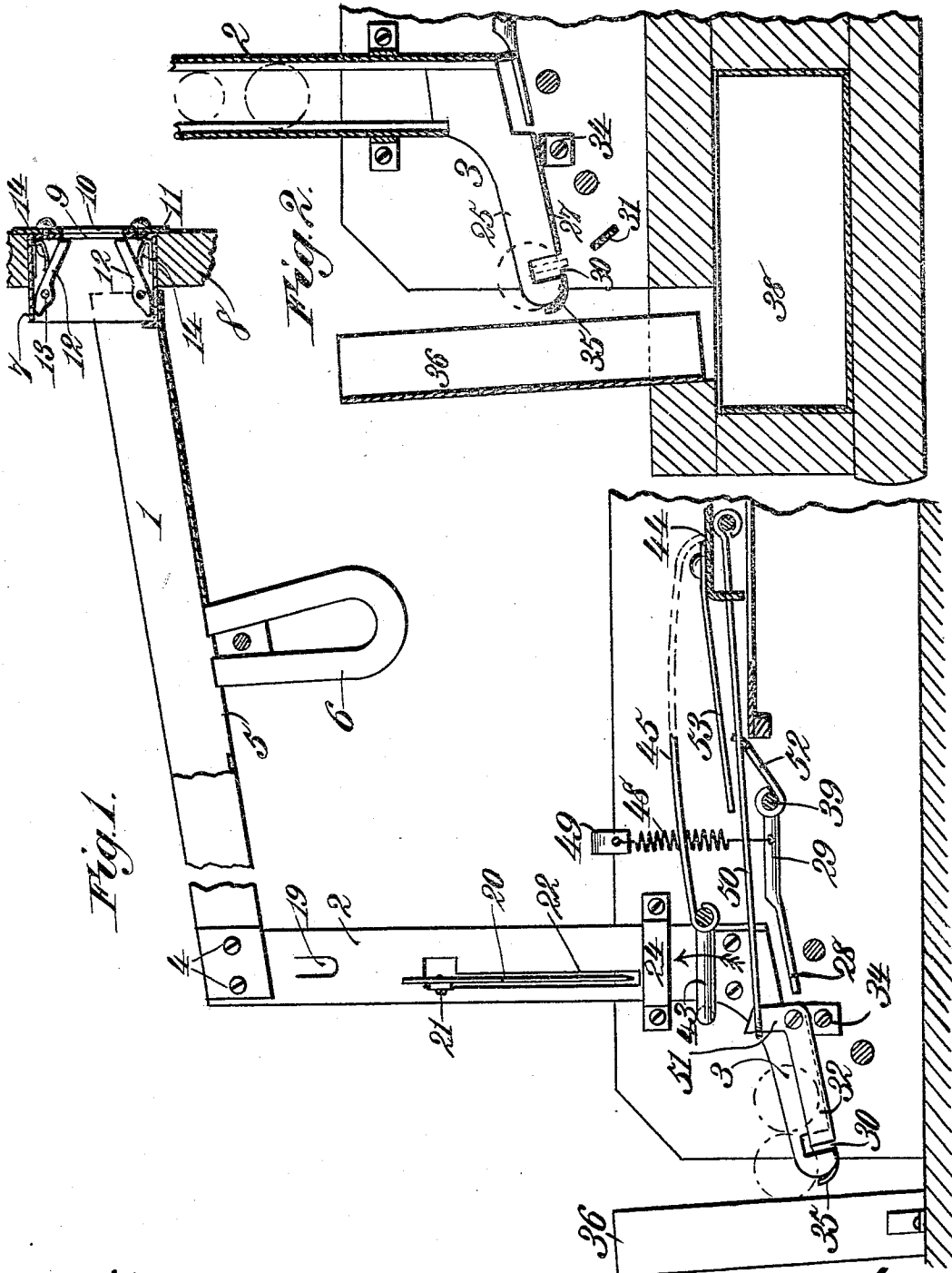


A. JACOBS.
 COIN CONTROLLED MECHANISM FOR VENDING MACHINES.
 APPLICATION FILED FEB. 26, 1908.

943,551.

Patented Dec. 14, 1909

2 SHEETS—SHEET 1.



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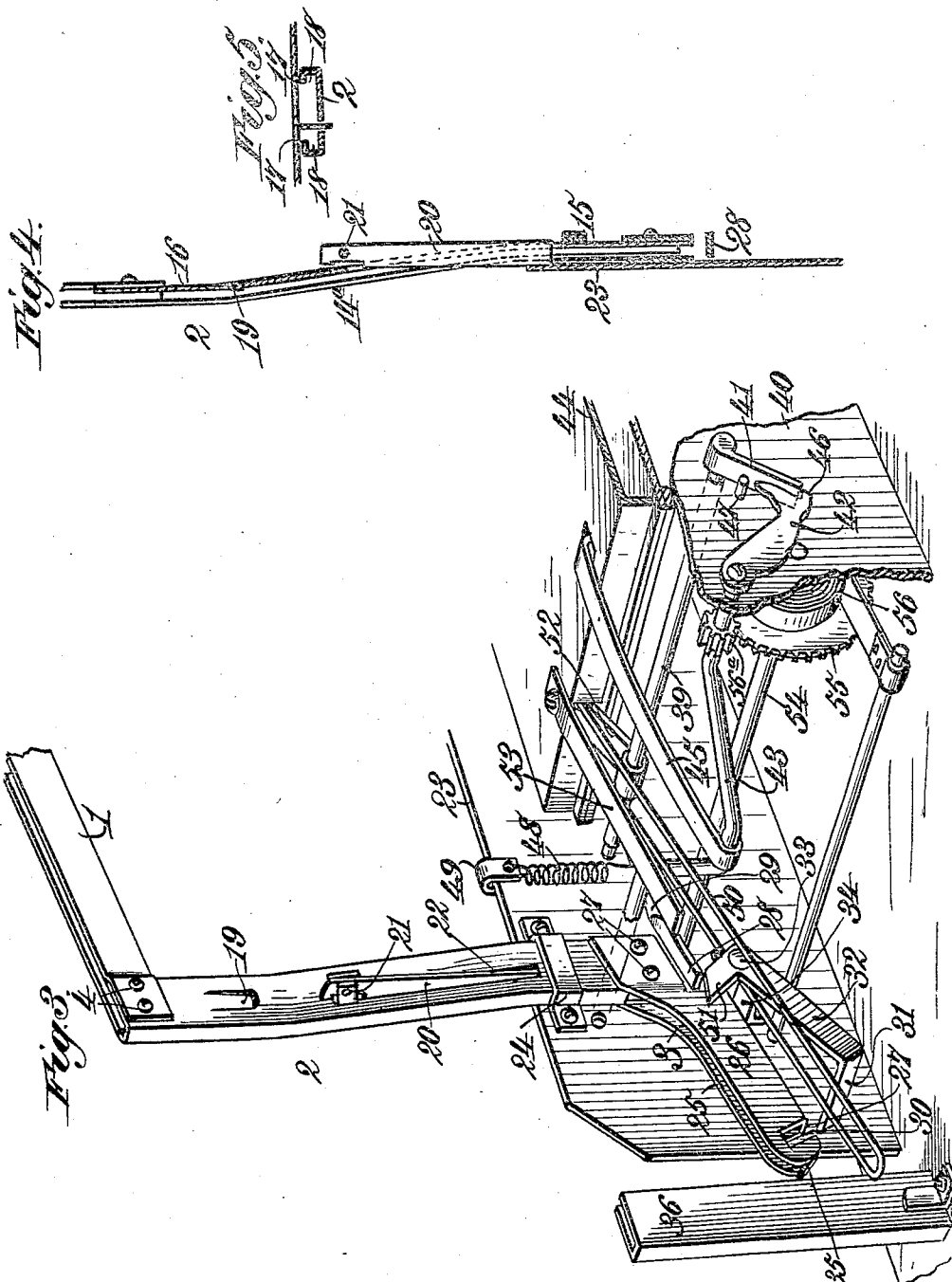
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2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED MECHANISM FOR VENDING-MACHINES.

943,551.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed February 26, 1908. Serial No. 417,862.

To all whom it may concern:

Be it known that I, ALONZO JACOBS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented new and useful Improvements in Coin-Controlled Mechanism for Vending-Machines, of which the following is a specification.

This invention relates to coin controlled mechanism for vending machines, and the object thereof is to provide a mechanism of such class in a manner as hereinafter set forth embodying means for releasing the actuating mechanism of the vending machine when a coin of a proper denomination has been inserted and further embodying means in the manner as hereinafter set forth to prevent the operation of the coin controlled mechanism if an attempt is made to operate such mechanism by the insertion of a fraudulent coin, a slug or a disk.

A further object of the invention is to provide a coin controlled mechanism in the manner as hereinafter set forth to prevent the clogging of the mechanism by the inserted coins.

A further object of the invention is to provide a coin controlled mechanism with means in the manner as hereinafter set forth for giving an impulse to the coin after it is inserted so as to facilitate the travel of the coin down the coin chute.

A further object of the invention is to provide a coin controlled mechanism for vending machines which shall be comparatively simple in its construction, strong, durable, efficient in its use, readily set up with respect to the elements of the vending machine and inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

Referring to the drawings wherein like reference characters denote corresponding parts throughout the several views:—Figure 1 is a sectional side elevation of a coin controlled mechanism in accordance with this

invention. Fig. 2 is a longitudinal sectional view showing the lower end of the coin chute and coin receptacle. Fig. 3 is a perspective view, showing the adaptation of the mechanism in connection with a vending machine. Fig. 4 is a vertical sectional view of the rear of the coin chute. Fig. 5 is a transverse section of the rear of the coin chute.

Referring to the drawings in detail, the coin chute is formed of an upper section 1, an intermediate section 2 and a lower section 3. The section 1 over-laps the section 2 at the top and is secured thereto by the hold-fast devices 4 while the section 3 communicates with the section 2 at the bottom of the latter. The section 1 extends inwardly and downwardly at an inclination while the section 2 extends vertically and the section 3 projects downwardly and inwardly at an inclination. The section 1 is substantially U-shaped in cross section and has its bottom formed with an opening 5 arranged in close proximity to a magnet 6, the function of the latter being to arrest and attract from the section 1 any fraudulent devices inserted in the coin chute and embodying magnetizable material. The section 1 at its forward end opens into a casing 7 which is secured in an opening formed in one of the walls 8 of the vending machine frame. The casing 7 is provided with an entrance slot 9 for the coin which registers with the coin slot 10 formed in a plate 11 secured to the front face of the wall 8. Arranged within the casing 7 is a pair of coin retaining members 12 in the form of levers, one arranged over the other and connected by the pivots 13 to the casing 7, the pivots 13 being positioned at the rear end of the members 12. The forward ends of the members 12 are normally maintained in front of the opening 9 through the medium of the springs 14, these springs being interposed between the members 12 and the top and bottom walls of the casing 7. The function of the members 12 is to detain soft coins such as lead slugs and other soft metal disks. The forward ends of the members 12 are very sharp and case hardened and will prevent the introduction of soft spurious coin as the sharp ends of the members 12 will engage or bite the spurious coins or slugs and arrest their entrance to the coin chute.

The section 2 has the intermediate portion

thereof inclined inwardly as at 14 so that the lower portion 15 of said section 2 will not extend in the same plane as the upper portion 16. The section 2 consists of an elongated strip of material having the marginal portions at the sides thereof bent in an angular manner to form inwardly extending flanges 17 constituting guide-ways 18 in which the coin descends. The flanges 17 retain the coin within the section 2 while the coin is descending, that is to say if the coin is of a diameter as to extend in the guide ways 18. If it is not of the necessary diameter as to extend in the guide-ways 18, the coin will drop out of the section 2 just prior to its entrance into the intermediate portion 14 of the said section 2. The upper portion 16 of the section 2 is formed with a spring tongue 19 over which the coin travels and the said tongue 19 acts as a means to throw off a coin of less diameter. If the coin of less diameter should not fall from the section 2 after passing the tongue 19, it will contact with a vertically extending knife edge lever 20, the latter projecting in the path of the coin as it travels down the section 2 and the lever 20 will force the coin of less diameter from the chute.

The lever 20 is pivoted to the rear of the section 2 as at 21 and extends through a vertical slot 22 formed in the body portion of the section 2. The lower end of the lever 20 projects through the lower portion of the slot 22 into the path of the coin, as clearly shown in Figs. 1 and 5, and if the coin is of the proper diameter, the lower end of the lever 20 will be forced rearwardly during the passage of the coin so that the coin will eventually enter the section 3, but if the coin is of less diameter, the front edge of the lever 20 will force the coin from the section 2. The lever 20 not only performs the function heretofore set forth in connection therewith but further acts as a means to prevent tampering with the mechanism. In this connection it will be stated that the lever 20 is adapted to cut a thread or string in two in the event someone should bore a hole in a nickel or coin and then introduce it into the machine and then pull it back and forth thereby unlocking the machine so as to cause it to operate and discharge the article. The lever 20 will cut the string the first time it will come in contact with the lower end thereof.

The section 2 at its lower end is secured to the inner face of a supporting plate 23 by means of the bracket 24 and the said lower end of the section 2 opens into section 3. The section 3 of the chute comprises a pair of side walls 25 and 26 and a bottom wall 27. The side walls 25, 26 are secured to the lower end of the section 2 as at 27 and the forward portion of each of the side walls 25, 26 at the bottom thereof is cut away,

whereby the rear end 28 of a trip arm 29 can be positioned in alinement with the lower end of the section so that coin passing down said section 2 will also pass between the forward portions of the arms 25, 26 and engage the rear end 28 of the trip arm 29 and shift the said arm for a purpose to be hereinafter referred to. The rear end of the section 3 is formed with a notch 30 in which is adapted to extend the angular end 31 of a shifting lever 32, the latter being pivoted as at 33 to a vertically extending bracket 34. At the rear end of the section 3 a slot 35 is provided for the coin. The function of the slot 35 is for the purpose of detaining for inspection the last coin introduced in the event the machine is operated by a spurious coin. The function of the angular end 31 of the lever 32 is to engage the coin in the section 3 when the coin is positioned against the stop whereby the coin is thrown from said section 3 into the conducting chute 36 and from there discharged into the receptacle 38. If the receptacle 38 is filled with coins, the coin, however, will be dislodged from the section 3 so as to prevent the clogging of the coins in the coin chute. The manner in which the lever 32 is oscillated so that the coin will be dislodged from the section 3 will be hereinafter referred to.

In connection with the retaining of the coin in the slot 35, it will be assumed that a coin is retained in the slot and another coin is introduced into the chute causing the machine to operate, the first will be dislodged by the shifting lever 32, the second coin assuming the position of the first coin, the second coin will not be removed from the point of inspection during the act of delivering a second cigar when two or more are delivered for one coin caused by the operation of a mechanism forming a part of my co-pending application Serial No. 417,863 filed February 26, 1908 for vending machines, for the reason that the yoke 50 to be hereinafter referred to will be elevated above the angular end 34 of the lever 32.

The trip arm 29 constitutes an actuating means for a rock shaft 39 which is journaled at one end in the support 23 and at its other end projects through a support 40 and carries on said projecting end a releasing arm 41 for a stop arm 42 carried on one end of a crank shaft 43, the latter constituting an actuating means for a delivery slide 44, the said shaft 43 being pivotally connected to a link 45 which in turn is connected to the slide 44. The shaft 43 at one end is journaled in the support 23 and at its other end projects through the support 40 and on its projecting end is carried the stop arm 42, the latter being provided with a shoulder 46 against which is adapted to engage the free end of the releasing arm 41. For limiting the movement in one direction of the

arm 41 a lug 47 is provided which projects from the outer face of the support 40 and is positioned in the path of the arm 41.

The trip arm 29 is connected to the rock shaft 39 and is furthermore connected to an extensible spring 48 carried by clip 49 attached to the support 23. The function of the spring 48 is to turn the trip arm 29 to normal position which in turn will rock the shaft 39 in a direction opposite to that direction in which it is rocked when the coin engages the trip arm 29 so that the arm 41 will be shifted to such position as to lie in the path of the shoulder 46 and engage the stop 42, thereby arresting the movement of the shaft 43. The lever 32 is actuated through the medium of an elongated yoke 50 which straddles the upper portion 51 of the lever 32 and is connected to the slide 44. The yoke 50 is positioned over an arm 52 carried by the rock shaft 39 so that on the forward movement of the delivery slide 44, the yoke will be drawn over the arm 52 which will elevate the rear portion of the arm and cause it to engage with the end 51 of the lever 32, thereby rocking the said lever 32 and shifting the angular end 31 in the notch 30, the said angular end 31 engaging the coin in the section 3, discharging it from said section. A rearwardly extending guide arm 53 is attached to the delivery slide 44 to prevent the yoke 50 from assuming a position as to pass over the end 51 of the lever 32.

Journalled in the supports 23 and 40 is a drive shaft 54 carrying a gear 55 and operated through the medium of a power transmitting spring 56. The gear 55 meshes with the pinion 56^a upon the shaft 43 so it is evident that when the stop arm 42 is released, motion will be transmitted to the shaft 54 which in turn revolving the gear 55 will impart motion to the pinion 56^a and rotate the shaft 43.

It is thought that the operation of the coin controlled mechanism can be readily understood from the foregoing description taken in connection with the accompanying drawings, but it will be said that after the coin has passed through the coin chute and has an impulse imparted thereto by the members 12 it will pass down the coin chute and engage the trip arm 29 which will rock the shaft 39 so that the releasing arm 41 will be shifted out of the path of the shoulder 46 upon the stop arm 42, consequently releasing the actuating mechanism for the slide and causing the delivery slide to reciprocate. The coin after it actuates the trip arm 29 in one direction will pass into the section 3 of the chute and be dislodged therefrom through the medium of the angular end 31 of the lever 32. After the coin passes off the arm 29, the latter will be returned to normal position through the me-

dium of the spring 48. The returning of the trip arm 29 to normal position will also rock the shaft 39 in an opposite direction to that which the shaft has been rocked when the trip arm 29 is shifted by the coin. The rocking of the shaft 39 through the medium of the spring 38 will move the releasing arm 41 to engagement with the lug 47 so that the free end of said arm will be positioned in the path of the shoulder 46 engaging the said shoulder and arresting the movement of the stop arm 42, consequently locking the actuating means for the delivery slide from movement, said means being retained in such position until the rock shaft 39 is again actuated to move the free end of the arm 41 out of the path of the shoulder 46.

What I claim is:—

1. A coin controlled mechanism for vending machines comprising a coin chute having an upper inclined coin receiving section, a lower coin discharging section, and an intermediate vertical section, said vertical section having the upper part thereof projecting outside of the plane of the lower part of said section whereby a coin of less diameter will be thrown out of the chute and a pivoted member in said lower part of the section to impel outward any coins that may pass the offset upper portion.

2. A coin controlled mechanism for vending machines comprising a coin chute embodying an upper, a lower and an intermediate section communicating with said upper and lower section, said intermediate section formed with a pair of flanges constituting means for retaining the coins of a predetermined diameter during their passage through the chute, said intermediate section further provided with means for discharging coins of a diameter less than the predetermined diameter of the coin, and means associating with said lower section for discharging the coin therefrom.

3. A coin controlled mechanism for vending machines comprising a coin chute embodying an upper, a lower and an intermediate section communicating with said upper and lower sections, said intermediate section formed with a pair of flanges constituting means for retaining coins of a predetermined diameter during their passage through the chute, said intermediate section further provided with means for discharging coins of a diameter less than the predetermined diameter of the coin, means associating with said lower section for discharging the coin therefrom, and means arranged at one end of the upper section for impelling a coin down the chute.

4. A coin controlled mechanism for vending machines comprising a coin chute, said chute having a stop portion at the lower end thereof against which a coin abuts, an oscil-

latory lever adapted to engage in the lower portion of the chute thereby positively dislodging a coin therefrom, an elongated reciprocatory yoke adapted to engage with
5 said lever for shifting it in one direction, a rock shaft provided with a releasing arm for a delivery slide actuating mechanism, a trip arm projecting from said rock shaft and
10 extending in the path of the coin traveling through the chute, adapted to be engaged by the coin whereby said trip arm is shifted and said shaft actuated to remove the releasing arm to release the actuating mechanism for the delivery slide, a guide arm
15 for said yoke, and means for returning the trip arm to normal position after the coin has passed off the same.

5. A coin controlled mechanism for vending machines comprising a coin chute provided with a rearwardly extending lower
20 portion having side walls which support the coin and having a stop at the end of said portion and a notch, said stop adapted to arrest the coin, and a lever adapted to engage in said notch for dislodging the coin
25 from the lower portion of said chute and raising it above and beyond said stop.

6. A coin chute having one section thereof downwardly inclined and formed at its lower
30 end with an obstruction; in combination with means for lifting a coin in said section over said obstruction.

7. A coin chute having one section thereof downwardly inclined and provided at its
35 lower end with a stationary stop; in combination with means arranged to work in said

section for lifting a coin therein over said stop.

8. A coin chute having one section thereof inclined and provided with an up-turned
40 lower end; in combination with means for lifting a coin in said section over said end.

9. A coin chute having one section thereof downwardly inclined, said section being
45 formed at its lower end with an obstruction and adjacent said end with a notch; in combination with means arranged to work in said notch for forcing a coin in said section to pass over said obstruction.

10. A coin chute having one section thereof
50 of downwardly inclined and provided at its lower end with a stationary stop; in combination with a pivoted member having a portion thereof arranged to work in said section for forcing a coin therein to pass over said
55 stop.

11. A coin chute having one section thereof downwardly inclined, said section being
60 formed at its lower end with an obstruction and adjacent said end with a notch; in combination with a pivoted member having a portion thereof arranged to enter said notch, for forcing a coin in said section to pass over said obstruction.

In testimony whereof I have hereunto set
65 my hand in presence of two subscribing witnesses.

ALONZO JACOBS.

Witnesses:

MARY S. HILL,
E. J. GIDDINGS.