W. P. DUN LANY.

COIN REGISTERING MECHANISM.

APPLICATION FILED JULY 18, 1913.

1,154,239.

Patented Sept. 21, 1915.

4 SHEETS—SHEET 1.

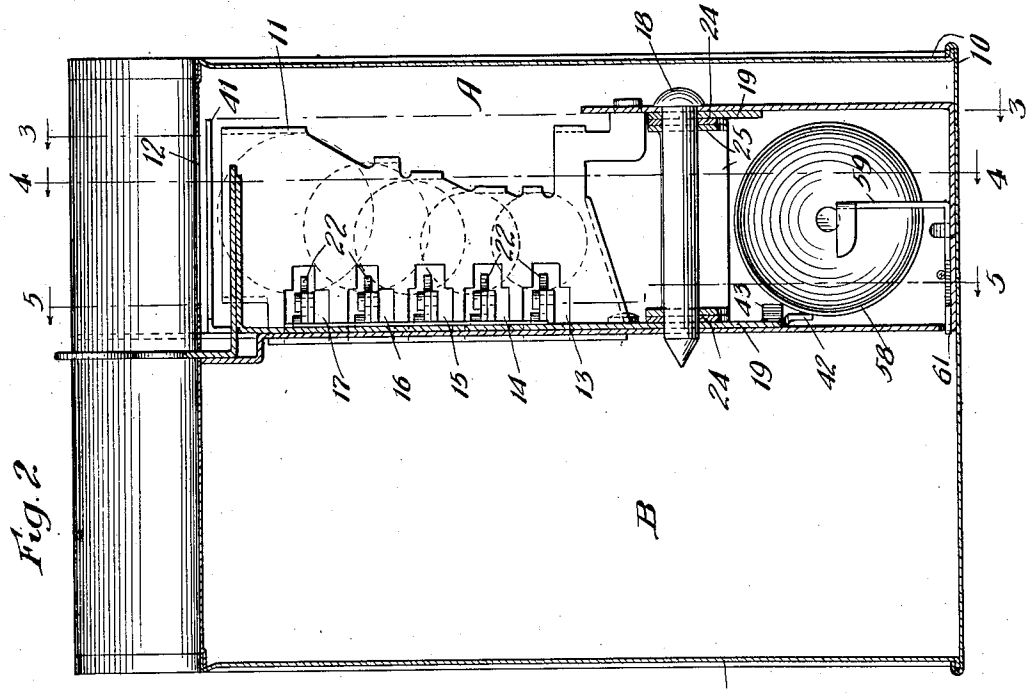


Fig. 2

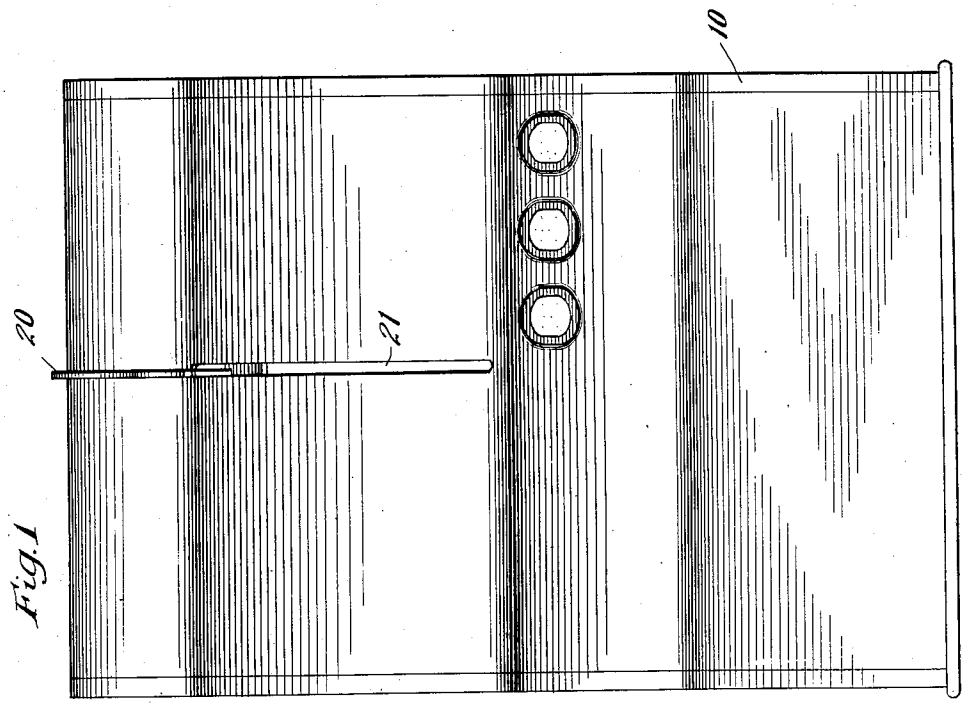


Fig. 1

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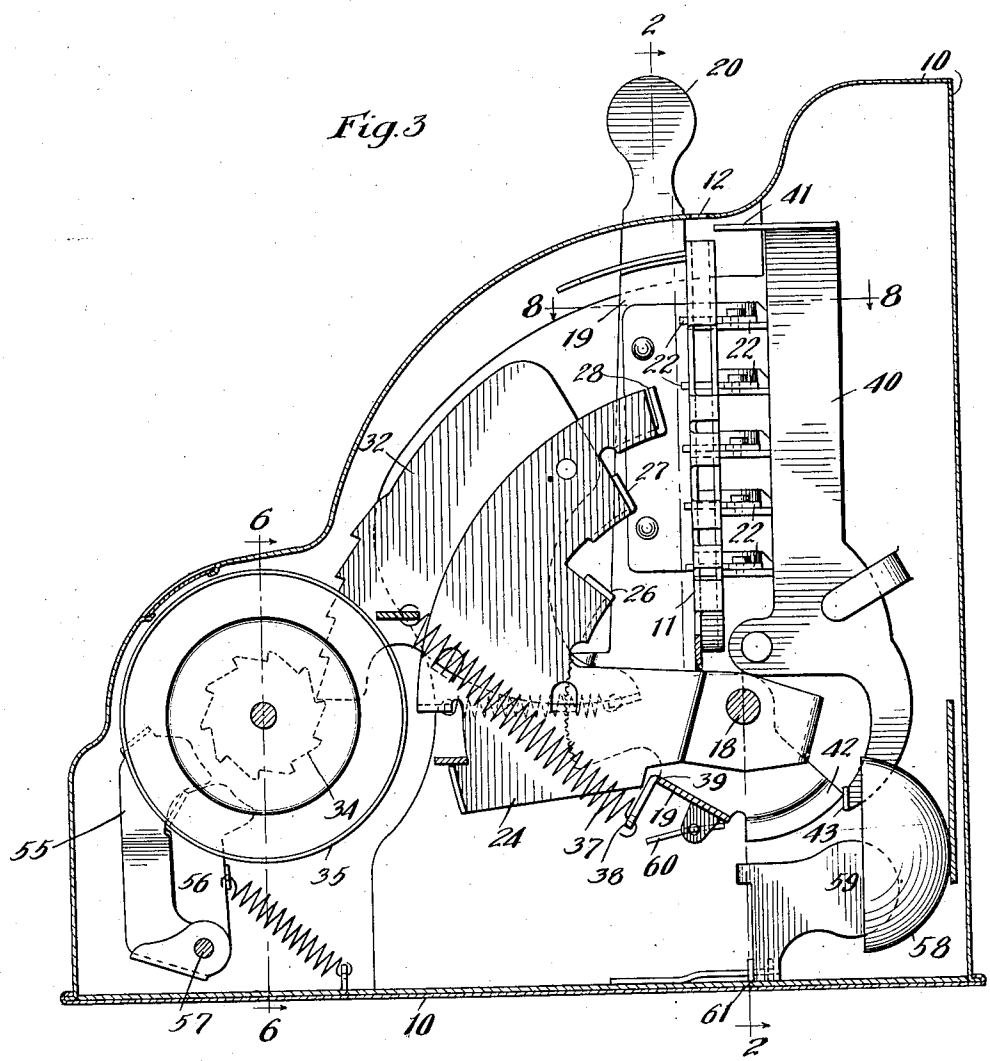
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4 SHEETS—SHEET 2.

Fig. 3



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4 SHEETS—SHEET 3.

Fig. 4

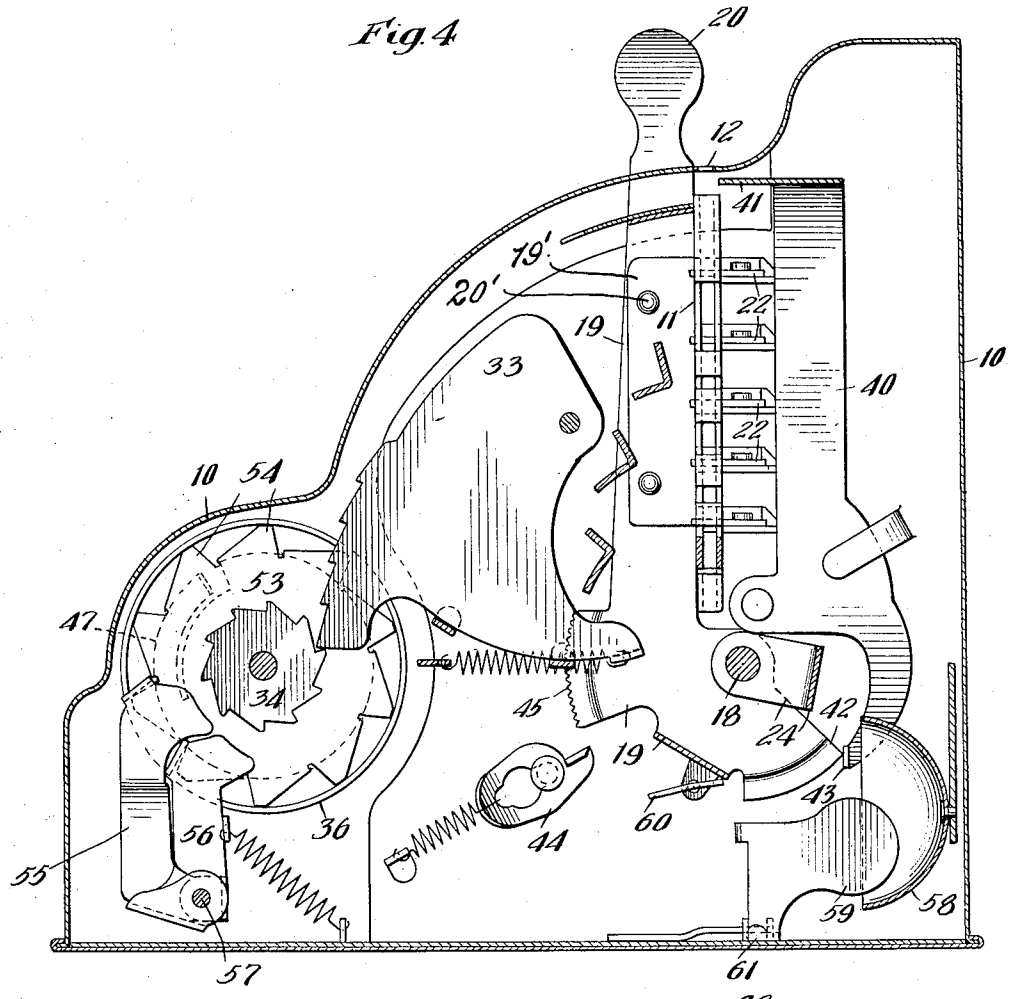
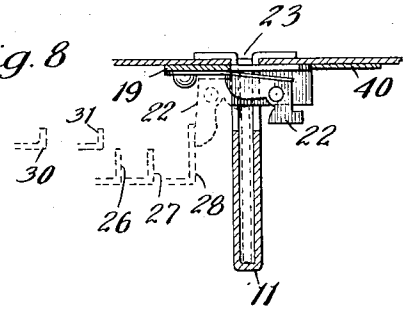


Fig. 8



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4 SHEETS—SHEET 4.

Fig. 5

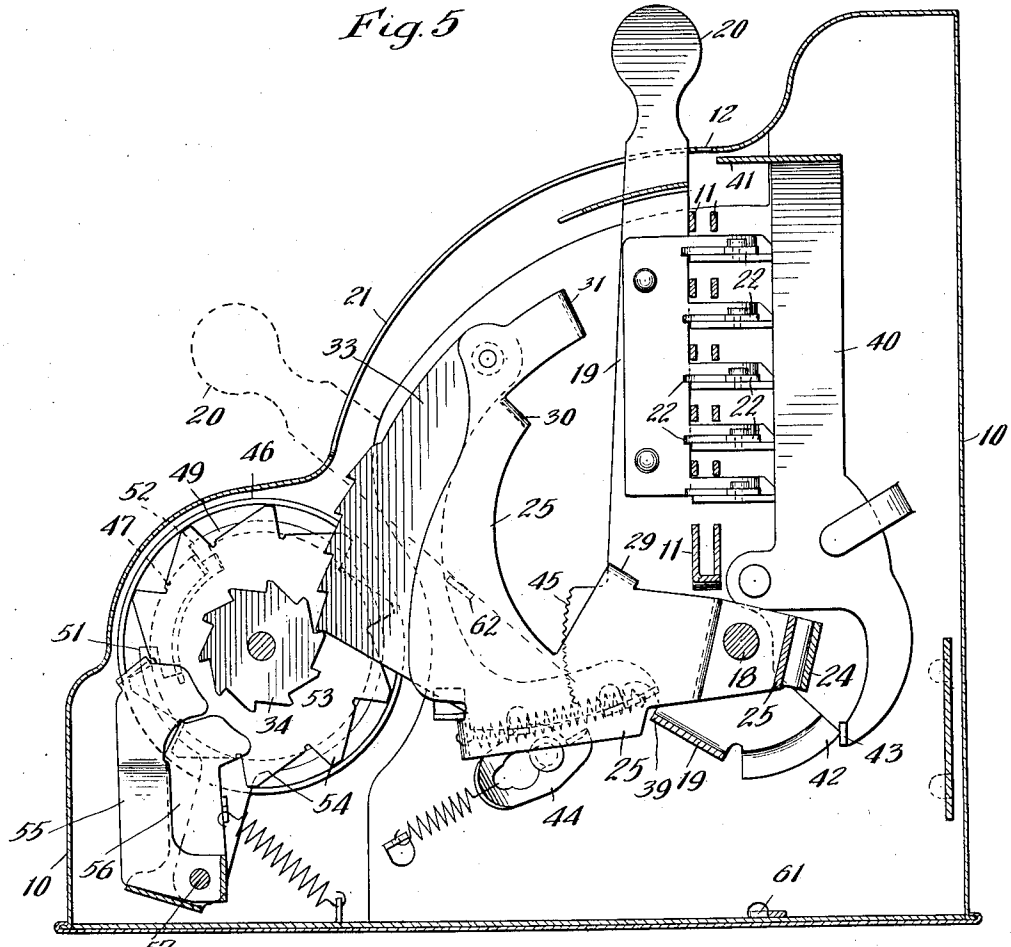


Fig. 6

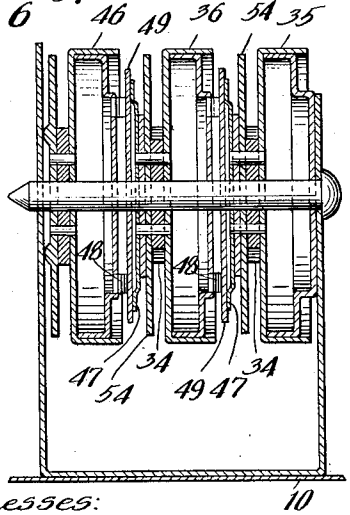
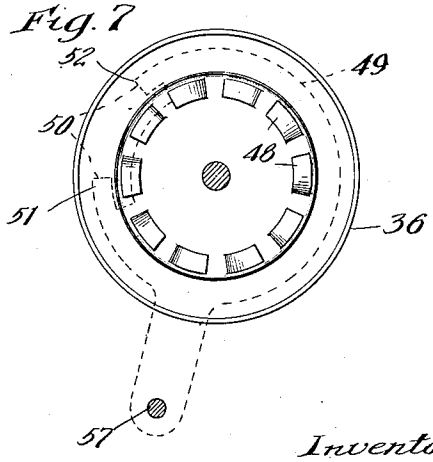


Fig. 7



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM P. DUN LANY, OF MAYWOOD, ILLINOIS, ASSIGNOR TO CHARLES W. SHONK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COIN-REGISTERING MECHANISM.

1,154,239. Specification of Letters Patent. Patented Sept. 21, 1915.

Application filed July 18, 1913. Serial No. 779,664.

To all whom it may concern:

Be it known that I, WILLIAM P. DUN LANY, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Coin-Registering Mechanism, of which the following is a specification.

This invention relates to improvements in coin registering mechanism.

An object of the invention is to provide a mechanism adapted to register coins of different denominations and in which the actuating mechanism proper is selectively set by the coins in accordance with their values, the coins themselves not being used to actually operate the register wheels.

Another object of the invention is to provide a coin registering mechanism having a fixed, graduated coin chute for receiving the coins and an oscillatable frame for rotating the register wheels, the frame having mounted thereon a plurality of triggers normally in inoperative position but adapted to be moved to operative position by coins in said chute when the frame is oscillated past the same, the conditions set up on the frame being dependent upon the size or value of the coins in the chute.

A still further object of the invention is to provide a coin registering mechanism having few parts which do not easily get out of order; which is accurate in operation; and which cannot be tampered with to register any false amounts and in which the coin having been registered cannot be taken out by the operator.

The invention furthermore consists in the improvements in the parts and devices and in the novel combinations of the parts and devices as herein shown, described or claimed.

In the drawing forming a part of this specification, Figure 1 is a front elevation of a mechanism embodying my improvements. Fig. 2 is a vertical, longitudinal section taken substantially on the line 2—2 of Fig. 3. Figs. 3, 4 and 5 are transverse, sectional views taken substantially on the lines 3—3, 4—4 and 5—5 respectively of Fig. 2. Fig. 6 is a vertical, sectional view showing more particularly the registering mechanism and taken on the line 6—6 of Fig. 3. Fig. 7 is a detail view showing more particularly a portion of the transferring mechanism between the register wheels, and Fig. 8 is a detail sectional view taken substantially on the line 8—8 of Fig. 3 and showing more particularly one of the triggers on the oscillatable frame, said figure showing also in dotted lines the position assumed by the trigger when set to operative position and indicating also the relative positions of the shoulders engaged by the different triggers.

In said drawing, the casing of my improved mechanism is designated by the reference 10, the same, as shown, having two chambers A and B, the former having mounted therein the registering mechanism proper and the latter being used as a place to receive the coins after their values have been registered. Within the chamber A and fixed with respect to the casing 10, is mounted a vertical, graduated coin chute 11, the same being in alinement with a coin slot 12 formed in the top face of the casing. Said chute 11 is provided with a plurality of transverse slots 13, 14, 15, 16 and 17, the same corresponding, respectively, to coins of ten, one, five, twenty-five and fifty cents as more particularly hereinafter specified. Mounted on a stationary pivot 18 is an oscillatable frame 19 having an operating handle 20 extending to the exterior of the casing and movable in a slot 21 therein. Said frame 19 carries a plurality of spring-controlled triggers 22, each of which is normally in inoperative position, as shown in full lines in Fig. 8. These triggers are so located on the frame 19 that they pass through the slots 13 to 17, as shown more particularly in Fig. 2. When a coin is in the chute 11, say a fifty cent piece for instance, the rear arm of the trigger which moves in the slot 17 will be engaged by the coin therein when the frame is oscillated past the chute, as shown in Fig. 8, and the trigger will then be swung to the position shown in dotted line in said figure. As will be understood, the frame 19 is normally in the position shown in Figs. 3, 4 and 5, in which position it covers the opening 23 in the side of the chute which communicates

with the chamber B, and when said frame is oscillated from normal and the proper trigger 22 set by the coin, the coin will then fall out of the chute 11 into the chamber B. Also mounted on the pivot or shaft 18 are a pair of independently pivoted levers 24 and 25, see Figs. 3 and 5, the lever 24 being provided with a plurality of engagement shoulders 26, 27 and 28 (Figs. 3 and 8) adapted to be engaged, respectively, by the triggers for coins of one, five and twenty-five cent values. The lever 25 is provided with three engagement shoulders 29, 30 and 31 (Fig. 5) corresponding, respectively, to the triggers operated by the coins of ten, twenty-five and fifty cent values. Each lever 24 and 25 carries a spring-controlled, multiple pawl 32 and 33, respectively, each engaging a ratchet wheel 34 mounted on the units and tens registering wheels 35 and 36.

From the foregoing description it will be seen that when the lever 24 is oscillated the register wheel 35 for the units column will be rotated amounts corresponding to the amounts of oscillation of the lever 24, and similarly the register wheel 36 for the tens column will be rotated amounts corresponding to the amounts of oscillation of the lever 25. The engagement shoulders 26 and 27 on the lever 24 are so located that when engaged by their corresponding triggers the lever 24 will be oscillated sufficiently to move the units register wheel 35 one and five steps, respectively. The shoulders 29 and 31 on the lever 25 are so located that when engaged by their corresponding triggers, the tens register wheel 36 will be rotated one and five steps, respectively, to register ten and fifty cents. It will be noted that the multiple pawl 32 is provided with only five teeth so that no matter how much the lever 24 is moved, the units register wheel 35 can only be moved five points. Consequently when the trigger which is next to the highest on the frame 19 and which corresponds to coins of twenty-five cent value, engages the shoulder 28 it will cause a rotation of the units wheel 35 equal to five steps. At the same oscillation the same trigger will engage the shoulder 30 on the lever 25 thereby rotating the tens register wheel 36 two steps, corresponding to twenty cents, and on account of the shoulder 28 being so located that it causes a moving of the lever 24 in excess of that required to rotate the units wheel five steps, any transferring operation between the units and the tens wheel will take place, if the same should be necessary, before the completed movement of the oscillatable frame 19 in registering a twenty-five cent piece. For returning the frame 19 and the levers 24 and 25 to their normal position after the frame has been oscillated, a spring 37 is provided, one end of which is connected to a stationary part of the casing and the other end to a lug 38 on the lower end of the frame 19, and the frame 19 is provided with a shoulder 39 which engages the undersides of the levers 24 and 25 thereby returning the latter back to normal position when the frame 19 returns back to its normal position. In order to close the entrance to the chute 11 after the frame 19 is removed from normal position and thereby prevent the insertion of a second coin or the removal of the coin being registered, a pivoted arm 40 is provided which has a projection 41 movable into position over the entrance to the slot 11 and beneath the coin slot 12. This arm 40 is automatically operated by the frame 19 which is provided with a depending projection 42 engaging a shoulder 43 on the lower part of the arm 40, see Fig. 3. As shown in said figure, the arm 40 is pivoted eccentrically to the frame 19 so that the projection 42 on the latter will slip off of the shoulder 43 after a slight movement of the frame but on account of the peculiar formation of the projection 42, it will hold the arm 40 with its projection 41 over the chute 11 until the frame 19 returns to normal. A double-acting, spring-controlled pawl 44 is provided which engages with a ratchet 45 on the frame 19 to prevent the latter from being given an incomplete or partial movement thereby requiring a full movement of the frame 19 whenever it is moved sufficiently to once engage pawl 44.

In addition to the units and tens registering wheels 35 and 36, I also provide a register wheel 46 for the hundreds column and the transferring mechanism between said register wheels is constructed and operated as follows: Each register wheel of lower denomination carries a spring pawl 47 which engages ratchet teeth 48 on the register wheel of next higher order but is normally prevented from engagement therewith by a stationary plate 49, see dotted lines of Fig. 7. The plate 49 is, however, provided with a cut-out portion or recess 50 of sufficient length to permit the pawl 47 to advance the ratchet 48 one step, the ends 51 and 52 of the plate 49 adjacent the recess 50 being curved to allow the pawl 47 to slide into engagement with the ratchet 48 and to push it out of engagement therefrom. To prevent overthrow of the register wheels, each is provided with a ratchet plate 53 notched at the lower portions of the teeth therein as shown at 54, in which engage spring-controlled detents 55 and 56 so arranged that a movement of one causes a movement of the other, but on account of the ratchet-engaging portions of said detents 55 and 56 being at unequal distances from their common pivot 57, the detents will disengage the ratchet plate at different times thereby insuring an engagement of at least one of said detents with the ratchet plate at all times.

A bell 58 may be provided, adapted to be

rung each time the frame 19 is oscillated, said bell being rung by a clapper 59 engaged by a trigger 60 on the bottom part of the frame 19, said clapper 59 being pivotally mounted as at 61. The casing is provided with a shoulder or stop 62 against which the frame 19 strikes to limit its amount of downward movement when oscillated and, as will be understood, the triggers 22 are set in inoperative position upon return movement of the frame by the triggers engaging the stationary coin chute.

The oscillatable frame or lever 19 carries a plate 19′ (Figs. 4 and 8) which is secured to the frame by rivets or equivalent means 20′. The rear part of this plate extends past the pivot points of the triggers 22 and rests against whichever side of any trigger is presented toward the plate. This plate thus serves to hold any trigger in its normally inoperative, or in its set operative, position. In Fig. 8 the trigger shown in full lines is held by the said plate 19′ in its inoperative position. When the frame 19 is drawn forward by the operator, so that no part of it interposes between the coin and the left hand edge of the chute 11, any coin that has been introduced into the chute is free to immediately pass through the opening 23 at the left hand edge of the chute into the coin chamber B. The rear edge of the plate 19′ is yielding, toward and from the triggers and their pivots, so that it effects the spring-control of the triggers, to maintain them operatively set or in inoperative normal position, as will be readily understood.

Although I have herein shown and described what I now consider the preferred embodiment of my improvements, yet it will be understood that various changes and modifications may be made in the details of construction and arrangement of parts without departing from the spirit of my invention, and all such changes and modifications are contemplated as come within the scope of the claims appended hereto.

I claim:

1. A coin registering mechanism including, in combination: a casing having a coin-receiving slot therein; a fixed, graduated coin-receiving chute; an oscillatable frame movable away from said chute and having a plurality of independently operable triggers adapted to be tripped by the coins; register wheels; and means engaged and moved by said triggers when the latter are set by a coin for rotating the register wheel amounts corresponding to the value of the coin being registered, substantially as specified.

2. A coin registering mechanism including, in combination: a casing having a coin-receiving slot therein; register wheels; a stationary, graduated coin-receiving chute; an oscillatable frame movable away from said chute and having a plurality of elements thereon, the number of said elements corresponding to the number of different size coins to be registered; and pivoted levers engaged by said elements and adapted to rotate the register wheels, substantially as specified.

3. A coin registering mechanism including, in combination: a casing; a graduated, coin-receiving chute within said casing and fixed relatively thereto, said chute having a plurality of slots; register wheels; an oscillatable frame movable away from said chute and having a plurality of independently operable elements thereon, said elements being adapted to pass through the slots in the chute and to be actuated by coins therein; and pawl and ratchet devices intermediate said frame and said register wheels for operating the latter and engaged by elements on the frame when any of the same are set by coins, substantially as specified.

4. A coin registering mechanism including, in combination: a casing having a slot therein; a stationary, graduated coin-receiving chute, said chute having a plurality of transverse slots therein; registering mechanism; levers having pawls thereon for actuating said registering mechanism; and an oscillatable frame movable away from said chute and having a plurality of pivoted elements thereon normally in inoperative position, said elements being so located that they pass through said slots in the chute when the frame is oscillated, said elements being moved to operative position by coins in said chute and when in operative position adapted to engage said levers and move the latter, substantially as specified.

5. A coin registering mechanism including, in combination: a casing; a fixed, graduated coin-receiving chute therein; register wheels having ratchets thereon; pivoted levers having pawls thereon engaging said ratchets; and an oscillatable frame movable away from said chute and having a plurality of pivoted triggers thereon normally in inoperative position and adapted to be set by coins in said chute when the frame is oscillated past the same, substantially as specified.

6. A coin registering mechanism including, in combination: a casing; a graduated, stationary coin-chute having a plurality of transverse slots therethrough; register wheels for units and tens columns, said wheels having ratchets thereon; transferring mechanism between said register wheels; a pair of pivoted levers each having a ratchet pivotally mounted thereon, each ratchet adapted to engage one of said ratchet wheels; an oscillatable frame movable away from said chute and having a plurality of spring-controlled triggers pivotally mount-

ed thereon, said triggers being so located that they pass through the slots in the coin-chute when the frame is oscillated to be thereby set in operative position by coins in the chute, said triggers, when set, engaging the levers and adapted to operate the latter; and means for returning the frame to normal position after it has been operated, substantially as specified.

7. A coin registering mechanism including, in combination: a casing having a graduated coin-receiving chute therein, the chute having a plurality of transverse slots; register wheels; transferring mechanism between said register wheels; an oscillatable frame movable away from said chute and having a plurality of triggers thereon so located as to pass through said slots and be acted upon by coins therein; pawl and ratchet mechanism for operating the register wheels; and a plurality of shoulders on the members carrying said pawls, said shoulders being located in the path of said triggers when any of the latter are set, substantially as specified.

8. A coin registering mechanism including, in combination: a casing having a stationary, graduated coin-receiving chute therein; register mechanism; pivoted levers each having a plurality of shoulders thereon spaced at different distances from the pivots thereof; pawls pivotally mounted on said levers and adapted to engage and operate ratchets connected with said register mechanism; and a frame oscillatable away from said chute about the same axis as said levers, said frame having mounted thereon a plurality of spring-controlled pivoted triggers adapted to be set by coins in said chute when the frame is oscillated past the same, said triggers when set engaging the shoulders on said levers to thereby operate the latter, substantially as specified.

9. A coin registering mechanism including, in combination: a casing; a stationary, vertical, graduated coin-receiving chute mounted in said casing, said chute having a plurality of transverse slots therethrough; register mechanism; pawl and ratchet mechanism for operating said register mechanism; an oscillatable frame movable away from said chute and having a plurality of pivotally mounted triggers thereon, said triggers being so located that they pass through the slots of the chute to be set by coins therein and when set, operating the pawl devices; an automatically operated means for closing the entrance of the chute when the frame is moved from normal, substantially as specified.

10. A coin registering mechanism including, in combination: a casing having a coin slot therein; a fixed, graduated coin-chute within said casing and in line with said slot; register wheels; transferring mechanism between said register wheels; ratchets mounted on each of said register wheels; a pair of independently movable pivoted levers, each lever having engagement shoulders thereon; a pivoted pawl on each of said levers and adapted to engage with and operate one of said ratchet wheels; an oscillatable frame movable away from said chute and having a plurality of pivotally mounted spring-controlled triggers thereon normally in inoperative position and adapted to be set to operative position by coins in said chute, the triggers when set engaging said shoulders on the levers to operate the latter; and means for returning said levers and said frame to normal position after the frame has been oscillated, substantially as specified.

11. A coin registering mechanism including, in combination: a casing having a coin slot therein; a fixed, graduated coin-chute within said casing and in line with said slot; register wheels; transferring mechanism between said register wheels; ratchets mounted on each of said register wheels; a pair of independently movable pivoted levers, each lever having engagement shoulders thereon; a pivoted pawl on each of said levers and adapted to engage with and operate one of said ratchet wheels; an oscillatable frame movable away from said chute and having a plurality of pivotally mounted spring-controlled triggers thereon normally in inoperative position and adapted to be set to operative position by coins in said chute, the triggers when set engaging said shoulders on the levers to operate the latter; means for returning said levers and said frame to normal position after the frame has been oscillated; and a device for closing the entrance to said chute when the frame is moved from normal position, substantially as specified.

12. In a coin registering mechanism, in combination: means for successively receiving and temporarily holding and releasing coins of different denominations, comprising coin-set triggers having different ranges of movement; and registering wheels and actuating connections which are operated by said triggers, respectively, independently of the presence of the coin.

13. In a coin registering mechanism, in combination: means for successively receiving and holding and releasing coins of different denominations, comprising an oscillatable frame and coin-set triggers carried thereby at different distances from the center of oscillation; and registering wheels which are caused to be actuated by said triggers, respectively, independently of the presence of the coin.

14. In a coin registering mechanism, in combination: means for successively receiving and temporarily holding and releasing a coin; and registering wheels and actuating

connections, including a bodily movable series of triggers, each adapted to be operatively set by its appropriate coin, for operating the registering wheels, the actuation of which is caused by a part of said coin-holding means independently of the presence of the coin and after the same has been released.

15. In a coin registering mechanism, in combination: means for successively receiving and temporarily holding and releasing a coin; registering wheels; an oscillatory frame having means for containing coins of different denominations at different distances from the axis of the frame; a set of normally inoperative triggers on said frame, one for each denomination of coin; actuating connections whereby any operatively-set trigger will operate the registering wheels according to the denomination of the coin which set it and means whereby a coin is caused to set the trigger appropriate to its denomination.

16. In a coin registering mechanism, in combination: registering wheels; a set of normally inoperative triggers, one for each denomination of coin; each trigger being adapted to be operatively set by its coin; an oscillatory frame having means for containing coins of different denominations at different distances from the axis of the frame and arranged for moving the entire set of triggers bodily; connections whereby any trigger when set, causes the registration of the amount of its coin; means for discharging the coin after the trigger has been set; and means for resetting the triggers to normal inoperative position.

17. In a coin registering mechanism, in combination: a frame mounted on a pivot on which it may be turned; registering wheels; ratchet devices actuated by said frame and actuating the registering wheels; a coin chute near said frame and relative to which chute the frame is movable, in which chute different denominations of coins may be arrested at different points; and independent triggers carried by the said frame at correspondingly different points, each adapted to be set operatively with respect to a ratchet device by its appropriate coin in said chute, and being set to inoperative position by the return of the frame to normal position; and means independent of the coin for holding the triggers in operative or inoperative position.

18. In a coin registering mechanism, in combination: a frame mounted on a pivot on which it may be turned; registering wheels; ratchet devices actuated by said frame and actuating the registering wheels; a coin chute near said frame and relative to which chute the frame is movable, in which chute different denominations of coins may be arrested at different distances from the pivot of said frame; and independent triggers carried by the said frame at different distances from its pivot, each adapted to be set operatively with respect to a ratchet device by its appropriate coin in said chute, and being set to inoperative position by the return of the frame to normal position.

19. In a coin registering mechanism, in combination: a frame mounted on a pivot on which it may be turned; registering wheels; ratchet devices actuated by said frame and actuating the registering wheels; a coin chute near said frame and relative to which chute the frame is movable, in which chute different denominations of coins may be arrested; and independent triggers carried by the said frame at different points, each adapted to be set operatively with respect to a ratchet device by its appropriate coin in said chute for the operation of the ratchet device for a distance according to the value of the coin, and being set to inoperative position by the return of the frame to normal position; and means independent of the coin for maintaining the triggers in operative or inoperative position.

20. In a coin registering mechanism, in combination: a frame mounted on a pivot on which it may be turned; registering wheels; ratchet devices actuated by said frame and actuating the registering wheels; a coin chute near said frame and relative to which chute the frame is movable, in which chute different denominations of coins may be arrested at different distances from the pivot of said frame; independent triggers carried by said frame at different distances from its pivot, each adapted to be set operatively with respect to a ratchet device by its appropriate coin in said chute, and being set to inoperative position by the return of the frame to normal position; and means independent of the coin for holding the triggers in operative or inoperative position.

21. In a coin registering mechanism, in combination: a plurality of registering wheels; a set of triggers normally inoperative and adapted to be individually adjusted to operative position by the aid of an inserted coin; an oscillatory frame carrying coin-set triggers and adapted to contain coins of different denominations at different distances from the axis of the frame; and a plurality of operating devices each adapted to actuate its respective registering wheel; one of said triggers being arranged to actuate one of said operating devices another of said triggers being arranged to actuate another of said operating devices and one of said triggers being arranged to operate two of said operating devices.

22. In a coin registering mechanism, in combination: registering wheels; a fixed coin chute having an open side through which a coin is adapted to pass; a coin re-

ceptacle arranged to receive the coins from the chute; a frame mounted on a pivot and movable to open and to close the open side of the chute; and selectively adjusting means on said frame by which the said frame may cause the operation of the registering wheels, the selected adjustment of said means into operative position being according to the denomination of the coin.

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