F. L. SATTLEY.

COIN HANDLING MACHINE.

APPLICATION FILED NOV. 12, 1908.

1,047,305.

Patented Dec. 17, 1912.

5 SHEETS—SHEET 1.

Fig. 2

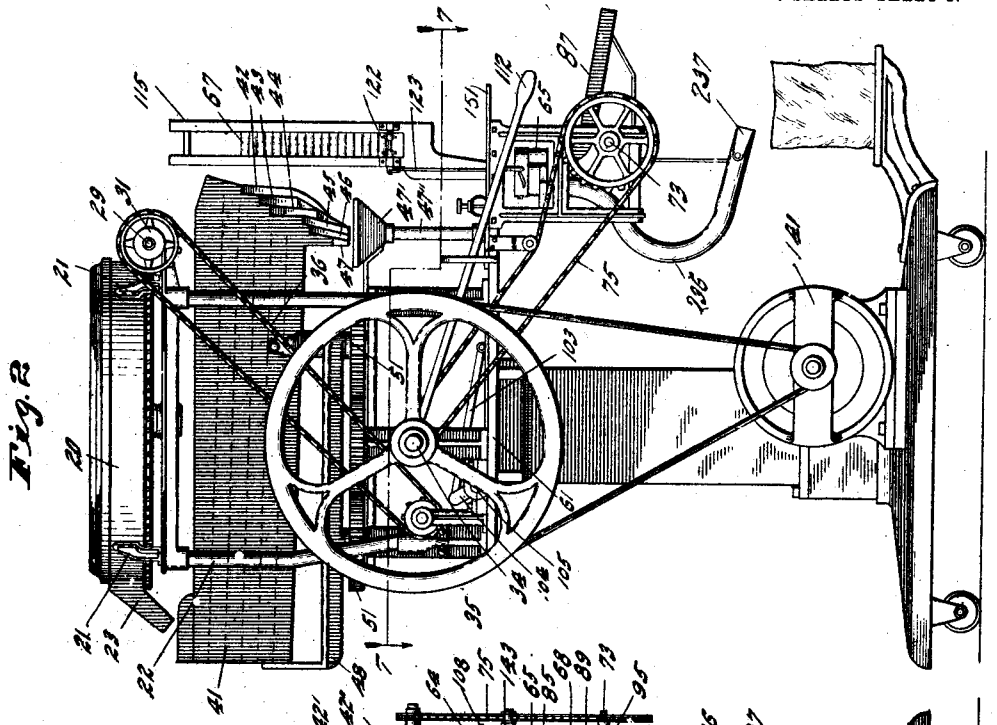
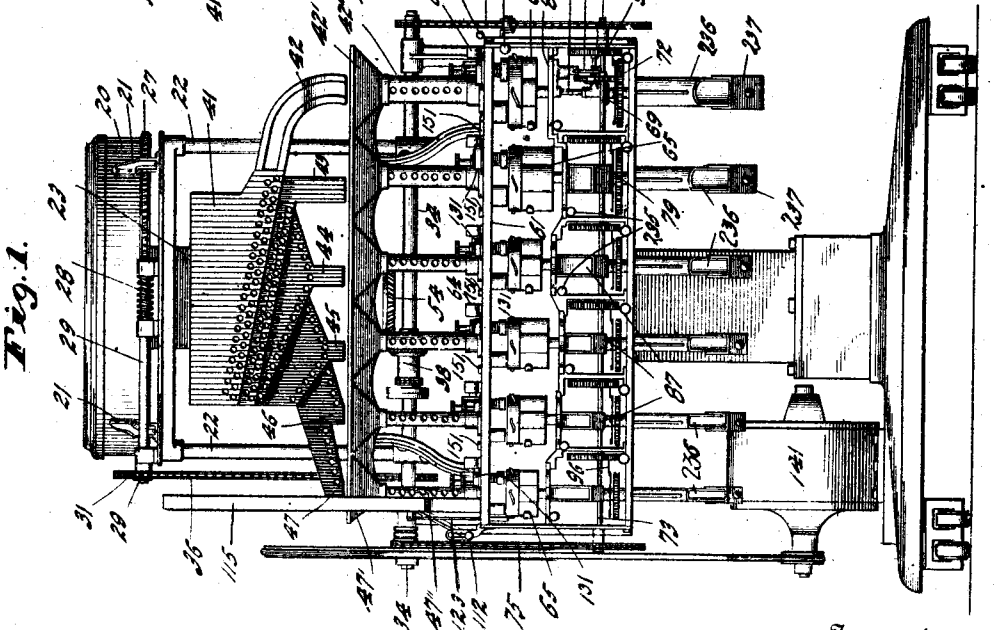


Fig. 1.



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5 SHEETS-SHEET 2.

Fig. 3.

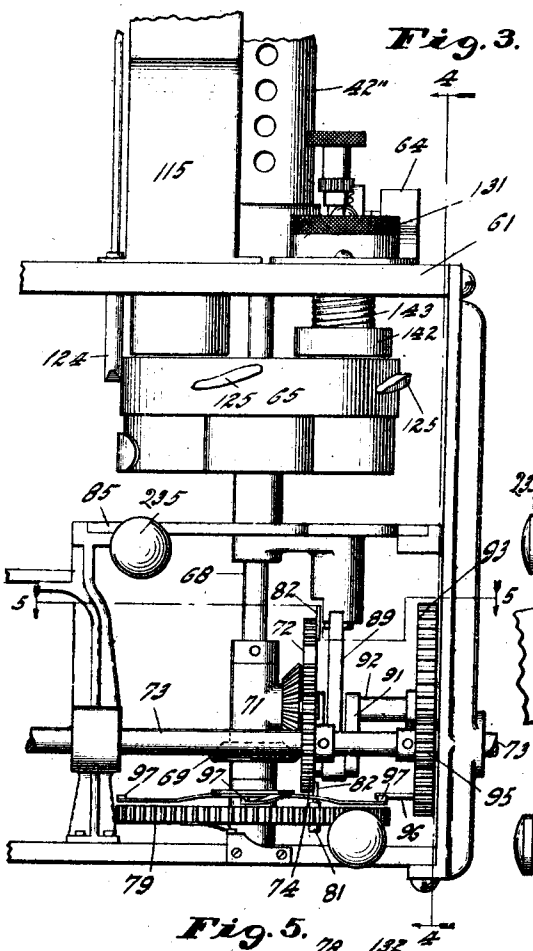


Fig. 4.

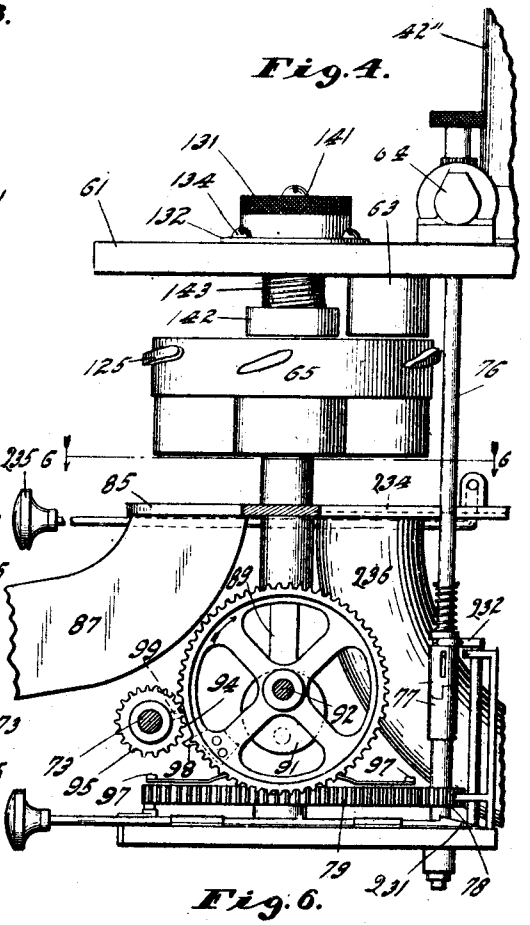


Fig. 5.

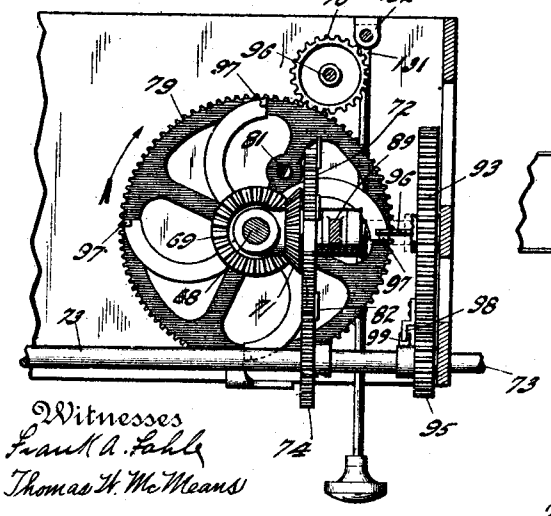
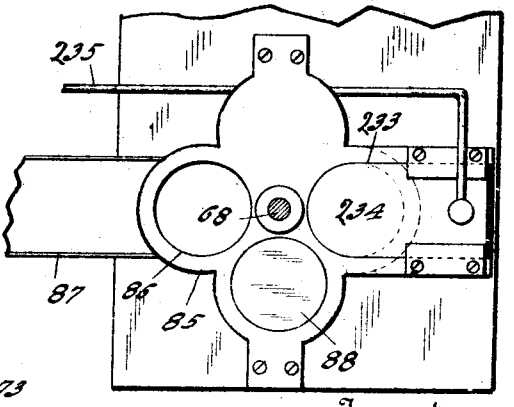


Fig. 6.



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5 SHEETS—SHEET 3.

Fig. 9.

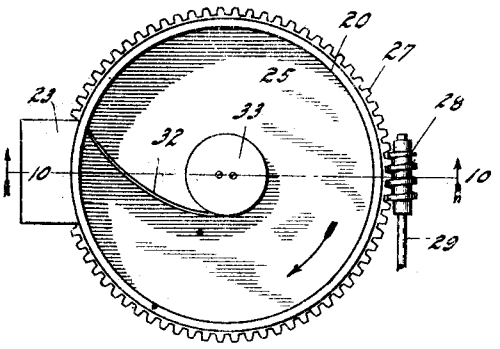


Fig. 8.

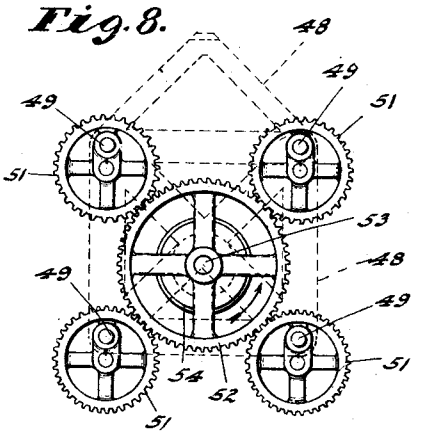


Fig. 10.

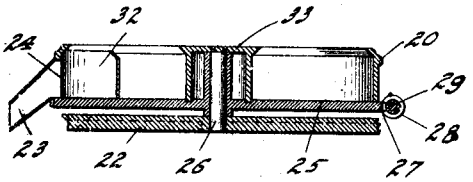
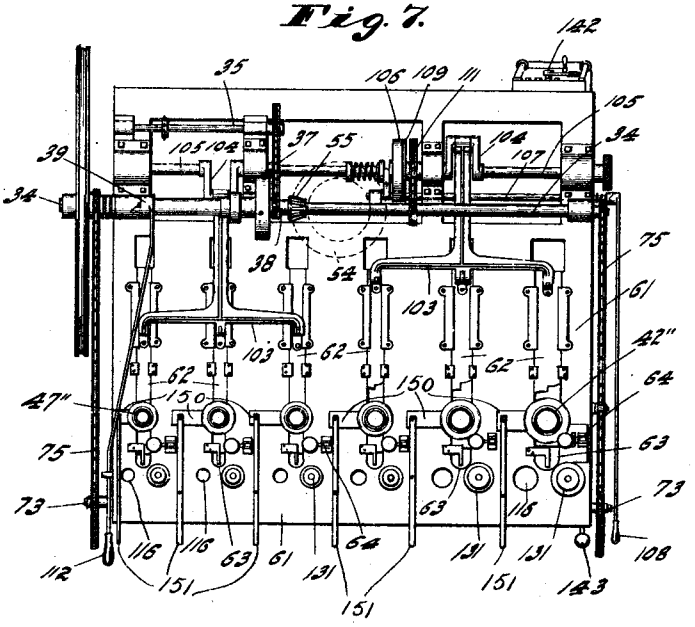


Fig. 7.



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6 SHEETS—SHEET 4.

Fig. 11.

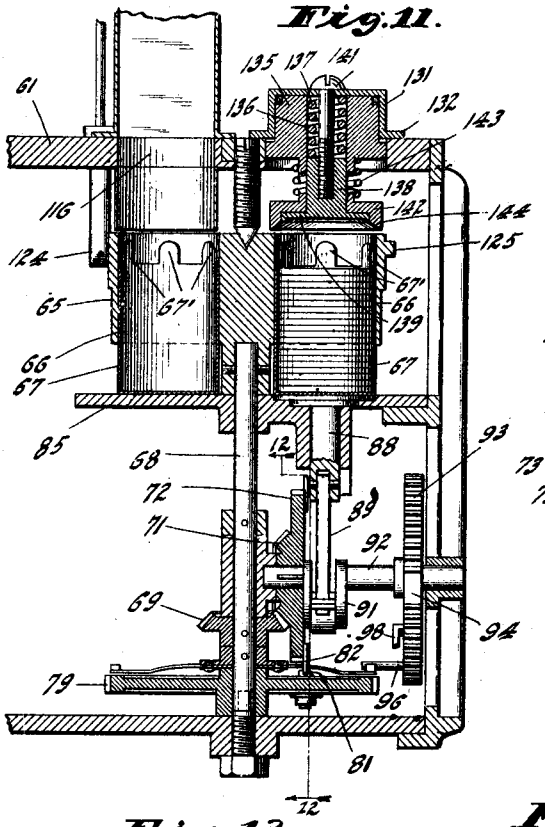


Fig. 12.

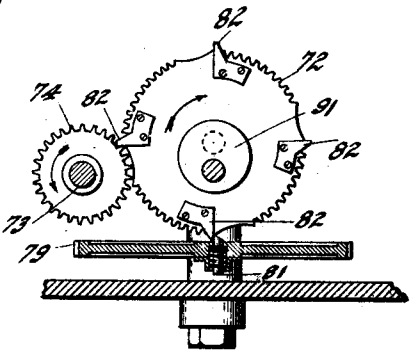


Fig. 13.

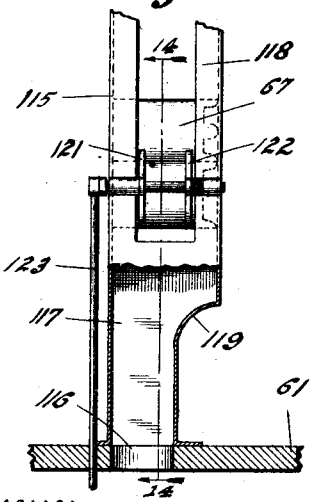


Fig. 14.

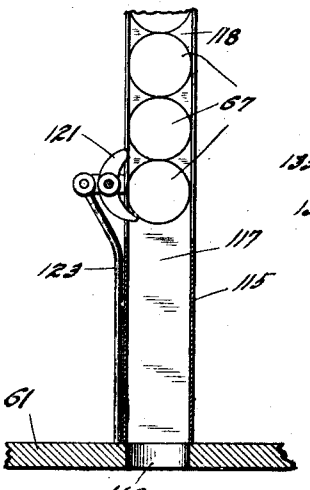
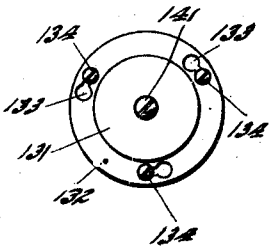


Fig. 15.



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5 SHEETS—SHEET 5.

Fig. 16.

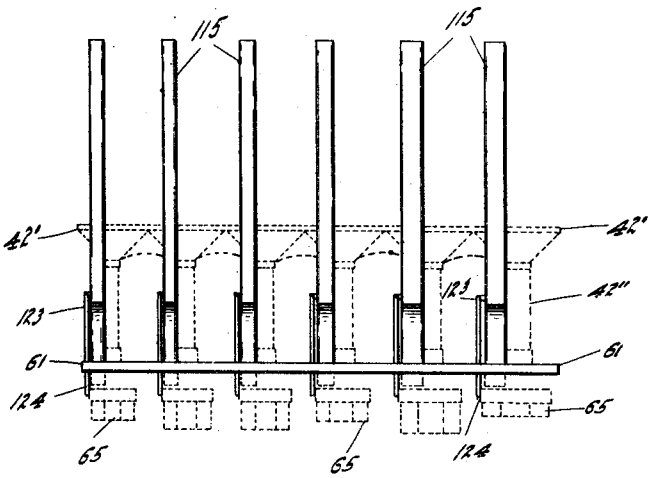
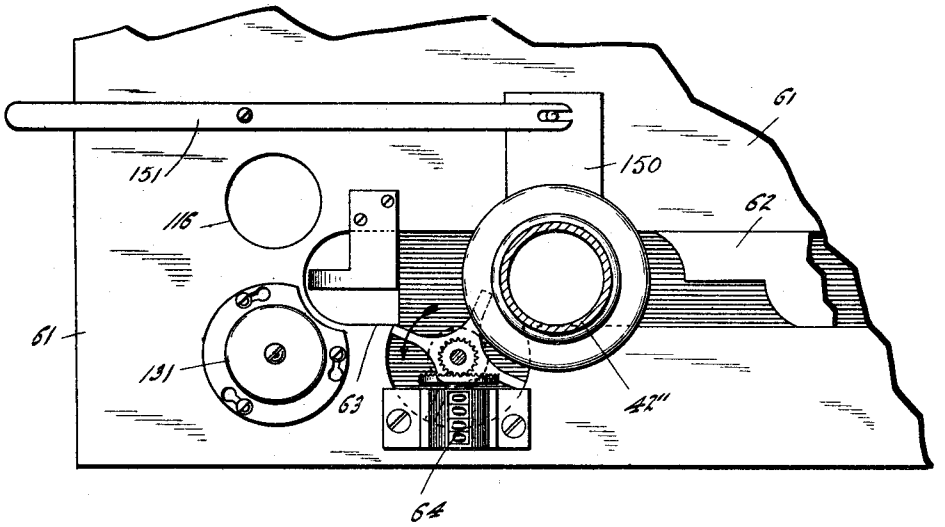


Fig. 17.



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UNITED STATES PATENT OFFICE.

FREDERICK L. SATTLEY, OF INDIANAPOLIS, INDIANA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SATTLEY COIN HANDLING MACHINE COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

COIN-HANDLING MACHINE.

1,047,305. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed November 12, 1908. Serial No. 462,238.

To all whom it may concern:

Be it known that I, FREDERICK L. SATTLEY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Coin-Handling Machines, of which the following is a specification.

The object of my invention is to produce a machine of compact and readily operable character by means of which a quantity of coins comprising all usual denominations of the country, may be delivered to the machine in a conglomerate mass and by it separated accurately into the several denominations counted and delivered either to packages of predetermined capacity or to receptacles into which may be delivered any desired quantity, the construction being such that the several mechanisms may be driven simultaneously or independently preferably by a single motor, the several connections thereof being readily controlled.

The accompanying drawings illustrate my invention.

Figure 1 is a front elevation of a complete machine all but one of the devices for feeding previously formed containers to the packaging mechanism being omitted for the sake of clearness; Fig. 2 is a side elevation of the machine shown in Fig. 1; Fig. 3 a front elevation of one of the packaging devices; Fig. 4 a section on line 4—4 of Fig. 3; Fig. 5 a section on line 5—5 of Fig. 3; Fig. 6 a section on line 6—6 of Fig. 4; Fig. 7 a section on line 7—7 of Fig. 2; Fig. 8 a detail plan of the gyrating mechanism; Fig. 9 a plan of the receiving member; Fig. 10 a section on line 10—10 of Fig. 9; Fig. 11 a sectional detail of the packaging and crimping mechanism; Fig. 12 a section on line 12—12 of Fig. 11; Fig. 13 a side elevation in partial vertical section of the package magazine and automatic feeder; Fig. 14 a section on line 14—14 of Fig. 13; Fig. 15 a plan of a removable clamping head; Fig. 16 a front elevation, similar to Fig. 1, showing the plurality of container delivering mechanisms, and Fig. 17 a plan showing one of the coin ejecting mechanisms and adjacent parts.

For the satisfactory operation of a machine of this character it is essential that, while it must be possible to deliver a very considerable quantity of mixed coins quickly to the machine so that the operator need not spend time in this operation, yet nevertheless means need be provided to prevent the sudden entrance of a considerable number of mixed coins to the sorting mechanism in order to avoid choking the mechanism in such way as to render its operation inaccurate. For this reason I provide a receiving hopper or basin 20 which is stationary and supported by suitable brackets 21 upon the frame 22 of the machine. Basin 20 is provided at one side with a discharge chute 23 which leads from an opening 24 formed in the wall of the basin. Arranged so as to form a bottom for basin 20 is a horizontally rotatable plate 25 journaled upon a suitable pivot 26 carried by frame 22. Said plate needs to be slowly rotated in one direction and for this purpose I provide the same with worm teeth 27 meshing with a driving worm 28 carried by a shaft 29 having a sprocket wheel 31. Extending diagonally across plate 25 to one edge of opening 24 is a scraper or guard 32 which, at its outer end is secured to the wall of basin 20 and at its inner end is secured to the stationary center 33. By this arrangement a considerable quantity of mixed coins may be dumped into the basin 20 and fed gradually but continuously therefrom through chute 23 by a rotation of plate 25. Shaft 29 is driven from the main drive shaft 34 of the machine by any suitable means, such means in the present case comprising a countershaft 35, a sprocket chain 36 connecting said countershaft and sprocket 31, and a sprocket chain 37 connecting countershaft 38 journaled on the main shaft 34 and adapted to be clutched thereto by a suitable clutch 39.

Chute 23 is arranged to deliver to the receiving end of a sorting mechanism of the type fully disclosed in my pending application No. 205,747, said sorting mechanism

comprising, briefly, a gyratory body 41 containing as many sorting shelves as there are kinds of coins less one. For United States coinage this requires five sorting shelves and a bottom from which lead discharge chutes 42, 43, 44, 45, 46 and 47 respectively. The body 41 is carried by a gyratory frame 48 which is supported upon four wrist pins 49 each carried by a gear 51, and all of the gears 51 meshing with a central driving gear 52. Gear 52 is carried by a shaft 53 journaled in frame 48 and provided at its lower end with a traveling gear 54 meshing with a pinion 55 carried by shaft 38. Mounted below spouts 42 to 47 inclusive are hoppers 42′ to 47′ inclusive which deliver to vertical coin-receiving tubes 42″ to 47″ inclusive. The lower ends of the several coin-receiving tubes pass to a table 61 and mounted on said table is a plurality of plungers 62 one of which is arranged to traverse transversely the lower end of each tube delivering the coins successively from the tube to a discharge opening 63 formed in table 61 and through which the coin may pass, the coin in its passage passing by and operating a counter 64. Rotatively mounted beneath each of the openings 63 is a horizontally rotative head 65 provided with a plurality of vertical open-ended pockets 66 each of which is adapted to receive a previously-formed package or container 67 and each of which is successively brought beneath the corresponding opening 63 in order to permit a delivery of coins from the counting mechanism through said opening into a previously formed container or package. Each head 65 is carried by a vertical shaft 68 carrying a bevel gear 69 which meshes with a bevel gear 71 carrying a mutilated gear 72 the teeth of said gear being arranged in as many groups as there are pockets 66. Extending across the entire series of packaging mechanisms is a shaft 73 which carries a plurality of pinions 74 arranged in position to be operatively engaged by the adjacent mutilated gear 72 but normally rotating freely between two groups of teeth of said gear 72. This shaft is rotated continuously by means of a chain 75 connecting it with the main drive shaft 34 and at such speed that, immediately upon establishment of engagement between a pinion 74 and its adjacent mutilated gear 72 the gear 72 will be advanced with sufficient rapidity to very rapidly cause head 65 to advance one step. Engagement between each mutilated gear and its driving pinion may be established in any one of a number of ways. In the present case the counter 64 is geared to a vertical shaft 76 which is connected by a separable clutch 77 with a pinion 78 meshing with a gear 79 which lies in a plane at right angles to the plane of gear 72 and carries a vertical projectable finger 81 adapted to be projected into engagement with any one of a series of fingers 82 carried by gear 72 the arrangement being such that a complete rotation or fraction of rotation of gear 79 will cause a slight advancement of the mutilated gear 72 so as to bring its teeth into engagement with the driving pinion 74, the amount of movement accomplished by finger 81 being very slight and therefore the load upon the counter being slight and thus not affording any material resistance to the passage of coins past the counter. The previously formed containers are supported, in the rotary head 65, by a table 85 which, at a point opposite the receiving position beneath opening 63 is perforated at 86 to permit the completed package to drop into a chute 87. The movement of head 65 by means of gear 72 causes the previously filled package or container to be moved away from receiving position and brought above a plunger 88 mounted in the table 85. Plunger 88 is connected at its lower end with a pitman 89 which is connected to the wrist pin of a crank 91 carried by the shaft 92 upon which gear 71 is journaled. Secured to shaft 92 is a mutilated gear 93 which is mutilated at a single point 94 normally lying opposite the pinion 95 mounted on shaft 73. Gear 93 carries a finger 96 which is projected into the path of movement of any one of a series of fingers 97 carried by shaft 68. This movement might be depended upon to bring the teeth of gear 93 into position to be meshed with the teeth of pinion 95 but this would not only put a considerable load upon the counter 64 but would also bring the teeth of gear 93 into the path of movement of gear 95 at a speed considerably less than the speed of the teeth of gear 95 and this would be objectionable. In order to obviate this difficulty I secure to gear 93 a finger 98 which normally lies out of the path of movement of the finger 99 carried by pinion 95 but is thrown into the path of said finger 99 by the slight movement produced by the action of finger 97 upon finger 96 so that after finger 98 has been slightly advanced as described by reason of the action of the counter, the succeeding revolution of shaft 73 will bring finger 99 into engagement with finger 98 and thus advance gear 93 with the same speed as pinion 95 is advancing so that the teeth of gear 93 will fall easily and accurately into mesh with the teeth of pinion 95.

Arranged above plunger 88 and above head 65 is a clamping head against which the prongs 67′ of the container may be forced by plunger 88. The clamping head comprises a cup 131 provided with a flange 132 in which are formed bayonet slots 133 adapted to receive holding pins 134 carried by table 61. The cup 131 contains a block 135 having a central bore 136 within which is mounted a compression spring 137.

Sleeved in the lower end of bore 136 is the stem 138 of a disk 139 which, on its lower face is slightly cupped. Passing down through cup 131, with its head engaging the cup, is a screw 141 which is threaded into stem 138 so that, by turning the screw 141, disk 139 may be adjusted toward and from the plunger 88. Surrounding disk 139 is a ring 142 which is normally held down by means of a spring 143. The ring 142 on its lower edge is outwardly flared at 144 so as to present an inclined surface to the upper ends of prongs 67′ so that said prongs will be easily bent inward on an upper movement of the plunger 88. The structure as a whole is readily removable, by turning cup 131 so as to withdraw it from pins 134, in order to facilitate access to the packaging head.

The plunger 62 may be reciprocated by any desired means and in the form shown I have illustrated said plungers as being divided into two groups connected to a pair of pitmen 103 which are connected to a pair of cranks 104 carried by a crank shaft 105. Mounted on shaft 105 is a clutch member 106 which is controlled by means of a rock shaft 107 and a lever 108, which lever is brought to the front of the machine to a point within easy reach of the operator. Coöperating with the clutch member 106 is a clutch member 109 which is continuously rotated by means of a chain 111 connecting said clutch member with the continuously rotating shaft 34. The clutch 39 is similarly controlled by a lever 112 which is also brought to the front of the machine.

It is desirable that some means be provided to automatically supply each head 65 with a succession of previously formed containers or packages 67 and for this purpose I provide for each one of the heads 65 a magazine 115 (only one of said magazines being shown in Fig. 1 for the sake of clearness). This magazine 115 is adapted to receive a vertical stack of horizontally arranged packages and delivers to an opening 116 formed through table 61 diametrically opposite from the clamping head. Each of these magazines comprises a vertical tube 117 of substantially the diameter of one of the containers 67 and above this is increased in one dimension to form a portion 118 of the shape proper to receive the containers in horizontally superimposed position. The two portions of the magazine being connected by a flaring wall 119 at one side so that, when any one of the containers is permitted to drop onto said wall, the inclosed end of the container will be permitted to continue downward thus upending the container and delivering it in a vertical position through opening 116 into one of the pockets 66 of the head 65. Movement of the containers downward through the magazine is controlled by a pair of fingers 121 and 122 in a well known manner, said fingers being alternately thrown into and out of position by means of a link 123 which, at its lower end is provided with a finger 124 adapted to be engaged successively by a series of cams 125 carried by the head 65 the arrangement being such that each step of advancement of head 65 will bring one of the cams 125 into engagement with finger 124, so as to rock fingers 121 and 122 to permit the delivery of a single container in a well known manner.

It is often desirable, in the handling of coins in large quantities, to be able to deliver the same in counted amounts to bags or other similar receptacles. In order to make it possible to make such deliveries from my machine, it is necessary to prevent the operation of the packaging mechanism which I have described and for this purpose the intermittent actuation of the mutilated gear 72 may be prevented. A simple means for accomplishing this result is shown in Fig. 4 where I have provided a cam 231 adapted to act upon a shifting yoke 232 by means of which one of the clutch members 77 may be separated from its fellow and thus prevent rotation of gear 79. When this is done it is essential that no container be delivered to the head 65 so that the coins delivered through opening 63 may pass down through an unoccupied pocket 66 of head 65. In order to permit the coins to continue in their passage from this point I form an opening 233 in plate 85 and normally close said opening by a gate 234 which may be moved away from its normal position by a button 235 so that when said gate is withdrawn the coins may pass through opening 233 into a chute 236 which at its lower end is provided with a gate 237, the lower end of said chute being arranged so that a bag or other receptacle may be readily placed beneath it.

The drive shaft 34 may be driven by any suitable means but a convenient means is a small electric motor 141 which may be controlled in its movement by a rheostat 142 controlled by a lever 143 brought to the front of the machine at a point easy of access.

In operation, a conglomerate mass of coins is poured into the basin 20 and delivered therefrom by plate 25 in a steady stream to the sorting mechanism, from which it is delivered to the several coin containing tubes from whence they are discharged in a plurality of streams, each comprising coins of a single denomination only, either to the packaging mechanism or to the chutes 236. Proper manipulation of the parts already described permits the packaging of some coins and the simultaneous delivery of others to sacks or the packaging of all coins or the delivery of all coins in denominational streams to sacks. If for any reason the delivery of coins from the sorting

mechanism to the counting mechanism is more rapid than the delivery of coins from the counting mechanism to the packaging mechanism, the operation of the sorting mechanism may be arrested for a time by manipulation of lever 112. On the other hand, if the delivery of sorted coins is not sufficiently rapid to supply the counting mechanism, the counting mechanism may be arrested by manipulation of lever 108. It is to be noted, however, that if the delivery of sorted coins to the counting mechanism is slower than the possible delivery from the counting mechanism to the packaging mechanism, it is not absolutely essential to stop the plungers 62 because their operation does not in any manner affect the counting mechanism, unless a coin is delivered by the plunger to its counting mechanism, the actuation of the counter being wholly dependent upon the movement of a coin relative thereto. The counting mechanism is arranged immediately adjacent the delivery passage 63 and every coin is delivered directly to the opening 63 by its plunger 62 so that every coin is counted even to the last coin passing through the machine. The passage 63 is very short so that the coin which is the last coin to be delivered to a particular receptacle will reach its receptacle before it is followed by a coin which will cause the actuation of the mechanism which produces a forward step of head 65 and thus causes said head to bring a new receptacle into position to receive the operating coin, thus positively insuring accuracy of delivery of coins to the containers. The drawings are, in the main particulars, drawn accurately to scale, Figs. 1 and 2 being just one-eighth size. It will be seen, therefore, that the machine, while capable of handling accurately the entire range of coinage of this country, is nevertheless comparatively small and very compact and wholly under control of a single operator so that a conglomerate mass of coins of all denominations may be delivered to the machine and will be by it delivered in commercial packages of the several denominations.

Where a conglomerate mass of coins is deposited in the hopper 20 it often occurs that the number of coins of some particular denomination will be considerably less in number than coins of other denominations and it is desirable that a considerable column of coins be maintained in each of the tubes 42″ to 47″ during the operation of the packaging mechanism associated with each tube and for that reason I mount at the bottom of each tube 42″ to 47″ a cut off slide 150 which is adapted to be projected across the tube immediately above the plane of the plunger 62 so as to cut off the flow of coins to that plunger. Each of the slides 150 may be readily manipulated by a lever 151 which is projected toward the front of the machine where it may be readily engaged by the operator. It will be seen that each of these slides 150 is independent of all the others so that flow of coins from the several tubes 42″ to 47″ may be independently controlled.

I claim as my invention:

1. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging coins from said receiver, a coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, a plurality of sacking chutes one for each counting mechanism, and means for controlling the flow of coins from each counting mechanism either to its packaging mechanism or its sacking chute.

2. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging coins from said receiver, a coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, a plurality of sacking chutes one for each counting mechanism, and means for independently controlling the flow of coins from each counting mechanism either to its packaging mechanism or its sacking chute.

3. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging coins from said receiver, a coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, and means for delivering previously formed packages to each of said packaging means.

4. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging the coins from said receiver, a coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, means for delivering previously formed packages to each of said packaging

means, a plurality of sacking chutes one for each counting mechanism, and means for controlling the flow of coins from each counting mechanism either to its packaging mechanism or its sacking chute.

5. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging the coins from said receiver, a coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, means for delivering previously formed packages to each of said packaging means, a plurality of sacking chutes one for each counting mechanism, and means for independently controlling the flow of coins from each counting mechanism either to its packaging mechanism or its sacking chute.

6. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, a vibratory coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, by which a plurality of coins of one denomination are enveloped and retained within a package, and means for ejecting the completed coin-retaining package from the machine.

7. In a coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of various denominations, means for discharging coins from said receiver, a vibratory coin sorter arranged to receive the coins discharged from the receiver and adapted to separate said coins into a plurality of denominational streams, a plurality of counting mechanisms one for each denominational stream, a plurality of packaging mechanisms one for each counter, by which a plurality of coins of one denomination are enveloped and retained within a package, and means for ejecting the completed coin-retaining package from the machine.

8. A coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of several denominations, means for slowly feeding coins from said receiver, a coin sorter comprising a plurality of superimposed differentially perforated sorting shelves and a plurality of delivery chutes one for each denomination, a plurality of receiving tubes one for each delivery chute of the sorter, a plurality of counters one arranged adjacent the delivery end of each receiving tube, a plurality of ejectors one for each receiving tube and adapted to propel successive coins from the delivery chute past its counter, a plurality of channels one for each counter arranged immediately beyond said counter to receive coins immediately after they have passed the counter, a plurality of packaging mechanisms one for each counter and arranged to receive coins from the delivery passage of its counter, and intermediate connections between each counter and its packaging mechanism for controlling the movement of the packaging mechanism.

9. A coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of several denominations, means for slowly feeding coins from said receiver, a gyratory coin sorter comprising a plurality of superimposed differentially perforated sorting shelves and a plurality of delivery chutes one for each denomination, a plurality of receiving tubes one for each delivery chute of the sorter, a plurality of counters one arranged adjacent the delivery end of each receiving tube, a plurality of ejectors one for each receiving tube and adapted to propel successive coins from the delivery chute past its counter, a plurality of channels one for each counter arranged immediately beyond said counter to receive coins immediately after they have passed the counter, a plurality of packaging mechanisms, one for each counter and arranged to receive coins from the delivery passage of its counter, and intermediate connections between each counter and its packaging mechanism for controlling the movement of the packaging mechanism.

10. A coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of several denominations, means for slowly feeding coins from said receiver, a coin sorter comprising a plurality of superimposed differentially perforated sorting shelves and a plurality of delivery chutes one for each denomination, a plurality of receiving tubes one for each delivery chute of the sorter, a plurality of counters one arranged adjacent the delivery end of each receiving tube, a plurality of ejectors one for each receiving tube, and adapted to propel successive coins from the delivery chute past its counter, a plurality of channels one for each counter arranged immediately beyond said counter to receive coins immediately after they have passed the counter, a plurality of packaging mechanisms, one for each counter and arranged to receive coins from the passage of its counter, intermediate connections between each counter and its packaging mechanism for controlling the movement of the packaging mechanism, a plurality of sacking chutes one for each

counter and each arranged to receive coins from said delivery passage, and means for independently controlling the flow of coins of each denomination to either its packaging mechanism or its sacking chute.

11. A coin handling machine, the combination of a receiver adapted to receive a conglomerate mass of coins of several denominations, means for slowly feeding coins from said receiver, a gyratory coin sorter comprising a plurality of superimposed differentially perforated sorting shelves and a plurality of delivery chutes one for each denomination, a plurality of receiving tubes one for each delivery chute of the sorter, a plurality of counters one arranged adjacent the delivery end of each receiving tube, a plurality of ejectors one for each receiving tube and adapted to propel successive coins from the delivery chute past its counter, a plurality of channels one for each counter arranged immediately beyond said counter to receive coins immediately after they have passed the counter, a plurality of packaging mechanisms, one for each counter and arranged to receive coins from the delivery passage of its counter, intermediate connections between each counter and its packaging mechanism for controlling the movement of the packaging mechanism, a plurality of sacking chutes one for each counter and each arranged to receive coins from said delivery passage, and means for independently controlling the flow of coins of each denomination to either its packaging mechanism or its sacking chute.

12. A coin handling machine comprising, a receiver adapted to receive a conglomerate mass of coins of several denominations, means for feeding said coins from said receiver, sorting mechanism comprising a vibratory body having a plurality of differentially perforated superimposed plates adapted to receive the conglomerate coins from the feeding member of the receiver and deliver the same in denominational streams, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

13. A coin handling machine comprising, sorting mechanism comprising a vibratory body having a plurality of differentially perforated superimposed plates adapted to receive the conglomerate coins and deliver the same in denominational streams, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

14. A coin handling machine comprising a receiver adapted to receive a conglomerate mass of coins of several denominations, means for feeding said coins from said receiver, sorting mechanism comprising a vibratory body adapted to receive the conglomerate coins from the feeding member of the receiver and deliver the same in denominational streams, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

15. A coin handling machine comprising sorting mechanism comprising a vibratory body adapted to receive the conglomerate coins and deliver the same in denominational streams, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

16. A coin handling machine comprising a receiver adapted to receive a conglomerate mass of coins of several denominations, means for feeding said coins from said receiver, sorting mechanism comprising a

vibratory body having a plurality of differentially perforated superimposed plates adapted to receive the conglomerate coins from the feeding member of the receiver and deliver the same in denominational streams, a plurality of coin receptacles one for each stream, a plurality of counters one arranged adjacent to each receiver, means for ejecting successive coins from each of said receivers past its counter, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

17. A coin handling machine comprising sorting mechanism comprising a vibratory body having a plurality of differentially perforated superimposed plates adapted to receive the conglomerate coins and deliver the same in denominational streams, a plurality of coin receptacles one for each stream, a plurality of counters one arranged adjacent to each receiver, means for ejecting successive coins from each of said receivers past its counter, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

18. A coin handling machine comprising a receiver adapted to receive a conglomerate mass of coins of several denominations, means for feeding said coins from said receiver, sorting mechanism comprising a vibratory body adapted to receive the conglomerate coins from the feeding member of the receiver and deliver the same in denominational streams, a plurality of coin receptacles one for each stream, a plurality of counters one arranged adjacent to each receiver, means for ejecting successive coins from each of said receivers past its counter, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

19. A coin handling machine comprising sorting mechanism comprising a vibratory body adapted to receive the conglomerate coins and deliver the same in denominational streams, a plurality of coin receptacles one for each stream, a plurality of counters one arranged adjacent to each receiver, means for ejecting successive coins from each of said receivers past its counter, a plurality of packaging mechanisms one for each denominational coin stream, each of said packaging mechanisms comprising a member adapted to receive and successively present to its coin stream a previously formed package and also comprising means for completing the package upon the reception of a predetermined number of coins from the stream, means controlled by the coin stream for intermittently actuating the packaging mechanism upon the flow of a predetermined number of coins in the stream, and means for controlling the several mechanisms and means for controlling said driving means.

20. A coin handling machine comprising, a vibratory sorter embodying means to receive a conglomerate stream of coins of various denominations and separate the same into a plurality of denominational streams, means for delivering such conglomerate stream to the sorter, and a plurality of counting and packaging mechanisms each comprising means to receive a denominational stream and associate the coins thereof in packages of predetermined quantities.

21. A coin handling machine comprising, a sorting mechanism adapted to receive a conglomerate mass of coins of various denominations, said sorting mechanism comprising members adapted to operate upon the coins to separate the same into a plurality of denominational quantities, a plurality of packaging mechanisms one for each of said denominational quantities, each of said packaging mechanisms comprising means for counting the coins comprised in its denominational quantity, and means for receiving predetermined numbers of coins of its denominational quantity and inclosing them in a previously-formed commercial container, and means controlled by the counting mechanism for controlling successive packaging actuation of the packaging mechanism.

22. A coin handling machine comprising, a sorting mechanism adapted to receive a conglomerate mass of coins of various denominations, said sorting mechanism comprising members adapted to operate upon the coins to separate the same into a plurality of denominational quantities, a plurality of packaging mechanisms one for each of said denominational quantities, each of said packaging mechanisms comprising means for receiving predetermined numbers of coins of its denominational quantity and inclosing them in a previously-formed commercial container, and means controlled by the counting mechanism for controlling successive packaging actuation of the packaging mechanism.

23. In a coin handling machine, the combination, of means for delivering a conglomerate mass of various denominations of coins to a sorting mechanism, means for sorting the coins, means for successively delivering coin containers to be filled, means for delivering the coins into said containers, and means for closing the container to retain the coins therein.

24. In a coin handling machine, the combination, of means for delivering a conglomerate mass of various denominations of coins to a sorting mechanism, means for sorting the coins, means for successively delivering containers to be filled, means for delivering the coins into said containers, means for closing the container to retain the coins therein, and means for delivering the completed package from the packaging mechanism.

25. In a coin handling machine, the combination, of means for delivering a conglomerate mass of coins, means for sorting a conglomerate stream of coins into different denominations and arranged in position to receive such stream from the feeding means and means for independently counting each denomination of coins simultaneously, mechanism for delivering the coins of each denominational stream to its counting mechanism, and means for arresting the movement of the sorting mechanism without stopping the mechanism for delivering the coins to the counting mechanism.

26. In a coin handling machine, the combination, of means for delivering a conglomerate mass of coins, means for sorting a conglomerate stream of coins into different denominations and arranged in position to receive such stream from the feeding means and means for independently counting each denomination of coins simultaneously, mechanism for delivering coins to each counting mechanism, and means for arresting the movement of the mechanism for delivering the coins to the counting mechanism without stopping the sorting mechanism, and means for arresting the delivery of coins of one denomination to its counting mechanism without stopping the delivery of coins of the remaining denominations to their respective counting mechanisms.

27. In a coin handling machine comprising means for feeding a conglomerate mass of coins of various denominations to a sorting mechanism, a movable sorting mechanism, means for delivering the sorted coins in position to be automatically counted, means for counting the coins, means for delivering the counted coins in position to be packaged, means for packaging the coins, means for arresting the movement of the sorting mechanism without interfering with the movement of the counting and packaging mechanisms, and means for arresting the delivery of coins of one denomination to its counting mechanism without stopping the delivery of coins of the remaining denominations to their respective counting mechanisms.

28. In a coin handling machine comprising means for feeding a conglomerate mass of coins of different denominations to a sorting mechanism, said sorting mechanism, movable means for delivering the sorted coins in position to be automatically counted, means for counting the coins, means for delivering the counted coins in position to be packaged, means for packaging the coins, means for driving the machine and means for arresting the movement of the mechanism delivering the coins to the counting mechanism without interfering with the movement of the sorting mechanism, and means for arresting the delivery of coins of one denomination to its counting mechanism without stopping the delivery of coins of the remaining denominations to their respective counting mechanisms.

29. In a coin handling machine, the combination, of movable means for sorting and means for packaging a plurality of denominations of coins simultaneously, means for arresting the movement of the sorting mechanism without interfering with the delivery of the coins to the packaging mechanism, and means for arresting the delivery of coins of one denomination to its counting mechanism without stopping the delivery of coins of the remaining denominations to their respective counting mechanisms.

30. In a coin handling machine, the combination, of means for sorting and means for packaging a plurality of denominations of coins simultaneously, means for arresting the flow of the coins to the packaging mechanism without arresting the operation of the sorting mechanism, and means for arresting the delivery of coins of one denomination to its counting mechanism with-

out stopping the delivery of coins of the remaining denominations to their respective counting mechanisms.

31. In a coin handling machine, the combination of means for sorting and packaging a plurality of denominations of coins simultaneously, a plurality of means for holding differentially sized previously formed containers, other means for holding the containers in position to receive coins, and means for delivering the containers successively to the last mentioned holding means.

32. In a coin handling machine, the combination, of means for sorting a plurality of denominations of coins, means for packaging a plurality of denominations of coins, means for delivering the coins from the sorting mechanisms to containers supported by the packaging mechanisms, means for successively closing filled containers to retain the coins therein and means located in the path of the travel of the coins for controlling the movement of the packaging mechanisms.

33. In a coin handling machine, the combination, of means for sorting a plurality of denominations of coins, means for packaging a plurality of denominations of coins, means for sacking a plurality of denominations of coins, means for delivering the coins from the sorting means to the packaging or sacking means, and means for changing the flow of a part or all of the coins from the packaging means to the sacking means, or from the sacking means to the packaging means.

34. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream defining means, a plurality of independent coin-counters each associated with a coin-stream guides, a plurality of coin-packaging mechanisms each associated with a coin-stream guide and associated counter, driving mechanism for simultaneously operating the sorting mechanism and packaging mechanisms and for propelling the sorted coins past the counters to the packaging mechanisms, and means for independently interrupting the action of the sorting mechanism and the flow of any stream of coins to its packaging mechanism.

35. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream guides, a plurality of coin-packaging mechanisms each associated with a coin-stream guide, driving mechanism for simultaneously operating the sorting mechanism and packaging mechanisms and for propelling the sorted coins to the packaging mechanisms, and means for independently interrupting the action of the sorting mechanism and the flow of any stream of coins to its packaging mechanism.

36. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream guides, a plurality of propellers each associated with the delivery end of a coin-stream guide, a plurality of independent means for interrupting the flow of coins each from its stream-defining means without interrupting the flow from the other coin-stream guide, and means for interrupting the flow of coins from the sorters to the several coin-stream guides.

37. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream guides, a plurality of ejectors each associated with the delivery end of a coin-stream guide, means for simultaneously driving the sorting mechanism and the ejectors, and for interrupting the flow of coins from the delivery end of any one of the coin-stream guides without interrupting the actuation of the sorting means and without interrupting the flow of coins from the other coin stream guides.

38. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream guides, a plurality of ejectors each associated with the delivery end of a coin-stream guide, means for simultaneously driving the sorting mechanism and the ejectors, means for interrupting the actuation of the ejectors without interfering with the actuation of the sorting mechanism, and a plurality of coin obstructors each arranged to independently interrupt the flow of coins from a coin-stream guide to the associated ejector without interrupting the operation of the sorting mechanism or ejectors.

39. In a coin handling machine, the combination, of a coin-sorting mechanism having a plurality of independent denominational delivery portions, a plurality of independent denominational coin-stream guides, a plurality of independent coin counters each associated with a coin-stream guide, a plurality of coin-delivery devices each associated with the delivery end of a counter, means for interrupting the flow of coins from the sorter, a plurality of independent guides for interrupting the flow of coins from the denominational streams to the coin-delivery devices lying beyond the count-

er, whereby the flow from the sorter may be controlled without interrupting the delivery flow of the denominational streams, and flow of any denominational stream may be interrupted without interrupting the flow from the sorter.

40. In a coin handling machine, the combination, of coin-sorting mechanism, a plurality of independent counting mechanisms each arranged to receive a denominational stream from the sorting mechanism, and means for arresting the movement of any counting mechanism without stopping the action of the sorting mechanism and the other counting mechanisms.

41. In a coin handling machine, a sorting mechanism having a plurality of independent denominational delivery portions, a plurality of coin grouping mechanisms, one associated with each of said delivery portions for associating a group of coins with a previously formed container, means for removing said container and its group of coins from grouping position to a container-closing position to permit association of a succeeding group with a succeeding container, and means for operating upon the filled container to retain the coins therein and to eject the completed package from the machine.

42. In a coin handling machine, the combination, of a sorting mechanism, a plurality of independent denominational delivery guides formed to receive coins from the sorter and to deliver them in position to be counted, a plurality of coin ejecting means associated with said delivery means, means for simultaneously driving the sorting mechanism and ejecting means, and means for interrupting the flow of coins from one ejector without interrupting the sorting means and without interrupting the flow of coins from the other ejectors.

43. A coin handling machine comprising, sorting and distributing means, a plate having a plurality of apertures to which the distributing means deliver and through which coins may be delivered, and also having a plurality of apertures through which previously formed coin containers may be delivered, a plurality of coin-container magazines each delivering to one of such last mentioned apertures, a plurality of closing means one associated adjacent each coin aperture, a plurality of packing heads arranged beneath the apertured plate and each embodying a plurality of coin-container pockets to accurately and successively register with the adjacent apertures of the plate and with the closing means, means for releasing the completed package from each packaging head, and means for moving each packaging head step by step immediately subsequent to the deposit of a predetermined number of coins in a container.

44. A coin handling machine comprising, means for sorting and distributing coins, a plate having an aperture through which coins of one denomination may be delivered from a distributing means, means for delivering coins successively through said aperture, a packaging head arranged beneath said plate and provided with a plurality of pockets for receiving coin containers, an apertured base plate arranged beneath the packaging head and formed to retain the coin containers within the pockets of said head except in one position, and means rotating said head step by step to bring the pockets into successive register with the coin aperture and with the aperture through the base plate.

45. A coin handling machine comprising sorting and distributing means, a plurality of coin ejecting means each associated with a distributing means, a plurality of magazines for feeding previously formed coin containers, a plurality of packaging heads each provided with a plurality of pockets formed to receive coin containers from the adjacent magazine, a plurality of closing means one arranged adjacent each packaging head, a plurality of package delivery means for completed packages one arranged adjacent each packaging head, a coin container magazine, a coin ejecting means, a closing means, and a completed package delivery means being so arranged relative to the pockets of a packaging head that said pockets may be accurately registered successively with a magazine, coin ejector, closing means, and completed package delivery means, and means for moving said packaging head step by step.

46. In a coin handling machine, the combination of means for sorting a plurality of different denominations of coins and delivering them in denominational streams, a plurality of means for grouping the coins of the denominational streams into groups of predetermined numbers, a plurality of means for advancing the coins of said denominational streams consecutively to the grouping means, means for successively advancing each group from grouping position to packaging position and to discharging position, a plurality of package completing means each associated with a grouping means, a plurality of means for delivering completed packages from the machine, and means for successively advancing each group of coins from grouping position to packaging position and to discharging position.

47. A coin handling machine a plurality of mechanisms each adapted to handle and package a particular denomination of coins, means for delivering a plurality of denominational streams of coins to said packaging mechanisms, a plurality of means for

sacking the denominational streams of coins, and means for changing the flow of denominational streams of coins from their packaging mechanisms to their sacking mechanisms.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this fourth day of November, A. D. one thousand nine hundred and eight.

FREDERICK L. SATTLEY. [L. S.]

Witnesses:
ARTHUR M. HOOD,
THOMAS W. MCMEANS.