(No Model.)

3 Sheets—Sheet 1.

G. F. KOLB.

CASH REGISTER AND INDICATOR.

No. 457,726. Patented Aug. 11, 1891.

Fig. 1.

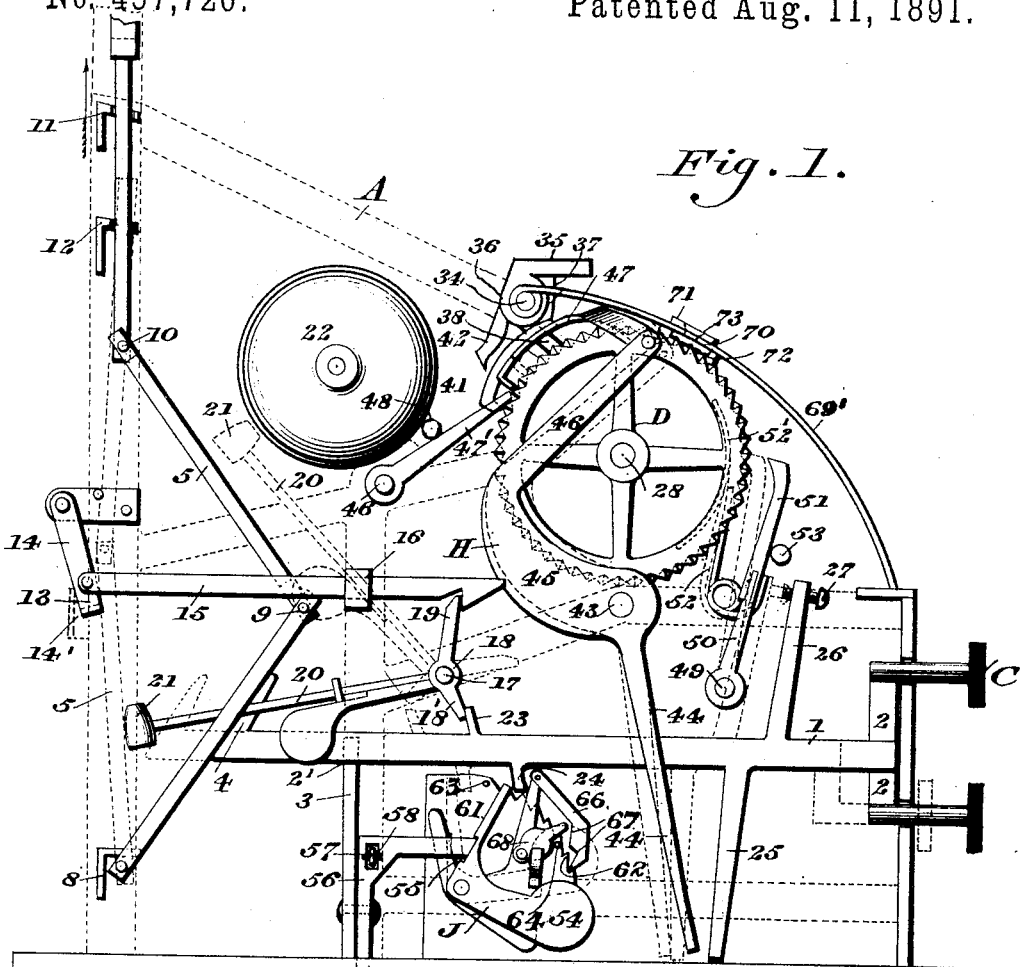


Fig. 13.

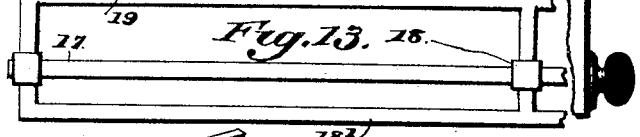


Fig. 11.

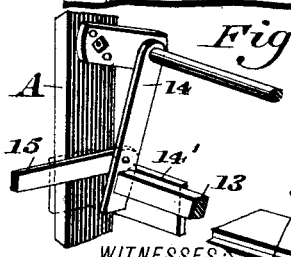
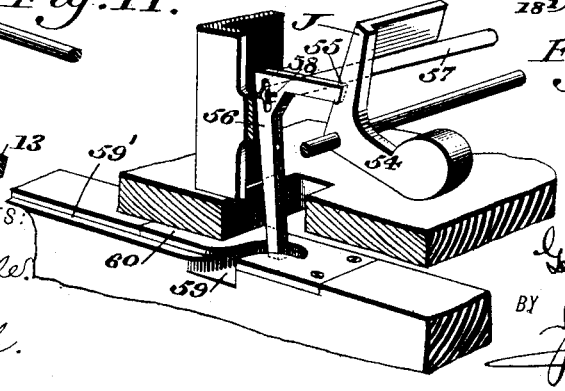


Fig. 8.



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(No Model.) 3 Sheets—Sheet 2.

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CASH REGISTER AND INDICATOR.

No. 457,726. Patented Aug. 11, 1891.

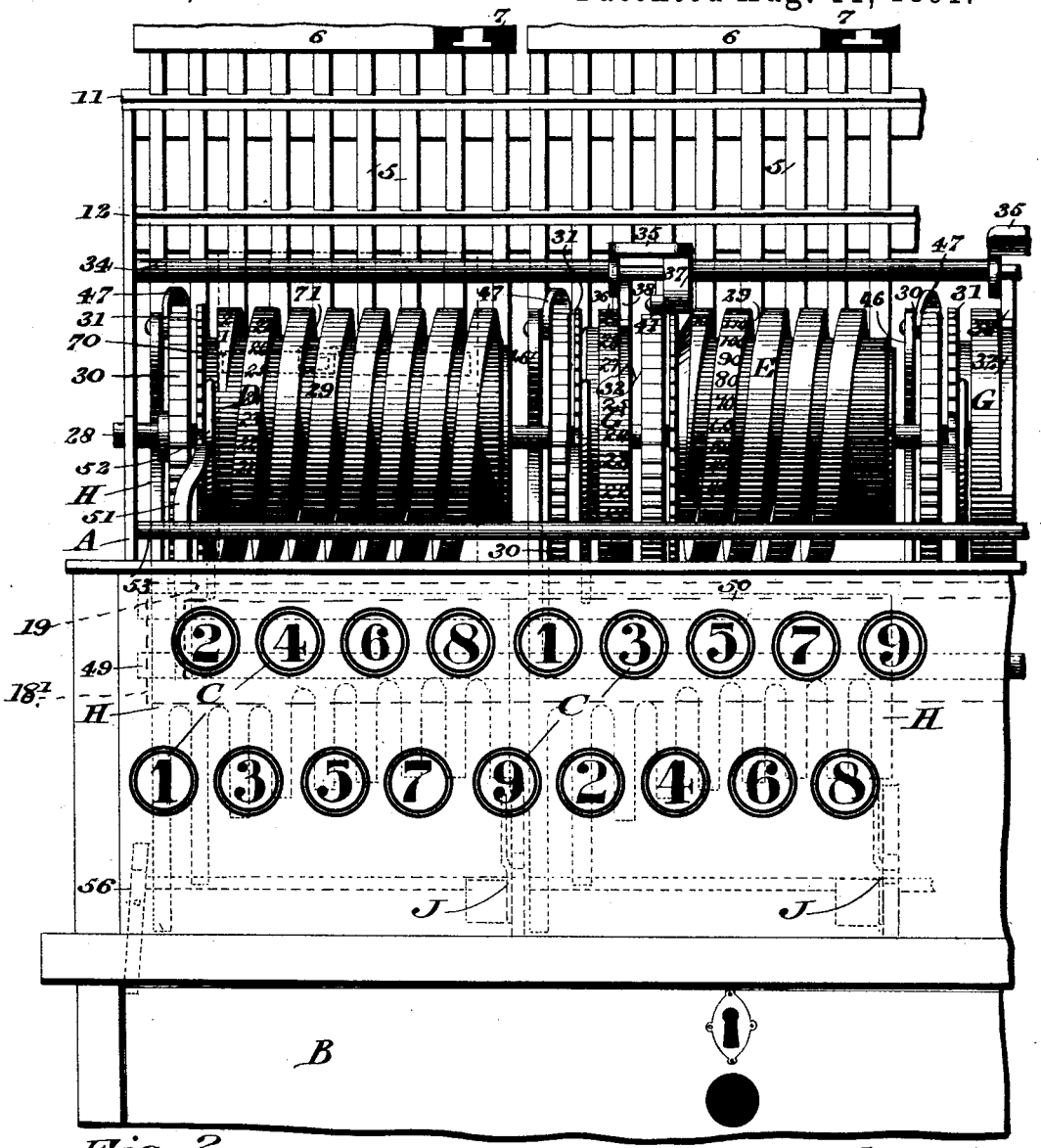

Fig. 2.

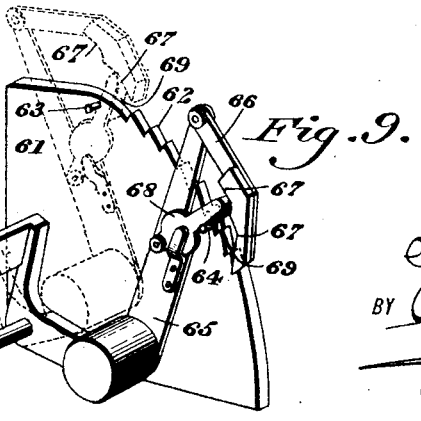

Fig. 9.

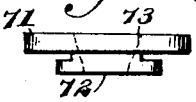

Fig. 12.

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(No Model.) 3 Sheets—Sheet 3.

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CASH REGISTER AND INDICATOR.

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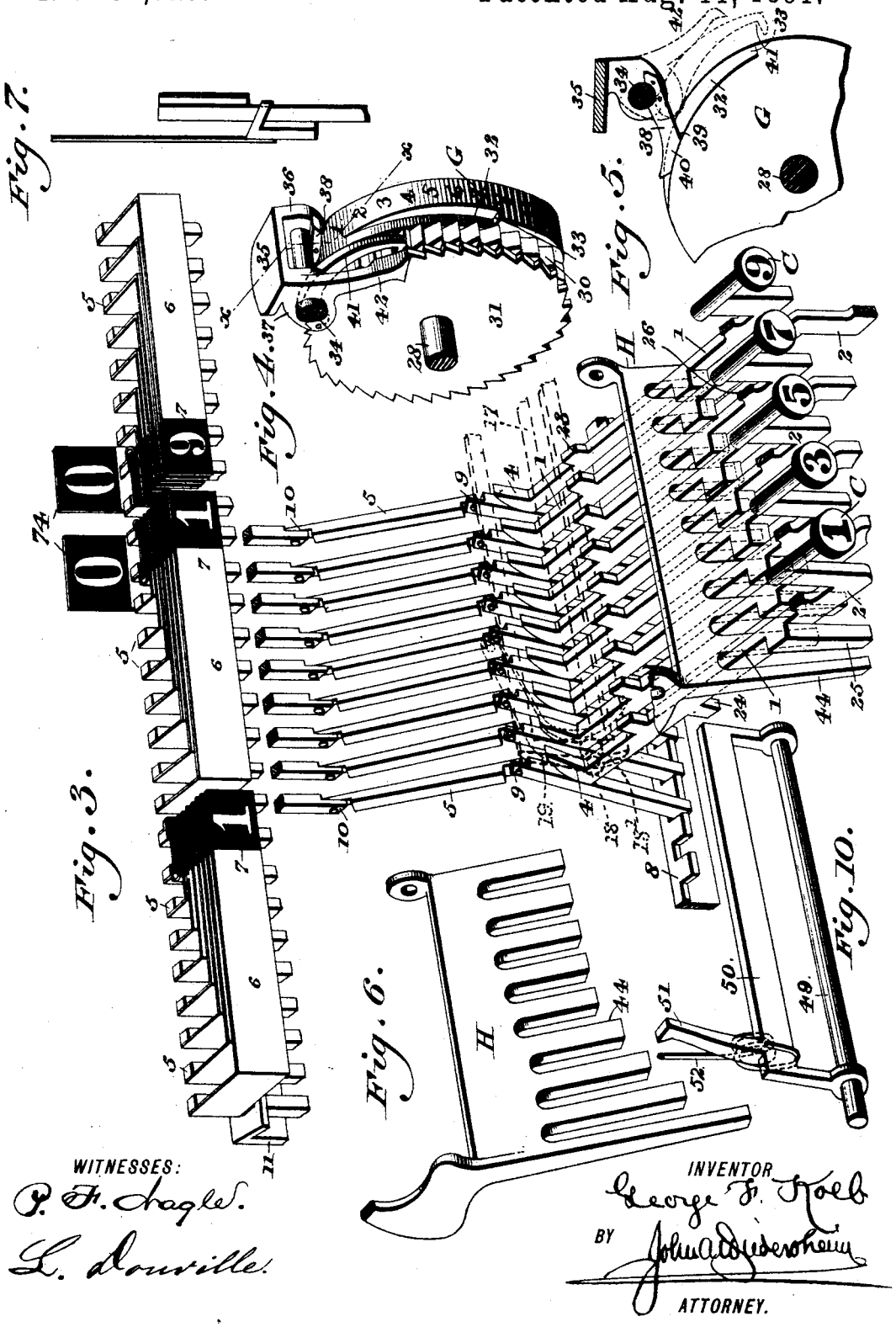

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UNITED STATES PATENT OFFICE.

GEORGE F. KOLB, OF PHILADELPHIA, PENNSYLVANIA.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 457,726, dated August 11, 1891.

Application filed December 9, 1889. Serial No. 333,130. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. KOLB, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Cash Indicators and Registers, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in cash registers and indicators; and it consists, first, of a device having one or more helical registering-drums, each having an individual registering attachment and operating mechanism for said drums, substantially as described.

It further consists of mechanism, substantially as described, for transferring the amount indicated by the registering-wheel to the registering-drum.

The invention further consists of an improved construction and arrangement of the tablet-levers and mechanism for controlling the position of the same relatively to the key-bars and of raising and lowering said tablets.

The invention further consists of mechanism for preventing a duplicate or false registration without displaying the tablet indicating the amount of purchase, consequent upon accidental disengagement of the finger or fingers of the operator from the keys and by an attempt to further press the said keys inward.

The invention further consists of mechanism for automatically locking the key-bars against inward movement when the machine is not in use.

The invention finally consists of the construction, arrangement, and combination of the several parts and details thereof, as will be more fully hereinafter set forth.

The object of the invention is to dispense with the use of springs to operate the parts, relying solely on the direct engagement of various positively acting or gravitating mechanical devices to raise the tablets and return the keys to their normal position.

Figure 1 represents an end elevation of a cash indicator and register embodying my invention, the frame or cabinet therefor being shown in dotted lines. Fig. 2 represents a front elevation of the same, partly broken away. Fig. 3 represents a perspective view of a portion of the keys and key-bars and the jointed levers and tablets to illustrate the operation of said parts. Fig. 4 represents a detail perspective view of the transfer for a portion of the drums or cylinders. Fig. 5 represents a side elevation of a portion of the same. Fig. 6 represents a detail perspective view of a comb-plate which is mounted over the key-bars and operates the registering cylinders or drums. Fig. 7 represents a side elevation of a portion of the frame and the upper end of a lever supporting a tablet illustrating the construction and arrangement of said parts. Fig. 8 represents a detail sectional perspective view of a key-bar-locking device. Fig. 9 represents a detail perspective view of mechanism for preventing a double depression of the key-bars when a single operation is required, and thereby avoid a double registration on the drums or cylinders. Fig. 10 represents a detail perspective view of one of the front detent-frames. Fig. 11 represents a detail perspective view of a portion of the casing and the tablet-lever-resetting attachment. Fig. 12 represents a detail view of the peep-slide. Fig. 13 represents a detail view, in elevation, of a part of the machine.

Similar letters and numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the frame or casing of such configuration as to cover the mechanism and to form a bearing for the rods and supports of the various parts, and having windows over the tablets to display the same from either front or rear.

B designates the cash drawer or till arranged under the device and adapted to be locked or closed by a suitable spring catch or lock, said drawer being left partially open when the machine is in use.

In the front portion of the casing over the drawer or till B are arranged a series of numbered key-heads C, representing units, tens, hundreds, &c., and are attached to key-bars 1. The said key-bars 1 are mounted in the casing in two rows or banks, representing the odd and even numbers, the upper series being formed with downwardly-extending elbows 2 and the lower series thereof con-

structed with similar upwardly-extending elbows, whereby the said bars are brought into line in the same horizontal plane. The rear portions of the said bars 1 are located in slots 2′, formed in a support 3, and are thereby held separated, the extreme rear ends of the bars being formed with hooked ends 4 to provide projections for striking jointed levers 5, situated in the rear of the frame and having supports 6 for tablets 7 on the upper ends thereof. The said levers 5 are pivotally attached at their lower ends to a slotted bar 8 and preferably have two joints 9 and 10 in the body thereof, and the upper portions thereof are mounted to slide vertically in parallel slotted guide-bars 11 and 12, affixed to the rear of the frame or casing, the upper one of the latter being directly under the tablets 7. The joints 9 of said levers 5 normally lie in the position shown in Fig. 1, or toward the front of the machine, to cause the lower portions of said levers to bear against the hooked ends 4 of the key-bars 1, so that when the said bars are suddenly depressed the sections of the levers 5 adjacent to the joints 9 are thrown past the center of return action of said levers and the latter thereby held elevated.

The tablet-supports 6 are preferably made of sheet metal attached to the upper ends of each of the levers 5 and extend over to a predetermined position, at which place they are numbered on one or both sides. It will be seen that the levers 5 farthest from the centralized position of the numbered portions of the tablets will have longer strips of metal secured thereto and decreased in proportion toward said position. By the use of this form of tablet the space of occupancy is greatly reduced and made more compact.

To the rear portion of the frame or casing A is attached a resetting attachment comprising a rod 13, Figs. 1 and 11, having end arms 14, pivoted to said frame and normally lying in close to the rear of the frame, as shown in Fig. 1, being prevented from having outward movement by a stop 14′ on the frame. The rear end of a hooked bar 15 is pivotally connected to one of the arms 14 of said attachment and moves through a supporting-loop 16, Fig. 1, secured to the side of the frame or casing.

A shaft 17 is mounted in the ends of the frame or casing A, and thereon are movably located sleeves 18, having a lower integral bar 18′, extending across the machine, as seen in detail in Fig. 13 and shown in position in Fig. 3, and with one of said collars is formed a catch-dog 19, adapted to engage the hooked bar 15, the opposite collar having a weighted stem 20, carrying a hammer 21, to strike a relatively-situated gong or bell 22.

The upper side of the rear portion of each key-bar 1 is constructed with a lug 23 and the lower side thereof is formed with a lug 24. When the bars are set in position, the said lugs 23 and 24 are in longitudinal alignment, and the lugs 23 bear against the bar 18′. In like manner the lugs 24 are arranged in alignment, and are for a purpose hereinafter referred to. On the front lower portion of the bars 1 are a series of depending fingers 25 of graduated lengths and in number equal to the number of keys in each series of units, tens, hundreds, &c., the said fingers decreasing in length from the bar representing one to that representing nine to thereby allow for an increased inward pressure of the bar from one to nine. The upper forward portion of each bar 1 is also formed with a series of fingers 26 of equal length and in alignment, each having an adjustable stop 27 in the upper end thereof, which is adjusted relatively to the length of inward movement of the key-bar to which it is attached.

A series of drums or cylinders D E, &c., are loosely mounted on a shaft 28, located in the forward part of the casing and having bearing in the end frames. These drums or cylinders are formed with helical grooves 29, Fig. 2, the dividing ribs of which are numbered, the numerals on cylinders D being consecutive and those on cylinder E representing the sum total of a predetermined number individually registered by a single revolution of a registering disk or wheel G applied to said cylinder.

As shown, each cylinder is supplied with a feeding ratchet-wheel 30, preferably having fifty teeth, and a supplemental stop-ratchet wheel 31, having the same number of teeth as said wheel 30 and lying against and affixed to the latter, the teeth of said wheels being reversely arranged. In like manner the registering disks or wheels G are provided with wheels 30 and 31. Each of the said disks G is formed with a groove 32 in a portion of the peripheral edge thereof, the said groove gradually merging into the said periphery at one end and having an abrupt shoulder 33 at the other end thereof. On a rod 34, mounted over and slightly in rear of the said cylinders and disks, is located an actuating device for said disks, comprising a plate 35 to form a weight, having ears 36 and 37 with openings therein to fit over said rod 34. To the ear 36 is rigidly attached a forwardly-projecting detent 38, having a lower projection or heel 39 and a toe 40, Fig. 5. To one side of ear 37 is movably attached a dog 41, which extends rearward over the wheel 30 of cylinder E and engages the teeth of the latter. The opposite side of the said ear 37 has a detent 42 connected to its rear edge and slightly bent to cause the toe thereof to engage the teeth of the ratchet 31 adjacent thereto. While detent 38 rides on the periphery of each disk detent 42 holds the drum stationary. Under the cylinders or drums is located a rod 43 to form a bearing, on which is loosely mounted a comb-plate H, having a series of depending fingers 44 of graduated lengths, the longest being adapted for engagement with the depending finger 25 of the key-bar representing the numeral 1 and decreasing in length simi-

larly with the said fingers 25. The upper portion of each plate H is constructed with a weighted arm 45, formed with a forward extension 46, to which is pivoted a dog 47, projecting rearward over and in contact with the ratchet-wheel 30.

In rear of the drums or cylinders is situated a shaft 46, on which is mounted a series of detents 47′, engaging the ratchet-wheels 30 to prevent back movement thereof, and adjacent to and over the said detents is arranged a stop-bar 48 to limit the rearward movement of the detents and thereby insure an engagement thereof with said ratchet-wheels 30. In front of the drums or cylinders is journaled a shaft 49, on which is movably mounted a series of cross-bars 50, having a series of fixed detents 51 to engage the teeth of wheels 31 to limit the forward revolution of the drums or cylinders. To the said cross-bar 50 are attached the coils of spring-brakes 52 that bear against the said drums or cylinders. The said spring-brakes act in a twofold capacity, to check the movement of the cylinders and to repel the said bar 50 with its detents 51 from the wheels 31, said brake having a curved shoe 52′, Fig. 1, fitting over a considerable surface of the drums or cylinders to check the movement thereof.

Above the shaft 49 is located a stop-rod 53, against which the upper portions of the detents 51 have bearing when in their normal position, and thereby the rearward movement of said detents is limited and the repellent effort of the said spring-brakes counteracted. By this means the said detents 51 are held the proper distance from the wheels 31 and are operated by the adjustable stops 27 of fingers 26 on the key-bars 1.

Under the rear portions of the key-bars 1 are mounted movable frames J, one for each series of keys, and comprising weighted end arms 54, whose rear upper portions or extensions are constructed with notches 55, adapted to be engaged to lock the said frames against movement by pivoted catches 56, connected by a slide-bar 57 moving therethrough and having pins 58, Fig. 1, therein to bear against the said catches 56 to move the same in either one of two longitudinal directions. The said catches 56 are for the purpose of locking the series of keys against inward depression or operation, and the vertically depending member of the catch at one end is elongated and projects through an opening in the base of the frame or casing A to engage the upper edge of one side of the cash drawer or till B. As fully shown in Fig. 8, said drawer or till B is formed with a cam or analogous groove 59, opening into the top edge from the outer portion and having a top plate 60 with a slot therein conforming to the groove 59, and one portion thereof constructed of less width than the top edge of the said drawer to thereby form a groove 59′ to allow the depending end of the catch to fit therein when not engaged by the groove 59.

As has been hereinbefore set forth, the said drawer or till B is always partially open when the indicator and register is in use, and when desired to lock the same against use the same is pushed inward and the depending member of the end catch 56 is caught by the cam-groove 59, and all the upper members of the series of catches are gradually drawn into the notches 55 of the weighted end arms 54 of the frames J to thereby lock the said frames against movement and prevent the key-bars 1 from being operated by virtue of the engagement of the lugs 24 on said bars with the upper portions of the said frames. When the drawer or till is drawn outward, the upper part of the end catch 56 is thrown to the right and, simultaneously operating the other catches therewith, the frames J are unlocked and the key-bars are released for operation.

As shown in Figs. 1 and 9, to one side of the ends of the frames J are situated stationary frames 61, preferably in the form of quadrants and having ratchet-teeth 62 on the upper edge and pins 63 and 64 projecting from one side thereof. The ratchet-teeth in said quadrants correspond in number to the number of keys in each series, the same being nine in this instance, so as to accommodate the different lengths of movements of the key-bars. To said frames J is attached an arm 65, that projects above the edge of each quadrant 61 and carries a gravity-pawl 66 at the upper end thereof, whose lower end is weighted to cause an engagement with the teeth of the quadrants, and formed with recesses 67, that are engaged by the ends of a detent or finger 68, pivotally secured to said arm 65. The said finger 68 is formed with a lug 69 to contact with the pins 63 and 64 to thereby raise and lower the pawl 66.

In operating the keys to register a sale the fingers of the manipulator by accident might slip when only a partial movement of the said keys has been made and before the tablet or tablets have been raised, but far enough to cause one or more of the drums or cylinders to register, and a farther or repeated pressure on the said keys would cause a double or false registration by the said drums or cylinders. It is to prevent this false registration that the quadrants 61 and their attachments are employed, and when one or more keys are fully depressed they press against the upper portion of the frame or frames J and tilt one or more of the arms 65, thereby causing the pawl 66 to be thrown back over and playing close to the teeth of the quadrants until the lug 69 on the finger 68 strikes the upper pin 63, when said pawl 66 is elevated by the engagement of the upper end of the finger 68 with the lower recess 67 in the said pawl to hold the latter clear of the teeth during the return caused by the gravitating movement of the frames J over said teeth and until the lug 69 strikes the lower pin 64 to release the upper end of the finger 68 from the lower to the upper recess 67, and thereby allow the end of

the pawl to fall into the first ratchet-tooth. If the fingers should slip from the key during a depression, the pawl 66 will drop into the intermediate teeth of the quadrants and hold the key partially depressed by means of the upper part of one or more of the frames J, engaging the rear lower lug 24 of the key-bar, being held partially thrown back, and thereby no weight will be brought to bear on the said key-bar, and because the same will be locked against forward movement, thus preventing operation of one or more of the registering drums or cylinders. By completing the depression of the key thus locked, the tablet or tablets will be raised and the drums or cylinders will be operated to register the exact amount of the sale. One of these attachments will be employed in connection with each series of keys, representing units, tens, hundreds, &c., to provide a uniformity of operation.

Over each cylinder or drum is a hinged guard 69′, formed with slots 70, in which are fitted peep-slides 71, having lower lugs 72, fitting in the helical grooves of said drums or cylinders, and peep-openings 73 over the numbered ribs of said drums. These slides move across the casing as the drums revolve, and the openings therein are always located over the last registered amount on each drum, thereby making it convenient to readily ascertain the exact amount registered by each drum or cylinder.

Stationary ciphers 74 are mounted in an elevated position in rear of the units and tens tablets to indicate the fractional or decimal amount, being secured in a convenient manner to the rear portion of the casing.

In operation it will be seen that if a sale is made, say, for two dollars, the operator will press the representative key inward with full pressure to slide the key-bar 1 inward, causing the hooked end 4 of said bar to repel the contiguous lever 5 with such force as to throw the lower sections thereof past or rearward of the center of return gravitating movement of joint 9, and thereby elevate the tablet representing two dollars. During this operation the lug 23 on the key-bar will strike the cross-bar 18′ and cause the hammer 21 to strike the gong or bell 22. At the same time the catch-dog 19 will draw on the hooked bar 15 to throw the resetting attachment, comprising bar or rod 13, inward a sufficient distance to force back any levers 5 which may have been elevated by previous operation. The finger 25 on the key-bar will also engage the adjacent finger 44 of the comb-plate H and force the same rearward a sufficient and requisite distance to cause the dog 47 to draw the drum D around the distance of two teeth of wheel 30, and simultaneously the detent 47′ will fall into the teeth of said wheel, as presented thereto, and prevent back movement of the drum. The finger 26 is caused to bear against the adjacent cross-bar 50 and force the detent 51 into the teeth of stop-ratchet 31 and also apply the brake 52′ to said drum to prevent forward movement thereof. These parts are so arranged and timed as to work relatively at the proper movement without the one interfering with the other. The key-bar is returned to its normal position by the weighted frames J engaging the lugs 24, which impel said bars outward, except in case of preventing a false registration, as has been hereinbefore referred to. By preference the disks G are numbered from one to fifty, and register fifty units or tens before the drum E is actuated, which is as follows: By an inward depression of one or more of the units or tens key-bars the disks G are revolved such distance as to register the exact number in a manner similar to the drum D. When the said disks revolve a predetermined distance, the toe 40 of detent 38 drops into the groove 32 of said disks and travels therein until the heel 39 strikes the shoulder 33, thereby raising said detent and the plate 35, causing the dog 47 to draw on the wheel 30, and thereby cause said drum E, representing tens, to collectively register fifty tens by the advancement or movement of one tooth of the said wheel 30. Said drum E is numbered from fifty upward—viz, fifty, one hundred, one hundred and fifty, &c.—thereby making it convenient to readily ascertain from said drum the sum total correctly added of the units or tens registered. For example, if two hundred and fifty tens have been registered, it will represent twenty-five dollars, and on the units-cylinder the number of units will be consecutively added.

By the foregoing it will be understood that the numbers on all the cylinders or drums are progressive, and if drum D shows a registration of one hundred dollars, drum E two hundred and fifty tens, and the units-drum five hundred units, the sum total of all would be one hundred and thirty dollars. If desired, however, the numbers of the drums may be increased to register various fractions of currency, and may be also numbered differently, and disks G may be supplied with one hundred teeth instead of fifty, or more or less, as may be desired. Two drums or cylinders may be also operated at one time to register either tens and units or hundreds and tens.

The keys and key-bars have been referred to as being operated by a horizontal inward pressure; but an outward pull or a downward or upward movement of said keys may be as readily employed. The formation and arrangement of the key-bars, as set forth, prevents tampering with the inner mechanism as said bars pass snugly through openings in the front portion of the casing.

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

1. In a cash register and indicator, a helically-grooved collective adding-drum, a sum-total registering-disk applied to said drum, said drum and disk being arranged longi-

tudinally in a horizontal position, independent ratchet-and-pawl mechanisms in connection with said drum and disk, and horizontal key-bars extending transversely under said drum and disk, adjacent to and contacting with the operating mechanism of said parts to simultaneously operate the same, substantially as described.

2. In a cash register and indicator, a helically-grooved drum or cylinder having feed and stop ratchet-wheels against one end of said drum or cylinder with teeth corresponding in number to the number of registers of the drum or cylinder, feed and stop pawls on opposite sides of said ratchet-wheels, and key-levers extending transversely under said drum or cylinder and contacting with mechanism, substantially as described, for operating said ratchets by an inward pressure of said key-levers, substantially as set forth.

3. In a cash register and indicator, a helically-grooved drum or cylinder, gravitating dogs and detents for said ratchet-wheels for operating the same, and key-bars with projections in the body thereof for operating said dogs and detents, substantially as described.

4. In a cash register and indicator, a registering-drum with a ratchet, a series of key-bars with projections in the body thereof, and a plate with fingers of varying lengths operated by said key-bars, and carrying-dog to engage the ratchet of the drum, substantially as described.

5. In a cash register and indicator, a registering-drum having a feed and a stop ratchet-wheel, a series of key-bars, a comb-plate operated by said key-bars, and having a dog to engage the ratchet of the drum, and rear and front stop detents, substantially as described.

6. In a cash register and indicator, a series of key-bars and a series of vertically-disposed jointed tablet-supporting levers normally having a loose contact with the said key-bars, substantially as described.

7. In a cash register and indicator, a series of key-bars and a series of vertically-disposed jointed tablet-supporting levers whose lower portions normally lie against the projections of the key-bars and are thrown backward past the center of return movement of the lower joints thereof by a depression of said bars to hold the tablets elevated, substantially as described.

8. In a cash register and indicator, a series of key-bars, a series of jointed tablet-levers engaged by said key-bars, and a resetting attachment for said tablet-levers consisting of a swinging bar, substantially as described.

9. In a cash register and indicator, a series of key-bars, a series of jointed tablet-supporting levers engaged by said key-bars, a resetting attachment for said tablet-levers having a hooked bar, and a catch-dog for operating said hooked bar and resetting attachment, substantially as described.

10. In a cash register and indicator, a series of key-bars, a series of jointed tablet-supporting levers engaged by said key-bars, a resetting attachment for said tablet-levers having a hooked bar, stops to prevent rearward movement of the said resetting attachment, and a catch-dog for drawing said hooked bar forward a sufficient distance to operate the resetting attachment, substantially as described.

11. In a cash register and indicator, a series of key-bars having rear projections and lugs and fingers projecting from opposite sides thereof, a comb-plate supporting a dog, a registering drum or cylinder having a ratchet-wheel, and a series of jointed tablet-supporting levers, substantially as described.

12. In a cash register and indicator, a series of key-bars having lugs and fingers projecting from opposite sides thereof, a comb-plate having a weighted arm, a projection carrying a dog, and a registering-drum, substantially as described.

13. In a cash register and indicator, a series of key-bars having depending fingers of graduated lengths, a comb-plate carrying a dog and having fingers of graduated lengths, and a registering-drum, substantially as described.

14. In a cash register and indicator, a registering drum or cylinder adapted to be revolved and having a stop ratchet-wheel, a detent attached to a frame in front of said drum to engage the ratchet-wheel, and a series of key-bars with upwardly-projecting fingers with upper adjustable extensions arranged at angles to said fingers to operate said detents, substantially as described.

15. In a cash register and indicator, a revoluble registering drum or cylinder having a feed and a stop ratchet-wheel with the same number of teeth, a series of key-bars with upper and lower projecting fingers and lugs, a comb-plate carrying a dog to engage the feed-ratchet, a detent in front of said drum to engage the stop-ratchet, a rear detent, and a weighted frame for returning the key-bars to their normal positions, substantially as described.

16. In a cash register and indicator, a revoluble registering drum or cylinder having a feed and stop ratchet-wheel with the same number of teeth, a series of key-bars with upper and lower projecting fingers and lugs, and rear hooked ends, a comb-plate carrying a dog to engage the feed-ratchet, a detent in front of said drum to engage the stop-ratchet, a rear detent for said feed-ratchet, a series of jointed tablet-supporting levers, and a weighted frame for returning the key-bars to their normal position, substantially as described.

17. In a cash register and indicator, a series of key-bars having upper and lower lugs in the rear portion, a series of jointed tablet-levers, a lower gravitating frame engaging the lower lugs of the key-bars and adapted to return said bars to their normal positions, and an upper gravitating frame engaging the upper series of lugs on said bars and having a

weighted stem attached thereto and carrying a hammer to strike a gong or bell, substantially as described.

18. In a cash register and indicator, a series of key-bars and a lower weighted gravitating frame engaging said bars to return the same to their normal positions, substantially as described.

19. In a cash register and indicator, a series of key-bars, a series of jointed tablet-supporting levers arranged contiguous thereto, and a rocking resetting attachment in rear of said levers consisting of a swinging bar, substantially as described.

20. In a cash register and indicator, a registering drum or cylinder having ratchet-wheels attached thereto, a dog for revolving said drum, front and rear detents, and key-bars having upwardly-projecting fingers carrying adjustable stops to engage said front detents, substantially as described.

21. In a cash-register and indicator, a registering drum or cylinder having feed and stop ratchet-wheels attached thereto, a series of key-bars having upwardly-projecting fingers with adjustable stops therein, a series of lower projecting fingers of graduated lengths, and rear upper and lower lugs and end projections, a comb-plate having depending fingers of graduated lengths adapted to be engaged by the lever-fingers of the key-levers, and a weighted arm supporting a feed-dog engaging the feed-ratchet, front and rear detents and a brake, a series of jointed levers for supporting the tablets, a resetting attachment for said levers having an inner hooked end, a movable frame engaged by the rear upper lugs on the key-bars having a weighted stem supporting a hammer to strike a gong, and a catch-dog to engage the hooked bar of the said resetting attachment, and the lower weighted or gravitating frames engaging the lower series of lugs on the key-bars to their normal positions, substantially as described.

22. In a cash register and indicator, a helically-grooved registering drum or cylinder having progressive numbers thereon, a hinged guard with a slot extending longitudinally over said drum, and a peep-slide mounted in the slot of the said guard and provided with a lug fitting in the groove of said drum and adapted to move from end to end of said drum and having an opening therein to display the numerals, and a key-lever extending transversely under said drum and adapted by an inward pressure to operate the same, said parts being combined substantially as described.

23. In a cash register and indicator, an adding drum or cylinder, a registering drum or disk provided with feed and stop ratchets and having a groove with a shoulder, a gravitating device consisting of a tilting or rocking table having a pivoted dog and a stationary detent in connection therewith, and a key-lever for operating said parts, substantially as described.

24. In a cash register and indicator, a collective adding drum or cylinder having feed and stop ratchet-wheels, an individual registering-disk having feed and stop ratchet-wheels and a groove formed with a shoulder, a dog for operating said registering-disk, and dogs and detents suspended over said drum and disk to relatively operate the same, substantially as described.

25. In a cash register and indicator, a collective adding drum or cylinder having feed and stop ratchet-wheels, an individual registering-disk, having similar feed and stop ratchet-wheels, and a groove formed with a shoulder, a comb-plate with fingers supporting a dog for feeding said registering disk or wheel, detents for limiting the forward and backward movement of the disk or wheel, key-bars with depending fingers to engage said comb-plate, a gravitating plate supported above and in rear of the drum, and the wheel or disk carrying a stationary detent for the stop-ratchet of the drum, a dog engaging the feed-ratchet of the drum, and a dog with a heel to operate in the groove of the registering wheel or disk, and the forward and rear stop detents, substantially as described.

26. In a cash register and indicator, a series of registering-drums having feed and stop ratchet-wheels, a series of key-bars having upwardly-projecting fingers with adjustable stops, a series of frames carrying detents and spring-brakes, and the rear detents, substantially as described.

27. In a cash register and indicator, a series of registering-drums having feed and stop ratchet-wheels, a series of individual registering disks or wheels, feed and stop ratchet-wheels for said parts, a series of key-bars having upwardly-projecting fingers with adjustable stops, a series of frames carrying detents and spring-brakes, and the rear detents and gravitating devices for transferring the predetermined individual sum-total from the disks or wheels to a portion of said drums, substantially as described.

28. In a cash register and indicator, a series of key-bars having rear lower lugs or projections, a series of weighted or gravitating frames, and a series of catches for locking said frames and key-bars against movement, substantially as described.

29. In a cash register and indicator, a series of key-bars having rear lower projections, a series of weighted or gravitating frames having notches therein, a series of catches unitedly operated to lock and unlock said parts, the one end catch having a depending member, and a cash drawer or till having a cam or other suitable groove to engage the depending member of the end catch to actuate the series of catches, substantially as described.

30. In a cash register and indicator, a series of key-bars having rear lower projections, a series of weighted or gravitating frames having notches therein, a series of catches unitedly connected by a sliding bar, the one end

catch of said series having a depending member projecting through the bottom of the case, and a cash drawer or till having a cam or other suitable groove to engage the depending member of the end catch to thereby actuate the series of catches, substantially as described.

31. In a cash register and indicator, a series of key-bars, a series of gravitating frames having notches, a series of catches therefor operated by a depending member of the end catch, a cash drawer or till having a groove in the edge of one side thereof to engage and operate the depending member of one of the catches, a series of registering drums or cylinders and disks or wheels, and the tablet-levers supporting tablets, said parts being adapted to be locked against movement by said catches, substantially as described.

32. In a cash register and indicator, a series of key-bars, a tilting or gravitating frame for locking said bars, a catch for locking said frame, and a cash-drawer having a device adapted to engage with and operate said catch, and thereby locking the drawer, substantially as described.

33. In a cash register and indicator, a series of key-bars adapted to be locked against movement by a series of gravitating frames, and catches automatically operated to lock and unlock said frames, substantially as described.

34. In a cash register and indicator, a series of key-bars having projections, a series of gravitating frames having bars to engage said projections of the key-bars and formed with notches, a series of catches connected by a sliding bar with pins therein for united operation, one of said catches being formed with a depending member, and a cash draw or till having a curved groove opening inward from the outer portion of one side of the same and having a wear-plate thereover, substantially as described.

35. In a cash register and indicator, a series of key-bars having depending projections in the body thereof, a series of independent registering drums and disks, a series of weighted or gravitating frames, and a series of ratchet-frames having devices in connection with the said gravitating frames to lock and prevent the key-bars from being operated to make a false registration, substantially as described.

36. In a cash register and indicator, a series of key-bars, a series of registering drums and disks, a series of weighted or gravitating frames, a series of ratchet-frames, and arms attached to said gravitating frames supporting a detent to engage said ratcheted frames, substantially as described.

37. In a cash register and indicator, a series of key-bars having depending projections, a series of independent registering drums and disks, a series of weighted or gravitating frames, and a series of ratchet-frames having automatic devices for preventing the keys from being operated to cause a double or false registration, substantially as described.

38. In a cash register and indicator, a series of key-bars having depending projections, a series of independent registering-drums, and a series of automatically-operating devices to prevent a double operation of said key-bars and obviate a double registration when a single registration only is required, substantially as described.

39. In a cash register and indicator, a series of key-bars, having depending projections, a series of independent registering drums or cylinders, a series of gravitating frames having arms carrying recessed pawls and a finger, and a series of ratcheted frames with side pins or projections, substantially as described.

40. In a cash register and indicator, a series of key-bars, a series of registering drums or cylinders, a series of gravitating frames having arms carrying pawls with recesses and fingers having lugs to engage said recesses of the pawls, and a series of ratcheted frames with side pins to engage the lugs of the fingers and operate the latter to raise and lower the pawls, substantially as described.

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