No. 698,629. Patented Apr. 29, 1902.

L. J. BURDICK.

REGISTERING MECHANISM.

(Application filed Feb. 25, 1901.)

(No Model.) 2 Sheets—Sheet 1.

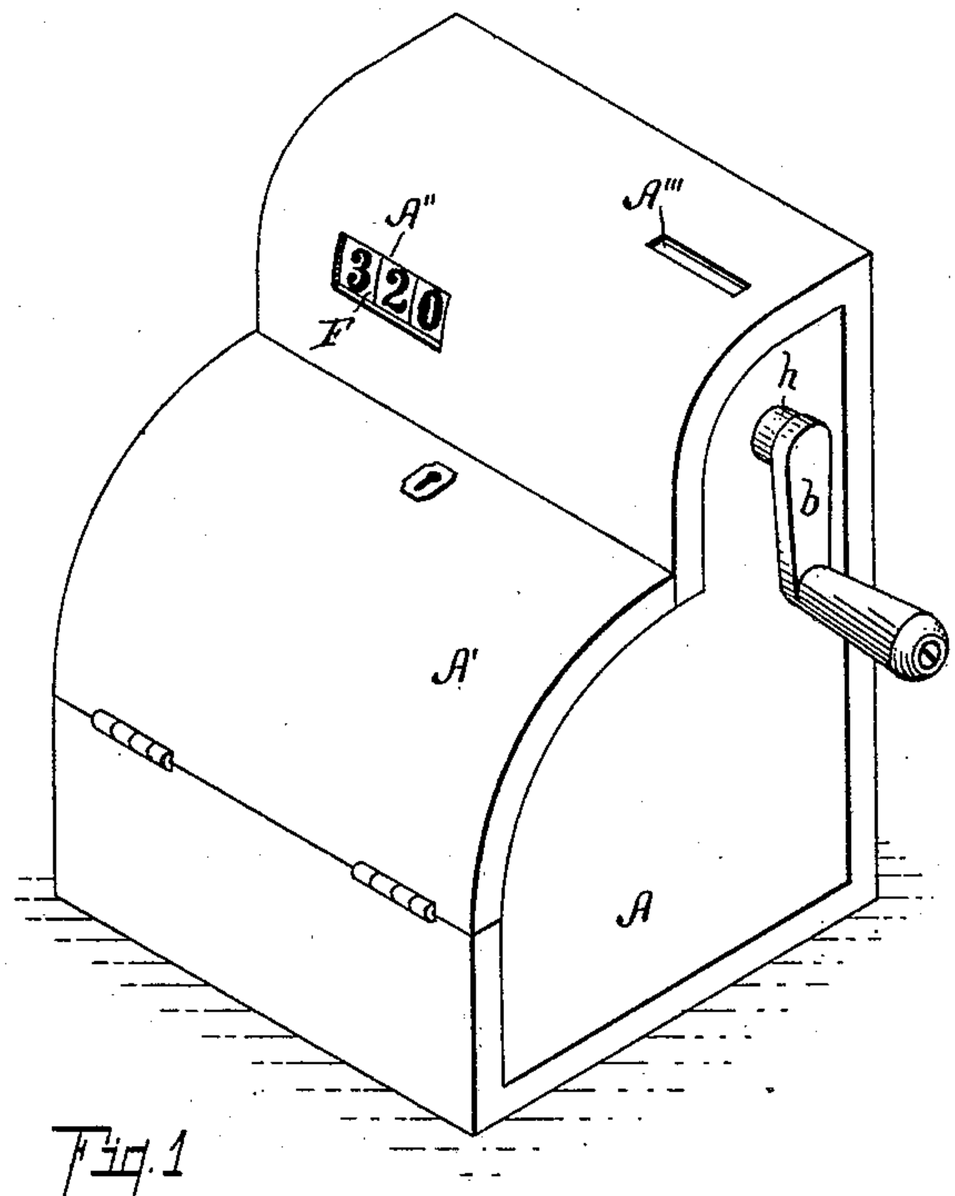

Fig. 1

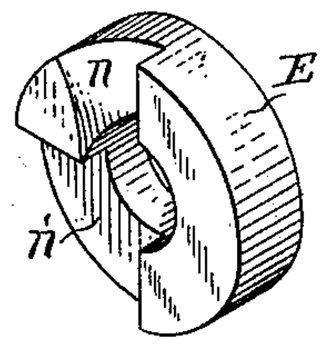

Fig. 11

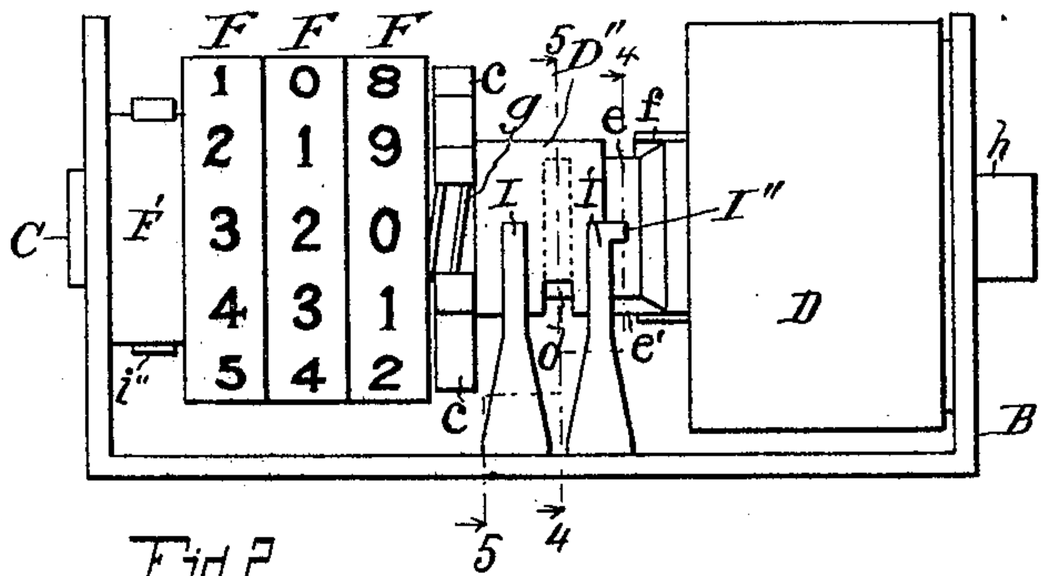

Fig. 2

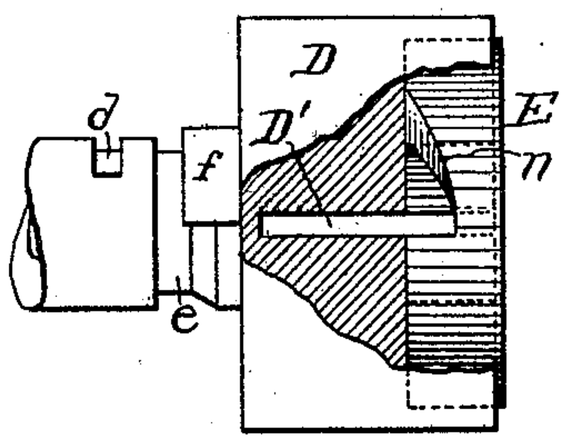

Fig. 10

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No. 698,629. Patented Apr. 29, 1902.

L. J. BURDICK.

REGISTERING MECHANISM.

(Application filed Feb. 25, 1901.)

(No Model.) 2 Sheets—Sheet 2.

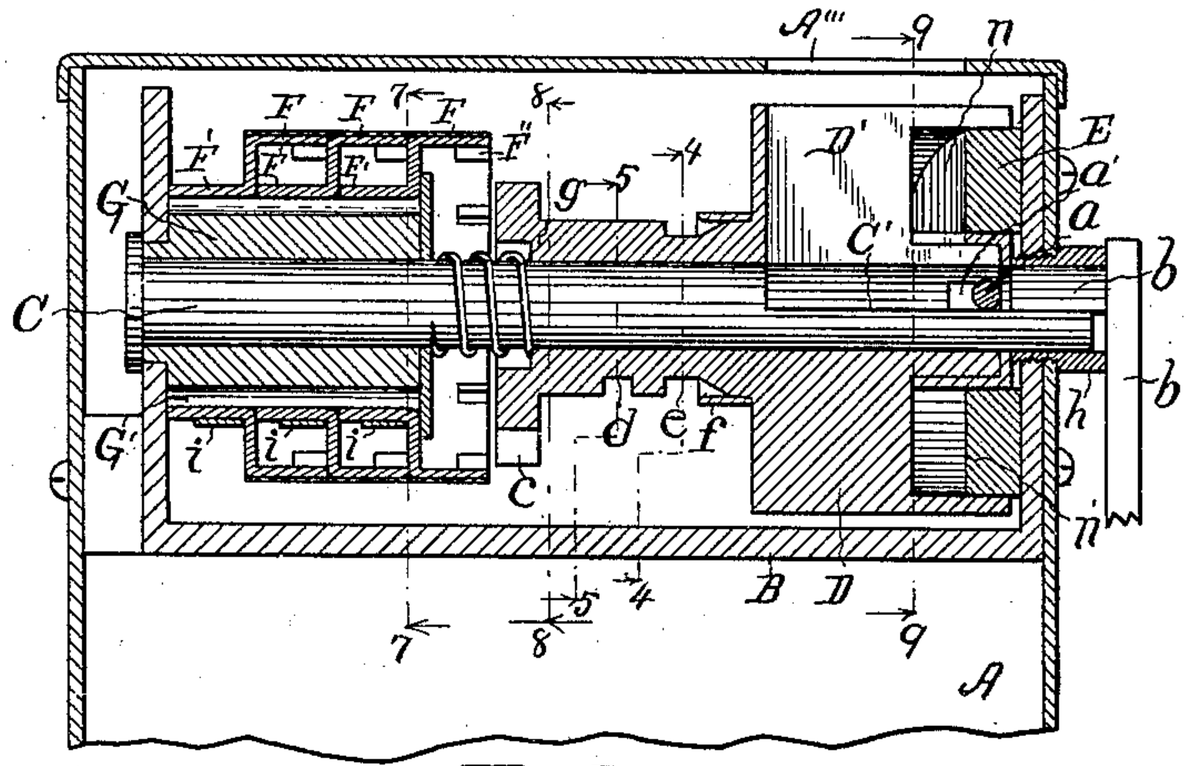

Fig. 3

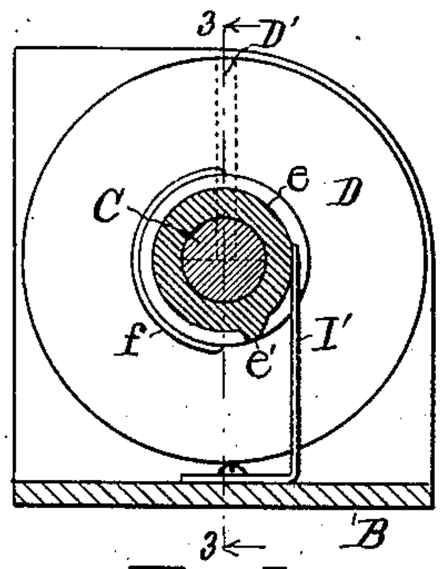

Fig. 4

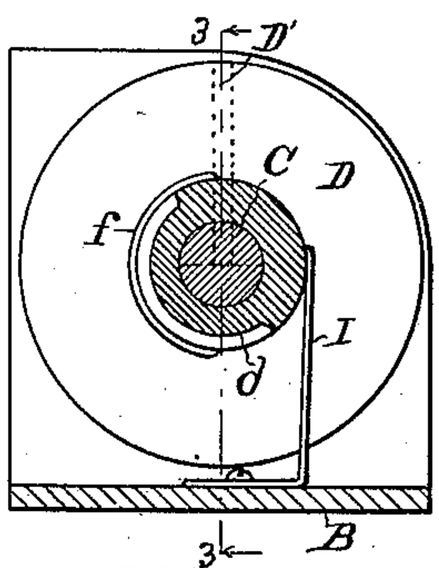

Fig. 5

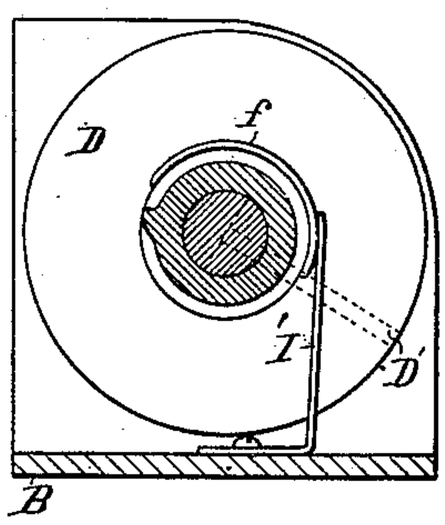

Fig. 6

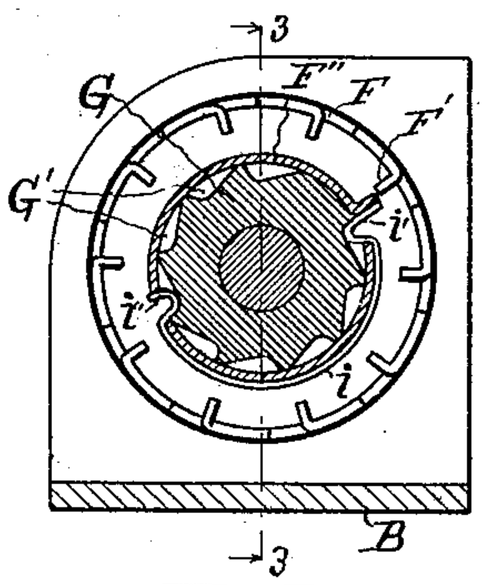

Fig. 7

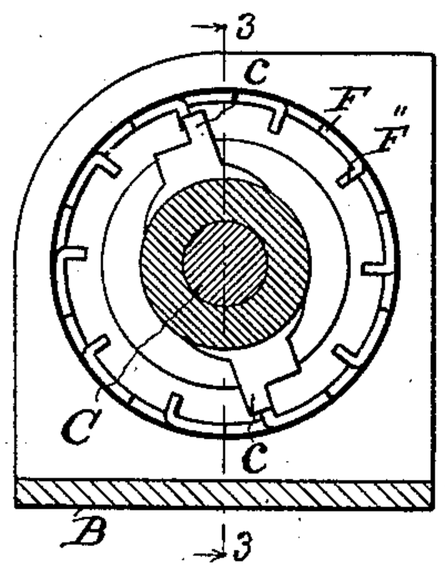

Fig. 8

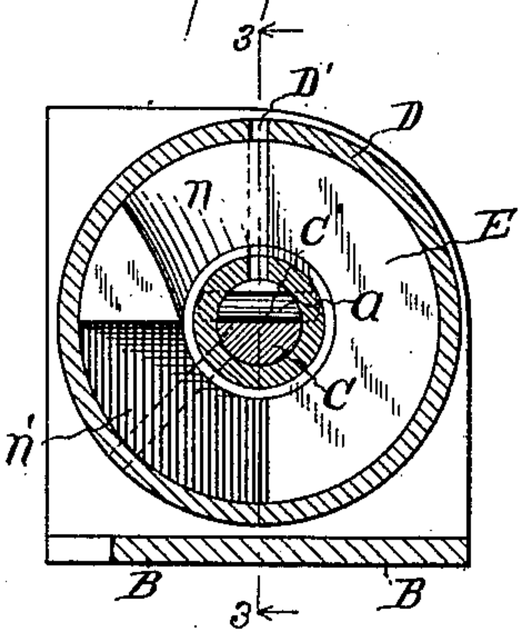

Fig. 9

Witnesses:

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Inventor,

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By Fred L. Chappell

Atty.

UNITED STATES PATENT OFFICE.

LEO J. BURDICK, OF STURGIS, MICHIGAN.

REGISTERING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 698,629, dated April 29, 1902.

Application filed February 25, 1901. Serial No. 48,731. (No model.)

To all whom it may concern:

Be it known that I, LEO J. BURDICK, a citizen of the United States, residing at the village of Sturgis, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Registering Mechanism, of which the following is a specification.

This invention relates to improvements in registering mechanism. It is here shown adapted and designed for use in connection with a money-bank, and it is desired to claim it in this connection as well as generally. The register itself is adapted to a great variety of uses and automatically registers the value of any coin introduced into or passed through the same, it being adapted to accomplish such registration owing to the differences in size of different coins for which the particular register is adapted.

The objects of this invention are to provide an improved register mechanism which shall automatically register the value of any coin introduced into the same; second, to provide in a register mechanism improved means of actuating the same whereby the introduction of a coin will automatically adjust and set the parts for the registration of the value of the coin.

The invention has for further objects details of construction of the register mechanism pertaining to the guides, to the crank mechanism therefor, and to an improved mechanism and arrangement of parts whereby the results are simply and effectively accomplished.

Other and further objects will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A money-bank with a registering mechanism embodying the features of my invention in their most approved form is fully and clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a money-bank incasing my improved register mechanism. Fig. 2 is a side elevation of the register mechanism removed from the bank or casing. Fig. 3 is a vertical longitudinal detail sectional elevation through my improved register mechanism and its inclosing casing, taken on a line corresponding to lines 3 3 of Figs. 4, 5, 7, 8, and 9. Fig. 4 is a transverse detail sectional elevation taken on the irregular line 4 4 of Fig. 3. Fig. 5 is a detail transverse sectional elevation taken on the irregular sectional line 5 5 of Fig. 3. Fig. 6 is a detail transverse sectional elevation, taken on same line as Fig. 4, showing the parts in a different adjustment. Fig. 7 is a detail transverse sectional elevation taken on line 7 7 of Fig. 3. Fig. 8 is a detail transverse sectional elevation taken on line 8 8 of Fig. 3. Fig. 9 is a detail transverse sectional elevation taken on line 9 9 of Fig. 3. Fig. 10 is a detail view of the lettered parts D E and their appendages, portions being broken away to show the details of construction. Fig. 11 is a detail perspective view of the lettered part E containing the cam over which the coins pass in moving and actuating the register mechanism.

In the drawings similar letters of reference refer to similar parts throughout the several views.

All of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines.

Referring to the lettered parts of the drawings, A is the external casing forming the money-bank, which is provided with a hinged cover A′, provided with a suitable lock. The upper part of the case is conformed to receive the register mechanism itself, being provided with a window A″ for the appearance of the numbers of the register within. A slot A‴ is provided in the top for the introduction of coins, and the slot in the register within is located so that it passes beneath this slot in the case.

Within the case A is supported the frame B, which carries the entire registering mechanism, it being suitably supported by screws in the ends thereof. The left-hand end is provided with a series of number-wheels F, supported on a cam-shaft G and provided with transfer mechanism substantially like that appearing in my former patent, No. 588,727, dated August 24, 1897. I have provided, how-

ever, an improved form of combined spring and transfer-tooth, the same clearly appearing in Fig. 7 at *i*, one end of which, *i'*, is adapted to serve the purpose of the transfer-tooth being turned in to enter the cams in the shaft and the opposite end of which is turned in to enter the cams in the shaft, but does not project out to the rim to form a tooth. The wheel F at the right-hand end projects beyond the end of the shaft G and is retained on the shaft by a thin washer or disk. The shaft G, which is fixed, is hollow, and extending through the same is a second shaft C, which is provided with a suitable head at the left-hand end and extends entirely through the register mechanism and out at the right-hand end of the case and frame. For a considerable distance at the right-hand end of the shaft one-half of the same is cut away, and a crank *b*, with a half-shaft *b'* for a shank, fits into the round opening at the end and engages the shaft C to rotate the same. On the right-hand end of the frame is secured a cam-plate E, by suitable screws, the left-hand surface of which is shaped into a cam at *n* and the under portion is cut away at *n'*, as clearly appears in Figs. 3, 9, 10, and 11.

Arranged upon the shaft C and adapted to revolve therewith is a suitable head or body D. Slot D' is cut within the same of sufficient size to receive freely the largest coin intended to be registered by the mechanism. This coin can be inserted when the slot D' comes opposite the slot A''' of the outer case, which introduces the coin at the bottom or beginning of the cam of the fixed plate E. When the coin is so introduced and the head D is rotated, the coin comes into contact with the cam *n*, which, owing to the fact that the coin is confined in the slot, carries the head D to the left against the pressure of spring *g*, which is located on shaft between the head and the register at the left. The body D is tubular or sleeve-like toward the left at D'', and a wheel-like portion is on the left-hand end, having dogs *c*, which are carried into the rim of the wheel F and engages the inwardly-projecting teeth F'' and serve to actuate this lowest wheel of the register mechanism so long as it is held into engagement therewith. By the engagement of suitable grooves in the sleeve portion D'' by fingers on the casing and the disengagement of the same this head is retained for a predetermined period and then allowed to return toward the right and disengage from the number-wheel of the register. This is accomplished by the following means: On the sleeve portion D'', I provide a number of grooves and guides *d e*. I provide spring-fingers I I', secured to the casing B, to engage within these guiding grooves or slots *d e* to retain the same in the operative position for the required periods for effecting the proper registration for the coin introduced. The fingers I I' are peculiarly constructed to effect their purpose. The finger I' has a lateral projection toward the right at its upper end. A collar *f* projects through and partially covers the guiding-groove *e*. This collar is provided with a notch *f'*, the purpose of which will hereinafter appear. The right-hand finger I' is provided with a lateral projection at its upper end I''. The groove extends practically around the reduced or sleeve portion D''. The groove *d* extends partially around the sleeve portion D''. It will be noted that a dime is of lesser diameter than a cent and that a five-cent piece is of larger diameter than either one cent or one dime.

The register illustrated is intended to register only dimes, nickels, and cents. When one cent is introduced into the slot D' and the crank *b* is rotated, the coin is carried against the cam *n*, which carries the head D toward the left. This movement is facilitated by the little antifriction-roller *a*, extending transversely through a slot *a'* between the parts of the shaft C C'. This roller also serves to connect the body D to the shaft. This carries the sleeve portion D'' also toward the left to such a distance that the projection I'' extends beyond the entrance to the groove *e* and passes up on the outside of the little collar *f*. This prevents the finger I' descending into the groove *e*, and as it is only necessary that the number-wheel F should be engaged for a single step of its movement this is accomplished while the coin is passing in contact with the cam *n*. As soon as the coin is discharged the sleeve D'' returns toward the right, and in this instance disengages the dogs *c* and permits the completion of the rotation of the part D to the initial position for the reception of the next coin. When a five-cent piece is introduced, the part D, with the sleeve D'', is moved to the left to such an extent that the finger I drops into the groove *d*. The finger I'' passes up onto the collar *f*, as before. The finger I engages within the groove *d* for a half-rotation, when it passes out of the groove and releases the sleeve D'' and permits the spring *g* to throw the part D back to the right again, disengaging the dogs *c* from the number-wheel F. As the number-wheel has been by this means turned one-half way over and as there are ten numbers on its periphery the five cents has been thus properly registered. When a dime is introduced into the slot, it will of course move the part D toward the left a much smaller distance than either of the other coins. The notch *f'* in the collar *f* is of sufficient depth to allow the projection I'' on the finger I' to pass. This permits the finger to drop into the groove *e* which groove extends substantially the entire distance around the sleeve, so that when a dime is inserted and the crank is turned over the dogs *c* will engage the number-wheel and cause it to make an entire revolution when the crank is turned twice over, thus registering the full amount ten cents. When the revolution is completed, the finger is lifted out of the groove *d* by the raised portion *e'* and permits the part D' to be released and

returned to the right-hand position, ready for the next registration. In each instance after the coins have passed up the cam-surface *n* and the appropriate fingers have engaged in the guides the coin is discharged through the fact that a portion of the plate E beyond the cam is entirely cut away, as at *n'*, thus permitting the coin to be discharged, so that as each coin is introduced and has performed its registration it drops within the casing A, which in this instance is a money-bank, but which may be any suitable casing or receptacle desired. From this description it will be readily understood how my improved register mechanism operates.

I desire to state that while I have shown the structure of my improved register mechanism in its most approved form that its details can be very greatly varied without departing from my invention. I think it would not be possible to illustrate the different variations, because they are so many. It would be clear to any mechanic that it mattered not whether the dogs engaged the number-wheels inside or outside or upon their faces or whether that engagement was effected directly or by intermediate means. Any number device could be employed. A skilled mechanic would also readily understand that a great variety of guides and fingers could be employed with suitable cams for disengaging same at appropriate intervals to effect different registrations. It is shown that a single finger can be utilized to effect the registration of two different coins, and the same finger might effect by appropriate grooves or guides the registration of all the different coins, although I prefer to use a plurality of fingers, as it enables a wider distribution of the guiding-grooves on the sleeves, and consequently does not require so fine or accurate workmanship. I desire to state, further, that different sizes of coins might be made use of in connection with cams or slides and stops to compel the proper engagement of a register for the required period to secure their proper registration and that this could be accomplished without the addition of fingers and guiding-grooves or other engaging and guiding mechanism in that connection. I also desire to state that I prefer to have the one means supplement the other, as I believe it is most effective and satisfactory. The use of a movable part and a cam-surface in connection to cause the coin to actuate the register mechanism or any other mechanism is a very desirable feature. For operating this device rapidly for the registration of quantities of coin a suitable hopper or feed device can be provided; but as this is intended, primarily, for a money-bank no such means will be necessary or required in this connection. Such means would only be necessary where this register is made use of as a counter for small coins, in which instance no case or receptacle need be provided in connection.

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

1. In a register mechanism for coins the combination of a suitable casing containing a slot for the introduction of coins; a register within said casing, supported on a suitable shaft supported in a suitable framework, having its lower number-wheel provided with teeth; a cam-plate; a shaft through said plate; a body with a sleeve-like extension supported suitably on said shaft and connected to rotate therewith, containing a longitudinal slot to receive coins; and the said sleeve part containing guiding-grooves; fingers secured to the said framework and adapted to engage said grooves and hold the sleeve in a given position through a predetermined part of its rotation; a spring to return said sleeve to the normal position; and dogs carried by said sleeve to engage the number-wheels when they are moved into engagement by the introduction of a coin and rotated by suitable means, as specified.

2. In a register mechanism for coins the combination of a register, supported on a suitable shaft supported in a suitable framework, having its lower number-wheel provided with teeth; a cam-plate; a shaft through said plate; a body with a sleeve-like extension supported suitably on said shaft and connected to rotate therewith, containing a longitudinal slot to receive coins; and the said sleeve part containing guiding-grooves; fingers secured to the said framework and adapted to engage said grooves and hold the sleeve in a given position through a predetermined part of its rotation; a spring to return said sleeve to the normal position; and dogs carried by said sleeve to engage the number-wheels when they are moved into engagement by the introduction of a coin and rotated by suitable means, as specified.

3. In a register mechanism the combination of a suitable register; a cam-plate; a movable part adjacent to said cam-plate containing a recess to receive a coin; engaging means actuated by said movable part to actuate the register when a coin is introduced; a guiding means to engage said movable part when it is actuated by a coin and hold it in engagement with the register, a predetermined portion of its movement to register the value of the coin, coacting as specified.

4. In a register mechanism the combination of a suitable register; a cam-plate; a movable part adjacent to said cam-plate containing a recess to receive a coin; engaging means actuated by said movable part to actuate the register when a coin is introduced; and means to hold it in engagement with the register, a predetermined portion of its movement to register the value of the coin, coacting as specified.

5. In a register mechanism the combination of a register; a relatively fixed part and movable part; a recess between the two for the reception of a coin; actuating means on the

movable part for the register; guides for the movable part to hold it in actuating connection with the register for periods predetermined by the size of the coin to be registered to register the values of the coins.

6. In a register mechanism the combination of a register; a relatively fixed part and movable part; a recess between the two for the reception of a coin; actuating means on the movable part for actuating the register for periods predetermined by the size of the coin to be registered to register the values of the coins.

7. In a register mechanism the combination of a register; a central shaft therethrough; a sliding sleeve thereon containing the guiding-grooves *d e*, and collar *f* with slot *f'* therein; fingers I and I' to engage said grooves; means of actuating said shaft to force it lengthwise and rotate it whereby different degrees of movement of the register are secured, coacting as specified.

8. In a register mechanism the combination of a register; a central shaft therethrough; a sliding sleeve thereon containing the guiding-groove *e* and collar *f* with slot *f'* therein; finger I' with projection I'' thereon to engage said grooves; means of actuating said shaft to force it lengthwise and rotate it whereby the different movements are secured, coacting as specified.

9. In a register mechanism the combination of a register; an engaging part therefor; a cam-plate E having cam *n* and recess *n'*; a movable part D opposite containing slot D' to receive coins and carry them against the cam-plate whereby the part is actuated a varying predetermined amount to register the coin.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

LEO J. BURDICK. [L. S.]

Witnesses:
J. H. MACDONALD,
J. D. BARNETT.