

No. 773,053.

PATENTED OCT. 25, 1904.

T. CARROLL.
CASH REGISTER.

APPLICATION FILED JUNE 4, 1903.

NO MODEL.

5 SHEETS—SHEET 1.

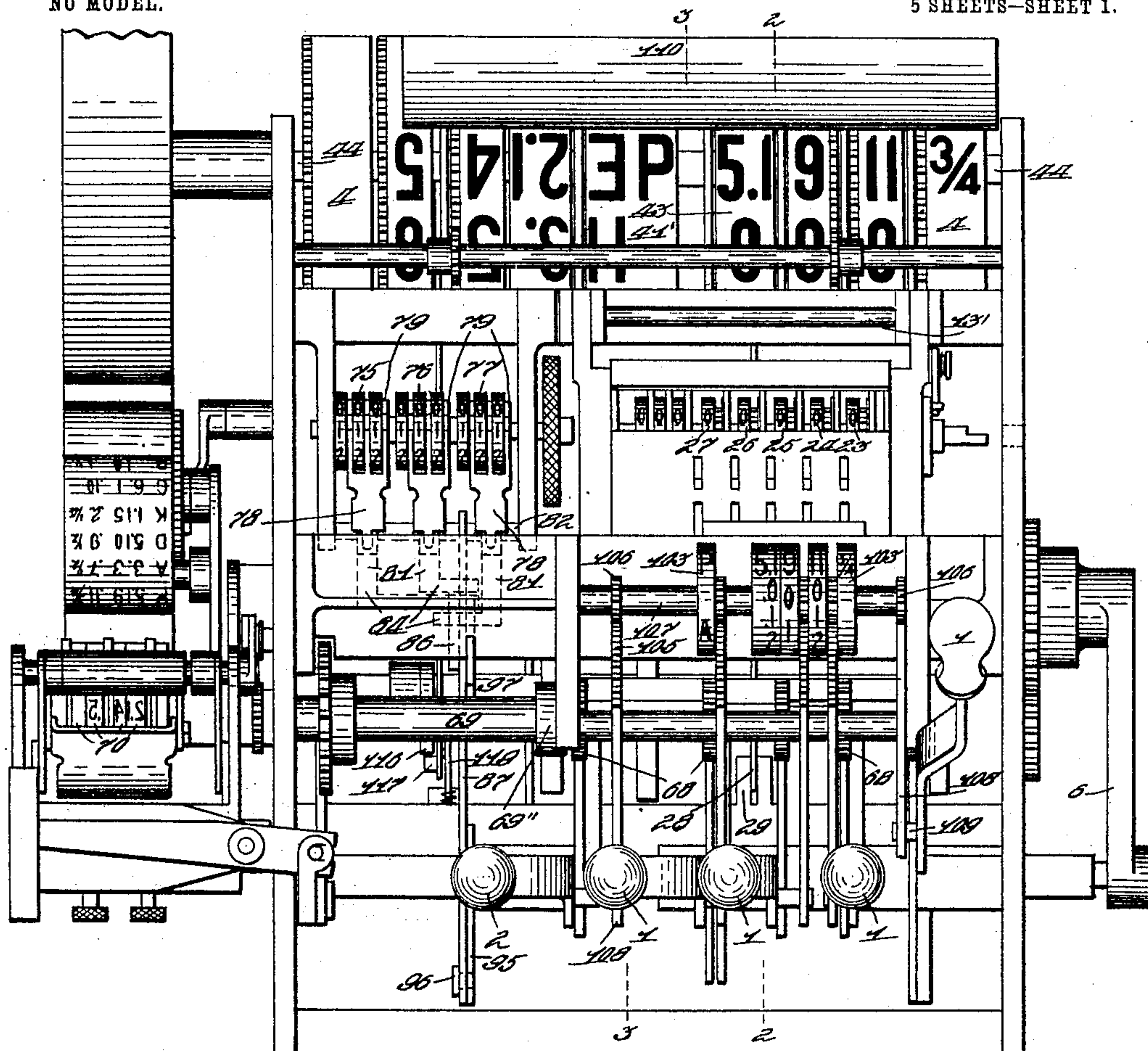


FIG. 1.

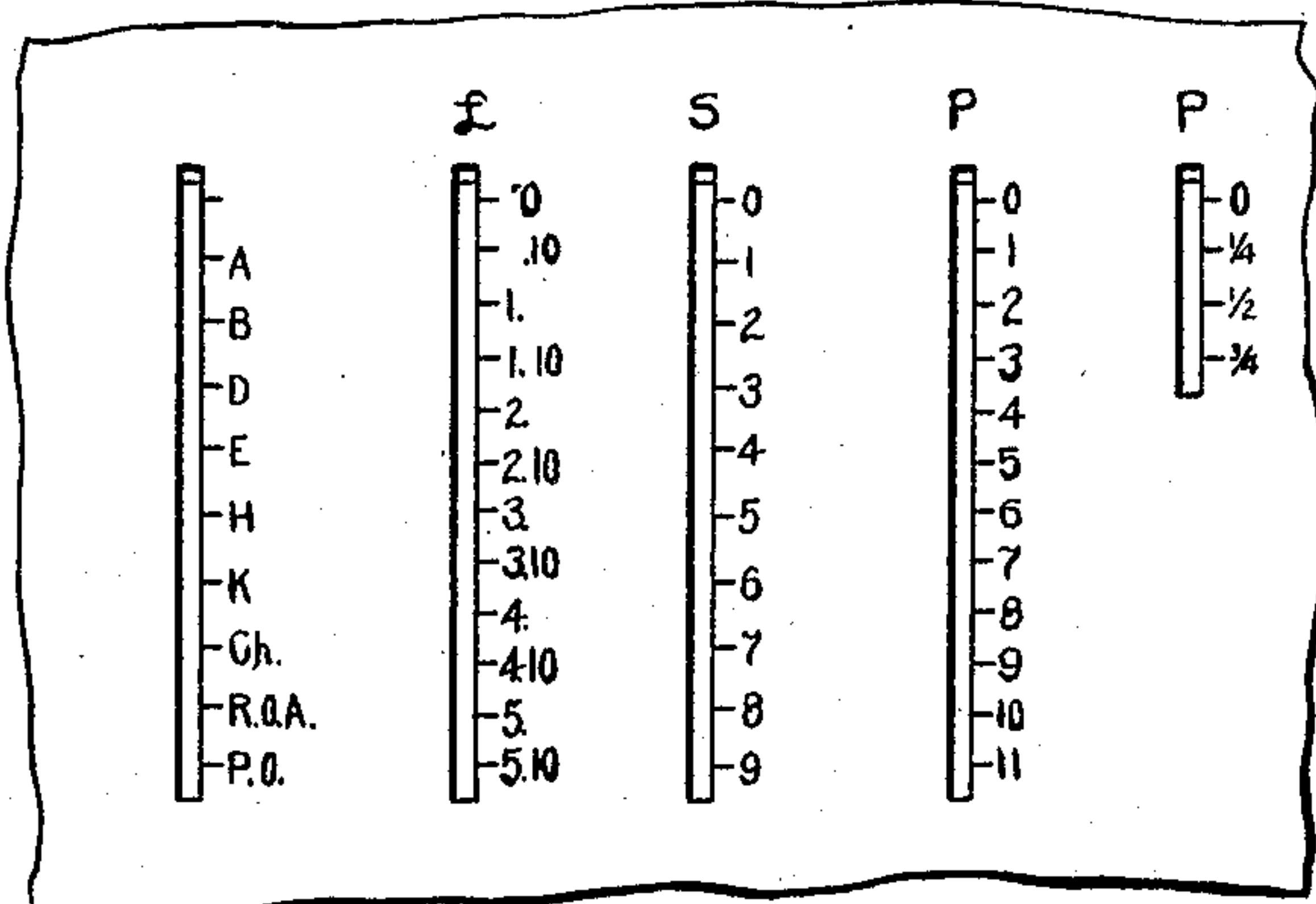


FIG. 6.

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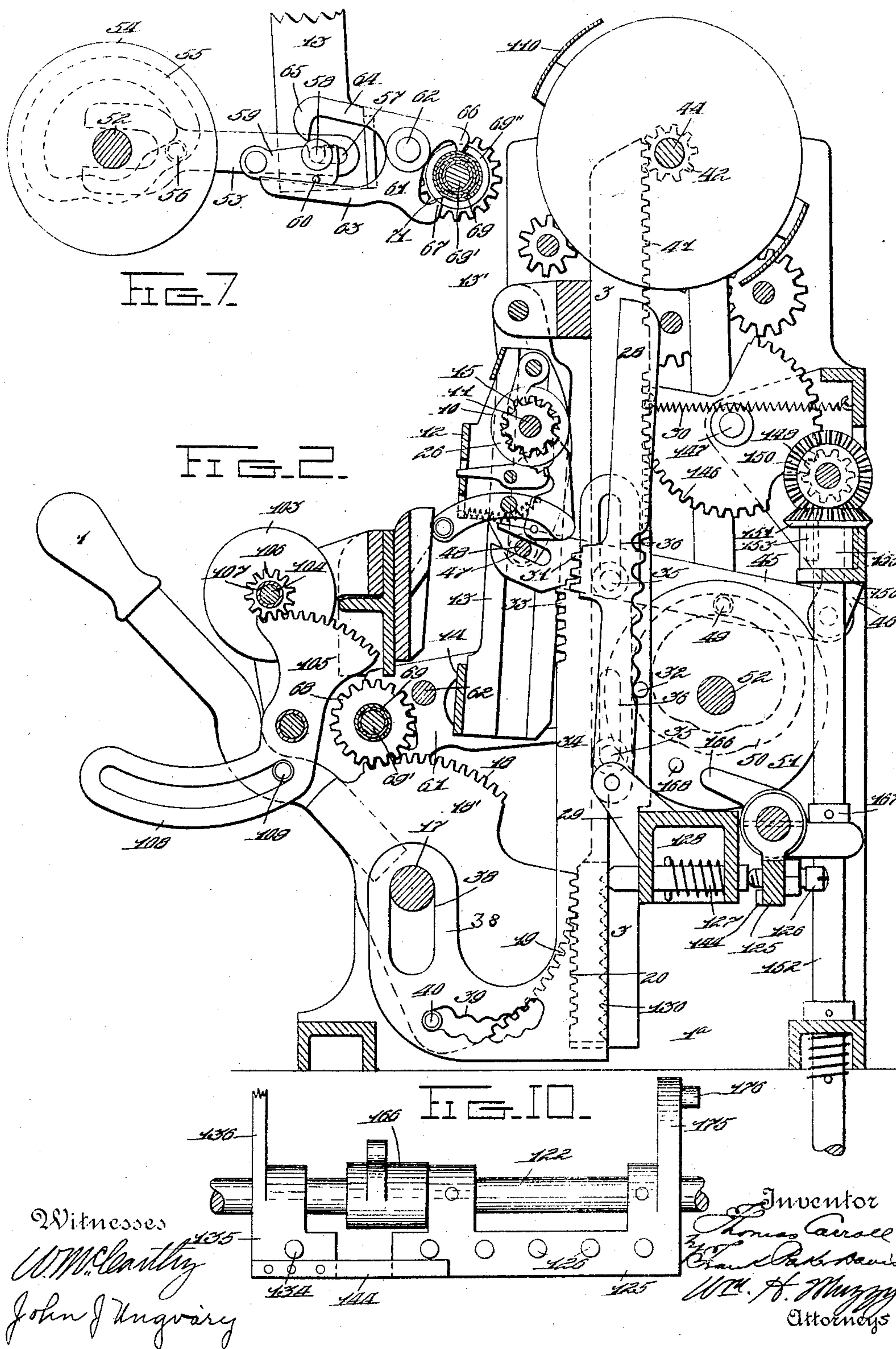
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5 SHEETS—SHEET 2.



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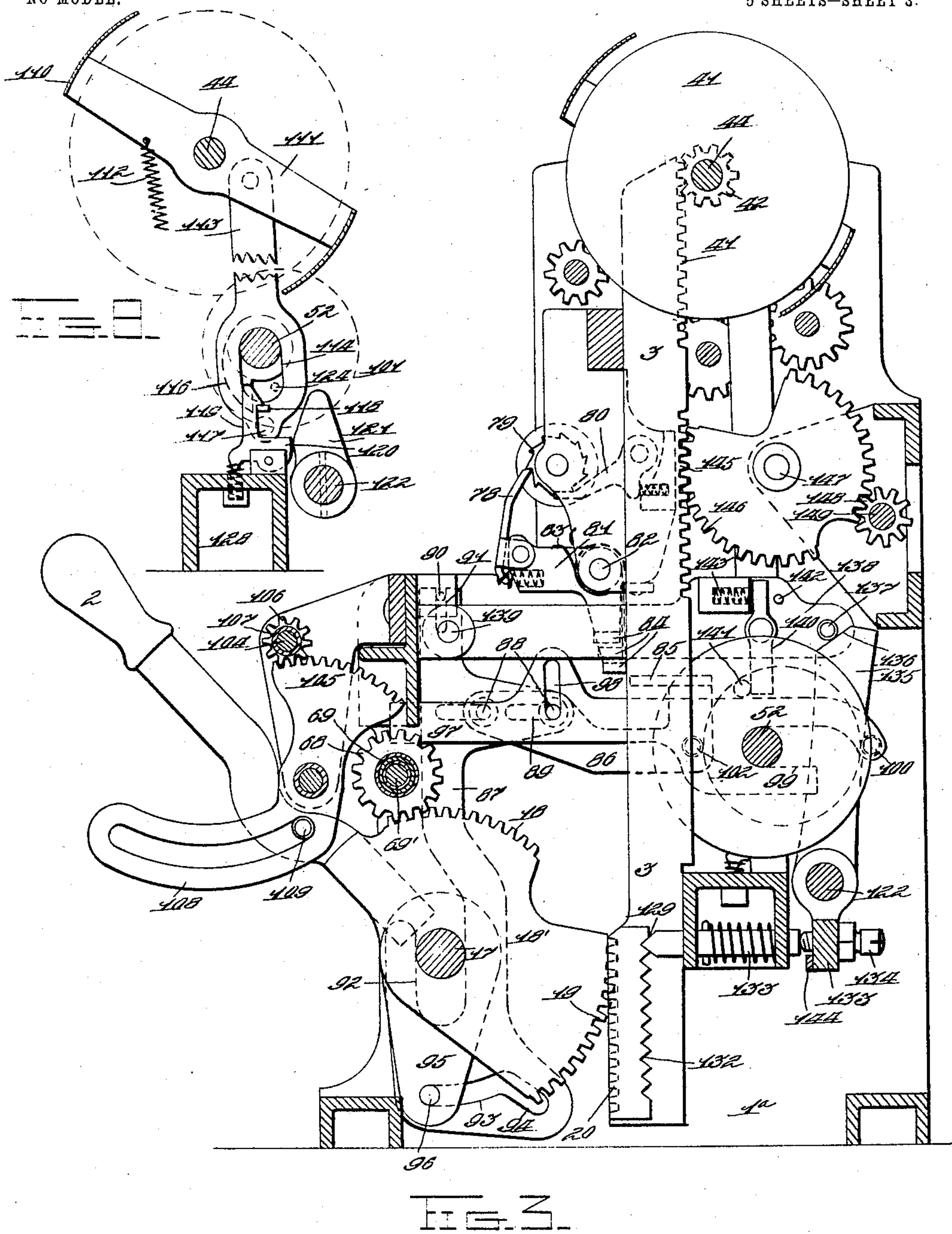
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5 SHEETS—SHEET 3.



Witnesses

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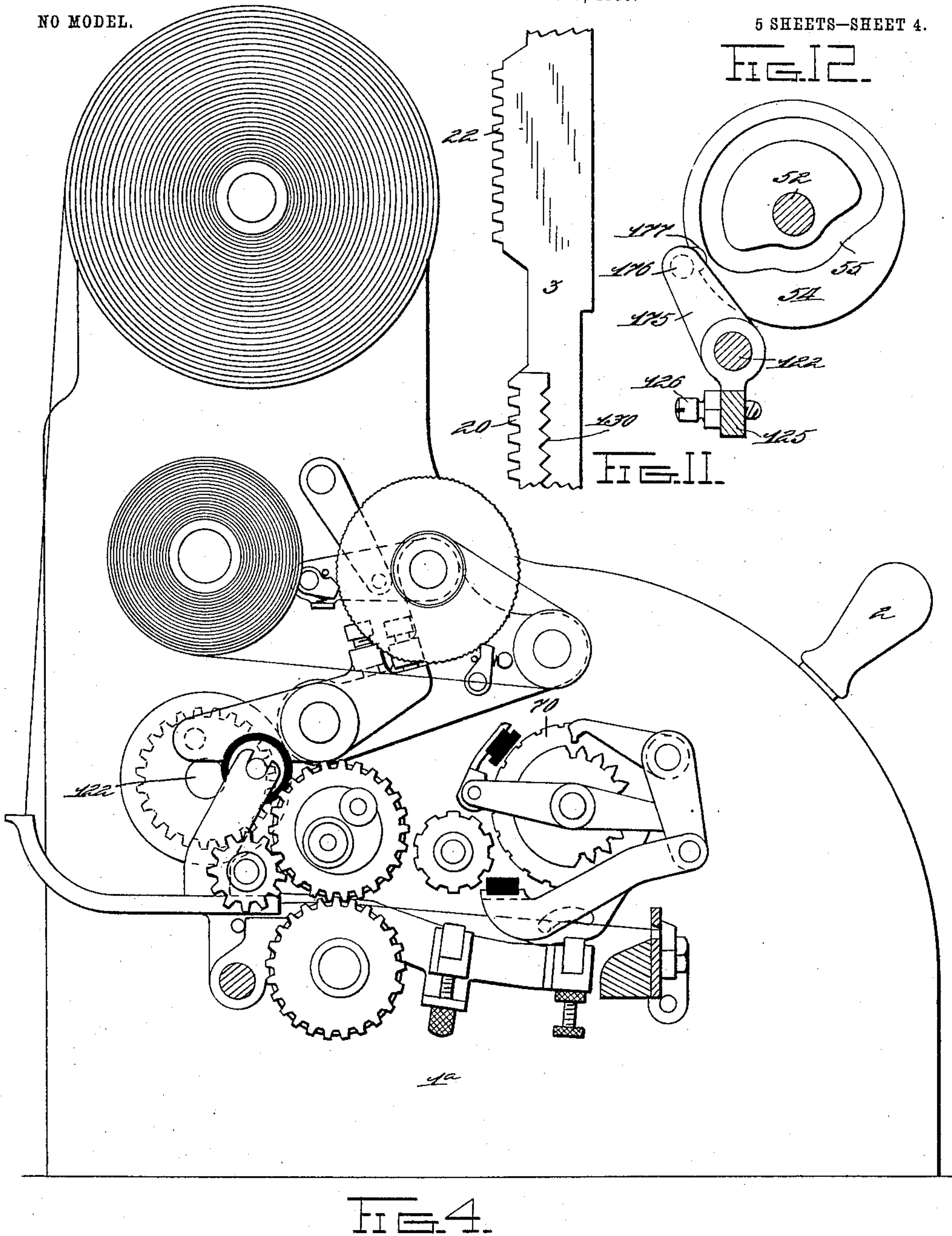
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NO MODEL.

5 SHEETS—SHEET 4.



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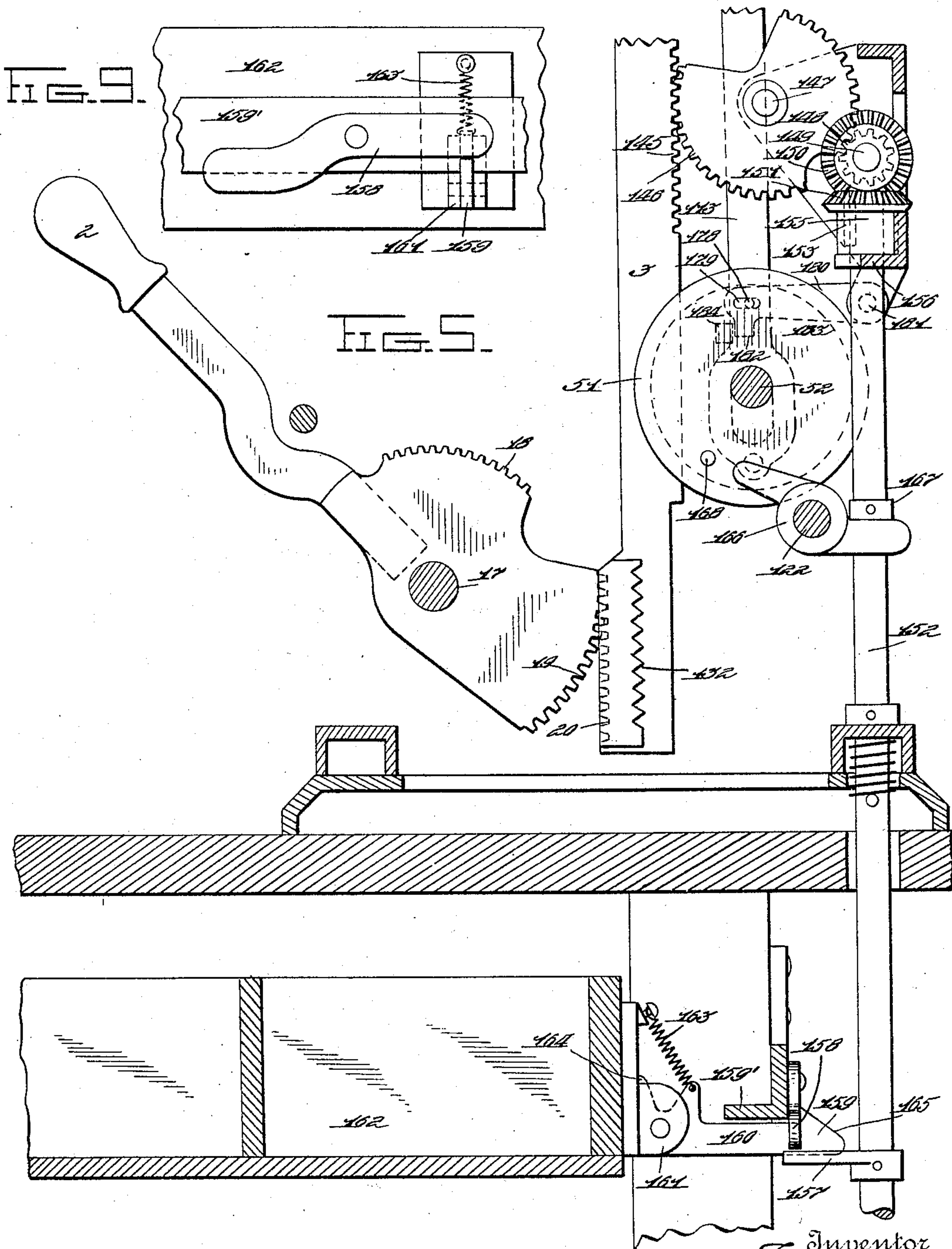
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

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CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 773,053, dated October 25, 1904.

Application filed June 4, 1903. Serial No. 160,024. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CARROLL, 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 Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash-registers, and has more particular relation to improvements in registers of the class which employ a series of setting elements which may be moved to different positions for different amounts or transactions to be registered and recorded.

One of the objects of the invention is to provide a machine of the class mentioned with register-operating devices and connecting means intermediate said devices and the setting elements whereby the movement of any one setting element will result in setting combinations of the register-operating elements.

A further object of the invention is to provide devices for throwing out the counter in the class of machine mentioned when certain transactions are indicated or recorded.

The invention also has certain further objects, which will be hereinafter more fully set forth.

The invention consists of certain novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a front elevation of a machine embodying my invention, the cabinet of the same and the several cash-drawers being omitted and the handle broken away. Fig. 2 represents a transverse vertical section through the machine on the line 2 2 of Fig. 1. Fig. 3 represents a similar section on the line 3 3 of Fig. 1 with the counter and supporting frame omitted. Fig. 4 represents an end elevation of the machine looking toward the printing mechanism. Fig. 5 represents a detail vertical detached section, partly in elevation, of the connections between the clerk's lever and

the drawer-latches. Fig. 6 represents a detail plan view of a portion of the front of the cabinet, showing the lever-slots and the graduated scales or indexes. Fig. 7 represents an enlarged detail side elevation, partly in section, of the throw-out devices for the counter. Fig. 8 represents a detail vertical section, partly broken away and partly in elevation, of the flash and controlling devices. Fig. 9 represents a broken detail rear elevation of one of the cash-drawers and its latch devices. Fig. 10 represents an enlarged detail front elevation of the rocking-lever locking-frames. Fig. 11 represents an enlarged detail side elevation, partly broken away, of one of the rack-bars; and Fig. 12 represents a detail side elevation of the machine-locking disk and cooperating parts.

Described in general terms, this machine may be said to comprise a series of pivoted setting-levers 1 for the amounts to be registered and a single lever 2 for the clerks or departments to which the different transactions are to be credited. When operated, the setting-levers set a series of vertical rack-bars or slides 3, which bars in turn engage pinions upon rotary indicators 4 4' and 43. The rack-bars 3 of the levers 1 are positioned according to the amounts to be registered, and the counter 5 is drawn over said set rack-bars by the movement of an operating crank-handle 6. The movement of the clerk's or department lever sets the special indicator 41' and a special type-carrier and also sets the drawer-selecting mechanism. When the machine is subsequently operated, the drawer mechanism is actuated to release the selected drawer corresponding to the department or clerk indicated by the special indicator.

It is not thought necessary to go into a detail description of the counting mechanism and numerous other parts of the machine not having any direct bearing upon the present improvements, as these parts are fully described and covered in my copending application, No. 72,018, filed August 14, 1901. It is thought sufficient to state in the present specification that the counter 5 comprises a

series of rotary counting-wheels 10, mounted upon a rotary shaft 11, which in turn is mounted in a slidable counter-frame 12. This frame is mounted to reciprocate vertically in the slotted side arms 13 of a rocking frame 14, which latter is actuated to move the counter-wheel pinions 15 into and out of the same vertical plane with the teeth of the rack-bars 3, as hereinafter more fully described. It will of course be understood that the counter-wheels may be arranged for any monetary system; but in the present instance and to illustrate one application of the invention I have shown them constructed for English currency with the denominations of pounds, shillings, and pence. The first wheel, 23, of the counting series is intended for the registration of fractions of pence, such as one-fourth, one-half, and three-fourths. After this wheel has moved a distance equal to four teeth, which equals one penny, it sets the transfer devices for the next succeeding pence-wheel 24, which is intended for the registration of the full units of pence. After this second wheel has moved a distance equal to twelve teeth it sets the transfer mechanism for the transfer to the third wheel, 25, which is intended for the registration of shillings. After this third wheel has made a movement equal to ten teeth or one-half of a pound it sets the transfer mechanism for the next succeeding wheel 26, which is intended for the registration of half-pound or ten-shilling units. The marking of this latter wheel is alternatively "1" and "0." After this half-pound wheel has moved a distance of two teeth it sets the transfer mechanism for the next succeeding wheel 27, which is intended for the registration of full units of pounds. It will be hereinafter described how the setting of the pounds-lever will set devices for actuating either the pounds-wheel alone or both the pounds counter-wheel and the half-pound counter-wheel.

Each of the levers 1 and 2 is pivoted upon a transverse supporting-shaft 17 and is provided with a segmental plate 18', having two series of rack-teeth 18 and 19. The rack-teeth 19 mesh continually with rack-teeth 20, formed on vertical rack-bars 3, which are suitably guided in the main frame 1^a of the machine. Each of the bars 3 of the amount-registering levers 1, excepting the pounds rack-bar, is provided with counter-operating rack-teeth 22, which when the lever is adjusted are moved into a plane which is normally traversed by the counter when it is reciprocated, as hereinafter described.

It will be observed from the foregoing description that each of the wheels 23, 24, 25, and 27 is provided with its individual rack-bar 3, whereby it is actuated when the bar is set and the counter reciprocated. The counter-wheel 26, however, does not coöperate with any bar similar to the rack-bars 3, but

is operated by a pivoted rack-lever 28. This lever is mounted upon a lug 29 of the main frame and is normally drawn rearward by a coil-spring 30 to move its rack-teeth 31 out of the path of the pinion of the counter-wheel 26. The rear edge of the lever 28 is notched, as best shown in Fig. 2, to receive a laterally-projecting pin 32, mounted upon the rack-bar 3, which is connected to the pounds-lever. When this lever is in its normal position, the pin 32 will project into the lowermost notch of the lever 28, and the lever will remain in its normal retracted position. Should the adjusting-lever, however, be moved to the first position on its index-plate, which position represents ten shillings, the pin 32 will be elevated one degree by the upward movement of the bar 3 and will engage the projection or tooth between the first two notches of the lever 28, and thus force said lever forward. This forward movement of the lever will bring its rack-teeth 31 into the path of the pinion of the counter-wheel 26, so that when the counter is reciprocated vertically the wheel 26 will be moved forward one tooth. This wheel is never moved more than one tooth by the rack-teeth 31, and this movement takes place just as the counter reaches its lowermost position.

The rack-bar 3 of the pounds-lever, as before stated, is not provided with any counter-operating teeth 22. The pounds counter-wheel, however, is operated by rack-teeth 33, formed on a slide 34, which is slidably mounted upon its respective bar 3 by pins 35, which project through suitable elongated slots 36, formed in the slide 34. (See Fig. 2.) By this means the slide 34 is vertically movable independently of the slide or rack-bar 3. The lower end of the slide 34 is formed with a forwardly-projecting arm 37, having a vertical slot 38, through which the shaft 17 projects to guide the slide vertically. The lower portion of the arm 37 is formed with a scalloped slot 39, into which projects an antifriction-roller 40, mounted upon the rack-segment 18' of its respective lever. The first movement of the lever to the position representing ten shillings will not elevate the slide 34 at all, but will move the lever 28 forward, as before described. This first movement, however, moves the bar 3 to set the indicator and also set the type-carrier. Should the setting-lever, however, be moved to the position representing one pound, the roller 40 will engage the first projection on the upper wall of the slot 39 and force the slide 34 upward a distance of one tooth. When the counter is now operated, this tooth will actuate the wheel 27 to move the same forward an advance of one tooth. The last-mentioned movement of the pound-lever will move the pin 32 into the second notch of the lever 28, and no registration will take place on the counter-wheel 26. This operation is repeated as the pound-lever is moved along

the scale from tens of shillings to pounds, with the exception, however, that after the one-pound notch has been passed the slide 34 will be held in position to register one pound or more, as the case may be, even if the lever 28 is moved forward to register shillings in combination with pounds. After the lever has passed the two-pound mark slide 34 will be held in position to register two pounds, even though the lever 28 is also set to register ten shillings, and so on up the scale until the limit of five pounds ten shillings is reached.

The upper rear edge of the bar 3, that is connected to the pounds-lever, is formed with rack-teeth 41, which mesh continually with a pinion 42, fast to the double indicating-wheel 43. This wheel is journaled upon a transverse shaft 44 and is formed with indicating characters similar to those along the edge of the slot through which the pounds-lever operates. In other words, this indicator is provided with indications for ten shillings, one pound, one pound ten shillings, two pounds, two pounds ten shillings, and so on up to five pounds ten shillings. The indicating-numerals, however, for the tens of shillings in each instance are singular, as they read in combination with the next preceding indicator, and the necessity of the ciphers is thus obviated. This is clearly shown in Fig. 1.

The indicators for the amounts are arranged in two sets for indicating to the back and front of the machine. These sets are geared together, so as to read correctly from left to right upon both sides of the machine by connecting shafts and pinions and in a manner well known in the art. The special-character indicator 41', however, is provided with two duplicate sets of indicating characters which indicate properly from both the front and the back of the machine.

As before stated, the counter-frame 12 is slidably mounted in the frame 13, so that it may be reciprocated vertically. This reciprocation is effected by pivoted levers 45, mounted upon lugs 46, pendent from the main frame, as shown in Fig. 2. The forward ends of the levers are slotted, as at 47, to embrace a transverse shaft 48, mounted in the counter-frame. Each of the levers 45 is provided with an antifriction-roller 49, which projects into a cam-groove 50 of a box-cam 51, fast upon the main rotation-shaft 52 of the machine. By this means when the shaft 52 is rotated, as hereinbefore described, the levers 45 are reciprocated, and the counter thus given its movements first down and then back to its upper normal position. (Shown in Fig. 2.) The transferring devices are operated upon the back or up stroke; but as their particular construction forms no part of the present invention no further description of them is thought to be necessary. It will of course be understood that the frame 13, in which the counter slides, is shown in Fig. 2 in a position

in which the counter would not engage any previously-set rack-teeth. It is thus necessary to first rock the frame 13 rearward at its lower end, it being pivoted, as at 13', to the main frame.

The rocking of the frame 13 is accomplished by a reciprocating bar 53. This bar is bifurcated at its rear end and straddles the rotation-shaft 52, which latter at this point is provided with a box-cam 54, having a cam-groove 55, into which an antifriction-roller 56, mounted on the bar 53, projects, as best shown in Fig. 7. The forward end of the bar is formed with an elongated slot 57, through which projects a headed bolt 58, mounted on the frame 13. A pivoted hook-pawl 59 is mounted on the bar 53 and is arranged to normally engage the bolt 58 to couple the bar to the frame 13. The pawl 59 is provided with a laterally-projecting pin 60. A lever 61 is pivoted upon a transverse shaft 62 and is provided with two arms 63 and 64. The arm 63 normally projects under the pin 60 and holds the pawl 59 up in engagement with the bolt 58. The arm 64 is formed at its forward end with a hook projection 65, which when the lever 61 is rocked, as hereinafter described, engages the pin 58, and thus locks the frame 13 in the position shown in Fig. 2, in which the counter will not be operated. Should the pawl 59 remain caught upon the pin 58 when the lever 61 drops, the hook end 65 engages said pawl and forces the same downward and disengages it from the pin or bolt 58. When the pawl 59 is disengaged from the bolt 58, as before described, the reciprocations of the bar 53 will have no effect upon the frame 13, and the counter when reciprocated will not engage any of the previously-set rack-bars. When the hook 65 again disengages from the bolt 58, the arm 63 engages the pin 60 and causes the pawl 59 to again engage the bolt 58. The above operation of disengaging the pawl 59 from the bolt 58 takes place only when the counter is to be thrown out or rendered inoperative. The forward end of the lever 61 is formed with two spaced operating-noses 66 and 67.

Each of the racks 18 meshes with one of a series of pinions 68, these pinions being mounted, respectively, upon the inner ends of a series of nested sleeves 69 and a shaft 69', which project laterally through the machine and carry the type-wheels 70 at their outer ends in a manner well known in the art. The outermost of these sleeves 69, which is connected to the lever representing the different clerks and special transactions, is provided with a hub 69'', which is cut away, as at 71. The nose 66 normally projects into this cut-away portion, as shown in Fig. 7, and the hook 65 is thus held elevated. The sleeve 69 may be moved to any of its first six positions without disturbing the nose 66, as the latter simply plays through the cut-away portion 71; but

when said sleeve is moved past the sixth position into either of the three positions representing "Charge," "Received on account," or "Paid out" the nose 66 is cammed upward by the end wall of the reduced part 71, and the counter-carrying frame is thus thrown out of operation, as above described. When the sleeve 69 is moved back, the counter-carrying frame is brought into operative condition again by the nose 67 being cammed downward by the end wall of the reduced portion 71, as will be readily understood by reference to Fig. 7. While the counting mechanism is thrown out for the three special transactions, the indicating and printing of these special transactions still takes place, and a perfect record is thus made of all transactions. While the parts are in the positions shown in Fig. 7, the nose 66 is locked down in position by the nose 67 engaging the full portion of the hub 69".

As it is desirable in the present class of machine to retain independent totalized records of the number of sales in the different classes of special transactions, I provide a series of special counters 75, 76, and 77, as best shown in Fig. 1. Each of these counters is arranged to be actuated to count one when properly set for operation by a spring-pressed pawl 78, having a number of tines of different lengths which are arranged to coöperate with ratchet-wheels 79 upon the sides of the respective counter-wheels. These ratchets are restrained against retrograde movement by a series of locking-pawls 80. Each of the pawls 78 is carried by a pivoted bell-crank lever 81, mounted upon a transverse shaft 82 and normally held in its lowered position (shown in Fig. 3) by a coil-spring 83. The lower pendant arms of the levers 81 project downward side by side, and each of the same is provided at its lower end with a laterally-projecting flange 84, these flanges projecting laterally in different vertical planes, as shown in Fig. 3. The levers 81 are arranged to be independently operated by a common operating-arm 85, which is moved to different elevations and then reciprocated to engage one or the other of the flanges 84 and move the same downward. The arm forms part of a horizontal slide 86, which slide is supported upon a vertically-movable slide 87 by means of pins 88, which project through elongated slots 89, formed in the slide 87. This latter slide is guided at its upper end by a pin 90, mounted on the main frame and which projects through a slot 91, formed in said slide. The lower end of the slide is slotted, as at 92, to straddle the shaft 17 and be guided thereby. This lower portion of the slide is formed with a slot having a portion concentric to the shaft 17 and a cam portion 94. An arm 95, connected to the special clerk's lever, carries a pin 96, which projects into the slot 93. The formation of the portion 93 of the slot is such that the slide 87 will remain stationary when

the adjusting-lever of the special bank is moved to any of its first six positions. Should the lever, however, be moved to any of the positions representing the special transactions, the pin 96 will engage the walls of the cam portion 94 of the slot and will raise the slide 87 correspondingly. As the slide moves upward the arm 85 is brought into the same horizontal plane with the proper flange 84. After the arm 85 has been so positioned the slide 86 is reciprocated upon the operation of the crank-handle to cause the arm to operate the proper bell-crank lever 81. This reciprocation of the slide is effected by an auxiliary slide 97, formed with a vertical slot 98, through which one of the pins 88 projects. The forward end of the slide 97 is suitably supported in the main frame, while the rear end of the said slide is slotted, as at 99, to straddle the rotation-shaft 52, as best shown in Fig. 3. One of the arms formed by the slot in the slide is curved downward slightly at its rear end and is provided with an antifriction-roller 100. An eccentric 101 is mounted upon the shaft 52 and engages the roller 100 and a similar roller 102, mounted on the slide 97. As the eccentric 101 is given a complete rotation upon each operation of the machine it will be seen that the slide 97 is correspondingly reciprocated, being moved positively in both directions. When the arm 85 is in its normal position, (shown in Fig. 3,) the reciprocation of the slide 97 will have no effect upon any one of the special counters; but when the arm 85 is raised into the same plane with any of the flanges 84 its reciprocation will actuate the corresponding special counter.

During the setting operation of the indicators the same are hidden by the flashes, as hereinafter described, and to provide an indicating means whereby the clerk or operator may verify the amounts set up I journal a series of auxiliary indicators 103 upon a transverse shaft 104, as best shown in Figs. 1 and 2. These indicators correspond to the regular large indicators at the top of the machine and are set by a series of rack-segments 105. Each of these segments is geared to its respective indicator-wheel by a pinion 106 and a sleeve 107. Each of the rack-segments is provided with a slotted arm 108, into which projects an antifriction-roller 109, mounted upon its respective setting-lever. As these small indicators 103 are always exposed to the view of the operator, he can ascertain at any time by a glance just what amounts the levers are set to indicate, register, and print. The regular indicators located at the top of the machine are arranged to be concealed at both the back and front by flash-plates 110, which are mounted upon arms 111, journaled upon an indicator-shaft 44. These arms, as best shown in Fig. 8, are normally drawn into a position to cause the flashes to conceal the indicators by a coil-spring 112, which connects

one of said arms to the frame of the machine. A bar 113 is pivotally connected to this arm 111 and is slotted at its lower end, as at 114, to permit the passage therethrough of the rotation-shaft 52. This shaft carries a cam 116, which coöperates with an antifriction-roller 117, mounted at the lower end of the bar 113, for moving the flashes away from the indicator-openings in the cabinet and into the positions shown in Fig. 8. The bar 113 is also provided with a latching-lug 118, which is engaged by a spring-pressed hook 119, mounted upon the main frame and provided with a tripping-nose 120, which is so located as to be engaged by an arm 121, fast to a rock-shaft 122, which extends across the rear portion of the machine. This shaft is rocked forward, as hereinafter described, when any one of the setting-levers is operated, and thus disengages the hook-pawl 119 from the lug 118 and permits the flashes to be drawn between the indicator-wheels and the indicator-openings to conceal the indicators by obstructing the view through the cabinet-apertures. In order to compel the tripping of the latch 119 upon each operation of the machine, I provide the eccentric 101 with a pin 124, which when the eccentric commences its movement engages the upper end of the pawl 119 and forces the same from over the lug 118 to allow the bar to pass upward. The shaft 122 carries a pendent arm 125, provided with a series of set screws or bolts 126, which are arranged to engage the rear ends of a series of spring-pressed locking and alining plungers 127, mounted in a channel-bar 128 of the main frame. The forward ends of the plungers are beveled, as at 129, and engage the saw-teeth 130 of toothed bars mounted upon the respective bars 3, all of which is clearly shown in Fig. 2. These plungers 127 only engage the toothed bars 130, mounted upon the main slides, the special clerk's slide having a modified construction to be presently described. It will be seen from the above description that when any one of the amount-levers is operated the frame 125 will be rocked rearward with the shaft 122 and the flashes thus dropped in front of the indicators, as before described. As will be hereinafter described, I provide devices for locking the crank-handle against operation until the special setting-lever has been operated, and in order to also lock the machine against operation until the flashes have assumed positions to conceal the indicators I provide the bar 113 with a laterally-projecting pin 178. (See Fig. 5.) This pin projects into an elongated slot 179, formed in the forward end of the lever 180, which is pivoted upon the main frame, as at 181. This lever is provided with a locking-nose 182, which normally projects into the path of a lug 184, fast to a disk 183. It will be seen from the above description that as long as the flashes remain in the positions shown

in Fig. 2 the nose 2 will project in front of the lug 184, and thus lock the machine. When the flashes are moved to conceal the indicators, the nose 2 is withdrawn out of the path of the lug 184, and the machine is thus free to be operated.

The rack-bar 3 of the special clerk's lever is provided with a toothed plate 132, similar to the plates of the amount-slides 21. The teeth of this plate coöperate with a spring-pressed plunger 133, similar to the plungers 127. This plunger 133 abuts against an adjusting-bolt 134, mounted in the lower end of a pivoted lever 135, which is journaled upon the shaft 122. From the above construction it will be seen that when the special setting-lever is operated the lever 135 will be rocked, without, however, rocking the shaft 122 except through an intermediate connection to be presently described. The upper end of the lever 135 is beveled, as at 136, and at this beveled edge is arranged to engage an antifriction-roller 137, mounted upon the rear end of a pivoted lever 138, which is mounted upon the main frame, as at 139. This lever 138 carries a pendent locking-pawl 140, which, as shown in Fig. 3, is normally spring-pressed against a stop-pin 141, mounted upon the box-cam 54. A stop-pin 142, mounted on the lever 138, limits the movements of the pawl 140 under the impulse of a spring 143, which engages it. When the lever 135 is operated, the rear end of the lever 138 is elevated until the lower end of the pawl 140 clears the pin 141. The pawl then snaps forward over the pin 141 and prevents the return of the lever 138, thus leaving the machine in its unlocked position. It will be seen that this unlocking of the machine takes place upon the operation of the special setting-lever alone. As it is desirable to drop the flash just as soon as the special setting-lever is operated, the lever 135 is provided with a laterally-projecting arm 144, which projects in front of the frame 125. When the lever 135 is rocked, the frame 125 is correspondingly rocked and the flash dropped, as before described. Should the frame 125 be first operated, however, the machine will not be released, as said frame moves independently of the lever 135.

The rack-bar 21 of the special setting-lever, as best shown in Fig. 3, is provided upon its rear edge with a series of rack-teeth 145, which mesh with a mutilated gear 146, journaled upon a lug 147, projecting from the main frame. This gear 146 meshes with a pinion 148, which is mounted upon a transverse shaft 149. This shaft, as best shown in Fig. 5, carries a beveled pinion 150, which meshes with a corresponding pinion 151. This latter pinion is loosely mounted upon a vertical shaft 152 and is connected for rotary movement therewith by a feather-and-groove connection 153. The pinion 151 is supported against

slipping down upon the shaft 152 by a hub 155, formed thereon and resting on a horizontal bracket 156 of the main frame. By this construction the shaft 152 and pinion 151 rotate together, but the shaft may be moved vertically independent of the pinion. The shaft 152 is suitably journaled in the main frame, as shown in Fig. 5, and is provided with a series of radially-arranged fingers 157, one of which is illustrated in said figure, the lower part of the shaft being broken away. The construction and arrangement of these fingers upon the shaft are fully shown and described in the patent to William F. Bockhoff, No. 616,866, issued December 27, 1898, and reference is hereby made to the same for any fuller description desired. In the present case I will describe the action of one of the fingers 157 only.

When the shaft 152 is rotated, the proper finger 157 is brought under a latch-operating lever 158. (Better shown in Fig. 9.) This lever 158 is mounted upon a cross-bar 159' of the main frame and is arranged to depress the rear hook end 159 of a locking-lever 160, pivotally mounted in lugs 161, secured to the rear wall of the respective cash-drawer 162. The lever 160 is normally drawn upward by a spring 163, which connects it to the cash-drawer, said lever being arrested in its normal position by a stop-arm 164, formed thereon and contacting with the rear wall of the drawer. The hook end 159 of the lever 160 is beveled, as at 165, so that when the cash-drawer is closed this hook end will be automatically depressed, so that it will ultimately snap up back of the cross-bar 159', and thus latch the cash-drawer in its closed position. When the shaft 152 has been rotated to bring the desired finger 157 under the proper lever 158, said shaft 152 is elevated, causing the fingers 157 to operate the latch-operating lever, and thus depress latch 160 and release the selected cash-drawer, which is automatically propelled from the cabinet or casing in any suitable manner. Vertical movement is imparted to the shaft 152 by a bell-crank lever 166, loosely mounted upon the shaft 122 and projecting immediately below a rigid collar 167, mounted on the side shaft 152. The forwardly-projecting portion of the bell-crank lever 166 normally lies in the path of a pin 168, mounted upon the box-cam 51. When the shaft 52 is rotated, the pin 168, mounted on the box-cam 51, engages the bell-crank 166 near the end of the rotation, and thus rocks said bell-crank to elevate the shaft 152 and release the selected cash-drawer.

In order to prevent the operation of the machine during the time that an adjusting-lever is being moved from one position upon the index-plate to another, I provide the frame 125 with a locking-arm 175, which carries a laterally-projecting pin 176. One of the cams

54 is formed in its periphery with a locking-notch 177. The relative arrangement of the parts is such that the notch 177 is normally directly opposite the pin 176. When the frame 125 is rocked by the operation of any one of the setting-levers, the pin 168 is caused to enter the notch 177, and thus lock the disk 54. This locking, however, only continues as long as the frame 125 is held in its rearward position by the adjustment of one of the levers to a position intermediate two of the numerals or characters upon the scale-plate. After the operation of the machine has been commenced the notch 177 passes out of alignment with the pin 176, and the frame 125 is thus locked against any rearward movement. This locking of the frame results in the locking of the setting-levers, as none of these levers can be free unless the frame 125 is free to swing rearward.

The printing devices, which I have fully illustrated in Fig. 4, include the type-carriers 70 and suitable inking, impressing, and strip-feeding devices; but as this mechanism is fully described and claimed in my copending application, Serial No. 136,164, filed December 22, 1902, I will not enter into a further description here. I have simply shown this one form of printing mechanism as an example of devices that may be used in connection with my invention, and it will be understood that any other well-known printing mechanism might be employed with equal facility. The cash drawers or receptacles that are employed in connection with my present invention may be mounted within a suitable case or cabinet by any of the usual forms of guideways including anti-friction-bearings for allowing the free movements of the drawers to open positions when released. Any usual construction of drawer springs or ejecting devices may be employed to propel the drawers from the casing when the latches are operated as hereinbefore described.

It will of course be understood that the peculiar arrangement of the combination indicators and adding-wheels controlled by the single operating-lever for pounds is not confined to the registering of pounds and shillings, but may be equally well employed for registering amounts of other monetary systems—as, for instance, the registering of dollars and cents, tens and fives of cents, &c. In this latter case the indications upon the special scale would be “.05,” “.10,” “.15,” “.20,” “.25,” “.30,” “.35,” and so on up to a point including the full capacity of the machine. It will also be understood that the peculiar construction for controlling the actuating-racks from a single lever is not limited to two racks, as shown, but this number might very well be increased without departing from the spirit of this invention.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a cash-register, the combination with a series of amount-setting elements, a counter, counter-operating devices controlled by said setting elements, a movable frame carrying said counter, means for moving said frame to carry the counter into engagement with said operating devices, and means for giving said counter a translatory movement within said frame to cause the actuation of the counter by the operating devices; of a special setting element; and means controlled by said special element to prevent the operation of said counter.

2. In a cash-register, the combination with a series of amount-setting elements, a counter, counter-operating devices controlled by said setting elements, a movable frame carrying said counter, means for moving said frame to carry the counter into engagement with said operating devices, and means for giving said counter a translatory movement within said frame to cause the actuation of the counter by the operating devices; of a special setting element; and means controlled by said special element to prevent the movement of said frame to carry the counter into operative position while permitting the ordinary translatory movement of the counter within the frame.

3. In a cash-register, the combination with an operating mechanism, a series of amount-setting elements, a counter, counter-operating devices controlled by said setting elements, a movable frame carrying said counter, means connected with said operating mechanism for moving said frame to carry the counter into engagement with said operating devices, and means also connected with said operating mechanism for giving said counter a translatory movement within said frame to cause the actuation of the counter by the operating devices; of a special setting element having a variable adjustment for the different transactions; and means controlled by said special setting element for disabling the means for moving said frame into position to carry the counter into operative position, while permitting the ordinary translatory movement of said counter within the frame.

4. In a cash-register, the combination with an operating mechanism, a series of amount-setting elements, a counter, counter-operating devices controlled by said setting elements, a movable frame carrying said counter, a reciprocating bar operated by said operating mechanism and connected with said frame to move the latter and thereby carry the counter into operative position, and means connected with the operating mechanism for giving said counter a translatory movement within said frame to cause the actuation of the counter by the operating devices; of a special setting element having differential adjust-

ment, and means controlled by said special element when it occupies certain positions for breaking the connection between said reciprocating bar and said frame and thereby preventing the movement of the frame to carry the counter into operative position.

5. In a cash-register, the combination with an operating mechanism, of a series of amount-setting elements, a counter, counter-operating racks controlled by said amount-setting elements, a movable frame for carrying said counter, and means connected with said operating mechanism for giving said counter a translatory movement within said frame to carry the counter over the adjusted operating-racks; of a reciprocating bar operated by said operating mechanism and provided with a hook for engaging said frame whereby to move the frame to carry the counter into operative position; a differentially-adjustable special setting element; a special printing-wheel corresponding thereto; a sleeve connection between said special setting element and said printer-wheel, and a disengaging pawl coöperating with said hook and also coöperating with provisions formed on said printer-sleeve to effect disengagement of said hook from said frame when said special setting element is moved to certain positions and thereby prevent the operation of the counter.

6. In a cash-register, the combination with a series of amount-setting levers arranged to be moved to different positions for different amounts, of a special setting-lever arranged to be moved to different positions for different transactions, a printing mechanism connected to the several setting-levers, a counting mechanism controlled by the amount-setting levers, and means for preventing the operation of the counting mechanism when the special setting-lever is set to certain positions.

7. In a cash-register, the combination with a series of amount-setting levers arranged to be moved to different positions for different amounts, of a special setting-lever arranged to be moved to different positions for different transactions, indicators connected to the respective setting-levers, a counting mechanism controlled by the amount-setting levers, and means controlled by the special setting-lever for preventing the operation of the counting mechanism when said lever is moved to certain positions.

8. In a cash-register, the combination with a series of setting elements, of a series of indicators for indicating to the back and to the front of the machine, flashes for hiding said indicators, means for tripping the flashes upon the initial movement of any one of the setting elements, and a series of auxiliary indicators connected to the setting elements.

9. In a cash-register, the combination with a series of setting elements, of a series of indicators, means for concealing the indicators

during the movement of the setting elements, and a series of independent auxiliary indicators which are exposed at all times.

10. In a cash-register, the combination with
5 two counting elements, of an amount-controlling member, and means intermediate said member and counting elements for controlling the operation of either of said elements independently or both of them simultaneously
10 according to the movement of the member.

11. In a cash-register, the combination with
two counting elements, of a single setting element arranged to be moved to different positions for different amounts, and means intermediate
15 said member and counting elements for controlling either one or both of said elements.

12. In a cash-register, the combination with
a plurality of counting elements, of a single
20 setting member, and means intermediate the setting member and the counting elements for controlling any one of said elements independently or all of the same simultaneously according to the adjustment of said setting
25 member.

13. In a cash-register, the combination with
a plurality of counting elements, of operating-racks for the same, a setting member, and
30 means connected with said setting member for operating any one of said racks independently or all of the same simultaneously according to the adjustment of said member.

14. In a cash-register, the combination with
a plurality of counting elements, of a single
35 setting member arranged to control either or both of the counting elements, and a single indicator for indicating the amounts registered on both of the counting elements.

15. In a cash-register, the combination with
40 a plurality of counting elements, of a setting member arranged to be moved to different positions for different amounts, an indicator, and three actuating devices for the counting elements and the indicator respectively which
45 are controlled from the single setting element.

16. In a cash-register, the combination with
a plurality of counting elements, of a single
50 setting member, an indicator, and three racks for the respective counting elements and the indicator and controlled by the single setting element.

17. In a cash-register, the combination with
two counting elements, of a single setting
55 member arranged to be moved to different positions, independent operating devices for the counting elements, and means intermediate said independent devices and setting element for alternately setting said devices as the setting element is moved from one position to
60 the next succeeding position.

18. In a cash-register, the combination with
a plurality of counting elements, of independent
65 actuators for said elements, a setting member for moving one of said actuators at all times, and means connected to the setting

member for operating the remaining actuator only upon certain movements of said setting member.

19. In a cash-register, the combination with
a counter, of operating-racks, and a single set- 70
ting element with connections for controlling a plurality of said racks independently of the movement of the counter.

20. In a cash-register, the combination with
a counter, of a plurality of operating-racks, 75
a setting element, means connecting one of said racks to the element for continuous movement, and means connecting a remaining rack to the element for intermittent movement independently of the movement of the counter. 80

21. In a cash-register, the combination with
a counter, of a plurality of operating-racks
85 for the same, a setting-lever, means connecting one of said racks for continuous movement with said lever, and means connecting a remaining rack for intermittent movement with said lever.

22. In a cash-register, the combination with
a counter, of a setting element representing
90 different denominational groups and arranged to be moved to different positions, and means intermediate said element and the counter for operating the counter according to the denomination for which the lever is set.

23. In a cash-register, the combination with 95
a counter, means for moving the counter through a certain path upon each operation of the machine, racks arranged to be brought into the path of the counter, and a single setting element constructed to be moved to different
100 positions and controlling all of said racks.

24. In a cash-register, the combination with
a counter arranged to be moved through a certain
105 path upon each operation of the machine, of a plurality of operating-racks arranged to be brought into the path of the counter, and a single setting element controlling said racks.

25. In a cash-register, the combination with 110
a special setting element, of a series of special counters, an actuating device for said counters having a single operating projection arranged to coöperate with any one of the
115 special counters, and means intermediate the setting element and the actuating device for moving the latter into coöperative relation with the desired counter.

26. In a cash-register, the combination with
an operating mechanism including a rotary 120
part, a setting element, a lock for the operating mechanism including a pendent spring-pressed pawl, a projection upon the rotary part against which said pawl normally rests
125 to lock the machine, and means connected to the setting element for elevating the pawl out of contact with the locking projection whereby said pawl may be automatically moved over said projection to prevent the relocking
130 of the machine.

27. In a cash-register, the combination with a series of operating elements arranged to be set up according to the amounts to be registered, a counter arranged to be moved over said elements, a frame supporting said counter, a special setting element, and means controlled by said special element for preventing the frame supporting the counter from being moved into an operative position.

28. In a cash-register, the combination with an operating mechanism, of a counter mounted in a swinging frame, means intermediate the swinging frame and the operating mechanism for actuating said frame, and a latch device for coupling and uncoupling said means from the frame.

29. In a cash-register, the combination with an operating mechanism, of a swinging frame, a counter sliding in said frame, means intermediate the frame and operating mechanism for actuating said frame, and clutch devices between said means and frame.

30. In a cash-register, the combination with an operating mechanism, of a counter mounted in a movable frame, a rotary shaft, and reciprocating means intermediate the shaft and the frame for operating the latter, a latch for coupling said means to the frame, and means for disengaging the latch arranged to engage and hold the frame stationary.

31. In a cash-register, the combination with an operating mechanism, of a counter mounted in a movable frame, a rotary shaft, a reciprocating link operated by said shaft, a latch mounted on said link for connecting it to the frame, and a pivoted device arranged to disengage the latch from the frame and to engage and lock the frame in its inoperative position.

32. In a cash-register the combination with an operating mechanism, of a series of indicators, means for concealing the indicators, and devices for locking the operating mechanism so long as the indicators are exposed to view.

33. In a cash-register, the combination with an operating mechanism, of a series of indicators, a movable indicator-concealing means, and a lock for the machine controlled by said movable means.

34. In a cash-register, the combination with an operating mechanism, of a series of indicators, movable flashes for concealing the indicators, a series of setting elements, a latch for the flash controlled by the setting elements, and a lock for the operating mechanism controlled by the movement of the flashes.

35. In a cash-register, the combination with an operating mechanism, of a series of amount-setting elements, a special setting element, a series of indicators, a movable member controlled by the amount-setting elements, a movable member for the special setting element, a lock for the operating mechanism controlled

by the latter movable member, a series of indicators, a flash for the indicators tripped by the movable member of the amount-setting device, and means for causing the movable member of the special setting element to operate the movable member of the amount-setting elements.

36. In a cash-register, the combination with an operating mechanism, of a series of indicators, a series of amount-setting elements, a special setting element, a lock for the machine controlled by said special setting element, and concealing means for the indicators controlled by any one of the setting elements.

37. In a cash-register, the combination with an operating mechanism including a rotary member, of a pivoted lever carrying a locking-pawl, a setting element, means intermediate the setting element and the lever for elevating the same, a projection on the rotary member arranged to normally engage the side of the pawl to lock the machine, and a spring for forcing said pawl over the top of said projection when the lever is elevated to prevent the return of said lever.

38. In a cash-register, the combination with an operating mechanism, of a series of special counters, a bell-crank operating-lever for each counter, an operating-slide, a special setting element for moving the slide vertically, and means connected to the operating mechanism for moving the slide horizontally to cause it to operate the selected special counter.

39. In a cash-register, the combination with an operating mechanism, of a series of special counters, an operating-slide for said counters, a special setting element, a setting device for said slide formed with a slot having a concentric portion and a cam portion, and a projection on said setting element extending into said slot.

40. In a cash-register, the combination with an operating mechanism, of a series of indicators, a pivoted flash for the same, a link-bar connected to the operating mechanism for actuating the flash, and a lock for the operating mechanism controlled by said link-bar.

41. In a cash-register, the combination with a series of setting-levers, of a series of operating-racks controlled by the same, a counter mounted in a movable frame, means controlled by the operating mechanism for establishing an operative relation between the counter and the counter-racks, a special setting element arranged to be moved to different positions for different transactions, and means for preventing the establishment of operative relations between the counter and counter-racks when the special setting element is moved to certain of its positions.

42. In a cash-register, the combination with an operating mechanism, of a series of setting-levers arranged to be moved to different positions, counter-actuating racks controlled by

said levers, a counter, means connected to the
operating mechanism for establishing an op-
erative connection between the counter and
the operating-racks, a special setting element
5 arranged to be moved to different positions
for different transactions, and devices con-
nected to said setting element for preventing
the establishment of the operative relations
between the counter and the counter-operat-

ing racks when said special setting element is
moved to certain of its positions.

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

THOMAS CARROLL.

Witnesses:

H. C. WOOD,
J. B. HAYWARD.