J. A. WEBSTER.

VENDING MACHINE.

APPLICATION FILED JULY 8, 1916.

1,313,032.

Patented Aug. 12, 1919.

Fig. 1.

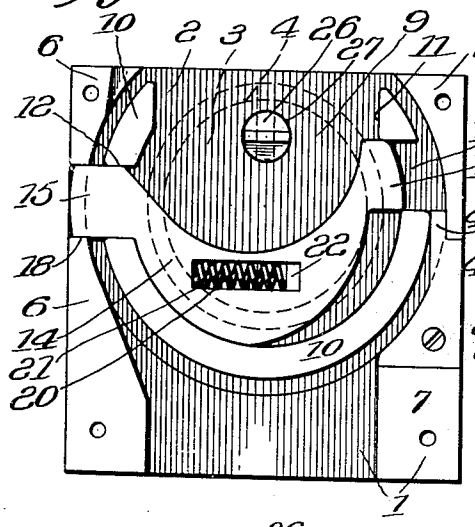


Fig. 2.

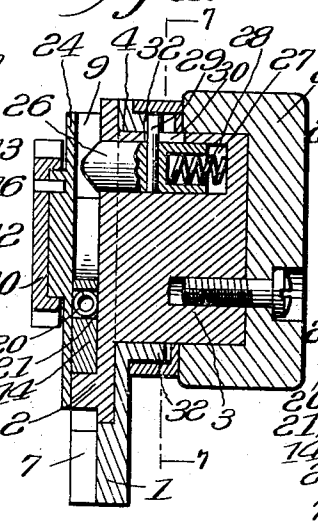


Fig. 3.

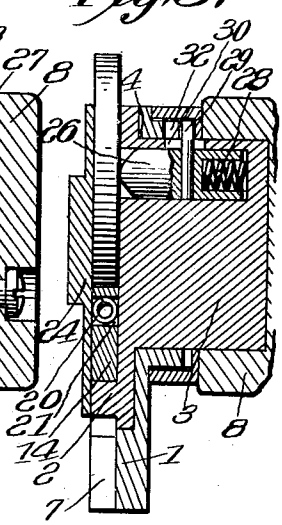


Fig. 4.

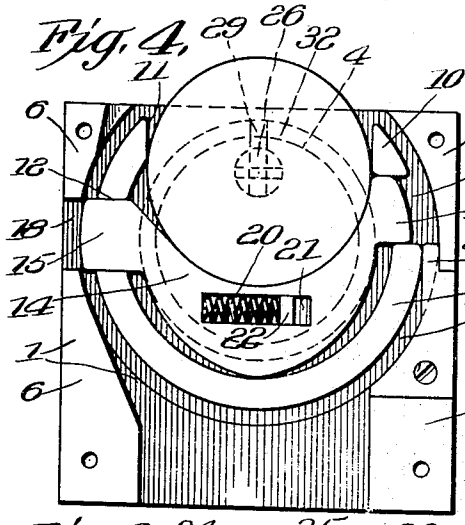


Fig. 5.

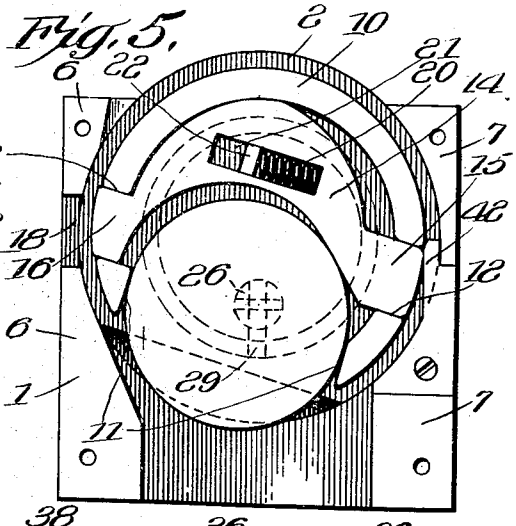


Fig. 6.

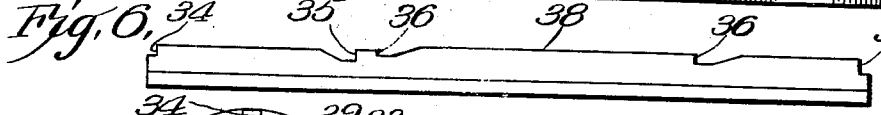
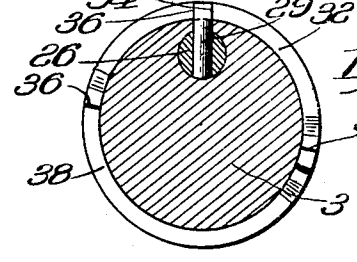


Fig. 7.



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By his Attorney

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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

1,313,032. Specification of Letters Patent. Patented Aug. 12, 1919.

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To all whom it may concern:

Be it known that I, JOHN A. WEBSTER, citizen of the United States, residing at Rutherford, in the county of Bergen and State of New Jersey, have invented new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to a coin released operating mechanism for vending machines and consists of an improved construction and arrangement thereof, designed particularly to be of few and substantial parts and to attain the greatest degree of compactness so as to take up the minimum of space.

My improved mechanism is operative only with coins of the proper thickness and diameter and is adapted to be inoperative with washers. Moreover it provides for the return of all improper coins and precludes of manipulation with an instrument so as to release the mechanism improperly and further insures against a coin being carried through more than one cycle of operation should it be caught within the mechanism after releasing the parts to permit the operation of one delivery.

The described and other features and advantages of my improved device will be understood by reference to the accompanying drawing wherein like reference numerals are applied to the corresponding parts in the several views.

Of the views Figure 1 is a rear elevation of the parts with the back plate and carrier plate removed. Fig. 2 is a vertical longitudinal sectional view thereof; Fig. 3 is a partial view similar to Fig. 2 with the parts in released position. Fig. 4 is a view similar to Fig. 1 with a coin inserted; Fig. 5 is a similar view with the parts in advanced position and the coin ejected; Fig. 6 is a plan view showing the development of the annular stop ratchet and Fig. 7 is a cross sectional view on line 7—7 of Fig. 2.

Referring to the drawings wherein there is illustrated a desirable embodiment of my invention, I have shown the coin controlled operating device of my invention disassociated with the vending machine with which it is to be used for it will be understood that my device may readily be incorporated with many of the existing types of delivery mechanisms which are not necessary to be here shown.

In the approved construction of my invention here shown 1 indicates the supporting and bearing member for the operating parts which is adapted to be secured in suitable manner to the casing or frame of a vending machine. A rotatable coin carrier member 2 is provided with an integral cylindrical extension 3 journaled within an annular bearing 4 in the member 1. This carrier member 2 is of circular disk form and is fitted between the marginal side walls 6 and 7 of the bearing member 1—and the inner edges of the latter are curved into close proximity to the periphery of the carrier 2. The thickness of the carrier disk 2 and these marginal walls of the member 1 substantially correspond. At their upper edges the side walls 6 and 7 are spaced to permit of the passage of the coin therebetween and at their bottom portions they are similarly spaced to permit the coins to drop into any suitable receptacle which may be provided to receive the coins after delivery. To effect the operation of the delivery mechanism motion is transmitted thereto upon rotation of the coin disk 2 imparted by the manipulation of a finger piece or knob 8 affixed to the cylindrical extension 3 thereof.

As shown the coin carrier disk is provided with a coin receiving slot or recess 9 inclosed by a marginal shoulder portion 10. The inner walls 11—11 of the shoulder 10 at the entrance to said recess are spaced with relation to the proper coin to permit of its passage therethrough but not to permit of the passage of coins of excess diameter. The marginal walls are also slotted at 12—13 at opposite sides to provide bearings for the locking slide or bar 14 of the form shown. The bar 14 is provided at one side with a latch extension 15 fitted to slot 12 and at its opposite side with a bearing extension 16 fitted to the slot 13. This bar is of a size to permit of its being moved laterally within the recess 8 whereby in its initial position, as shown in Fig. 1 the locking extension 15 thereof will be projected beyond the periphery of the carrier and received within a locking recess 18 formed in the member 1.

Means are provided tending normally to force the locking bar into its locking position of Fig. 1 and this means is here shown as a spring 20 received in a recess 21 in the locking bar and bearing upon a shoulder or pin 22 on the carrier, extending into the slot 21. The upper part of the locking bar is of semi-circular form correspond-

ing in curvature to the proper coin to provide a recess therefor. In the position of the bar shown in Fig. 1 the recess so formed will be seen to be offset to the left whereby the locking bar projects into the path of the coin which upon being depressed into the slot will engage it so as to move it toward the right. As shown in Fig. 4 by so doing it will impart thereto sufficient movement to release the locking extension 15 from the slot 18. In the arrangement shown the locking bar provides the inner wall of the coin recess and is desirably spaced with relation to the inner surface of the marginal side walls 6—7 proportionate to the proper diameter of the coin. From the foregoing it results that to effect the release of the locking bar a coin of the proper diameter must be inserted.

It is designed that the operativeness of the device shall also be determined by the proper thickness of the coin employed and to that end a cover plate 24 is attached to the front of the carrier member to complete the coin slot by forming the rear wall thereof. As is readily seen the front wall of the slot is formed by the rear surface of the carrier member 2 and the width of the slot so formed is arranged to be but slightly in excess of the width of the proper coin. A yielding pin 26 is fitted to a socket 27 in the bearing portion 3 of the coin carrier and is acted upon by a compression spring 28. The pin 26 carries a stop pin 29 outwardly extended through a slot 30 in the member 3, to be in coacting relation to an annular ratchet or stop flange 32 on the bearing member 1. The end of the pin which enters the coin slot is beveled as shown and normally extends within the slot in which advanced position the stop 29 will be in position to engage a forward stop shoulder 34 of the ratchet flange 32 and in consequence prevent rotation of the carrier in advance direction which as usual is to the right of the operator or as viewed in Figs. 1, 4 and 5 in a counter clock-wise direction. Referring to Figs. 6 and 7 it will be seen that the ratchet flange is provided with a second forward stop shoulder 35 and with a series of reverse stop shoulders 36 and with an intermediate high portion 38.

In the initial position of the parts, as shown in Figs. 1 and 2, the coin-slot will be positioned to receive the coin therein from above and the latch 15 of locking bar 14 will be in locking engagement with slot 18 in the member 1 and the pin 26 will also be in the extended position of Fig. 2 so as to position the pin 29 to engage the forward stop 34 and the first reverse stop 36 of the ratchet flange. The carrier is thus held from rotation in either direction. Upon the insertion of a coin as shown in Figs. 3 and 4, if it be of proper diameter upon being depressed it will act upon the locking bar 14 sufficiently to withdraw the latch 15 from slot 18 and if it is also of the proper thickness it will act upon the pin 26 to move it inwardly into the position of Fig. 3 whereby the stop 29 will clear the co-acting ratchet stops. Thus, as will be readily understood, if the coin is defective in either of its dimensions it will not effect the release of both stops 15 and 29 and the mechanism in consequence will be held inoperative. My arrangement provides for fully testing of the coin upon merely inserting it within the slot and as shown its upper portion is still elevated sufficiently above the parts to be grasped by the fingers and withdrawn if the coin does not meet the qualifications for rendering the mechanism operable.

With a proper coin inserted, the stops 15—29 will release the carrier which may then be rotated one complete cycle in the direction of the arrow to operate a suitable delivery mechanism by means of a pinion 40 attached to the rear face of the carrier plate or otherwise. In so operating, it is arranged that when the carrier has rotated sufficiently for the shoulder to close the space between the sides 6 and 7 at their upper ends, the second advance stop 35 of the ratchet flange shall be operative to again test the coin as to thickness and as the coin is then inaccessible to the operator manipulation of the coin after insertion to effect the release is insured against. Immediately upon being further advanced in its rotation the second reverse stop 36 becomes active to prevent reversal and return of the coin. Thus if the coin is not passed by the second advance stop 35 it may still be returned to the operator. After passing beyond the point of reversal the pin 29 will ride up onto the high portion 38 of the ratchet flange so as to release the pin 26 from spring pressed engagement with the coin. Thereafter the succeeding reverse stops will become successively operative so that the carrier can be brought into initial position again only upon completing the advance cycle of movement. In so advancing, when brought into the position of Fig. 5 an edge cam 42 affixed to the member 1 is engaged by the latch extension 15 and the extension is thereby forced inwardly to release the holding pressure of the slide bar 14 on the coin and in consequence the coin is released when in inverted position to drop through the lower passage, between the sides 6 and 7, by gravity into any suitable receptacle therefor not shown. The carrier upon completing its cycle of movement will be stopped and held in its initial position of Fig. 1 by the reëngagement of the latch 15 with the slot 18 and by the engagement of the pin 29 with initial stops 34—36. The upper inner edge of the wall 6 is suitably

inclined to retract the latch 15 to complete its cycle.

The edge cam 42 in addition to being instrumental to effect the release of the coin, performs the important function of opposing the further passage of the coin should it through any cause become caught within the carrier and not be dropped therefrom. It will be seen that the coin by engaging the cam 42 will lock the mechanism against further rotation and thereby guard against plural delivery by means of a retained coin.

The position of the pin 26 as will be noted is centrally of the coin when within the carrier from which it results that the mechanism can not be released by the use of a washer as the pin will be received in the aperture thereof and therefore not release the pin 29 from the stops 34—35. The under bevel of pin 26 will permit of the washers being withdrawn.

While I have shown and described a desirable embodiment of my invention it will be understood that my invention is subject to many apparent modifications and changes in construction without departing therefrom. It is therefore intended that all matter contained herein shall be interpreted as illustrative and not in a limiting sense.

I claim—

1. A coin controlled operating mechanism for vending machines comprising a stationary member, a coin carrier movable with relation thereto and provided with a coin receiving slot, a yieldable stop for the carrier adapted to be released by a coin of proper diameter, a yieldable stop for the carrier adapted to be released by a coin of proper thickness, and each of said stops being adapted to lock the carrier in a stationary initial position thereby to release the carrier for rotation from initial position only upon the insertion of a coin within the slot proper both in diameter and thickness.

2. A coin controlled operating mechanism for vending machines comprising a stationary member, a coin carrier movable with relation thereto and provided with a coin receiving slot open to the exterior in initial position, a yielding stop for the carrier adapted to be released by a coin of proper diameter, a yielding stop for the carrier adapted to be released by a coin of proper thickness and fixed stop elements arranged to co-act with each of the yielding stops to lock the carrier against forward movement from initial position and with at least one of the yielding stops in a second position when the coin slot is inaccessible and means to oppose movement of the carrier beyond a coin discharge position when the coin is not discharged therefrom substantially as described.

3. A coin controlled operating mechanism for vending machines comprising a stationary member, a coin carrier movable with relation thereto and provided with a coin receiving slot open to the exterior in initial position, a yielding stop for the carrier, adapted to be released by a coin of proper diameter, a yielding stop for the carrier adapted to be released by a coin of proper thickness and fixed stop elements arranged to co-act with each of the yielding stops to lock the carrier against forward movement from initial position and with at least one of the yielding stops in a second position when the coin slot is inaccessible substantially as described.

4. A coin controlled operating mechanism for vending machines comprising a stationary member, a coin carrier movable with relation thereto and provided with a coin receiving slot, a movable stop for the carrier adapted to be released by a coin of proper diameter, a movable stop for the carrier adapted to be released by a coin of proper thickness, each of said stops being operative to lock the carrier in its initial position and to be released upon the insertion of the coin within the slot and means to engage the movable stops to release the coin when said carrier is in discharge position substantially as described.

5. A coin controlled operating mechanism for vending machines, comprising a stationary member, a coin carrier journaled to rotate with relation thereto and provided with a coin receiving slot communicating with the exterior in its initial position, a yielding stop for the carrier adapted to be released by a coin of proper diameter, a second yielding stop for the carrier adapted to be released by a coin of proper thickness, fixed stop shoulders arranged to co-act with the yielding stops normally to lock the carrier in initial position and to prevent advance rotation thereof beyond an intermediate position unless a proper coin is within the slot and to prevent reverse return of the carrier beyond said intermediate position, said slot being inaccessible, when said carrier is in said intermediate stop position and means to release the yielding stops from contact with the coin when the carrier is in a coin delivery position and to oppose movement of the carrier beyond delivery position when the coin is not discharged therefrom substantially as described.

6. A coin controlled operating mechanism for vending machines comprising a stationary bearing member, a rotary coin carrier journaled therein and provided with a coin receiving slot, a yielding stop for the carrier adapted to be released by a coin of proper diameter, a second yielding stop for the carrier adapted to be released by a coin of proper thickness and positioned

to register with the apertures of washers, fixed stop shoulders arranged to coact with each of the yielding stops normally to lock the carrier in initial position and with at least one of the yielding stops to prevent advance rotation of the carrier beyond an intermediate position and said carrier being formed to close the coin slot when in said latter position.

7. A coin controlled operating mechanism for vending machines comprising a stationary bearing member, a rotary coin carrier journaled therein and provided with a coin receiving slot, a yielding stop for the carrier adapted to be released by a coin of proper diameter, a second yielding stop for the carrier adapted to be released by a coin of proper thickness and positioned to register with the apertures of washers, fixed stop shoulders arranged to coact with each of the yielding stops normally to lock the carrier in initial position and with at least one of the yielding stops to prevent advance rotation beyond an intermediate position and said carrier being formed to close the coin slot when in said latter position and means to release the coin when said carrier is in discharge position substantially as described.

8. A coin controlled operating mechanism for vending machines comprising a stationary bearing member, a rotary coin carrier journaled therein and provided with a coin receiving slot, a yielding stop for the carrier adapted to be released by a coin of proper diameter, a second yielding stop for the carrier adapted to be released by a coin of proper thickness and positioned to register with the apertures of washers, fixed stop shoulders arranged to coact with the yielding stops normally to lock the carrier in initial position and to prevent advance rotation thereof beyond an intermediate position and said carrier being formed to close the coin slot when in said latter position, reverse acting stop arranged to co-act with one of the movable stops when the carrier has advanced beyond said intermediate forward stop, means to release the coin when said carrier is in discharge position and to oppose movement of the carrier beyond its discharge position when the coin is not discharged therefrom substantially as described.

9. A coin controlled operating mechanism for vending machines comprising a stationary member, a coin carrier movable with relation thereto and provided with a coin receiving slot open to the exterior in initial position and of a size to prevent the insertion of a coin of excess diameter, a yieldable stop for the carrier adapted to be released by a coin of proper diameter, a yieldable stop for the carrier adapted to be released by a coin of proper thickness and each of said stops being adapted to lock the carrier in a stationary initial position and to release the carrier for rotation only upon the insertion of a coin within the slot of proper thickness and diameter and one of said yielding stops being adapted to register with the aperture of a washer.

In testimony whereof I have signed my name to this specification.

JOHN A. WEBSTER.