Feb. 6, 1940. W. W. WILLIAMS 2,189,157

DISPENSING APPARATUS

Filed Jan. 6, 1938

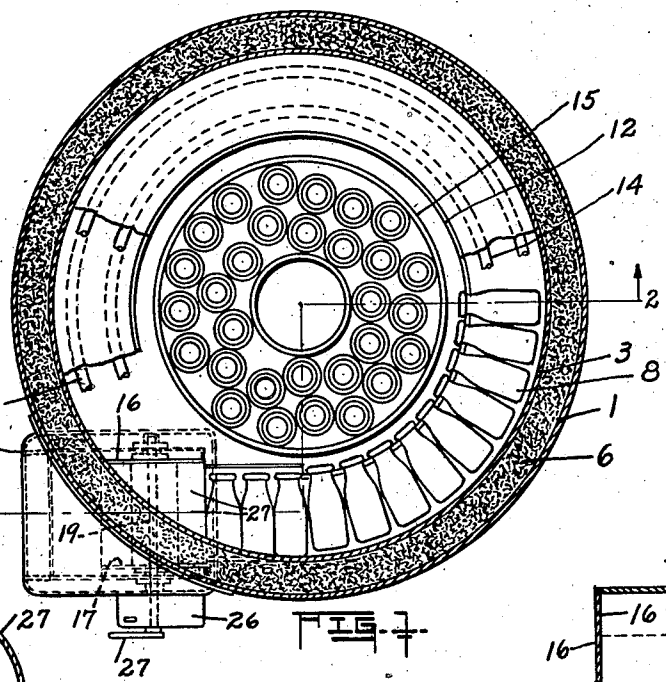


FIG. 1.

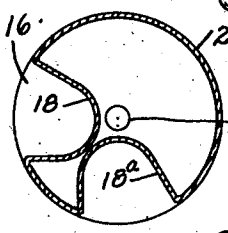


FIG. 4.

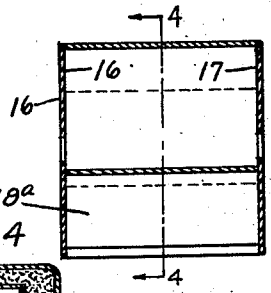


FIG. 3.

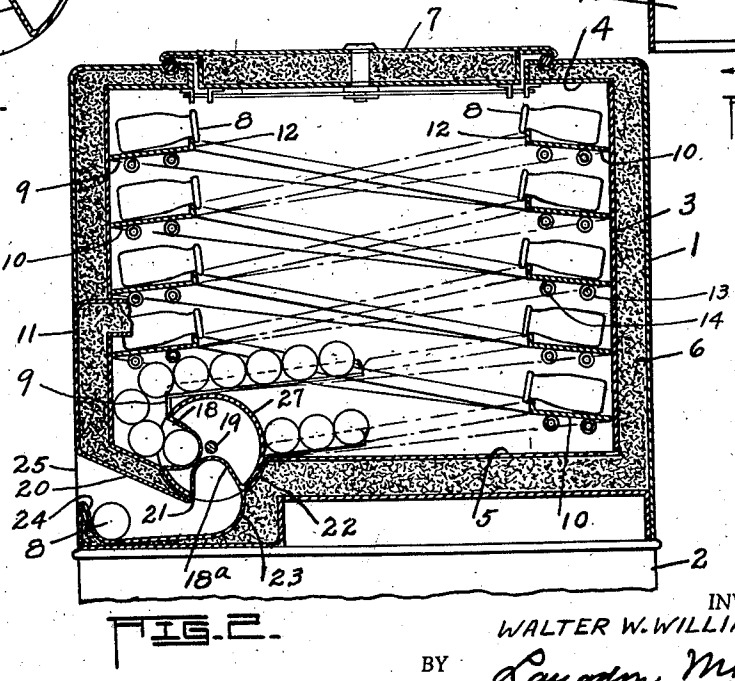


FIG. 2.

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DISPENSING APPARATUS

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Application January 6, 1938, Serial No. 183,564

2 Claims. (Cl. 312—36)

This invention relates to improvements in dispensing apparatus and more particularly to the construction of a cabinet for containing packaged liquids, maintaining the packages at a desired temperature and dispensing them one at a time.

It is an object of this invention to construct a cabinet of this character adapted to support a plurality of bottles or cylindrical containers, such as milk bottles, so as to be delivered by gravity through an outlet at the bottom, and this invention is a further continuation or development of a construction of this character disclosed in this applicant's prior co-pending application Serial No. 178,050, filed December 4, 1937. It is a further object of this invention to provide an improved means for dispensing the packages of liquid from the said cabinet.

With these and other objects in view, reference is made to the accompanying sheet of drawing which illustrates a preferred form of this invention with the understanding that minor changes may be made without departing from the scope thereof.

In the drawing:

Figure 1 is a view of a preferred form of this invention with the cover and upper portion of the cabinet removed, illustrating parts in section and parts in plan view.

Figure 2 is a view in vertical section taken on the line 2—2, Figure 1, of the cooling and dispensing portion of the cabinet.

Figure 3 is an enlarged detail view in central longitudinal vertical section of the dispensing closure.

Figure 4 is a view in section taken on the line 4—4 of Figure 3. In the embodiment of this invention as illustrated, a cylindrical cabinet is preferably divided into an upper section 1 to form a refrigerated compartment containing the dispensing apparatus, cooling coil, and a lower section 2 to form a compartment to contain any desired type of refrigerating apparatus. The refrigerated compartment 1 is provided with a spaced-apart inner side wall 3, top wall 4, and bottom wall 5, with the space between the inner and outer walls filled with an insulation material 6, as is customary in refrigerated compartments. The top of the cabinet is provided with a door 7 for the insertion of bottles or cylindrical containers 8, which door is preferably circular in form, insulated similar to the cabinet walls and may be secured to form an air-tight closure, as shown, or in any other desired manner.

It is preferable to support the cylindrical packages 8, illustrated herein as the usual milk bottles used in the commercial distribution of milk, upon two equally spaced apart annular spiral supports or ramps 9 and 10 extending from the inner wall 3 of the compartment 1, each spaced apart from the top a sufficient distance to allow a bottle to be placed thereon and each terminating one above the other within a tangential housing 11 extending from the lower portion of the cabinet. The pitch of the spiral annular supports or ramps 9 and 10 is such that as the bottles are removed from the bottom, those thereabove will descend by gravity.

It is preferable to mount the annular supports or ramps 9 and 10 upon the walls 3 at a slight angle to the horizontal and provide the inner free ends with an upturned flange 12 to engage the neck of the bottle, so that in descending, the bottles will roll upon a two-point contact with the support or ramp, one point of contact being the bottom of the bottle and the other the neck of the bottle as shown.

It is preferable to arrange cooling coils 13 and 14 from the refrigerating apparatus upon the under-side of these supports or ramps 9 and 10 and secured thereto in any desired manner. The cylindrical space surrounded by the annular supports or ramps 9 and 10 may be employed for pre-cooling the bottles later to be placed upon the dispensing spirals and may, if desired, be separated therefrom by a cylindrical spacer 15.

The construction so far described is preferably the same as that disclosed in this applicant's said prior co-pending application Serial No. 178,050. The housing 11 rotatably mounts a cylindrical dispensing closure closed at each end by circular plates 16 and 17 and its cylindrical walls provided with two longitudinal spaced-apart depressions forming pockets 18 and 18a of such size to receive and completely contain a bottle or cylindrical package to be dispensed. The end plates 16 and 17 are secured upon an axial shaft 19 rotatably mounted in the sides of the housing 11 to support the dispensing closure. The bottom of the housing 11 is formed with the front wall 20 embracing the cylindrical dispensing closure and is provided with an opening 21 to register with a pocket 18 or 18a to allow a bottle therein contained to pass out of the housing. The housing 11 is provided with a rear wall 22 which is a continuation of the bottom wall 5 of the refrigerated compartment 1 to embrace the cylindrical dispensing closure to the rear of the opening 21 and is then extended in a downward curved portion 23 over which the bottle 8

discharged from the pocket 18 or 18ª through the opening 21 will roll to engage a stop 24 under the front of the housing 11 and spaced apart from the wall 20 to form an opening 25 through which the bottle may be easily removed.

The shaft 19 of the cylindrical dispensing closure of the housing 11 passes through the outer wall thereof and, if it is to be coin operated, it passes through a casing 26 carried on the housing and is provided with an operating handle 27 upon its exterior end. In any event, the shaft is provided with a stop which will prevent rotation of the closure in one direction with the pocket 18ª coinciding with the opening 21 of the casing 1. In this position, as shown in Figure 2, the pocket 18 is in position to receive a bottle 8 from the upper ramp or spiral 9 of the casing. The cylindrical body 27 between the pockets 18 and 18ª acts as a stop for the bottles in the lower ramp or spiral 10. When the handle is oscillated in the opposite direction, a stop is provided to be engaged by the shaft when the bottle in pocket 18 is discharged through the opening 21 as the open end of the pocket comes into register therewith. During this oscillation, the cylindrical portion 27 wipes over the contiguous bottles on both ramps until the bottle on the lower ramp or spiral 10 is received within the pocket 18ª and during this movement, the cylindrical portion 27 wipes over the next adjacent bottle on the upper ramp or spiral 9. It is to be noted that the upper ramp or spiral 9 passes over the cylindrical portion 27 and is terminated short of the adjacent inner wall 3 of the cabinet so that the bottles 8 passing by gravity down this spiral are guided into position to be received in the pocket 18 each time it is oscillated to be brought into register with the contiguous bottle. if desired, any type of commercial coin-controlled apparatus may be contained in the casing 26 to free the handle after it has been brought into engagement with one of its stops by the depositing of a coin in the casing.

When the cabinet is filled by placing bottles upon the top of each of the spiral supports, they will roll down thereover until a bottle on one ramp is received in one of the pockets in the oscillating cylindrical dispensing closure, then the other bottles will move into position to contact each other until that ramp is filled and the bottles rolling down the other ramp will bring the first bottle into contact with the cylindrical portion 27 of the oscillating dispensing closure and the rolling bottles will move into contact with each other. By oscillating the cylindrical dispensing closure, bottles are removed alternately first from one spiral support and then from the other so that they become exhausted on both spirals at approximately the same time. This is a considerable advantage over the applicant's prior said co-pending application Serial No. 178,050, because in that application the structure was such that all of the bottles on one ramp had to be dispensed before the closure began to dispense the bottles from the other ramp. As these cabinets are designed for use in small stores and are to be filled from time to time, preferably by the milk-man delivering the milk, in this latter improved device approximately the same number of bottles on each ramp will be required and the bottles therein will be uniformly fresh.

What I claim is:

1. In an apparatus for cooling and dispensing containers, a cabinet containing a storage chamber having a discharge opening, a pair of vertically spaced and aligned spiral ramps mounted interiorly of said storage chamber for supporting and for advancing said containers by gravity to said discharge opening, and an oscillating cylindrical dispensing closure for said discharge opening in said storage chamber having a pair of longitudinal pockets one for each ramp, said pockets being disposed on one side of a diametrical plane through said cylindrical closure, the ends of said ramps terminating at substantially diametrically opposed portions of said cylindrical closure whereby said containers are received and dispensed alternately from said ramps upon the oscillation of said cylindrical closure.

2. In an apparatus for cooling and dispensing containers, a cabinet containing a storage chamber having a discharge opening, a pair of vertically spaced and aligned spiral ramps mounted interiorly of said storage chamber for supporting and for advancing said containers by gravity to said discharge opening, and an oscillating cylindrical dispensing closure for said discharge opening in said storage chamber having a pair of longitudinal pockets one for each ramp, said pockets being disposed on one side of a diametrical plane through said cylindrical closure, the end of one ramp terminating in a substantially horizontal plane on one side of said cylindrical closure and the end of the other ramp passing over said cylindrical closure terminating in a substantially horizontal plane on the other side of said cylindrical closure in a substantially diametrically opposed relation to the end of said first mentioned ramp whereby said containers are received and dispensed alternately from said ramps upon the oscillation of said cylindrical closure.

WALTER W. WILLIAMS.