

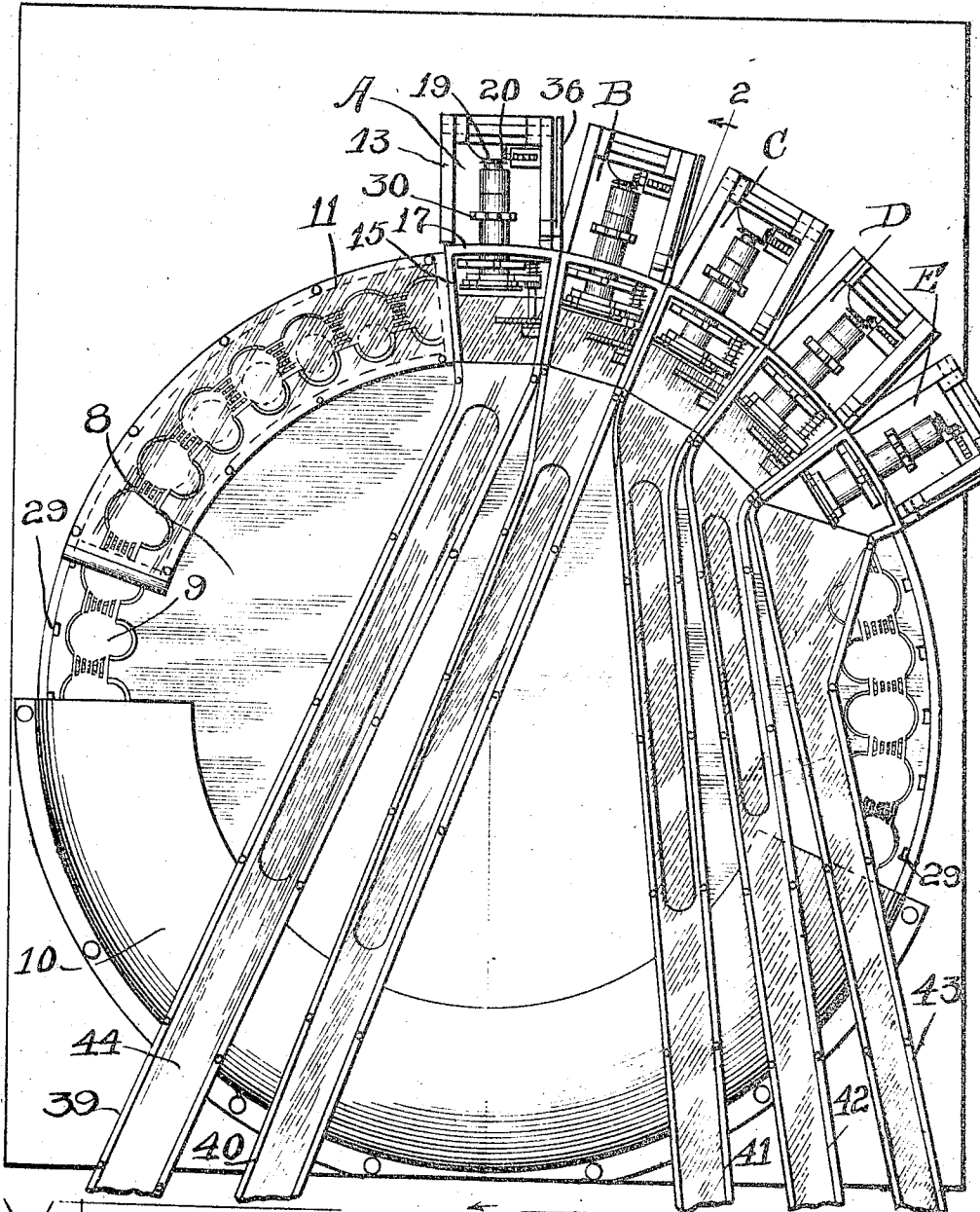
J. M. JOHNSON & H. J. BAUR.
 COIN SEPARATOR AND COUNTER.
 APPLICATION FILED AUG. 30, 1912.

1,200,843.

Patented Oct. 10, 1916.

5 SHEETS—SHEET 1.

Fig 1



WITNESSES
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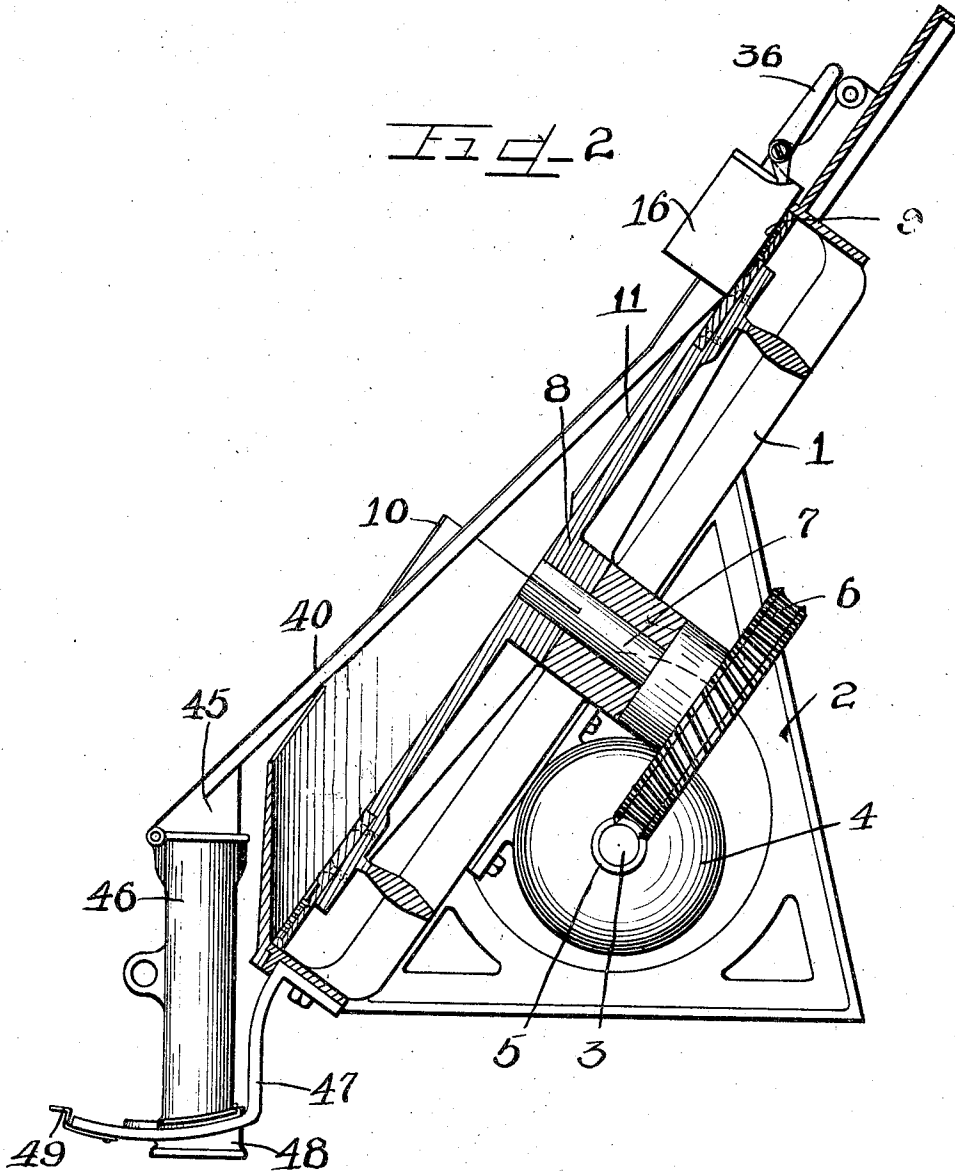
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5 SHEETS—SHEET 2.



WITNESSES

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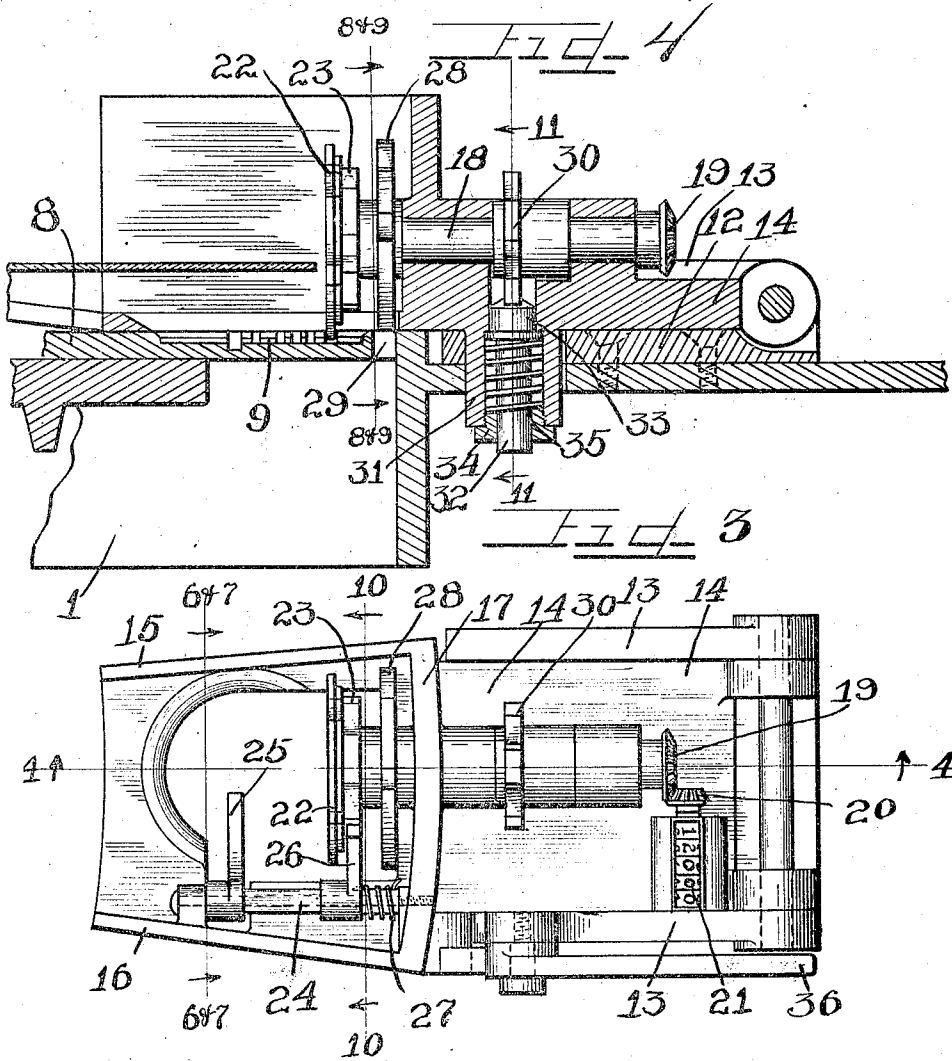
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 5 SHEETS—SHEET 3.



WITNESSES

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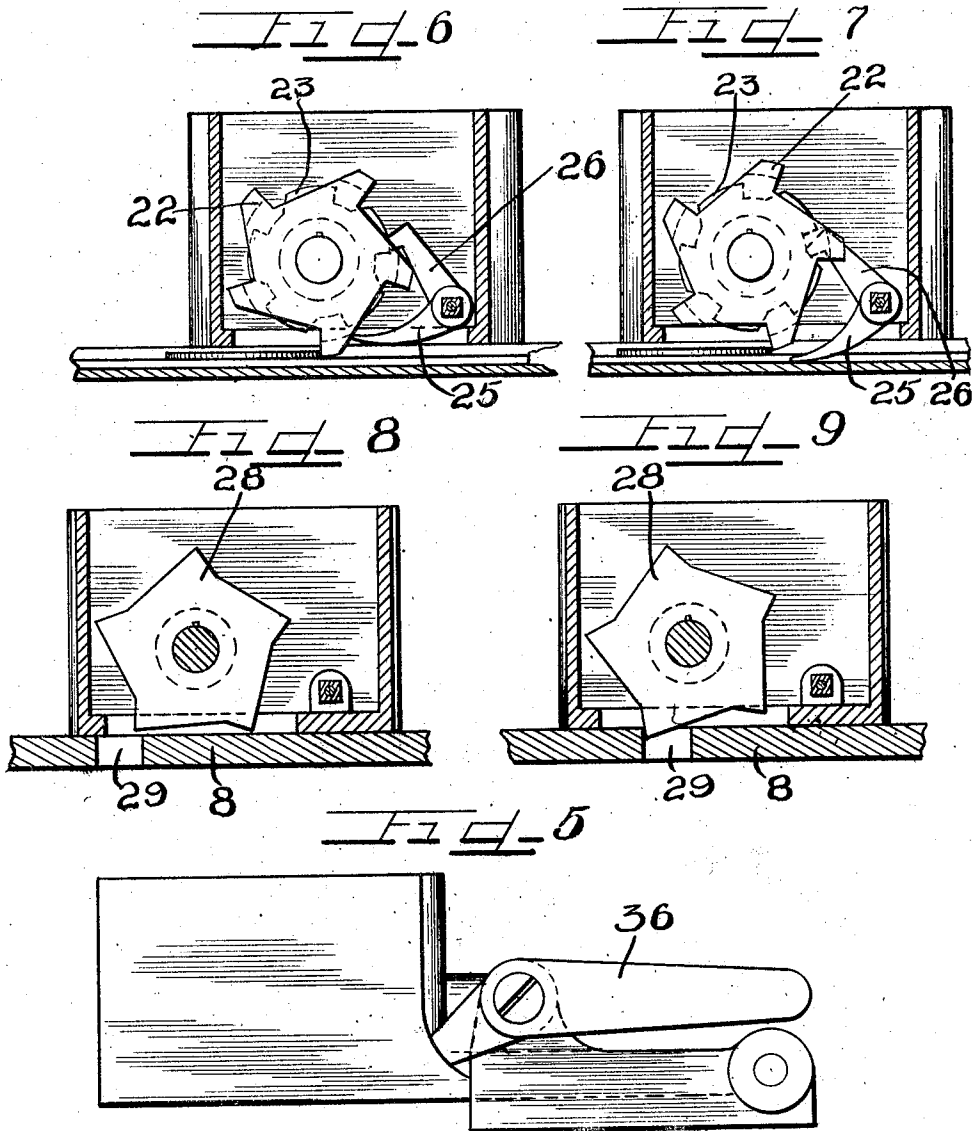
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 5 SHEETS—SHEET 4.



WITNESSES

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5 SHEETS—SHEET 5.

Fig. 12

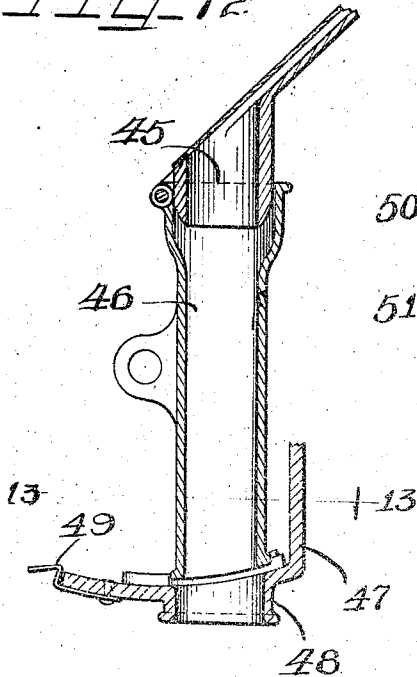


Fig. 13

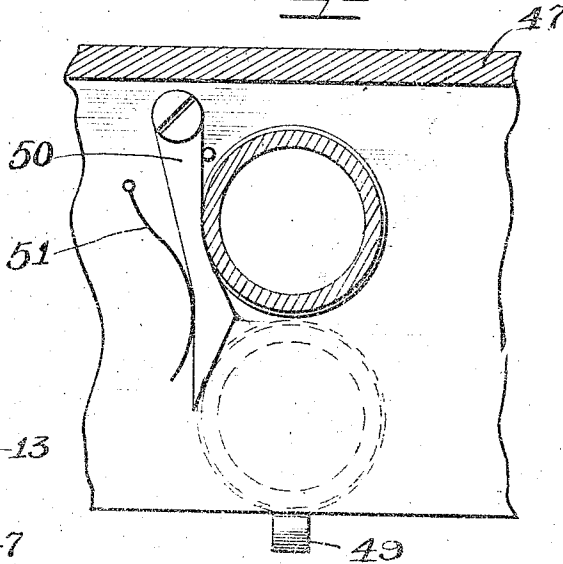


Fig. 10

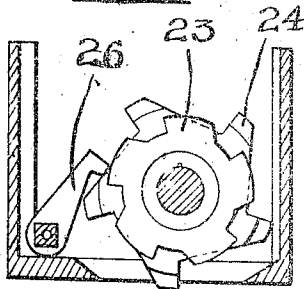
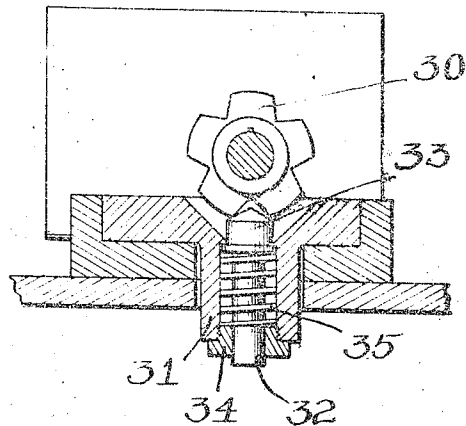


Fig. 11



WITNESSES

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UNITED STATES PATENT OFFICE.

JAY M. JOHNSON AND HUGO J. BAUR, OF CHICAGO, ILLINOIS; SAID BAUR ASSIGNOR TO SAID JOHNSON.

COIN SEPARATOR AND COUNTER.

1,200,843.

Specification of Letters Patent.

Patented Oct. 10, 1916.

Application filed August 30, 1912. Serial No. 717,837.

To all whom it may concern:

Be it known that we, JAY M. JOHNSON and HUGO J. BAUR, citizens of the United States, and residents of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin Separators and Counters; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numbers of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of coin separators and counters set forth in United States Letters Patent No. 915,965, issued to Jay M. Johnson on the 23rd day of March, 1909.

The object of this invention is to greatly simplify the construction in all respects and to afford a positively actuated means for driving the register mechanically.

It is also an object of the invention to provide a construction in which the means for actuating the register for indicating the count are set in operation by the coin to be counted, but are driven independently of the coin.

It is also an object of the invention to afford a construction in which the counting mechanism is tripped by the passing coin and then actuated by positive drive from one of the moving parts of the machine.

It is also an object of the invention to afford a construction capable of separating and counting coins of any denomination and in which the counted and separated coin are delivered each to its individual compartment or receptacle.

It is also an object of the invention to afford a machine provided with coin chutes for the respective denomination of coin, each so constructed that should a coin fall into the wrong chute it will be delivered therefrom back to the hopper.

The invention embraces many novel features and consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a face view of the operating mechanism of the machine with the case removed and the chutes broken away. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3 is an enlarged face view of one of the counting and recording mechanisms. Fig. 4 is a section on line 4—4 of

Fig. 3. Fig. 5 is a side elevation of the counting mechanism showing the same removed from the machine. Figs. 6 and 7 respectively are sections on lines 6—6 and 7—7 of Fig. 3, and illustrate the one the normal position of parts, the other the position assumed after the preliminary movement of the counting wheel effected by the moving coin. Figs. 8 and 9 are sections taken on lines 8—8 and 9—9 of Fig. 4, and illustrate the positions of the star wheel corresponding with the positions of the counting or ratchet wheel shown in Figs. 6 and 7 respectively. Fig. 10 is a section on line 10—10 of Fig. 3. Fig. 11 is a section on line 11—11 of Fig. 4. Fig. 12 is an enlarged, vertical, transverse section taken through one of the coin receptacles and its coin chute. Fig. 13 is an enlarged section on line 13—13 of Fig. 12.

As shown in the drawings: a suitable frame 1, annular in form, is supported in a rearwardly inclined position, as shown in Fig. 2, upon one or more brackets 2 arranged to support the same upon any suitable bed or table conveniently at an angle of approximately forty five degrees from the vertical. Journaled on said brackets 2, is a shaft 3, driven from a motor 4, conveniently an electric motor. Secured on said shaft is a worm 5, which meshes with a worm gear 6, rigidly secured on a shaft 7, journaled in said inclined frame and on the outer end of which is secured the coin carrying wheel 8, which fits in said annular frame and bears against a suitable flat back plate. Said plate or coin carrying wheel 8, is provided near its periphery with recesses or pockets 9, such as shown in Fig. 1, said pockets or recesses being elongated radially of the carrying wheel to afford a comparatively large circular recess, and a smaller circular recess communicating therewith, thus permitting a coin of small size to be carried in said pocket or recess, in which event the coin will fit farther into the smaller or reduced portion of the recess, while in the event of the larger coin being carried therein the shape of the recess or pocket projects the coin farther toward the periphery of the carrying wheel. Said recesses are constructed of such size that but one coin of any denomination can be carried therein at the same time. As shown also, said carrying wheel is provided in its face with a plurality of grooves concentric with said carrying wheel and one for each

denomination of coin to be counted, that is to say, in the present construction in which half dollars, quarter dollars, nickels, pennies and dimes are to be counted, there are five such grooves, and one additional groove may be employed for dollars, if dollars are to be counted. Secured on the face of said frame 2, at the bottom thereof is a metallic upwardly and inwardly directed casing 10, which is screwed or bolted to said frame and which serves as a hopper to confine the coin therein against the carrying plate. Extending upwardly around the top of said frame is a covering plate 11, of glass, mica, or any suitable transparent material and which is supported at a sufficient distance above the face of the carrying wheel to permit inspection at all times of the coin passing to the counters.

In the present construction in which no coin of higher denomination than half dollars is to be counted, there are five counters, and mechanism for actuating the same supported at the top of the machine, each of which delivers into an individual chute for delivering the separated and counted coin to an appropriate receptacle. Each of said counting mechanisms comprises a bed plate 12, adapted to be screwed or bolted to the frame of the machine at the top thereof and provided with upwardly directed side members 13, to afford the lugs at the outer end of said attaching plate to which is hinged the bottom plate 14, of the counting mechanism.

Integral with the inner end of the bottom plate 14, of the counting and registering mechanism are upwardly directed flanges 15 and 16, one on each side of said bottom plate and projecting forwardly over the coin carrying wheel to afford a box-like receptacle above the peripheral pockets in the coin carrying wheel.

Journalled in the end wall 17, thereof is a shaft 18, which extends radially of the carrying wheel and is provided at its outer end with a bevel pinion 19, which meshes with a corresponding bevel pinion or gear 20, of a veeder or other suitable register 21, as shown in Fig. 3. Secured on said shaft 18, at its inner end is a ratchet wheel 22, of a diameter to project into one of the peripheral grooves in the carrying plate, said ratchet wheel having, as shown, five teeth thereon, each affording an abrupt shoulder for engagement with the passing coin, as shown in Figs. 6 and 7. Secured on said shaft adjacent said ratchet wheel is a cam wheel 23, having five equally distanced seats or recesses in its periphery and journalled at one side of said wheels is an angular shaft 24, on one end of which is a downwardly curved sharp lifting finger 25, adapted to be projected into the appropriate groove in the carrying wheel and on the

other end thereof is an upwardly extending dog or pawl 26, positioned to ride on said cam wheel, the end of which is shaped to engage in the successive recesses therein and secured on said shaft is a spring 27, which acts to throw the lifting plate or finger 25, on said shaft to the bottom of the groove when the pawl or dog drops into a notch in the cam wheel, as shown in Fig. 7. Also secured on said shaft is a star wheel 28. As shown, a five pointed star is so positioned on said shaft as to register with apertures 29, at the edge of the coin carrying wheel and adapted to project therein, as shown in Fig. 9, after each preliminary actuation of the ratchet or counting wheel. An automatic bracket and centering device is provided on said shaft embracing a cam 30, provided in its periphery with five notches spaced equal distances apart.

Seated in a cylindric extension or boss 31, which extends through the bottom plate and bed plate of the counting device and register, is a plunger 32, the angular head 33, of which is adapted to engage in any of the notches in said cam 30, and as shown, a nut 34, is threaded into the end of said boss and affords a bearing for a pushing spring 35, which holds said plunger always in position to engage the cam 30. As shown, a latch 36, secured on one of the side flanges 13, of the bed plate, engages the bottom plate of the counting mechanism to hold the same in adjusted position, but permits instant release thereof when said latch 36, is lifted, thereby permitting the entire counting unit to be swung upwardly out of engagement with the carrying wheel. One of said counting mechanisms is provided for each denomination of coin to be counted and are arranged around the periphery of the coin carrying wheel in such relation that count of the largest denomination (and, of course, coin of the largest size to be counted, as, for instance, half dollars) are registered by the counting mechanism A, quarters by the counting register B, nickels by the counting register C, pennies by the counting register D, and dimes by the counting mechanism E. In this relation the ratchet 22, of each of said counting and registering devices, are engaged as follows: That for the half dollar is engaged in the groove appropriated therefor and which in the drawings, is shown as the second groove from the outer side. That for quarters extends into the third groove; for nickels into the fourth; for pennies into the fifth, and for dimes into the sixth groove, counting from the outer side inwardly. Coin chutes 39, 40, 41, 42, and 43, are provided one for each of said counting and registering mechanisms. Each of these, as shown, is enlarged at the upper end to register with the converging side flanges at

the inner end of the counting and registering unit and the upper ends of said coin chutes are threaded to afford continuous side walls. Said coin chutes, as shown, all extend obliquely downwardly and laterally from their respective counting and registering means and each thereof is provided with a closed metallic bottom except for an open slot therein of such size, length and width that should a coin of a denomination smaller than that for which the coin chute is appropriated fall therein, said coin will of necessity fall therefrom and back into the hopper to be actuated. This, however, cannot produce inaccuracy, inasmuch as any coin of sufficiently small diameter to fall through the slot in one of said coin chutes, is of too small diameter to be actuated by the counting and registering mechanism for that chute. As shown also, each of said chutes is covered with a transparent medium such as glass or mica, indicated by 44, so that the operation of the machine may be watched by the operator at all times. Each of said coin chutes terminates in a coin tube or receptacle from which the coin may be discharged to a coin bag or any suitable means for receiving the same.

As shown, the lower end of each coin chute is enlarged to afford a tubular downward extension 45, and hinged on the outer end of the coin chute is a coin tube 46, which normally registers with a discharge aperture in a bracket 47. Secured on the main frame and surrounding said discharge aperture, as shown, is an outwardly flaring flange 48, to which the mouth of the coin sack may be secured to permit coin to be delivered directly thereinto. As shown, said bracket 47, is extended outwardly and curved upwardly to approximately fit the bottom of the coin tube 46, when swung outwardly on the end of said chute as indicated in dotted lines in Fig. 13, and, as shown, a spring latch or detent 49, is provided at the outer end of said bracket to limit the outward swing of the coin tube. As shown also, a spring latch 50, is pivotally engaged on said bracket or shelf 47, to engage each of said coin tubes to hold the same in adjusted position, and, as shown in Fig. 13, the latch or lever which serves this purpose is provided with a notch or recess in one face thereof to engage the tube when in register with the discharge aperture and is shaped at its extremity to engage the tube to hold the same outwardly and out of engagement with the spring aperture, and a spring 51, in each instance serves to positively engage said latch against the tube.

The operation is as follows: The coin, indiscriminately mixed, are dumped into the hopper at the bottom of the coin carrying wheel and rotation of said wheel serves

to carry the coin upwardly to the counting and registering mechanisms with one coin in each pocket of the carrying wheel. Of course, the coin being indiscriminately mixed assume no definite order with reference to denomination and arrangement in the carrying wheel, but are selectively carried upwardly to counting position. The arrangement of said counting mechanisms is such, and their arrangement with reference to each other, that no two can operate at the same time; in consequence, assuming that a half dollar is presented to the counting and registering mechanism A, said coin first is projected against one of the teeth of the ratchet wheel 22, in said counting mechanism with sufficient force to shift the ratchet wheel, so that the head of the dog or pawl 26, falls into the notch or recess in its cam wheel, whereupon the spring 27, throws the lifting finger 25, downwardly, as shown in Fig. 7, to engage beneath the coin and discharges the same from its pocket. With the effecting of this preliminary movement, one of the angles of the star wheel 28, has been thrown downwardly, as shown in Fig. 9, to engage in one of the notches 29, in the coin carrying wheel and in consequence, the further rotation of the register is effected by the direct drive of the motor and entirely independently of the coin. In consequence, the veeder or register is rotated a sufficient distance to count one thereon as the star point is released from the carrying wheel, at which moment the angular head 33, of the plunger is again seated in one of the notches in the cam 30. Had it been a quarter first presented or should a quarter follow the half dollar, the next succeeding registering mechanism B, acts thereon in exactly the same manner, the lifting finger engaging beneath the coin to throw the same out of its pockets and into the chute, while the coin serves but to adjust the registering means preliminary to the positive and direct drive from the carrying wheel. In the same manner, successive coins are presented to the respective counting and registering mechanism, each of which, as before described operates entirely independently of the other and non-simultaneously therewith, and the coin, as counted, are lifted by the finger 25, from their pocket with the return of the cam wheel to normal or, in other words, to a position in which the pawl or dog 26, is elevated. If by accident a coin should fall into a chute not intended for that particular coin, said coin must obviously be of a size less than that for which said particular counter and chute are intended, inasmuch as the larger coins have been previously removed by the action of their counters and registers. In consequence, such smaller coin falling into the chute rolls down the inclined side wall there-

of, falls through the slot and into the hopper, from whence it is raised to be ultimately counted.

Of course, the machine may be made of any suitable size or capacity and the number of coins for which the same may be adapted is dependent only upon the size of the coin. Of course, it is evident that inspection of all parts of the machine while in operation can be made at any time without stopping the machine, and furthermore, any other means than tubes and shelf or bracket before described may be employed to permit the discharge of the coin to a sack or sacks and to afford means for retaining the counted coin from each chute while a filled bag is being removed and a bag to be filled substituted therefor.

Obviously very numerous details of the construction may be varied. We therefore do not purpose limiting this application for patent otherwise than necessitated by the prior art.

We claim as our invention:

1. In a coin counting mechanism a positively driven carrying element for coin, a counting element arranged closely adjacent thereto with one part of said element in the path of the moving coin and adapted to be adjusted for actuation by the coin and to be actuated by the carrying element, and pivotally mounted rigid ejecting mechanism operated by said counting element momentarily thrown into ejecting position to eject the coin from said element after the coin has been counted.

2. In a coin counter the combination with a carrying element for coin, of mechanism positively driven from said carrying element for counting each passing coin, and pivoted rigid ejecting means for the coin thrown into operation by the coin and moved into position out of use by said carrying element after ejection of the coin from said carrying element.

3. In a machine of the class described a carrying element adapted to selectively pick up coin of different denominations and move the coin one by one to counting position, a counting mechanism for each denomination of coin, each capable of counting only a single denomination, actuating means therefor, and means projecting into the path of the moving coin for adjusting the actuating means for counting into positive engagement with the carrying element.

4. In a coin registering machine the combination with the coin carrying element and a registering mechanism, of means operated by the moving coin for bringing a part on the registering mechanism into positive engagement with a part of the carrying element, and pivotally mounted rigid ejecting mechanism for the coin moved into operat-

ing position by the coin and immediately moved out of such position after ejection of the coin from the carrying element, by said carrying element.

5. In a machine of the class described a carrying element for the coin, adapted to carry coins of different denominations, counting means, one for each denomination of coin carried, a coin of one denomination acting to bring the carrying element and a part on the counting means for that particular coin, into positive engagement for actuation of the counting means, and ejecting mechanisms for the coins to eject the same during the counting operation.

6. In a machine of the class described a stationary member, a carrying element adapted to sweep coins upwardly thereon from a mixed mass of coins, a counting element, one for each denomination of coin to be counted, parts on each of said elements moved into engagement by a coin being swept upwardly by said carrying element adapted to positively effect engagement between said carrying element and said counting element to effect a count, and ejecting means for the coins operated in part by the coins, and in part by said carrying element.

7. In a coin counting and separating mechanism the combination with a carrying element, a counting element positively intermeshing therewith during a part of the counting operation and a plurality of positively acting means respectively brought into operation selectively by the different coins to discharge the counted coin from the carrying wheel dependent upon the denomination of the coin.

8. A coin counting machine embracing a unitary rotating carrying element having pockets in its periphery for coins of different denominations, a plurality of counting elements, one for each denomination of coin, positioned around the carrying element, and means actuating said respective counting elements directly from the coin carrying wheel embracing star wheels positively intermeshing therewith, and adjusting elements adapted to be tripped by the moving coins to bring the star wheels into mesh.

9. In a machine of the class described a carrying wheel having pockets in its periphery, a plurality of grooves, concentric with its center passing therethrough and each appropriated to a particular coin denomination, a lifting finger supported over the carrying wheel and adapted to be projected into one of said grooves, a cam for actuating said finger, a star wheel connected to said cam and an adjusting means actuated by a passing coin and acting to throw the star wheel into mesh with the carrying wheel and to throw the lifting finger upwardly, thereby ejecting the coin therefrom.

10. A carrying wheel having pockets in its periphery and grooves concentric with the wheel all passing through each of said pockets.

5 11. In a machine of the class described a rotative carrying wheel having pockets in its periphery, of a plurality of grooves concentric with the center of the wheel and all passing through all the pockets, said grooves
10 corresponding in number and in general arrangement from the center with the number and sizes of coins to be counted.

12. A carrying wheel of the class described having recesses in its face for coins
15 of different sizes and grooves of different radius extending through said recesses and each appropriated to a given coin denomination.

13. In a machine of the class described
20 the combination with a coin carrying element, of a plurality of coin counter mechanisms, an inclosed coin chute, one for each denomination of coin to be counted, each chute having an outer transparent wall and
25 having a longitudinally slotted bottom to permit coins of smaller denomination than that for which the chute is intended to fall therefrom, said chute disposed in a position with respect to said carrying element to receive the coins therefrom after the same
30 have been counted, and ejecting means, one for each denomination of coin disposed for operation by said respective coin counter mechanisms, and each ejecting its particular denomination of coin into the respective
35 chute therefor when actuated.

14. In a machine of the class described, the combination with a carrying element and a plurality of counting elements driven in
40 part thereby, of inclined coin chutes arranged one for each of said counters, and means disposed to be projected beneath the forward edge of a coin to elevate and eject the same from said carrying element into
45 the respective chute provided therefor according to the denomination of the coin.

15. In a machine of the class described a counting mechanism, a grooved coin carrying element with which the coin counting
50 mechanism positively intermeshes during a part of the counting operation, a plurality of lifting elements positively projected into the grooves in said carrying element into the path of the moving coins and each element
55 adapted to lift and discharge a coin of one denomination only.

16. In a machine of the class described a flat inclined rotative carrying wheel having pockets in the face thereof near its periphery, notches adjacent the pockets, a counting
60 mechanism, a shaft for actuating the same, a star wheel positioned at right angles to said carrying wheel and adapted to engage in said notches, an adjusting ratchet secured

to said star wheel and projecting into the
65 path of the moving coin and adapted when actuated by the coin to move said star wheel into mesh with the carrying element.

17. In a machine of the class described an apertured grooved carrying element for the
70 coin, a counter, an adjusting element for the counter projecting at right angles to the groove and into the path of the moving coin, a star wheel rigidly engaged thereon and adapted to intermesh with the apertures in
75 the carrying element, said adjusting element acting when engaged by a coin to shift the star wheel, and a resilient brake acting to resist overthrow in the operation of said
80 register.

18. A machine of the class described embracing the combination with a rotative
carrying wheel, the counting mechanisms therefor, and the coin chutes, of a shelf supported at the front of the machine having
85 discharge apertures therethrough, and a plurality of coin tubes hingedly supported on the coin chutes and acting when in normal position to deliver coin and when swung into inclined position to retain the separated coin
90 therein.

19. In a device of the class described the combination with a rotative carrying wheel for the coin, of a registering mechanism
95 hingedly supported in operative relation thereto, and adapted to be manually adjusted into and out of operative relation with the carrying wheel independently of coins on said wheel.

20. In a machine of the class described a
100 carrying wheel having pockets in its periphery to selectively engage and carry the coin therein, of a plurality of pivoted counting mechanisms hingedly supported in operative relation with the carrying wheel, a
105 latch holding the same normally in operative position, and coin chutes inclined laterally and downwardly and arranged one for each counting mechanism, adapted to receive the counted coins ejected from the carrying
110 wheel.

21. In a device of the class described a stationary member, a member moving there-
over adapted to sweep coins around on said stationary member, mechanism actuated by
115 the coins as mechanical elements for counting the moved coins according to their denomination, each comprising an element adapted to project into the path of a moving coin, a register connected to be driven
120 thereby, and a star wheel journaled at right angles to said moving element and adapted to be engaged thereby to drive the register independently of the coin after the coin has contacted the projecting element.
125

22. In a device of the class described a stationary member, a movable member adapted to sweep coins of different denomi-

nations lying flat thereon, thereover, mechanism for registering the coins according to the denomination thereof, comprising means projecting into the path of a moving coin, a
5 registering means, driving means therefor, and means permitting said driving means to be thrown in train with said registering means when the coin contacts the element in the path thereof.

10 23. In a device of the class described the combination with a coin carrying element for coins of different denominations, of counting mechanism disposed to be driven directly by coins on said element, ejecting
15 means associated with said counting mechanism adapted to be projected beneath the leading edge of the moving coins on said carrying element, and a plurality of chutes arranged adjacent said carrying element to
20 receive the coins ejected therefrom after the same have been counted.

24. In a device of the class described coin carrying means for coins of different denominations, registers, one for each denomination of coin, means for operating the same
25 adapted to be contacted by coins carried on

said carrying means rejecting mechanism other than said operating means adapted to to be projected into the path of a coin carried on said means when said register means
30 is actuated, and discharge chutes to receive the ejected coins according to the denomination thereof.

25. In a device of the class described the combination with coin carrying means, of
35 associated counting and ejecting mechanism, the one arranged with respect to the carrying means to normally lie in the path of coins moved thereon, and the other connected to said counting mechanism whereby
40 when the same is operated the ejecting mechanism is projected in front of and into the path of the coin to eject the same from the carrying means.

In testimony whereof we have hereunto
45 subscribed our names in the presence of two subscribing witnesses.

JAY M. JOHNSON.
HUGO J. BAUR.

Witnesses:

CHARLES W. HILLS, Jr.,
GEORGE R. MOORE.