No. 773,060. PATENTED OCT. 25, 1904.

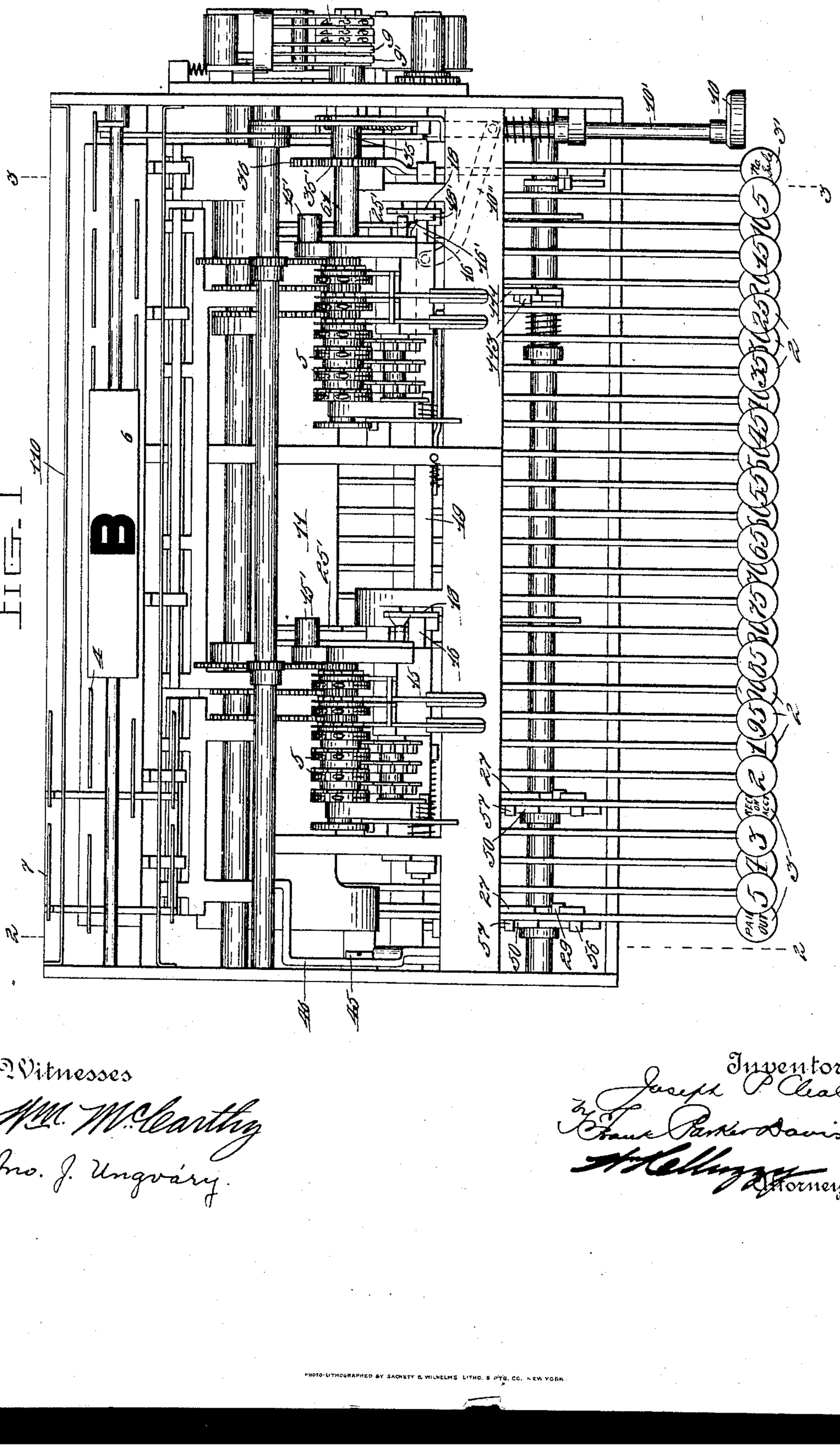
J. P. CLEAL.

CASH REGISTER.

APPLICATION FILED APR. 17, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

FIG. 1



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NO MODEL. 4 SHEETS—SHEET 2.

FIG. 6.

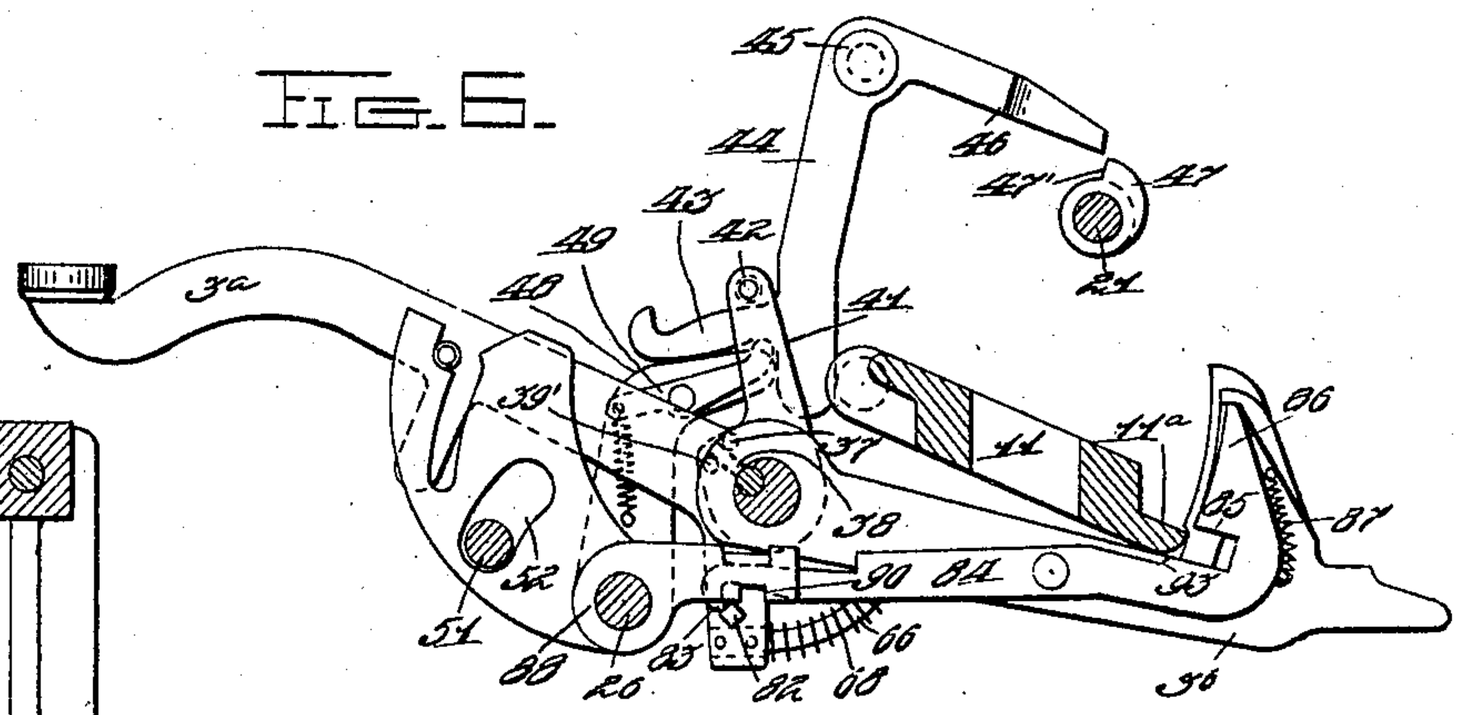


FIG. 13.

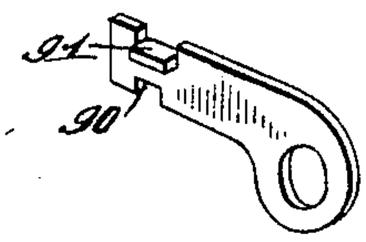
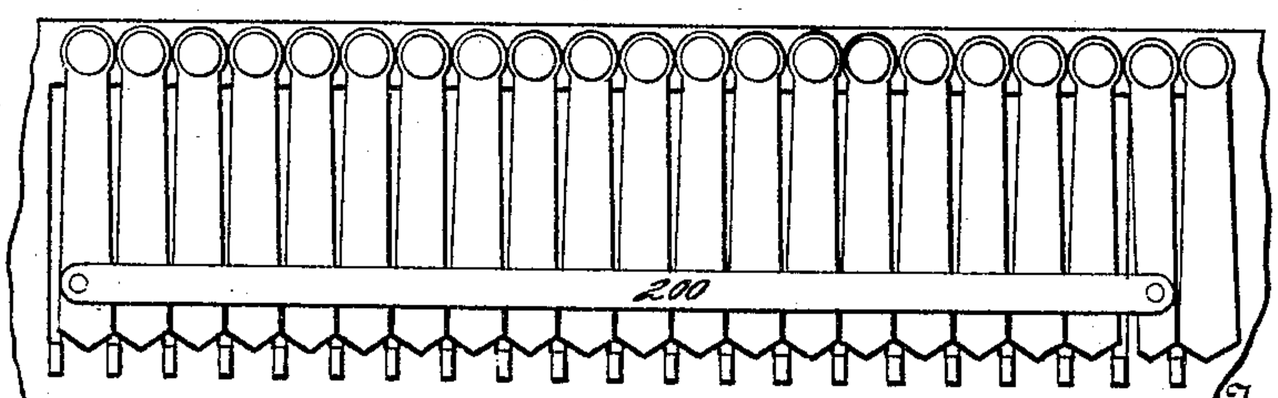


FIG. 2.

FIG. 12.



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NO MODEL. 4 SHEETS—SHEET 3.

FIG. 4.

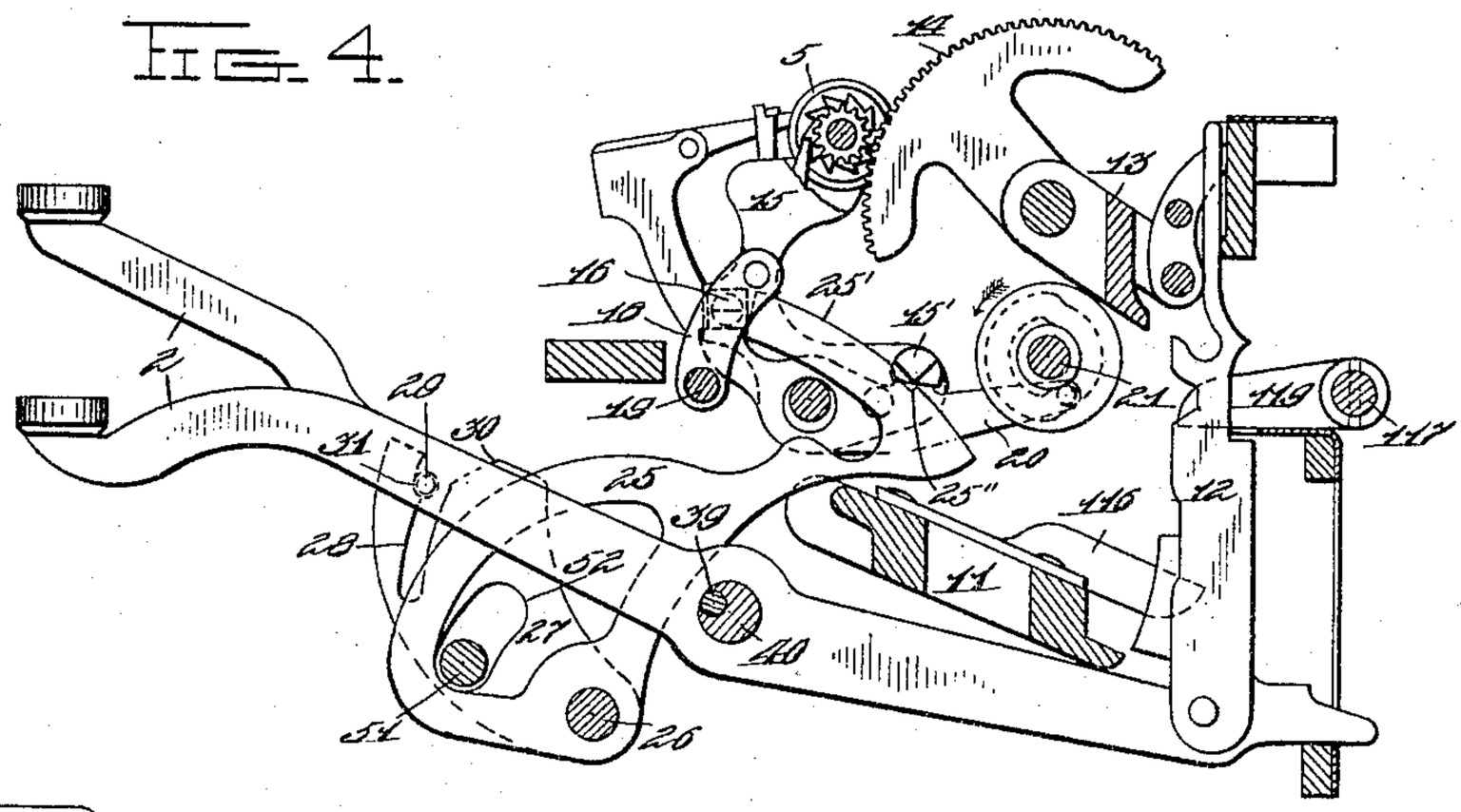


FIG. 5.

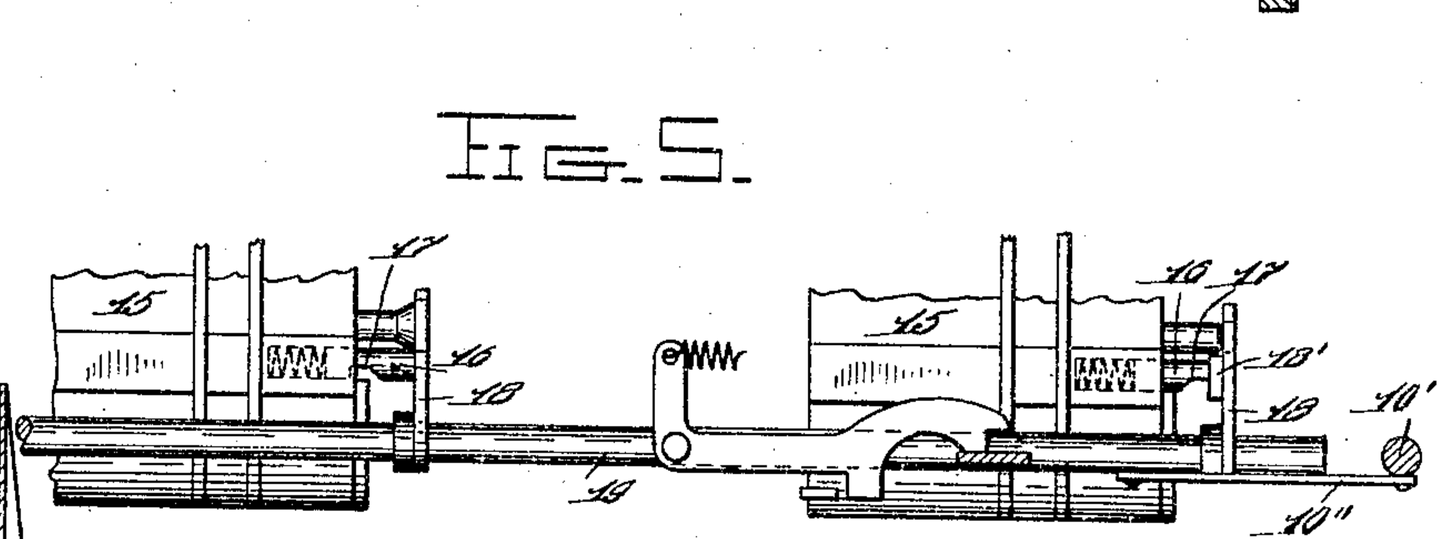
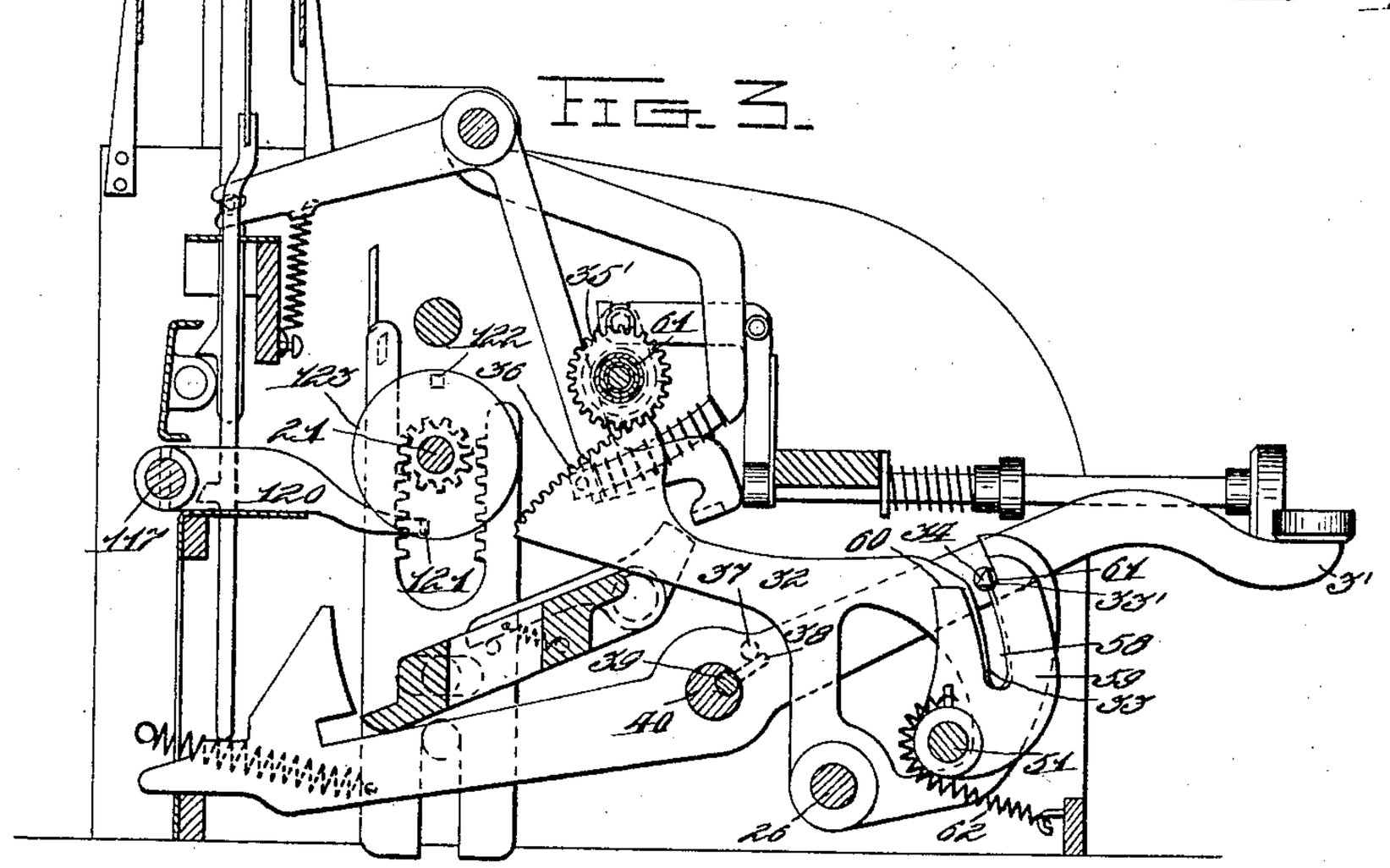


FIG. 3.



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NO MODEL. 4 SHEETS—SHEET 4.

FIG. 7

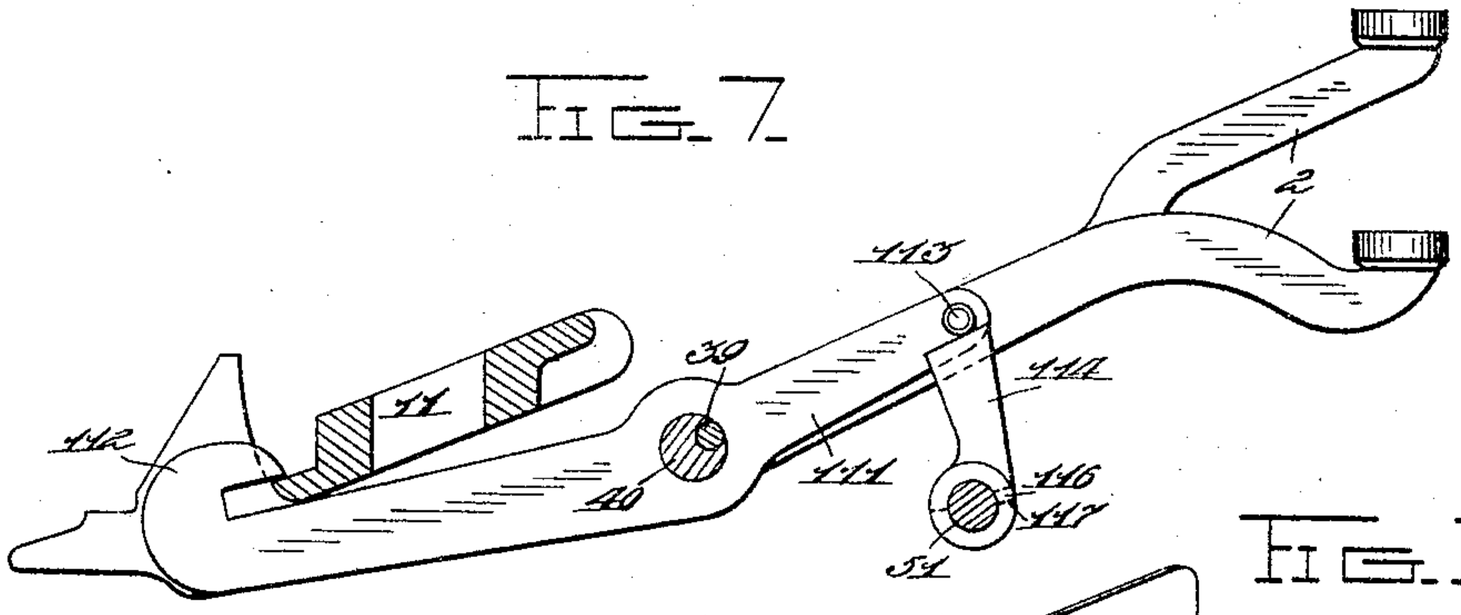


FIG. 10

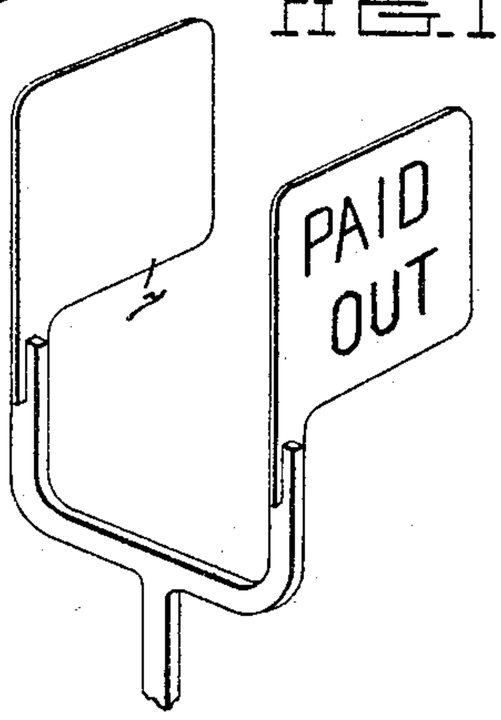


FIG. 8

FIG. 11

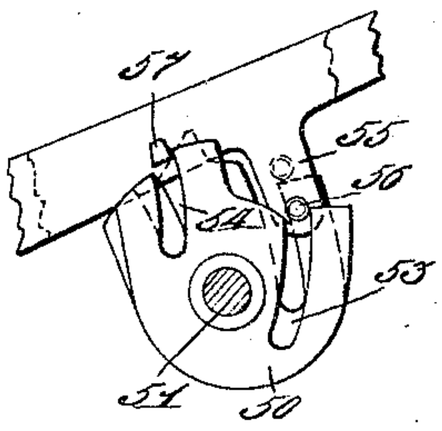
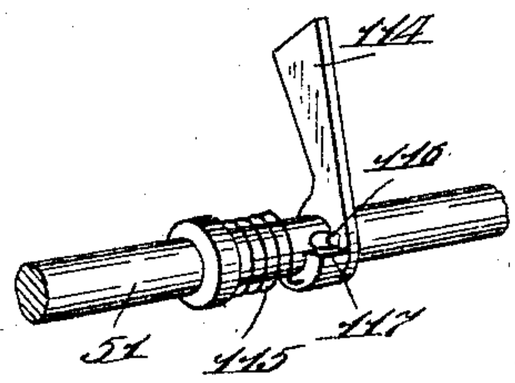


FIG. 9



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No. 773,060. Patented October 25, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH P. CLEAL, OF DAYTON, OHIO, ASSIGNOR TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 773,060, dated October 25, 1904.

Application filed April 17, 1903. Serial No. 153,038. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. CLEAL, 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 so-called "throw-out-counter" type.

One of the objects of the invention is to provide improved devices whereby the counting mechanism will be automatically disconnected from the operating mechanism when the machine is operated for certain transactions.

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 top plan view of the machine embodying my invention, the cabinet of the same and the cash-drawer being removed. Fig. 2 represents a transverse vertical section through the same on the line 2 2 of Fig. 1, the cash-drawer being omitted. Fig. 3 represents a section similar to Fig. 2 on the line 3 3 of Fig. 1. Fig. 4 represents a detail transverse vertical section through a portion of the mechanism taken to one side of one of the counters, the frame of the latter being partly broken away to expose one of the counter-pinions. Fig. 5 represents a detail front elevation, partly broken away, of portions of the counter-frames and adjusting and throwing devices for the same. Fig. 6 represents a detail side elevation of one of the special keys, its coöperating devices, and the main lock for the machine. Fig. 7 represents a detail side elevation of the operating devices for the special key-lock. Fig. 8 represents a detail elevation similar to Fig. 6 with a number of the parts omitted for clearness, the graduated formation of the cam-slotted plates being shown in dotted lines. Fig. 9 represents a detail perspective view of the shaft carrying the locking cam-plates with its operating-arm mounted thereon. Fig. 10 represents a detail perspective view of one of the special indicators. Fig. 11 represents a detail side elevation, partly in dotted lines, of the locking-plates 50 and coöperating parts. Fig. 12 represents a detail rear elevation of the key-stops and coupling-bar, and Fig. 13 represents a detail perspective view of one of the locking-pawls for the special keys.

Described in general terms, this machine may be said to comprise a single key-actuated mechanism and a plurality of independent counters, either of which may be brought into position to be actuated by the common operating mechanism at will, substantially as shown and described in my Patent No. 718,565, granted January 13, 1903. As the operations of the amount-keys, key-coupler, key-standards, regular amount-indicators, counters, and printer are substantially identical with the above-mentioned patent, I will refer to the same for any desired detail description of these parts. In order, however, to clearly present the improved devices which I have applied to this type of machine, I will describe generally the several parts of the machine shown in said patent which come into intimate relation with my improved constructions.

In the aforesaid drawings, 1 represents the frame of the machine; 2, the amount-keys; 3, the special keys; 4, the amount-indicators; 5, the counters; 6, the counter-indicator; 7, the special indicators; 8, the amount-printing wheels; 9 and 9′, the special printing-wheels, and 10 the counter adjusting or shifting key or button.

The keys 2 coöperate with a pivoted key-coupler 11 and are provided with graduated key-standards 12. The keys are arranged in banks, and the standards 12 of the respective banks coöperate with pivoted registering-frames 13 to move the same greater or less

distances, according to the values of the keys operated. These frames are provided with segmental operating-racks 14. A duplicate set of racks is also provided and the two sets suitably geared together, so as to move in unison in the manner described in said patent. The two counters 5 are arranged to cooperate with the respective sets of rack-segments and are mounted, respectively, in pivoted frames 15. Each of these frames, as best shown in Figs. 1 and 5, is provided with a spring-pressed plunger 16, formed with a notch 17, and arranged to be forced back into a socket in its respective frame by an arm 18, mounted upon a longitudinally-movable shaft 19, which is connected to the shank 10′ of the key 10 by a pivoted link 10″. The right-hand arm 18 instead of engaging the plunger direct is provided with an intervening lug 18′, which engages said plunger. By this means the pressure upon the key 10 will shift the rod 19 to the left, and thus operate the arms 18 and cause them to position the plungers 16. The notches 17 of the respective plungers are so formed therein, as shown in Fig. 5, that when one of the same is coöperating with one of two throwing-levers 20 the remaining notch will be out of alinement with its respective lever. As both of the levers 20 are operated by suitable cams upon the rotation-shaft 21 at each operation of the machine, it will be seen that only one of the counter-frames 15 will be thrown forward, as only one of the levers 20 will engage its respective plunger 16, the remaining lever simply playing in the notch 17 of its particular plunger. When one of the counter-frames 15 is thrown forward, the pinions of its counter-wheels are brought into mesh with one set of segmental racks 14, all of which is fully described in said patent.

By reference to Fig. 5, which illustrates the normal position of the rod 19, it will be seen that the left-hand counter is in inoperative position, while the right-hand counter is in condition to be operated or thrown forward when the keys are depressed. In the present machine the left-hand counter is intended for the "charge" transactions. The right-hand counter is intended for cash-transactions and is to be thrown out of operation whenever any one of the special keys or the charge-button is operated. To accomplish this result, the plunger 16 of the right-hand counter is beveled, as at 16′, Fig. 1, and is arranged to be engaged by the forward end of a segmental arm 25′ of a lever 25, which is fast upon a transverse rock-shaft 26, as shown in Fig. 4. When the plunger is engaged by the forward end of the segment 25′, it is forced into its respective counter-frame, substantially in the same manner as when the charge button or key 10 is operated. It will be seen from the above that the right-hand counter is arranged to be thrown out of operation irrespective of the position of the key 10 by said arm 25. The left-hand counter also coöperates with a similar lever 25. The segmental arm 25′ of this latter lever, however, is not of sufficient length to engage the plunger 16 of its respective counter (see Fig. 1) and is utilized for a different purpose, hereinafter described.

The levers 25, as best shown in Fig. 4, are fast upon a transverse rock-shaft 26, which is suitably mounted in the main frame and is provided with a series of operating-plates 27, formed with locking-slots 28. Antifriction-rollers 29, projecting laterally from the respective special keys 3, are arranged to pass into the slots 28, so that when the special keys are depressed the plates 27 will be locked after being operated. In Fig. 4 the pin 29 is shown in dotted lines, and this pin is not on the amount-keys 2, but is on the special keys 3, which are beyond the amount-keys 2, as shown in Fig. 1. The plates 27 are formed with locking edges 30 and combined camming and locking shoulders 31, the latter being graduated in length, as shown in Fig. 8. The operation of the different special keys will rock the shaft 26 to a greater or less extent, but always sufficiently to cause the levers 25 to effect their purposes. By this construction when one of the special keys is operated and moves its plate 27 the remaining plates 27 are moved and held in such positions that the locking edges 30 or shoulders 31 will lie in the paths of the remaining rollers 29 of the special keys, and thus lock the latter.

The segmental arm 25′ (see Fig. 4) of each of the levers 25 is formed with a locking-notch 25″. Each of the frames 15 is provided with a locking-stud 15′, which when the frame is rocked rearward enters the recess 25″ and locks the right-hand lever 25 against any forward movement to throw out the cash-counter. When the arm 25′ is moved forward, the notch 25″ moves from under the stud 15′. The edge of the arm 25′ is thus moved under the stud 15′, and the counter-frame is locked as long as the parts remain in this condition.

The shaft 26 is provided at one end with a lever 32, (see Fig. 3,) formed with a locking-slot 33, through which projects a pin 34, mounted on the special "no-sale" key 3′. The lever 32 is formed with a cam-shoulder 33′ substantially the same as those on the plates 27. It will be seen from the above that all the special keys, including the no-sale key, rock the shaft 26 to a greater or less extent, and this movement is therefore utilized to set the special printing-segment 9. This segment, as best shown in Fig. 1, is mounted upon a sleeve 35, which is journaled upon the outermost of the regular nested printer-sleeves 61. This sleeve 35 is provided at its inner end with a pinion 35′, which meshes with a

segmental rack 36, formed on the rearwardly-extending end of the lever 32, which is fast to the shaft 26. By the above-described means the special printing wheel or segment 9 is set according to the special key operated.

In the foregoing description I have shown how one of the counters representing cash transactions is rendered inoperative when any one of a series of special keys is depressed by adjusting devices which will render a pivoted throwing-lever for the counter-frame ineffective in its operation, this throwing-lever being operated upon each movement of the machine by suitable cams carried by the rotation-shaft 21 of the machine.

As it is desirable to lock the machine after the movement of one of the special keys has been started, and until this movement is completed I provide each of said special keys with a laterally-projecting pin 37. (See Figs. 3 and 6.) These pins project into proximity to radial pins 38, projecting from a rock-shaft 39 through suitable slots formed in the key-shaft 40, in which said shaft 39 is journaled, as shown in Fig. 3. It follows from the above that when one of the special keys is depressed the shaft 39 is rocked. Upon the shaft 40, near one end, is journaled an arm 41, (see Fig. 6,) provided with an anti-friction-roller 42 and a pin 39′, which is engaged by the pin 38 of the paid-out key. The roller 42 projects over the curved surface of an arm 43 of a bell-crank lever 44, which is pivoted upon the main frame, as at 45. One arm 46 of this lever projects into proximity to a cam 47, fast upon the rotation-shaft 21, as shown in Fig. 6. The shaft 26 is provided at one end with an arm 48, carrying a spring-drawn pawl 49, the rear end of which engages under the arm 43. When one of the special keys is depressed and the shaft 26 rocked forward, the arm 48 will be correspondingly rocked and by means of the pawl 49 will force the arm 43 slightly upward. This action will cause the rearwardly-extending arm 46 to pass in front of the locking-nose 47′ of a cam 47, and thus prevent the operation of the machine by the amount-keys during the movement of the special key. As the special key is moved, however, its pin 37 contacts with its respective pin 38 and rocks the shaft 39. When the shaft 39 is thus rocked, the arm 41 passes forward and downward, and the roller 42, engaging the upper surface of the arm 43, forces the latter downward against the tension of the spring-drawn pawl 49, and thus lifts the lever-arm 46 out of the path of the nose 47′.

As will be later described, the special keys have an initial setting movement and are afterward given their complete extent of movement by the operation of the amount-keys; but the above-described locking effect, by which the arm 46 is first moved into the path of the nose 47′ and is then rocked out of the path of the same, occurs during this initial setting movement of the special key, the roller 42 engaging the arm 43 as soon as the special key is started downward, and thereby raising the arm 46 from locking position by the time the setting-key has completed its initial movement, so that thereafter the amount-keys are free to be operated to complete the operation of the machine.

As it is desirable to lock the unoperated special keys when the amount-keys are displaced from normal position or to lock certain of the special keys when one of the same is operated I provide a series of locking-plates 50, (see Figs. 2 and 11,) fast to a transverse rock-shaft 51, which passes through elongated slots 52, formed in the plates 27. Each of the locking-plates 50 is provided with a cam-slot 53 and a free-play slot 54. Each of the special keys is provided with a pendent arm 55, having an antifriction-roller 56, which is arranged to project into the slot 53 of its respective locking-plate. Each of the keys is further provided with a locking-stud 57, which normally lies directly over the slot 54. The parts shown in Fig. 2 represent the extreme left-hand special key. The roller 56 and lug 57 are normally free to descend into their respective slots. When this particular key is operated, this roller and lug lock the particular plate of this key, and consequently the shaft 51, against movement. The rollers 56 and lugs 57 of the remaining special keys normally lie out of alinement with the slots 53 and 54 of their respective plates, as shown in Fig. 11. The upper edges of the plates 50 of these latter keys, however, are beveled in proximity to the slots, so that when one of the keys is depressed its particular plate will be cammed forward until the roller and lug enter their respective slots. This camming movement rocks the shaft 51, and thus moves the plates 50 under the lug and roller of the first special key at the left and the remaining special keys. The arrangement of the slots and lugs is such that no two keys can be free to operate at the same time.

By reference to Fig. 3 it will be seen that the no-sale key 3′ is only provided with one projection or lug 34, and this latter operates in a single slot 58, formed in the locking-plate 59, which is fast to the shaft 51. This plate is provided, however, with locking-shoulders 60 and 61, whereby the no-sale key is locked when any one of the special keys is operated. The shaft 51 and the plates carried thereby are returned to their normal positions by a coil-spring 62, secured to the hub of the plate 59 and to a portion of the main frame, as shown in Fig. 3.

As has before been stated, all the special keys, excepting the no-sale key, have an initial setting movement, which movement is utilized to couple the rear portion of the key

to the key-coupler, so that when the latter is operated by the amount-keys the active rear portion of the special key will be simultaneously operated. To effect this result, each of the keys 3 is formed in two sections 3^a and 3^b, (see Figs. 2, 6, and 8,) said sections having their ends journaled upon the transverse key-shaft 40. Each of the sections 3^a is provided with a pendent arm 65, carrying a curved rod 66. This rod projects through an apertured lug 67, formed on the section 3^b, (see Fig. 2,) a coil-spring 68 being mounted upon said rod between the lug 67 and the arm 65. When the forward section of the key is depressed, the spring 68 is put under tension to cause the rear section to follow the coupler when the latter is elevated, and thus become coupled thereto. The section 3^a is formed with two spaced shoulders 69 and 70 and two ratchet-teeth 80. A square lug 81 projects from the section 3^b into the space between the shoulders 69 and 70. This arrangement of parts limits the relative movements of the two sections of the key under the impulse of the spring 68 or the power applied to the key.

The pendent arm 65 of each special key is provided with a laterally-projecting lug 82, (see Fig. 6,) upon which the forward hook end 83 of a coupling-lever 84 normally rests. This lever 84 is pivoted upon the key-section 3^b and is formed at its rear end with a coupler-receiving slot 85 and an extension 86, similar to the regular end construction of the section 3^b, which is substantially as described in the aforesaid patent. A coil-spring 87 connects the rear end of the lever 84 and the section 3^b to normally draw the forward end of the lever 84 down upon the lug 82 and to draw the lever into coupling position when released. A lever 88 is pivoted upon the shaft 26 and projects rearward over the lug 82, being drawn down against the same by a coil-spring 89, (see Fig. 8,) which connects said lever to the main frame. This lever 88 is formed with a locking-notch 90 and a horizontal flange 91, which latter projects over the top of the forward end of the lever 84. When the key-section 3^a is given its first downward movement, the hook 83 first drops in front of the lug 82, and thus prevents the return of the key-section. The further downward movement of the key-section causes the lug 82 to move so far to the rear as to come into alinement with the notch 90, thus permitting the lever 88 to descend and latch the key-section in its depressed position. The downward movement of the forward end of the lever 84 causes this rear hook end 86 to assume a position in the path of the key-coupler, so that when the latter is operated by the depression of the amount-keys the key-section 3^b will become coupled thereto and be given its full stroke.

The rear end of the lever 84 is formed with a cam shoulder 93. As the key-coupler is elevated its flange 11^a passes rearward and engages the cam shoulder 93, forcing the rear end of the lever 84 downward, and thus elevating its forward end. As the forward end of the lever 84 moves upward it engages the horizontal flange 91 and raises the latch-lever 88. This operation releases the lug 82 and frees the key-section 3^a, which is then moved further downward by the lug 81 engaging the shoulder 69. The key-sections now become coupled together in their normal relation to one another by the pawl 102, and the latch 88 will be held up upon the return stroke by the lever 84 until the lug 82 has passed the locking position.

Each of the key-sections 3^b is provided with a slide 94, mounted thereon by pins 95, (see Fig. 2,) which project through elongated slots 96, formed in the slide. The rear portion of the slide is formed substantially in the same manner as the rear portion of the key-section, so as to engage with the key-coupler when the latter is operated. This rear portion of the slide is provided with a pivoted pawl 96′, having a cam edge 97 near its lower end. This cam edge is normally drawn against the coupling-flange of the key-coupler by a coil-spring 98, connected to the pawl and to a pin 99, mounted on the slide. The forward end of the slide is formed with a notch 100, into which projects a pin 101, mounted on a pawl 102, which is pivoted on the key-section 3^b. A coil-spring 103 connects the pawl and the slide 94 for normally drawing the pawl rearward and the slide forward. A pin 104, mounted on the key-section 3^b, acts as a stop for a lug 105, formed on the slide to limit the forward movement of the latter. The pawl 96′ is limited in its forward movement by a pin 106, mounted upon the slide 94 and against which the pawl abuts.

When the key-coupler is elevated, the pawl 96′ is cammed rearward and through the medium of a spring 98 draws the slide 94 in the same direction, the spring 98 being stronger than the spring 103. This rearward movement of the slide causes the pawl 102 to engage one or the other of the teeth 80, and thus locks the two sections of the key together as long as the key-coupler remains in a partially-operated position. The office of this construction is to prevent the key-section 3^a from being held in a depressed position while the key-section 3^b is allowed to return to its normal position, which misoperation might result in damage to the machine or in error in the operation of its several parts. This construction also acts as a lock for the sections 3^a of the special keys which have not been operated by coupling the sections 3^a to the sections 3^b after the operation of the machine has commenced.

As the rear sections are of course locked

against movement by the key-coupler, the forward sections will be correspondingly locked when coupled to the rear sections. The rear section 3^b of each of the special keys coöperates with a vertically-movable tablet-stem 108, which is similar to the regular tablet-stems except that it is shorter and is bifurcated at its upper end, as best shown in Fig. 2, to support two corresponding indicators 7 for indicating simultaneously to the back and front of the machine. The operation of these indicators is substantially the same as the regular indicators except that the lower ends of their stems do not rest directly upon the key-sections 3^b, but are located some little distance above the same. This construction results in a deferred operation of the indicators 109, and the same are not raised into view until during the latter part of the movement of the key-section 3^b. In order to conceal the amount-indicators when in their normal positions, I provide two guard-plates 110, located upon opposite sides of said indicators and suitably supported upon the main frame of the machine. It will be seen by reference to Fig. 2 that the amount-indicators are raised some little distance higher than the special indicators 109, and both of these indicators may thus be brought into view in different horizontal planes.

As it is desirable to lock all of the special keys when any one of the amount-keys is operated without a special key, I provide a pivoted locking-lever 111, which is formed at its rear end with a hook 112, that projects over the key-coupler flange. (See Fig. 7.) The forward end of the lever 111 is provided with an antifriction-roller 113, which normally rests upon the upper cam edge of a lever 114. This lever is pivotally mounted upon the shaft 51, as shown in Fig. 9, and is connected to said shaft by a coil-spring 115. The lever is limited, however, in its movement under the impulse of the spring by a stop-pin 116, projecting from the shaft and engaging a shoulder 117, formed on the lever. Whenever one of the amount-keys is operated, the lever 111 is rocked and cams the arm 114 forward. If the shaft 51 is unrestrained, this operation of the arm 114 will move all of the plates 50 under the lugs of the special keys to lock the special keys. Should one of the special keys, however, have been previously operated, the shaft 51 will be of course locked against movement and the arm 114 will be moved independently of the shaft, the spring 115 being put under tension to return the arm to its normal position when it is released.

From the foregoing description it will be seen that whenever a straight cash sale is made it is simply necessary to depress the proper amount-keys, which operation will register the amount upon the right-hand counter and will print the amount and a character representing a cash sale upon the detail-strip. The special indicator 7 will indicate which counter is being employed. The construction for accomplishing this setting of the special indicator forms no part of the present invention, but is included in one of my copending applications. Any suitable devices may be employed for this purpose, either as shown here or as shown and described in my aforesaid patent.

If a charge sale is to be made, the charge-key 10 is pressed, which adjusts the counter-throwing mechanism, as before described, so that the amount will be registered in the charge-counter and similarly indicated and printed, it of course being understood that the machine automatically returns the key 10 to its normal position and leaves the right-hand or cash counter in position to be actuated upon the next operation of the amount-keys if the key 10 is not again pressed. The mechanism for accomplishing this result is fully described in the aforesaid patent.

Should it be desired to pay out an amount of money, the proper special key utilized for this purpose is first depressed. The initial movement of this key so rocks the shaft 26 that the right-hand lever 25 will engage its respective plunger 16 and adjust the same, so that the cash-counter will not be operated.

It will of course be understood that my present invention can be applied to different classes of machines and that it is in no wise limited to machines having two counters or any particular number of counters. In fact, as the throw-out feature is shown as applied to one counter only the devices could very readily be used in connection with single-counter machines.

The locking-hangers shown in Fig. 12 are for the purpose of preventing the operation of any amount-key with the no-sale key. One of the hangers operated by the no-sale key is connected by a link-bar 200 with one of the hangers of the units-of-dollars bank. It will be seen from the above that the hangers of both banks will be prevented from moving laterally if the no-sale key is operated.

By reference to Fig. 4 it will be seen that I have provided the key-coupler with a rearwardly-projecting arm 116, located near its left-hand end. A rock-shaft 117 is arranged transversely across the rear of the machine and is provided with a rigid arm 119. This arm is arranged to be engaged and elevated by the arm 116 when the left end of the coupler is fully elevated. The right-hand end of the shaft 117 is provided with a locking-arm 120, (see Fig. 3,) which is provided with a laterally-projecting flange 121. This flange cooperates with a lug 122, mounted on a disk 123, fast to the rotation-shaft 21. Should an attempt be made to manipulate the machine by holding back the key-coupler near the left-

hand end of the same, the arm 116 will not engage the arm 119 by the time the lug 122 reaches the flange 121, and the machine will thus be locked until the left-hand end of the coupler is allowed to ascend sufficiently to rock the shaft 117 and elevate the arm 120 to move the flange 121 out of the path of the lug 122. By the above-described mechanism all manipulation of the machine by the twisting of the key-coupler is prevented, as both ends of the coupler must rise an equal distance or the machine becomes locked at the end of the downstroke of the keys.

In order to lock all of the special keys when the charge-button is operated, I provide the right-hand arm 18 with a lug 18′. This lug is normally out of the path of the forward end of the throw-out arm 25′; but when the rod 19 is shifted to the left by the operation of the charge-key the lug is brought directly in the path of said throw-out arm 25′ and all rocking of this arm and the part 25, which carries it, is prevented and the special keys thus locked. When the rod 19 is released upon the completion of the operation of the machine, the parts return to their normal positions and the arm 25′ is again free to be operated by the movement of any one of the special keys.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cash-register key comprising two sections constructed to be independently operated and means for automatically locking the two sections together upon the movement of one of said sections.

2. A cash-register key including two independently-movable sections, an operating mechanism controlling one of said sections, and locking devices between the sections controlled by the operating means.

3. In a cash-register the combination with an operating mechanism, of a key formed in two sections, spring means intermediate the sections and constructed to be put under tension by the operation of one section to cause the remaining section to follow the operating mechanism when the latter is actuated.

4. In a cash-register the combination with a common key member, of a key formed in two sections one of which is constructed to be coupled to said common member, and means intermediate the sections of the key for controlling such coupling operation by the movement of one section of said key.

5. In a cash-register the combination with a common operating mechanism, of a key formed in two sections, and a movable coupling device mounted on one of the sections and controlled by the movement of the remaining section.

6. In a cash-register the combination with a common coupling member, of a key formed in two sections one of which is constructed to become coupled to the common coupler, and means intermediate the two key-sections for effecting the coupling operation, including a movable coupling device mounted on one of said sections, and means operated by the remaining section for controlling said coupling device.

7. In a cash-register the combination with an operating mechanism, of a series of keys each of which is formed in two sections, locking devices between the sections of the keys, and means controlled by the operating mechanism for locking the key-sections of each key together when said operating mechanism is out of its normal position.

8. In a cash-register, the combination with a key and an operating member, of a lock for said operating member; lock-operating means for locking the operating mechanism during one portion of movement of said key; and means operating during the continued movement of said key to oppose the said lock-operating means and release the lock by said continued movement of the key.

9. In a cash-register the combination with an operating mechanism, of a special key formed in two sections, a latch for one of said sections, means for locking the two sections together, and means controlling the latch so that it will not engage said one of the sections when the two sections are locked together.

10. In a cash-register, the combination with a key and an operating mechanism, of a lock for said operating mechanism; means controlled by said key during one portion of its movement to move said lock into operative position under spring tension; and independent means actuated by said key during its continued movement for moving said lock out of operative position during such continued movement.

11. In a cash-register, the combination with a key having an initial setting movement and a final operative movement, and an operating member, of a lock for said operating member; and means controlled by said key for actuating said lock to lock the operating member at the beginning of said setting movement of the key and to release said lock at the end of said setting movement of the key, said lock-controlling means being constructed to permit the continued operative movement of said key independently of the locking device.

12. In a cash-register the combination with an operating mechanism including a coupling member, of a key formed in two sections, a latch for one of said sections, and a coupling device mounted on the remaining section and constructed to trip the latch when operated by the coupling member.

13. In a cash-register the combination with an operating mechanism including a key-coupler, of a key formed in two sections, a locking

device intermediate the sections, and means operated by the key-coupler for controlling the locking device.

14. In a cash-register the combination with a series of special keys, of a series of amount-keys, locking devices cöoperating with the special keys, and yielding operating means intermediate the amount-keys and said locking devices.

15. In a cash-register the combination with an operating mechanism including a pivoted key-coupler formed with a coupling-flange, a special key constructed in two sections one of which is formed with a coupling-notch, and spring means intermediate the two sections arranged to be put under tension by the operation of one of the sections to cause the remaining section to follow and become coupled to the key-coupler when the latter is operated.

16. In a cash-register the combination with an operating mechanism, of a counter, a special key formed in two sections, and means for throwing out the counter when one of the sections is independently operated.

17. In a cash-register the combination with an operating mechanism, of a counter mounted in a movable frame, a series of special keys, means for throwing out the counter controlled by the special keys, and a lock for said means operated by the counter-frame when the latter is out of its normal position.

18. In a cash-register the combination with an operating mechanism, of a counter mounted in a movable frame, a series of special keys, means for throwing out the counter controlled by the special keys, and a device controlled by the throw-out means for preventing the movement of the counter-frame during the time said throw-out means is out of normal position.

19. In a cash-register the combination with an operating mechanism of a counter coöperating with the same, keys controlling the operating mechanism, a series of special operating-keys each constructed with independently-movable sections, and means operated by the independent movement of one section of any one of the special operating-keys for preventing the counter coöperating with the operating mechanism.

20. In a cash-register the combination with an operating mechanism, of a counter, a series of special keys each constructed with independently-movable sections, and means controlled by the independent movement of one section of any one of said special keys for preventing the operation of the counter in connection with the operating mechanism.

21. In a cash-register the combination with an operating mechanism, including keys and a key-coupler, of a counter, a series of special operating-keys having initial and final movements, movable coupling devices on said special keys, and means controlled by the initial movement of any one of said special keys for preventing the operation of the counter in connection with the operating mechanism.

22. In a cash-register the combination with a series of operating amount-keys, of a counter-operating mechanism, a counter, a series of operating special keys each constructed with independently-movable sections, and means controlled by the initial movement of one section of any special key for preventing the operation of the counter in connection with the operating mechanism.

23. In a cash-register the combination with a series of pivoted amount-keys, of a counter-operating mechanism, a counter, a series of pivoted special keys constructed with independent pivoted sections, and means controlled by the initial movement of any one of said special key-sections for preventing the operation of the counter in connection with the operating mechanism.

24. In a cash-register the combination with an operating mechanism, of a counter mounted in a movable frame and arranged to be brought into connection with the operating mechanism, a series of special keys constructed with independently-movable sections, and means controlled by the movement of any one of said key-sections for preventing the counter being moved into connection with the operating mechanism.

25. In a cash-register the combination with an operating mechanism, of a counter, a series of amount-keys, a series of special keys arranged to have initial and final movements, a movable member common to the amount-keys, means for preventing the operation of the said member while any one of the special keys is making its initial movement, and means for rendering the counter inoperative by the initial movement of any one of the special keys.

26. In a cash-register the combination with an operating mechanism, of a counter mounted in a movable frame and arranged to be brought into connection with the operating mechanism, means for moving the frame upon the normal operation of the machine, a special controlling device constructed with independently-movable sections, and means operated by the movement of one section of the controlling device, for preventing the operation of the counter.

27. In a cash-register the combination with a series of amount-keys, of counter-actuating devices operated thereby, a counter mounted in a movable frame and arranged to be brought into connection with the operating devices, a series of special keys constructed with independently-movable sections, and means controlled by the initial movement of any one of said key-sections for preventing the regular movement of the counter-frame.

28. In a cash-register the combination with

an operating mechanism, of a counter arranged to be brought into connection therewith, a series of special keys each of which is formed in two independently-movable sections, one of the sections having initial and final movements, devices controlled by the initial movement of one section to set the remaining section for operation, and means controlled by the special keys for preventing the operation of the counter.

29. In a cash-register the combination with an operating mechanism, of a counter, a common operating member, a series of special keys each of which is formed in two sections, means for coupling one of the sections to the operating member, and devices controlled by the special keys for preventing the operation of the counter.

30. In a cash-register the combination with an operating mechanism, of a counter, a series of operating amount-keys, a coupler, a series of special keys constructed in sections one of which coöperates with the coupler, means operated by the movements of the special key-sections for preventing the operation of the counter, and means for giving the special keys their final movements by the operation of the amount-keys.

31. In a cash-register the combination with an operating mechanism, including a common coupling member, of keys each formed in two sections one of which is constructed to couple with the common member, a spring put under tension by the operation of one section of each key to cause the companion section to follow and become coupled to the coupling member when the latter is operated.

32. In a cash-register the combination with an operating mechanism, of a counter coöperating therewith, a series of special keys each of which is formed in two sections, means controlled by the operation of the keys for preventing the operation of the counter, and means controlled by the operating mechanism for coupling the two sections of each key together.

33. In a cash-register the combination with an operating mechanism, of a special key formed in two sections normally independently movable, and means controlled by the operating mechanism for coupling the two sections of each key together.

34. In a cash-register the combination with an operating mechanism including a coupling member, of a key formed in two independently-movable sections, a spring arranged to be put under tension by the movement of one of the sections to cause the companion section to follow and become coupled to the coupling member when the latter is operated, and means for causing the sections to move together.

35. In a cash-register the combination with an operating mechanism including a coupling member, a key arranged to be coupled thereto, and a spring arranged to be put under tension at will to cause the key to follow and become coupled to the coupling member when the latter is operated.

36. In a cash-register the combination with an operating mechanism, of a counter, a series of amount-keys, a key-coupler operated thereby, a special key formed in two sections, and a spring put under tension by the movement of one section to cause the other to follow and become coupled to the key-coupler member when the latter is operated.

37. In a cash-register the combination with an operating mechanism, of a counter, a common coupling member, a series of keys for operating said member, a special key formed in two sections, one of which is arranged to be coupled to the common member and arranged to be set by its companion member, and means controlled by the special key for preventing the operation of the counter.

38. In a cash-register the combination with an operating mechanism, of a counter, a special key formed in two sections, means operated by one section for setting the remaining section for operation in connection with the operating mechanism, and means controlled by the special key for preventing the operation of the counter.

39. In a cash-register the combination with an operating mechanism, of a counter, a special key formed in two sections, means controlled by the operating mechanism for locking the two sections together, means operated by one of the sections for setting the companion section for operation in connection with the operating mechanism, and means controlled by the special key for preventing the operation of the counter.

40. In a cash-register the combination with an operating mechanism, of a key formed in two sections, means operated by one of the sections for setting the remaining section for operation in connection with the operating mechanism, a latch for securing the operated section in set position, and means controlled by the operating mechanism for releasing said section.

41. In a cash-register the combination with an operating mechanism, of a key formed in two sections, means operated by one of the sections for coupling the remaining section to the operating mechanism, and a latch for the first-mentioned section arranged to be operated by the coupling means.

42. In a cash-register the combination with an operating mechanism, of a counter, a series of special keys constructed with two independently-movable sections, a printing mechanism, and means controlled by the initial movements of the special keys for setting the printing mechanism and preventing the operation of the counter.

43. In a cash-register the combination with

an operating mechanism, of a printer, a printing mechanism, a series of special keys having initial and final movements, rocking devices operated by the special keys to a greater or less extent according to the relative operating value of the operated key, means connecting the rocking devices to the printing mechanism, and means for causing the rocking devices to prevent the operation of the counter.

44. In a cash-register, the combination with a key and an operating member, of a lock for said operating member; lock-operating means actuated by said key during one portion of its movement to lock said operating member; and independent means actuated after said key has completed such portion of its movement whereby to disable the first-mentioned lock-operating means.

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

JOSEPH P. CLEAL.

Witnesses:
WM. C. MUZZY,
JNO. J. UNGVÁRY.