(No Model.) 2 Sheets—Sheet 1.

C. H. LITTLE.

CASH REGISTER.

No. 571,728. Patented Nov. 17, 1896.

Fig. 6.

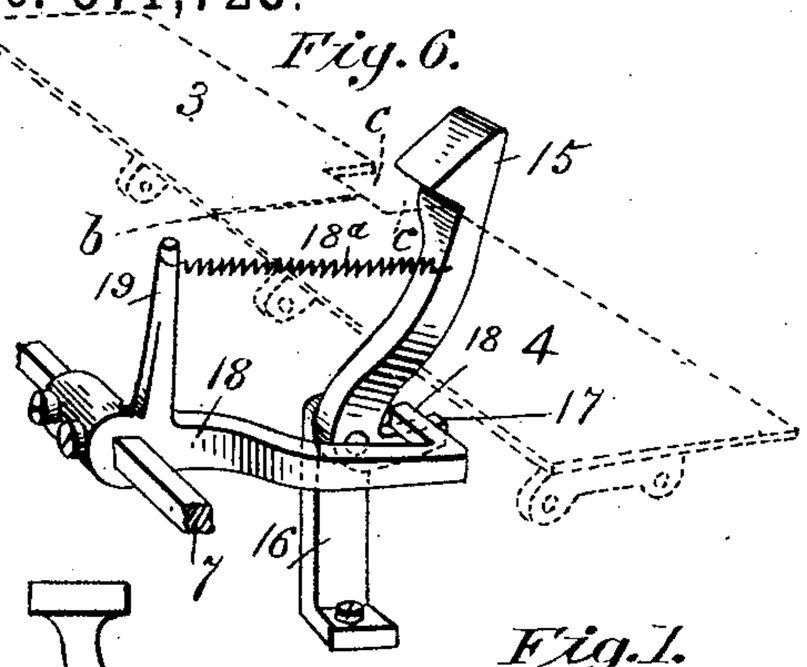

Fig. 1.

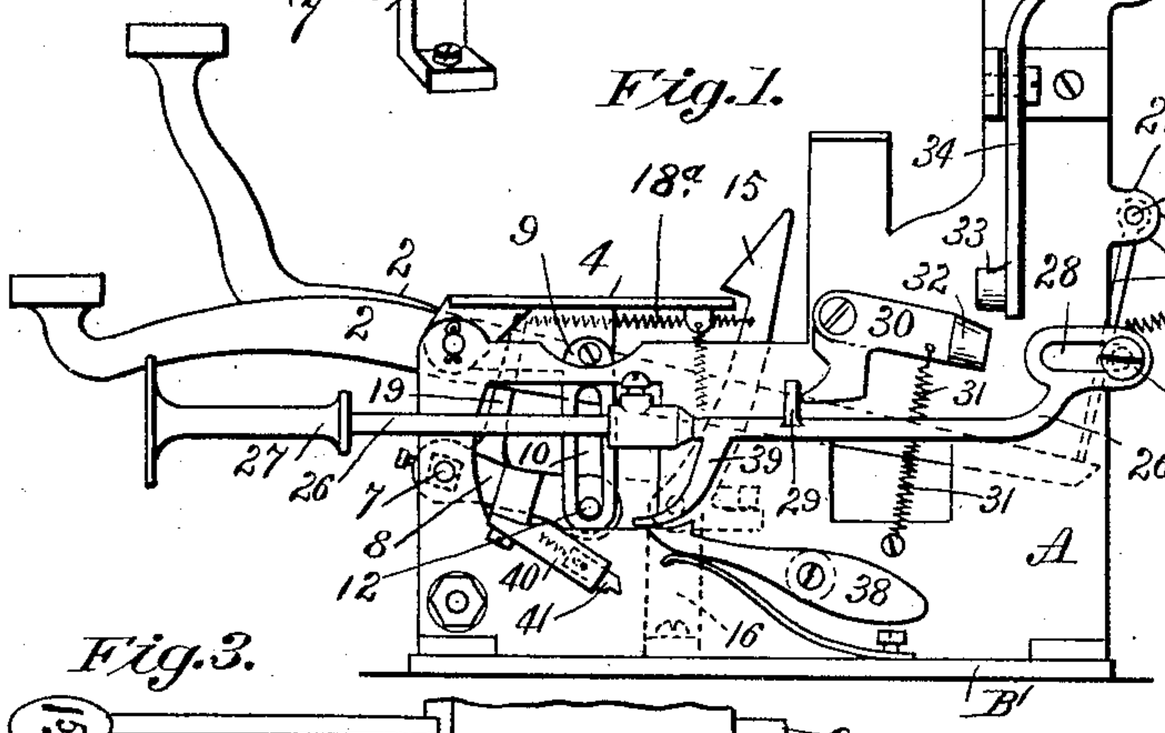

Fig. 2.

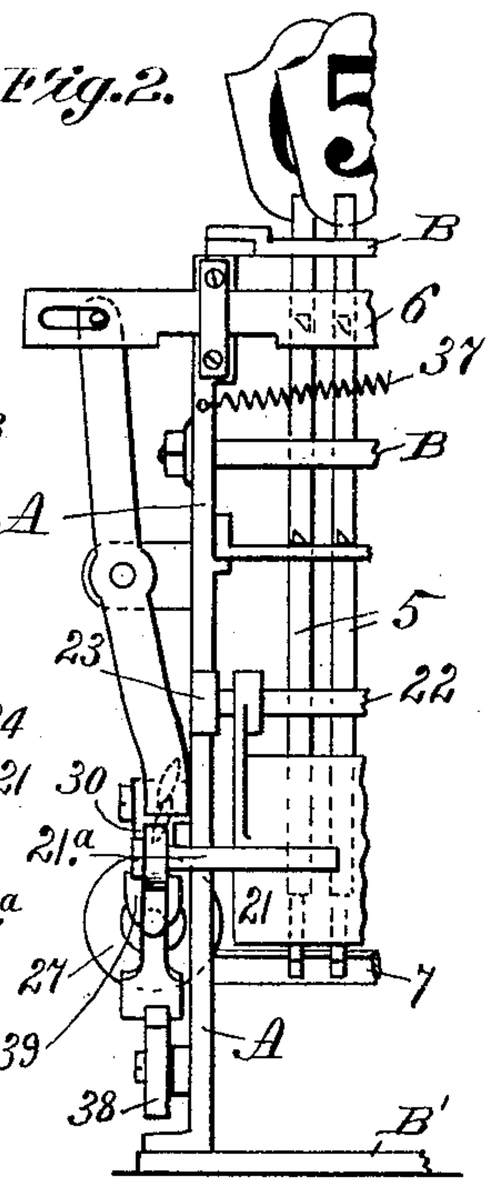

Fig. 3.

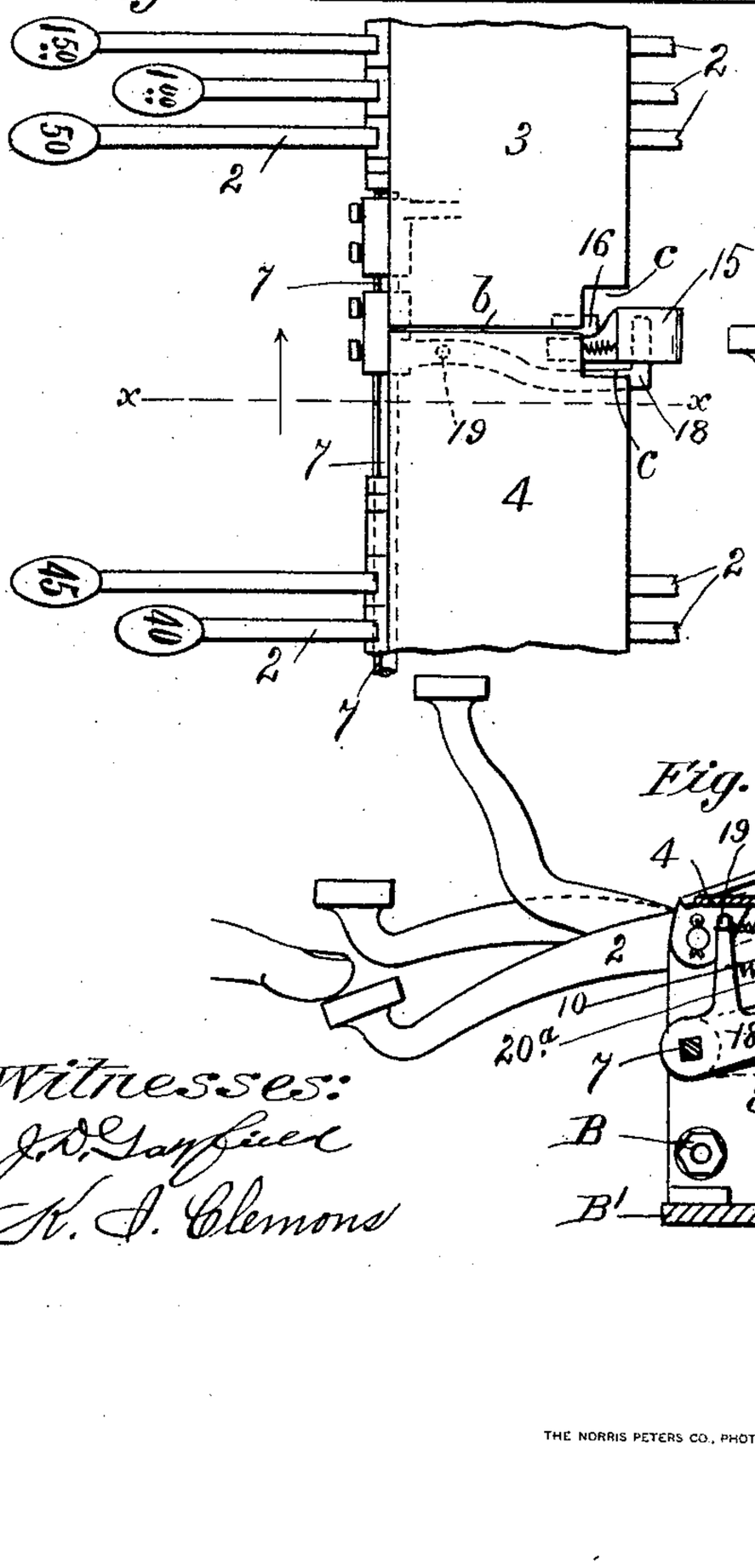

Fig. 4.

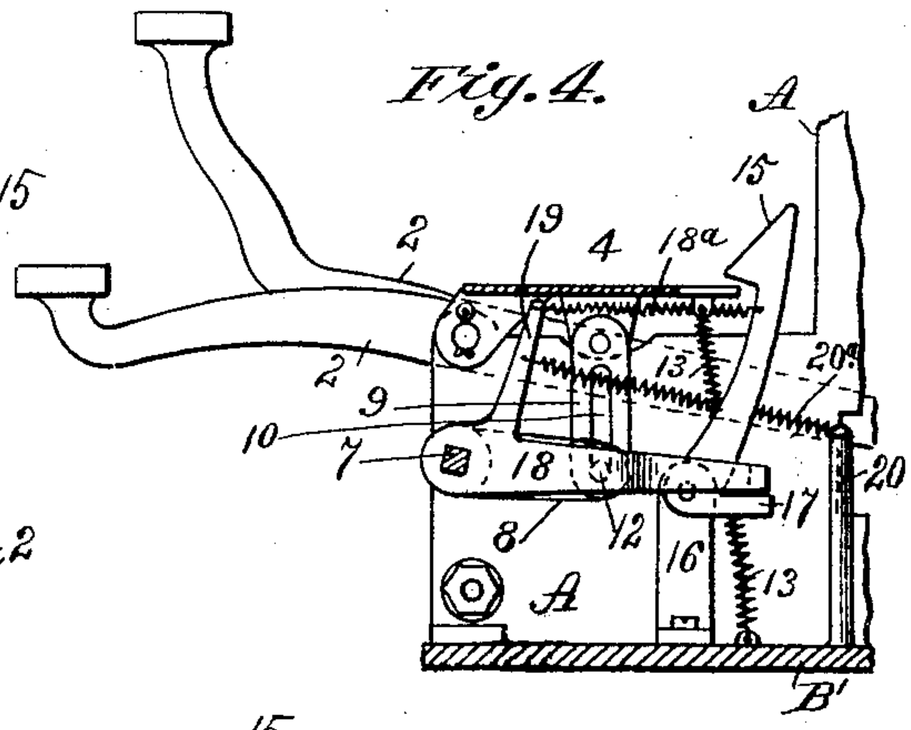

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

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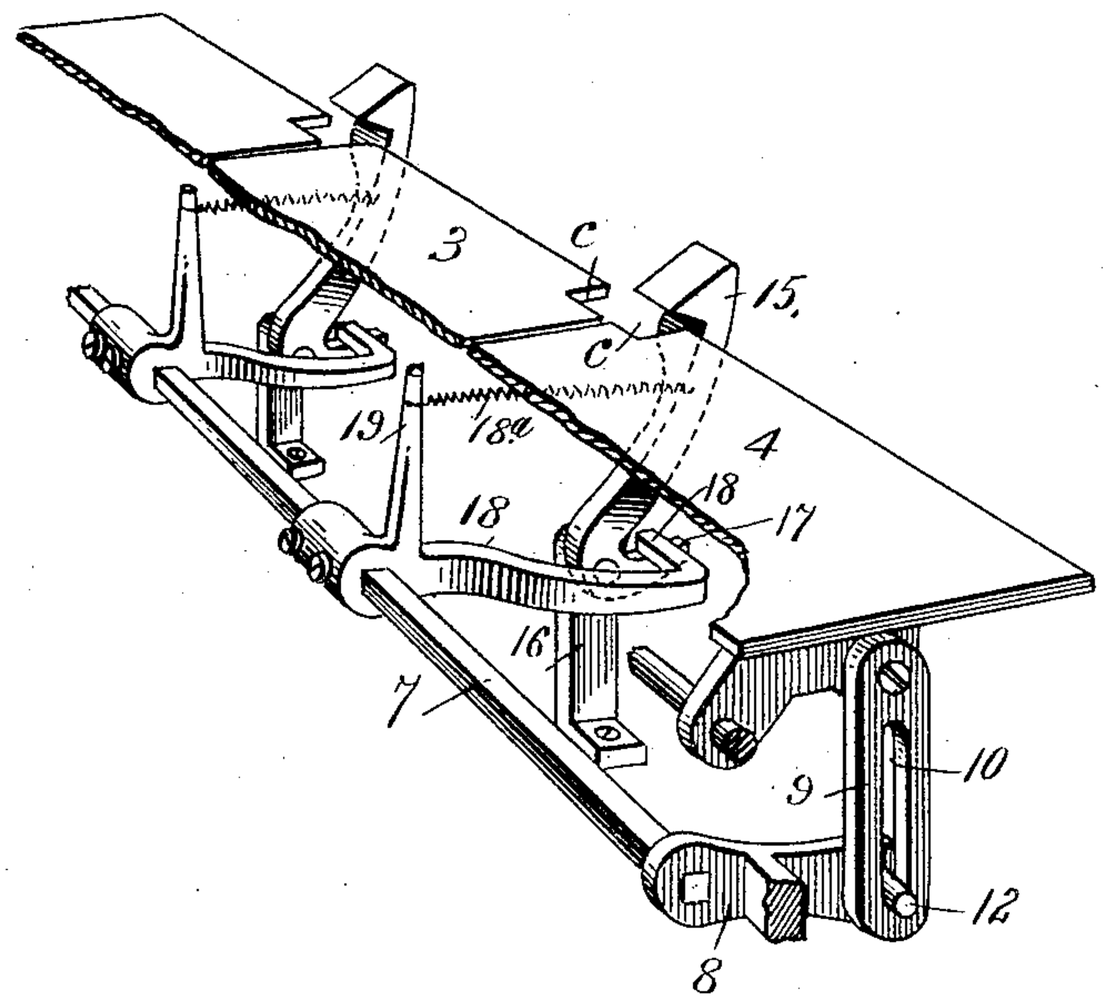
Fig. 7.



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UNITED STATES PATENT OFFICE.

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CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 571,728, dated November 17, 1896.

Application filed May 29, 1896. Serial No. 593,574. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LITTLE, a citizen of the United States of America, residing at Melrose, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Cash Registering and Indicating Machines, of which the following is a specification.

This invention relates to cash registering and indicating machines, and has for its object the improvement in the construction of machines made with two or more sections or key-banks, whereby the rocker plate or plates of one or more of said sections are locked against movement thereof by a key or keys whenever a key of any section has been operated to raise an indicator-rod, but which construction permits the simultaneous action of all of said rocker-plates when one key of each section are operated together, a further object being the improvement in means for dropping an indicator-rod which has been raised by the operation of a key, said dropping of the indicator being effected by means of mechanism independent of said key or its coöperating parts.

The invention consists in the peculiar arrangement and construction of the machine, as clearly set forth and claimed in the following specification.

Referring to the drawings forming part of this specification, Figure 1 is an end elevation of a cash-registering machine embodying my improvements, showing more particularly the mechanism for dropping the indicator-rods. Fig. 2 is a rear elevation of one end of a machine to which the indicator-operating devices above referred to are applied. Fig. 3 is a plan view of a portion of two rocker-plates of a machine, showing the position of the locking mechanism therefor and several keys of each bank. Fig. 4 is a sectional view through one of the key-banks, taken on line $x\,x$, Fig. 3. Fig. 5 is a view of the parts shown in Fig. 4 with a key depressed. Fig. 6 is a perspective view of the principal parts of the rocker-plate-locking mechanism, showing the two rocker-plates in dotted lines. Fig. 7 shows in perspective the application of more than one hook to the rocker-plates, which is necessary whenever the machine has more than two rocker-plates.

Referring to the drawings, A represents one of the end frames of the mechanism of a cash registering and indicating machine, said frames being united by transversely-extending plates or bars, as B, and secured to a suitable base, as B′.

The key-levers 2 and the rocker-plates 3 and 4 and means of raising an indicator-rod 5 and of supporting it temporarily in such raised position by a laterally-moving bar 6, engaging with said indicator-rods, are all of well-known construction and are shown and described in a patent to David T. Methven, dated March 31, 1896, and numbered 557,517.

The machine illustrated in the drawings accompanying this application is a double key-bank machine having independent rocker-plates for each bank and means for locking one of said rocker-plates whenever the other of said plates is operated by the depression of a key, but which permits both of the said plates to be raised together by the simultaneous depression of a key of each bank; but I do not wish it understood that the device is applicable to a two-bank machine only, as it can be applied to any machine with more than one bank. The said means for locking said rocker-plates 3 or 4 consist of a shaft 7, shown herein as square in cross-section, suitably supported by one end in the end frames A of the machine and by its opposite end at some point beyond the line of division between the rocker-plates. Two or more arms 8 are secured upon said shaft at proper intervals, said arms being substantially parallel to the key-levers 2.

Connecting-links 9 are pivotally secured to the under side of the rocker-plates by one end thereof, and a slot 10 is made in the body of said links, with which slot the pin 12 in the end of the arms 8 engages and by which said shaft 7 and arms 8 are supported in the position shown in Figs. 1 and 4 and by which they are moved upwardly to the position shown in Fig. 5, when a key is depressed and one of said rocker-plates moved upward. Springs, as 13, are attached to the under side of the rocker-plates and to the base B′ of the machine, by means of which the said rocker-

plates, key-levers, &c., are returned to their normal positions after having been operated. The said rocker-plates 3 and 4 are divided into two parts, the dividing-line between them being indicated by *b*, Fig. 3, the corners of the said plates at one end of said dividing-line being cut away, as at *c c*, within which space so provided lies the end of the pivoted hook-lever 15, the vertical center line of which lies opposite the said dividing-line *b*. Said hook-lever is supported pivotally on a post 16, screwed to the base B′, as shown. Said lever has provided thereon a rearwardly-projecting arm 17. Fixed on shaft 7 in a position about opposite said hook-lever 15 is an arm 18, the end of which lies at right angles horizontally to the said arm and engages normally with the arm 17 of said hook-lever when the parts are in their normal position, as shown in Figs. 1, 4, and 6, said parts 17 and 18 being held forcibly in contact by a spring 18ª, attached to a vertical post 19 on arm 18 by one end and by its opposite end to a hook-lever 15, which causes the said hook-lever to engage with the edge of one or more of the rocker-plates when said arm 17 is released from the pressure of the arm 18, which occurs when one of the keys of any bank is depressed. A second spring 20ª is attached to the post 19 by one end and to a post 20, fixed in the base B′ of the machine, by its opposite end and also serves to hold said arm 17 against the under side of said arm 18 when the parts are in their normal positions.

By the operation of the above-described devices whenever a key of any bank is depressed the rocker-plate of said bank rises in time to escape engagement with the hook-lever 15, which immediately begins to move toward the edge of said rocker-plates lying in proximity thereto, the various parts operating to cause said forward movement of the hook-lever as follows: The key-lever raises the rocker-plate in the usual manner. Said plate rises against the tension of the spring 13, and in its upward movement carries with it the links 9. The pins 12 on the arms 8 engage with the lower end of slot 10 in said links, and said arms 8, thereby upwardly moved, cause a rotational movement to be given to shaft 7, to which is fixed the arm 18, the end of which is lifted from its contact with arm 17 on the hook-lever 15 against the tension of spring 20ª, permitting thereby the spring 18ª to draw the said hook-lever toward the rocker-plates and engage with the edge of whichever of the rocker-plates remains stationary, it being understood that reference is now made to the operation of a single key of either bank, the said hook-lever remaining in engagement therewith until the key is released, when the spring or springs 13 cause the return of the rocker-plate and its coöperating parts to their normal positions. The said return of said parts leaves the indicator in its raised position and operates mechanism for locking all of the key-levers of both banks, and no other key thereof can be depressed until after said levers have been released by the operation of a push-rod projecting through the front of the case, said operation of the push-rod first releasing the exposed indicator and allowing it to drop back into the machine.

It is obvious, therefore, that it is impossible in machines embodying this invention to operate any key while an indicator is exposed to view, and likewise impossible to operate a key of one bank and while holding it depressed operate a key of any other bank.

A key of each bank must be operated singly or if more than one key is to be operated the operation thereof must be simultaneous, but in either case the key-levers are locked by the return movement of the parts to their normal positions, so that they must be unlocked by a push-rod, as above stated, before a key of any bank can be again operated. When keys from two or more of said banks are depressed simultaneously, their rocker-plates rise together and in time to escape engagement with the hook-lever 15.

The mechanism for locking and unlocking the key-levers and for releasing the raised indicator rod or rods, as above described, is constructed and operates as follows: As stated, the depression of a key raises an indicator-rod in the usual manner, said rod being supported in said raised position by the engagement of a projection on said rod with a projection on the laterally-moving bar 6, as described in said patent to Methven, above mentioned. As shown in Figs. 1 and 2, a key-locking plate 21 is fixed by short arms to a shaft 22, supported in suitable bearings 23 in the end frames A. A curved arm 24, attached to one end of said plate 21, has a spring 25, fixed by one end thereto and its opposite end fixed to the frame A, the purpose of said spring being to bring said plate 21 into position over the ends of the key-levers 2, when the push-rod 26 is released for the purpose of locking said keys. Said push-rod is supported on said plate 21 by one end by an arm 21ª, and its opposite end passes through a hole in the casing of the machine, whereby it is supported in the horizontal position, as shown in Fig. 1, said casing, as stated, not being indicated in the drawings. A knob 27 is fixed to the end of the said push-rod which projects through the front casing of the machine. The end of said push-rod engaging with the plate 21 is provided with a slot 28, whereby when said rod is operated to disengage a raised indicator, as aforesaid, it will move a certain distance before imparting any movement to the said plate 21. It is this first movement of the push-rod which imparts lateral movement to the bar 6 by the engagement of the projection 29 on said rod with the right-angled lever 30, pivotally fixed by a screw or otherwise to the end plate A of the frame. A spring 31, attached to the long arm of said lever 30 and to the frame, serves to

keep the short arm of said lever in contact with said projection 29 of the push-rod. On the end of the said long arm of said right-angled lever a wedge 32 is provided, whose thin edge points upward, and in a normal position, as in Fig. 1, it lies in a position for engagement with an oppositely-pointed wedge or cam projection 33, standing at right angles to the vertically-swinging lever 34, which is pivoted midway between its extremities to a projecting arm on the frame A, as shown. The inclined faces of said wedge and cam are so disposed that the end of the lever 34, engaged by the lever 30, is moved away from the frame of the machine. The upper extremity of said swinging lever has a pin 35 fixed thereon and at right angles thereto, which engages with the end of the bar 6. Said lever 34 is designed to move the bar 6 in one direction only against a suitable spring, which returns it to its normal position after it has been operated by said lever 34, and said spring also serves to hold the lower end of said lever close up against the frame A. The said movement of the bar 6, to disengage therefrom all indicator-rods supported in a raised position, is accomplished by moving the push-rod into the machine by pressing thereupon, which causes the projection 29 thereon to swing the right-angled lever 30 on its pivot, raising the longer of its two arms, on which is the wedge 32, which engages with the cam projection 33 on the swinging lever 34 in such manner as to move the lower end of the said lever away from the end frame A, and thereby imparts lateral movement to the bar 6 by the engagement therewith of pin 35 in the upper end of said lever in such manner as to disengage from said bar any indicator-rods supported thereby, and allow them to drop into the machine and out of sight.

The above-mentioned movements all take place and the indicator-rod drops back into the machine during the movement of the push-rod within the limits of the slot 28 on the end thereof, and while said plate 21 remains in the position shown in Fig. 1—viz., in engagement with the ends of the key-levers 2 of both banks of keys. When by the movement of said push-rod inward the end of the slot 28 engages with the arm 21^a, the wedge 32 is in engagement with the cam projection 33. A further movement of said push-rod causes said wedge 32 to pass by the said cam projection, releasing said bar 6, whose spring 37 acts to return it to its normal position and with it the swinging lever 34. Said continued movement of the push-rod moves the plate 21 out of engagement with the key-levers of all the banks of keys, and the spring-actuated dog 38, with the detent therein, as shown, then engages the curved depending fingers 39 on the push-rod and holds the latter in the last-named position—viz., at the end of its inward movement and holding plate 21 out of engagement with the ends of the key-levers—in which position it remains until a key of one or more key-banks is operated. When a key is so operated and immediately upon its return to its normal position, the said push-rod is released and the spring 25 swings the plate 21 again into the position shown in Fig. 1, in engagement with the ends of all of the key-levers, leaving the indicator-rod of the key or keys just operated in a raised position supported by the bar 6, as above described.

The release of the detent 38, which holds the push-rod, is accomplished by a short arm 40, attached to the arm 8, Fig. 1, in the end of which arm is a spring-operated latch 41, the end of which is beveled off, as shown, so that on the upward stroke thereof said latch will retire within the said arm 40 when it encounters the end of the said detent; but on the downstroke thereof—viz., when one of the rocker-plates descends—said latch will engage the point of said detent and move it downward far enough to release therefrom the finger 39, whereupon the spring 31, actuating lever 30, (one arm of which engages the projection 29 of the push-rod,) returns the latter to its normal position, as shown in Fig. 1. Upon again manipulating the push-rod the keys can be again operated to register, all as above described.

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

1. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of another, and means between said key-banks and said hooks for operating the latter, substantially as described.

2. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member located in proximity to the divisional line between said rocker-plates for engaging each of said plates by the actuation of another, and means between said key-banks and said hooks for operating the latter, substantially as described.

3. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of another, and means between said key-banks and said hook for operating the latter, combined with means independent of said key-levers or their coöperative parts for dropping any indicator-rod previously raised by the operation of a key of the machine, substantially as described.

4. In a cash registering and indicating machine composed of two or more banks, each

bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of the other, and means between said key-banks and said hooks for operating the latter, combined with means independent of said key-levers or their coöperative parts for dropping any indicator-rod previously raised by the operation of a key of the machine, and for unlocking the key-levers of all the banks after the said indicator-rod has been dropped, substantially as set forth.

5. In a cash registering and indicating machine having two or more key-banks and an independent rocker-plate for each of said banks, the combination with said key-banks and rocker-plates of a hook member for engaging and locking each of said rocker-plates, by the actuation of another thereof, said hook members being pivotally supported below said rocker-plate, an arm 18, fixed on shaft 7, and engaging said hooks, an arm 8, on said shaft, and a link, as 9, pivotally connected to arm 8, and the under side of the rocker-plate, substantially as described.

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