

No. 686,005.

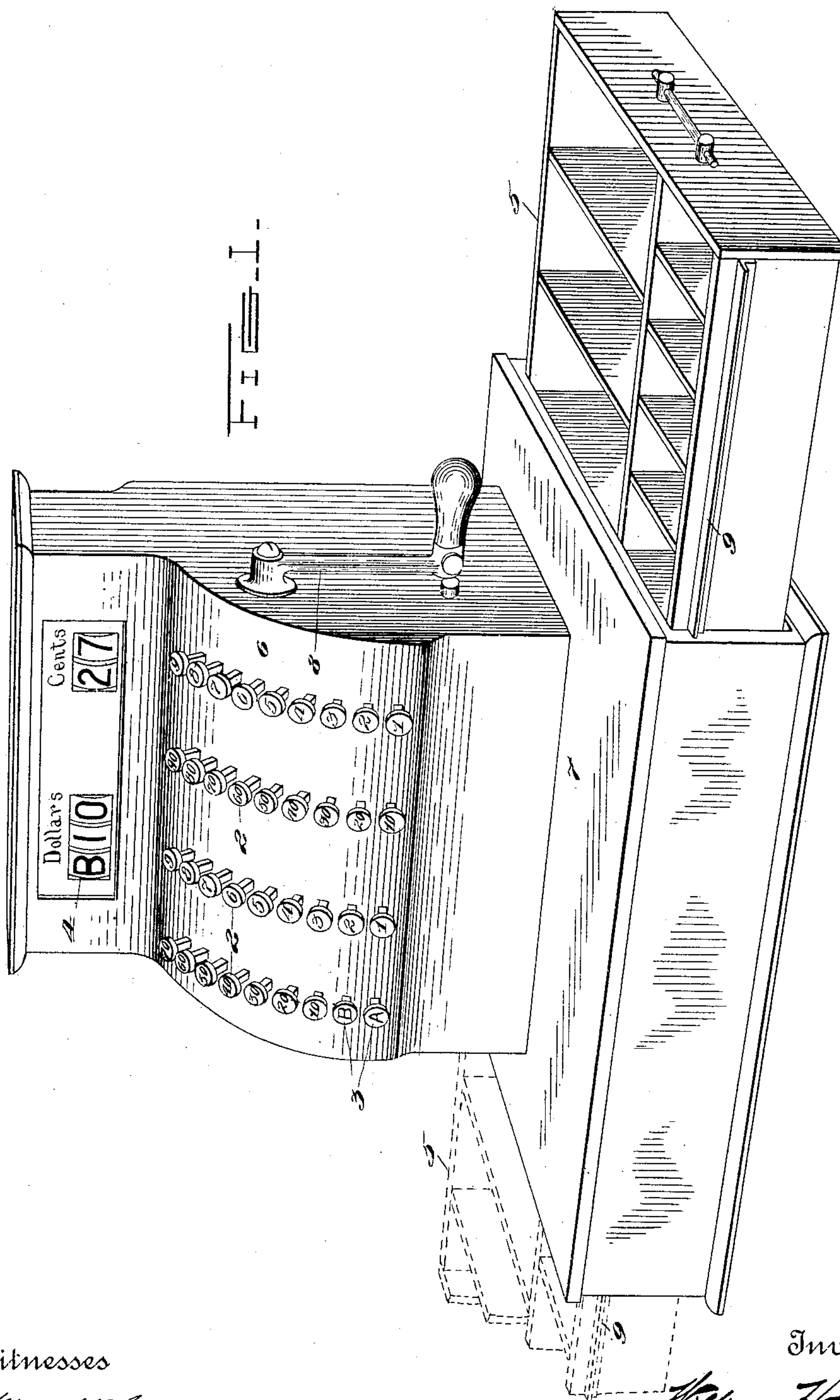
Patented Nov. 5, 1901.

W. H. MUZZY.
CASH REGISTER.

(Application filed Apr. 5, 1900.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses

Wm. McCarthy
Lia Berkstresser

Inventor

William H. Muzzy

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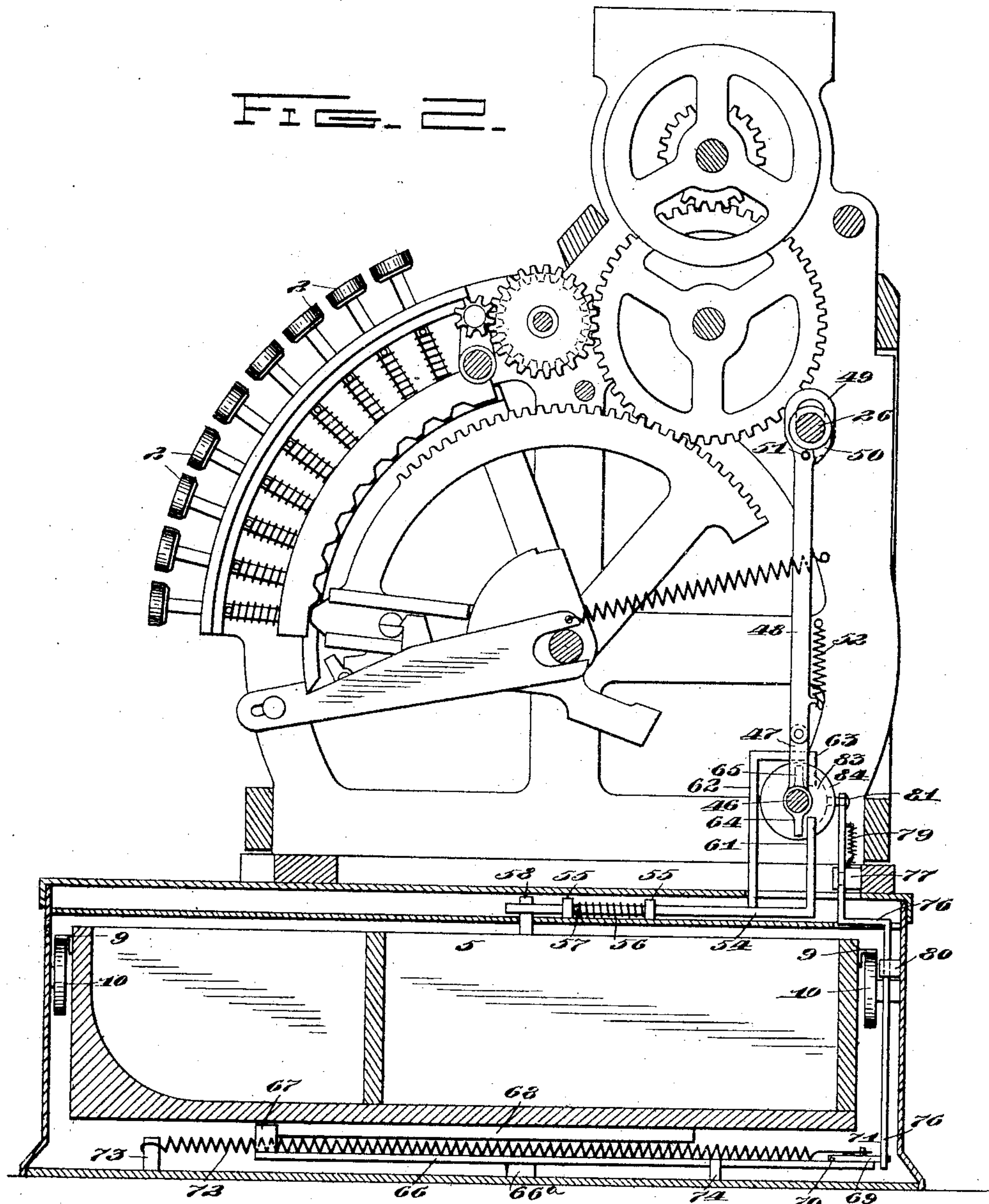
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5 Sheets—Sheet 2.



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FIG. 3.

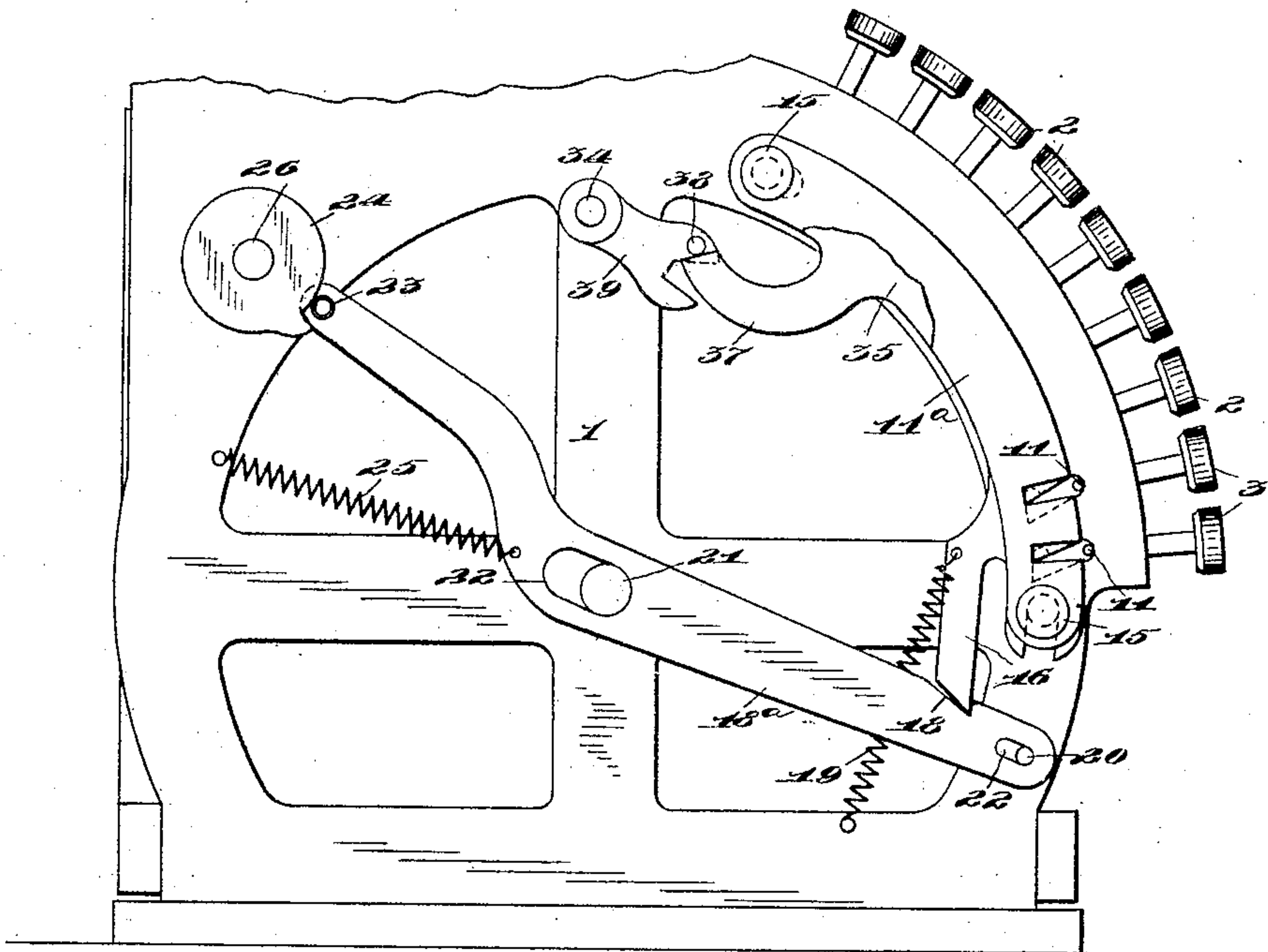
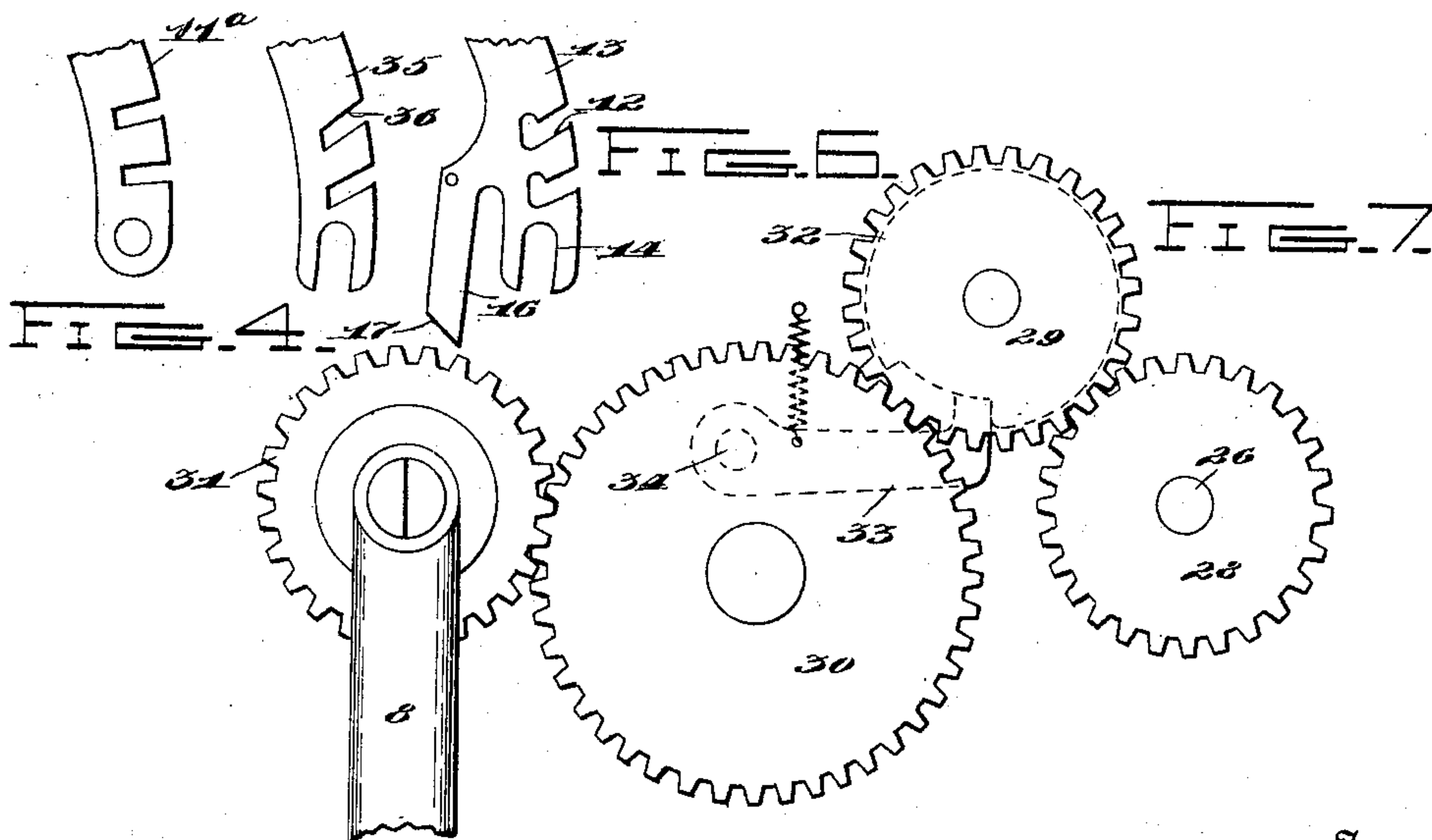


FIG. 5.



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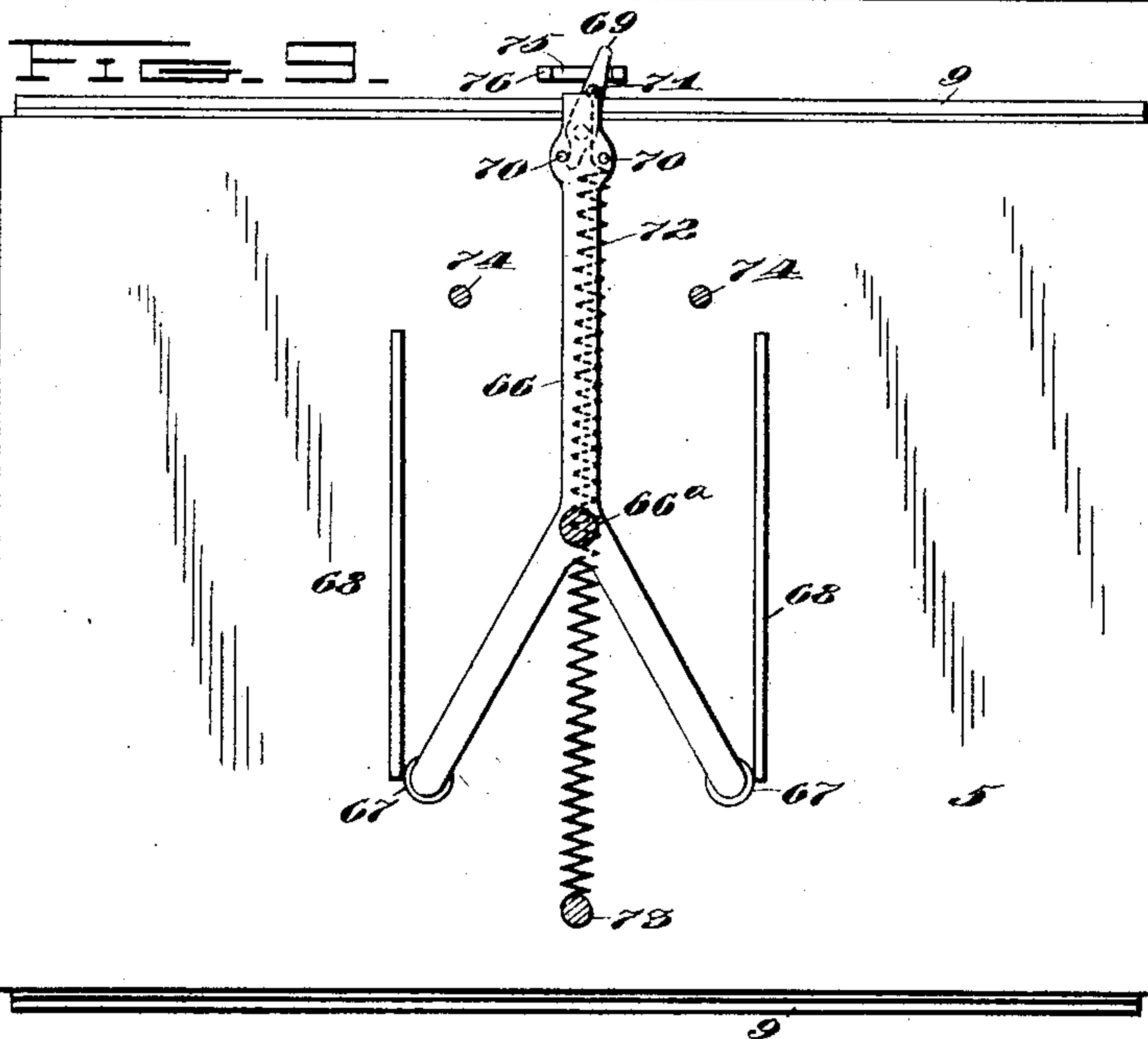
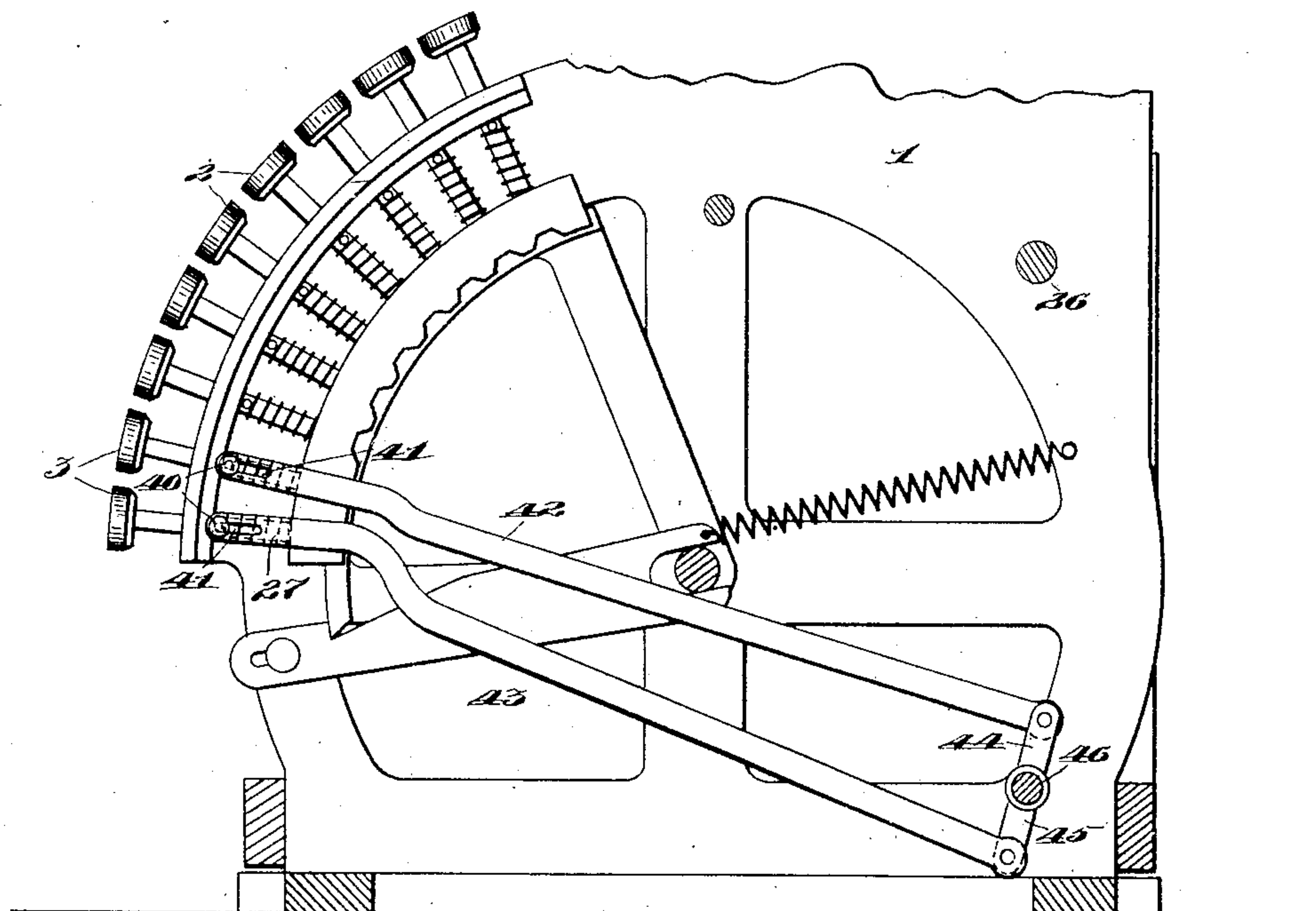
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FIG. 8.



Witnesses

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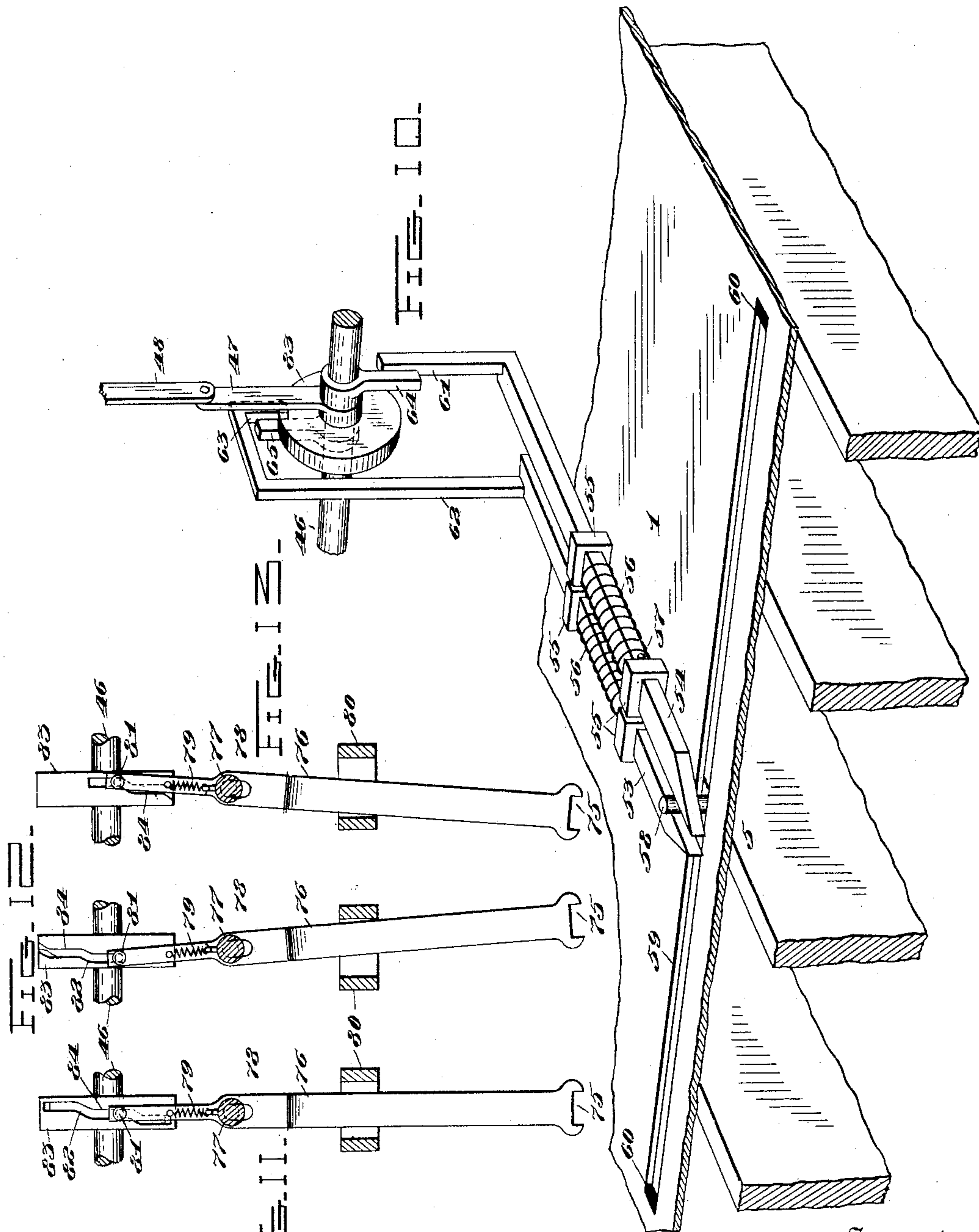
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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. MUZZY, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 686,005, dated November 5, 1901.

Application filed April 5, 1900. Serial No. 11,679. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MUZZY, 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 machines of the type having movable cash drawers or receptacles.

One of the several objects of the invention is to provide an improved cash-register in which separate cash-compartments are provided for the different clerks or for the cash received from sales made in different departments of a store.

Another object of the invention is to provide an improved cash-receptacle different portions of which may be exposed at will.

A further object of the invention is to provide an improved cash-register in which the cash-receptacle is arranged to be projected in a plane parallel with the front of the machine to avoid any liability of said receptacle striking or interfering with the operator standing in front of the machine.

In the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of the type of machine patented to Messrs. Cleal and Reinhard, April 13, 1897, No. 580,378, to which, for the sake of illustration, I have applied my invention, the printer being omitted and one position of the cash-drawer being shown in full lines and the other in dotted lines, partly broken away. Fig. 2 represents a central vertical section through the machine, the cabinet being partly removed. Fig. 3 represents an end elevation of the machine, partly broken away, the cash-drawer being omitted. Figs. 4, 5, and 6 represent broken detail side elevations of the slotted guide-plate operating slide and detent for the special keys. Fig. 7 represents a detail side elevation of the operating-gears, machine-latch, and crank-handle, the latter being broken away. Fig. 8 represents a vertical section through the machine, partly broken away and taken on a line to the right of the left-hand key-bank. Fig. 9 represents

a bottom plan view of the cash-drawer and its cooperating opening-lever and spring. Fig. 10 represents a detail perspective view of the drawer-latches and cooperating parts. Figs. 11, 12, and 13 represent, respectively, detail rear elevations of the drawer-spring-setting lever and its operating-cam in its different positions.

In the aforesaid drawings, 1 represents the frame of the machine; 2, the amount-keys; 3, the special keys; 4, the special indicator, and 5 the cash-drawer.

I have illustrated the type of cash-register shown simply as an example of the application of my invention, and it will be at once apparent to one skilled in the cash-register art that the invention may be applied with equal facility to other forms of registers—such, for example, as the key-operated type of registers, well known in the art. In the form illustrated here, however, and described in the aforesaid patent the register-operating devices and register proper are located in a cabinet 6 above the drawer-casing 7, and the former are operated through the medium of an operating crank-handle 8 and controlled by the amount-keys 2. The cash-drawer 5 is slidably mounted in the casing 7 by means of horizontal flanges 9, mounted on its front and rear walls and resting upon a suitable number of antifriction-wheels 10, mounted within said casing, as clearly shown in Fig. 2. The drawer is divided into two distinct sets or groups of compartments occupying the respective opposite ends of the drawer, and each of which preferably comprises three bill-receptacles and five coin-receptacles. Each set or group of compartments is intended to constitute a separate drawer, which can be projected from its respective side of the drawer-casing without exposing the companion group or drawer.

The selecting means for determining which side or end of the drawer will be projected or exposed comprises, primarily, the two special keys 3, which I have lettered A and B as representing two clerks. These two special keys, it will be observed, are located at the bottom of the tens-of-dollars-amount bank; but they do not cooperate with the detent of the amount-keys, which detent is substantially the same

as described in the aforesaid patent. When one of said special keys is forced inward, a pin 11, carried thereby, is forced downward in one of two diagonal notched slots 12, formed in the special detent 13. (Shown in Figs. 3 and 6.) This detent is provided in its opposite ends with slots, such as 14, through which retaining-bolts 15 pass, and thereby support the detent movably in position. This detent is provided with a pendent arm 16, having a lower beveled end 17, which is normally held down in a beveled notch 18, formed in a latch-slide 18^a, by a coil spring 19, which connects said slide to the main frame. The said slide 18^a is supported in position by a stud 20 and the usual rock-shaft 21, which project through suitable elongated slots 22, formed in said slide. An antifriction-roller 23, mounted on the slide, is held against the periphery of a cam 24 by a coil-spring 25, which connects the slide to the main frame. The cam 24 is mounted upon the main rotation-shaft 26 of the machine and is adapted to operate the slide against the tension of its spring to force the arm 16 and detent 13 upward against the tension of their spring 19, and thus allow the key-pin to escape from the notch at the bottom of its slot 12 and the key to be returned to normal position by its spring 27, which is similar to the springs of the regular keys. The rotation shaft 26 receives its movement through the medium of a gear 28, fast to the end opposite from that carrying the cam 24. This gear 28 receives movement from the operating crank-handle 8 through intermediate gears 29, 30, and 31. The gear 29 carries a notched locking-disk 32, (shown in dotted lines in Fig. 7,) and which is engaged by a spring-drawn locking-pawl 33, mounted on a shaft 34 in a manner well known in the art and disclosed in the patent to Cook, No. 464,294, dated December 1, 1891. As long as the pawl 33 remains in the notch of the disk 32, as shown in Fig. 7, the crank-handle remains locked; but just as soon as the pawl is rocked by the rocking of the shaft 34 the machine is released. The said shaft, which extends across the machine, is rocked only when one of the special keys 3 is operated. This result is effected by a slide 35, provided with diagonal slots 36 for the reception of the pins 11 and mounted beside the detent 13 and in the same manner as the detent. (See Figs. 3 and 5.) When one of the special keys is operated, its pin 11 contacts with the inclined wall of its respective slot 36, and thus moves the slide 35 upward. This upward movement causes an arm 37, mounted on said slide, to engage and raise a pin 38, mounted on an arm 39, which is fast to the shaft 34, and thus rock said shaft to release the machine, as above described. These devices for releasing the crank-handle are old and well known in the art, and no further description of the same is deemed necessary here. The outer ends of the pins 11 are guided and supported from moving

laterally by a slotted guide-plate 11^a, supported by the bolts 15.

In addition to their pins 11 each of the keys 3 is provided with a headed pin 40. These pins project, respectively, through elongated slots 41, formed in link-bars 42 and 43, which are pivotally connected at their rear ends to rigid arms 44 and 45, extending from diametrically opposite sides of a rock-shaft 46. The length of each slot 41 is such that the pin 40 of the operated key will not contact with the end wall of its respective slot until its final inward movement, and even then it will only move its link-bar far enough to slightly rock the shaft 46 and move an arm 47, rigidly mounted thereon, out of its vertical position either to the front or to the rear of the shaft, according to the key operated. When the link 42 is moved rearward, the link 43 is of course moved forward, and vice versa, the slots 41 in each instance allowing free movement of the link moving forward. The slots 41 are of sufficient length to permit this free movement, even when the shaft 46 is further rocked, as hereinafter described.

The above-described rocking movement of the shaft 46 by the operation of a special key is, in effect, a setting movement and simply adjusts the parts for operation by the main rotation-shaft 26. The office of the aforesaid arm 47 is to give the shaft 46 its further rocking movements in either direction. For this purpose the upper end of the arm is pivotally connected to the lower end of a link-bar 48, the upper end of said bar having a slotted plate 49, through which said shaft 26 passes. The shaft 26 at this point is provided with a cam 50, which coöperates with an antifriction-roller 51 on the plate 49 to force the bar 48 downward against the tension of a coil-spring 52, which connects it to the main frame. The spring 52, it will be observed, returns the bar 48, arm 47, and shaft 46 to normal positions after they have been operated, this normal position being shown in Fig. 2.

When a special key is operated as above described, the arm 47 is rocked to one or the other side of its normal vertical position, and when the bar 48 is subsequently depressed upon the operation of the crank-handle the arm is further rocked in the same direction, and thus effects the release of the cash-drawer for movement in the proper direction and also adjusts the drawer-spring to move the drawer in the same direction. Of these latter devices I will first describe the drawer-latches for holding said drawer from movement in either direction. These drawer-latches, as better shown in Fig. 10, comprise two slidable latch-bars 53 and 54, mounted in apertured guide-blocks 55, which are secured to the main frame. Coil-springs 56 surround the respective bars and bear with their opposite ends against the rear blocks 55 and pins 57, mounted on said bars, so as to normally

force the latter forward upon each side of a stud 58, projecting upward from the cash-drawer. This stud is adapted to play through a slot 59, formed in the frame, and limits the cash-drawer in its movements in either direction by abutting against resilient blocks 60, mounted in the opposite ends of said slot. The forward ends of the bars 53 and 54 are beveled, as shown, so that when the drawer is closed after the machine has been operated the stud 58 may force the latch-bar it strikes back against the tension of its spring and pass said bar, which latter then springs back to its normal position, leaving all the parts as shown in Fig. 10. The bars 53 and 54 are provided at their rear ends with vertical extensions 61 and 62, respectively, the latter being provided with an angular top portion 63. The respective parts 61 and 62 are arranged in the paths of rigid arms 64 and 65, fast to the rock-shaft 46, but sufficient distance is left between the same to prevent the latches being moved upon the initial rocking or setting of the shaft 46 by the special keys, as more clearly shown in Fig. 2.

When the shaft 46 is rocked by the bar 48 after being set as above described, the respective arm 64 or 65, as the case may be, is forced against its respective extension 61 or 63, and the proper latch-bar thus drawn backward to release the cash-drawer for movement in the proper direction. The intervening spaces between the arms 64 and 65 and the extensions 61 and 63 when the parts are in their normal positions prevent the latches being prematurely thrown by a sudden or violent depression of a special key, such as might be resorted to in an effort to open the cash-drawer without first operating the machine. Simultaneously with the release of the cash-drawer, as above described, a spring-actuated lever 66, pivoted upon the base of the machine under the cash-drawer, as at 66^a, is thrown to one or the other side of its dead-center to force the cash-drawer in the proper direction. This lever 66 is of Y shape, as better shown in Fig. 9, and is provided at the end of each of its short arms with an upwardly-projecting antifriction-roller 67, these rollers being arranged to respectively engage pendent parallel flanges 68, mounted on the bottom of the cash-drawer. The long arm of the Y-lever is provided upon its upper side with a pivoted pawl 69, which projects beyond the end of the lever and is limited in its movements by stop-pins 70, mounted on said lever. A pin 71 projects upward from the pawl 69 to the rear of its pivot-point and serves as an attaching means for one end of a coil-spring 72, the opposite end of which is secured to a stud 73, projecting upward from the base of the machine, as shown in Fig. 2. The lever 66 is limited in its movements in either direction by studs 74, also mounted upon the base of the machine. When the cash-drawer stands in its normal closed position, as shown in Fig. 9, the lever 66 is on a

dead-center; but the tension of the spring 72 is slightly to one or the other side of the dead-center, according to the preceding movement of the drawer and the direction in which the pawl 69 is extending. When the devices stand in this normal position, the end of the pawl 69 projects into an elongated notch 75, formed in the lower end of a throwing-lever 76, for which see Figs. 2, 11, 12, and 13. The lever 76 is pivoted upon a headed stud 77, mounted on the main frame, and which passes through an elongated slot 78, formed in said lever. The lever is normally held down upon this stud by a coil-spring 79, which connects it to the same. The elongated slot 78 is to allow of vertical movement of the lever 76, such as is necessary upon the closing of the cash-drawer to permit the end of the pawl 69 to again enter the notch 75 by forcing under the lower beveled end of the lever, which then occupies the position shown in Fig. 11. The lower part of the lever is guided, but allowed to swing freely to the right or left, by a slotted guide-block 80, mounted on the drawer-casing. The upper end of the lever 76 is provided with a forwardly-projecting pin 81, which projects into a cam-groove 82, formed in a disk 83, which is fast to the rock-shaft 46. When the lever 76 is in its normal vertical position, (shown in Fig. 11,) the pin 81 lies in a vertical portion 84 of the cam-groove to allow of the aforesaid vertical movement of said lever and also to permit the shaft 46 and disk 83 to be given their initial movement by the special key without moving or rocking the lever. It will be observed that the formation of the slot 82 is such that when the disk 83 is rocked in opposite directions the lever 76 will also be rocked in opposite directions, as shown in Figs. 12 and 13. This rocking of the lever 76 throws the pawl 69 to bring the stress of the spring 72 to the proper side of the dead-center of the opening-lever 66. The walls of the notch 75 of the lever 76 do not disengage from the pawl 69 until the lever has been rocked sufficiently to both shift the pawl, as above described, and force it bodily, together with the lever 66, a distance sufficient to start the initial opening movement of the drawer and to throw the lever 66 well off of its dead-center. This action is necessary in order to prevent any sticking of the parts when the tension of the spring 72 is only slightly off of the dead-center of the lever 66. When the cash-drawer is closed, the spring 72 is again put under tension by the return of the lever 66 to the position shown in Fig. 9. It will of course be understood that the throwing of the lever 66 by the lever 76 follows immediately after the unlatching of the cash-drawer, so that the drawer will be free to move outward under said throwing impulse and the tension of the spring 72.

Any desired mechanism may be employed between the special indicator 4 and the special keys; but as the same forms no part of the present invention none will be described.

It will further be observed that by the peculiar construction of my cash-drawer opening from the sides of the machine all danger of the rapidly-moving drawer striking the operator is avoided and said operator allowed to stand in a natural position close to the machine when operating it.

I prefer to employ the present invention in connection with such machines as have a plurality of independent counters, one for each of the respective clerks and which are controlled, respectively, by the special clerk's keys, or to such machines as are provided with detail-strips or other means for determining the amount of cash taken in by each clerk. By an examination of a particular clerk's counter or his account on the detail-strip the exact amount of cash that should be found in his particular portion of the cash-drawer can be ascertained, and as he alone has access to that particular portion of the drawer mistakes may be instantly located. I have not shown either multiple counters or a detail-strip, as such devices controlled by the special keys are old and well known in the art and are shown in the patent to Joseph Cleal, No. 587,298, dated August 3, 1897, and the aforesaid patent to Cleal and Reinhard.

Where such an expression as "operation of the machine" and the like are employed in the claims they are intended to mean such an operation of the register as will complete all of the movements necessary between two distinct operations of the cash-receptacle.

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

1. A cash-register including a casing, a single cash-receptacle mounted therein and arranged to have a desired one of different independent portions thereof exposed from said casing for the reception of cash any number of times without in the meantime exposing the remaining portions from the casing and means for moving said receptacle to expose any selected one of the independent portions from the casing; said means being dependent for operation upon the regular movement of the machine.

2. A cash-register including a casing, a single cash-receptacle mounted therein and arranged to have a desired one of different independent portions thereof projected and exposed from said casing for the reception of cash any number of times without in the meantime projecting the remaining portions, and a spring device arranged to project any selected one of the portions of said receptacle.

3. A cash-register including a stationary casing, a single movable cash-receptacle mounted therein and arranged to have a particular desired portion thereof projected from said casing for the reception of cash without permitting the exposure of the remaining portions therefrom, means for predetermining at will which portion of the receptacle will be projected and means dependent upon the op-

eration of the machine for effecting the projection of the selected portion of the receptacle.

4. A cash-register including a stationary casing, a single movable cash-receptacle mounted therein and arranged to be so moved in relation to the same as to cause a particular desired portion thereof to be exposed for the reception of cash without permitting the exposure therefrom of the remaining portions, means for predetermining at will which portion of the receptacle will be exposed and means dependent upon the operation of the machine for effecting the exposure of the selected portion of the receptacle.

5. A cash-register including a casing, a cash-drawer mounted therein and arranged to be projected from opposite sides thereof, latches for controlling the movements of said drawer in opposite directions, and means for operating a desired latch dependent for movement upon the operation of the register.

6. A cash-register, including a casing, a cash-receptacle mounted therein so that it may be exposed at either side of the same at will, and means dependent for movement upon the operation of the machine for automatically exposing said receptacle at either side of the casing as desired.

7. A cash-register including a casing, a single cash-receptacle mounted therein and arranged to have a desired one of different independent portions thereof exposed from said casing for the reception of cash any desired number of times without in the meantime exposing the remaining portions from said casing and latches for controlling the different movements of said receptacle necessary to expose the different selected portions; said latches being dependent for operation upon the regular movement of the machine.

8. In a cash-register, the combination with a stationary casing, of a cash-drawer mounted therein and arranged to be projected from opposite sides of the same, and means for automatically projecting the drawer from either side.

9. In a cash-register the combination with a casing, of a single cash-receptacle and key-controlled means for effecting such movement of the receptacle in relation to the casing that different desired portions of said receptacle may be exposed from said casing without permitting the exposure of the remaining portions therefrom.

10. A cash-register including a casing, a single cash-drawer mounted therein and arranged to have different portions thereof exposed from said casing for the reception of cash as desired without at the same time exposing the remaining portions therefrom, means for holding the drawer within the casing and devices requiring an operation of the cash-register for releasing the drawer.

11. A cash-register including a casing, a drawer arranged to be projected from opposite sides thereof means for holding the drawer within the casing and devices requiring an

operation of the cash-register for releasing the drawer to allow it to move in the proper direction.

12. A cash-register including a casing, a single cash-drawer, means whereby different desired portions of the cash-drawer may be projected from the casing for the reception of cash without projecting the remaining portions or allowing their exposure and latch means for the drawer arranged to be actuated by the cash-register to allow the projection of the desired portion of the drawer.

13. A cash-register including a casing, a cash-drawer arranged to be projected from opposite sides of the same and means for automatically projecting the drawer in either direction which means is dependent for movement upon the operation of the machine.

14. In a cash-register, the combination with a casing, of a cash-drawer arranged to be projected from opposite sides of the same, means for automatically projecting the drawer in either direction and means for predetermining from which side the drawer will be projected.

15. In a cash-register, the combination with a stationary casing, of a cash-drawer arranged to be projected from opposite sides of said casing, means for automatically effecting the movements of the drawer in opposite directions, and setting devices for controlling said means.

16. In a cash-register, the combination with a casing, of a cash-drawer arranged to have a desired portion thereof projected from said casing without permitting the exposure of the remaining portions, means for causing the movement of the drawer in different directions, to expose the desired portion thereof and setting devices for controlling said moving means.

17. In a cash-register, the combination with a stationary casing, of a cash-drawer arranged to be projected from said casing at opposite sides thereof and a spring device arranged to move the drawer in either direction at will.

18. A cash-register including an inclosing casing, a cash-receptacle mounted therein, means dependent upon the operation of the machine for so changing the relative positions of the casing and receptacle that a desired portion of said receptacle is exposed without permitting the exposure of the remaining portions, setting devices controlling said means, and a lock for the machine controlled by the setting devices.

19. A cash-register including a casing, a cash-drawer capable of being projected from the casing so as to expose different portions thereof without permitting the exposure of the remaining portions, setting means for determining which of several portions of the drawer will be projected from the casing and exposed upon the operation of the machine, a lock for the machine controlled by said setting means, and means for projecting the desired portion of the drawer upon the operation of the machine.

20. A cash-register including a casing, a cash-drawer arranged to be projected from opposite sides of said casing, devices for moving the drawer dependent upon the operation of the machine, setting means for said devices, and a lock for the machine controlled by the setting means.

21. A cash-register including a casing, a cash-drawer arranged to have different portions thereof projected from said casing, latches for controlling the different movements of the drawer, keys for setting said latches for operation in connection with the machine, and a lock for the machine controlled by the keys.

22. A cash-register including a casing, a cash-drawer mounted therein and arranged to be projected from either side of the same, means for automatically projecting the drawer in either direction, and means for determining the direction of movement of the drawer dependent upon the operation of the machine.

23. A cash-register including a casing, a cash-drawer mounted therein and arranged to be projected from opposite sides of the same, a spring device arranged to be set to propel the drawer in either direction and means for setting the spring device dependent upon the operation of the machine.

24. A cash-register including a casing, a latched cash-drawer arranged to be projected from either side of the same, means for automatically moving the drawer in either direction and a device for releasing said drawer arranged to be operated by the machine.

25. In a cash-register, the combination with a stationary casing, of a cash-receptacle arranged to be projected from different parts of the same, a spring device arranged to be set for moving the receptacle in different directions, and latches for said receptacle also arranged to be set to allow the receptacle to move in different directions.

26. A cash-register including a stationary casing, a cash-receptacle arranged to be projected from different parts of said casing, latches and spring opening devices for said receptacle, and means for setting said latches and opening devices for operation by the machine.

27. A cash-register including a casing, a cash-receptacle arranged to have different portions thereof exposed from said casing without exposing the remaining portions, and means operated by the machine for imparting a positive movement to the receptacle in either direction.

28. A cash-register including a casing, a cash-drawer arranged to be projected from opposite sides of said casing, means connected to the operating mechanism for imparting a positive opening movement to the drawer in either direction, and a spring device for continuing the opening movement in either direction.

29. A cash-register including a casing, a

cash-drawer arranged to open from opposite sides of said casing, special keys, setting devices connected to said keys, latches, and opening means for the drawer controlled by the setting devices and means for operating said latches and opening means upon the movement of the machine.

30. A cash-register including a cash-receptacle arranged to receive a positive initial opening movement from the machine, and drawer-actuating spring devices thrown into operative position by the movement of the machine for continuing the opening movement.

31. In a cash-register, the combination with a casing, of a cash-drawer arranged to be projected from opposite sides of said casing, register-operating mechanism and means operated by the said mechanism for moving the cash-drawer in either direction.

32. In a cash-register, the combination with a casing, a cash-drawer arranged to have different portions thereof projected from said casing, a spring device arranged to throw the drawer in different directions and means for setting the spring device for operation in the desired direction.

33. In a cash-register, the combination with a casing, of a cash-receptacle arranged to be moved in different directions in relation to the same so that different portions thereof may be exposed, latches for said drawer and keys for controlling said latches whereby the direction of movement of the drawer is determined.

34. In a cash-register, the combination with a casing, of a cash-receptacle arranged to be projected from different parts of the same, and a single drawer-opening spring device arranged to be thrown to one or the other side of a dead-center and thus be capable of exerting its force upon the receptacle to move the latter in different directions.

35. In a cash-register, the combination with a casing, of an operating mechanism, a cash-drawer arranged to open from opposite sides of the machine, latches for said drawer, a rock-shaft carrying latch-operating arms and keys for setting said shaft for operation by the operating mechanism.

36. In a cash-register, the combination with a casing, of a cash-drawer arranged to be projected from opposite sides of the same, a pivoted lever arranged to engage and force said drawer in either one direction or the other, and a power-spring connected to said lever.

37. In a cash-register, the combination with a casing, of an operating mechanism, a cash-drawer arranged to be projected from either side of the casing, a pivoted lever arranged to engage and force said drawer in either one direction or the other, a spring connected to said lever, and means for rocking the lever to one or the other side of its dead-center.

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

WILLIAM H. MUZZY.

Witnesses:

IRA BERKSTRESSER,
WM. MCCARTHY.