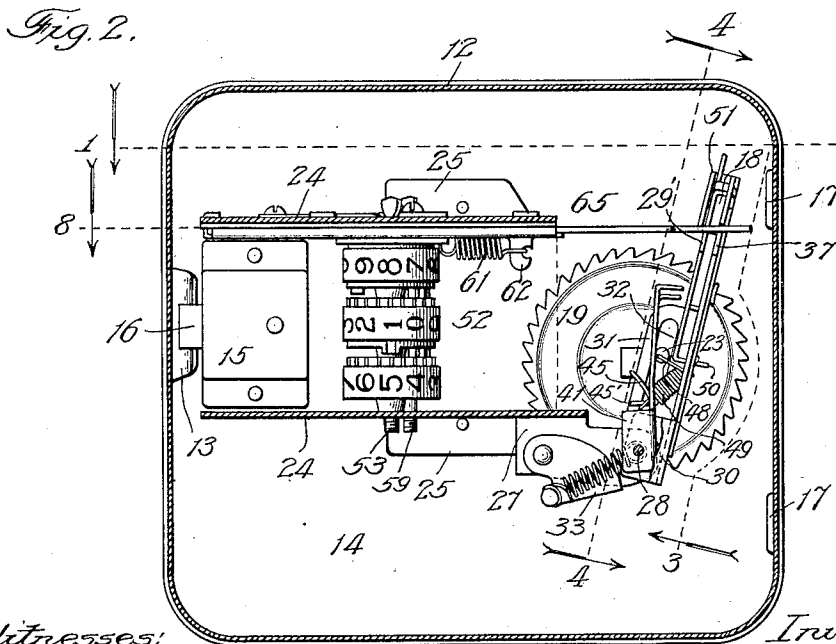
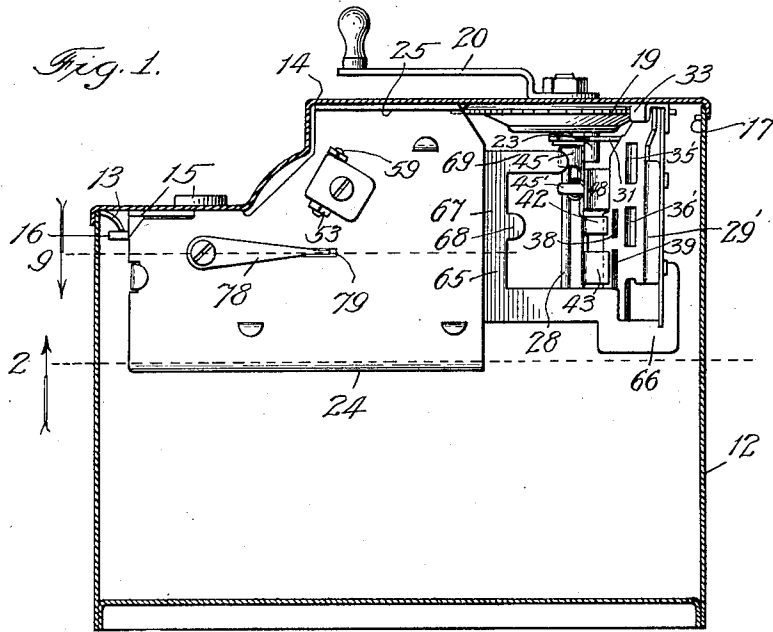


E. E. MATSON.
 REGISTERING SAVINGS BANK.
 APPLICATION FILED AUG. 28, 1911.

1,015,762.

Patented Jan. 23, 1912.

3 SHEETS—SHEET 1.



Witnesses:

Chas. H. Buell
 Ralph A. Schaefer

Inventor:

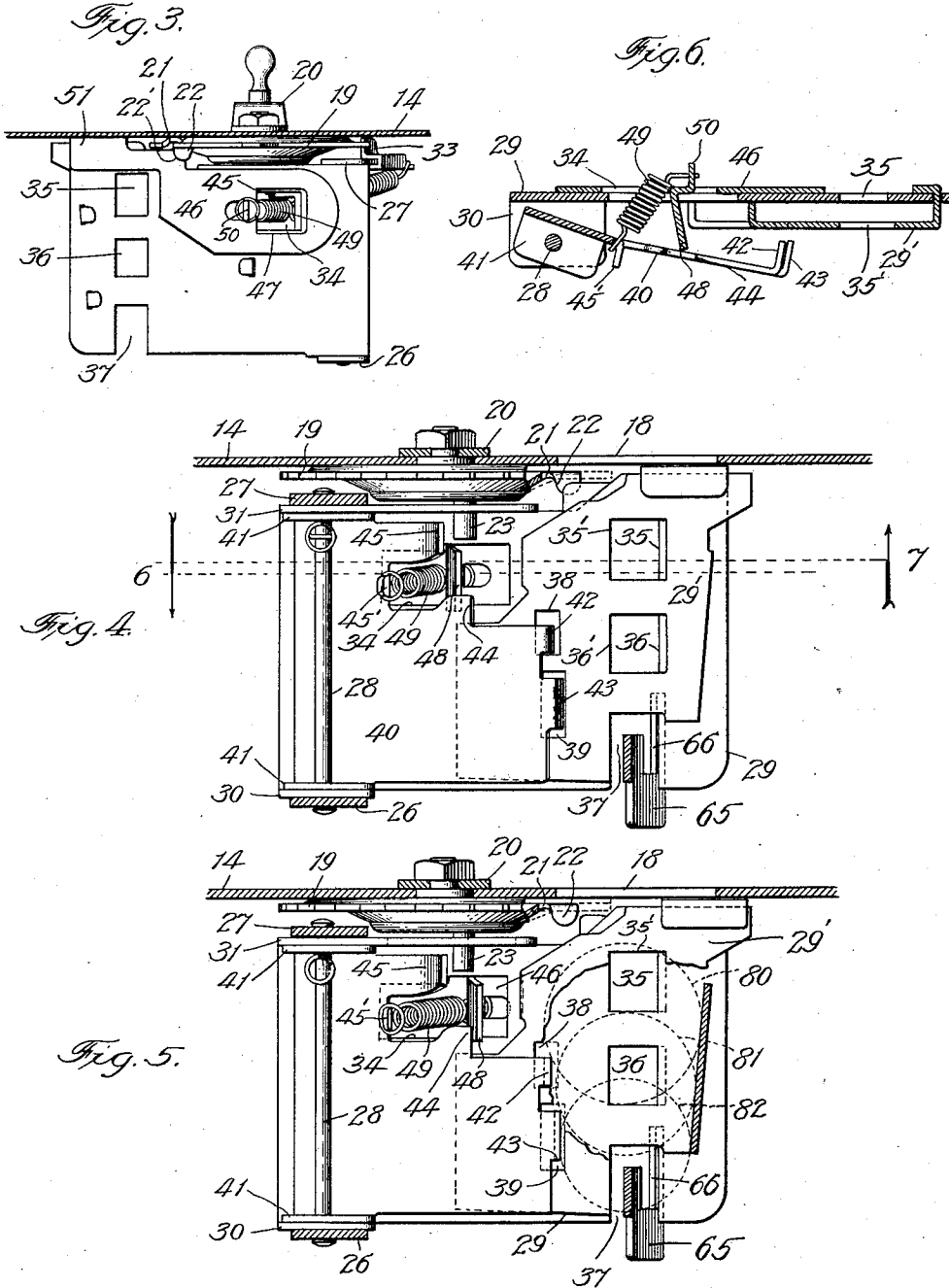
Edward E. Matson,
 By Devenport, Lee, Carter & Wiles,
 Attys. +

E. E. MATSON:
 REGISTERING SAVINGS BANK.
 APPLICATION FILED AUG. 28, 1911.

1,015,762.

Patented Jan. 23, 1912.

3 SHEETS—SHEET 2.



Witnesses:

Chas. H. Buell.
 Ralph A. Schaefer

Inventor:

Edward E. Matson,
 By Dyrenforth, Lee, Huston & Wilson,
 Attys.

E. E. MATSON.
 REGISTERING SAVINGS BANK.
 APPLICATION FILED AUG. 28, 1911.

1,015,762.

Patented Jan. 23, 1912.

3 SHEETS—SHEET 3.

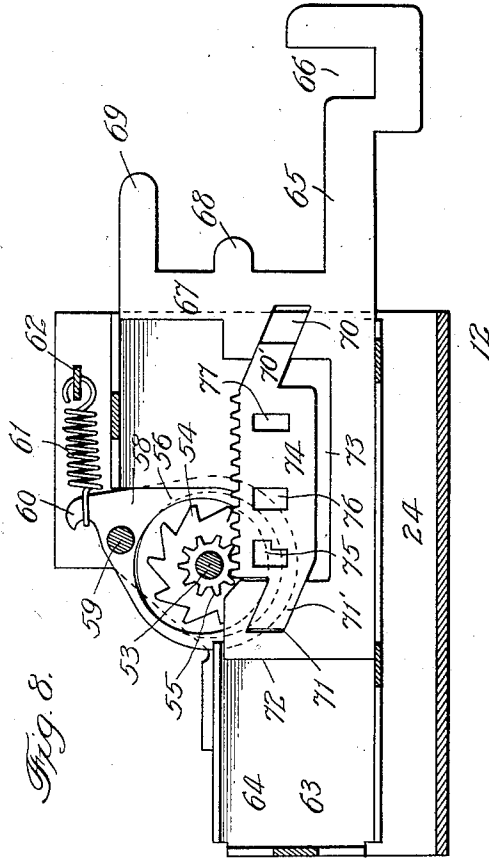


Fig. 8.

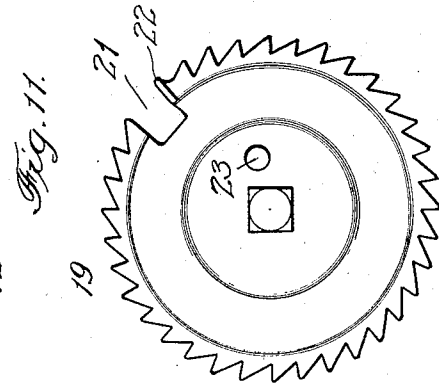


Fig. 11.

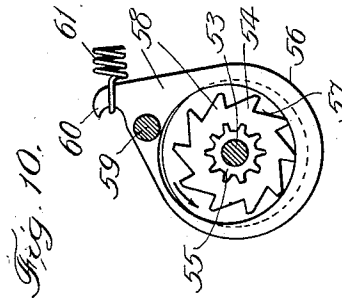


Fig. 10.

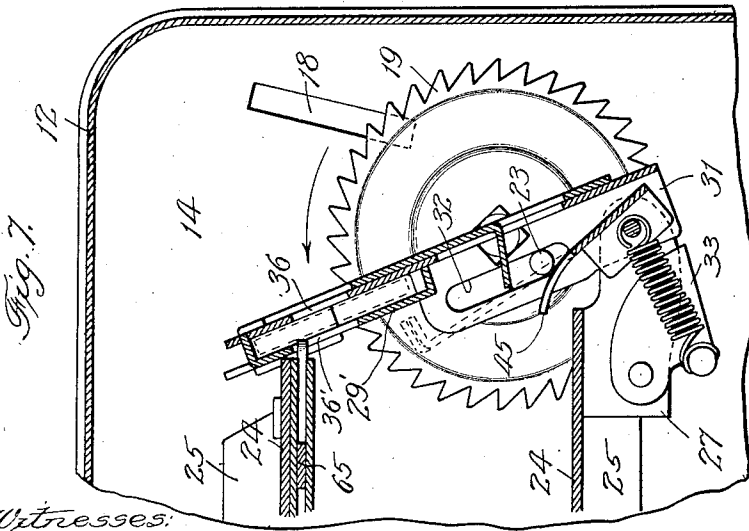


Fig. 7.

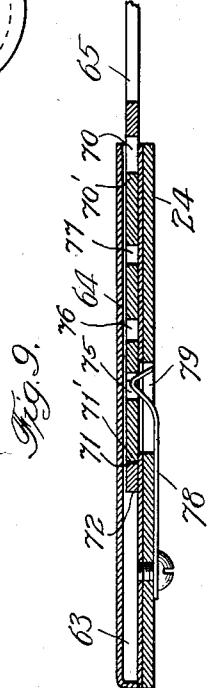


Fig. 9.

Witnesses:
 Chas. H. Bull.
 Ralph A. Schauf

Inventor:
 Edward E. Matson.
 By Dyresfjord, Lee, Chittum & Wiles
 Attys. #

UNITED STATES PATENT OFFICE.

EDWARD E. MATSON, OF MICHIGAN CITY, INDIANA, ASSIGNOR TO THE NATIONAL SELF-REGISTERING BANK CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

REGISTERING SAVINGS-BANK.

1,015,762.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed August 28, 1911. Serial No. 646,508.

To all whom it may concern:

Be it known that I, EDWARD E. MATSON, a citizen of the United States, residing at Michigan City, in the county of Laporte and State of Indiana, have invented a new and useful Improvement in Registering Savings-Banks, of which the following is a specification.

My invention relates to an improvement in the class of portable savings banks wherein the act of depositing each coin operates registering mechanism to show the sum of all coins deposited; and it relates particularly to improvements in the construction of such a bank shown and described in Letters Patent No. 771,117, dated September 27, 1904.

The object of my invention is to simplify the construction disclosed in the aforesaid patent, and especially that of the swinging graduated coin receiving and releasing chute or carrier, the mechanism for operating it, and the mechanism for actuating the registering counter through the medium of an inserted coin, thereby to render the construction mechanically more perfect and the specified features more reliably and accurately operative.

In the accompanying drawings, Figure 1 is a vertical section on line 1, Fig. 2, showing the operating mechanism of the bank in side elevation; Fig. 2 is a section on line 2, Fig. 1, showing the mechanism by a bottom plan view with the parts in normal condition; Fig. 3 is a section on line 3, Fig. 1; Fig. 4 is a section on line 4—4, Fig. 2; Fig. 5 is a similar section with the inner spring-pressed member of the coin-chute broken away, and showing the condition of parts immediately after a coin has been inserted into the chute; Fig. 6 is a section on line 6, Fig. 4; Fig. 7 is a section on line 7, Fig. 4, presenting an enlarged broken view, and showing the condition of parts produced, by a partial turning of the ratchet-wheel, for releasing the coin; Fig. 8 is an enlarged section on line 8, Fig. 2; Fig. 9 is an enlarged section on line 9, Fig. 1; Fig. 10 is an enlarged view in elevation of the ratchet-device for the actuating end of the registering mechanism, and Fig. 11 is a bottom plan view of the operating ratchet-wheel.

As in the case of the device of the aforesaid patent, the present improved construc-

tion is adapted to be operative with coins of penny, nickel and dime denominations.

The box or casing 12, having an inwardly-projecting lip or keeper 13 on its upper forward edge, is provided with a removable cover 14 carrying a key-operated lock 15 in position to adapt its reciprocating bolt 16 to be shot into engagement with the keeper, and inwardly-projecting lugs 17 on its rear end to enter apertures (not shown) provided to receive them in the upper part of the rear wall of the box. The cover carries all of the operating mechanism and contains the coin-insertion slot 18 (Figs. 4 and 5). A ratchet-wheel 19 is journaled on the cover to extend flatwise close to the inner surface thereof, and the journal carries on its outer end a crank-handle 20. The position of the ratchet-wheel relative to the slot 18 is such as to cause it to slightly lap one end of the latter except when a notch 21 in the edge of the wheel registers with the insertion-slot; and from one lateral edge of the notch depends a stop-lip 22 to arrest the wheel, as hereinafter described, accurately at the end of its complete rotation. A stud 23 depends eccentrically from the inner face of the wheel to actuate all of the mechanism by rotating the ratchet-wheel.

For supporting all of the mechanism, except the ratchet-wheel, its operating handle and stud, on the cover, a bracket 24, of rectangular cross-section, formed with a bottom connecting two parallel sides, is rigidly secured, through flanges 25, 25, extending outwardly from the upper edges of the sides, to the inner face of the cover. The bracket-side which is not presented to view in Fig. 1, has projecting from the opposite edge-ports of its end adjacent to the ratchet-wheel, ears 26 and 27, in which a vertical journaling rod 28 is secured at its ends to carry the horizontally swinging coin-chute of the following-described construction: An outer plate 29 is provided on its opposite edges with inwardly-projecting ears 30 and 31, at which it is journaled near one end on the rod 28, the upper ear 31 being extended beyond its pivoted portion and provided in the extension with a horizontal slot 32 in which the eccentric stud 23 works to swing the coin-chute back and forth by rotating the ratchet-wheel in one direction, it being held against reverse turning by a spring-

pressed detent 33 pivoted on the ear 27. Adjacent to the slotted ear 31, the plate 29 contains a slot 34; and in that plate, near its free end, is formed a vertical series of three openings, 35, 36 and 37, shown of rectangular form with the lowermost open at the lower edge of the plate. To the inner face of the plate 29 is secured, to extend flatwise but in spaced relation to it and form the coin-chute passage, a plate 29¹ containing openings 35¹ and 36¹ to register, respectively, with the openings 35 and 36, the lower corner of the plate 29¹ being cut away to render it open where it registers with the opening 37. This plate 29¹ is also provided with two vertically-alining openings 38 and 39 for the coin-arresting purpose hereinafter explained. To coöperate with the chute-forming plates, a mutilated plate 40 is hinged to the rod 28 at ears 41, 41 provided on its upper and lower edges to coincide with the ears 30 and 31. The plate 40 has formed on its free end outwardly-projecting stop-fingers 42 and 43 to register, respectively, with and enter the openings 38 and 39 in the plate 29¹ for extending them across the chute-passage. The plate 40 has also formed on its edge, adjacent to the finger 42, a shoulder 44; on its upper edge, near the ear 41 thereon, an inwardly-curved finger 45; and adjacent to the latter a short inwardly-projecting tongue 45¹. On the outer face of the plate 29 is supported, over the slot 34 therein, a slide-plate 46 having punched in it a slot 47 to register with the slot 34, the section of metal punched out to produce the slot 47 being bent inwardly to form a stop 48 extending normally into the path of the shoulder 44 to withhold the plate 40 against turning to enter the fingers 42 and 43 into the openings 38 and 39; and this slide-plate is held in its normally-retracted position by a spiral spring 49 extending through the slots 47 and 34 and connecting the slide-plate, at a short tongue 50 thereon, with the tongue 45¹ on the plate 40. The free end-portion of the slide-plate is formed as a saddle 51 to embrace and be guided by the upper edges of the plates 29 and 29¹ near the corner of their free ends; and a shoulder 22¹ on the slide-plate behind the saddle 51 affords a stop for the lip 22 on the ratchet-wheel.

In the bracket 24, about midway between its ends, is supported to extend between its sides, a registering device 52, like the adding train shown in the aforesaid patent, consisting of an ordinary form of counter comprising a series of number-bearing wheels, in the present case three, for units, tens and hundreds, respectively, rotatably supported on a shaft 53 and visible through openings in the top 14. The units-wheel carries concentrically on its outer face a ratchet 54

with a pinion 55 upon it. The ratchet is equipped with a spring-detent device consisting of a ring 56 surrounding the ratchet and having a detent-tooth 57 projecting from its inner surface into the path of the ratchet-teeth; the ring having an extension 58 through which it is eccentrically pivoted by a pin 59 to the adjacent side of the bracket 24, and the extension terminating in a hook 60 for connecting the ring by a spiral spring 61 with the bracket-side at 62 (Fig. 8). Thus the counter is held not only against reverse-turning, but the detent-device also firmly prevents it from turning excessively, by inertia, in the opposite direction and renders it accurate in registering with the positive turning thereof by the means provided for operating it of the following-described construction: The side of the bracket 24 adjacent to the pinion 55 carries rigidly on its inner face but spaced therefrom to form an elongated chamber 63 (Fig. 9), a plate 64. In this chamber is reciprocally confined a bar 65 terminating at its outer end in a yoke 66 to straddle the lower edge of the chute-device, and having rising from it, between its ends, a branch-member 67, from between the ends of which projects forwardly a short tappet 68 and similarly from its upper end a relatively-longer tappet 69. In the inner edge of the relatively-wide lower part of the branch 67 is formed an oblique recess 70, and a correspondingly-inclined recess 71 is formed in the opposing edge of an upright member 72 on the inner end of the bar 65. The members 67 and 72 form between them a frame containing a rectangular space 73 to accommodate movably a rack-bar 74 provided on one end with an oblique tongue 70¹ to fit and work in the recess 70 and on its opposite end an oblique tongue 71¹ to fit and work in the recess 71. At suitable intervals apart in the rack-bar are provided openings 75, 76 and 77, into the path of which projects the free end of a spring-detent through a slot 79 in the side of the chamber 63 to which the detent is fastened.

The operation is as follows, starting with the parts in their normal condition: To insert a coin into the slot 18, it must be forced past the stop 22¹ on the slide-plate 46, whereby it moves the latter against the retractive force of the spring 49. This movement of the slide-plate takes the stop-end 22¹ of the yoke 51 away from the lip 22 to free the ratchet-wheel. The shifting of the slide-plate, moreover, withdraws the stop 48 from the shoulder 44 on the spring-pressed plate 40 and permits its spring 49 to turn it on its hinge and introduce the fingers 42 and 43 respectively into the openings 38 and 39 wherein they obstruct the path through the coin-chute. If the inserted coin be a nickel, it will be arrested in the

chute by lodgment against the finger 42, as indicated at 80 in Fig. 5, in which position it will coincide with the tappet 69; if it be a penny, it will be arrested by lodgment against the finger 43 and coincide with the tappet 68, as indicated at 81, and if a dime be inserted, it will drop through the chute and lodge, as indicated at 82, in the yoke 66 which straddles the swinging chute-device at its base, as aforesaid. With a coin thus lodged in the chute, the operator turns the handle to completely rotate the ratchet-wheel 19, when further turning thereof is arrested by engagement of the lip 22 with the stop 22¹. In the rotation of the ratchet-wheel the stud 23 it carries works in the slot 32 to first turn the chute-device on its hinge toward the adjacent end of the bracket 12, this operation being so timed that shortly after the chute-device reaches that position, further turning of the ratchet-wheel turns that device in the opposite direction to its normal position. In the movement of the eccentric stud in the slot 32 when the chute-device attains its innermost position the stud encounters the curved finger 45 and returns the swinging plate 40 to its normal position, thereby withdrawing the fingers 42, 43 and permitting the coin to drop through the chute into the box 12; and the plate is held in that position by the retraction of the sliding plate to its normal position under the action of the spring 49, whereby the shoulder 44 is presented to the stop 48. In thus turning the chute-device inwardly on its hinge, it abuts the coin carried by it against the tappet in its path, thereby moving the bar 65 correspondingly, and in turning outwardly, the chute-device engages the outer end of the yoke 66 to pull the bar back to its normal position. In the inward movement of the bar 65 the abutment of a rack-tooth against a tooth of the pinion 53 causes the resistance presented by the pinion to the movement of the rack to slide the inclined tongues 70 and 71 down the inclined recesses 70¹ and 71¹ and thus depress the rack in the space 73 to take it out of mesh with the pinion. This dropping of the rack takes place instantaneously the moment that a coin encounters the respective tappet to begin the inward movement of the bar 65, which thereupon carries the rack with it to the full extent of the inward stroke of the bar by the abutment of the coin against that tappet. It is at the end of this stroke that, in the further turning of the ratchet-wheel, the stud 23 encounters the curved finger 45 to effect release of the coin, and pending this operation the chute remains stationary against the end of the bracket 24. The detent 78 snaps into the particular hole 75, 76 or 77 which the inward movement of the rack brings into registration with it, and arrests the rack in

proper position to produce by its return-stroke properly accurate turning of the counter to add to the registration the amount represented by the deposited coin. When, under the action of the stud 23 in the slot 32 by the continued turning of the ratchet-wheel, the chute-device is turned outwardly, it encounters the outer arm of the yoke 66 and pulls out the bar 65, while the rack is being held against corresponding longitudinal movement by the detent 78 and is being raised by the action of its inclined tongues in their recesses into mesh with the pinion 55; upon being so raised, instantaneously at the beginning of the outward stroke of the bar 65, the continued movement of the latter causes it to carry with it the rack, which actuates the counter to register the added amount of the deposited coin.

As will be observed, the operation is substantially the same as that of the aforesaid patented construction, from which the present construction differs, more especially, in omitting a cam-disk for actuating the swinging stop-plate of the chute-device, thereby enabling such disk to be dispensed with, simplifying the structure of the chute-device and enabling it to be operated immediately by the stud 23, and thus more positively and reliably; and in the construction of the rack-bar, whereby the registering function of the counter is rendered infallible and accurate.

What I claim as new and desire to secure by Letters Patent is—

1. In a device of the character described, a bodily movable coin-chute having a series of openings through its sides and another opening in its inner side, a spring-pressed plate supported to extend along the inner face of the chute and be movable back and forth relative thereto, said plate carrying a finger to register with and enter said other opening for obstructing the passage through the chute, means for moving the chute, and means for retracting said plate to withdraw said finger and open the chute-passage for the discharge of the deposited coin.

2. In a device of the character described, a coin-chute hinged at one end and having a series of openings through its sides and another series of openings in its inner side, a spring-pressed plate hinged at one end to extend along the inner face of the chute and be moved by and relative to the same, said plate having fingers to register with and enter the openings of said other series for obstructing the passage through the chute at different points therein, means for moving the chute, and means for retracting said plate to withdraw said fingers and open the chute-passage for the discharge of the deposited coin.

3. In a device of the character described, the combination of a slotted ratchet-wheel provided with an operating handle, an eccentric stud and a stop-lip adjacent to the slot, a coin-chute hinged at one end and having a series of openings through its sides and another series of openings in its inner side, a slotted ear on the chute in which said stud works, a spring-pressed plate hinged at one end to extend along the inner face of the chute and be moved by and relative to the same, and provided with fingers on its free end to register with and enter the openings of said other series for obstructing the passage through the chute at different points therein, and with a finger extending in the path of said stud and a shoulder, a spring-retracted slide-plate having a stop to cooperate with said lip and a stop cooperating with said shoulder, and mechanism having tappets of different lengths, appropriate to the coins of different denominations, respectively, adapted to engage the coins in the chute at said series of openings through the same.

4. In a device of the character described, the combination of a movable coin-chute having means for releasably-arresting coins of different denominations at different points, said chute being provided in its sides with openings corresponding with the positions of the coins, respectively, means for moving the chute to and fro, a bar having at one end tappets of different lengths adapted to engage the coins respectively through said openings, a frame on said bar toward its opposite end, having oblique recesses in

its opposing edges, a rack in said frame having oblique end-tongues movably confined in said recesses, and an adding train adapted to be operated by the rack on said bar, for the purpose set forth.

5. In a device of the character described, the combination with a box provided with a cover, of a bracket secured to the under side of the box and provided on one side with an elongated chamber, a coin-chute hinged at one end to an end of said bracket and provided with means for releasably arresting coins of different denominations at different points, said chute being provided in its sides with openings corresponding with the positions of the coins, respectively, means on the box for moving the chute to and fro, a bar reciprocally confined in said chamber and having its outer end connected with said chute and provided with tappets of different lengths adapted to engage the coins respectively through said openings, a frame on said bar toward its opposite end, having oblique recesses in its opposing edges, a rack in said frame having a series of openings and oblique end-tongues movably confined in said recesses, a spring-dent extending into said chamber in the path of said rack-openings, and an adding train adapted to be operated by the rack in the outward movement of said bar, for the purpose set forth.

EDWARD E. MATSON.

In the presence of—

EDWARD A. SQUIER,
CORNELIUS R. COLLINS.