

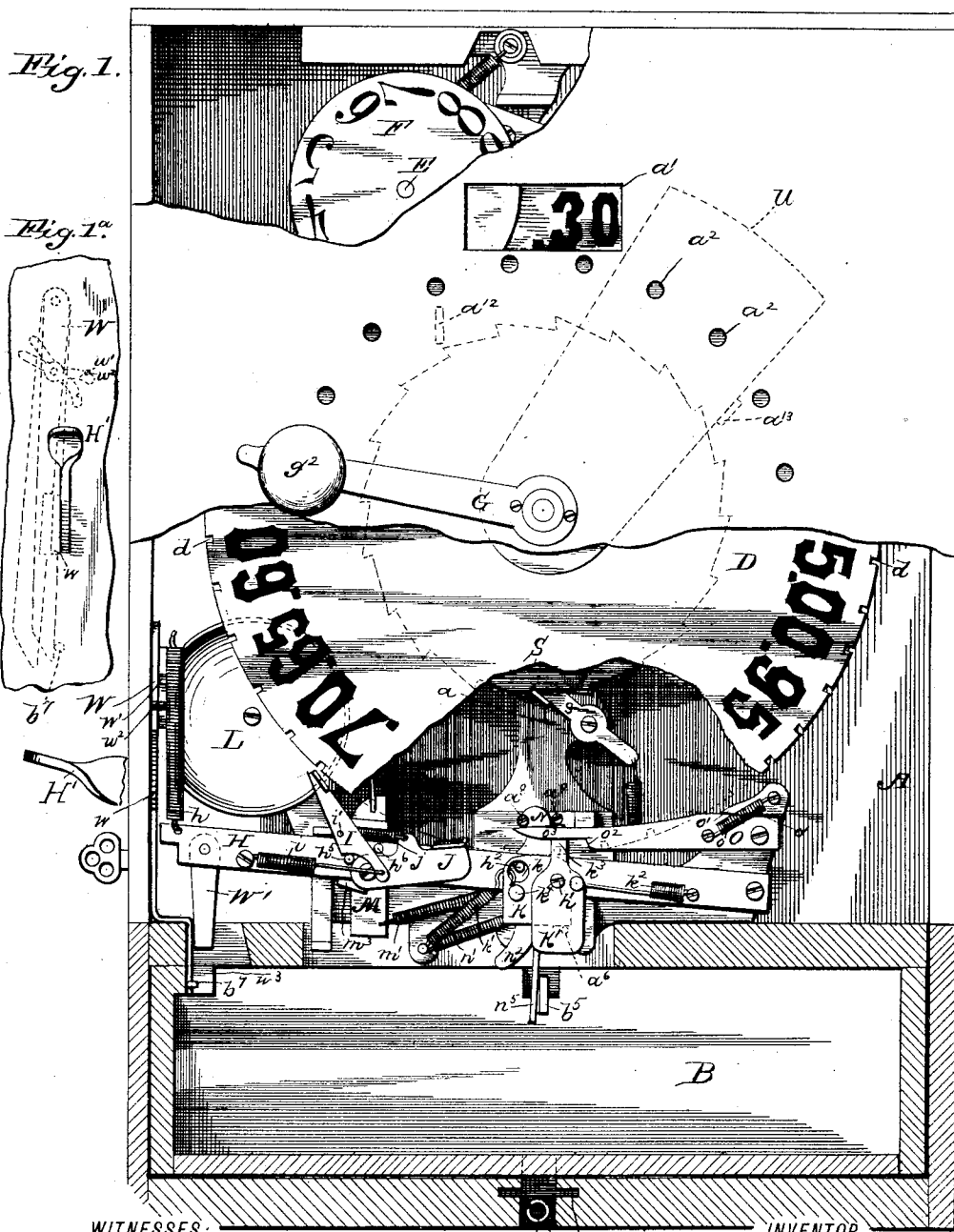
(No Model.)

4 Sheets—Sheet 1.

T. J. HUME.
CASH INDICATOR AND REGISTER.

No. 474,558.

Patented May 10, 1892.



WITNESSES;

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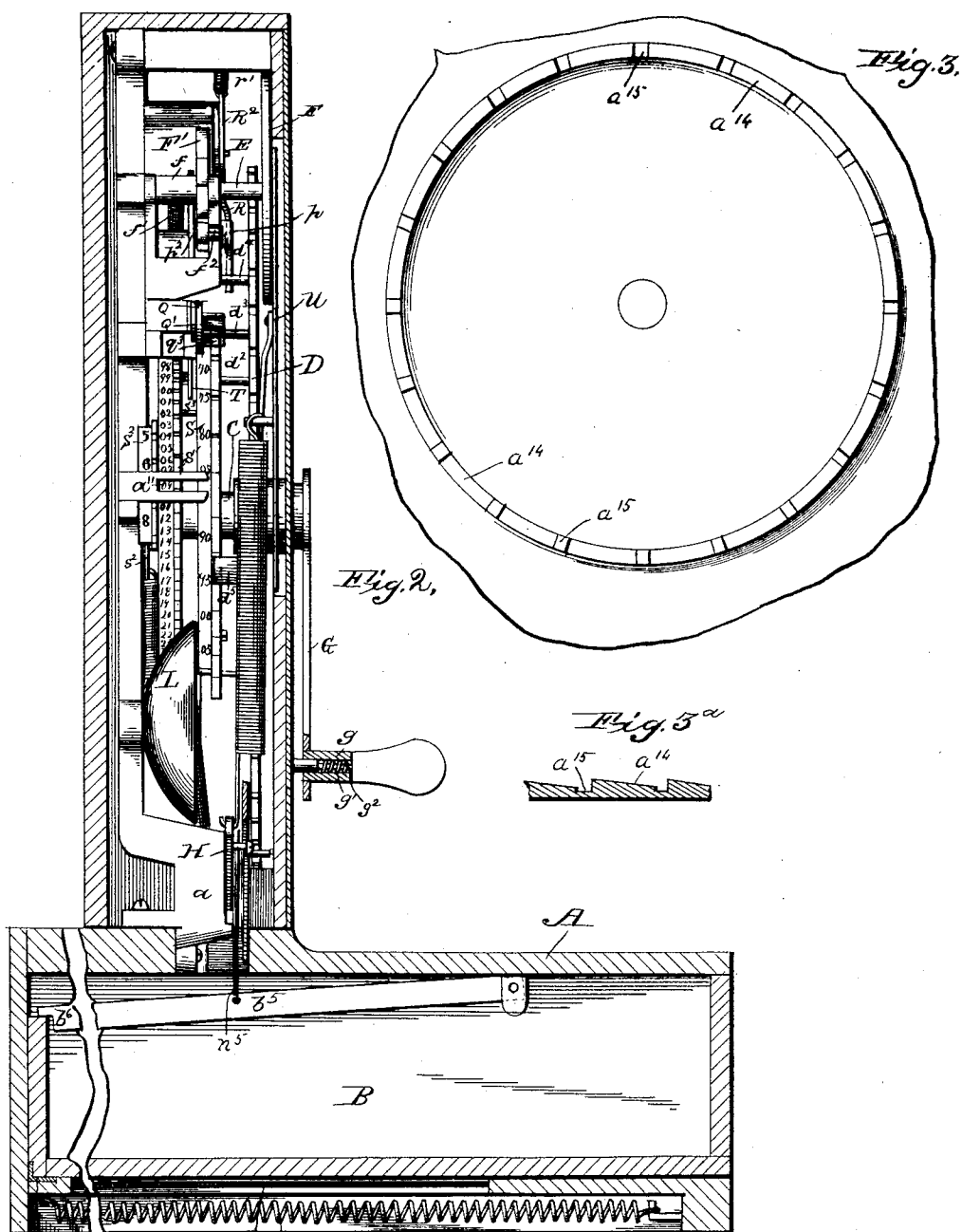
(No Model.)

4 Sheets—Sheet 2.

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CASH INDICATOR AND REGISTER.

No. 474,558.

Patented May 10, 1892.



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4 Sheets—Sheet 3.

T. J. HUME.
CASH INDICATOR AND REGISTER.

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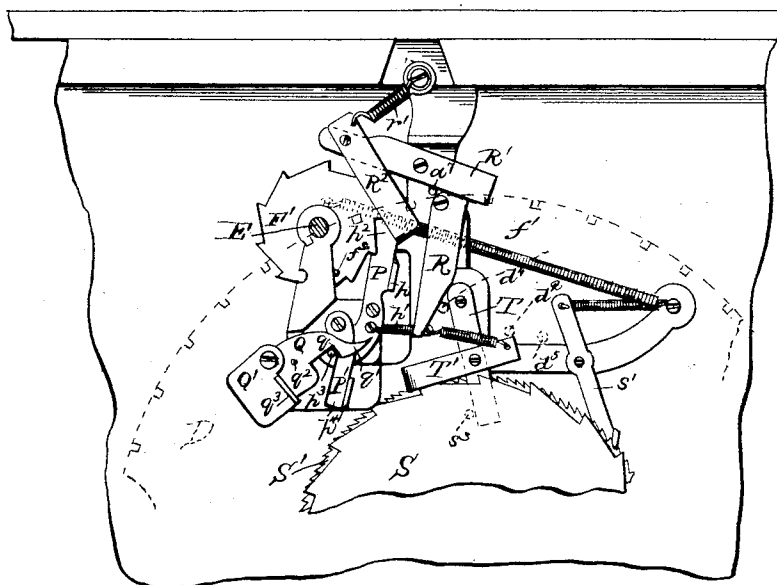


Fig. 4.

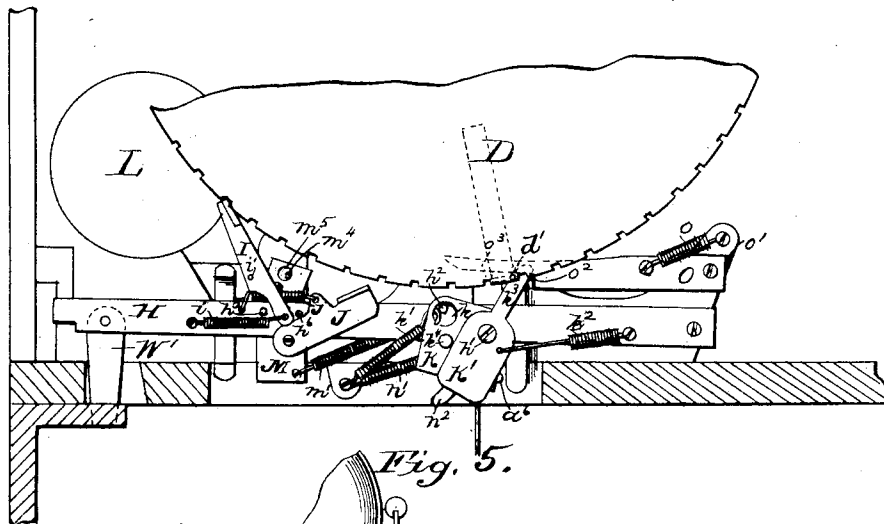


Fig. 5.

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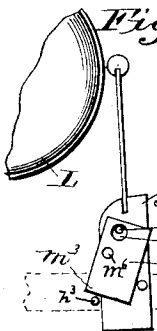


Fig. 5a

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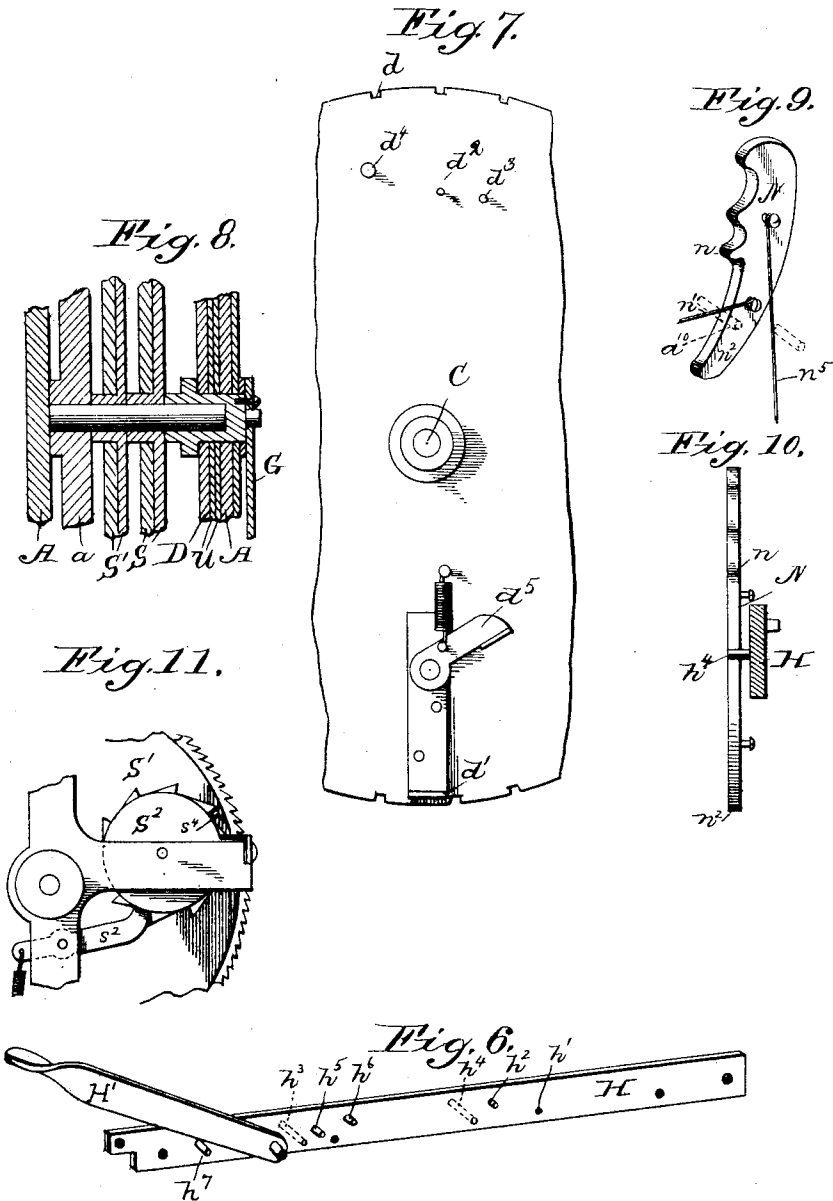
(No Model.)

4 Sheets—Sheet 4.

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CASH INDICATOR AND REGISTER.

No. 474,558.

Patented May 10, 1892.



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UNITED STATES PATENT OFFICE.

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WILLIAM F. GUTHRIE, OF SAME PLACE.

CASH INDICATOR AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 474,558, dated May 10, 1892.

*Application filed June 13, 1891. Serial No. 396,144. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. HUME, of Atchison, Atchison county, Kansas, have invented certain new and useful Improvements in Cash Indicators and Registers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The object of my invention is to provide an improved cash register and indicator which shall be cheap in construction, easy and accurate in operation, and capable of indicating in a single sum at a common point the various amounts within the capacity of the machine and totalizing the successive registrations and so constructed that neither wear and tear, rough usage, nor willful mistreatment by the operator may disorganize the parts so as to result in a registry not corresponding with the indication.

To this end my invention consists in the apparatus and in the construction, arrangement, and combination of the parts and the elements thereof, as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front view of the machine and casing, the lower part of the latter being broken away to show the drawer in section and some of the lower operating parts in elevation. In this figure the upper left-hand corner of the face-plate is broken away to show the dollar-indicating wheel, and the lower part of the cents-disk is broken away to illustrate the ratchet and pawl. Fig. 1^a is a detail side elevation of the casing and showing one means for preventing the operating of the machine, except when the drawer is closed, partly in full and partly in dotted lines. Fig. 2 is a side elevation of the machine with the casing and handle in section. Figs. 3 and 3^a are respectively a rear elevation and detail section of a modified means for holding the disk-arm in its adjusted position. Fig. 4 is an enlarged elevation showing details of the mechanism above the cents-disk. Fig. 5 is a similarly-enlarged elevation showing the details of the mechanism below the cents-disk when the controlling-lever is in its depressed position. Fig. 5^a is a detail view of the alarm mechanism. Fig. 6 is a detached

perspective view of the controlling-lever. Fig. 7 is a rear elevation, diminished, of the cents-disk with two sides thereof broken away. Fig. 8 is a detail vertical section of the central shaft. Figs. 9 and 10 are respectively perspective and edge views of the drawer-releasing plate N. Fig. 11 is a detail elevation from the rear, showing the one-hundred-dollar-registering wheel and a portion of the dollar-registering wheel.

The same letters of reference represent the same parts in all of the figures.

A represents a suitable casing containing a cash-drawer B, ejected by a spring *b*. The spring *b* plays in a boring *b'* of a slotted guide *b*² and has at its inner end a T-shaped plate *b*³, an upwardly-extending portion of which engages behind the lower rear edge of the drawer. The tension of the spring *b* when released by the release of the drawer from its latch-lever, as hereinafter described, pulls the T-plate *b*³ forward to the limit of the slot in which it plays, propelling the drawer, which, however, is free to move on outward. If desired, any suitable stop may be used to prevent entire removal of the drawer.

Within and supported by the casing A is a frame *a*, which supports most of the operative parts. Projecting from the frame *a* is a shaft C, on which is loosely journaled a disk D, on the face of which, near the circumference, are equally-spaced numerals, running in multiples of five from "5" to "95," inclusive, preceded by the figures "00," occupying the same space as each numeral representing cents. This disk will be hereinafter referred to as the "cents-disk." As the cents-disk is rotated the numerals will be successively displayed through a reading-opening *a'* in the casing, the figures "00" being opposite such opening at normal or the "zero point."

Fixed upon the forward end of a revolving shaft E, supported in the frame *a*, is a smaller disk F, on the face of which, near its circumference, are equally-spaced numerals, running from "1" to "9," inclusive, representing dollars, preceded by a blank space equal to that allotted to each numeral. The disk will be hereinafter referred to as the "dollar-disk." The dollar-disk is so located that as it rotates its numerals will be displayed through

the reading-opening a' to the left of the numerals on the cents-disk, so as to be read in connection therewith. When the dollar-disk is in its normal position, the blank space will be opposite the reading-opening.

The apparatus is operated, subject to the control of a controlling-lever, hereinafter described, by the backward and forward rotation of the cents-disk through positively-applied energy, both the dollar-disk and the registering mechanism being operated from the cents-disk.

Upon a hub projecting from the cents-disk through the casing is fixed an operating-arm G , by means of which the cents-disk is rotated backward and forward. There is a hollow boss g on this arm G , in which plays a handled pin g^2 , projecting through the boss and arm toward the casing far enough to engage recesses in the casing, as hereinafter described. Around and engaging the pin g^2 within the boss is a compressible spiral spring g^3 , tending to press the pin g^2 toward such recesses when the pin has been withdrawn from such recesses by the hand of the operator.

In the face of the casing or a plate fixed thereon is an annular series of twenty interspaced recesses a^2 , adapted to be engaged by the pin g^2 to stop and hold the handle and operating-arm at points to expose successively the numerals on the cents-disk through the reading-opening, the recesses a^2 being numbered to correspond with the numerals on the cents-disk which will be exposed when the pin g^2 is in such recesses, respectively.

Hereinafter in this description and specification the terms "right hand" and "left hand" will be used with reference to the right and left hand sides, respectively, as observed from the front of the apparatus, and the term "forward rotation" has reference to rotation of the wheels and disks (other than the dollar-disk and its ratchet j') from left to right on the upper circumference. With reference to the dollar-disk and its ratchet "forward rotation" will mean rotation from right to left on the upper circumference.

It is desirable in an apparatus of this sort, to prevent false registries, that the rotation of the operating-disk forward to indicate and register once initiated should be continued without possibility of backward rotation until the desired point is reached, and that backward rotation in the process of effacing an indication once initiated should be continued without possibility of forward rotation until the zero-point is reached, and that indication and registration can be initiated only from the zero-point. This is accomplished in my machine through mechanisms operated from a spring-controlled lever H , hereinafter designated the "controlling-lever." The cents-disk can be rotated forward only when the controlling-lever is depressed and backward only when the controlling-lever is elevated. The controlling-lever is held normally ele-

vated by a spring h and is depressed in operation by the hand of the operator.

Pivotally supported at i' on the frame a is a pawl I , adapted under the stress of a spring i , when free to the action of such spring, to engage peripheral recesses d in the cents-disk to hold said disk against backward rotation. On the lever H is a pin or stud h^2 , so located that when the lever H is normally held raised by its spring h the pin h^2 engages an extension of the pawl I , holding it out of engagement with the recesses d against the stress of the spring i ; but when the controlling-lever H is depressed the pin h^2 is carried from engagement with the pawl I , which is then free to move into engagement with the recesses d to stop the disk D against backward rotation. Pivotally supported on the controlling-lever is a spring-pawl J , engaging the peripheral recesses d in the cents-disk against forward rotation under the stress of the spring j when the controlling-lever is elevated. The spring j is connected at the end away from the plate J to the controlling-lever H , so as to move with it. Above the pawl J is a stud or pin h^6 , above described, so located that it does not prevent the stress of the spring j from holding the pawl J in engagement with the recesses d when the controlling-lever is elevated; but when the controlling-lever is depressed the pin h^6 carries the pawl J down with the controlling-lever out of engagement with the recesses d and the disk D is free to be rotated back to the zero-point. These pawls I J are so arranged that one is not released from engagement with a recess d until after the other has engaged a similar recess, so that the cents-disk is never free to move in but one direction, corresponding with the elevation or depression of the controlling-lever.

The controlling-lever can be depressed to release the cents-disk to permit forward rotation only when the cents-disk has been rotated backward fully to the zero-point because of the following arrangement: Pivoted on the controlling-lever by a screw h' is a stop-plate K , with an opening k , into which projects from the controlling-lever H a pin or stud h^2 , which by engagement with the sides of the opening k limits the movement of the plate K , which is normally held by a spring k' over and in engagement with a pin or stud a^6 , projecting from the frame a . It is obvious that the controlling-lever cannot be depressed while the plate K , pivoted on it, is in engagement with the pin a^6 . Pivoted on the controlling-lever, and preferably on the same pivot with the plate K , is a plate K' , normally held in a vertical position by a spring k^2 and having an upward extension k^5 . From the rear of the cents-disk projects a lip or lug d' , so located thereon that when the cents-disk is rotated backward just before and at the zero-point the lug d' engages the extension k^5 and tilts it to the right, moving the lower portion of the plate K' to the left to engage a stud or pin k^4 on the stop-plate K ,

thereby moving the stop-plate K to the left, so as to carry its lower portion out of engagement with the pin a^6 , when the plate K and the lever H are free to be depressed. Pivoted on the frame a is a lever-plate M, carrying a bell-hammer m and actuated by a spring m' , the tendency of which is to throw the hammer m against a bell L, suitably supported on the frame a . On the plate M is pivoted at m^6 a gravity trigger-plate m^2 , (see Fig. 5^a,) a projecting portion of which m^3 normally lies extended beyond one side of the plate M. The motion of the trigger is limited by a pin m^4 , projecting from the plate M through an opening m^5 in the trigger-plate. Projecting backward from the controlling-lever H is a pin h^3 , so located that when the controlling-lever is depressed it rides down over the projecting portion of the trigger, pushing it aside until it has passed, and when the controlling-lever rises the pin h^3 engages under the projecting portion of the trigger, acting as a bevel, and forces the hammer back against the action of the spring m' , which when the pin h^3 has passed beyond the projecting portion of the trigger throws the hammer against the bell.

Playing between guides a^8 a^9 , projecting from the lower part of the frame a , is the plate N, with a projecting bevel, lug, or extension n , adapted to be engaged by a pin h^4 , projecting backward from the controlling-lever H. A spring n' normally holds the plate N down and to the left. A downward and leftward curved extension n^2 of the plate N rides over and along a pin or stud a^{10} , projecting from or forming a part of the frame a . When the controlling-lever H is depressed, the pin h^4 passes down over the beveled upper portion of the lug n , forcing the plate N to the right against the stress of its spring until the pin h^4 has slipped under the lower portion of the lug n . When the lever H rises, the pin h^4 engages the lug n , raising the plate N until the curved extension n^2 , riding over the pin a^{10} , moves the plate N so far to the right that the pin h^4 no longer engages the lug n and the plate N is free to return to its normal position under the stress of its spring.

n^3 is a link, which connects the plate N with a drawer latch-lever b^5 , having a recess b^6 , engaging the rear side of the drawer. When the controlling-lever H is depressed and again rises, it raises the plate N and through the link connection the latch-lever b^5 , allowing the drawer to be projected forward out of the casing by the spring, as hereinbefore described.

Pivoted on the frame a on its lower right-hand portion is a stop-lever O, normally held elevated by a spring o against a stop o' , preferably part of the frame a . The stop-lever O has a stop-recess o^2 , with which the lug d' engages at the zero-point, preventing backward rotation of the cents-disk beyond the zero-point. The stop-lever O has an upwardly-curving leftward extension o^3 , under which the lug d' rides to the limit of the stop in

backward rotation, but over which the lug may freely ride in forward rotation, depressing the stop-lever O against the tension of its spring and tilting the upward extension k^3 of the plate K' to the left against its spring until the lug d' has passed without disturbing the plate K.

The cents-disk indicates up to and including "95," and amounts in dollars are indicated by the dollar-disk. Every complete revolution forward of the cents-disk registers one dollar, as hereinafter described, and every such complete revolution brings into view successively through the reading-opening a numeral on the dollar-disk through the following operative connection between such disks.

On the shaft E, to which the dollar-disk is fixed, as before described, is fixedly connected a ten-toothed ratchet-wheel, so that the rotation of the ratchet-wheel one tooth will rotate the dollar-disk a distance to display the next succeeding numeral through the reading-opening. Pivoted upon the frame a is a stop-pawl P, with a flange p , adapted to hold the ratchet F' against backward rotation when the pawl P is free to the action of its spring p' . An upward extension p^2 of the pawl P limits the motion of the upper part to the right by engagement with a spring-pawl R², hereinafter described. On a lower leftward extension of the pawl P is a pin or stud p^3 , adapted to be engaged by latch-plate Q, hereinafter described. Pivoted on the frame a is a gravity latch-plate Q, with a latch-recess q , adapted to engage the pin p^3 on the pawl P and having a curved extension q' . (See Fig. 4.) Pivoted on the frame a , and preferably on the same pivot with the plate Q, is a gravity trip-plate Q', adapted to engage a pin q^2 on the plate Q when the trip-plate is moved to the right and upward, as hereinafter described. By such engagement the latch-recess q is raised out of engagement with the pin p^3 on the pawl P, releasing the pawl P to the stress of its spring, so as to throw the pawl into engagement with a tooth of the ratchet F'. The trip-plate Q' has an outwardly-extending flange q^3 in the path of the pin d^4 on the cents-disk, hereinafter described. Pivoted on the frame a is a gravity-plate P', which when moved to the left, as hereinafter described, engages the pin p^3 on the pawl P, moving said pin to the left under the curved extension q' of the gravity-latch Q into engagement with the latch-recess q , where the pin p^3 would remain until positively released, locking the pawl P out of engagement with the ratchet F'. The plate P' has a flange p^4 in the path of the pins d^2 d^3 on the cents-disk, hereinafter described. On the frame a is pivoted a depending gravity-lever-plate R, the upper edge of which engages the lower edge of a lever R', which is pivoted on the frame a . On the upper left-hand end of the lever R' is a depending spring-actuated carrying-pawl R², adapted to engage the teeth

of the ratchet F' . A spring r , connected to said pawl R^2 , tends to throw the pawl R^2 into engagement with ratchet F' and to raise the upper left-hand end of the lever R' , and with it the pawl R^2 , to rotate the ratchet F' when engaged therewith. The lower edge of the lever R' is acted upon by the beveled upper edge of the lever R , so that when the lower depending end of the lever R is moved to the right, as hereinafter described, it raises the lower right-hand end of the lever R' , depressing the pawl R^2 into engagement with a tooth of the ratchet F' , so that when the lever R' is released from the pressure of the lever R the spring r raises the carrying-pawl R^2 , rotating the ratchet F' forward one tooth, where it is held by the engagement of the stop-pawl P . A stop-pin a^7 , fixed in the frame, prevents the pawl being raised far enough to rotate the ratchet F' more than one tooth. Fixed on a collar or drum f on the ratchet F' is a spiral spring f' , which, as the ratchet F' is rotated forward, winds around the drum f and when the ratchet F' is released from the engagement of the stop-pawl P rotates the ratchet backward to its zero-point, where the blank space on the disk F is opposite the reading-opening a' .

The parts $P' Q'$ are operated by pins on the back of the cents-disk, as follows: Projecting from the back of the cents-disk are three lugs or pins $d^2 d^3 d^4$. The pin d^4 is so located that in the forward motion of the cents-disk shortly before a complete revolution has been made it engages the flange q^3 , moving the trip-plate Q' forward and upward until by engagement with the pin q^2 it raises the latch-plate Q and its latch-recess q out of engagement with the pin p^3 on pawl P , allowing the spring p' to throw the stop-pawl P into engagement with a tooth of the ratchet F' . Passing on, the pin d^4 engages the depending lever R , moving it to the right, and thereby depressing the pawl R^2 into engagement with the same tooth on the ratchet F' , already engaged by the stop-pawl P , as hereinbefore described. Just at the point of complete revolution the pin d^4 passes from engagement with the depending lever R , whereupon the spring r is free to rise, raising the pawl R^2 and moving the ratchet F' forward one tooth, where it is held by the engagement of the stop-pawl P , displaying through the reading-opening a' the numeral on the dollar-disk immediately succeeding that theretofore displayed. This dollar-disk is advanced one numeral for each complete revolution of the cents-disk up to "9," where the ratchet is stopped by the engagement of a pin or lug f^2 on the ratchet F' against the frame a of the machine. On backward rotation of the cents-disk the pin d^4 rides freely under the depending lever R and the flange q^3 of the gravity trip-plate Q' . The pins $d^2 d^3$ are so located as to engage the flange p^4 of the trip-plate P' . On forward rotation the pins $d^2 d^3$ ride freely under the flange; but on backward rotation, after the pin d^4 has operated the parts, as above described, to a point

where the ratchet F' is held by the stop-pawl P , the pins $d^2 d^3$ engage the flange p^4 , moving the plate P' to the left, engaging the pin p^3 on the stop-lever P , and moving the lower end of the stop-pawl P to the left until its pin p^3 engages under the latch-recess q of the latch-plate Q , holding the stop-pawl P out of engagement with the ratchet F' , and also through the upward extension p^2 of the pawl P engaging the carrying-pawl R^2 and moving it away from the ratchet F' , which is then free to return to its zero-point under the action of the spring f' . This movement of the stop-pawl P under the engagement of the trip P' is limited by the engagement of the upward extension p^2 with the carrying-pawl R^2 . These functions are usually performed by the pin d^2 , which projects from the back of the disk D on a radial line running about half-way between the numerals "10" and "05" on the face of the cents-disk and nearer the center of the cents-disk than the pin d^4 ; but the relation of the parts is such that just at the point of complete revolution, where the figure "1" on the dollar-disk and the figures "00" on the cents-disk would be exhibited through the reading-opening a' , the pin d^2 would not have advanced past the trip-plate P' , so as to engage it on backward rotation, and accordingly the pin d^3 , located on the same line of movement as the pin d^2 and to the right of it, is provided to engage the flange p^4 on backward rotation from that particular point.

Loosely journaled on the shaft C between the casing and the front of the cents-disk is an arm U , the lower portion of which is divided into two spring-arms, the resilience of which produces frictional connection between the arm U and the cents-disk, so that the arm U tends to rotate with the cents-disk. The outer end of this arm bears the word "Change," which is at times exposed through the reading-opening a' . The motion of the arm U is limited by stops $a^{12} a^{13}$, of any suitable form, projecting from the rear side of the front of the casing. When the cents-disk is rotated forward in making an indication, it carries the arm U past the reading-opening a' until it is stopped just beyond the opening by the stop a^{13} , and immediately upon the backward rotation of the cents-disk, preparatory to another indication, the arm, through such frictional connection, begins to move and is moved across the opening a' until stopped by the stop a^{12} immediately behind the opening.

Upon the back of the cents-disk is a spring-actuated carrying-pawl d^5 , adapted to engage in forward motion ratchet-teeth on the first wheel of a train of registering mechanism and ride idly over such ratchet in backward rotation. Any suitable registering mechanism may be employed to be operated from the cents-disk. In the present case there is loosely journaled on the shaft C a twenty-toothed ratchet-wheel S , with a backing-piece carrying equally-spaced peripheral numerals corresponding with the ratchet-teeth, running

from "5" to "95," inclusive, in multiples of five, preceded by "00," occupying the same space as one of the numerals and representing cents, and on the same shaft an equal-sized one-hundred-toothed ratchet-wheel S' , with a backing-piece carrying equally-spaced peripheral numerals corresponding with the ratchet-teeth, running from "1" to "99," inclusive, preceded by the figures "00," occupying the same space as each of the numerals and representing dollars, and journaled on the frame a is a nine-toothed ratchet-wheel S^2 , with a space equal to one of the ratchet-teeth from which a tooth has been omitted, and having a backing-piece carrying peripheral numerals running from "1" to "92," inclusive, corresponding with the ratchet-teeth and representing hundreds of dollars.

s s' s^2 are spring-actuated stop-pawls, preventing retrograde motion of the ratchets S S' S^2 , respectively. The ratchet-wheels are so arranged that the peripheral numerals on the backing-pieces may be read in connection as one item in connection with a reading-slot a^{11} , fixed to or made a part of the frame a . Pivoted on the frame a is a dependent spring-lever T , carrying a spring-actuated carrying-pawl T' , adapted to engage the teeth of the ratchet S' . Projecting from the backing of the wheel S is a pin s^3 , which on each complete revolution of the wheel S engages the depending lever T and moves it sufficiently to the right to move the wheel S' the distance of one ratchet by the action of the spring-pawl T' , which after the pin s^3 has passed lever T is by its spring returned to engagement with the next succeeding tooth of the ratchet S' , so that every complete revolution of the wheel S , which represents one dollar, transfers its value to the wheel S' , each tooth of which represents one dollar. Projecting from the backing of the wheel S' , near its circumference, is a pin s^4 , which on each revolution of wheel S' engages the ratchet of the wheel S^2 and moves the latter forward one tooth, thus transferring the value of a complete revolution of the wheel S' , which is one hundred dollars, to the wheel S^2 , each tooth of which represents one hundred dollars. When the ratchet S^2 has been rotated until the pin s^4 would come opposite the place where one ratchet-tooth is omitted, the pin s^4 will play idly and no further registration can be made, thus preventing a dishonest operator, who knows from the contents of the drawer how much should appear registered, from thereon registering the machine to the full amount and then repeating to an amount less than the proper amount and abstracting the difference from the drawer.

To prevent the depression of the controlling-lever and any subsequent operation of the apparatus when the drawer is open, I provide two devices. The first consists of a latch-lever W , depending from the inside of the casing in such position that its tendency, through gravity, is to swing forward, so as to

bring a recess w into engagement with the controlling-lever H , locking it against depression, as shown in Figs. 1 and 1^a. When the drawer is fully closed, a suitable projection on the drawer, as a pin b' , Fig. 1, engages the lower end of the latch-lever and moves it backward out of engagement with the lever H ; but when the drawer opens under the stress of its spring the latch-lever is free to swing forward into engagement with the lever H , locking the machine against operation until the drawer is again fully closed. The two positions of the latch-lever W are indicated by dotted lines in Fig. 1^a.

In order that the apparatus may be operated with the drawer left open in busy seasons I provide a cam-lever w' , pivoted on the upper part of the lever W , adapted to engage a pin w^2 in the side of the casing, so as to move the lever W back and lock it out of engagement with the lever H , whether the drawer be closed or not, until the cam-lever w' be disengaged from such pin. Another device for the same purpose is provided in lever W' , Figs. 1 and 5, which pivotally depends from the controlling-lever, so as to engage the side of the drawer or a rib thereon, except when the drawer is fully closed, when a recess w^3 (see Fig. 1) on such side or rib comes into register with the depending lever W' , so that the controlling-lever can be depressed, the lever W' entering such opening. The lever W' is so connected with the controlling-lever by friction or other suitable means that it can be swung upward and left held out of engagement with such side of the drawer or rib thereon when it is desired to operate the machine with the drawer open.

A suitable locking-door in the casing affords access to the interior of the apparatus to read the totalized registry, to set the registering apparatus at zero by revolving the registering-wheels so that "00" is read on all the wheels in connection with the reading-slot a' , and to set the devices W and W' and connections, as above described.

The operation of the machine is as follows: Supposing the indicating-disks and registering-wheels to be set at zero, the pin g' in the handle of the operating-arm G would be in the zero-recess in the casing and the "change-arm" would conceal the numerals on the cents-disk from view through the reading-opening, the lug d' on the cents-disk would have tilted the plate K' so as to disengage the plate K from the pin a^6 , and the controlling-lever could be depressed, which depression would disengage the pawl J from the peripheral recesses in the cents-disk, and it would then be rotated freely forward over the pawl I . As soon as the cents-disk began to move forward its frictional engagement with the change-arm will move it from before the reading-opening until stopped by the stop a^{13} , when the numerals on the cents-disk would be exposed. Supposing it is desired to indicate and register twenty-five cents, the spring-

pressed pin in the handle g' withdrawn from the zero-recess would be released after it passed the "20c." recess, and, sliding along the casing, would be forced by its spring into the "25c." recess when reached, when the cents-disk would expose the numerals "25" through the reading-opening. The controlling-lever would then be released and rise under the stress of its spring, ringing the bell and releasing the drawer to the action of its spring and locking the cents-disk, through the pawl J, against further rotation, all as hereinbefore described. In the rotation of the cents disk the spring-pawl d^5 has engaged a tooth of the ratchet S and moved it forward, so as to expose "25" through the reading-slot of the registering parts. To make another indication and registration, the pin in the handle of the operating-arm would be withdrawn from the "25c." recess in the casing and the cents-disk rotated backward to the zero-point, when the lug d' would operate to tilt the plate K, so that the controlling-lever could be depressed and forward motion of the cents-disk initiated for another indication and registration, as before described. As soon as the backward rotation of the cents-disk commenced frictional connection with it would cause the change-arm to begin to move across the reading-opening and it would conceal the numerals on the cents-disk after it had been moved the distance of one numeral, where it would be stopped by the stop a^{12} . If, instead of twenty-five cents, it had been desired to register one dollar and twenty-five cents, instead of releasing the pin to enter the "25c." recess the forward motion of the cents-disk would have been continued to a complete revolution (the lug d' riding over the curved extension of the stop-lever O) and beyond to the "25c." recess, as before, whereby the figure "1" would be exposed on the dollar-disk and "25c." on the cents-disk. On the backward rotation of the cents-disk after this operation and preparatory to another indication and registration the lug d' and the stop-lever O would engage to stop the cents-disk at the zero-point, as before, and the pin d^2 , through the operative connections hereinbefore described, release the ratchet F' to its spring, which would rotate the dollar-disk back to its zero-point. Successive operations of the cents-disk, moving the ratchet S continuously forward, would totalize the amounts of the registries through the transfer mechanisms hereinbefore described. I prefer the annular series of recesses a^2 for the engagement of the pin g^2 in the handle of the operating-arm; but, if preferred, there might be substituted an annular series of twenty bevels or ratchets a^{14} , (see Figs. 3 and 3^a.) with a notched recess a^{15} at the lower end of each bevel, so arranged that in operation the handle g' , being released to permit the pin g^2 to engage the bevel a^{14} just after the pin g^2 had passed over a notch a^{15} , the pin g^2 would ride down over the bevel and engage in the

notched recess, firmly locking the operating-arm.

If the controlling-lever II were made of a single piece extending outside the casing, some difficulty might be experienced in placing the mechanism in and removing it from the casing. Consequently I prefer to make said lever in two parts, of which the part II, the lever proper, terminates inside the casing. Near the end of said part II is a pin h^7 , preferably an extension of the pivot for the lock-lever W'. To a suitable stud of the casing is pivoted a short lever II', having a handle outside the casing, said lever II' bearing upon the pin h^7 . Upon depression of the short lever II' it depresses the controlling-lever II in an obvious manner.

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

1. An improved cash indicator and register comprising a pair of cash-indicating disks, a revoluble operating-handle connected to one of said disks, a spring-pawl mechanism operating upon a ratchet-wheel carried by one of said disks and operated by a pin carried by the other disk, a returning-spring connected to the disk engaged by the pawl mechanism and operating to move the disk back into its normal position, a detent for the said ratchet-wheel, and tripping mechanism operated by the return of the handled disk to release the detent from the said ratchet-wheel, substantially as set forth.

2. An improved cash indicator and register comprising a number of cash indicating and registering disks, a pawl mechanism operating a ratchet-wheel carried by one of the indicating-disks, and a plurality of pins carried by and having different locations on another indicating-disk and engaging the said pawl mechanism in both forward and retrograde movements of said disk, whereby the said pawl mechanism will be differently operated by different pins, substantially as set forth.

3. In a cash register and indicator having a vertical revoluble disk mounted transversely of the machine and having an operating-handle and carrying numerals successively displayed through an aperture in the casing and indicating cents, and in combination therewith, a second vertical disk, also mounted transversely of the machine in front of the first-named disk, carrying numerals to indicate dollars, so located as to display its numerals to the left of the numerals on such cents-disk, such dollar-disk being fixed on a shaft carrying a spring-returned ratchet-wheel, and pins on such cents-disk so located as to come into operative connection with and cause a partial revolution of such ratchet-wheel on each complete revolution of such cents-disk, a detent for the said ratchet-wheel, and tripping mechanism operated by the return of the handled disk to release the detent from the said ratchet-wheel, substantially as and for the purpose described.

4. In a cash register and indicator having a vertical revoluble disk mounted transversely of the machine and having an operating-handle and carrying numerals successively displayed through an aperture in the casing and indicating cents, and in combination therewith, a second vertical disk carrying dollar-numerals to the left of the numerals on such cents-disk and mounted, also, transversely of the machine, such dollar-disk being fixed on an arbor carrying a ratchet-wheel in operative connection with pins on such cents-wheel, so as to cause such dollar-wheel to make a partial revolution upon each revolution of such cents-wheel and to be released to the action of a returning-spring connected with such ratchet-wheel or arbor upon the return movement of such cents-disk, a detent for the said ratchet-wheel, and tripping mechanism operated by the return of the handled disk to release the detent from the said ratchet-wheel, substantially as and for the purpose described.

5. In a cash register and indicator having a vertical revoluble disk mounted transversely of the machine and carrying numerals successively displayed through an aperture in the casing and indicating cents, and in combination therewith, a second vertical revoluble disk mounted transversely of the machine, overlapping the first-named disk, and carrying upon its face marginal numerals to indicate dollars, so located as to display its numerals to the left of the numerals on such cents-disk, such dollar-disk being fixed on a shaft or arbor carrying a spring-retained ratchet-wheel, a spring-actuated returning-pawl engaging said ratchet-wheel, a trip-plate engaging a catch which operates by contact with the said retaining-pawl, a trip-plate provided with a rib for releasing said retaining-pawl from engagement with said ratchet-wheel, a catch operating to hold said retaining-pawl out of such engagement, a spring-retained pawl engaging teeth on the periphery of the dollar-indicating disk, a carrying-pawl engaging the teeth of such ratchet-wheel, a plate engaging the carrying-pawl, and pins on such dollar-disk causing the operation of such darts, substantially as and for the purpose described.

6. In a cash indicator and register, the combination, with suitable registering mechanism and a rotary reciprocating indicator, of means for positively rotating said indicator in either direction and therethrough operating the registering mechanism, and detents and controlling mechanism, substantially as described, for positively preventing a partial return and a second rotation of said indicator after a first motion, whereby is insured continuous motion of the indicator to the desired point of indication in one direction and a continuous motion back to the zero-point.

7. In a cash indicator and register having a reciprocating rotary indicator, a controlling device insuring in the indicator a continuous

rotation to the desired point of indication and after indication insuring continuous rotation back to the zero-point, and means for preventing the operation of the controlling device to permit rotation toward the desired point of indication except when the indicator is at the zero-point.

8. In a cash indicator and register having a reciprocating rotary indicator, an automatically-retained device controlling the backward and forward rotation of such indicator and mechanism to prevent the actuation of the controlling device except at the zero-point.

9. In a cash indicator and register having a revoluble disk carrying numerals successively displayed through an aperture in the casing and having an automatically-retained lever to control and govern the backward and forward rotation of such disk, plates on such lever in engagement with pins or studs tripped from engagement therewith by a projection or bent arm on such disk when such disk is rotated backward to the zero-point, substantially as and for the purpose described.

10. In a cash register and indicator having a revoluble disk carrying numerals successively displayed through an aperture in the casing and having an automatically-retained lever and pawls controlling and governing the backward and forward rotation of such disk, tripping mechanism to prevent the actuation of such lever after having been released to the action of its automatically-returning mechanism except when such disk shall be at the zero-point, substantially as and for the purpose described.

11. In a cash register and indicator having a revoluble disk carrying numerals successively displayed through an aperture in the casing, and in combination therewith, an automatically-retained lever, pawls to prevent backward and forward rotation of such disk when such lever is actuated or returned, respectively, a plate pivoted on such lever automatically held above a stud or pin and preventing the actuation of the lever, and another plate loosely hung on the same pivot as such last plate, so that when such disk is rotated back to the zero-point a projection on such disk will strike the projection on such last plate and will cause said first plate to move out of engagement with said first stud or pin, so that such lever may be depressed, substantially as and for the purpose described.

12. In a cash register and indicator having a revoluble disk carrying indicating-numerals successively displayed through an aperture in the casing, and in combination therewith, an automatically-retained lever, pawls engaging such disk against backward and forward rotation when such lever is actuated or automatically returned, respectively, a plate loosely pivoted on said lever above a stud or pin engaging in operative connection with such first plate and holding the same against the actuation of such lever carrying such plate, another plate loosely hung on the same pivot,

a projection or bent arm on such disk engaging with such plate, and a stud on the first plate engaged by the last plate when moved by such bent arm and moving such first plate from engagement with such stud or pin, permitting the actuation of such lever carrying such first plate after such last plate has been engaged by such bent arm shortly before and at the zero-point, substantially as and for the purpose described.

13. In a cash register and indicator having a revoluble disk carrying indicating-numerals successively displayed through an aperture in the casing, and in combination therewith, a spring-returned depressible lever carrying a spring-actuated pawl engaging with peripheral recesses in such disk when such lever is at rest or in normal position, allowing such disk to ride freely over such pawl in the backward motion of such disk and engaging such disk against forward motion until such lever is depressed, carrying such pawl with it out of engagement by the action of the stud or detent, substantially as and for the purpose described.

14. In a cash register and indicator having a revoluble disk carrying indicating-numerals successively displayed through an aperture in the casing, and in combination therewith, a spring-returned depressible lever, a pin or stud on such lever engaging with a pawl, a pawl engaging with the peripheral recesses in such disk when such lever is held in depressed position against the spring of such lever, allowing such disk to ride freely over said pawl in its forward motion, but engaging such disk against backward motion until such lever is released, carrying such pawl out of engagement with such disk against the action of a spring holding such pawl in connection with such disk until so thrown out of engagement by the action of such stud or pin, substantially as and for the purpose described.

15. In a cash register and indicator having a revoluble disk carrying indicating-numerals successively displayed through an aperture in the casing, and in combination therewith, a spring-returned depressible lever controlling by the engagement of pins or studs spring-actuated pawls engaging peripheral recesses in such disk against the forward-and-backward rotation of such disk when such lever is raised or depressed, respectively, pins on such lever, and pawls engaged by such pins, substantially as and for the purpose set forth.

16. In a cash indicator and register having a reciprocating rotary indicator, a controlling device insuring in the indicator a continuous rotation to the desired point of indication and after indication insuring continuous rotation back to the zero-point, and means operated by said controlling device for releasing an automatically-opened money-receptacle.

17. In a cash indicator and register having a reciprocating rotary indicator, a controlling device insuring in the indicator a continuous

rotation to the desired point of indication and after indication insuring continuous rotation back to the zero-point, and means operated by said controlling device for releasing an automatically-opened money-receptacle, and connections whereby on the opening of said receptacle the indicator will be locked against a second indication.

18. An improved cash indicating and registering mechanism comprising a casing inclosing the operative mechanism, a drawer or till placed in the lower part of the casing, a vertically-movable plate located within the casing and having a number of shoulders or projections, a rod connected at its upper end to said plate, a releasing-lever for the drawer or till connected at one end to the rod, and a depressible arm having a stud or pin engaging the shoulders of the plate to raise the same, and thus elevate the drawer-releasing lever, substantially as set forth.

19. In a cash register and indicator having a vertical revoluble disk mounted transversely of the machine, carrying numerals successively displayed through an aperture in the casing, a spring-returned depressible lever pivoted at one end in one side of machine's casing, and in combination therewith, a spring-actuated plate having projections engaged by a stud or pin carried by said lever and by a pin on the supporting-standard of such mechanism, a cash-drawer located in the bottom of the casing, a locking-lever pivoted in the bottom of the casing and engaging the inner end of the drawer, and a rod connecting the free end of the lever with the said plate, substantially as and for the purpose described.

20. In a cash register and indicator having a revoluble disk carrying numerals displayed successively through an aperture in the casing and having a spring-returned depressible lever, and in combination therewith, a spring-actuated plate connected with a drawer-releasing lever and having projections engaged by a pin or stud on said first-named lever and by a pin or stud on the supporting-standard of such mechanism, substantially as and for the purpose described.

21. In a cash indicator and register having a reciprocating rotary indicator, a controlling-lever having connections, substantially as described, for insuring in the indicator a continuous rotation to the desired point of indication and after indication insuring continuous rotation back to the zero-point, and means for operating an alarm operated directly by said controlling-lever.

22. In a cash indicator and register having a reciprocating rotary indicator, a controlling-lever having connections, substantially as described, for insuring in the indicator a continuous rotation to the desired point of indication and after indication insuring continuous rotation back to the zero-point and means for operating an alarm operated directly by said controlling-lever, and connections where-

by the alarm will be operated at the time when the controlling device locks the indicator against further indication.

23. In a cash register and indicator having a
5 revoluble disk carrying numerals success-
ively displayed through an aperture in the cas-
ing, and in combination therewith, a spring-
actuated depressible lever carrying a stud or
pin engaging a tripping-plate upon and con-
10 nected with a spring-actuated-lever plate hav-
ing a hammer adjusted to strike a gong when
said plate is tripped, and a gong-hammer-le-
ver plate, and a tripping-plate, substantially
as set forth.

24. In a cash register and indicator having a
15 revoluble disk carrying numerals success-
ively displayed through an aperture in the cas-
ing, and in combination therewith, a spring-
returned depressible lever carrying a stud or
pin to trip a tripping-plate upon a spring-
20 actuated lever or plate carrying a hammer,
such tripping mechanism causing such ham-
mer to strike a gong when such depressible
lever is released after depression to the ac-
25 tion of its spring and such tripping mechan-
ism, substantially as and for the purpose de-
scribed.

25. In a cash register and indicator having a
30 revoluble disk carrying numerals success-
ively displayed through an aperture in the cas-
ing and having a spring-returned depressible
lever controlling the rotation of such disk, a
tripping hammer-plate to strike a gong mech-
anism and release the cash-drawer and a down-
35 wardly-projecting arm pivoted upon said le-
ver and frictionally held in register with an
opening in a rod or flange on one side of such
drawer or till when closed, but out of register
with such opening when such drawer is opened
40 to any extent, substantially as and for the
purpose described.

26. An improved cash indicator and regis-
ter comprising a number of revoluble cash in-
dicating and registering disks, a revoluble
45 operating-arm for the same, a depressible le-
ver for releasing the disks, a pivoted arm op-
eratively connected to said lever, a bell or
gong, and a trip-plate operatively connected
to the striker of the bell and engaged by a
50 pin or stud carried by said lever for bringing
the striker into contact with the bell or gong
and sounding the same, substantially as set
forth.

27. In a cash indicator and register having a
55 reciprocating rotary indicator, a controlling-
lever having connections, substantially as de-
scribed, for insuring in the indicator a con-
tinuous rotation to the desired point of in-
dication and after indication insuring contin-
60 uous rotation back to the zero-point, a cash-
drawer, and means for locking the said con-
trolling-lever against operation when the cash-
drawer is open.

28. In a cash indicator and register, the com-
65 bination, with a revoluble indicating-disk, of
a spring-returned depressible lever having
connections with said disk, whereby the disk

will be locked from operation when the lever
is in one of its positions, and an arm projecting
from said lever and operatively held in reg- 70
ister with a drawer-recess when the drawer is
closed, but out of such register when said
drawer is opened to any extent, whereby the
lever can be moved in one direction and the
disk revolved only when the drawer is closed. 75

29. An improved cash indicating and regis-
tering mechanism comprising a drawer or till
located in the lower part of the casing, a
spring-actuated slide for opening the drawer,
located beneath the drawer and working in a 80
forwardly-extending groove in the drawer-
casing, a gravity-arm pivoted upon the inner
side of the vertical part of the casing and en-
gaged by a stop on the side of the drawer, a
gravity-dog pivoted upon the said arm and 85
engaging a stud on the inner part of the ver-
tical casing, and a depressible arm pivoted at
one end in one side of the machine-casing and
operatively connected to the cash indicating
and registering mechanism and movable at 90
its outer or free end portion across a recess in
one side of the pivoted dog-carrying arm, sub-
stantially as set forth.

30. In a cash register and indicator having a
95 revoluble disk carrying numerals success-
ively displayed through an aperture in the
casing inclosing a drawer or till and having a
spring-returned depressible lever controlling
the movements of such disk, a gravity-arm
with a recess therein so placed as to engage 100
such lever when hanging at rest, and a pin or
stud on the side of the drawer engaging such
arm to move the same backward out of en-
gagement with such lever when such drawer
is closed, preventing the operation of such 105
controlling-lever except when such drawer is
closed, and a dog engaging a stud to hold such
gravity-arm out of operative position when
desired, substantially as and for the purpose
described. 110

31. In a cash indicator and register compris-
ing a plurality of reciprocating rotary indi-
cating-disks, one indicating-disk controlling
the rotation of another, mechanism permitting
a plurality of forward rotations of the first in- 115
dicating-disk and stopping it at the zero-point
on its first backward rotation, and mechanism
controlled by the first disk for rotating the
second disk back to its zero-point, substan-
tially as described. 120

32. In a cash register and indicator having
a revoluble disk provided with a projection
or bent arm and carrying numerals success-
ively displayed through an aperture in the
casing, and in combination therewith, a spring- 125
actuated stop engaging with the said projec-
tion or bent arm on such disk, preventing the
backward rotation of such disk beyond the
zero-point, but permitting the forward rotation
of such disk indefinitely, substantially as and 130
for the purpose described.

33. An improved cash indicating and regis-
tering mechanism comprising a revoluble
cash-indicating disk, a depressible pivoted le-

ver carrying spring-retained pivoted plates, a pivoted arm located above the depressible lever and extending across the path of movement of the upper end of one of said plates and provided, also, with an upwardly-curved inner or free end, and an arm carried by one of said indicating-disks and operatively passing above and below the curved end of the arm and tilting the plate, substantially as set forth.

34. In a cash indicator and register, the combination, with a casing having a reading-opening, of a rotary indicator having numerals adapted to be read through said opening and a movable shutter frictionally held between the casing and the indicator and having no other connection with parts of the machine, whereby upon rotation of the indicator said shutter may be moved to open or close the reading-opening.

35. An improved cash indicator and register comprising a number of revoluble cash-indicating disks, each having a circular series of numerals upon its face, a face-plate secured to the casing in front of said disk, a vibratory arm interposed between the outer disk and the inner side of the face-plate and frictionally connected with the outer disk, an aperture in the face-plate past which the arm vibrates, and a pair of stops upon the inner side of the face-plate, arranged to limit the movements of the arms, substantially as set forth.

36. In a cash register and indicator having a revoluble disk carrying indicating-numerals successively displayed through an aperture in the casing, and in combination therewith, a vibratory arm journaled on the same shaft as such disk between such disk and the casing and movable across such aperture, a spring holding such vibratory arm in frictional contact with such disk, and stops limiting the motion of such disk, substantially as and for the purpose set forth.

37. In a cash register and indicator, a combination of revoluble disks having a forward and backward rotation, one for cents and one for dollars, the first loosely journaled on a shaft and the second fixed on an arbor, arranged so that the numerals on their respective faces near the peripheries will be exhibited in conjunction, one numeral for each disk, at a common point through an aperture in the case of the machine, the dollar-disk being moved forward by operative connection with the cents-disk and backward by a spring, with a handle carrying a spring-pressed retaining-pin moving the cents-disk backward

and forward, and a spring-retained depressible controlling-lever carrying a spring-moved pawl engaging recesses in the periphery of the cents-disk against the forward motion of such disk and carrying a stud or pin operating upon a spring-actuated pawl engaging peripheral recesses in such cents-disk against backward motion when such lever and stud upon such lever engage with a trip upon a spring-moved plate carrying a hammer to strike a gong, and a plate with projections actuated by a spring and operated by a stud upon such lever to raise and lower through operative mechanism a catch or retaining-lever for a spring-pressed cash-drawer, so as to release the same to the action of such cash-drawer spring, means to prevent the operation of such lever except when such drawer is closed, studs or pins upon such controlling-lever, a spring catch or stop to prevent the backward rotation of such cents-disk beyond a fixed zero-point, movable, so as to permit the forward rotation of such disk beyond such zero-point, a stud-engaged plate with tripping mechanism preventing the depression of such controlling-lever until such cents-disk has been rotated backward to such zero-point, a stud engaging said last-described plate, pins on such cents-disk to set a spring-actuated retaining-pawl and moved into position, a spring-withdrawn carrying-pawl operating a ratchet-wheel fixed on the arbor of such dollar-disk at the point of complete revolution of such cents-disk and to trip from engagement and into a locked position such retaining-pawl on the backward motion of such cents-disk, a vibratory arm journaled on the same shaft with the cents-disk and frictionally connected with such cents-disk and moving to and fro with the movements of such cents-disk between the numbers on its face and such aperture, a ratchet-wheel on the arbor carrying such dollar-disk, a retaining-pawl on such ratchet-wheel, a spring-withdrawn carrying-pawl engaging with such ratchet-wheel, a lever carrying such spring-withdrawn carrying-pawl, a plate moving such lever, and a train of registering mechanism operated by the forward motion of such cents-disk, substantially as and for the purpose described.

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

THOMAS J. HUME.

Witnesses:

FRED MCCOY,
J. ELLIS.