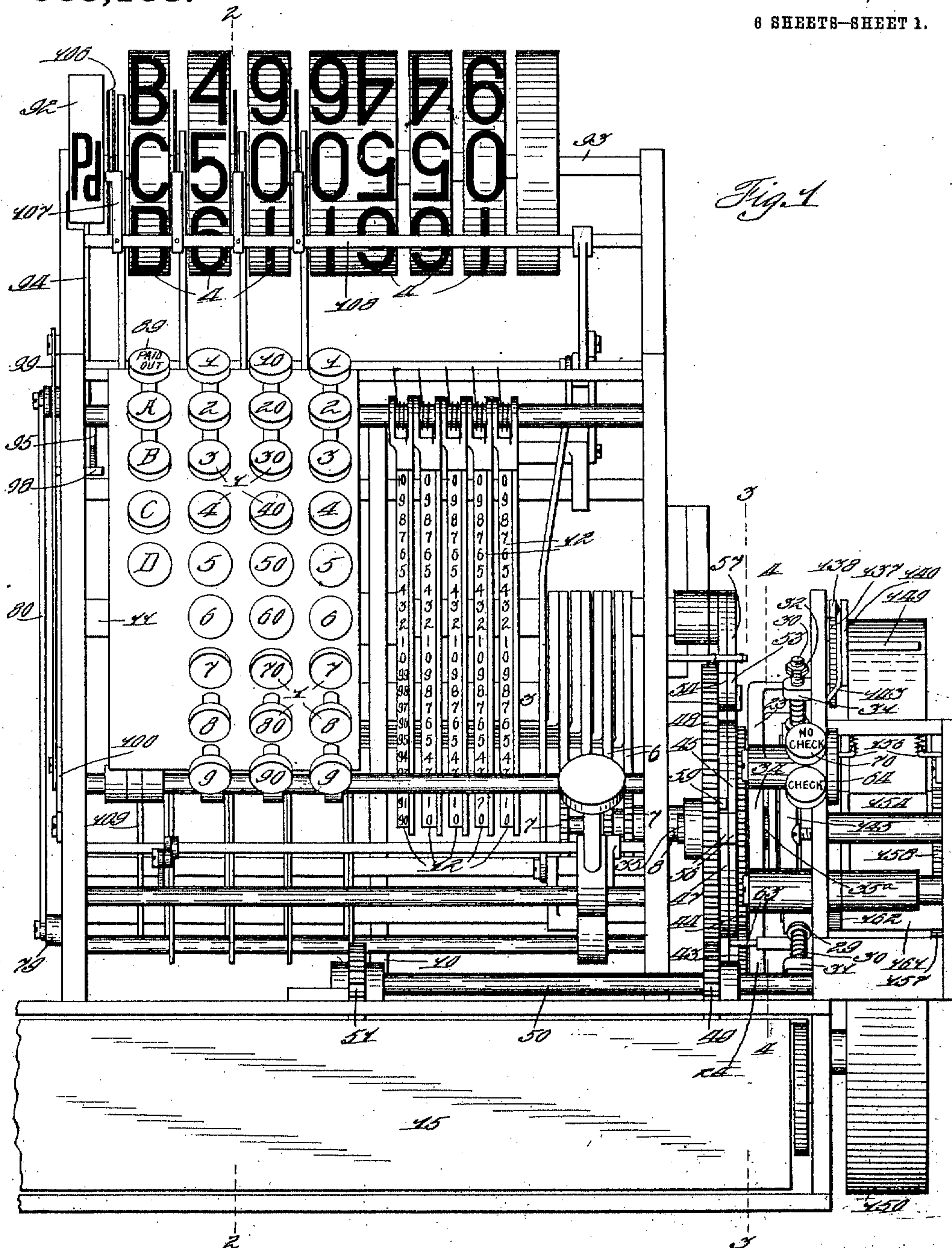


W. F. BOCKHOFF & E. J. VON PEIN.  
 PRINTING MECHANISM FOR CASH REGISTERS.  
 APPLICATION FILED FEB. 6, 1904.

985,138.

Patented Feb. 28, 1911.

6 SHEETS—SHEET 1.



Witnesses  
 W. W. Claitor  
 J. M. Henderson

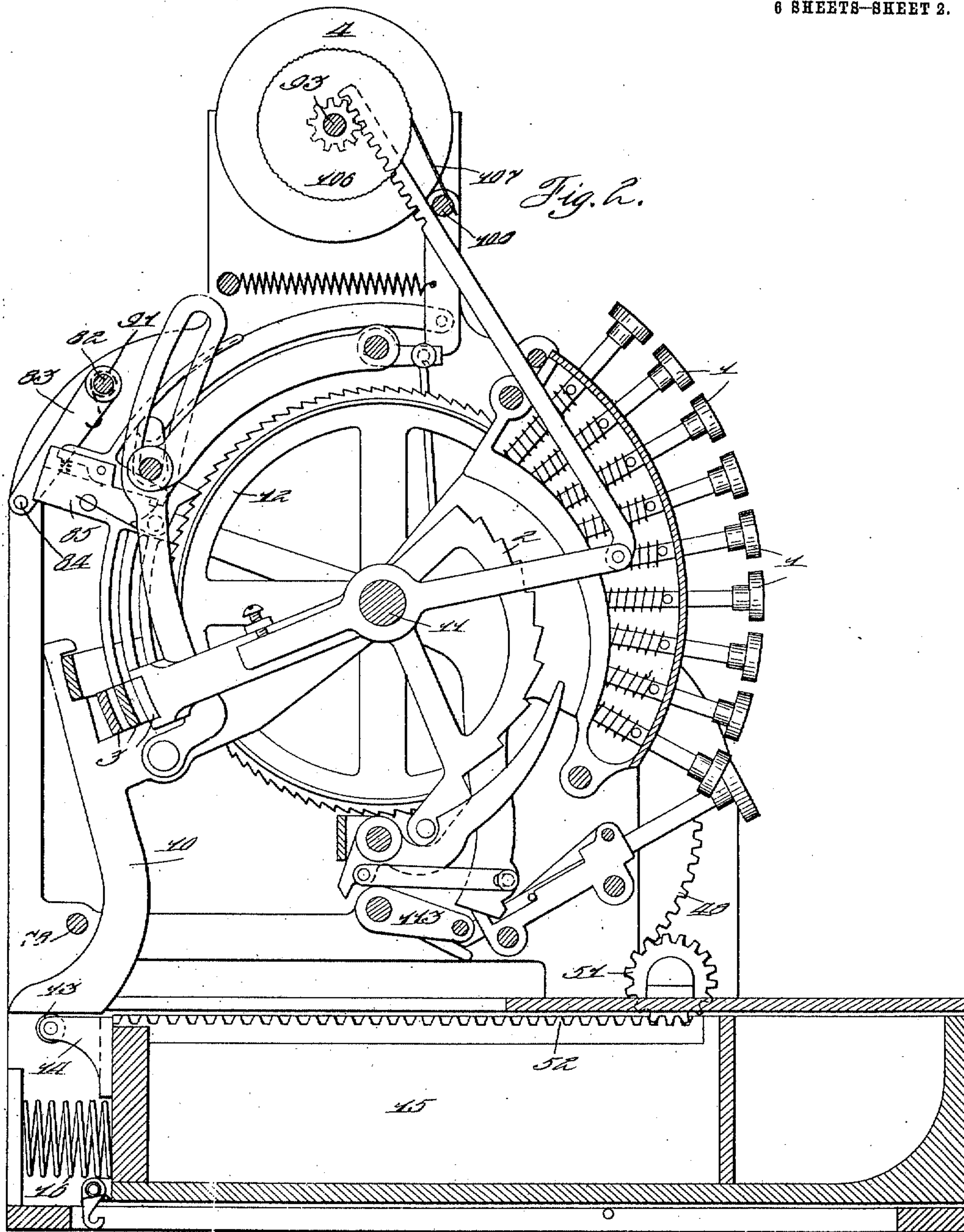
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6 SHEETS—SHEET 2.



Witnesses  
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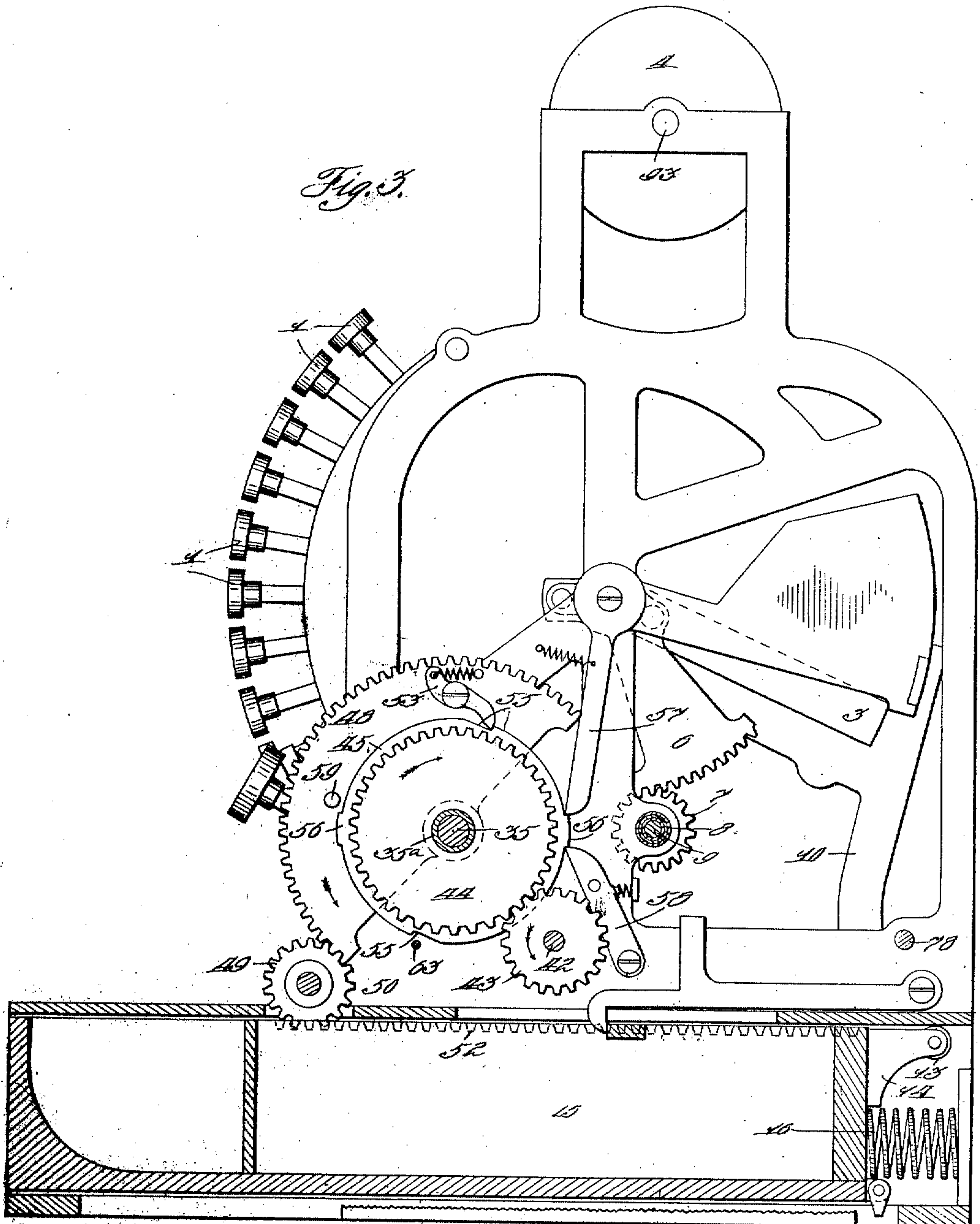
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6 SHEETS—SHEET 3.



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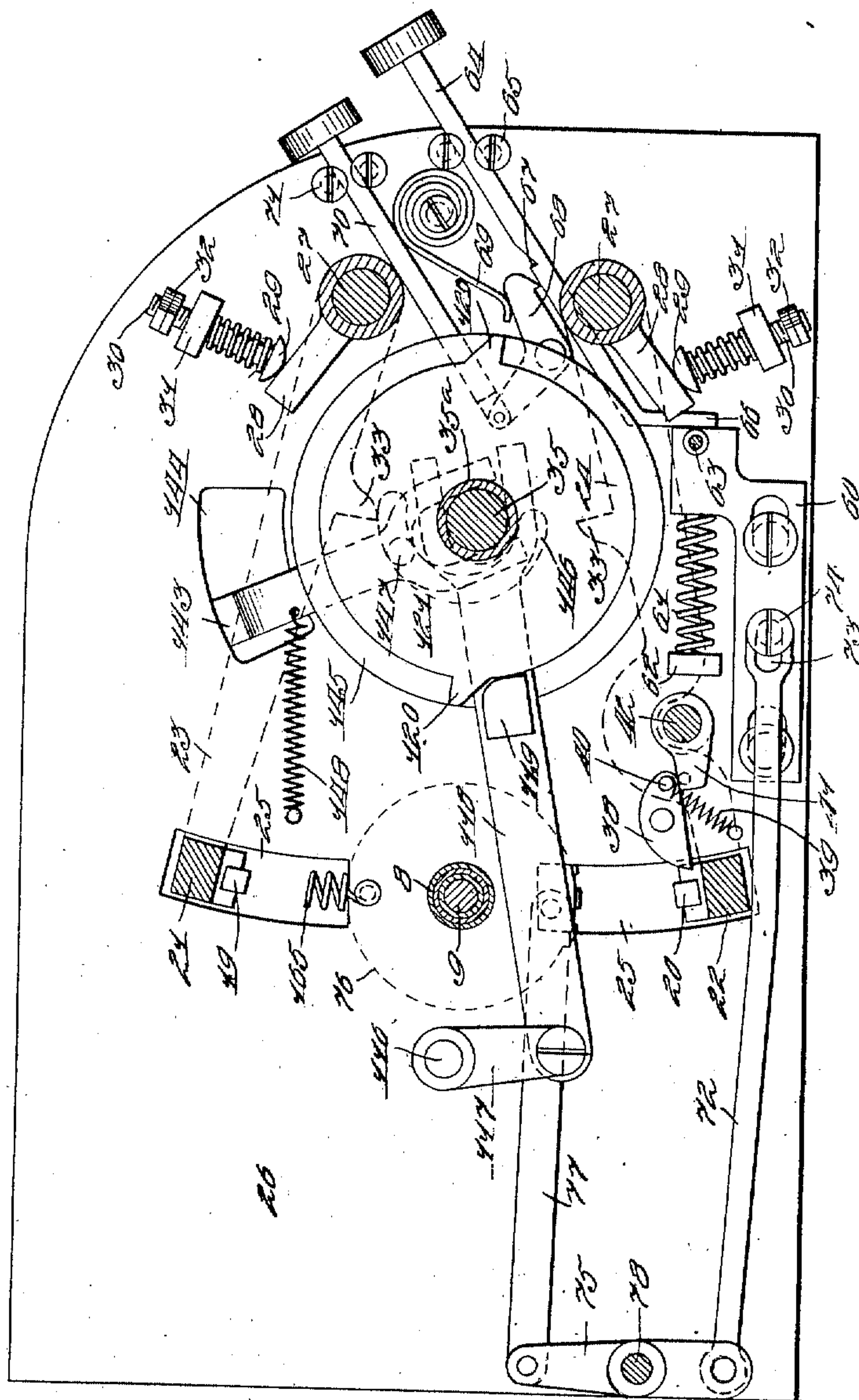
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6 SHEETS—SHEET 4.

Fig. 4.



Witnesses  
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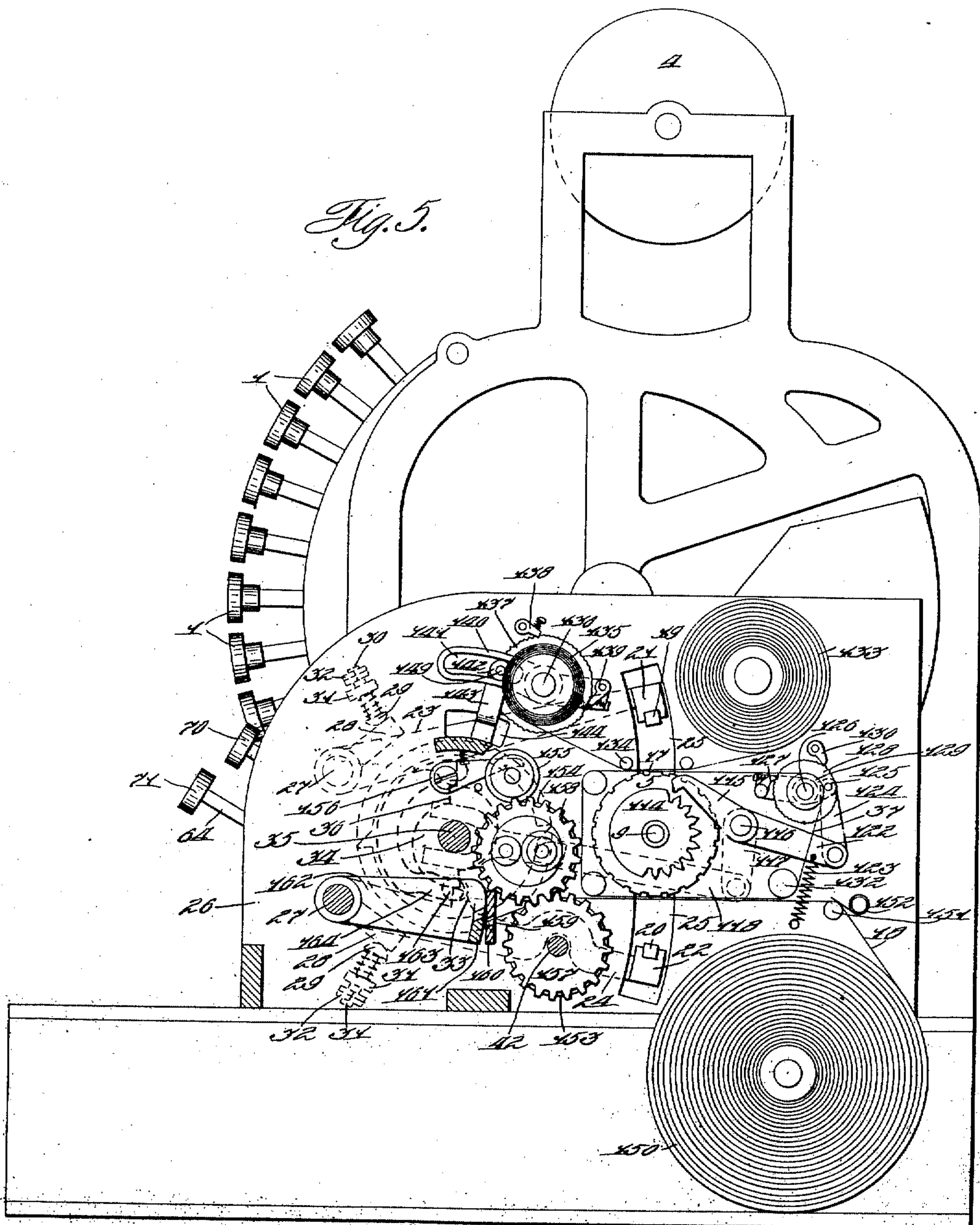
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6 SHEETS—SHEET 5.



Witnesses  
*W. W. McLeath*  
*Wm. O. Henderson*

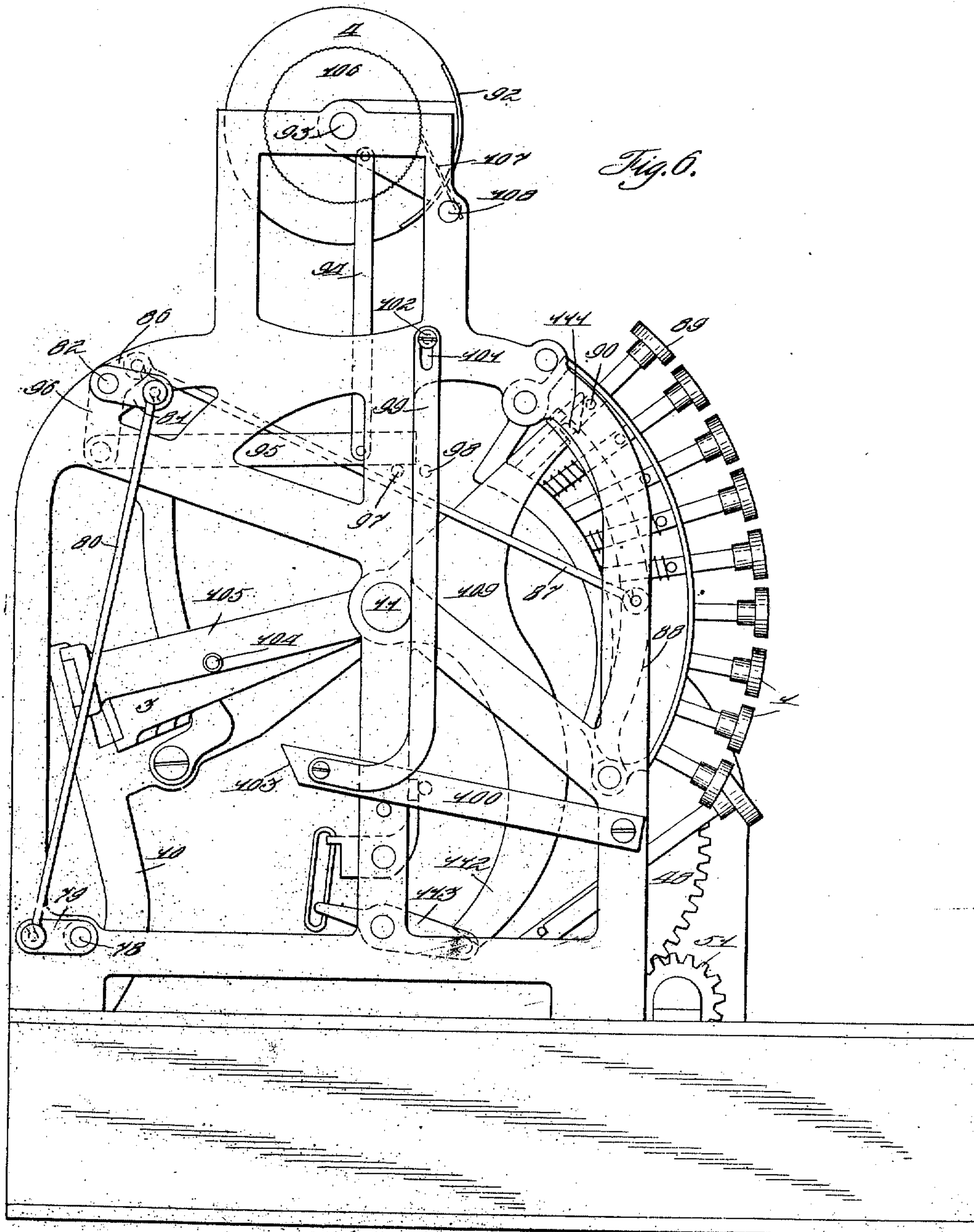
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6 SHEETS—SHEET 6.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM F. BOCKHOFF AND EDWARD J. VON PEIN, OF DAYTON, OHIO, ASSIGNORS, BY  
MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON,  
OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

## PRINTING MECHANISM FOR CASH-REGISTERS.

985,138.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed February 6, 1904. Serial No. 192,429.

*To all whom it may concern:*

Be it known that we, WILLIAM F. BOCKHOFF and EDWARD J. VON PEIN, residing at Dayton, in the county of Montgomery and State of Ohio, citizens of the United States, have invented certain new and useful Improvements in Printing Mechanism for Cash-Registers, of which we declare the following to be a full, clear, and exact description.

10 This invention relates to improvements in cash registers and has more particular relation to improvements in printing devices for the same.

One of the several objects of the invention is to provide an improved printing mechanism for the type of machines shown and described in the patent to Henry S. Hallwood, No. 704,795, granted July 15, 1902.

Another object of the invention is to provide an improved printing mechanism in which the devices for issuing the checks are controlled by certain keys whereby a check is issued or not, as desired, according to the key operated.

25 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 of the type mentioned with our improvements applied thereto; the cabinet of the same being omitted. Fig. 2 represents a vertical transverse section through the same on the line 2 2 of Fig. 1. Fig. 3 represents a similar section on the line 3 3 of Fig. 1. Fig. 4 represents a detail section through the printer on the line 4 4 of Fig. 1; and Figs. 5 and 6 represent respectively end elevations of the right and left ends of the machine with the cabinet removed.

As a number of the parts shown in the present case are fully described and illustrated in the aforesaid patent we will refer to said patent for such detail descriptions as are not hereinafter given. Described in general terms, however, the machine is provided with a series of amount keys 1 arranged in banks. These keys when depressed act as stops for graduated step segments 2 which segments in turn control a series of nested yokes 3 and a series of rotary indicators 4. As the nested yokes 3 are moved according

to the values of the keys depressed, we utilize the movements of these yokes to set the printing wheels 5. For this purpose each of the yokes is provided with a rigid segmental rack 6 best shown in Fig. 3. Each of these segments 6 meshes with a pinion 7 fast to the inner end of one of a series of nested sleeves 8 on a supporting shaft 9 upon which said sleeves are mounted, the outermost of said sleeves being suitably journaled in the main frame. While the yokes 3 are limited in their downward movements by the step segments or sectors 2, they are not returned by these parts but receive their upward movement by means of a lever 10 mounted upon a shaft 11 upon which the registering wheels 12 are mounted and curved downward at its rear end to rest upon an anti-friction roller 13 mounted in a bracket 14 secured to the rear of a sliding cash drawer 15. By this means when the cash drawer is moved outward by its ejecting spring 16 the lever 10 is allowed to descend and when the cash drawer is closed the lever is again moved back to its normal position thus elevating the nested yokes 3 and moving said yokes together with the printing wheels back to their normal positions.

Each of the printing wheels 5 representing the amount banks, as well as a special printing wheel representing the clerks' bank of keys which is similar in operation to the amount banks as far as the printer is concerned, is provided with a duplicate set of numerals from zero to nine located upon diametrically opposite sides of its periphery so that when an impression of one number is being taken from above on the detail strip 17 a corresponding impression may be taken from the lower portions of the wheels upon a check strip 18. The two impressions are secured by flexible platens 19 and 20 mounted in platen arms 21 and 22. These arms are secured to the rear ends of platen levers 23 and 24 and project through suitable slots 25 formed in the printer frame 26. Each of the platen levers 23 and 24 is journaled upon a stud 27 projecting laterally from the printer frame 26 and is provided with a short operating arm 28 against which a head 29 of a spring bolt 30 engages to normally hold the platen levers under spring tension. Each of the bolts 30 is mounted in



an apertured lug 31 of the printer frame and is provided with nuts 32 for limiting its movement under the impulse of its spring. Each of the platen levers is provided with a vertical projection or cam nose 33 as shown in dotted lines in Figs. 4 and 5. These noses, as shown in Fig. 5, normally engage the opposed enlarged portions of a cam 34 fast to a rotation sleeve 35<sup>a</sup> journaled on a rock shaft 35 so as to hold the platens away from the types or under spring tension whereby they will be operated when released. This release takes place upon the rotation of the sleeve 35<sup>a</sup> which moves the cam 34 to bring its radial walls 36 into alinement with the lugs 33 thus freeing said lugs and allowing said levers to operate to bring the platens into engagement with the detail and check strips and force the latter against the ink ribbon 37 and the type wheels. This operation of the two platens takes place when it is desired to print both the detail strip and the check but it is at times desirable to print only the strip and suspend the action of the check printing device, and to accomplish this result we provide means other than the cam 34 for holding the lower or check platen lever 24 in its lowered position. This means comprises a pivoted pawl 38 mounted upon the printer frame 26 and arranged to be normally spring-drawn to project over the platen arm 22 by a coil spring 39 which connects it to the printer frame. The pawl 38 is provided with a laterally projecting pin 40 which normally rests upon the upper edge of an arm 41 fast to a short rotation shaft 42 also mounted in the printer frame, all of which is best shown in Fig. 4. The shaft 42, as best shown in Fig. 3, is provided with a gear wheel 43 which meshes with a gear wheel 44 fast to an operating disk 45 which is journaled upon the sleeve 35<sup>a</sup>. The sleeve 35<sup>a</sup> has fast thereto a second disk 47 as best shown in Fig. 1, and since the cam 34 for operating the detail strip and the check platens is, as before described, fast upon this same rotation sleeve 35<sup>a</sup>, it will be apparent that the rotation of the disk 47 will revolve this cam to operate both platens, the method of rotation of this disk 47 being explained below. A large gear segment 48 is fast to the rock shaft 35. This segment 48 meshes with a pinion 49 fast on a rotation shaft 50 mounted in the main frame and which is provided with a pinion 51 meshing with a rack 52 fast to one of the partition walls of the cash drawer 15.

Through the above described connections the opening and closing of the cash drawer will result in the segment 48 being oscillated. This segment carries two independent spring drawn pawls 53 and 54 so located thereon as to normally engage the peripheries of the disks 45 and 47. By this means

the normal operation of the machine results in the segment 48 moving both of the disks 45 and 47 one-half of a revolution. For this purpose each of the disks is provided upon diametrically opposite sides with notches 55 into which the pawls 53 and 54 snap when the segment 48 is oscillated, so that the disks will be turned in one direction only. Each of said disks is further provided at diametrically opposite edges with locking lugs 56. These lugs are engaged by spring drawn pawls 57 to prevent retrograde movement of said disks 45 and 47. The lugs are also engaged by spring-pressed pawls 58 for preventing excessive forward movement or overthrow of said disks. These latter pawls, as shown in Fig. 3, are normally locking the disks 45 and 47. When the cash drawer passes out of the casing, however, the segment 48 is oscillated so as to bring the pin 59 projecting laterally therefrom against the pawls 58 and disengage them from the lugs 56. At this time the pawls 53 and 54 fall into the notches 55 so that when the segment 48 commences its return the disks will be moved far enough forward before the pawls 58 can engage said disks to prevent the pawls locking the disks until they engage the next succeeding lugs 56.

As before stated it is desirable at times to suspend the operation of the devices for effecting the printing of the check. As the disk 45 controls this operation we provide means for preventing the pawl 53 which operates this disk from engaging its particular notch 55 so that the disk 45 remains stationary. These devices comprise a slide 60 mounted by suitable slot and pin connections upon the printer frame and normally forced forward by a coil spring 61 interposed between said slide and a lug 62 on the printer frame. This slide is provided with a laterally projecting pin 63 the outer end of which projects into proximity to the disk 45. When the slide 60 is in its normal position shown in Fig. 4 the pin 63 projects into the position shown in Fig. 3 and thus prevents the pawl 53 from engaging in the notch of the disk 45 when the segment 48 is oscillated. When the slide 60 is moved rearward, however, the pin 63 is carried so far to the rear as to leave the pawl 53 free to engage the lower notch 55 of its respective disk 45 and thus operate the same and actuate the shaft 42 through the devices before described. When the shaft 42 is rotated the arm 41 rocks the pawl 38 until it passes free of the latter thus permitting said pawl 38 to rock on its pivot and allow the check platen to operate. If the shaft 42, however, is not rotated the pawl 38 is locked against any rocking movement and as it projects over the upper side of the platen arm 22 it prevents this arm



from moving upward even after the platen lever is released by the cam 34. The slide 60 is forced rearward and held in this position by a plunger 64 mounted between guiding rollers 65 and provided with a pendent arm 66 which engages the forward side of the carriage 60. The shank of the key 64 is provided with a notch 67 so that when the key is depressed it will be latched in this depressed position by a bell crank latch 68 pivoted upon the printer frame and normally forced forward by a coil spring 69. The latch 68 is pivotally connected to a plunger key 70 also mounted in the printer frame by guide rollers 71. The key 70 is marked at its outer end with the words "No check" while the key 64 is marked with the word "Check." If the key 64 is depressed it remains depressed because of the latch 68 and checks will be issued as long as the key remains in this position. Should the key 70 be depressed, however, the latch 68 will be operated and disengaged from the key 64 which latter key will be forced outward into its normal position by the slide 60 which in turn will assume its normal position because of the stress of the spring 61. The office of the "no check" and "check" keys is to compel a pressure of one or the other of said keys for each operation of the machine and also to correct any mistakes as to the issuance of checks after the machine is partly operated. In other words, if after the amount keys and clerk's key have been depressed it is decided that the improper check key has been depressed the correct key can be operated and a check issued or not issued as desired. In fact even after the keys have been operated and the cash drawer opened any mistake in the check keys may be corrected without interfering with the proper operation of the machine.

As it is at all times desirable to issue a check upon the operation of any of the special transaction keys of the machine we have provided means for moving the slide 60 rearward for this purpose when any special transaction key is operated irrespective of the position of the "no check" key 70. These devices comprise a link rod 72 formed at its forward end with an elongated slot 73. A headed pin 74 mounted in the slide 60 projects through this slot thus effecting a connection with the slide without preventing free movement of the latter. The rear end of the link 72 is pivotally connected to a lever 75 which in turn is connected to a special printing wheel 76 by a link 77. The lever 75 is fast to a rock shaft 78 which projects laterally across the rear of the machine and is provided, as best shown in Fig. 6, with a rearwardly projecting arm 79. This arm is connected by a link 80 to an arm 81 fast to a rock shaft 82 which, as best shown in Fig. 2, carries an arm 83 provided with a

laterally projecting pin 84 which, when the shaft 82 is rocked, passes under all of the registering levers 85 and thus prevents the descent of the latter and a subsequent registration. The shaft 82 is rocked by an arm 86 fast thereto and connected by a link 87 to a lever 88, so pivoted on the main frame that its upper end is in proximity to a special "paid out" key 89. This key carries a laterally projecting pin 90 so positioned that when the key is depressed it will force the lever 88 rearward and thus rock the shaft 82 against the tension of a coil spring 91 which surrounds the shaft and is connected to an arm 83 and the main frame. The rocking of the shaft 82 results in a similar rocking of the shaft 78 and thus draws the slide 60 rearward so that a check will be issued even should the key 64 be released and returned to its outer position.

We have described above the manner in which the pawl 53 for the disk 45 is prevented from engagement with the notches 55 at will. It will be understood, however, that the pawl pertaining to the disk 47 is never thrown out so as not to cooperate with the notches of its respective disk as this disk must be turned a half revolution upon each operation of the machine, and therefore the detail strip platen will be operated at each operation of the machine to take an impression thereon regardless of whether a check is issued or not, and the check platen is allowed to spring upward to take an impression upon the check only in such cases as hitherto described where the parts are set to permit the issuing and printing of the checks. It will of course be understood that the cash drawer is provided with suitable full stroke devices whereby full opening and closing movement thereof is assured and any partial operation of the disks 45 and 47 prevented.

As has before been stated the rocking of the shaft 78 sets the special printing wheel or segment 76 to bring to the printing point a type character corresponding to the character on the special "paid out" key. We have shown only one special key but it will be understood that we can employ any desired number of keys and so position their pins 90 as to move the lever 88 to a greater or less distance and thus move the type carrier 76 correspondingly. In such an application of our invention the minimum movement of the shaft 78 would draw the slide 60 rearward sufficiently to assure the issuance of a check. In connection with the special controlling devices we provide a special indicator 92, segmental in form and mounted loosely upon the regular indicator shaft 93. This indicator 92 is connected by a link 94 to a lever 95 which is pivoted upon an arm 96 pendent from the shaft 82. The forward end of the lever 95 normally rests upon a pin



97 projecting from the main frame of the machine and clear of a pin 98 mounted on a vertically movable link 99 which is pivoted at its lower end to a lever 100 and is formed at its upper end with a slot 101 through which passes a headed guiding bolt 102. The rear end of the lever 100 is beveled or inclined as at 103 and this inclined edge is so located as to be engaged by an anti-friction roller 104 mounted upon the main operating yoke 105 of the machine which latter yoke is reciprocated once upon each operation of the machine in a manner fully shown and described in the aforesaid patent 15 to Hallwood.

From the above it will be seen that the link or bar 99 is forced upward by the roller 104 engaging the inclined end 103 of the lever 100 when the yoke 105 descends and is 20 allowed to again resume its normal position when the yoke 105 is again elevated. When the lever 95 is in the position shown in Fig. 6 the upward movement of the bar 99 will have no effect upon it but when 25 the shaft 82 is rocked by the operation of the special key said lever 95 is moved forward far enough to bring its forward end over the pin 98. The upward movement of the bar 99 will now elevate the lever 95 carrying with it the link 94 and the indicator 92. 30 After the special indicator has been set it is held in this set position by a toothed wheel 106 secured thereto and engaged by a spring pawl 107 mounted on a rock shaft 108 constructed and operated in a manner well 35 known in the art and shown and described in the aforesaid patent. The special key 89 is provided with a special detent 109 mounted on the main shaft 11 and provided with a 40 single hook projection 111 which coöperates with the pin 90 substantially in the same manner as the hook projections of the detents shown in the aforesaid patent. This detent 109 is provided with a pendent arm 45 112 which is elevated by a rock frame 113 to release the special key in a well known manner.

Reverting now to the printing wheels, each of the same is provided with a toothed alining disk 114. Each of these disks is engaged 50 by an alining pawl 115 said pawls being secured to a short rock shaft 116 which is provided with a pendent arm 117 supporting the rear end of an operating link 118. The 55 bar or link 118 is bifurcated at its forward end to straddle the shaft 35 and is provided, as best shown in Fig. 4, with an operating block 119. This block is arranged to be engaged by two diametrically arranged cams 60 120 formed on the periphery of a disk 121 which is fast to the sleeve 35. By this means one of these cams 120 is brought into operation in connection with the block 119 upon each operation of the machine and the 65 shaft 116 rocked to bring the alining pawls

115 in engagement with the alining disks 114 during the printing operation. The shaft 116, as best shown in Fig. 5, is provided with a rearwardly projecting arm 122 which is normally drawn downward by a 70 coil spring 123 and thus returns the alining pawls 115 to their normal positions. The arm 122 is connected by a link 124 to a short lever 125 journaled upon a stud 126 projecting from the printer frame and carrying 75 a spring-pressed pawl 127 which engages a notched disk 128 mounted on a ribbon feeding roller 129 which is journaled on the shaft 126. A pawl 130 mounted on the printer frame engages the disk 128 to prevent retrograde movement of the same. 80 The inking ribbon 37 passes over the roller 129 and about the printing wheels, being supported in position by pins 132 projecting laterally from the printer frame. By means 85 of these devices a fresh portion of the ribbon is fed forward at each operation of the machine. The detail strip 17 passes from a supply roller 133 mounted on the printer frame, down and under guiding pins 134 90 and up to a feeding roller 135. This roller is journaled upon a stud 136 secured to the printer frame and is provided with a toothed feeding wheel 137. This wheel is engaged by a spring-pressed retaining pawl 138 and 95 an operating pawl 139, the latter mounted upon an arm 140 also journaled upon the pin 136. The arm or lever 140 is formed with an elongated slot 141 into which projects an anti-friction roller 142. This roller is 100 mounted upon the upper end of an angular arm 143 which passes through an aperture 144 formed in the printer frame and is bifurcated at its lower end to straddle the shaft 35. (See Fig. 4.) Said shaft 35 at 105 this point is provided with a disk 145 formed with an eccentric cam groove 146 into which projects a pin 147 mounted on the arm 143. A coil spring 148 connects the arm 143 to the main frame to normally draw 110 a pin 149 mounted in the upper end of the arm against the periphery of the paper, being wound upon the roller 135.

By the above described means the lever or arm 143 is given a vertical reciprocation 115 upon each operation of the machine and the strip is thus fed forward a predetermined distance. As the size of the roll of paper increases the upper end of the arm 143 is gradually forced forward in the 120 curved slot 141 which construction provides for a uniform feed of the detail strip at all times by counteracting the increasing size of the roll by a decreasing throw of the lever 140. 125

The check strip 18 passes from a supply roller 150, up and over a guiding pin 151 against which a tension spring 152 presses to hold the paper taut; thence forward between two impression rollers 153 and 154, 130



the latter containing suitable stereotyped matter, dating and consecutive numbering types and being inked by a rotary inking roller 155 mounted above the same in suitable slots formed in the printer frame and forced down into engagement therewith by spring-pressed pawls 156 mounted on the printer frame. The roller 153 is mounted upon the projecting end of the shaft 42 and is provided with a gear 157 which meshes with a gear 158 fast to the roller 154. By this means when the disk 45 is thrown out of operation the shaft 42 remains stationary and the feeding rollers for the check strip remain inactive and no check is fed. After the check has been printed and passed from the rollers 153 and 154 it passes through a slot 159 formed in a stationary knife plate 160 and thence forward over a shearing knife 161 fast to an arm 162 which is journaled on the printer frame. The arm 162 is provided with a laterally projecting pin 163 which projects into a cam groove 164 formed in the disk 145 whereby the knife is reciprocated at the proper time to sever the printed check and permit the same to drop down into any suitable check holder provided therefor. In order to cushion the stroke of the detail platen lever 23 we provide the lower wall of the upper aperture 25 with a coil spring 165 (see Fig. 4) which when the platen makes its stroke permits said platen to make a hammer impression and then moves it away from the printing wheels. The weight of the lower platen accomplishes the same result for the lower printing lever.

While the form of mechanism here shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood we do not intend to confine ourselves to any one form of embodiment of the invention here disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a cash register, the combination with an operating mechanism and a counter, of a printing mechanism for printing checks, a special key, means operated by the key for immediately rendering the counter inoperative, and means also operated by said key for insuring the coupling of the check printing mechanism to the operating mechanism.

2. In a cash register, the combination with an operating mechanism, of a printing mechanism for printing checks or not as desired, two keys, one of which when depressed permits the issue of the checks and the other when depressed prevents the issue of the checks, and a special key and connections which when operated cause checks to be

issued irrespective of the operation of either of the first mentioned keys.

3. In a cash register, the combination with a printing mechanism arranged to issue checks or not as desired, of a special check key for causing the issue of checks, a special "no check" key for preventing the issue of checks, and a third special key for causing the issue of checks irrespective of the operation of either of the first two keys.

4. In a cash register, the combination with an operating mechanism and a register, of a printing mechanism arranged to issue checks or not as desired, a check key for causing checks to issue, a "no check" key for preventing the issuance of checks, a special key and connections for throwing out the counter, and means connected to said last mentioned key for causing the issuance of checks irrespective of the two first mentioned keys.

5. In a cash register, the combination with an operating mechanism, of a printing mechanism arranged to print checks or not as desired, a cash drawer, means intermediate the cash drawer and the printing mechanism for actuating the latter, a check key for causing the operation of the cash drawer to issue a check, and a "no check" key for breaking the connection between the cash drawer and the printing mechanism.

6. In a cash register, the combination with a printing mechanism arranged to print both a detail strip and a check, of a cash drawer, a permanent connection between the cash drawer and the strip printing devices, means connecting the cash drawer and the check printing devices, a check key for causing said means to establish an operative connection, and a "no check" key for breaking this operative connection.

7. In a cash register, the combination of a printing mechanism arranged to print checks or not as desired and including a check feed mechanism and a check platen, a cash drawer, means intermediate the cash drawer and printing mechanism for actuating the latter, and means for breaking the connection between the cash drawer and printing mechanism at will, to stop the operation of said check feed mechanism and said check platen.

8. In a cash register, the combination with an operating mechanism, of a cash drawer, a printing mechanism, means intermediate the cash drawer and printing mechanism for actuating the latter, adjusting means for disconnecting the printer from the cash drawer, and special devices connected to the operating mechanism for connecting the printing mechanism to the cash drawer irrespective of said adjusting means.

9. In a cash register, the combination with an operating mechanism and a cash drawer for actuating the same, of a printing mechanism



nism including strip printing and check printing devices, independent actuators for said printing devices, independent connecting means intermediate the operating mechanism and said actuators, and devices for entirely stopping the movement of one of said actuators at will.

10. In a cash register, the combination with an operating mechanism including a series of oscillatory members, of a counter arranged to be operated by said members, a special key, a printing mechanism for printing both a strip and a check, throw-out means for the counter controlled by the special key, and devices actuated by the special key for controlling the coupling and uncoupling of the check printing devices to and from the operating mechanism.

11. In a cash register, the combination with an operating mechanism including a series of oscillatory elements, of a series of type carriers connected to said elements and carrying duplicate sets of types, independent platens for printing from the respective sets of types, a cash drawer for operating said platens independently, and means for suspending the action of one of the platens at will.

12. In a cash register, the combination with an operating mechanism, of a printing mechanism arranged to print both a detail strip and a check, independent operating disks for the strip printer and check printer, a main operating member carrying two pivoted pawls arranged to engage the operating disks, and means for holding one of said pawls out of engagement with its respective disk at will.

13. In a cash register, the combination with an operating mechanism, of a printing mechanism connected thereto, a device for suspending the action of the printing mechanism, a key for operating said device, a latch for securing the key in its operated position, and a second key for operating said latch.

14. In a cash register, the combination with an operating mechanism, of a printing mechanism, a device for suspending the action of the printing mechanism at will, a key for moving said device out of its operative position, a latch for said key, and a second key for operating said latch.

15. In a cash register, the combination with an operating mechanism, of a printing mechanism, a disk for operating the printing mechanism, means for normally locking the disk against movement in either direction, and an actuating device for said disk arranged to first unlock it and then actuate it.

16. In a cash register, the combination with an operating mechanism, of a printing mechanism, an operating gear for said mechanism, means for locking said gear

against movement in either direction, an oscillatory actuator for said gear, means carried by said actuator for unlocking the gear when moving in one direction, and other means carried by said actuator for operating the gear when moving in the opposite direction.

17. In a cash register, the combination with an operating mechanism, of a printing mechanism, an operating disk for said mechanism, pawls for locking said disk against movement in either direction, an oscillatory actuator for said disk having a projection for unlocking one of said pawls, and a pawl mounted on said actuator for operating the disk in one direction.

18. In a cash register, the combination with an operating mechanism, of a cash drawer, a printing mechanism, an operating gear for the printing mechanism, means for normally locking said gear, an oscillatory member for unlocking and actuating said gear, and means connecting said oscillatory member to the cash drawer.

19. In a cash register, the combination with an operating mechanism, of a printing mechanism, a notched disk for operating the printing mechanism, an actuator carrying a pawl arranged to engage the notches of said disk, and means constructed to be interposed in the path of the pawl at will to hold it out of engagement with said notches.

20. In a cash register, the combination with an operating mechanism, of a printing mechanism, a cash drawer, an oscillatory member operated by the cash drawer, a rotary member actuated by the oscillatory member, and duplicate printer actuating devices on said rotary member, one of which is brought into action upon each operation of the machine.

21. In a cash register, the combination with an operating mechanism and a printing mechanism, of a device for suspending the action of said printing mechanism, manipulative means for actuating said suspending device to allow the operation of the printer, and a second manipulative means for destroying the effectiveness of said first-mentioned manipulative means and thereby preventing the printer from operating.

22. In a cash register, the combination with an operating mechanism and a printing mechanism, of a shifting device for controlling the operation of the printing mechanism, a key for actuating said shifting device to permit the operation of the printer, and a second key for disabling the first key and permitting the shifting device to return to normal position thereby suspending the operation of the printer.

23. In a cash register, the combination with an operating mechanism and a printing mechanism, of a shifting device for con-



trolling the operation of the printing mechanism, a key for actuating said shifting device to permit the operation of the printer, and a second key and connections for insuring the return of the first key to normal position and thereby permit the shifting device to return to normal position and thus suspend the operation of the printer.

24. In a cash register, the combination with a check printing mechanism including a check feeding mechanism and a platen, of a cash drawer and connections for operating said feeding mechanism and said platen, a detail strip printing mechanism including a platen, connections for operating said detail strip platen by the cash drawer, and a manipulative device for entirely stopping the movement of said check feed mechanism and said check platen while permitting the continued operation of the detail strip platen by the cash drawer.

25. In a cash register, the combination with a series of keys, of a series of type carriers controlled thereby and carrying duplicate sets of type, independent platens for printing from the respective sets of type, a cash drawer for operating said platens independently, and means for suspending the action of one of said platens at will.

26. In a cash register, the combination with an operating mechanism, of a printing mechanism, a disk for operating the printing mechanism, means for normally locking said disk from movement, and an actuating device having provisions for first unlocking said disk and then actuating the same.

27. In a cash register, the combination with a detail strip printing mechanism and a check printing mechanism, of juxtaposed companion disks connected respectively with said detail strip printing mechanism and check printing mechanism, and a common operating mechanism for said disks.

28. In a cash register, the combination with a detail strip printing mechanism and a check printing mechanism, of juxtaposed companion disks connected respectively with said detail strip printing mechanism and said check printing mechanism, a common operating mechanism for said disks, and means for suspending the action of said operating mechanism upon one of said disks.

29. In a cash register, the combination with a detail strip printing mechanism and a check printing mechanism, of duplex operating disks therefor, duplex pawls for engaging and operating said disks, and operating mechanism for actuating said pawls.

30. In a cash register, the combination with a detail strip printing mechanism and a check printing mechanism, of duplex operating disks therefor, duplex pawls for engaging and operating said disks, operating mechanism for actuating said pawls, and means for preventing one of said pawls

from engaging its respective disk whereby to suspend the operation of its respective printing mechanism.

31. In a cash register, the combination with a printing mechanism including a check feeding mechanism and a check platen, of means controlled by said check feeding mechanism for holding said check platen in inoperative position.

32. In a cash register, the combination with a printing mechanism including a check feeding mechanism and a check platen, of means for operating said check feeding mechanism and said platen, and means controlled by said feeding mechanism for disabling said platen operating means when said check feeding mechanism is idle.

33. In a cash register, the combination with a printing mechanism including a check printing mechanism and a check platen, of means for operating said check feeding mechanism and said platen, means controlled by said feeding mechanism for disabling said platen operating means when said check feeding mechanism is idle, and means for suspending at will the operation of said check feeding mechanism.

34. In a cash register, the combination with printing devices, and means for setting same, of a platen for taking impressions therefrom, check feeding devices, a special key, means controlled by the special key when operated for controlling the operation of the feeding devices, a second special key, and means operated thereby for releasing the first special key.

35. In a cash register, the combination with an operating mechanism, and type carriers controlled thereby, check feeding devices arranged to be operated by said mechanism, a manipulative device for controlling the operation of the check feeding devices, and a second manipulative device for holding the above mentioned device in controlling position, but adapted when operated to release said first device.

36. In a cash register, the combination with printing devices, and oscillatory operating members controlling same, of means for taking impressions therefrom, paper feeding means, means normally preventing operative connection between the feeding and impression taking means and the operating members, a key for disabling said preventing means, and a second key for releasing the first key.

37. In a cash register, the combination with printing devices, and check feeding and impression taking means therefor, of means for suspending the operation of said means, a key for disabling said suspending means, a latch for holding said key in operated position irrespective of the operation of the machine, and a second key for disabling said latch.



38. In a cash register, the combination with printing devices, and check feeding and impression taking means therefor, of means for suspending or allowing the operation of said means, a manipulative device, means controlled thereby for operating the suspending or allowing means, a second manipulative device, and means operated thereby for disabling the control by the first mentioned manipulative device.

39. In a cash register, the combination with printing devices, and check feeding devices, of an operating mechanism for said check feeding devices, means for connecting said operating mechanism to said feeding devices, a special key controlling the connecting means, and means for retaining said key in operated position irrespective of the operation of the machine.

40. In a cash register, the combination with an operating mechanism for the machine, of paper feeding devices, means for connecting said operating mechanism to said feeding devices, means rendering the connecting means normally inoperative, a key for allowing the connecting means to operate when desired, and means for retaining the key in depressed position between operations of the machine.

41. In a cash register, the combination with an operating mechanism, of devices for printing and feeding a check and a strip, means connected to the operating mechanism for operating the strip feeding and printing devices at all operations of the machine, a special key, means controlled thereby for connecting the check feeding and printing devices to the operating mechanism, means retaining said key in set position irrespective of operations of the machine, and means for releasing said key when desired.

42. In a cash register, the combination with printing devices, of means for feeding a check thereto, a key controlling the effectiveness of said feeding means, and arranged to remain in controlling position irrespective of the operation of the machine, and a second key controlling the effectiveness of said feeding means for one operation.

43. In a cash register, the combination with a cash drawer and type carriers controlled thereby, check feeding devices arranged to be operated by the closing movement of said drawer, a manipulative device for controlling the operation of the check feeding devices, and a second manipulative device for disabling the control by the first manipulative device.

44. In a cash register, the combination with a cash drawer, and check feeding and impression taking devices operated thereby, of means for suspending or allowing the operation of said devices, a manipulative device, devices controlled thereby for operating the said means, a second manipulative

device, and means operated thereby for disabling the control by the first manipulative device.

45. In a cash register, the combination with a cash drawer, and means operated thereby for feeding a check, a key controlling the effectiveness of said feeding means, and arranged to remain in controlling position irrespective of the operation of the machine, and a second key for controlling the effectiveness of said feeding means for one operation.

46. In a cash register, the combination with a rotatable cam, of a link operated thereby having a pin, a lever having a slot in which the pin is adapted to ride, and paper feeding means operated from the lever.

47. In a cash register, a paper feeding device comprising a link having a pin, a lever having a curved slot in which the pin is adapted to ride, a spring pressing the lever in one direction, paper feeding means operated by the lever, and means for reciprocating the link.

48. In a cash register, the combination with accounting and printing devices and operating mechanism therefor, of check feeding devices normally in inoperative condition, a key for connecting the feeding devices to the operating mechanism, and a second key for connecting the feeding devices to the operating mechanism and preventing operation of the counter.

49. In a cash register, the combination with accounting and printing devices and operating mechanism therefor, of check feeding devices normally in inoperative condition, counter operating devices normally in operative condition, a special key, and means controlled thereby for locking the counter operating devices from operation and for allowing the check feeding devices to operate.

50. In a cash register, the combination with an operating mechanism, and a cash drawer controlling the movement of same, of printing devices set by the operating mechanism, check feeding devices, means for connecting said devices to the operating mechanism, and a special key for controlling said connecting means.

51. In a cash register, the combination with type carrying mechanism, means for taking impressions thereupon, and means for feeding a record material to impressing position; of means controlled by the feeding mechanism for preventing movement of the impression mechanism.

52. In a cash register, the combination with type carrying mechanism, a platen for taking impressions thereupon, rollers for feeding a record material to impressing position and an operating mechanism for said platen and rollers; of latching devices op-



erated with said rollers for preventing impressing movement of the platen.

53. In a cash register, the combination with an operating mechanism, type carriers, means for taking impressions from said carriers, and means for feeding a record material to impressing position, said feeding means being normally disconnected from said operating mechanism; of a key for controlling the connection of said feeding means with said operating mechanism, and means, operable by hand, to latch said key in position to allow such connection.

54. In a cash register, the combination with an operating mechanism, of a printing mechanism, a movable member for operating the printing mechanism, means for normally locking said member, and an actuating device having provisions for first unlocking said member and then actuating the same.

55. In a cash register, the combination with an operating mechanism, of a movable member operated thereby, an indicator, a lever connected to the indicator and normally out of the path of the movable member, a key and mechanism operated thereby for moving said lever in the path of the movable member, so as to actuate the indicator upon an operation of the operating mechanism.

56. In a cash register, the combination with an operating mechanism, of a link operated thereby, an indicator, a lever connected to the indicator and normally out of the path of the link, a key and mechanism operated thereby for moving said lever in the path of the link so as to expose the indicator upon an operation of the operating mechanism, and a pawl for holding the indicator in exposed position.

57. In a cash register, the combination with an operating mechanism, of a link operated thereby, an indicator, a lever connected to the indicator and normally out of the path of the link, a key and mechanism operated thereby for moving said lever in the path of the link so as to expose the indicator upon an operation of the operating mechanism, a ratchet wheel connected to the indicator, and a pawl for engaging the ratchet thereby holding the indicator in exposed position.

58. In a cash register, the combination with an operating mechanism, of an indicator, actuating means for the indicator normally out of coöperative relation with the operating mechanism, and a manipulative device controlling the movement of the actuating means into coöperative relation with the operating mechanism so that upon the operation of the latter mechanism the indicator will be brought into indicating position by its actuating means.

59. In a cash register, the combination with a plurality of differentially movable

yokes, of type carriers connected thereto, means for taking impressions from said type carriers upon both a record strip and a check strip, feeding means for the check strip normally inoperative, a special key for rendering the check strip feeding means operative, banks of manipulative devices controlling the movement of said yokes in one direction, and a cash drawer and connections for operating the impression means, for actuating the check strip feeding means and for returning the displaced yokes to normal position.

60. In a cash register, the combination with a plurality of differentially movable yokes, of type carriers connected thereto, banks of manipulative devices controlling the differential movement of said yokes, a cash drawer for returning said yokes to normal position, a normally inoperative check issuing mechanism constructed to be operated by the opening and closing of the cash drawer, indicators for indicating various classes of transactions, and means automatically controlling the operation of the check issuing mechanism when a transaction other than cash transaction is to be indicated.

61. In a cash register, the combination with a plurality of differentially movable yokes, of type carriers connected thereto, banks of manipulative devices controlling the differential movement of said yokes, a cash drawer for returning said yokes to normal position, a normally inoperative check issuing mechanism constructed to be operated by the opening and closing of the cash drawer, a special manipulative device, indicators for indicating various classes of transactions, and means under the control of the special manipulative device for causing a special transaction to be indicated and permitting the operation of the check issuing mechanism during an operation of the cash register.

62. In a cash register, the combination with a plurality of differential movable yokes, of type carriers connected thereto, a registering mechanism, actuating levers for said registering mechanism supported by the yokes and designed normally to have the same degree of movement as the yokes, banks of manipulative devices controlling the differential movement of said yokes, a cash drawer for returning said yokes to normal position, a normally inoperative check issuing mechanism constructed to be operated by the opening and closing of the cash drawer, indicators for indicating various classes of transactions, a special manipulative device, and means controlled by the latter device for causing a special transaction to be indicated, for preventing movement of the registering levers and for permitting the operation of the check issuing mechanism during an operation of the cash register.

63. In a cash register, the combination



with a type carrier, of means for taking im-  
pressions therefrom, an operating mecha-  
nism for the impression means normally dis-  
connected therefrom, a key controlling the  
5 connection of the operating mechanism and  
the impression means, and a second key con-  
trolling the disconnection of said means and  
mechanism after the same have been con-  
nected, the said keys being arranged to re-  
10 main in operated position irrespective of the  
operation of the cash register.

64. In a cash register, the combination  
with a check issuing mechanism, of operat-  
ing means therefor normally disconnected  
15 therefrom, a key controlling the connection  
of the check issuing mechanism and operat-  
ing means, and a second key controlling the  
disconnection of said mechanism and means  
after the same have been connected, the said  
20 key being arranged to remain in operated  
position irrespective of the operation of the  
cash register.

65. In a cash register, the combination  
with a type carrier, of means for taking im-  
pressions therefrom on a check strip, mecha- 25  
nism for feeding the check strip, operating  
devices for the impression means and the  
feeding mechanism normally disconnected  
therefrom, a key controlling the connection  
of the operating devices with the impression 30  
means and feeding mechanism, and a second  
key controlling the disconnection of the  
operating devices from the impression means  
and feeding mechanism, the said keys being  
35 arranged to remain in operated position irre-  
spective of the operation of the cash register.

In testimony whereof we affix our signa-  
tures, in the presence of two witnesses.

WILLIAM F. BOCKHOFF.  
EDWARD J. VON PEIN.

Witnesses:

H. C. WOOD,  
LEWIS D. BAKER.

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Washington, D. C."

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