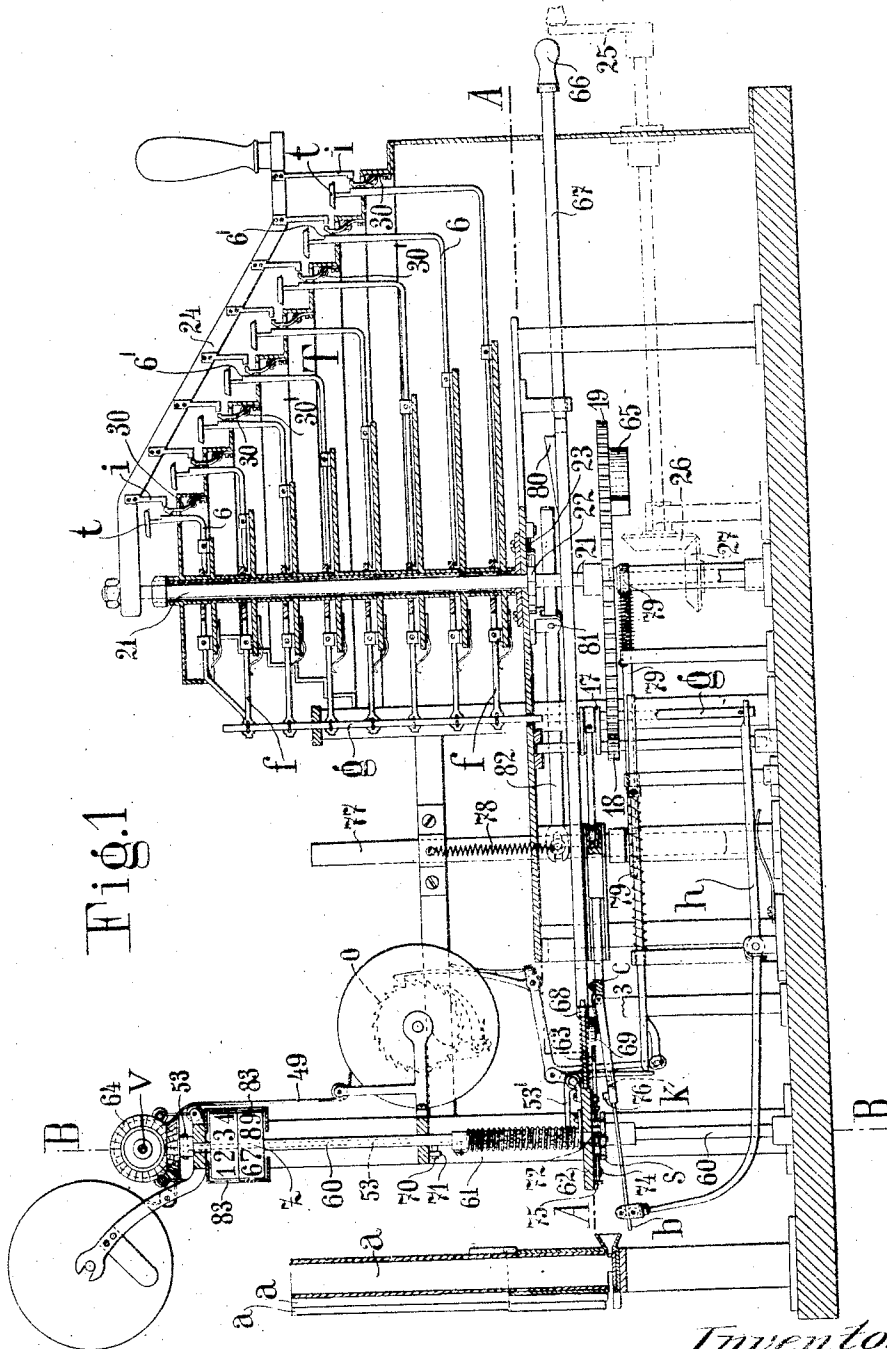


J. PLANECKI & F. DROBNIAK.
CASH ISSUING, INDICATING, AND REGISTERING APPARATUS.
APPLICATION FILED APR. 5, 1910.

Patented Sept. 10, 1912.

3 SHEETS—SHEET 1.

1,038,432.

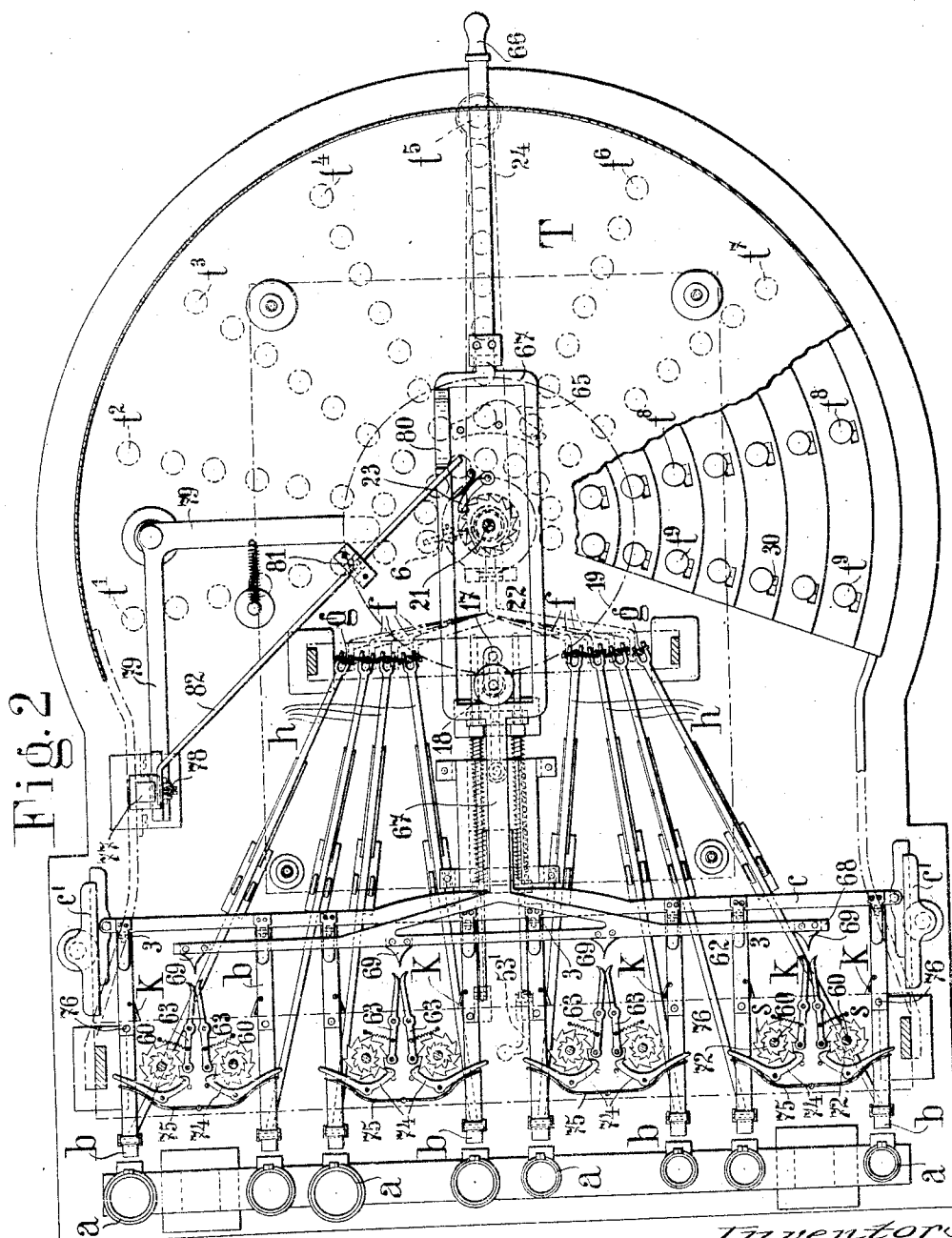


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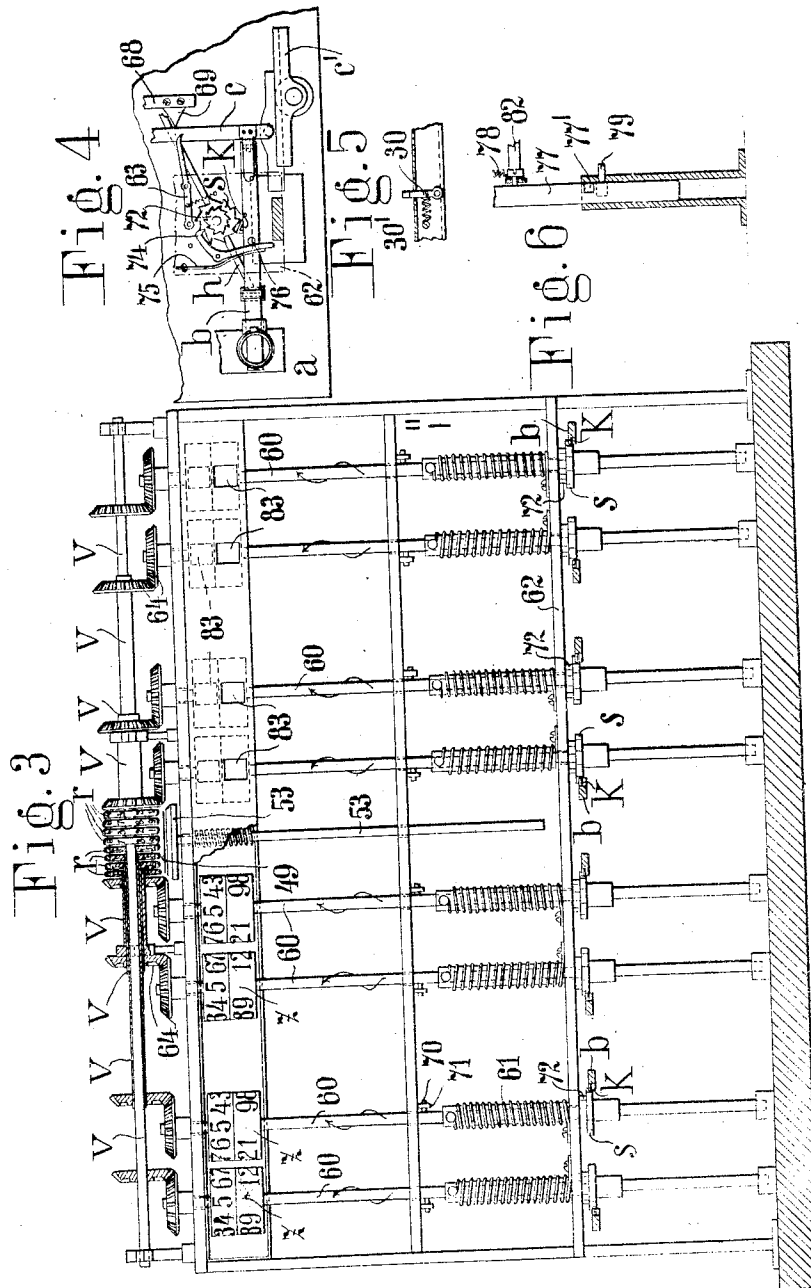
By *[Signature]*
James L. Morris, Jr.
att'y

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3 SHEETS—SHEET 3.

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Witnesses:

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UNITED STATES PATENT OFFICE.

JOHANN PLANECKI, OF KRAKAU, AND FRANZ DROBNIAK, OF JAWISZOWICE, AUSTRIA-HUNGARY.

CASH ISSUING, INDICATING, AND REGISTERING APPARATUS.

1,038,432.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed April 5, 1910. Serial No. 553,627.

To all whom it may concern:

Be it known that we, JOHANN PLANECKI and FRANZ DROBNIAK, subjects of the Emperor of Austria-Hungary, residing the first at Krakau, Galicia, Austria-Hungary, the second at Jawiszowice, Galicia, Austria-Hungary, have invented certain new and useful Improvements in Cash Issuing, Indicating, and Registering Apparatus, of which the following is a specification.

This invention relates to a cash issuing, indicating and registering apparatus in which the coins are piled separately, according to value, in receptacles and are ejected therefrom one by one by means of ejecting slides operated together. The said ejecting slides are normally held in inoperative position and may be set directly by manipulation of keys into a position for causing the coins to be ejected from the respective receptacles, when the said slides are moved to and fro by means of a crank mechanism or the like common to all of them; the slides for the time being in operative position perform a number of to and fro movements corresponding with the number of coins of any particular value to be paid out and then return automatically to the inoperative position; while they are moving in the operative position, the slides set by means of gearing an indicator for making visible the amounts paid out and the type wheels of a printing mechanism, which imprints the amounts paid out and if required any other dates or indications upon a checking strip. An apparatus of this kind is described in U. S. Patent No. 932,973.

The purpose of the present invention is to simplify essentially the whole mechanism, and more especially the devices operating the indicating and printing devices and to insure correct operation thereof, so that the amount paid out always agrees with the sum indicated and printed. For this purpose each of the coin receptacles has apportioned to it an indicating drum and a type wheel operated by the corresponding ejecting slide, so that the devices for adding the amounts of ejected coins of different kinds are dispensed with and all the ratchet gears can be released by a device common to them all, for the purpose of returning the indicating and printing mechanism to the zero position. The ratchet gears are also combined

with locking devices which are moved when the slides have nearly completed their ejecting stroke, so as to lock the ratchet gears. Thus at each stroke of the slides the ratchet wheels are always moved forward only by an equal angular distance say by one division or by one tooth so as to prevent the indicating drums and type wheels from over-running the correct position for indicating and printing the right number which over-running might otherwise occur in consequence of the inertia of the rotating parts. There is also provided a movable stop which, before the key releasing arm that can rotate only in one direction has moved through a complete circle is automatically released and thereby brought into the path of the releasing arm and thus locks the latter in its initial position. The stop is perferably removed from the path of the arm by operation of the device which releases the ratchet gears, so that the arm can then be turned again for another paying out operation.

A cash paying machine having the improvements according to the present invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section. Fig. 2 a plan partly in section on line A—A of Fig. 1 and Fig. 3 a section on line B—B of Fig. 1, the parts behind the section being omitted. Fig. 4 shows a part of the machine in plan, the ejecting slide being in the end position which it has after the coin has been ejected. Figs. 5 and 6 show details of the machine.

The coins to be dealt with are piled separately, according to value, in receptacles *a* and are ejected therefrom by the corresponding slides *b* which are normally held in the lowermost inoperative position (Fig. 1). The said slides *b* are hinged, as at 3, to a common transverse bar *c* sliding in guides *c'* and can be lifted into the operative uppermost position by a keyboard mechanism *T*. The keys *t'*, *t''* . . . *t'''* are arranged step-wise in concentric groups, each group corresponding with one of the coin receptacles. Each key lever *g* of one and the same group operates the transmitting lever *f* belonging to that group and the movement is transmitted by a rod *g* to the corresponding lever *h*, which lifts the corresponding ejecting slide *b* when any key of the group in question is depressed. In order to in-

sure the performance of the said operation the arrangement may be such that all the key levers 6 belonging to one and the same group extend beneath the enlarged end of the transmitting lever *f* belonging to this group as shown in Figs. 1 and 2.

The ejecting slides are all operated together by means of a crank 17 through a connecting rod attached to the bar *c*. This crank is driven by gear wheels 18 and 19 from a vertical shaft 21 carrying at its upper end an arm 24 adapted to turn above the keys in one direction being prevented from turning in the other direction by a pawl 23 engaging in a ratchet wheel 22 on the shaft 21. The arm 24 is, in the present case, provided with a handle, by means of which it can be turned to move the bar *c* to and fro and thus to cause the ejecting slide *b* that happens to have been lifted by depression of a key, to enter the coin receptacle a number of times in succession. However, it may be preferable to move the slides and the arm 24 by a crank 25 through bevel wheels 26, 27 (Fig. 1) and this crank may be driven by hand or electrically or otherwise.

The depressed keys are held in the depressed position by hooked spring levers 30 adapted to be turned laterally against the action of a spring 30' (Fig. 5). As soon as a key *i* is depressed the corresponding hooked lever 30 engages the shoulder 6' of the key lever 6, whereby the latter is held in its operated position. In the operated position the hooked lever is pressed slightly outwardly in a radial direction by means of the shouldered portion of the key lever 6.

The arm 24 is provided with projections *i* which, as the arm moves over the keys, turn aside the hooked levers 30 that are engaging the depressed keys and are pressed outwardly and brought into the traveling path of the corresponding projections *i* when the corresponding keys are depressed, so that the said keys are released and return to normal position, thus allowing the corresponding ejecting slides (*b*) to return to the lowermost inoperative position. The ratio between the wheels 18 and 19 is such that when the arm 24 arrives at a position above or of the radial rows of keys, the slides *b* have performed a number of reciprocating movements corresponding with the number on the keys of this row. The arrival of the arm above a radial row, however, determines the release of all the depressed keys of that row, so that the corresponding ejecting slides having ejected from their respective receptacles a number of coins corresponding with the number on the keys, return to the inoperative lowermost position (Fig. 1) and the further movement of the arm 24 (or crank 17) merely

causes the slides to move idly to and fro under the receptacles.

The apparatus according to the present invention is provided with a device by means of which, for controlling purposes, the number of coins paid out from each individual coin receptacle is made visible and is printed on a checking strip. For this purpose there is provided an indicating drum and type disk for each separate coin receptacle, for the purpose of indicating and printing the number of coins delivered from each receptacle, instead of adding up the amount of the aggregate sum of the coins paid out, as is the case with the apparatus according to U. S. Patent No. 932,973. The devices are as follows: Each of the ejecting slides *b* carries at one side a spring pawl *k* which when the slide is in the raised and operative position is adapted to engage a corresponding ratchet wheel *s*. The latter is keyed to a vertical shaft 60 to which is attached one end of a spring 61, the other end being attached to the stationary plate 62. Each shaft 60 carries a drum *z* on which are two rows of numbers visible through windows 83, one row to the payer and the other to the receiver, so that both may know the number of coins of any one value paid out. At each ejecting movement of a slide when in operative position the corresponding ratchet wheel *s* is rotated by the pawl *k* on the slide through an angle corresponding, for example, to one division of the wheel and the drum *z* is rotated so as to bring the next number into view; the spring 61 is wound up as the ratchet wheel is turned and a detent 63 prevents the return of the ratchet wheel. The rotation of each shaft 60 is transmitted by bevel gearing 64 to a corresponding horizontal shaft *v*, these shafts being, in the present case, arranged in two groups, those of each group being inserted one within the other and connected each with a type wheel *r* arranged in the middle of the machine. Below these adjacent type wheels *r* there is arranged a spring controlled printing stamp 53 adapted for vertically reciprocating movement for the purpose of printing the numbers carried by the type wheels on a strip of paper 49, the type wheels being inked in any known manner. Besides the said numbers which indicate the number of coins of each kind actually paid out, the checking strip may have printed thereupon any other indications or dates.

The stamp 53 may be operated, for example, by a cam 65 on the wheel 19, which, after the releasing arm 24 has passed over the whole keyboard, acts on a connecting lever 53' or the like and raises the stamp to press the paper strip 49 against the type wheels *r*. After the imprinting operation the released stamp 53 is lowered by its

spring, whereupon during the last part of the motion of the releasing arm 24 a device *o* of the usual kind for advancing the paper strip 49 is operated by the cam 65.

5 The indicating and printing mechanism must be returned to zero position when each payment is completed. For this purpose there is provided in the present case, a slide 67 having a handle 66 and connected with a
10 transverse bar 68 carrying wedge shaped projections 69. When the slide 67 is moved inward each projection 69 operates on two adjacent detents 63 to release them from the corresponding ratchet wheels *s*, where-
15 upon the drums *z* and type wheels *r* are returned to their zero position by springs 61. The shafts 60 have pins 70 which strike against fixed stops 71 when the drums and type wheels have arrived at their zero posi-
20 tions.

In order to prevent over-running of the indicating drums and type wheels, beyond one number or type respectively, when actuated by the pawls *k* of the raised ejecting
25 slides *b*, a check wheel 72 having teeth which are reversed relatively to those of wheel *s*, is fixed to each of the latter. The pawls 74 of these check wheels are pivoted to the fixed cross bar 62 and are held normally out of
30 contact with wheels 72 by springs 75. Each ejecting slide carries a pin 76 which when the slide is in the raised position, strikes the corresponding pawl 74 toward the end of the ejecting movement and causes the pawl
35 to engage its check wheel 72 against the action of spring 75, so that the shaft 60 and the parts connected therewith are locked in the proper position (Fig. 4). On the return of the ejecting slide the pawl 74 again
40 returns to the inoperative position.

All the keys *t* of the same unit are arranged in one radial row so that as the releasing arm 24 moves over these radial rows, which are arranged at equal angular
45 distances apart, it passes the unit keys in ascending order. The ejecting slides *b* must have performed exactly one to and fro movement when the releasing arm 24 has arrived at the first radial row of keys (keys *t* with
50 the index "1"); it is therefore necessary to fix the initial or starting point of the movement of the releasing arm 24. For this purpose there is provided at a suitable place a vertically movable stop 77 normally held by
55 a spring 78 in a raised position in which it is in the path of the releasing arm 24. Before the payment operation this stop 77 is held in the depressed position against the action of spring 78 by a bent lever 79 engaged in a
60 notch 77' in the stop; the releasing arm can then pass freely over the rows of keys. Before the releasing arm again arrives at its starting point, the cam 65 strikes one arm of the angle lever 79 so that the other arm is
65 withdrawn from the notch 77' (Fig. 6) in

the stop 77, thus releasing the latter and allowing it to be raised by the spring 78 into the path of the releasing arm 24 which is thus locked in the correct starting place. The stop 77 must be removed from the path
70 of the releasing arm before the next payment operation. The slide 67 that releases the detents 63 may advantageously be employed for this purpose. It is provided with an inclined surface 80 which, as the slide
75 moves inward, acts on a lever 82 pivoted at 81 and linked to the stop 77. This lever depresses the stop 77 against the action of its spring 78 until the lever 79 again engages in the notch 77' and thus locks the stop in
80 the depressed position.

The hereinbefore described mechanism operates in the following manner: After all the keys *t* corresponding with sums to be
85 ejected have been depressed and the corresponding ejecting slides brought into the raised and operative positions, the arm 24 is moved over the keys and releases them by means of the projections *i* so that each slide
90 returns to the inoperative position as soon as it has ejected the number of coins of the same kind corresponding with the number on the key. After the releasing arm 24 has passed over the whole key-board, the stamp
95 53 of the printing mechanism, the type wheels of which were set by the ejecting stroke of the slides, is operated and then the paper strip 49 is advanced. Finally the stop 77 is released and the releasing arm 24 is
100 locked in the starting position. At the next operation of the slide 67 for the purpose of re-setting the indicating and printing mechanism to zero, the stop 77 is again re-set so that the whole apparatus is ready for a
105 fresh operation.

Claims.

1. In a coin handling apparatus, the combination, with a pair of coin receptacles, and a pair of ejectors therefor; of a pair of shafts; a counter and a ratchet mounted
110 upon each shaft; means carried by said ejectors for driving said ratchets in one direction; a pair of centrally pivoted detents normally engaged at one end with said ratchets, for holding the same against reverse move-
115 ment and having their other ends arranged in juxtaposition; a pair of springs connected to said shafts and adapted to be tensioned during the first-mentioned rotation of said ratchets; a slide provided with a projection
120 adapted to extend between the second-named ends of the detents, for separating the same and releasing the first-named ends of said detents from engagement with said ratchets, to permit reverse rotation of the latter; and
125 means for operating said slide.

2. In a coin handling apparatus, the combination, with a pair of coin receptacles, and a pair of ejectors therefor; of a pair of shafts; a counter and a ratchet mounted
130

upon each shaft; means carried by said ejectors for driving said ratchets in one direction; a pair of centrally pivoted detents normally engaged at one end with said ratchets, for holding the same against reverse movement and having their other ends arranged in juxtaposition; a pair of springs connected to said shafts and adapted to be tensioned during the first-mentioned rotation of said ratchets; and means for separating the juxtaposed ends of said detents, to release the first-named ends thereof from engagement with said ratchets and permit reverse rotation of the latter.

3. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary member common to the several ejectors for operating the same; a depressible stop arranged in the path of movement of said member for determining the initial position thereof; means for normally holding said stop in elevated position; a tilting member for depressing said stop against the action of said holding means; and means for operating said tilting member.

4. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary member common to the several ejectors for operating the same; a depressible stop arranged in the path of movement of said member for determining the initial position thereof; means for normally holding said stop in elevated position; a tilting member for depressing said stop against the action of said holding means; means for operating said tilting member; and means for retaining said stop in depressed position.

5. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary member common to the several ejectors for operating the same; a depressible stop arranged in the path of movement of said member for determining the initial position thereof; means for normally holding said stop in elevated position; a tilting member for depressing said stop against the action of said holding means; and a movable member provided with an inclined projection adapted to engage said tilting member, to operate the latter.

6. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary operating member common to the several ejectors; a movable stop normally arranged in the path of movement of said member for determining the initial position of said member; means for moving said stop into inoperative position; and a spring-controlled retaining member arranged for engagement with said stop when the same is in such position.

7. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary operating member common to the several ejectors; a movable stop normally arranged in the path of movement of said member for determining the initial position of said member; means for moving said stop into inoperative position; means for retaining said stop in such position; and means for releasing said retaining means.

8. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary operating member common to the several ejectors; a movable stop normally arranged in the path of movement of said member for determining the initial position of said member; means for moving said stop into inoperative position; means for retaining said stop in such position; and a rotatable cam for releasing said retaining means.

9. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary operating member common to the several ejectors; a movable stop normally arranged in the path of movement of said member for determining the initial position of said member; means for moving said stop into inoperative position; a two-armed spring-controlled retaining member having one arm thereof arranged for engagement with said stop when the same is in inoperative position; and means arranged for engagement with the other arm of said retaining member, to release the first-named arm.

10. In a coin handling apparatus, the combination, with a plurality of coin receptacles, and ejectors therefor; of a rotary operating member common to the several ejectors; a depressible stop normally arranged in the path of movement of said member for determining the initial position of said member; means for normally holding said stop in elevated position; means for depressing said stop; means for retaining said stop in depressed position; and means for releasing said retaining means.

11. In a coin handling apparatus, the combination, with a plurality of coin receptacles, and ejectors therefor; of a rotary operating member common to the several ejectors; a depressible stop for determining the initial position of said member; means for normally holding said stop in elevated position; a lever connected to said stop; means for tilting said lever, to depress said stop; a two-armed spring-controlled retaining member having one arm thereof arranged to engage said stop when the latter is depressed; and a rotary member arranged to engage the other arm of said retaining member, to release the first-named arm.

12. In a coin handling apparatus, the

combination, with a plurality of coin receptacles, and ejectors therefor; of a rotary operating member for the several ejectors; counting devices actuated by said ejectors; 5 re-setting devices for said counting devices; means for normally holding said re-setting devices inoperative; a stop for determining the initial position of said operating member; means for moving said stop into inoperative position; and a member provided 10 with means for releasing said holding means, and with additional means for operating said stop-moving means.

13. In a coin handling apparatus, the combination, with a plurality of coin receptacles and ejectors therefor; of a rotary operating member for the several ejectors; counting devices actuated by said ejectors; a series of printing wheels set according to 20 the number of actuations of each ejector; a printing stamp; a stop for determining the initial position of said operating member; means for moving said stop into inoperative position; retaining means for engaging said 25 stop when the same is in such position; and a rotary cam for actuating said stamp and releasing said retaining means.

14. In a coin handling apparatus, the combination, with a coin receptacle, and a reciprocating ejector therefor; of a counting mechanism operated by said ejector during each movement of the same in one direction; means for locking said mechanism 30 during each movement of said ejector in such direction to prevent over-running of said mechanism, said locking means being operated by said ejector; means for releasing said locking means upon each return movement of said ejector; means for hold-

ing said mechanism against reverse movement during the entire operation of said ejector; means for releasing said holding means upon the conclusion of the operation of said ejector; and means for reversing the movement of said mechanism when such 45 release is effected.

15. In a coin handling apparatus, the combination, with a coin receptacle, and a reciprocating ejector therefor; of a counting mechanism operated by said ejector 50 during each movement of the same in one direction; a locking member associated with said mechanism; a member carried by said ejector for operating said locking member immediately after each operation of said 55 mechanism, and before said ejector starts on its return movement, to prevent over-running of said mechanism; means for automatically releasing said locking member when said ejector starts on its second-named 60 movement; a holding member associated with said mechanism for preventing reverse movement of the latter during the entire operation of said ejector; means for releasing said holding member upon the conclusion 65 of the operation of said ejector; and means for automatically reversing the movement of said mechanism when such release is effected.

In testimony whereof we have hereunto 70 set our hands in presence of two subscribing witnesses.

JOHANN PLANECKI.
FRANZ DROBNIK.

Witnesses:

JOSEF RUBASCHER,
AUGUST FUGGER.