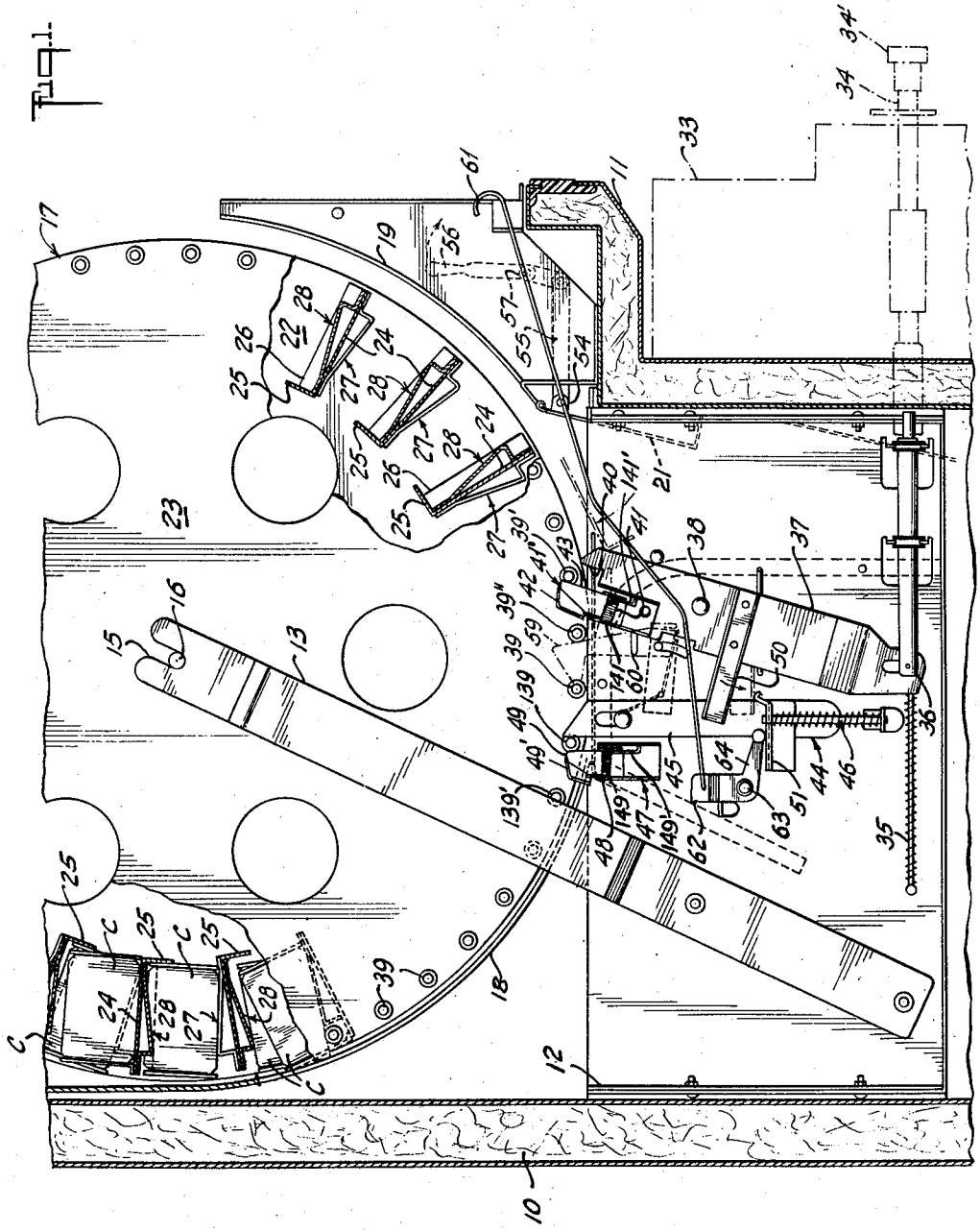
June 2, 1959 A. M. CARUSO 2,889,187

ROTARY CONTAINER DISPENSERS

Filed Jan. 16, 1957 2 Sheets-Sheet 1

Fig. 1.



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June 2, 1959 A. M. CARUSO 2,889,187

ROTARY CONTAINER DISPENSERS

Filed Jan. 16, 1957 2 Sheets-Sheet 2

Fig. 2.

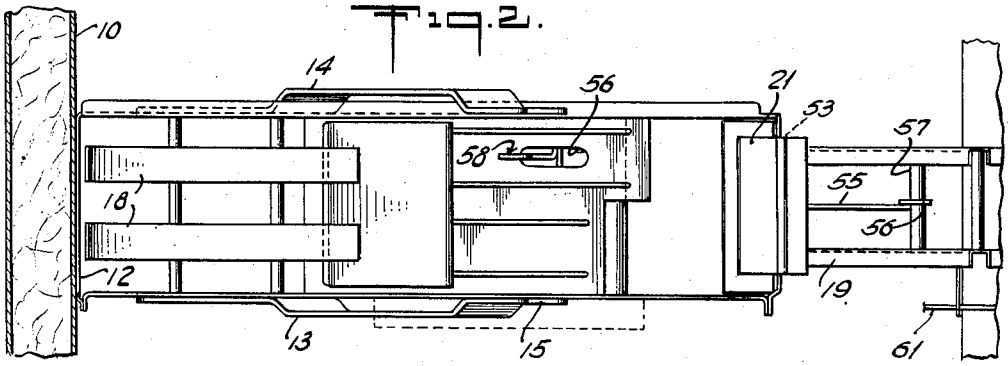


Fig. 3.

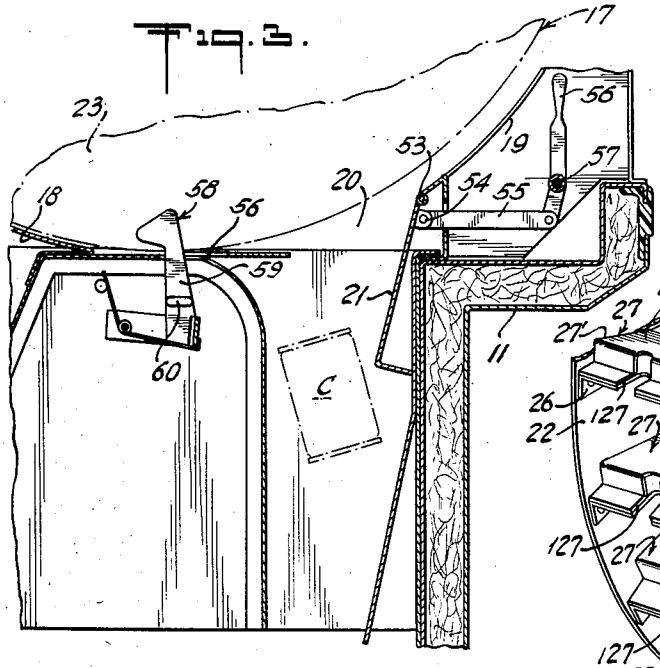


Fig. 4.

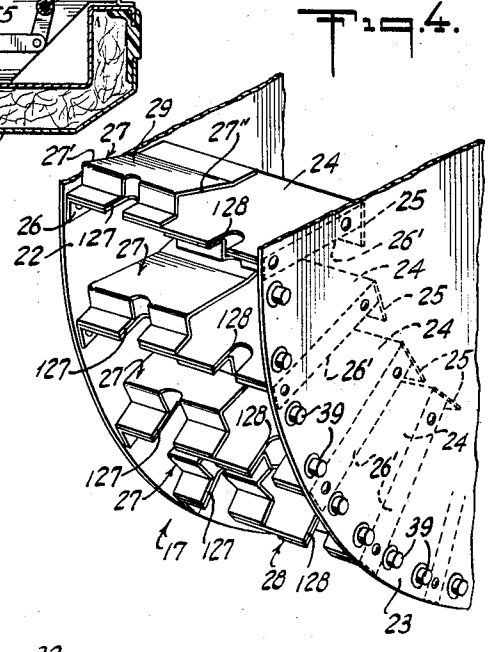
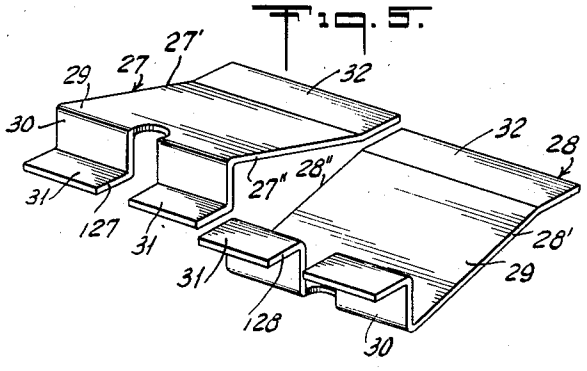


Fig. 5.



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ROTARY CONTAINER DISPENSERS

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3 Claims. (Cl. 312—97.1)

This invention relates to a container dispenser adapted for use in vending machines, and particularly pertains to what may be termed a rotary dispenser provided with peripherally arranged compartments for accommodating one or more individual containers.

One of the objects of the present invention is the provision of a rotary container dispenser wherein are provided radially disposed partitions having substantially right-angular flanges at their interior ends for limiting the inward movement of containers, and wherein each of the partitions is provided with at least one step-like element extending from the exterior end of a partition to its interior flanged end, and which step-like element is so arranged that its major planar surface is parallel with the surface of the next adjacent partition.

A further object of this invention resides in the provision of a rotary container-receiving drum composed of two spaced circular discs and which discs are connected by a series of radially disposed partitions terminating at their interior ends in stop flanges at substantially right angles to the bodies of the partitions, and wherein two step-like elements are secured to each partition so that one of the elements extends from one face of the partition while the other element extends from the opposite face thereof, and wherein said elements correspond in width to substantially half the width of each partition, and wherein the broad planar face of each step-like element is in parallelism with the body of the next adjacent partition.

A further object of the present invention is the provision of a rotary container-receiving drum composed of two spaced discs, and wherein along the outer periphery of one of the discs are provided substantially uniformly spaced pins extending from the exterior surface of the disc, and wherein a support for the axis of the drum is provided having open bearing means to facilitate the bodily removal of the drum, and wherein the support for said drum axis and the drum itself are located in a casing, and wherein below the drum there is provided a container guard for keeping containers in their respective compartments, said guard having a container discharge opening, and means provided in the casing for manually closing that opening.

A further object of this invention is the provision of a rotary container-carrying drum in accordance with the foregoing objects, and wherein in said casing there is mounted a coin controlled mechanism for operating said drum upon the insertion of the required coin denomination into the machine, and wherein means are provided for arresting the operation of the drum when the supply of containers in the drum is exhausted.

The foregoing and still further objects and other advantages of the present invention will become more fully understood from the ensuing description in conjunction with the accompanying drawings, wherein:

Fig. 1 is a more or less diagrammatical side elevation of the present device, partly in section;

Fig. 2 is a diagrammatical plan view of the casing with the drum removed;

Fig. 3 is a vertical detail view, partly in section, of a drum-locking arrangement;

Fig. 4 is a fragmental perspective view of a typical drum portion; and

Fig. 5 is an enlarged perspective view of the step-like elements associated with the radial partitions provided in the drum shown in Fig. 4.

In Fig. 1 there will be seen a portion of a vending machine having an insulated rear wall **10** and an insulated front portion **11**, and between which portions there is shown a casing **12**. Extending from and attached to the side walls of the casing are drum supports **13** and **14**, see Fig. 2, provided with open bearings **15** to accommodate axis **16** of rotary drum **17**. Extending about the lower periphery of the drum are rear container guard **18** and front container guard **19**, separated by a container discharge opening **20** which is adapted to be closed manually by a pivoted baffle **21**, as will be presently explained.

Drum **17** is composed of two like circular discs **22** and **23**, see Fig. 4, which are spaced from each other by connecting partitions **24**. These partitions are disposed radially and their interior or rear end is formed into stop flanges **25**, disposed at substantially right angles to partitions **24**. Obviously these partitions also have side flanges **26**, **26'** by means of which they are connected with discs **22** and **23**.

Secured to each of the partitions **24** are step-like elements **27** and **28** of a width corresponding to substantially half the width of partitions **24**. Elements **27** are attached to one face of the partitions, while elements **28** rest against the opposite face thereof. The disposition of these elements is such that their outer side edges **27'**, **28'**, as well as flanges **26** and **26'** of partitions **24**, abut, respectively, with the inner faces of discs **22** and **23**, while the inner side edges **27''**, **28''** of the partitions are aligned along a plane midway between the two drum discs.

From Fig. 5 it will be observed that these step-like elements are composed of a major planar portion **29**, upright portions **30** and planar front ends **31** and planar rear ends **32**. Front ends **31** and rear ends **32** are secured to the respective opposite faces of partitions **24**. The planar faces **29** of the elements are so designed that they are parallel with the bodies of the next adjacent partitions. Thus, when observing Fig. 1, it will be seen that the planar surfaces of step-like elements **27**, shown in section in that figure, are parallel with the next adjacent partitions **24** thereabove. On the other hand, step-like elements **28**, shown in full line, are parallel with the next opposite partitions therebelow. The arrangement of the elements in conjunction with the partitions has for its object to keep containers inserted between the step-like elements and the partitions, from unduly cantering or shifting within the compartments formed between each two adjacent partitions. Obviously it is intended that in each compartment two containers are held next to one another, and by the provision of step-like elements **27** and **28** and especially through the interior edges **27''**, **28''** of these elements the containers are guided and held in their proper relation to one another, as indicated at the left-hand portion of Fig. 1 where the containers are marked "C."

Container dispensing mechanism

Exteriorly to insulated front portion **11** of the vending machine there will be seen in broken lines a coin-responsive control device **33**, beneath of which is indicated a plunger **34** which is adapted to be manually operated, that is it can be pulled out by means of knob **34'**, upon the insertion of the proper coin denomina-

tion into device 33. Plunger 34 extends beneath drum 17 as seen in Fig. 1, and is held normally in its inward position by a spring 35. With the inward end 36 of the plunger is operatively associated a lever 37 which is pivoted at 38. As stated previously, one disc of rotary drum 17 is provided at its periphery with a series of pins, shown clearly in Fig. 4 and indicated at 39. There are two pins to each compartment formed between two adjacent partitions 24.

The upper end of lever 37 is recessed at 40. Opposite that recess is hingedly supported at 41 a spring-loaded pawl 41' provided with a cam or deflecting surface 42. Pawl 41' is hinged at 141 and is actuated by spring 141'. The right-hand edge 43 of pawl 41' is adapted to engage one of the pins, such as pin 39' shown in Fig. 1, when spring 35 causes plunger 34 to assume its normal, inward position shown. When the plunger is pulled to its outward position, lever 37 is moved with its pawl 41' toward the next following pin 39''. As cam surface 42 of pawl 41' engages pin 39'', the latter swings pawl 41' outwardly until the right-hand surface 43 passes and engages pin 39''. Upon release of plunger knob 34', plunger 34 reverts to its inward position and drum 17 is caused to rotate by the change in position of lever 37 due to the action of spring 35. During that rotation of the drum one of the containers is discharged in the manner seen in Fig. 3.

Again referring to Fig. 1, there will be seen at the left of lever 37 a vertically operative detent structure 44 comprising detent 45 normally urged by spring 46 to its upward position shown. The upper end of detent 45 is adapted to engage one of the pins 39. At the left side of detent 45 there will be seen a fixedly mounted bracket 47 hingedly supporting at 48 a spring-loaded, deflectable pawl 49 provided with a cam surface 49'. Pawl 49 is hingedly supported at 149 and is urged to its upright position by spring 149'. Between pawl 49, which is similar to pawl 41' of lever 37, and detent 45 there will be seen a pin 139 engaged by the facing surfaces of pawl 49 and of detent 45, whereby drum 17 is prevented from turning.

Lever 37 has an extension 50 which is adapted to engage a ledge 51 forming a part of detent 45 when plunger 34 is pulled in outward direction and causes the lower end of lever 37 to swing to the right. By the movement of extension 50 against ledge 51 detent 45 is caused to clear pin 139 so that drum 17 can be moved by lever 37 as it reverts to its normal position, shown in Fig. 1, induced by the action of spring 35. While drum 17 is rotated for the distance between the centers of two adjacent pins, pin 139, formerly held between detent 45 and pawl 49, is released. As the drum progresses, pawl 49 is deflected by the next following pin 139' when the latter engages cam surface 49' of the pawl. When pin 139' has passed pawl 49, it is held between pawl 49 and detent 45 until released by the latter.

From the above described function of lever 37 and its cooperation with detent structure 44, it will become clear that plunger 34, when released for operation by the deposit into coin device 33 of the proper amount of coins, effects the peripheral movement of drum 17. This peripheral movement of the drum through an arc, equal to the distance between the centers of two adjacent pins, causes the discharge of one of the two containers held between two adjacent partitions 24, as indicated in Fig. 3.

Depending upon which of the two pins 39 for each compartment is moved, either a container supported by element 27 or a container placed between element 28 and the next adjacent partition will be discharged through opening 20 between guards 18 and 19.

Stocking the drum

When all of the containers in the drum are exhausted and the drum is to be stocked with a fresh supply of containers, it becomes necessary to close discharge opening 20. This is done by baffle 21 hinged at 53, as plainly seen in Fig. 3, and with which baffle is hingedly connected at 54 a connector 55, operative by hand lever 56, which is hinged at 57.

When drum 17 is empty its operation is automatically stopped by an "empty lock" indicated at 58. This empty lock consists of a spring-loaded, hook-shaped detent 59 which is normally held down by the weight of containers in the drum. When no containers are present detent 59 will assume its upward position, shown in full line in Fig. 3 and in dotted lines in Fig. 1, at which position it will engage the front edge of any of the partitions 24 and thus stop the operation of the drum. When the drum is to be re-stocked, detent 59 is manually moved to its drum-clearing position by means of grip 60 and is held in that position during the stocking of the drum.

In order to permit the movement of the drum for stocking it is also necessary to depress detent 45 and to hold the same depressed until the drum is stocked. This operation is effected by a manually operable connecting rod 61, shown in Fig. 1, which engages a lever 62 pivoted at 63 and having an extension 64 which is adapted to engage ledge 51 of detent 45. When rod 61 is pulled, detent 45 is lowered and clears the drum pins 39, 139, etc. so that the drum can be rotated. Obviously pawl 41' of lever 37 and pawl 49 of bracket 47 will permit the passage of the pins while the drum is rotated in counter clockwise direction during the stocking operation. They would prevent, however, the rotation of the drum in clockwise direction.

As described previously, drum 17, mounted in supports 13 and 14, is bodily removable from the vending machine for the purpose of repairs, etc.

Referring to Figs. 4 and 5, it will be observed that the outer or frontal edges of both elements 27 and 28 are provided with recesses or cutouts 127, 128, respectively. Partitions 24 are also recessed, and their recesses register with element recesses 127, 128. These recesses facilitate stocking of the drum and the handling of containers.

While in the foregoing a specific construction of the device is described, minor obvious changes facilitating production may be required. Such changes are deemed to reside within the scope of the present invention as defined in the annexed claims.

What is claimed as new is:

1. In a rotary dispenser for vending machines adapted to hold two adjacent rows of substantially square-prismatic containers, said dispenser including a pair of circular discs, a series of radial partitions arranged between the discs and having side flanges attached to said discs, thereby spacing the latter, said partitions also having interior flanges disposed substantially at right angles to the partitions and serving as stop means for containers placed between the partitions, a pair of step-forming elements for each of said partitions and being of a width substantially half of that of said partitions, the elements being attached to opposite faces of the partitions and being offset to one another so that the outer side edge of one of the elements abuts with the inner face of one of said discs, and the outer side edge of the other element abuts with the inner face of the opposite disc, while the inner side edges of both elements are aligned along a plane midway between the discs.

2. In a rotary dispenser according to claim 1, and wherein each of the step-forming elements have planar front and rear ends attached to one face of a partition, an upright portion extending from the planar front end, and a major portion extending from the upper end of the upright portion to the planar rear end, said major portion of each step-forming element attached to one partition being disposed at parallel relation to the opposite face of the next adjacent partition so that two containers

can be readily held between each two adjacent partitions.

3. In a rotary dispenser according to claim 2, and wherein the planar front ends and the upright portions of said step-forming elements, as well as the frontal edges of said partitions and the frontal edges of said major portions are provided with registering recesses for facilitating the handling of containers.

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