No. 699,100. Patented Apr. 29, 1902.

T. CARNEY.

CASH REGISTER.

(Application filed Apr. 4, 1899.)

(No Model.) 3 Sheets—Sheet 1.

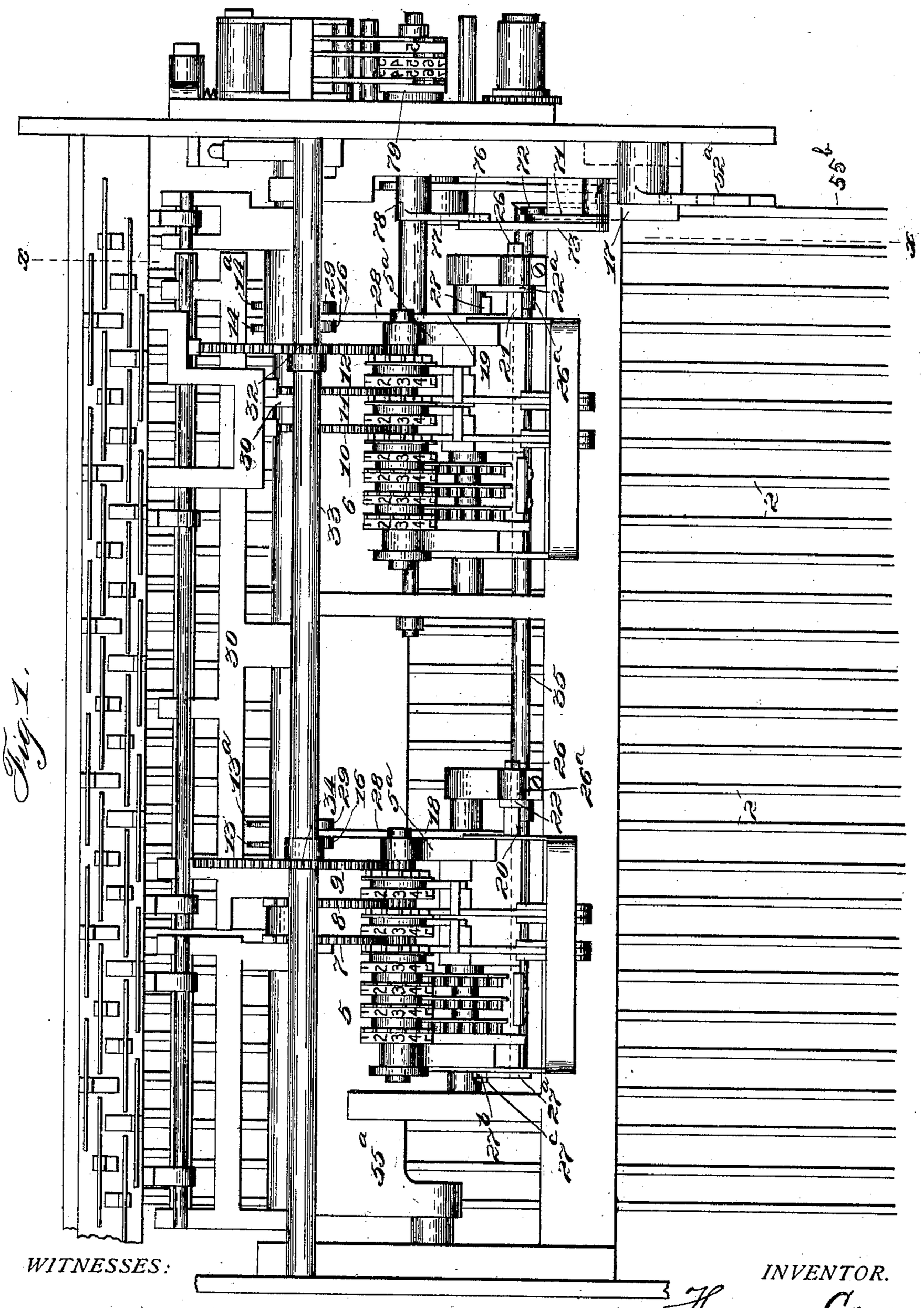

Fig. 1.

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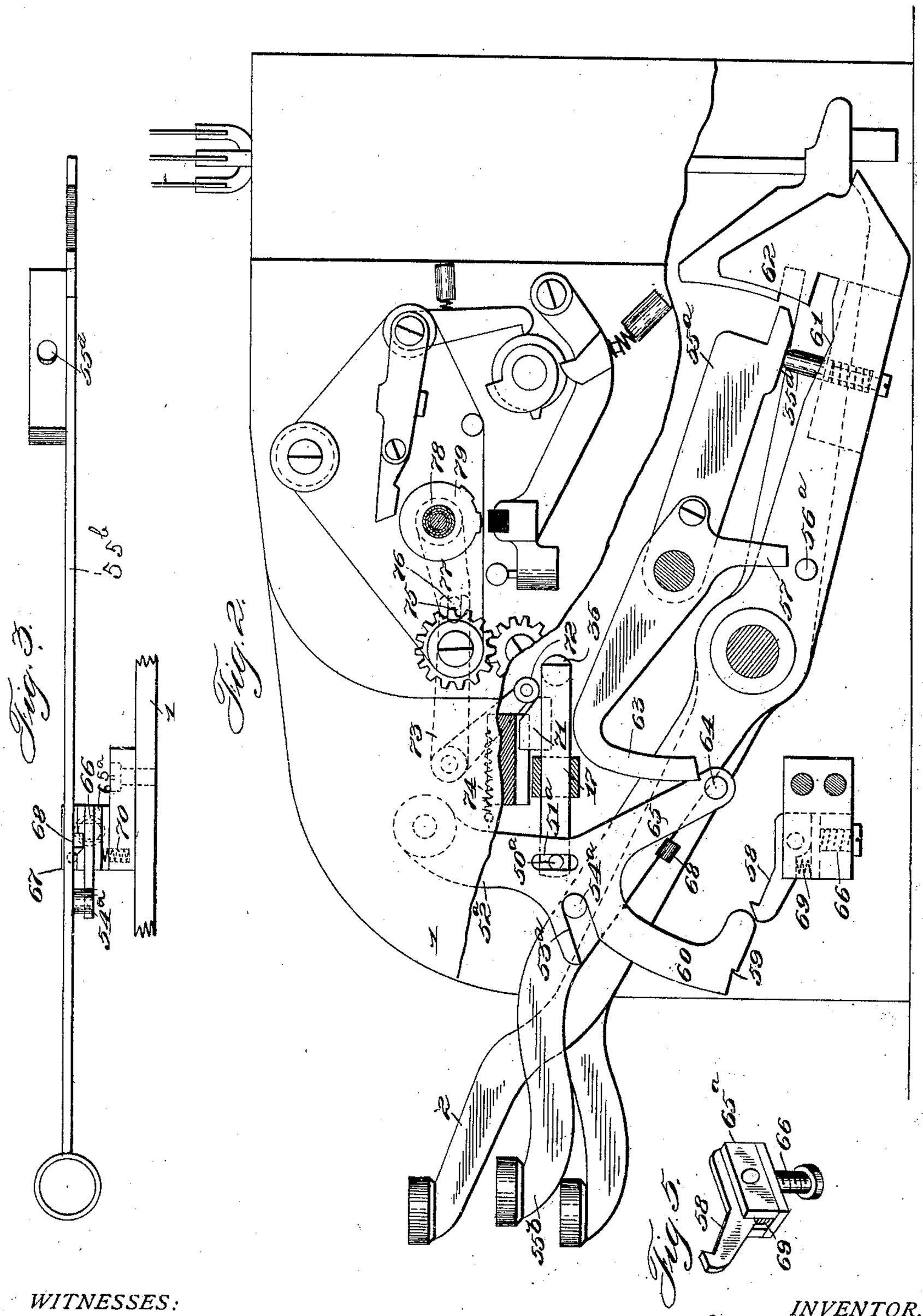
3 Sheets—Sheet 2.



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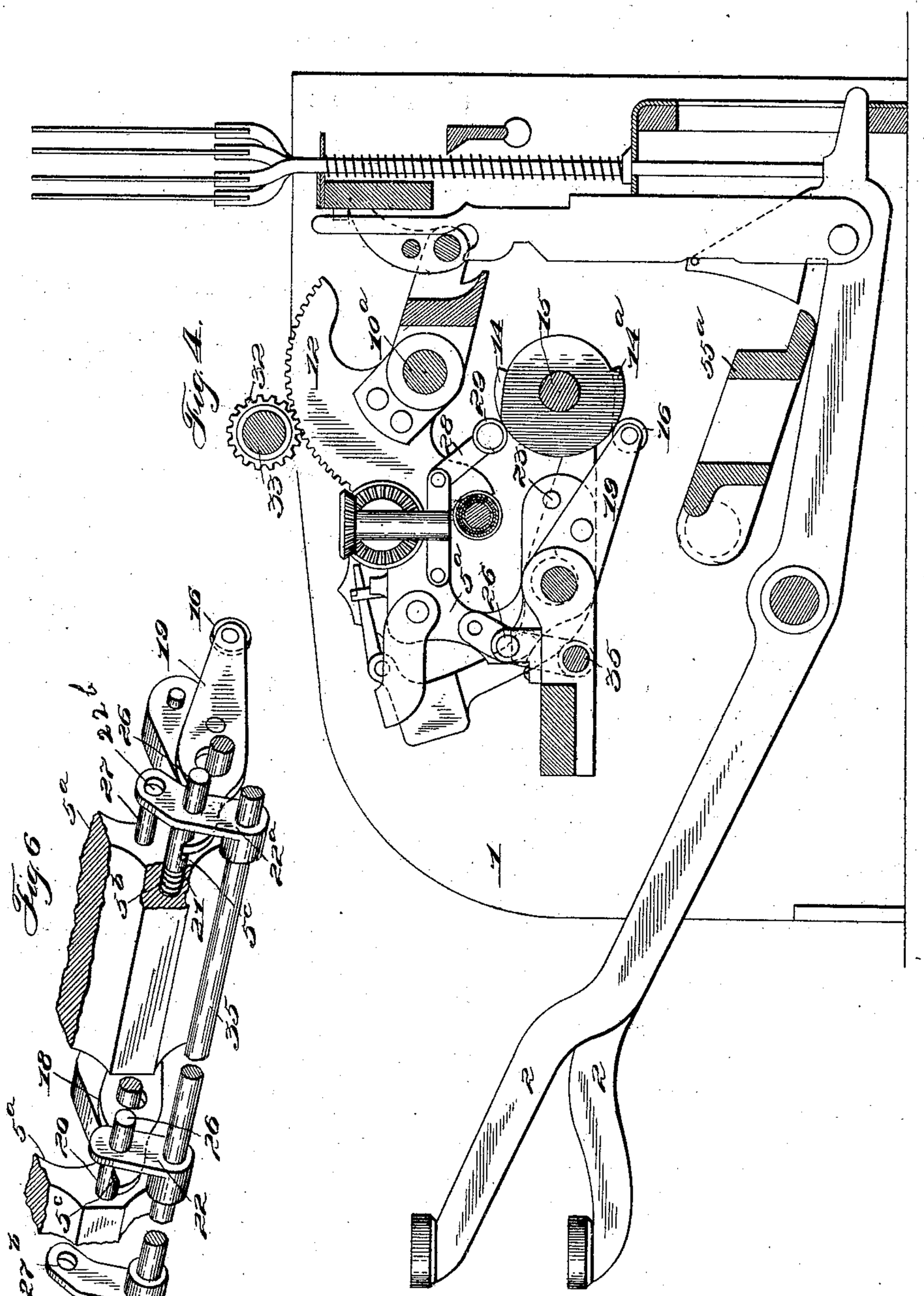

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UNITED STATES PATENT OFFICE.

THOMAS CARNEY, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 699,100, dated April 29, 1902.

Application filed April 4, 1899. Serial No. 711,645. (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 has more particular relation to registers of the type patented to me March 19, 1895, and numbered 536,015.

One of the several objects of the present invention is to provide a cash-register with a plurality of counters and improved devices for throwing either of said counters into operative position at will.

In the appended drawings, forming a part of this specification, Figure 1 represents a top plan view, partly broken away and with some of the parts omitted, of the devices embodying my invention applied to a machine of the class mentioned. Fig. 2 represents an end elevation of the same. Fig. 3 represents an enlarged detail top plan view of the special operating-key and its latch, the connecting-lever being omitted for clearness. Fig. 4 represents a transverse vertical section through my said machine, taken on the line x x of Fig. 1. Fig. 5 represents an enlarged detail perspective view of the swivel stud and latch pivotally mounted thereon; and Fig. 6 represents a detail perspective view of the counter-frames, spring-pressed shifting plungers, shifting arms and levers.

In the said drawings, 1 represents the frame of the machine; 2, the operating-keys; 5 and 6, the counters, and 55^b the special key. The construction of the operating-keys, indicators, and printer is substantially the same as described in said patent, and I will therefore only enter into a general description of the same at the present time. In the said patent but one counter is employed; but in my present machine two similar counters 5 and 6 are provided and so constructed as to be operated independently or separately by the same key mechanism. The said counters, each of which is substantially of the same construction and operation as the counter included in the before-mentioned patent, are similarly mounted in pivoted frames 5^a near the opposite sides of the machine, so that they may be oscillated and brought into the proper positions for their gears to receive motion respectively from segmental operating-racks 7, 8, and 9 and 10, 11, and 12 or be withdrawn from the same. The said racks 10, 11, and 12 receive motion from the operating devices, as fully described in said patent, while the racks 7, 8, and 9 are coupled to said first-mentioned racks in a manner hereinafter more fully described. The oscillating or throwing of the counters into operative position is accomplished by means of two cams 13 and 14, fast upon the usual rotation-shaft of the machine and engaging, respectively, with antifriction-rollers 16, mounted on the outer ends of the throwing-levers 18 and 19, which are pivoted on the respective counter-frames. The construction and location of each of these levers are such that the antifriction-roller of the same lies in the path of its respective cam when the rear end of the lever is forced upward, as hereinafter described. Said levers are turned on their pivots to elevate the antifriction-rollers into the paths of the cams by plungers 20 and 21, mounted in suitable sockets in the frames of the respective counters. (See Fig. 6.) Each plunger is forced forward partly out of its respective socket when relieved of the pressure of its arm 22 or 22^a, hereinafter described, by a coil-spring 5^b, mounted in the socket behind it. The under sides of the plungers are each provided with a notch 5^c, said notches being differently located on the respective plungers. Each of said levers 18 and 19 bears with its forward end against the under side of its respective plunger, and whether a given counter is thrown into engagement with its operating-segments or withheld from such engagement upon the operation of the keys depends upon whether the forward end of the lever 19 rests in the notch 5^c of its plunger. That counter will be brought into engagement with its operating-segments whose throwing-lever is not in engagement with the notch of its plunger. As shown in Fig. 6, the throwing-lever belonging to the counter upon the right hand, as shown in Fig. 1, will not

be brought into engagement with its registering-segments upon the subsequent operation of the operating-keys unless meanwhile the special key 55[b] be pressed, as will be presently described. The normal condition of the machine is such that the left-hand counter will be brought into engagement with its registering-segments, while the right-hand counter will be withheld from such engagement. The registering-segments and their throwing-cam 14 are moved at each operation of the machine; but since the counter is not in engagement with the segments such operation produces no effect. The arrangement of the plungers, throwing-levers, and parts operated by the special key 55[b] is such that when only one counter is brought into condition for engagement with its operating mechanism the other is thereby thrown out of such condition, as will be more fully described. The movement of the throwing-levers is limited by the stop-pins 23, one of which is carried by each of the counter-frames. The said plungers are operated by the aforesaid arms 22 and 22[a], which are rigidly mounted on a slidable rod 35, and are provided with studs 26, adapted to enter or engage apertured projections 26[a] of the frame, and thus prevent during such engagement any rotation of said rod. The rod 35 is loosely mounted in suitable guides upon the main frame. The arm 22[a] is formed with an aperture 22[b], adapted to receive a stud 27, mounted upon the right-hand counter-frame to lock said counter in inoperative position when the rod 35 is moved longitudinally to the left. An arm 27[a] is mounted upon the left-hand end of the rod 35, and is apertured at 27[b] to receive a locking-stud 27[c], mounted on the left-hand counter-frame. Each of the oscillating counter-frames is provided with a rigid arm 28, provided with an antifriction-roller 29, which is adapted to engage the periphery of one of two cams 13[a] and 14[a], mounted on shaft 15, and thus operate said arms to return the counter-frames to their original positions after they have been brought into engagement with their registering-segments.

The aforesaid racks 7, 8, and 9 and 10, 11, and 12 are coupled together in pairs in the following manner: The racks 7 and 10, which are arranged to turn the dollar registering-wheels, are both keyed or otherwise rigidly secured to the shaft 10[a], upon which they are mounted so as to move together, while the racks 8 and 11, which operate the respective tens-of-cents registering mechanisms, are loose upon the said shaft, but are yoked together by a frame 30, which is also journaled on said shaft. The racks 9 and 12, which turn the five-of-cents registering mechanism, are also mounted loosely upon the said shaft, and one of the same is extended to mesh with a gear-wheel 32, fast upon an auxiliary coupling-shaft 33. This shaft is suitably journaled in the frame of the machine and is provided with a pinion 34, which meshes with a similar extension of the remaining rack 9 of this set. By the above-described means the segmental racks move in sets, so that the proper registration will be made upon whichever counter may be thrown into operative engagement.

The shifting rod 35 is operated to shift the counters, as above described, by means of a slidable key-rod 17, suitably mounted in the frame (see Fig. 2) and having a beveled rear end which abuts against the beveled right-hand end of the shifting rod. This key-rod is provided with a block 71, having an inclined rear end, against which an antifriction-roller 72, mounted on a pivoted bell-crank lever 73, abuts. The said roller is normally held in contact with said block by a coil-spring 74, which connects the lever 73 with a portion of the frame. This lever is also formed at its rear end with a slot 75, into which projects a pin 76, mounted on a lever 77, which latter is in turn mounted on a sleeve 78, carrying a printing-segment 79. By means of this printing-segment, which operates in conjunction with a printer similar to that described in said patent or any other suitable form, I am enabled to print a character for designating which of the counters is being employed in connection with the amount of each transaction. The key-rod 17 is further provided with a laterally-projecting stud 50[a], which is adapted to operate in a slot 51[a], formed in a lever 52[a], which is pivoted at its upper end upon the main frame. This lever is also formed with an inclined slot 53[a], into which projects a stud 54[a], mounted on the special shifting key 55[b]. It will be observed from the above that when the said special key is depressed the stud 54[a] will rock the lever 52[a] on its pivot by bearing against the lower wall of the slot 53[a], which action will cause the said key-rod 17 to move inward and shift the counters, as before described. The special key 55[b] does not make a full stroke upon being depressed, but is first moved until a pin 56[a], mounted thereon, contacts with the lower end of a stop-arm 57, mounted on the pivoted key-coupler frame 55[a], which latter is fully described in said patent. The said key is held in this partially-depressed position by a pivoted latch-key 58, which engages a notch 59, formed in an extension 60 of the lever 52[a]. The upper part of the rear end of the special key is reduced, as at 61, so that when said key is raised it will not be stopped by the key-coupler, but may be elevated to a point where its hook end 62, which is similar to the regular keys described in said patent, will lie in the path of the end of the key-coupler, so as to be raised by the same when one of the amount-keys is operated. The aforesaid key-coupler is further provided with a rigid hook-arm 63, which coöperates with a pin 64, mounted on an extension 65 of the lever 52[a], so as to prevent the operation of the special key after a numeral-key has been depressed. As the lever 52[a] is held in position after being operated by the latch 58, it be-

comes necessary to provide some means for operating said latch to release said lever. This I accomplish by pivotally mounting said latch between two plates 65[a], fast to a swivel-stud 66, which is suitably mounted on a projection of the frame and is provided with an extension 67, having an inclined wall, which lies in the path of an inclined projection 68, mounted on the special key. The said latching-pawl is held in its normal latching position by a vertical coiled spring 69, mounted under the same, and a horizontal coiled spring 70, which is suitably mounted on the frame and engages the side of one of the plates 65[a], Fig. 3. When the special key is fully depressed by being engaged by the key-coupler, which is actuated by the value-keys, as before described, the projection 68 strikes the inclined wall of the extension 67 and forces the latch to one side against spring 70 and out of the notch 59, so that it snaps up beside the extension 60 and cannot again enter the notch until the lever 52[a] has returned to normal position and been again operated. It will also be observed that the special key is returned to its normal position after each operation of the machine, and therefore all the transactions will be registered upon one counter unless the special key for controlling the other is depressed. As the rear end of the key 55[b] is reduced, as at 61, the key-coupler 55[a] will therefore not continuously engage said key to force it back to its normal position, and I have therefore provided said key with a spring-pressed stud 55[d], suitably mounted thereon and which engages the under side of said coupler, and thus normally forces the key downward.

When it is desired to register upon the counter which is normally out of operative position, the special key is first depressed until it becomes latched against retraction, with its hook end in the path of the key-coupler. This movement shifts the counter mechanism. The amount-keys are now operated, and, through the key-coupler, further depress the special key until the latter is finally released from its latch near the end of its downstroke, and is returned by the key-coupler and the plunger 55[d] to its normal position. This return of the special key of course permits the counters to again assume their normal positions.

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 register-operating devices, of duplicate counters arranged to be brought into connection with the same, independent throwing devices for the respective counters, a slidable rod for adjusting said throwing devices, an operating-key and a lever arranged to be operated by said key and connected to the slidable rod.

2. In a cash-register, the combination with register-operating devices, duplicate counters arranged to be moved into connection with the same, a shifting bar, a lever for operating said bar, a key and a latching means for said lever arranged to be released by said key.

3. In a cash-register, the combination with register-operating devices, duplicate counters arranged to be moved into connection with the same, a shifting rod for said counters, a lever for operating said rod, a key for moving said lever and means connected to the movable parts of the machine and arranged to be projected into the path of said lever and thus lock it against operation after the operation of the machine has commenced.

4. In a cash-register, the combination with register-operating devices, of duplicate counters arranged to be brought into connection with the same, throwing-levers for said counters, a slidable rod for adjusting said throwing-levers to operative or inoperative positions, a key for operating said rod, and means connected to said key and engaging said rod.

5. In a cash-register, the combination with register-operating devices, of independent counters arranged to be brought into connection with the same, a shifting device for said counters, a special key for operating said device and means connected to the movable parts of the machine for limiting the initial movement of said key but adapted to be moved out of the path of the key to permit the latter to continue its movement.

6. In a cash-register, the combination with register-operating devices, independent counters arranged to be brought into connection with said operating devices, a shifting device for said counters, a key for operating said device arranged to have a partial initial stroke and to become coupled to the operating devices so as to be moved thereby through the remainder of its stroke.

7. In a cash-register, the combination with a series of keys, of a register-operating mechanism connected to the same, independent counters arranged to be moved into connection with said operating mechanism, a key-coupler, a shifting device for said counters, and a key for actuating said device arranged to first make a partial stroke by itself and then be coupled and operated with the regular keys.

8. In a cash-register, the combination with register-operating devices, of independent counters, a shifting device for the same, a pivoted lever arranged to operate said shifting device and having an incline slot and a key having a pin projecting into said slot.

9. In a cash-register, the combination with register-operating devices, of a plurality of counters arranged to be brought into connection therewith, a shifting device for said counters, a key for operating said shifting device and a stop arranged to limit the initial stroke of said key and connected to the movable parts of the machine so as to be moved upon the operation of the latter to permit a full stroke of said key.

10. In a cash-register, the combination

with a series of keys, of register-operating devices connected to the same, a movable member arranged to be operated by any of said keys, duplicate counters arranged to be moved into connection with said register-operating devices and a special key for controlling said counters arranged to first make a partial stroke by itself and then be coupled and operated with the regular keys.

11. In a cash-register, the combination with a series of keys, of register-operating devices, a key-coupler, a plurality of independent counters arranged to be brought into connection with the register-operating devices, a shifting key for said counters, a lever arranged to be operated by said key, a locking-bar mounted on the key-coupler and arranged to either arrest the said lever or limit the initial movement of the shifting key accordingly as pressure is applied to said key before or after the movement of the key-coupler.

12. In a cash-register, the combination with register-operating devices, of independent counters arranged to be brought into connection with the same, a shifting device for said counters, a special key for operating the shifting device, a stop for arresting the key after it has made a partial stroke, a latch and connections for holding the shifting device in its operated position, and means for allowing the key to be fully operated to trip said latch.

13. In a cash-register, the combination with register-operating devices, of independent counters arranged to be brought into connection with the same, a shifting device for the counters, a pivoted lever for operating the same, a key for operating the lever, means for latching the lever, and a trip for said latch mounted on the key.

14. In a cash-register, the combination with register-operating devices, of a plurality of independent counters arranged to be thrown into connection with the same, adjusting devices for said counters, a rod for operating said devices carrying a bevel-faced projection, a printing device and operating means connected to said printing device and engaging said beveled-face projection.

15. In a cash-register, the combination with a registering and printing mechanism, of a plurality of counters, a key for bringing either of said counters into connection with the registering mechanism at will, a slotted lever arranged to be operated by said key, and a special printing device having a projection which enters the slotted lever whereby said device is operated.

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

THOMAS CARNEY.

Witnesses:

ALVAN MACAULEY,
WILLIAM MUZZY.