

No. 748,260.

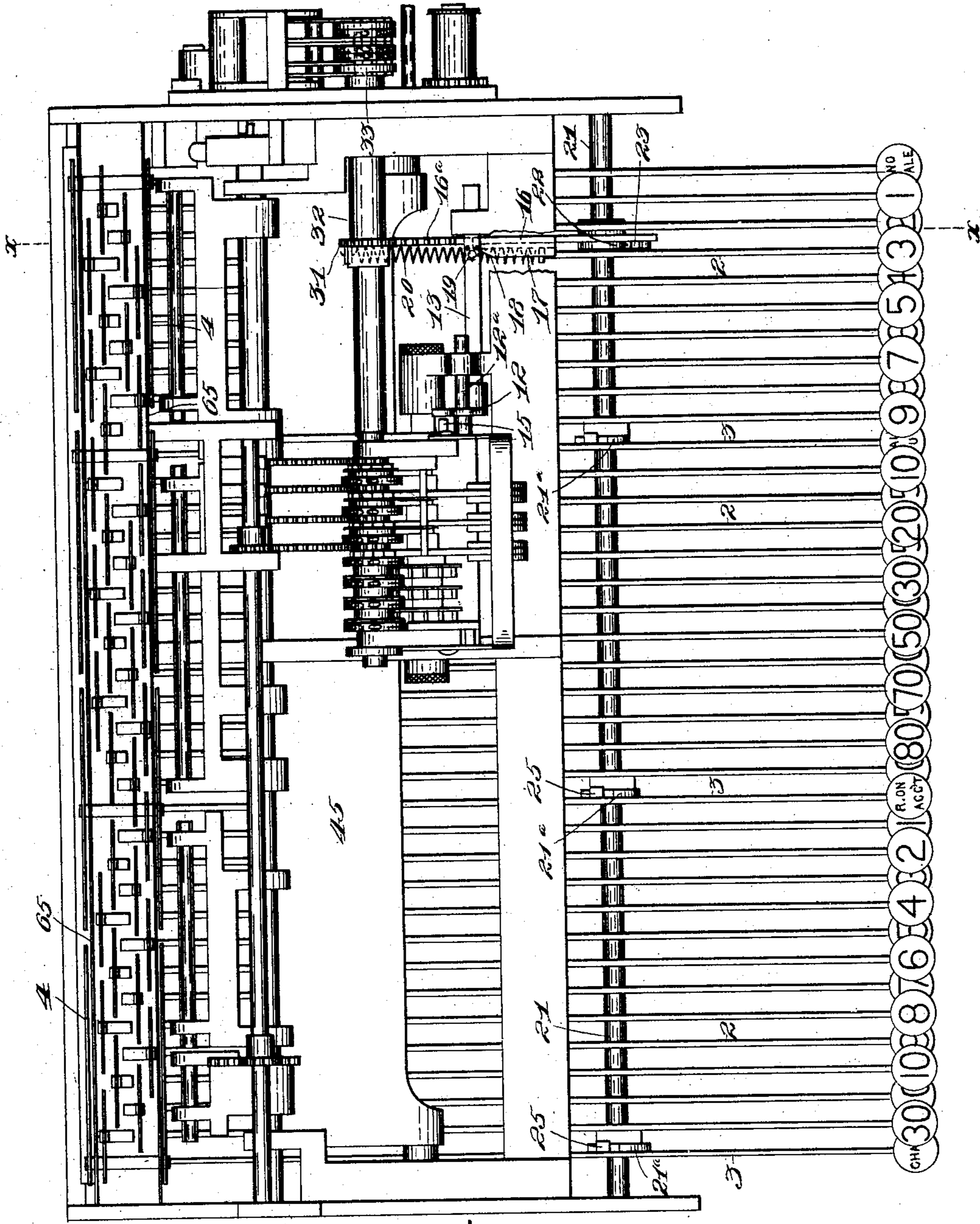
PATENTED DEC. 29, 1903.

T. CARNEY.
CASH REGISTER.

APPLICATION FILED JUNE 26, 1900.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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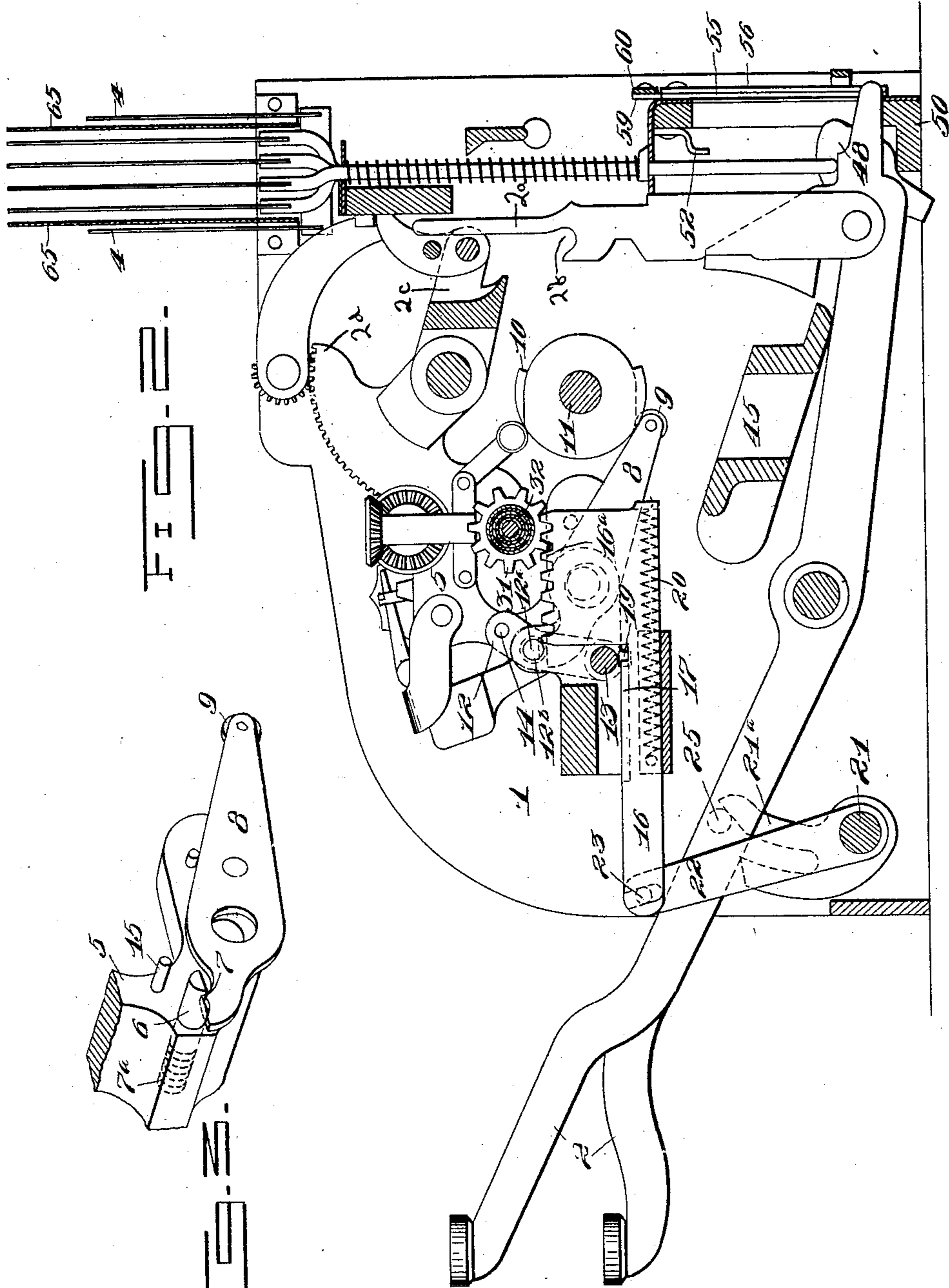
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4 SHEETS—SHEET 2.



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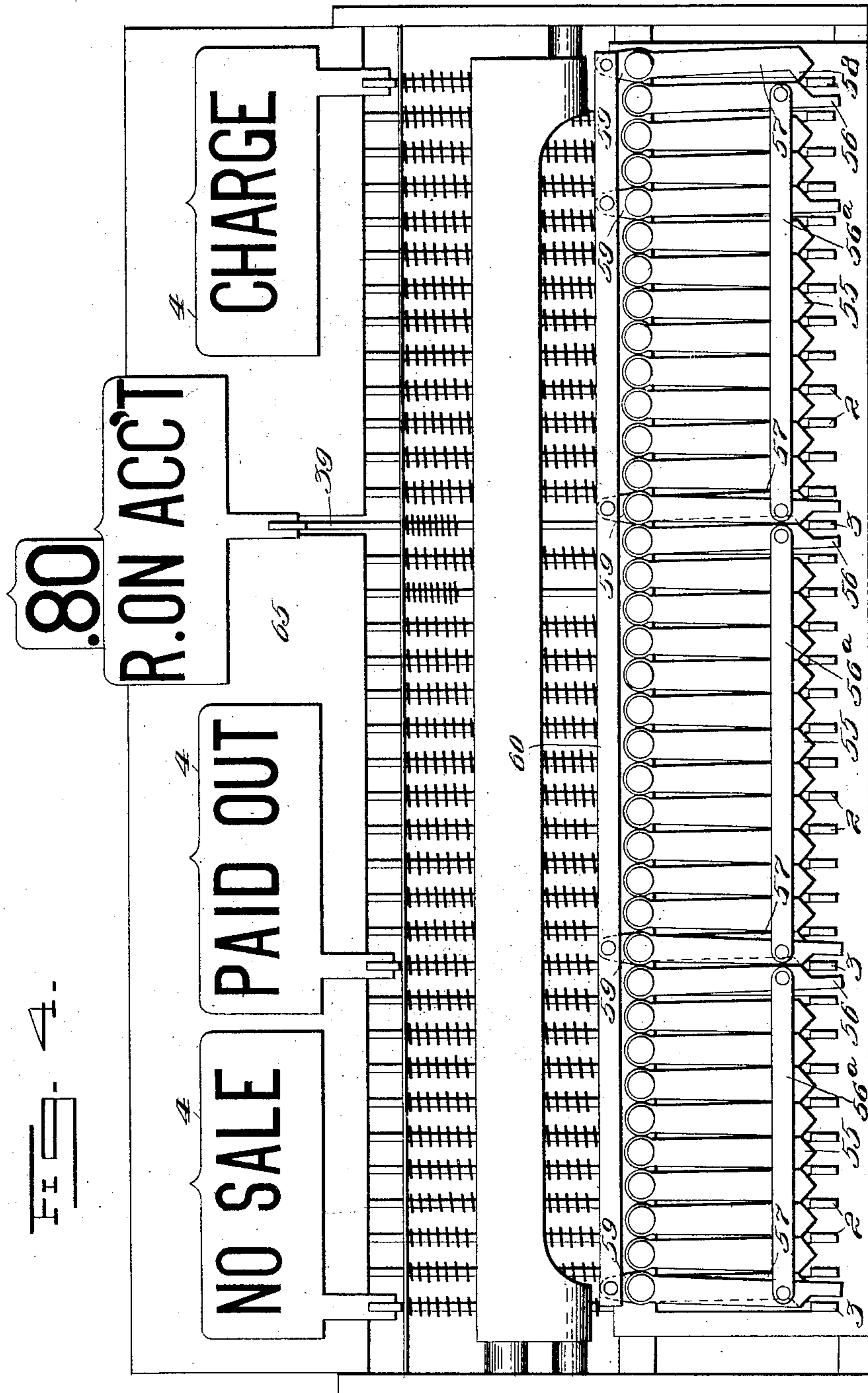
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4 SHEETS—SHEET 3.



Witnesses
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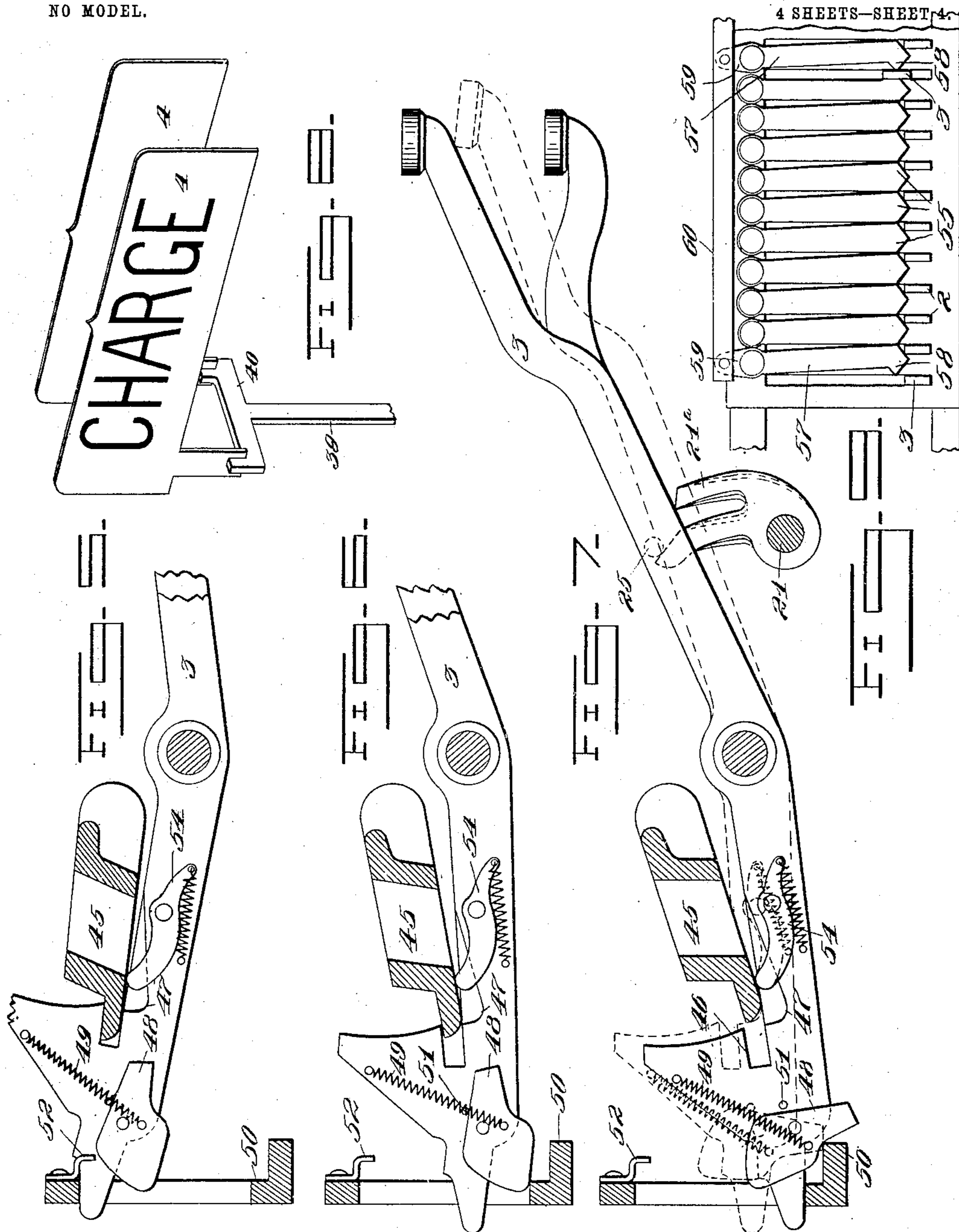
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UNITED STATES PATENT OFFICE.

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CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 748,260, dated December 29, 1903.

Application filed June 26, 1900. Serial No. 21,600. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CARNEY, 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 is shown as applied to a register of the class patented to me March 19, 1895, and numbered 536,015.

One of the several objects of the invention is to provide improved means for throwing the counter out of operative connection when certain special keys are operated.

Another object is to provide an improved system of indication.

In the appended drawings, forming part of this specification, Figure 1 represents a top plan view of the devices embodying my invention applied to a machine of the class mentioned, the case of the same being removed. Fig. 2 represents a vertical transverse section through the same on the line *x* *x* of Fig. 1, the cash-drawer being omitted. Fig. 3 represents an enlarged detail perspective view, partly broken away, of the counter and its throwing-lever. Fig. 4 represents a rear elevation of the machine. Figs. 5, 6, and 7 represent enlarged detail side elevations, partly in section and partly broken away, of one of the special keys in its different positions. Fig. 8 represents an enlarged detail perspective view of one of the special indicators, and Fig. 9 represents a broken detail rear elevation showing the special bank-locking hangers.

In the said drawings, 1 represents the frame of the machine; 2, the amount-keys; 3, the special keys, and 4 the double indicators.

The keys, register-operating mechanism, amount-indicators, and printing devices are of substantially the same construction and operation as described in said patent, and I will therefore refer thereto for a detail description of such parts.

Each of the amount-keys is provided with an operating-standard 2^a, formed with an

operating-shoulder 2^b, which engages a cross-bar of a pivoted registering-frame 2^c to rock said frame and actuate a rack-segment 2^d, carried thereby. The segments are arranged to mesh with the counter-wheel pinions. The shoulders on the standards 2^a are at different elevations, whereby the proper graduated movements of the registering-frames are secured. One exception is that the pivoted counter-frame 5, which carries the counter-wheels, is provided with a spring-pressed plunger 6, which is notched at its outer end, as at 7, and is normally forced partly out of the socket in which it is mounted by a coiled spring 7^a, mounted behind it in said socket. In the aforesaid patent the counter-frame is rocked by a lever pivoted independently of the same; but in my improved construction the counter-throwing lever 8 is so pivoted on said frame 5 that one of its ends rests against the said plunger 6, the opposite end being provided with an antifriction-roller 9, which is normally engaged by the periphery of a cam 10, mounted upon the rotation-shaft 11 of the machine. When the parts are in their normal positions, the notch 7 is out of alinement with the lever 8 and revolution of the cam rocks the lever, which in turn contacts with the plunger 6, and thereby throws the counter-frame forward to bring the counter-wheel pinions into mesh with the segmental operating-gears of the machine, as fully described in the said patent.

It will be readily seen from the above that when the notch 7 of the plunger 6 is moved into alinement with the pivoted throwing-lever the forward end of said lever moves idly in said notch, and thus allows the roller 9 upon its rear end to drop down out of the path of the cam, so that the rotation of the latter will not actuate said lever, and consequently will not bring the counter into operative engagement. The said plunger, as before stated, normally projects out of its socket so far that its full portion is in alinement with said throwing-lever. It is forced into its socket to bring the notch 7 into such alinement by an arm 12, fast on an endwise-slidable rod 13, mounted in the frame. Said arm 12 is formed with an aper-

ture 14, which is adapted to receive a stud 15, mounted on the counter-frame, when the said arm is slid to the left, Fig. 1, and thus lock the counter in its inoperative retracted position. The arm 12 is provided with a long stud 12^a, which operates in an aperture 12^b, formed in the main frame, and thus prevents any rocking of the shaft 13, but allows it free endwise play. Longitudinal movement is imparted to the rod 13 through the medium of a slide 16, which is mounted in the main frame at right angles to said rod and is provided with a horizontal flange 17, having a wedge 18 formed at its rear end, (see Fig. 1,) which is arranged to contact with an antifriction-roller 19, mounted upon said rod. The slide 16 is normally held in its forward position by a coiled spring 20, which connects it with the main frame. Motion is imparted to said slide to move it rearwardly against the tension of its spring by a transverse rock-shaft 21, which is provided with a slotted arm 22, into which projects a stud 23, mounted on said slide. As there are four special keys, the rock-shaft is provided with four cam-arms 21^a—one for each special key—and they extend radially therefrom and are slotted at different angles, whereby when the special keys are operated the rock-shaft is thereby given different degrees of movement. As shown in the drawings, the special keys are appropriated to recording charge, received-on-account, paid-out, and no-sale transactions, respectively. Each of these keys except the last is provided with an antifriction-roller 25, which is arranged to engage its respective cam-arm 21^a, and as each of the cam-slots is on a different inclination it follows that when any of the three special keys mentioned is operated the shaft 21 will be rocked to a greater or less extent, according to the key pressed. The no-sale key, however, is not connected to the rock-shaft 21. Any movement of said rock-shaft operates to drive the flange 6 into the counter-frame, and thereby throws out the counter, as already referred to.

In operating my improved machine if a cash transaction is recorded the amount-keys are simply pressed in the usual manner. If, however, a special transaction is to be registered—for example, a credit sale—the operator first presses the charge-key, which descends a slight distance, as hereinafter more fully described, and throws out the counter. He then presses the proper amount or value keys, giving them their full stroke, and they complete the operation of the charge-key, exposing the charge-indicator and also the indicators designating the amount of the recorded transaction.

Each special key is in most respects formed like the regular amount-keys; but each has in addition a recess 47, which is provided in order that the special key may be given an initial movement sufficient to rock the shaft 21 without, however, moving the key-coupler 45, which, as shown, is of the usual construction

and the flange of which normally rests upon the upper edges of the amount-keys, as usual. Such initial movement does not cause the flange of the key-coupler to enter the coupler-notch 46 of said key; but it brings the shoulder formed by the upper wall of said notch upward and forward, so that when subsequently the proper amount or value keys are operated the key-coupler will strike said shoulder and sliding within the key-coupler slot will thereby raise the special key and give it a full movement. For the purpose of retaining the special keys in the position in which they are at the end of their initial movement I provide each with a dog or stop, which is pivoted on its key and is connected thereto by a coiled spring 49. When the key is in its normal position, (shown in full lines in Fig. 7,) the tension of the spring is exerted to the rear of the pivot-point of the dog, so that when the key is elevated into the dotted position shown in said figure the dog will be rocked rearward to cause its lower end to pass over a cross-bar 50 of the machine, and thus prevent the return of the key, a pin 51 on said key limiting the movement of the dog. When the key is given its final movement by the key-coupler, the dog 48 engages a lug 52, mounted on the main frame, and is so rocked on its pivot as to throw the spring tension forward of said pivot, whereupon the spring moves the dog into the position shown in full lines in said Fig. 5, the pin 51 again limiting the movement of said dog. When the key moves down upon its return stroke, the dog engages the cross-bar 50 and is rocked back to its original position, as will be readily understood by reference to Fig. 6. As the stops 47 of the special keys prevent the key-coupler returning them fully to normal position, each of said keys is provided with a pivoted spring-drawn pawl 54, which engages the under side of the coupler and after the key-coupler has stopped forces the special key to normal position.

In a machine of this kind it is of course desirable to prevent the simultaneous operation of two or more value-keys in the same bank. It is also desirable to prevent the simultaneous operation of two or more special keys. Moreover, it is desirable to prevent the simultaneous operation of a special key and an amount-key, as the proper sequence of operation requires that the special key be partly depressed, as heretofore described, before the operation of the amount or value keys. To these ends the usual pendent stops 55 are pivoted above the rear ends of the keys, and they have sufficient play, so that the rear end of one key may rise freely between them; but the simultaneous operation of two or more keys is prevented, as will be readily understood. Coöperating with each special key is a modified form of stop 57, which is cut away at 58 on one side, so that after the rear end of the special key has passed the lower end of the modified stop it will fit into the

cut-away portion, and the stop will be able to swing freely upon the subsequent operation of the amount or value key, which would not be possible were the stop not cut away, as described. Each of the four modified stops 57 has an upward extension 59, and these extensions are all jointed to the link 60, so that when any modified stop is swung laterally by the operation of its special key all the other modified stops, as well as the regular stops 55, will be thereby likewise swung laterally, so as to lock the other special keys and the amount or value keys from simultaneous operation.

In order to prevent the operation of a second special key after one has been partly operated, I provide the sectional stops 56, the adjacent pairs of which are connected by the links 56^a. As will be readily understood, after a special key has been started from normal position all the other special keys will be locked from operation.

It is very desirable in a machine of the type mentioned to print a designating character upon the detail strip when any one of the special keys is operated, so that each special transaction—such as charge, paid out, and received on account—will be so identified upon said detail strip. To accomplish this object, I form the upper rear edge of the slide 16 with rack-teeth 16^a. These teeth are arranged to mesh with a pinion 31, secured to a sleeve 32, which is loosely mounted upon the nested sleeves carrying the usual numeral printing-wheels. This sleeve 32 is provided with a printing-wheel 33, having suitable designating-type about its periphery and so located as to print in alinement with the other printing-wheels. When the slide 16 is forced inward by the operation of one of the special keys, it is temporarily held in said inner position by said key.

Each special key 3 and also the special no-sale key 4 are provided with a special indicator, as shown in Fig. 8. Each special indicator is supported, as usual, upon the rear end of its special key and comprises a T-shaped standard 39, having the cross-piece 40, in the opposite ends of which are secured the two spaced indicator-tablets 4. The two tablets of each special indicator are located on opposite sides of the amount or value indicators, (see Fig. 2,) whereby the character of a recorded transaction is indicated at the front and also at the rear of the machine. In order that the special indicators shall not hide the amount or value indicators when they are operated simultaneously, I have arranged it so that the special indicators show below the regular indicators, as will be readily understood and as shown in my Patent No. 589,245, granted August 31, 1897. Between both the tablets of the special indicators and the amount-indicators are located rigid screen-plates 65, which are secured to the main frame and obscure the amount-indicators when the latter are in their normal posi-

tions. These screen-plates are necessary, because the construction which provides for an amount indication above the special indicators requires the unexposed amount-indicators to be in substantially the same horizontal plane with the exposed special indicators.

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

1. In a cash-register, the combination with a registering mechanism, of a series of keys, indicator-tablets arranged to be operated by said keys, special keys and coöperating special indicators arranged to be operated by said latter keys and each comprising a standard, a cross-piece on said standard, and spaced tablets mounted on the respective arms on said cross-piece so as to lie upon opposite sides of the regular indicators.

2. In a cash-register, the combination with counter-operating means, of a counter mounted in a movable frame, means for moving said frame, a shiftable rod controlling the operativeness of said frame-moving means, a series of special keys, a rock-shaft carrying arms arranged to be engaged by said keys respectively, and means for shifting the rod by the rocking of said shaft.

3. In a cash-register, the combination with counter-operating devices, of a counter, devices for throwing the latter out of coöperative relation with the operating devices, a slide for controlling said throwing devices, special keys arranged to differentially move said slide, and a printer geared to the latter, substantially as and for the purpose described.

4. In a cash-register, the combination with counter-operating devices, of a counter, means for establishing an inoperative condition of the latter, said means carrying a rack-bar, a series of special keys, and differential means of connection between the said keys and the means for disabling the counter whereby the rack-bar is given different lengths of movement by manipulation of different keys and the printer is correspondingly set.

5. In a cash-register, the combination with counter-operating devices, of a counter, a series of operating-keys, devices for throwing said counter into and out of operative relation with its operating devices, a series of special keys arranged to have divided movements in one direction, means controlled by said special keys for disabling said throwing devices in the initial movement of said special keys, and devices for locking the operating-keys during such initial movement of the special keys.

6. In a cash-register, the combination with counter-operating mechanism, of a counter, devices for throwing the same into and out of operative relation with said operating mechanism, special keys for controlling operative-ness of said throwing devices and arranged to have divided movements in one direction, and means for preventing registering opera-

tions during the initial movements of said special keys.

7. In a cash-register, the combination with operating devices, of a register mechanism, means for throwing the latter out of operative condition, a series of special keys, a rock-shaft carrying arms arranged to be moved different distances by said keys, means connecting said rock-shaft to the counter-throwing-out means, and a printer geared to said connecting means.

8. In a cash-register, the combination with operating devices of a registering mechanism a slide for throwing the latter out of operative condition, a series of keys arranged to variably move said slide, a rack mounted on said slide and a printing device connected to said rack.

9. In a cash-register, the combination with counter-operating devices, of a counter, means for throwing the latter into and out of relation with its operating devices, a slide for disabling said means so as to prevent the establishment of an operative relation between the counter and its operating devices, a rock-shaft connected to said slide and having a series of cam-arms, and a series of keys arranged to engage said cam-arms relatively and become coupled thereto.

10. In a cash-register, the combination with a series of operating-keys, of a counter-operating mechanism actuated thereby, a counter mounted in a movable support and normally removed from operative relation with said operating mechanism, means for moving the register into and out of operative relation with said mechanism, a series of special keys, means operated thereby to prevent subsequent movement of the counter-support, and a printer cooperating with said special keys to print a character denoting a special transaction represented by the particular key operated.

11. In a cash-register, the combination with a series of operating-keys, of a series of special keys, a series of racks operated by said keys, a counter mounted in a movable frame and arranged to be brought into mesh with said racks, normally inactive means for preventing movement of said counter into mesh with the rack, a plurality of special keys, and devices connecting the same with said preventing means whereby the latter may be rendered operative.

12. In a cash-register, the combination with an operating mechanism, of a series of keys, dogs pivoted on said keys and arranged to engage stationary portions of the frame, springs connecting the dogs to their respective keys and adapted to exert their tensions alternately on opposite sides of the pivot-points of said dogs to hold the dogs in the different positions to which they are moved, and a rest over which said dogs take when the keys are preliminarily manipulated.

13. In a cash-register, the combination with an operating mechanism, of a registering

mechanism, a series of keys, a movable member common to all of said keys and spring-pressed devices mounted on said keys and engaging said member whereby the keys are returned to normal position.

14. In a cash-register, the combination with counter-operating mechanism, of a counter, a series of keys, pivoted dogs mounted on said keys respectively, abutments for said dogs to encounter at the ends of the movements of the keys to shift said dogs on their pivots first in one direction and then in the opposite direction, springs for holding the dogs in either of their shifted positions, and a rest over which said dogs take when the keys are preliminarily manipulated.

15. In a cash-register, the combination with a registering mechanism, of a series of amount-keys, a series of special keys having initial and final movements and pivoted dogs mounted on the respective special keys and arranged to engage a stationary part of the machine and thus retain the keys in the positions to which their initial movements carry them, spring means for holding the dogs in their shifted positions, and means operated by the amount-keys to give the special keys their final movements.

16. In a cash-register, the combination with a registering mechanism, of a series of special keys, pivoted dogs mounted on said keys and arranged to engage a stationary part of the machine and thus hold the keys in the positions to which their initial movements carry them, stationary devices arranged to be engaged by the dogs for rocking the latter on their pivots, spring means for holding the dogs in their shifted positions, and means mounted on said keys for returning them to their normal positions.

17. In a cash-register, the combination with a registering mechanism, of a series of amount-keys, a series of special keys arranged to have divided movements in one direction, and means for preventing operation of the amount-keys while any one of the special keys is making its initial movement, with provisions for permitting operation of the amount-keys during final movements of the special keys.

18. In a cash-register, the combination with a registering mechanism, of a series of amount-keys, a series of special keys arranged to have initial and final movements in one direction, a series of key-stops for the amount-keys, and means operated by the special keys during their initial movements only for locking the key-stops.

19. In a cash-register, the combination with a registering mechanism, of a series of amount-keys, a series of special keys, a series of key-stops for the amount-keys, and a series of modified key-stops for the special keys which are operated only during the initial movements of the special keys to lock the amount-key stops only at that time.

20. In a cash-register, the combination with the amount or value keys, of the special keys

arranged to have initial movements and a final movement, regular key-stops to prevent the simultaneous operation of a plurality of amount-keys in the same bank, modified key-stops arranged to lock the amount-keys during the initial movements of the special keys, and to then unlock said amount-keys.

21. 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 by the movement of the frame, means for moving the frame upon the normal operation of the machine, special controlling devices, and means for locking the counter-frame from movement when the special controlling devices are operated.

22. In a cash-register, the combination with a series of amount-keys, of counter-operating devices actuated thereby, a counter mounted in a movable frame so that it may be brought into connection with said operating devices, a series of special keys, and means controlled by said keys for preventing the regular movement of the counter-frame when any one of said special keys is operated.

23. In a cash-register, the combination with a series of keys, of a common key member movable thereby, spring devices interposed between the keys and member whereby the keys may have movements independent of the member but will be returned to normal position because of the contact of said devices with said member.

24. In a cash-register, the combination with a series of amount-keys, of a series of special keys having initial and final movements, a common member, the special keys arranged to move initially independently of and into the path of the common member and adapted to receive their final movements upon the operation of the amount-keys.

25. In a cash-register, the combination with a series of amount-keys, of a series of special keys having initial and final movements, means to lock the amount-keys during the

initial movements of the special keys, and means requiring an operation of the amount-keys to complete the movements of the special keys.

26. In a cash-register, the combination with a series of special keys having initial and final movements, of a common member, the latter arranged to arrest the special keys after their initial movements, and a series of amount-keys adapted to operate the common member to complete the movements of the special keys.

27. In a cash-register, the combination with a series of amount-keys, of a series of special keys having initial and final movements, means mounted on said special keys and arranged to engage stationary supports and hold said keys after their initial movements, and means operated by the amount-keys to complete the movements of the special keys.

28. In a cash-register, the combination with a series of amount-keys, of a series of special keys having an initial and a final movement in one direction; a common member; provisions for permitting said initial movement of the special keys independently of the common member and for completing said final movement by means of said common member; and means connected with said common member for returning said special keys to normal positions.

29. In a cash-register, the combination with an operating mechanism, of a counter, a series of special keys, a printing device, an operating member for the printing device moved different distances by the special keys and arranged to throw out the counter at its first movement and to hold it out during its degrees of movement.

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

THOMAS CARNEY.

Witnesses:

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WM. MCCARTHY.