March 18, 1941. L. O. GARNER ET AL 2,235,147

DISPENSING APPARATUS

Original Filed May 31, 1939 3 Sheets-Sheet 1

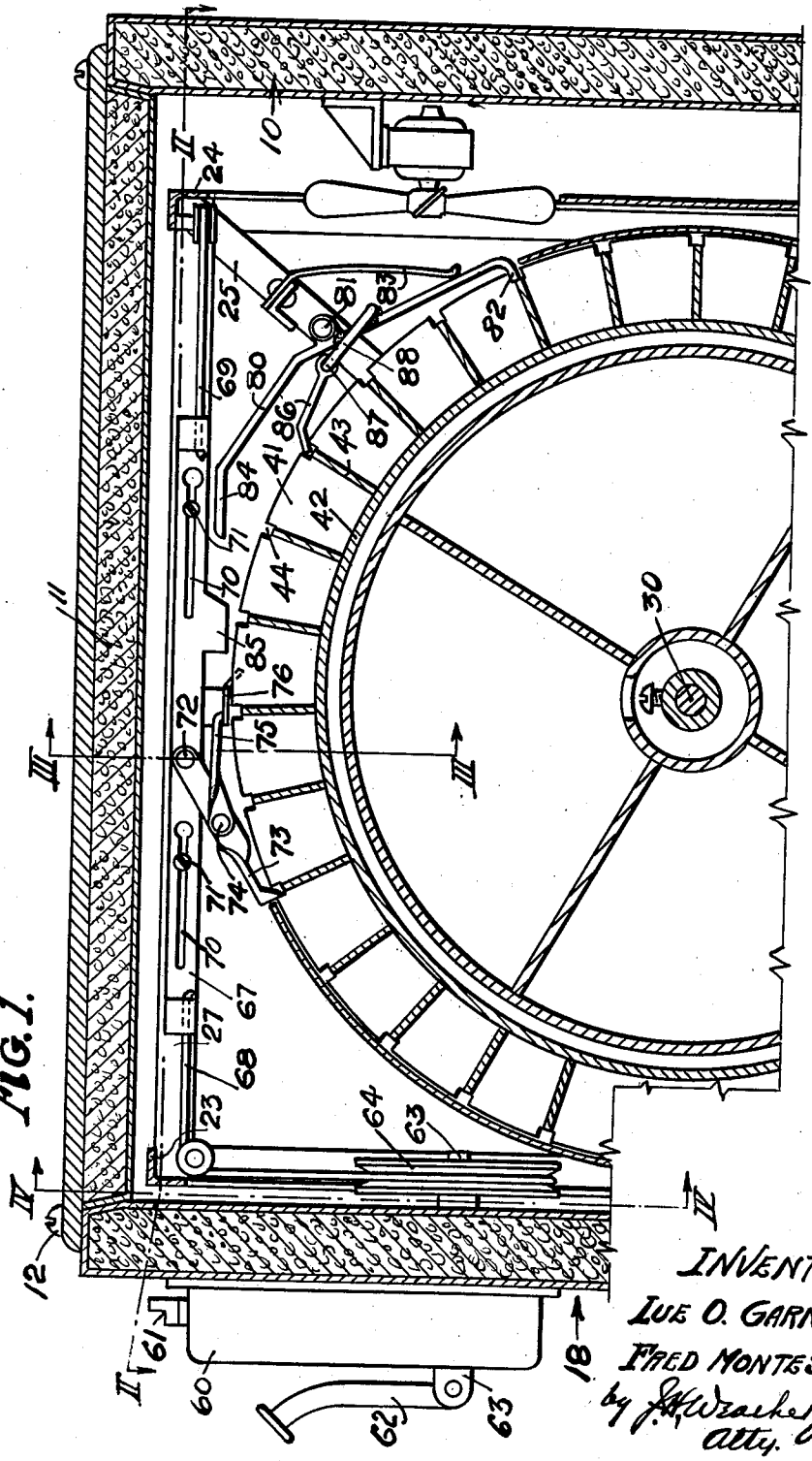


FIG. 1.

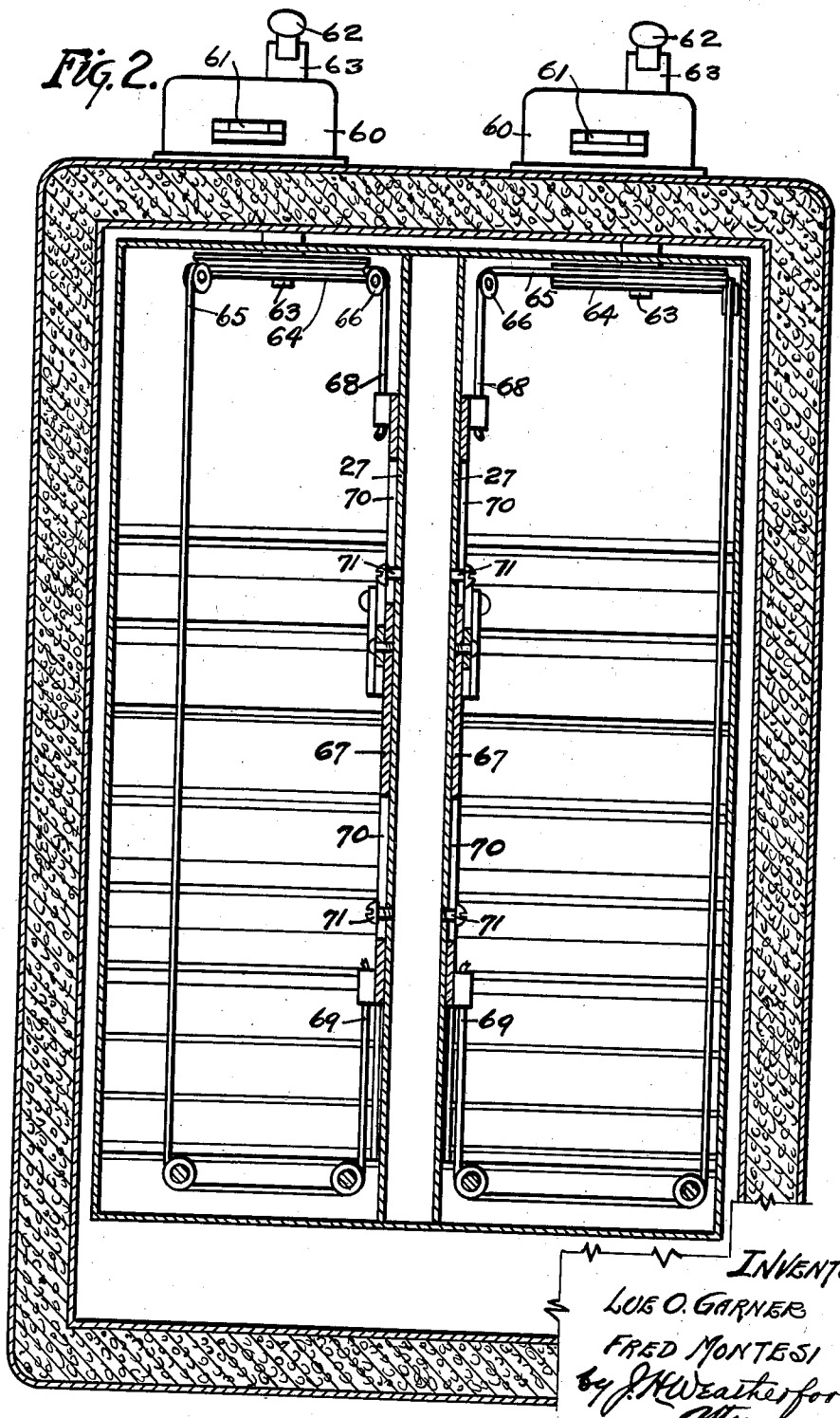
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FIG. 2.



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Fig. 3.

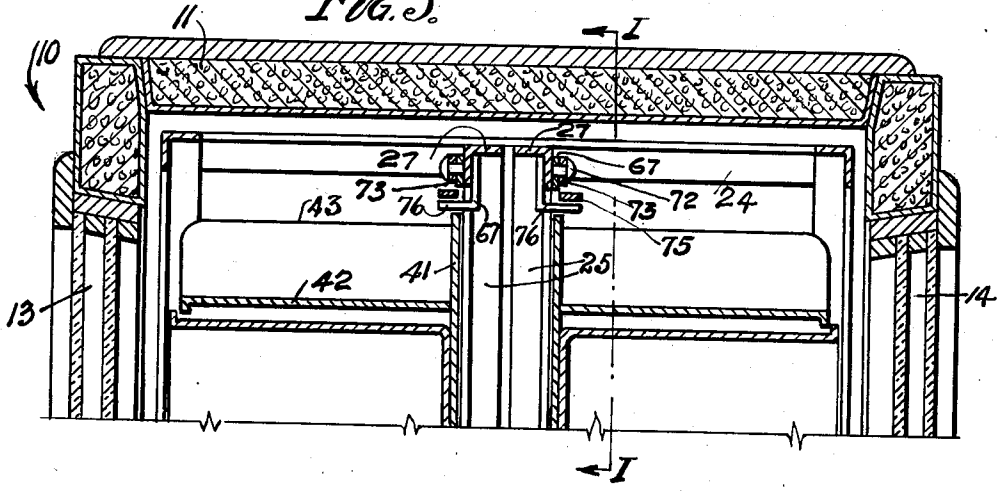
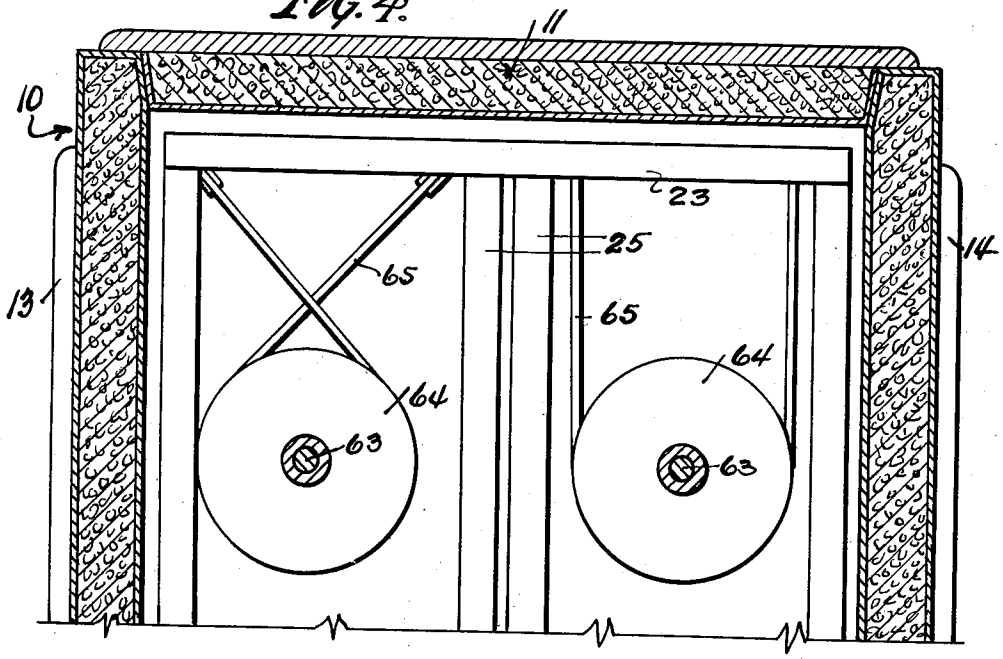


Fig. 4.



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DISPENSING APPARATUS

Lue O. Garner and Fred Montesi, Memphis, Tenn.

Original application May 31, 1939, Serial No. 276,624. Divided and this application February 3, 1940, Serial No. 317,080

3 Claims. (Cl. 74—155)

This invention relates to mechanism for dispensing packages or articles, and particularly to a device of this kind employing a holding and dispensing drum, and means for advancing this drum by a step by step movement.

The present application is a division of our application for patent on Dispensing apparatus, Serial No. 276,624, filed May 31, 1939.

The objects of the invention are:

To provide a dispensing apparatus having a carrier in which a large number of articles to be dispensed may be carried, and means for advancing this carrier step by step.

To provide means for preventing movement of the carrier by other than the designated advancing means.

To provide means for limiting the movement of the carrier at any one operation to a single step advancement.

The means by which the foregoing and other objects are accomplished and the method of their accomplishment will readily be understood from the following specification on reference to the accompanying drawings, in which:

Fig. 1 is a sectional side elevation taken substantially on the line I—I of Fig. 3 showing the upper portion of casing and dispensing drum and showing the advancing apparatus.

Fig. 2 is a sectional plan view taken on the line II—II of Fig. 1.

Fig. 3 is a sectional elevation of the upper portion of the casing and apparatus therein, taken on the line III—III of Fig. 1; and

Fig. 4 a sectional elevation taken on the line IV—IV of Fig. 1.

Referring now to the drawings in which the various parts are indicated by numerals:

The machine comprises a casing 10 which is here shown having walls insulated against heat exchange. The casing preferably has a top 11 which may be removed to permit access to the working mechanism, primarily for adjusting such mechanism, but which is ordinarily secured in place as by screws 12. The casing also has on its opposite side doors 13 and 14. 18 is the front of the casing through which delivery of the articles is effected.

Disposed within the casing is a frame which may be made up of angle iron members and preferably includes transverse top members 23, 24. Extending diagonally downward from the transverse top member 24 are a pair of angle iron members 25 which constitute an axle support. 27 are angle iron frame members which extend from the transverse top frame member 23 to the similar transverse top member 24 and are rigidly secured to both thereof. In Fig. 2 the top leg of these angles has been cut away and only the vertical legs are shown, these being in section.

At approximately the mid point lengthwise of the angle irons 25, a transversely disposed axle 30 is rigidly secured in desired manner. Mounted on the opposite end portions of this axle are a pair of dispensing drums, each of which includes a disc 41, a cylindrical sleeve 42 and a plurality of division plates 43 which are spaced at equal intervals around the exterior of the sleeve 42 to provide around the periphery of the sleeve a number of equal size pockets. The sleeve 42 and the plates 43 are secured together and to the disc 41 as by welding. The annular structure thus formed is hereinafter sometimes termed a drum and is rotatable around the axle 30.

Each disc 41 preferably extends peripherally beyond the outer edges of the division plates 43 and is provided with notches 44, there being one notch for each plate, and correspondingly therefrom, one for each of the pockets set off by these plates.

The two drums are entirely independent in their movement and their advancement is effected in independent but substantially identical manner. There is provided for each of the drums a coin box 60 which has a slot 61 in which a coin may be introduced, such coin boxes being purchasable in the open market and forming no part of the present invention. Each coin box has a handle 62 which is connected through a shaft 63 to a grooved pulley 64. Disposed around each pulley 64 is a related cord 65. Each cord 65 leads over suitable related pulleys 66 to a related shiftable bar 67, the opposite ends 68, 69 of the cord being connected to the opposite ends of the bar in such manner that when a handle 62 is shifted, as to the right, the end 69 of the cord pulls the bar 67 toward the back of the casing, and when the handle is shifted reversely back to original position the end 68 of the cord pulls the bar 67 back to its original position. Since both of the bars 67 are positioned adjacent the center of the casing one of the cords is necessarily crossed, as shown in Fig. 4, in order that movement of the two levers 62, as to the right, may effect identical shifting movement of the two bars 67.

Each bar 67 is provided with a pair of slots 70 and is slidably held against the frame member 27 as by headed pins or screws 71 which pass through the slots 70 and are secured into the

related frame member 27. Secured to the bar 67 as by a pivot pin 72 is a ratchet pawl 73 which is adapted to engage successively with the disc notches 44. Pivotally secured to the ratchet 73 as by a pin 74 is an oppositely faced dog 75, likewise adapted to engage with the notches 44. 76 is a slide which holds the dog 75 out of notch engagement during a portion of the backward movement, but terminates to permit engagement as the backward stroke is being completed.

For each drum there is a rocker arm 80 which is pivotally secured as to the axle support member 25 as by a pivot pin 81, this arm having at one end an inwardly turned lug 82 forming a notch engaging detent, this detent being resiliently held in such engagement by a leaf spring 83 and when so engaging preventing both forward and backward movement of the drum. The arm 80 extends oppositely beyond the pivot pin 81, the end 84 of this oppositely extending portion being disposed in the path of a cam 85 secured to and forming an integral portion of the bar 67 and being so positioned relatively thereto that it will be engaged by said cam and depressed to free said detent lug 82 from notch engagement and hold same in such disengaged position until forward movement of said drum shall have moved the disengaged notch out of engaging position.

86 is a latch engaging the drum notches successively to prevent retrogressive movement of the drum. The latch 86 is mounted on a pivot pin 87 which is carried by a bar 88, this bar, for convenience in assembling being secured to and carried by the arm 80, attachment being shown between pivot pin 81 and lug 82.

In use customers approach the front of the machine and drop the proper coin into one of the slots 61 then turn the related handle 62 to the right as far as the mechanism will permit. This movement of the arm shifts the related bar 67 rearwardly dragging the ratchet pawl 73 along the edge of the drum disc 41 and into engagement with the next rearward notch, and moving the oppositely faced dog 75 over the surface of the slide 76 until the dog drops off the end of that slide and eventually moves into notch engagement. During this movement the latch 86 and the detent 82 both prevent drum movement. However, as the dog 75 approaches notch engagement the cam 85 engages the end 84 of the arm 80 and dis-engages the lug 82, the latch 86 still preventing retrogressive drum movement, and in connection with the notch engagement of the dog 75 acting to prevent either backward or forward movement of the bar 67. The customer having moved the handle 62 to the limit of its movement must bring the handle back to its original position before drum advancement and delivery of the article can occur. As this backward movement of the handle starts, the lug 82 is held out of notch engagement. The ratchet 73 has accomplished notch engagement and the forward shift of the bar 67 through the pull of the cord 68 begins the shift of the drum. As this shifting movement continues the cam 85 disengages from the end 84 of the rocker arm 80 and permits the spring 83 to hold the lug 82 against the face of the disc 41 in position to drop into the approaching notch and thus limit forward movement. Article delivery from the drum (not here shown) is timed to occur as locking engagement of the detent 82 with the notch is effected.

We claim:

1. A vending mechanism, including a casing having therein a dispensing drum rotatably mounted; and means for manually actuating said drum; said drum including a rotatable disc having a plurality of equally spaced notches; said actuating means including an elongated support carried by said casing in substantial parallelism with a face of said disc and adjacent the periphery thereof, a member slidably movable for longitudinal reciprocation with respect to said support, manually operable means for retrogressively shifting said member and for returning said member to initial position, ratchet means carried by said member and retrogressively shiftable therewith into notch engagement, said ratchet means on return of said member accomplishing advancement of said disc, a dog adapted for notch engagement to prevent retrogressive movement of said member, a detent member pivotally carried by said casing adapted for notch engagement to prevent movement of said disc when in advanced position, means urging said detent into notch engagement, means carried by said member adapted to disengage said detent as said member is retrogressively shifted and to hold said detent free of notch engagement during initial advance movement of said member, a ratchet pawl oppositely faced to said ratchet means carried by said member and shiftable on retrogressive movement of said member into notch engagement as detent disengagement occurs, and means for holding said pawl from notch engagement during the beginning of retrogressive shift of said member and for disengaging said pawl during advance shift of said member.

2. A vending mechanism, including a casing having a dispensing drum rotatably mounted therein; and means for manually actuating said drum; said drum including a rotatable disc having a plurality of equally spaced notches; said actuating means including a member movably supported for reciprocable movement adjacent and along the edge of said disc, manually operable means for retrogressively shifting said member and for returning said member to initial position, ratchet means carried by said member and retrogressively shiftable therewith into notch engagement, said ratchet means on return of said member accomplishing advancement of said disc, a dog adapted for notch engagement to prevent retrogressive movement of said disc during retrogressive movement of said member, a detent member pivotally carried by said casing adapted for notch engagement to prevent movement of said disc when in advanced position, means urging said detent into notch engagement, a cam carried by said member adapted to disengage said detent as said member is retrogressively shifted and to hold said detent free of notch engagement during initial advance movement of said member, a ratchet pawl, oppositely faced to said ratchet means, carried by said member and shiftable on retrogressive movement of said member into notch engagement as detent disengagement occurs, and casing carried means for holding said pawl from notch engagement during the beginning of retrogressive shift of said member and for disengaging said pawl during advance shift of said member.

3. A vending mechanism, including a casing having a dispensing drum rotatably mounted therein; and means for manually actuating said drum; said drum including a rotatable disc hav-

ing a plurality of equally spaced notches; said actuating means including a member movably supported for reciprocable movement adjacent and along the edge of said disc, manually operable means for retrogressively shifting said member and for returning said member to initial position, ratchet means carried by said member and retrogressively shiftable therewith into notch engagement, said ratchet means on return of said member accomplishing advancement of said disc, a dog adapted for notch engagement to prevent retrogressive movement of said disc during retrogressive movement of said member, a detent member pivotally carried by said casing adapted for notch engagement to prevent movement of said disc in advanced position, resilient means urging said detent into notch engagement, a cam carried by said member adapted to disengage said detent as said member is retrogressively shifted and to hold said detent free of notch engagement during initial advance movement of said member, a ratchet pawl, oppositely faced to said ratchet means, carried by said member and shiftable on retrogressive movement of said member into notch engagement as detent disengagement occurs, and casing carried means for holding said pawl from notch engagement during the beginning of retrogressive shift of said member and for disengaging said pawl during advance shift of said member, said manually operable means including an oscillatable shaft extending through a wall of said casing, a lever external to said casing operably engaging said shaft, and means within said casing for operably coupling said shaft to said reciprocating member.

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