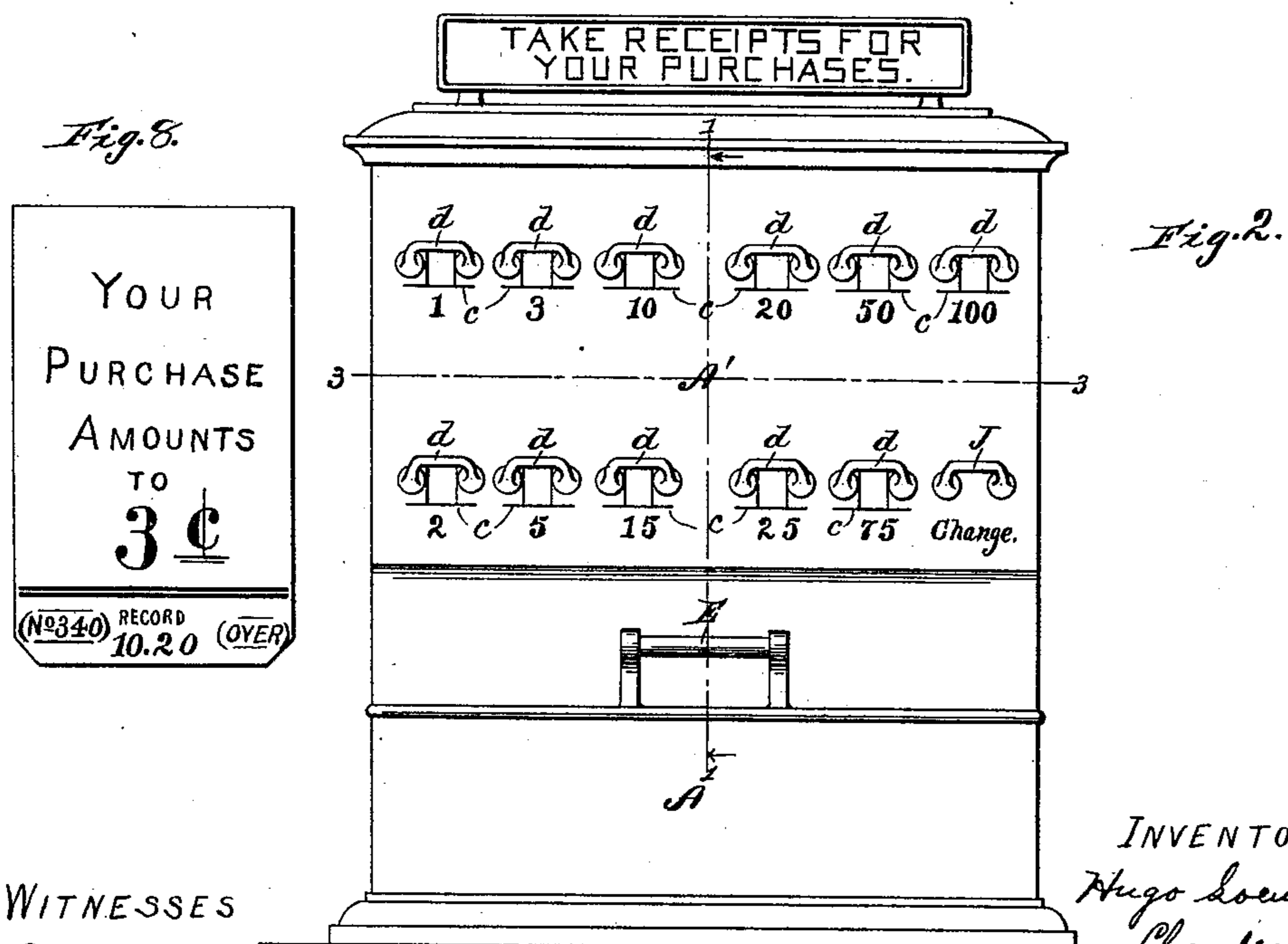
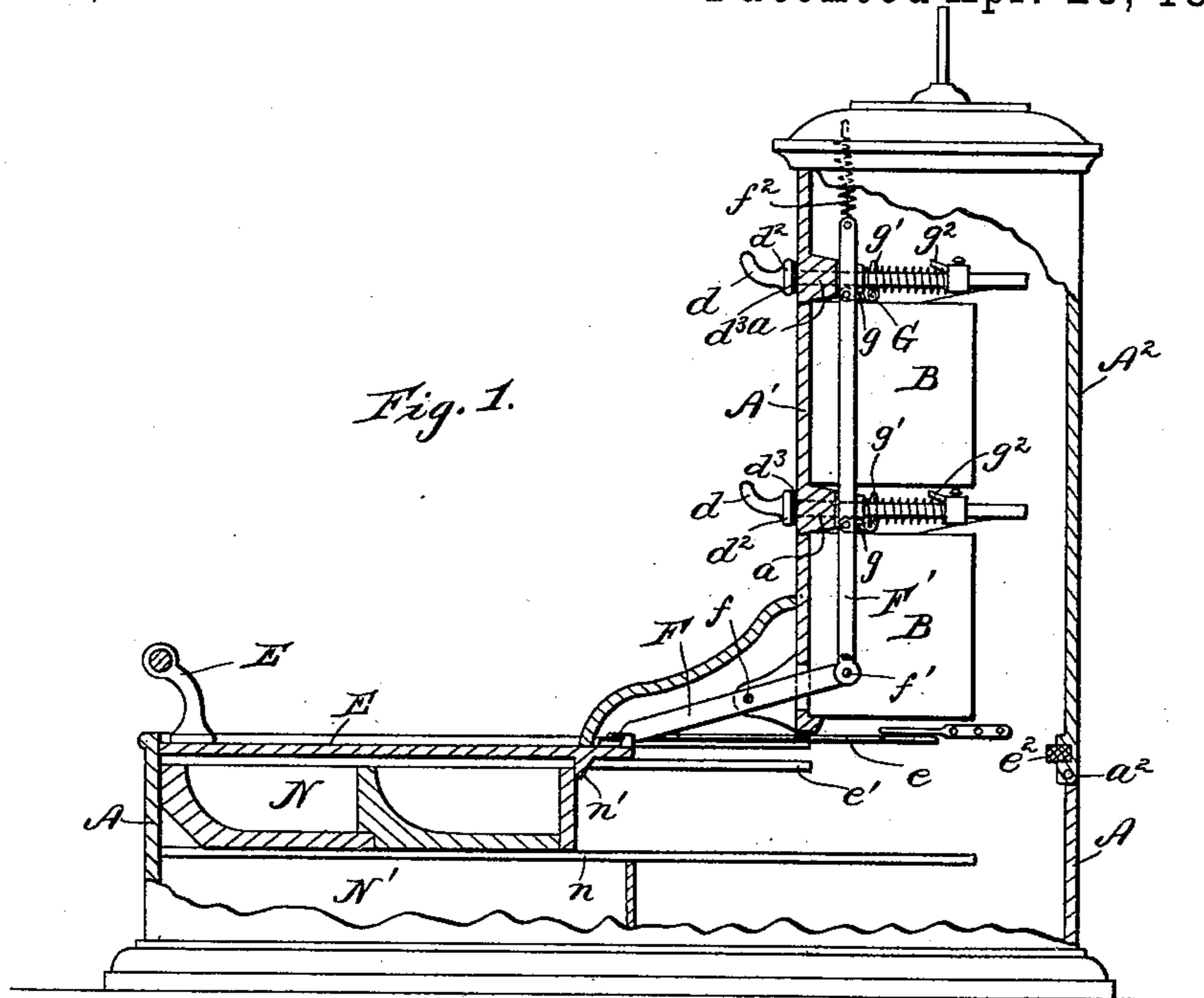


2 Sheets—Sheet 1.

No. 538,171.

Patented Apr. 23, 1895.



WITNESSES

Edward Gos
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INVENTORS,
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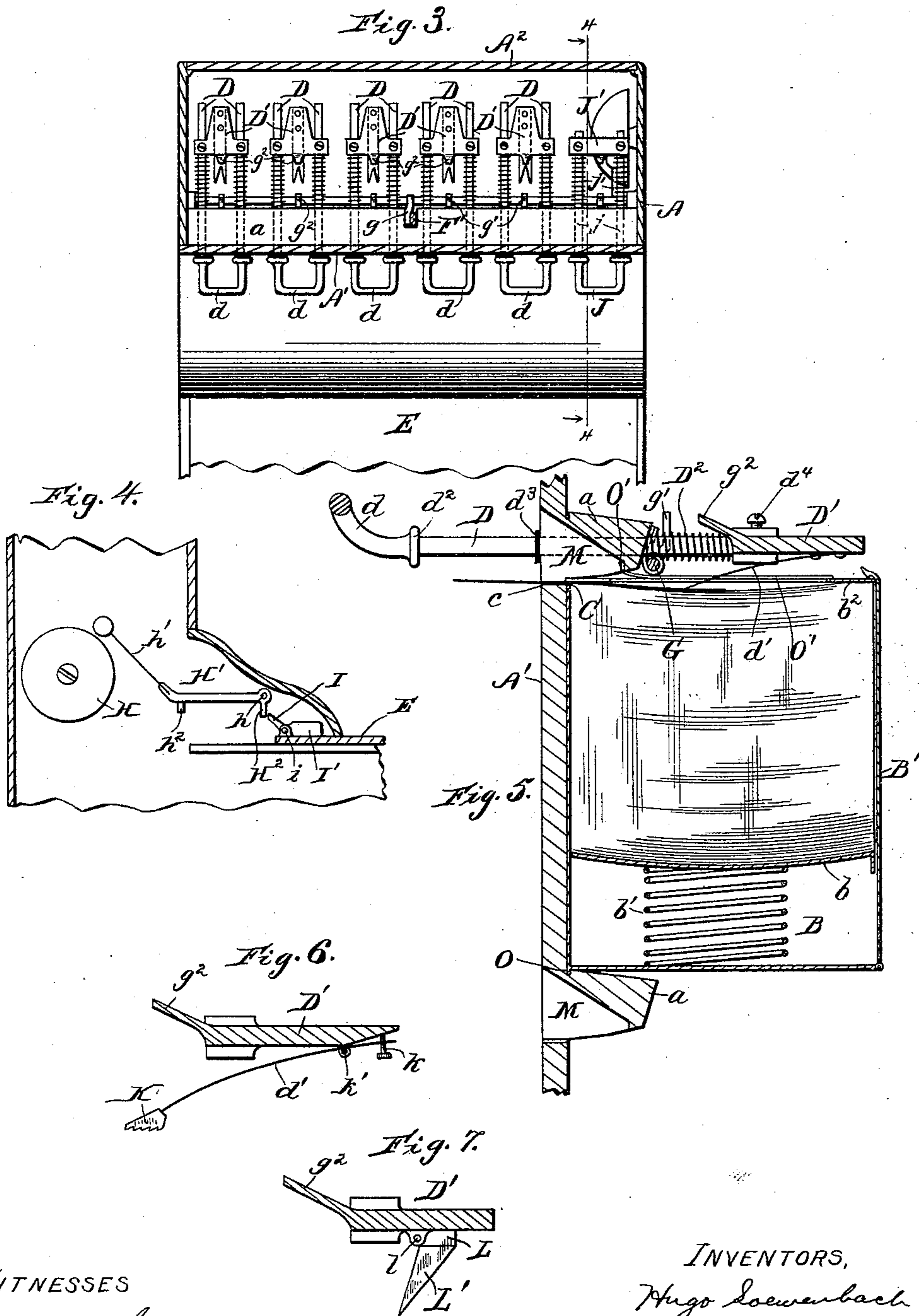
(No Model.)

2 Sheets—Sheet 2.

H. LOEWENBACH & C. FISHER.
CASH REGISTER.

No. 538,171.

Patented Apr. 23, 1895.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE GLOBE REGISTER COMPANY, OF SAME PLACE.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 538,171, dated April 23, 1895.

Application filed August 18, 1893. Serial No. 483,490. (No model.)

To all whom it may concern:

Be it known that we, HUGO LOEWENBACH and CHARLES FISHER, citizens of the United States, residing at Milwaukee, county of Milwaukee, State of Wisconsin, have invented a certain new and useful Improvement in Cash-Registers; and we declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to new and useful improvements in cash and sales registers, and consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings illustrating our invention—Figure 1 is a view partly in side elevation and partly in vertical section on line 1—1 of Fig. 2, of a device constructed in accordance with our invention. Fig. 2 is a front elevation of the same. Fig. 3 is a horizontal sectional view, taken on line 3—3 of Fig. 2. Fig. 4 is a detail vertical sectional view, taken on line 4—4 of Fig. 3. Fig. 5 is an enlarged detail vertical sectional view of one of the receptacles for sales slips or tickets. Fig. 6 is a detail view illustrating a somewhat different form of friction device for advancing the sales slips or tickets, and Fig. 7 illustrates still another form. Fig. 8 is a detail view of one of the slips or tickets.

Referring by letter to said drawings, A designates a suitable casing or housing, provided with a horizontally extending base, in which are arranged any convenient form of receptacles for cash, and provided also, with an upwardly extending portion in which are arranged the devices for holding and advancing the sales slips or tickets.

B B designate suitable boxes, each adapted for holding a number of sales slips or tickets, said boxes being conveniently secured to the front plate A' of the casing, between suitable ribs *a a*, upon the inner side of said front wall.

The back B' of each of the boxes or receptacles B, is suitably hinged to said box, in such a manner as to permit the box to be readily

opened for the insertion of a series of slips or tickets.

A movable plate *b* is fitted within the box B, and arranged to support the series of slips or tickets, said movable plate being arranged to rest upon the upper side of a suitable spring *b'* upon the bottom of the box, which serves to constantly exert an upward pressure upon the series of slips or tickets.

The upper end of the box B is provided with a marginal inwardly extending flange *b²*, against which the upper one of the series of slips or tickets is pressed, and in the front side of the box, immediately below the level of said flange is provided a horizontal slot C, which is arranged to register with a similar slot *c* in the front plate A' of the casing, so as to enable a suitable friction device to engage with the upper surface of the top one of the slips or tickets in the series, and push said slip or ticket forward through the slot C, and the slot *c*, so as to cause it to project beyond the front of the casing, said slots being of just sufficient size for the removal of a single ticket. For this purpose, any desired form of friction device may be employed, but in practice we prefer to employ substantially the form of device illustrated in the drawings, in which two parallel rods D D are arranged to slide lengthwise in bearings formed in the ribs *a a*, said rods being connected with a suitable handle *d*, at their front ends, and arranged to extend rearwardly inside of the casing, above the tops of the boxes B B, one pair of said rods being preferably arranged above each box.

Upon the inner ends of each pair of rods D D is mounted a suitable device for advancing the slips or tickets contained in the box, and said device conveniently consists of a yoke piece D', to which is secured a downwardly bent spring *d'* arranged to rest at its free end upon the top of the upper slip or ticket in the series.

In the particular form of construction shown in Figs. 1, 3 and 5, the spring *d'* is provided at its forward end with one or more suitable points arranged so as to be forced into the upper side of the slip or ticket, by a forward motion of the yoke, sufficiently to afford a firm

engagement of said spring with said slip or ticket, so that by said forward movement the top slip or ticket will be advanced through the slot in the front of the casing. By this means the operator may, by pulling upon the handle d , operate the friction device so as to advance the top ticket through the slot sufficiently to enable it to be readily grasped and drawn out from the box, when the movable plate b , beneath the series of tickets will be pressed upwardly by the spring b' , so as to bring the next slip or ticket of the series into position for removal through the slot, in like manner.

In order to readily retract the friction device, suitable springs $D^2 D^2$ are conveniently provided upon the rods $D D$ and arranged to bear against the yoke, in the manner shown, so that when the handle d is released, said springs will instantly throw the rods and the parts carried thereby, back to their initial positions. Suitable shoulders $d^2 d^2$ are conveniently provided upon the outer ends of the rods $D D$ to limit the backward motion of said rods by engagement with the front plate A' of the casing, and cushions $d^3 d^3$ are preferably provided between said shoulders and the front plate to prevent noise when the handles $d d$ are released, and permitted to fly back into their normal positions.

The yokes $D' D'$ are secured in position upon their respective pairs of rods $D D$ in any suitable manner, conveniently by means of set screws $d^4 d^4$, and the said yokes may be adjusted to any desired position necessary to give a desired amount of movement to the rods and said yokes before the limit of their forward movement is reached.

In order to insure the accurate feeding of the slips or tickets to the slot C , in the front of the box B , the movable plate b is conveniently made in the manner shown more particularly in Fig. 5, with its front and rear edges bent slightly upward, and its center somewhat depressed, so that the forward edges of the tickets or slips will be bent slightly upward, and thereby more readily directed into the slot.

As many boxes $B B$ may be employed as there are denominations of amounts of which it is desirable to keep a record, the particular device shown in the drawings comprising eleven denominations, ranging from one cent to one dollar, and adapted chiefly for use in recording small sales.

Slips or tickets of each denomination are arranged in the box or compartment bearing the same denomination, and when a sale is made, the handle d , which operates the friction device upon the proper box or compartment, is pulled forward so as to advance the slip or ticket of the desired denomination, which ticket is then drawn out from the slot and may be given to the purchaser as a voucher.

In order that the money drawer or till may

be opened in order to place the amount of the purchase therein or to make change, a suitable device is provided for normally holding the till in its closed or locked position, but is arranged so as to be freed by each operation of any one of the handles $d d$. To this end, a sliding cover E is arranged upon the top of the horizontally extending base of the frame above the till, and a suitable spring e is engaged with said sliding cover, so as to retract the same automatically as soon as it is freed by the locking device.

The particular form of locking device shown in the drawings comprises a suitable latch bar F , pivotally supported at f , in the casing, and adapted for engagement at its forward end with the rear edge of the sliding cover, as shown in Fig. 1. The rear end of the latch bar F is pivotally connected at f' with the lower end of a vertically movable bar F' , and it follows from this construction that a downward movement of said bar F' will serve to raise the forward end of the latch bar F , so as to free the cover E , when the spring e will instantly slide the cover backward within the lower part of the casing, suitable guides e' being arranged in the sides of the casing, between which edges of the cover are arranged to slide, and suitable cushions e^2 being arranged at the back of the casing to receive the impact of the sliding cover, as it is thrown back by the spring.

A suitable spring f^2 is connected with the upper end of the bar F' and with the upper part of the casing, and serves to normally hold said bar in its elevated position. Any suitable connection may be provided between the vertically movable bar F' , and the several pairs of bars $D D$, but in practice, we find it convenient to employ substantially the form of construction illustrated in the drawings, in which one or more transversely arranged shafts or bars $G G$ are arranged in suitable bearings in the upright part of the casing, and operatively connected by means of crank arms $g g$ with the bar F' , each of said transverse shafts or bars being arranged adjacent to the level of the bars $D D$ in one horizontal series. A number of upwardly projecting crank arms $g' g'$ are secured to each bar G , and each one of said crank arms is arranged in the path of a projecting finger g^2 upon the front end of one of the yokes D' , as many of said crank arms $g' g'$ being provided as there are pairs of bars $D D$ or handles $d d$. These shafts $G G$ with their respective crank arms are adjusted so that the forward movement of any one of the handles will bring the finger g^2 upon the yoke carried thereby, into engagement with one of the crank arms g' , thereby operating to rock the shaft G , and depress the forward end of the crank arm g , and thus serving to depress the bar F' , so as to free the cover of the till.

As a further and separate improvement, we prefer to provide a suitable audible signal or

alarm adapted for operation each time that the sliding cover of the till is retracted, and for this purpose we find it convenient to secure a suitable bell H, at a convenient point within the casing adapted for operation by a suitable hammer upon an arm H', which is pivotally supported within the casing at h, and is preferably provided, at its free end, with a flexible spring h', to the free end of which the hammer is secured. A depending arm H² projects downward from the pivoted end of the arm H', and into line with a pivoted dog, I, which is supported in a suitable support i upon the rear edge of the sliding cover, and is provided at its forward end with a weight I' for normally holding the nose of the dog in an elevated position, as more particularly illustrated in Fig. 4 of the drawings.

Beneath the arm H' is preferably arranged a suitable stop h² for engagement with said arm, just before the hammer touches the bell, said stop serving to hold the arm and the hammer normally in the position indicated in Fig. 4.

It follows from this construction that when the cover E of the till is released for any purpose whatever, the backward movement of the cover will cause the nose of the dog I to engage with the crank arm H² so as to lift the free end of the arm H' in an obvious manner, and as the backward movement of the cover carries the dog out of engagement with said crank arm, the arm H' together with the hammer will be permitted to drop so as to tap the bell. By reason of the engagement of the arm H' with the stop h², just before the hammer strikes the bell, the spring h' is caused to bend slightly with the weight of the hammer, and then returns to its normal position after the bell has been struck, thereby effecting a single stroke of the bell.

When the cover E is returned to its closed position, the dog I will pass beneath the crank arm H², the nose of the dog being slightly depressed thereby, and as soon as the nose of said dog is free to rise in front of the crank arm, the weight I' will operate to again elevate the nose of the dog into position for engagement with the crank arm.

In order to enable the till to be opened for the purpose of making change, when it is not desired to deposit the amount of a purchase therein, we prefer to provide at any convenient point in the front of the casing, a handle J, preferably of the same construction as the handles d d, and provided with rods or bars j j arranged to project through the front wall of the casing, in like manner to the rods D D, and carrying upon their inner ends, a yoke J', which is arranged to engage with one of the crank arms g' on one of the transverse shafts G, by a forward movement of said handle, suitable springs j' j' being arranged to normally hold said handle in its retracted position. By the operation of this handle, therefore, the till may be opened, and change made when desired, without the necessity of

extracting a sales slip or ticket from any one of the compartments or boxes.

If desired, in place of the particular form of spring device for advancing the sales slips or tickets, which is shown in Figs. 1, 3, and 5, in which the spring engages directly with the upper surface of the slip or ticket, the form of friction device shown in Fig. 6 may be employed, in which a suitably shaped tip K of rubber or other suitable material is provided upon the end of the spring and adapted for engagement with the top of the upper slip or ticket of the series, in an obvious manner. If desired, also, any suitable device may be employed for regulating the tension of the spring d', as for instance, as shown in Fig. 6, a suitable set screw k passed through the rear end of the spring and arranged to bear against the yoke D', said spring being movably supported upon the under side of the yoke, as at k'. So, also, if desired, the friction device illustrated in Fig. 7 might be employed for advancing the slips or tickets in which a suitable block L is pivoted to the yoke at l, and a triangular block L' of rubber or analogous material is secured to said block L and arranged to engage with the top of the uppermost one of the slips or tickets in the box or compartment.

As a further and separate improvement, in order to prevent any liability of the forward corners of the slips or tickets being caught in the slot C, in the front of the box, the said corners are conveniently cut away in the manner shown in Fig. 8 of the drawings, so as to cause the central part of the forward edge of each ticket to be projected through the slot, before the sides of the ticket come into engagement therewith.

An aperture M is provided in the front plate A', immediately above each one of the boxes B B, said aperture being so arranged as to expose to view the forward edge of the top one of the slips or tickets in said box or compartment.

In preparing the slips or tickets for use, a certain predetermined number of slips or tickets of each denomination is printed with the denomination of the ticket, and any desired wording connected therewith, and the series of tickets are either numbered consecutively from one up to a desired number, say five hundred, or said tickets are printed with the consecutive multiples of the denomination of the tickets, or both.

When the tickets are arranged in the box, they are preferably arranged with the ticket or slip bearing the highest numeral or the highest multiple of its denomination at the top of the series, although if desired, this order may be reversed.

When a sale of a given denomination is made, the appropriate handle d is operated in the manner described, so as to advance the uppermost one of the slips or tickets of the desired denomination, the movement of said handle operating to automatically open the

till, and the movement of the cover of the till serving to operate the bell or other signal, in the manner described.

In case that the sale is of an amount not designated by any particular denomination of slip or ticket, more than one handle may, of course, be operated and more than one slip or ticket removed, until the sum total of the denominations of the slips or tickets equals the amount of the sale.

At the close of a day's business, in order to ascertain the amount of cash which should be in the till, it is only necessary to note the amount printed upon the forward edge of the top one of the tickets in each box, which amount is the multiple of the denomination of the ticket by the number of the ticket in the series. For instance, in the particular example illustrated in Fig. 8, the amount printed upon the edge of the ticket is \$10.20, the denomination of the ticket being 3c. and the serial number of the ticket being 340. Now if the entire number of tickets in the series is five hundred, and the tickets are numbered consecutively from 1 to 500, with the highest denomination at the top of the pile of slips or tickets, it will be seen that the amount printed upon the uppermost ticket designates the sum total of all the tickets remaining in the box, at any time, and it is only necessary to deduct this amount from the multiple of the denomination of the tickets by the whole number in the series, to ascertain the amount of the sales of this particular denomination. Thus, if the multiple of the denomination 3c. is \$10.20, and three hundred and forty tickets remain in the box at the end of the day's business, it shows that one hundred and sixty tickets of this particular denomination have been removed, and that the sales represented thereby amount to \$4.80.

In keeping account of the sales from day to day, it is only necessary to preserve a record of the amounts which appear upon the uppermost one of the tickets and to deduct from each of said amounts the amount appearing upon the uppermost ticket of the same denomination, at the end of the next succeeding day's business. Of course if the order of the tickets be reversed, the amount appearing upon the uppermost ticket at the preceding day's sale must be deducted from the amount appearing at the end of a day's business, to find the amount of the sales.

As a further and separate improvement, we prefer to construct the till of upper and lower sections, N and N', the former being arranged to slide upon suitable supporting ribs *n*, within the bottom of the casing, when the cover is retracted so as to expose the lower section of the till. The upper section is preferably provided with a number of receptacles for coins, while the lower section N' is arranged to hold the bills.

A transverse rib *n'* is provided on the under side of the cover and arranged to engage

with the rear end of the upper section N, of the till, so that when the cover is closed, the upper section of the till will always be brought forward to its normal position, so as to be accessible when the cover is retracted by the spring.

As a matter of convenience, the boxes B B are provided at their lower front edges, with flanges or ears O adapted for engagement with grooves or notches in the upper sides of the transverse ribs *a a*, and upon their upper sides are provided with suitable spring O' arranged to spring upwardly into engagement with suitable shoulders in the under sides of the ribs in the manner shown in Fig. 5, so as to detachably secure the boxes in position.

When all the slips or tickets have been removed from a box or compartment, the back B' may be opened, in an obvious manner, and the box or compartment refilled with slips or tickets of the proper denomination, and in order to enable the boxes or compartments to be easily reached, the back A² of the casing, is preferably hinged as at *a*² and secured in its closed position, in any desired manner.

Our improved apparatus affords a very effectual means of keeping a record of all sales of whatever denomination, and with very little labor on the part of the user, the exact amount of the sales and of cash which should be in the till may be ascertained.

Our improved apparatus is furthermore very simple, strong and durable in its construction, and contains no parts liable to get out of order.

While we have shown our improved device as provided with two tiers or rows of receptacles for slips or tickets, ranging in denominations from one cent to one dollar, yet we wish to have it understood that any desired number of rows or tiers and any desired number of compartments for slips or tickets of any other desired denominations may be employed without departure from our original invention.

By having it understood that the slips or tickets are to serve as vouchers to the purchaser, or by placing a slight premium upon said slips or tickets, an additional check may be afforded upon the cashier or salesman, to prevent the liability of his issuing vouchers of a wrong denomination, and placing any other than the proper amounts in the till.

As shown in the drawings, a suitable handle E' is provided upon the cover E for returning said cover to its closed position, after each operation of the machine.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. A cash register comprising a suitable casing, one or more receptacles for sales slips or tickets located within the casing, and each arranged to hold a series of slips or tickets a suitable slot or aperture in the casing adjacent to the upper end of each of said receptacles, suitable means for holding said series

of slips or tickets, in position to permit the removal of the uppermost slip or ticket through the said slot or aperture, horizontally movable bars extending through the front wall of the casing, above each receptacle, and carrying a spring arm extending obliquely downward and forward and adapted for engagement with the face of the uppermost slip or ticket and for operating to advance said uppermost slip or ticket through said slot or aperture, substantially as described.

2. The combination with a suitable casing and one or more compartments for sales slips or tickets, of longitudinally movable bars or rods located above each of said compartments a spring engaging with the inner ends of said rods or bars and extending obliquely downward and forward, and adapted for engagement with the upper surface of the uppermost slip or ticket in said compartment, for advancing the same, and suitable adjusting mechanism for regulating the downward pressure of said spring, substantially as described.

3. The combination with a suitable casing and one or more compartments for sales slips or tickets, of longitudinally movable rods or bars located above each of said compartments, a spring engaging with the inner ends of said rods or bars and extending obliquely downward and forward, and a shoe of rubber or analogous material secured to the free end of said spring, and adapted for engagement with the upper surface of the uppermost slip or ticket in said compartment, for advancing the same, substantially as described.

4. A cash register comprising a suitable casing provided with a money drawer or till, having a movable spring actuated cover, one or more suitable receptacles located within the casing, and each adapted to hold a series of sales slips or tickets, a suitable slot or opening in the casing adjacent to each of said receptacles, a friction device movably supported in the casing, and arranged to engage with the face of the uppermost slip or ticket operating to advance said uppermost slip or ticket of the series through said slot or aperture, a bar pivotally supported within the casing, and adapted for engagement with the rear edge of said till cover, for normally holding the same closed, and a suitable device connected with said pivoted bar, and adapted for operation by the movement of said friction device, to free said cover simultaneously with the advancement of a slip or ticket, substantially as described.

5. A cash register comprising a suitable casing, a money drawer or till located therein, and provided with a sliding spring retracted cover, one or more receptacles, each adapted for holding a series of sales slips or tickets, a suitable slot or aperture in the casing, adjacent to each of said receptacles, for the removal of said slips or tickets, a friction device movably supported in the casing and arranged to engage with the face of the uppermost slip or ticket and adapted for operation to advance the same

to said slot, a bar pivotally supported within the casing and adapted for engagement with the rear edge of the till cover, for normally holding the same closed, an upwardly extending rod operatively connected with said bar, and adapted for operation by each of the friction devices to move said bar so as to free said cover, and an audible signal adapted for operation by a movement of said cover, substantially as described.

6. In a cash register, a receptacle for sales slips or tickets, provided at its top with a horizontal slot or aperture of sufficient size for the withdrawal of a single slip or ticket, a spring supported plate within said receptacle for holding a series of tickets in position to permit the removal of the uppermost slip or ticket of the series said plate being made concave upon its upper side, and a suitable friction device movably supported above said receptacle and arranged to engage with the face of said uppermost slip or ticket and adapted for operation to advance said slip or ticket through said slot, substantially as described.

7. In a cash register the combination with a suitable casing of a receptacle for sales slips or tickets, provided in its upper part with a slot for the removal of a single slip or ticket at a time, the front wall of the casing being also provided with a slot registering with the slot in said receptacle for permitting the removal of a single slip or ticket, and a suitable friction device for engagement with the faces of said slips or tickets for advancing the same through said slot or aperture, one at a time, and a spring-supported plate made concave upon its upper side, and arranged to support said slips or tickets in position for engagement by said friction device, substantially as described.

8. A cash register comprising a suitable casing, a plurality of receptacles within said casing each adapted for holding a series of slips or tickets of a given denomination, a slot in the upper front part of each of said receptacles, slots in the front wall of the casing arranged to register with said slots in the receptacles, and of sufficient size to permit of the removal of a single slip or ticket, independent friction devices movably supported in the casing above said receptacles, and provided with handles extending to the outside of the casing, each of said friction devices comprising a downwardly and forwardly extending spring arranged to engage with the face of the uppermost slip or ticket within the respective receptacles to advance the same through said slots upon a movement of the handle, substantially as described.

9. A cash register comprising a suitable casing a money drawer or till in the lower part of the same, provided with a sliding spring retracted cover, a locking device for normally holding said cover closed, an upwardly extending bar or rod operatively connected with and adapted to free said locking device, a plurality of receptacles each adapted to hold a

series of slips or tickets, independent friction devices located adjacent to said receptacles, and each arranged to engage the faces of and adapted for operation to advance the slips or tickets in the respective receptacles, one at a time, and a transverse rock-shaft operatively engaged with said rod or bar, and adapted for engagement by each of said friction devices to actuate said vertically disposed rod or bar by a movement of any one of the friction devices, so as to free the locking device and permit the till cover to be retracted simultaneously with the removal of a slip or ticket of any denomination, substantially as described.

10. In a cash register the combination with a suitable casing of a money drawer or till, located in the lower part of the casing, and provided with a sliding spring retracted cover, a locking device for normally holding said cover closed, a vertically extending rod or bar adapted for operation to free said locking device, a transverse rock shaft journaled in the casing and operatively connected with said vertical rod or bar, a plurality of independent receptacles, each adapted to hold a series of sales slips or tickets of a given denomination, said casing being provided with horizontal slots adjacent to the several receptacles, each of sufficient size to permit the removal of a single slip or ticket at a time, independent friction devices located adjacent to the several receptacles, and each arranged to engage with the face of and adapted for operation to advance a single slip or ticket through the slot, one at a time, suitable means upon each friction device for engagement with the rock shaft to free the till cover, upon the operation of any one of said friction devices, and an independent handle carrying a suitable device for similar engagement with said rock shaft to free the till cover, independently of the friction devices, substantially as described.

11. In a cash register, the combination with a suitable casing, a plurality of receptacles or compartments for sales slips or tickets, and a money drawer or till having a spring-retracted cover, of a suitable locking device for normally

engaging with said cover to hold it closed, a vertical rod or bar operatively connected with said locking device, a transverse rock-shaft provided with crank-arms, and a plurality of friction devices for engagement with the uppermost slips or tickets in the respective compartments, and each adapted to be brought into engagement with one of said crank-arms, as it is actuated to advance a slip or ticket, substantially as described.

12. In a cash register, the combination with a suitable casing, a plurality of receptacles or compartments for sales slips or tickets, and a money drawer or till having a spring-retracted cover, of a suitable locking device for normally engaging with said cover to hold it closed, a vertical rod or bar operatively connected with said locking device, a transverse rock-shaft provided with crank-arms, and a plurality of friction devices for engagement with the uppermost slips or tickets in the respective compartments, and each provided with a projecting finger adapted for engagement with one of said crank-arms when the friction device is actuated to advance a slip or ticket, substantially as described.

13. In a cash register, the combination with a plurality of receptacles for sales slips or tickets and friction devices for advancing the same, one at a time, of the front wall provided with horizontal slots for the extraction of said slips or tickets, and with transverse ledges or ribs extending along the inner face of said wall above said receptacles and provided with oblique openings communicating with the central portions of said horizontal slots and arranged so as to expose the forward edge of the uppermost slip or ticket in each compartment, substantially as described.

In testimony whereof we sign this specification in the presence of two witnesses.

HUGO LOEWENBACH.
CHARLES FISHER.

Witnesses:

JOHN E. WILES,
E. W. STRUT.