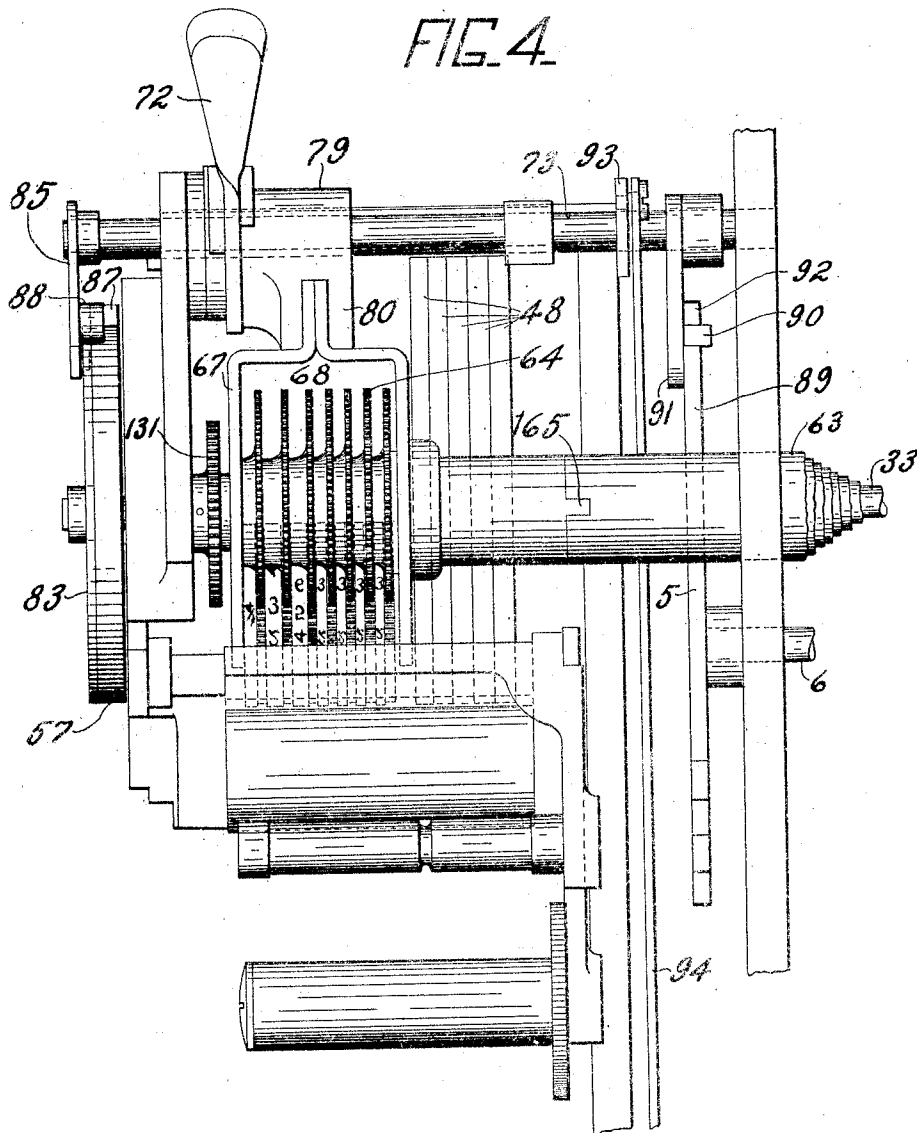
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Patented Apr. 2, 1912.

8 SHEETS—SHEET 4.



WITNESSES:

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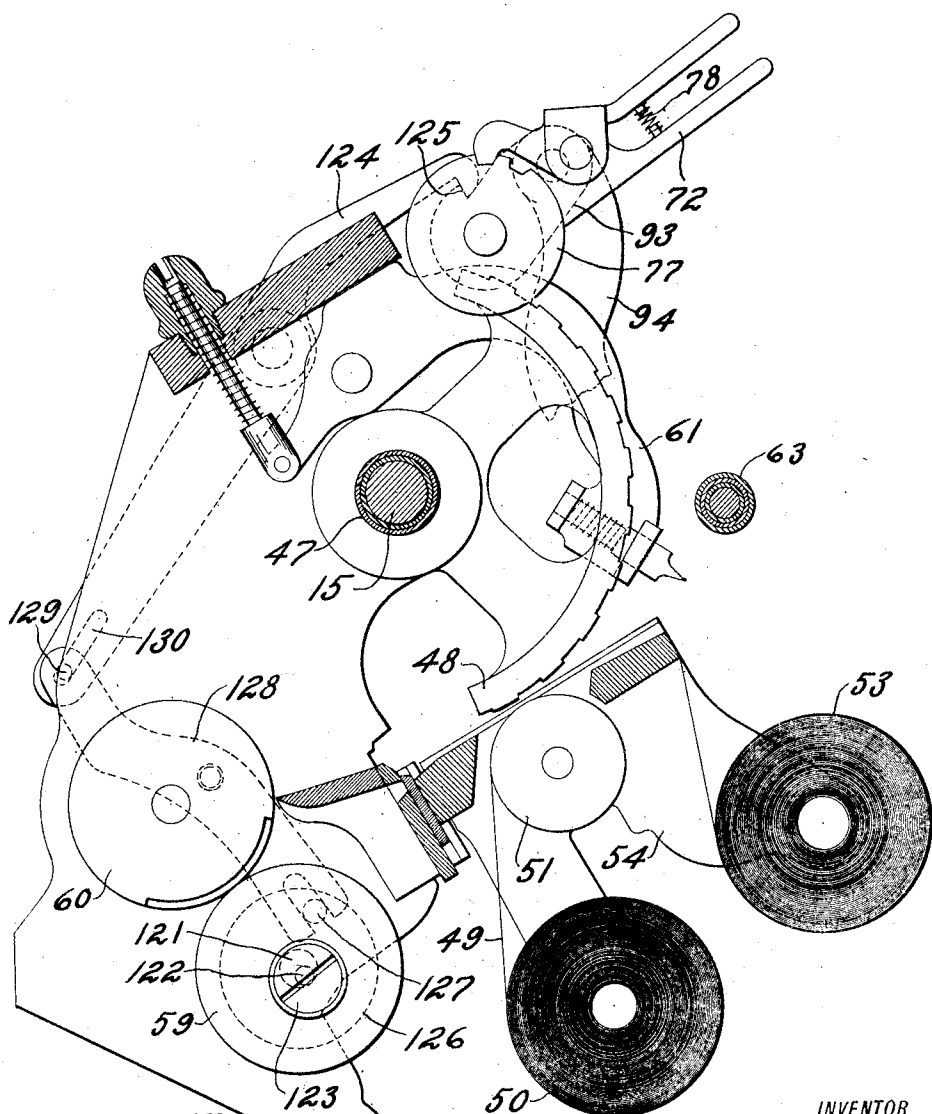
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8 SHEETS—SHEET 5.

FIG. 5.



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8 SHEETS--SHEET 6.

FIG. 6.

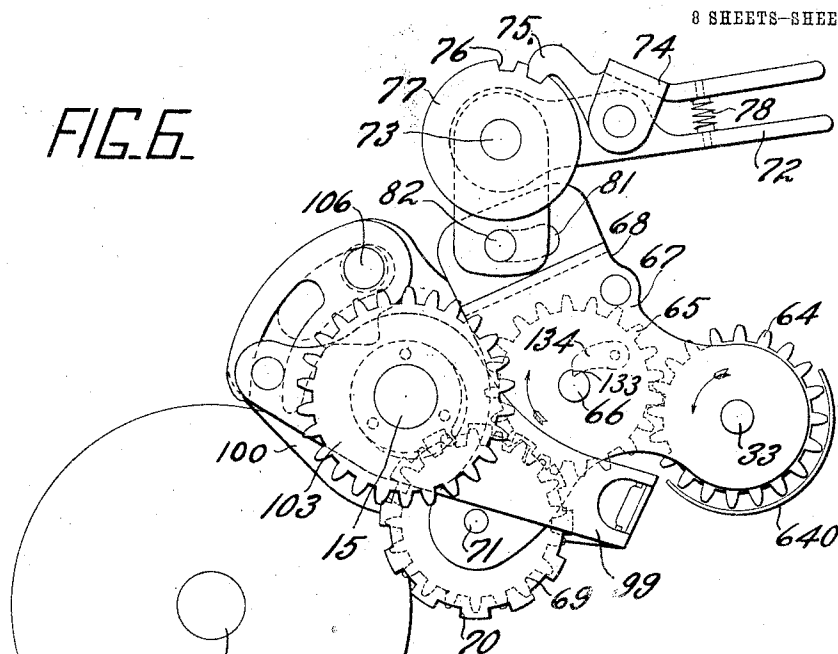
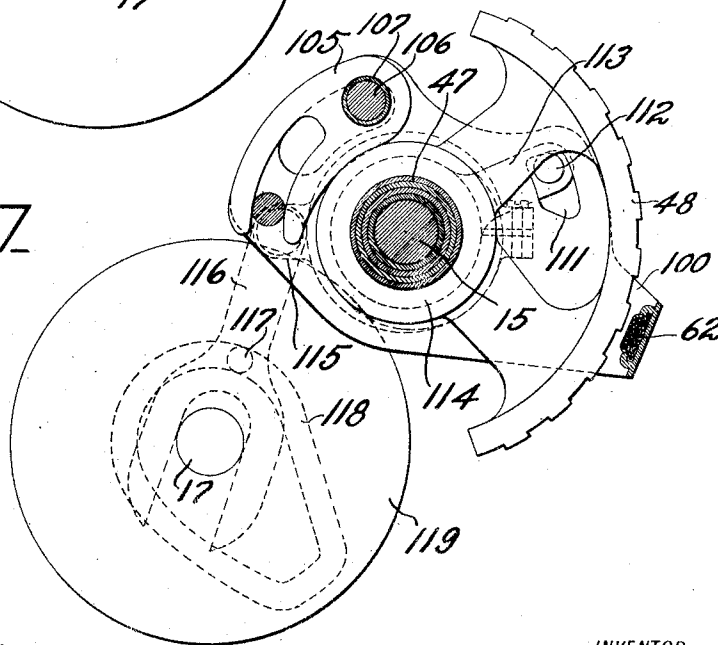


FIG. 7



WITNESSES:

WITNESSES:
P. H. Fairchild.
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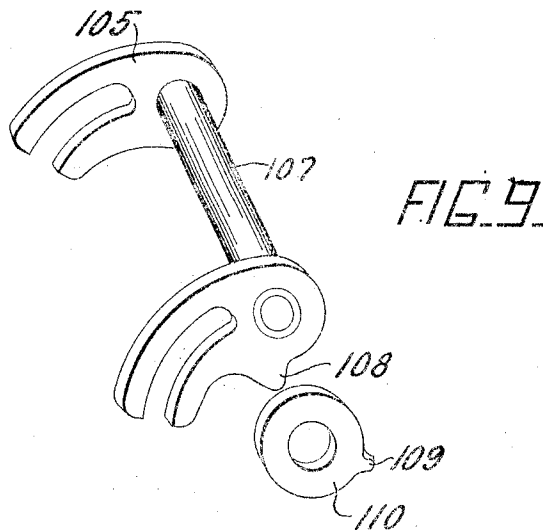
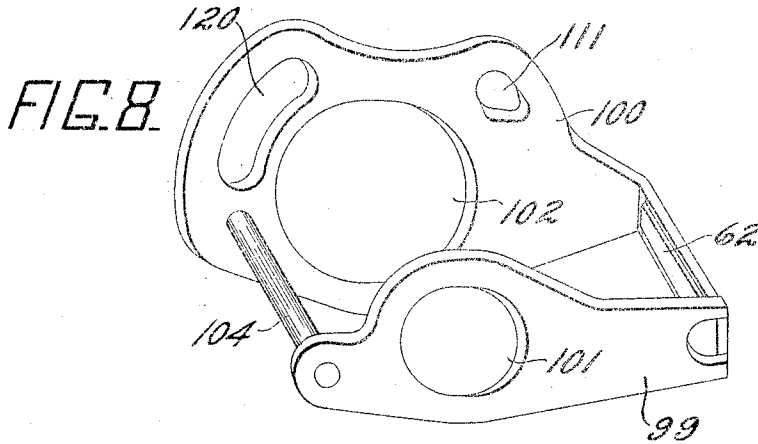
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APPLICATION FILED JUNE 6, 1910.

1,022,230.

Patented Apr. 2, 1912.
8 SHEETS—SHEET 7.



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APPLICATION FILED JUNE 6, 1910.

1,022,230.

Patented Apr. 2, 1912.

8 SHEETS—SHEET 8.

FIG. 10.

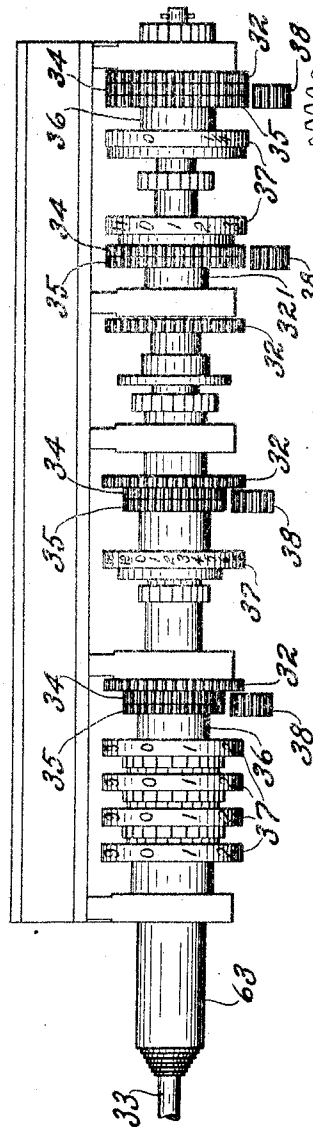


FIG. 11.

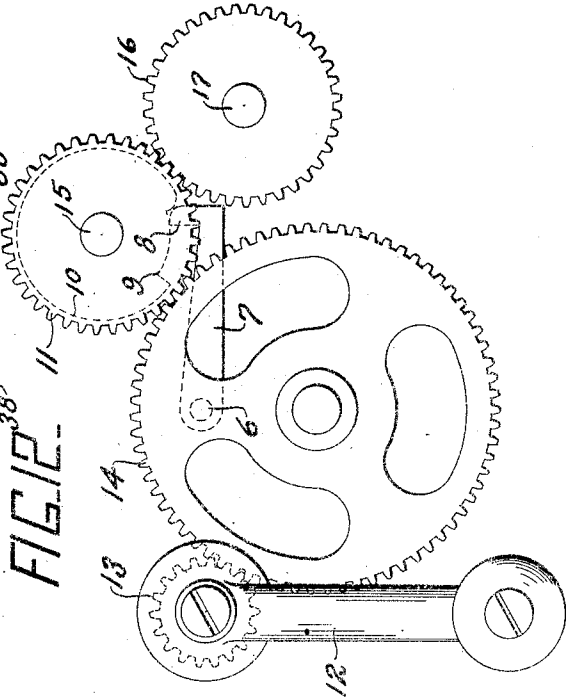


FIG. 12.

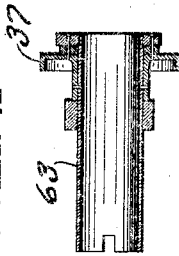
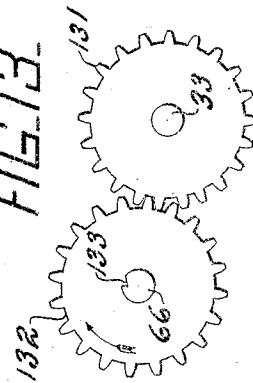


FIG. 13.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FREDERICK L. FULLER, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

TOTAL-PRINTING CASH-REGISTER.

1,022,230.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed June 6, 1910. Serial No. 565,390.

To all whom it may concern:

Be it known that I, FREDERICK L. FULLER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Total-Printing Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to accounting machines and more particularly to the printing mechanism thereof, and its principal object is to provide improved mechanism for printing totals as well as items upon a record strip.

Another object of this invention is to provide an interlocking mechanism between the manipulative devices which control the positioning of the item type carriers, and the mechanism for recording the total, so as to prevent the operation of the total recording mechanism when the item manipulative devices are operated, and to prevent the operation of the item manipulative devices when the total recording mechanism is positioned to record the total of the items.

Another object of this invention is to compel the disabling of the check strip feeding mechanism as an incident to the recording of the total.

Another object of this invention is to provide an improved form of inking mechanism for the type carriers.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred form of embodiment of which is hereinafter described with reference to the drawings which accompany and form part of the specification.

Figure 1 is a central transverse sectional view through a machine of the type shown in the Cleal and Reinhard Patent #580378, granted April 13, 1897, with the improvements applied thereto. Fig. 2 is a side elevation of the printing mechanism of the improved machine. Fig. 3 is a view somewhat similar to Fig. 2 and showing the

interlocking mechanism between the item manipulative devices and the total manipulative device. Fig. 4 is a partial front elevation of the printing mechanism. Fig. 5 is an enlarged central vertical section through the printing mechanism showing the control of the total manipulative device by the check feeding means. Fig. 6 is an elevation of the frame carrying the total type carriers, and the manipulative device for rocking the said frame. Fig. 7 is an enlarged sectional view through the printing mechanism showing in particular the inking mechanism. Fig. 8 is an enlarged perspective view of the frame carrying the inking pad. Fig. 9 is an enlarged perspective view of the arms of the cam for operating the inking frame. Fig. 10 is a front elevation of the totalizer mechanism showing the connecting sleeves for the total type carriers. Fig. 11 is a detail section showing one of the totalizer elements and the connecting sleeve for the corresponding total type carrier. Fig. 12 is a detail side elevation of the operating gearing. Fig. 13 is a detail elevation of the gearing for restoring the registering elements to zero.

Described in general terms the machine comprises several banks of manipulative devices which control the differential movement of actuating segments or devices, the latter in turn operating the indicating and registering mechanisms. These actuating segments set up item type carriers from which an impression is taken by the further operation of the machine. The registering mechanism is constructed to accumulate the items indicated and recorded, and connected with this registering mechanism or totalizer is a series of total type carriers from which may be taken an impression whenever desired. These total type carriers are normally out of printing position and are arranged to be moved into printing position by a manipulative device. When the total type carriers are moved into printing position by their manipulative device the manipulative devices which control the adjustment of the item type carriers are locked from operation, the reverse of this also be-

ing true, that is, when the manipulative devices controlling the item type carriers are operated, the total manipulative device is locked from operation.

- 5 This machine is also provided with means for feeding a strip and severing it into checks, with provisions such that when it is desired to record the total it is necessary to discontinue the feeding of said check strip.
- 10 The improvements have been shown applied to a machine employing the English monetary system for indicating, totalizing and recording transactions, but it is to be understood that this type of machine has
- 15 been used simply for the sake of illustration and that any other monetary system may be employed.

- Manipulative devices such as keys 1 are arranged in groups or banks and when depressed against the tension of their springs 2 are latched by detents 3. The operation of any of these keys 1 elevates the detent 3 of its bank and each detent is provided with a stud 4 which engages with the forward end of an arm 5 secured to a shaft 6 so as to rock said shaft. This shaft 6 extends horizontally through the machine and is provided at its right end with a rearwardly extending arm 7; (see Fig. 12),
- 25 which has at its extreme rearward end an upward extension 8 which enters into a recess 9 formed on the outer edge of a disk 10 secured to a gear 11. From this description it will be seen that the gear 11 and an operating handle 12 connected thereto will be locked until one of the keys 1 is depressed. The operating handle 12 is provided with a pinion 13 which meshes with a large gear 14 which in turn meshes with the gear 11.
- 30 The gear 11 is secured to one end of a transverse shaft 15, and meshes with a similar gear 16 which is secured to the right hand end of a shaft 17 extending horizontally through the machine.

- 45 Upon the release of the operating handle 12 by the operation of any one of the keys, said handle may be rotated and it will be seen that the shafts 15 and 17 will also be rotated. This shaft 17 has an arm 18 secured thereto, (see Fig. 1) and to the free end of this arm is secured one end of a link 19, the other end of said link being attached to the free end of an arm 20 secured to a shaft 21. Upon the rotation of the shaft 17 by the crank handle 12 the shaft 21 will be
- 50 rocked, and secured to this shaft 21 are segments 22, one for each bank of keys. These segments, upon the first movement of the shaft 21, will be rocked forwardly and downwardly, and shoulders 23 formed on said segments will be engaged by latches 24 pivoted to actuators 25 of the banks in which
- 60 keys are depressed. Upon the return movement of the segments 22 the actuators 25

carrying the latches 24 of the banks in which 65 keys are depressed, will also be carried upwardly and rearwardly distances determined by the value of the keys depressed. These actuators 25 are loosely mounted upon the rock shaft 21 and are disconnected from 70 the segments 22 by pawls 26 on the latches 24, engaging with the inner ends of the depressed keys. This construction is well known in the art and is fully shown and described in the before mentioned patent to 75 Cléal and Reinhard.

The actuators 25 are provided with teeth 27 upon their outer edge which mesh with gears 28, these gears in turn meshing with smaller gears 29 secured to indicators 30 80 which are mounted loosely upon a transverse rod 31. The gears 28 also mesh with gears 32 loosely mounted upon a transverse shaft 33 and these gears with one exception have secured to their sides, (see Fig. 10) gears 85 34, the pence gear 32 being connected to the corresponding gear 34 by a sleeve 321. Adjacent to the gears 34 are similar gears 35 which are connected by sleeves 36 to registering wheels 37 of the totalizer. The gears 90 34 and 35 are normally disconnected and just previous to the rearward movement of the actuators 25 they are connected by a pinion 38 for each pair of gears 34 and 35 so that the rearward movement of the actuators will be conveyed to the wheels 37 of 95 the totalizer through gears 28, 32, 34, 35, and pinions 38. These pinions 38 are mounted in the upper ends of arms 39 secured to a shaft 40. This shaft 40 has a downwardly 100 extending arm 41, the lower end of which is connected to the forward end of a link 42, the rearward end of the latter being forked so as to straddle the shaft 17. A pin 43 extending from the link 42 projects into 105 a cam groove 44 in a disk 45 secured to the shaft 17 adjacent to the link 42. The shape of the groove 44 in the disk 45 is such that just before the actuators 25 move rearwardly the link 42 will be moved forwardly to carry 110 the pinions 38 into engagement with each pair of gears 34 and 35 to connect them for movement together.

The actuators are returned to their normal position at the beginning of each operation 115 of the machine by extensions 46 of the segments 22 which engage with the actuators, and thereby carry them to their normal positions. During this movement the pinions 38 are out of mesh with the gears 34 and 35. 120

The gears 28 are fast to the inner ends of nested sleeves 47 which surround the shaft 15 and the other ends of said sleeves carry printing segments 48 for recording items upon a record strip 49, (see Figs. 2, 5, and 125 7). This strip is fed from a supply roll 50 over a platen 51, and thence to a storage roll 53. The platen 51 which is for taking

impression from the type carriers 48 is mounted in a movable frame 54, the latter having extending therefrom a pin 55 which projects into a cam groove 56 in a disk 57 secured to the left hand end of the shaft 15. The shape of the cam groove 56 is such that upon the rotation of the shaft 15 by the operating handle 12, the frame 54 carrying the platen 51 will be first lowered to feed the record strip and ink the type-carriers 48, as hereafter described, and then be raised to take an impression upon a check strip after which it is lowered to permit the ejection of the check and is finally raised to take an impression upon the record strip 49. The previously mentioned check strip 58 is fed from a suitable supply roll, between feed and impression rollers 59 and 60, shown in dotted lines in Fig. 2 and thence over the impression roller or platen 51. As previously described, the first elevation of the frame 54 carrying the platen roller 51 will take an impression upon the check strip 58 from the item type carriers 48 and by this movement of the frame 54 a portion of the check strip will be severed so that a check ejector 61 (Fig. 5) may grip the check and eject it as the platen frame 54 is lowered. Previous to the printing and ejecting of the check an ink pad 62 (Fig. 7) will be moved into position to ink the adjusted types and then moved out of the path of the pinion 51.

The operation of the machine so far described is the same as that shown and described in the above mentioned Cleal and Reinhard patent and now will be described the improvements applied to this type of machine, but it is to be understood that these improvements are not to be limited to the particular style of machine to which for illustration they have been shown as applied.

The totalizer elements 37 (see Figs. 1 and 10), are connected by sleeves 63 to gears 64, (see Figs. 4 and 6) these sleeves being divided and then joined by prongs 165 for convenience in assembling the totalizer elements and the total printing mechanism. A shield 640 partially surrounds the gears 64 (see Figs. 2 and 6) so that as the severed check is ejected by the ejectors 61 it will not engage with the teeth of the gears 64 but will freely pass to the check receiver in a manner well known in the art. These gears 64 mesh with similar gears 65 which are loosely mounted upon a stub shaft 66, the latter being supported in arms 67 of a frame 68 which is pivoted upon the totalizer shaft 33 near one end thereof. The gears 65 mesh with similar gears 69 attached to the sides of total type carriers 70 which are loosely mounted upon a rod 71 supported by the arms 67 of the pivoted frame. From this it will be seen that any movement of

the totalizer elements 37 will be transferred 65 to the total type carrier 70 through the sleeves 63 and gears 64, 65 and 69.

The frame 68 is arranged to be rocked so as to carry the total type carriers 70 into and out of printing position by a manipulative device 72 which is fast to a transverse shaft 73 suitably mounted in the machine frame. As the total manipulative device 72 is to be operated by the proprietor or some authorized agent only, the said device 75 is normally prevented from being moved from its upper position as shown in Fig. 3 by a lock bolt 730 which protrudes in the path of a lug 731 formed upon the shaft 73. By this means the lever 72 which 80 is secured to the shaft 73 is prevented from being lowered and consequently the type carriers 70 carried by the frame 68 are held out of printing position. This manipulative device 72 carries a pivoted latching 85 pawl 74 having a prong 75, the nose of which is constructed to enter notches 76 formed upon a disk 77 attached to the printer frame. A spring 78 is interposed between the manipulative device 72 and the 90 latching pawl 74 so as to hold the nose of the prong 75 into engagement with one of the notches 76 and thereby prevent any accidental displacement of said device 72. This manipulative device 72 is provided 95 with a hub 79, (see Fig. 4), having downwardly extending arms 80 between which play the upper ends of the arms 67 of the frame 68 carrying the total type carriers 70. Slots 81 are formed in the upper end of the 100 frame arms 67 through which extend a pin 82 connecting the arms 80 of the hub 79 of the total manipulative device 72. These slots 81 are cut eccentrically relative to the path of movement of the pin 82 so that 105 when the arms 80 carrying said pin 82 are moved by the total manipulative device 72, this pin will rock the arms 67 of the frame 68 about the shaft 33 so as to carry the total type carriers 70 into and out of printing position. When the type of the carriers 70 are in printing position they are in horizontal alinement with the item carriers 48 that are in printing position so that when the platen 51 is elevated, as previously described, the total will be recorded upon the 115 strip 49. When the total type carriers are in printing position, the manipulative devices or keys 1 which control the item type carriers 48 will be locked from operation so 120 that in recording the total a row of zeros will be recorded opposite the total which signifies that no item has been recorded during that operation of the machine. It is to be understood that the record strip is of 125 sufficient width to take in both sets of type carriers.

In Fig. 3 the manipulative device 72 which

controls the frame 68 carrying the total type carriers 70 is shown in such a position that the total type carriers are out of printing position. Upon an operation of the machine, while the lever or manipulative device 72 is in this position, the inner periphery of a ring 83, secured to the cam disk 57 which operates the platen frame 55, will engage with a stud 84, projecting from one arm of a bell crank lever 85 which is secured to the shaft 73 to which is also secured the manipulative device, and thereby prevent the rocking of the manipulative device 72 to carry the total type carriers into printing position. This ring 83 is provided with a cut away portion 86 through which, when the machine is at rest or in normal position, the pin 84 carried by one arm of the bell crank 85 is free to pass, upon the rocking of the manipulative device to carry the total type carriers into printing position. When in this position the outside periphery of the ring 83 will contact with the stud 84 so as to prevent the return of the manipulative device until near the end of the operation of the machine. Projecting from the periphery of the cam disk 57 is a lug 87 which, near the end of the operation of the machine, when the total type carriers are in printing position, will engage with a roller 88 projecting from the other arm of the bell crank lever 85 and positively return said bell crank and thereby the total manipulative device 72 to normal position, the nose of the prong 75 of the latching pawl 74 being beveled so as to be cammed out of the foremost notch 76 of the disk 77 by this operation, so as to restore the frame 68 and the total type carriers 70 carried thereby to normal inoperative printing position. The cut away portion 86 of the locking ring 83 is of sufficient width so that as the lug 87 engages the roller 88 carried by the bell crank 85, the stud 84 will pass through the said recess to its normal position, as shown in Fig. 3.

The arm 5 secured to the transverse shaft 6, and which coöperates with the detent 3 operated by the left hand bank of keys, has an upwardly extending portion 89, the upper edge of which, when said shaft 6 is rocked by the depression of any of the keys, will pass under a roller 90 projecting laterally from an arm 91 secured to the shaft 73 to which the total manipulative device 72 is also attached, so as to prevent the operation of the said manipulative device 72 and thereby prevent the movement of the total type carriers 70 into printing position. When the total lever 72 is moved to carry the total type carriers into printing position, the roller 90 will engage with a finger 92 projecting from the arm 89 and rock said arm and thereby rock the shaft 6 to release the crank handle 12. The shaft 73 to which

the total manipulative device 72 is secured has projecting forwardly therefrom an arm 93 to which is attached the upper end of a link 94, the lower end of said link being secured to the rear end of an arm 95, which is fastened to a transverse shaft 96 located in the lower front portion of the machine. This shaft 96 carries hook pawls 97 which, when said shaft 96 is rocked by the downward movement of the total manipulative device 72, will pass over pins 98 projecting laterally from the detents 3 of all the key banks thereby preventing the raising of said detents and consequently locking out the keys 1. From this construction it will be seen that when the keys 1 are operated the upper edge of the arm 89 will prevent the lowering of the total manipulative device 72 by passing under the roller 90 projecting from the arm 91 secured to the shaft 73, and that when the total lever 72 is depressed the shaft 96 will be rocked to carry the hook pawls 97 over the pins 98 thereby locking the keys 1 from operation. This construction also prevents simultaneous operation of the keys 1 and the total levers 72, as the partial operation of each of these devices will cause the pins 98 and the pawls 97 to jam and prevent the complete operation of either of said devices.

Owing to the connections between the registering elements and the total type carriers, a differently designed inking mechanism had to be provided from that shown in the aforementioned Cleal and Reinhard patent, and the construction and operation of said inking mechanism is as follows: Referring now to Figs. 6 to 10 inclusive it will be seen that the ink pad 62 is carried by arms 99 and 100. These arms are located upon opposite sides of the type carriers and are provided with slots 101 and 102, respectively. These slots are of different diameter owing to the fact that the slot 102 in the arm 100 is mounted upon the hub of the item type carrier 48 which is connected to the outermost sleeve 47, while the slot 101 is mounted upon the hub of a gear 103 secured to the shaft 15 near the left hand end of same. The gear 103 is to drive the feed and impression rollers 59 and 60 respectively through suitable intervening gears as fully shown in the aforementioned Cleal and Reinhard patent. The ends of the arms 99 and 100 opposite to those which carry the ink pad 62 are connected by a rod 104. This rod 104 is embraced by forked ends of arms 105 which are mounted upon a rod 106 that is supported by the printer frame and said arms are connected by a sleeve 107 which surrounds said rod 106. These arms 105 are mounted adjacent to the arms of the ink pad frame, and the arm 105 that is adjacent to the arm 99 has a downwardly extending projection 108 (see Figs. 6 and 9) which is engaged by a

lug 109 of a disk 110 which is attached to the hub of the gear 103, during the operation of the machine and after the ink pad 62 has been positioned to ink the type that are in printing position.

The arm 100 of the ink pad frame is provided with an enlarged slot 111, (see Fig. 7) into which projects a pin 112 projecting from a forwardly extending arm 113 of a hub 114 which surrounds the outer one of the nested sleeves 47. This hub 114 is provided with an ear 115 to which is pivoted the upper end of a link 116, the lower end of said link being forked so as to straddle the shaft 17. A pin 117 projecting from the link 116 extends into a cam groove 118 of a disk 119 secured to the shaft 17. The timing of the movement of the frame carrying the ink pad 62 by the cam disk 119 is such that the pin 112 will contact with the lower edge of the slot 111 and rock said frame clockwise so as to bring the pad beneath the type of the carriers that have been brought into printing position after which the lug 109 of the disk 110 will contact with the projection 108 of one of the forked arms 105 and rock said arms so that the forked ends thereof will raise the frame carrying the ink pad to ink the type that are in printing position. The frame will then be lowered and carried to its normal position as shown in Fig. 6. The arm 100 of the ink pad frame, as shown in Figs. 6 and 8, is provided with an elongated slot 120 through which the rod 106 passes. The recesses or slots 101 and 102 of the arms of the ink pad frame are slightly larger than their bearings to permit the upward movement of the frame in order that the ink pad 62 may ink the type, this also being true of the slots 111 and 120.

The principal object of the checks issued from the machine is to give to each customer a receipt for his purchase and as the total printing feature is for the information of the proprietor, or some authorized person, it is desirable to prevent the issuing of a check when the total is recorded and this is accomplished in the following manner. As well known in the art the impression roller 59, as shown in Figs. 2 and 5, is mounted upon a roller 121 which has eccentric bearings 122. One of these bearings extends to the outside of the left hand printer frame and is provided with what is known in the art as an "on and off" knob 123. When the impression roller 59 is "on" or in operative condition to feed the check strip 58, the forward hook end of a lever 124, (see Fig. 5), engages with a notch 125 formed in the arm 93 which is fast to the shaft 73, to which is also fast the total manipulative devices 72 and thereby prevents the depressing of said manipulative device and consequently the rocking of the total type carriers into printing position. When it is desired to print

the total, the knob 123 is rotated to "off" position so as to carry the feed roller 59 from out of contact with the impression roller 60, thereby disabling said rollers as far as their feeding operation is concerned. The rotating of the knob 123 will rotate a disk 126 secured to the inner eccentric bearing 122. This disk 126 carries a pin 127 which plays in the forked end of a lever 128 which is centrally pivoted to one of the printer frames. The other end of this lever is provided with a pin 129 which plays in an elongated slot 130 formed in the lower end of the lever 124. From this it will be seen that when the knob 123 is turned to "off" position it will disable the rollers 59 and 60 and also rock the lever 128 so as to withdraw the hook end of the lever 124 out of the notch 125 of the arm 93, thereby permitting the lowering of the total lever 72 so as to carry the total type carriers into printing position.

When the total lever 72 is lowered to carry the type carriers 70 into printing position, the hook end of the lever 124 will rest upon the circular portion of the arm 93. From this it will be seen that until the total lever 72 is returned to its normal upper position, it will be impossible to rotate knob 123 to "on" position because the hook end of the lever contacts with the inner circular portion of the arm 93.

The feature of the invention wherein the control of the check feeding mechanism is incidental to the recording of the total is believed to be broadly new and by some of the claims it is intended to cover broadly, the combination of type carriers for recording totals, whether they are the same that record the items or a separate set, and check feeding mechanism the control of which is incidental to the recording of the total.

In the type of machine shown in the patent of Cleal and Reinhard the totalizer elements 37 are provided with pawls which, when it is desired to reset the elements to zero, engage with a longitudinal slot formed in the supporting shaft for said elements, but in the present invention owing to the nested sleeves 63 which connect the elements of the totalizer to the gears 64 it is impossible to reset the elements to zero in the manner as shown in said patent and these elements are reset in the following manner: Secured near the left hand end of the shaft 33 is a gear 131 (see Figs. 4 and 13) which meshes with a similar gear 132 secured to the stub shaft 66 which carries the intermediate gears 65 that connect the gears 64 with the total type carriers 70. The shaft 33 at its right hand end is arranged to receive a suitable wrench, not shown, for rotating the same and when said shaft is rotated by the wrench, it will rotate the shaft 66 in the direction of the arrow, as shown in

Figs. 6 and 13, by the gears 131 and 132. This shaft 66 is provided with a longitudinal groove 133 which, when the shaft 66 is rotated in the direction of the arrow shown in

Fig. 6, will engage with the free ends of pawls 134 secured to the intermediate gears 65 and thereby rotate said gears in the same direction as the shaft. This rotation of the gears 65 will through the gears 64 and 69 rotate the registering elements 37 and total type carriers 70 until they are brought to zero position, any suitable device being provided to arrest the elements 37 and consequently the type carriers 70 when they reach their zero position.

It will be seen that although totalizing wheels 37 have been shown and the wheels 70 have been referred to as "printing wheels," yet the wheels 70 are in reality totalizing elements as they are set by the differential mechanism of the machine, and at all times exhibit the total of all items entered in the machine, wherefore, if desired, the totalizing wheels 37 may be readily dispensed with, and the totals of additions kept solely by the wheels 70, so that the total may at any time be transferred to the record strip without destroying the total carried by said wheels 70. Further, the total on said wheels 70 may at any time be observed, and thus determined without printing it.

While the form of mechanism shown herewith and described is admirably adapted to fulfil the objects primarily stated it is to be understood that it is not intended to confine the invention to the one form of embodiment herein shown and described as it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed is:

1. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers for recording the total of the items upon said strip, operating means common to both sets of type carriers, means for bodily moving the total type carriers into and out of recording position and means for causing relative movement between the type carriers and the record strip.

2. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers for recording the total of the items upon said strip, a frame supporting the record strip, means for moving the frame thereby carrying the strip to receive impressions from the type carriers, and means for bodily moving the type carriers into and out of recording position.

3. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a

second set of type carriers for recording the total of the items upon said strip in a column separate from the items, operating means common to both sets of type carriers, a frame supporting the record strip, means for moving the frame thereby carrying the strip to receive impressions from the type carriers, and means for bodily moving the type carriers into and out of recording position.

4. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers for recording the total of the items upon said strip in a column separate from the items, operating means common to both sets of type carriers, a frame supporting the total type carriers, a lever for moving the frame thereby carrying the total type carriers into and out of recording position and means for causing relative movement between the type carriers and the record strip.

5. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers for recording the total of said items upon said strip, a frame supporting said strip, means for moving the frame thereby taking impressions upon the strip from the type carriers, and means for moving the total type carriers into and out of recording position.

6. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers normally out of recording position for recording the total of said items upon said strip, means for moving the total type carriers into recording position, an operating mechanism and connections for taking impressions upon said strip from the type carriers, and means operated by the operating mechanism for positively returning the total type carriers to their normal position after an impression has been taken therefrom.

7. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers normally out of recording position for recording the total of said items upon said strip, actuating means common to both sets of type carriers, means for moving the total type carriers into recording position, an operating mechanism and connections for taking impressions upon said strip from the type carriers, and means operated by the operating mechanism for positively returning the total type carriers to their normal position after an impression has been taken therefrom.

8. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a

second set of type carriers normally out of recording position for recording the total of said items upon said strip, actuating means common to both sets of type carriers, means for moving the total type carriers into recording position, and an operating mechanism and connections for taking impressions upon said strip from the type carriers, for preventing the return of the total type carriers to normal position until an impression is taken therefrom, and for positively returning the total type carriers to normal position after an impression has been taken therefrom.

9. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers normally out of recording position for recording the total of said items upon said strip, means for moving the total type carriers into recording position, actuating means common to both sets of type carriers, manipulative devices controlling the movement of the actuating means, and means for preventing the operation of the manipulative devices when the total type carriers are moved into printing position.

10. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers normally out of recording position for recording the total of said items upon said strip, means for moving the total type carriers into recording position, actuating means common to both sets of type carriers, manipulative devices controlling the movement of the actuating means and means preventing the movement of the total type carriers into recording position when the manipulative devices are operated.

11. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers for recording the total of said items upon said strip, actuating means common to both sets of type carriers, manipulative devices controlling the movement of the actuating means, means for determining when a total is to be recorded and means controlled by both the manipulative devices and the determining means for preventing the operation of either one when the other is operated.

12. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a totalizer for accumulating the total of said items, a second set of type carriers connected to the totalizer for recording the total upon the record strip but normally out of recording position, means for bodily moving the total type carrier into recording position and means for causing relative movement between the type carriers and the record strip.

13. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a totalizer for accumulating the total of said items, a second set of type carriers connected to the totalizer for recording the total upon the record strip, but normally out of recording position, manipulative devices for controlling the recording of the items and the accumulation thereof on the totalizer, means for bodily moving the total type carriers into recording position and means for causing relative movement between the type carriers and the record strip.

14. In an accounting machine, the combination with type carriers for recording items and the total thereof upon a record strip, of means for feeding a check strip during the operation of the machine in which items are recorded and means for preventing the recording of the total while the check strip feeding means is in operative condition.

15. In an accounting machine, the combination with type carriers for recording items and the total thereof upon a record strip, of means for feeding a check strip, and means controlled by the check strip feeding means for preventing the recording of the total.

16. In an accounting machine, the combination with type carriers for recording items and the total thereof upon a record strip, of means for feeding a check strip, and means governed by the check strip feeding means for controlling the recording of the total.

17. In an accounting machine, the combination with type carriers for recording items and the total thereof upon a record strip, of means for feeding a check strip, and means for controlling the recording of the total and for disabling the check strip feeding means.

18. In an accounting machine, the combination with a set of type carriers for recording items upon both a record strip and a check strip, of a second set of type carriers for recording the total of said items on the record strip only, means for feeding the check strip during the operations of the machine in which the items are recorded, and means controlled by the check strip feeding means for preventing the recording of the total while said feeding means is in operative condition.

19. In an accounting machine, the combination with a set of type carriers for recording items upon both a record strip and a check strip, of a second set of type carriers for recording the total of said items on the record strip only but normally out of recording position, means for moving the total type carriers to normal position, and means for preventing the operation of the

moving means for the total type carriers while the check strip feed means is in operative condition.

20. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a totalizer for accumulating the total of said items, a second set of type carriers for recording the total as shown by the totalizer upon the record strip but normally out of recording position, a pivoted frame carrying the total type carriers, gears for connecting said total type carriers to the totalizer, a manipulative device for rocking the frame thereby carrying the total type carriers into recording position and means for causing relative movement between the type carriers and the record strip.

21. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a totalizer comprising movable elements for accumulating the total of said items, a shaft supporting said elements, gears corresponding in number to the elements of the totalizer and also supported upon said shaft, sleeves surrounding the shaft and connecting the elements and the gears, a second set of type carriers for recording the total upon the record strip, intermediate gears connecting the total type carriers and the gears sleeved to the totalizer elements, a second shaft for supporting the intermediate gears, a gear fastened to each of the above mentioned shafts and in mesh, means for rotating the first mentioned shaft and through the gear fast thereto rotate the second shaft, and means connecting the second shaft to the intermediate gears when said shaft is rotated by the first mentioned shaft so that said intermediate gears will return the totalizer elements and the totalizer type carriers to zero.

22. In an accounting machine, the combination with a totalizer comprising a plurality of movable elements, and means for differentially moving said elements, of a plurality of type carriers, gears connecting the totalizer elements and the type carriers, and means for rotating the connecting gears and thereby returning the type carriers and totalizer elements to zero.

23. In an accounting machine, the combination with a set of type carriers for recording items upon a record strip, of a second set of type carriers normally out of recording position, actuators common to both sets of type carriers, an operating mechanism for said actuators, means for locking said operating mechanism, and means for moving the total type carriers into recording position and for unlocking the operating mechanism.

24. In an accounting machine, the combination with a set of type carriers for re-

recording items upon a record strip, of a second set of type carriers normally out of recording position, actuators common to both sets of type carriers, an operating mechanism for said actuators, means for locking said operating mechanism, manipulative devices for unlocking the operating mechanism and controlling the movement of the actuators by the operating mechanism, and means for moving the total type carriers into recording position and also for unlocking the operating mechanism.

25. In an accounting machine, the combination with a set of type carriers, of means for differentially adjusting the same, manipulative devices controlling the adjustment of said type carriers, means for taking an impression upon a record strip from the adjusted type carriers, a frame and an ink pad carried thereby, means for moving the frame thereby carrying the pad in position to ink the adjusted type carriers, a rod connecting the sides of the ink pad frame, pivoted arms embracing the rod, and a cam for rocking the arms thereby raising the frame to ink the type.

26. In an accounting machine, the combination with totalizing elements bearing printing type and devices for differentially actuating said elements, of a platen, means for moving said platen at each actuation of the accounting machine, and manually controlled devices having connections for moving said totalizing elements into a position to be engaged by said platen.

27. In an accounting machine, the combination with totalizing elements bearing printing type and devices for differentially actuating said elements, of type carriers permanently connected to said actuating devices, a platen, means for moving it at each operation of said actuating devices to take an impression from said type carriers, and manually controlled devices having connections to move said totalizing elements bodily into the path of said platen.

28. In an accounting machine, the combination of a pivoted item type carrier, a total type carrier, a frame therefor mounted to oscillate about a pivot eccentric to the pivot of the item type carrier, means for operating the type carriers and manually controlled means for oscillating the total type carrier frame about its pivot to position the total type carrier in or out of operative alignment with the item type carrier.

29. In an accounting machine, the combination of an item type carrier, a movable total type carrier, means for operating the carriers and means for moving the total type carrier into and out of operative relationship with the item type carrier so the type carriers will print simultaneously or but one of the type carriers at a time, respectively.

30. In an accounting machine, the combination of an item type carrier, a total type carrier, means for operating the type carriers, and means for causing relative movement between the type carriers to position
5 them in or out of operative relationship in which they will print simultaneously.

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

FREDERICK L. FULLER.

Witnesses:

ROY C. GLASS,
CARL W. BEUST.