Nov. 1, 1932. J. H. McLELLAN 1,885,368

DISPENSING DEVICE

Filed Feb. 16, 1932

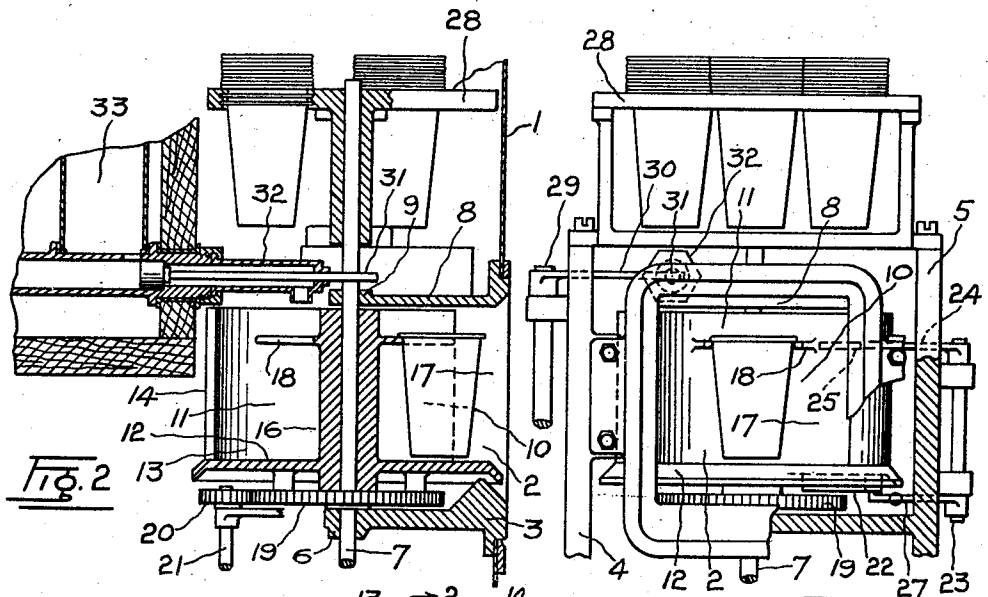



Fig. 2

Fig. 3

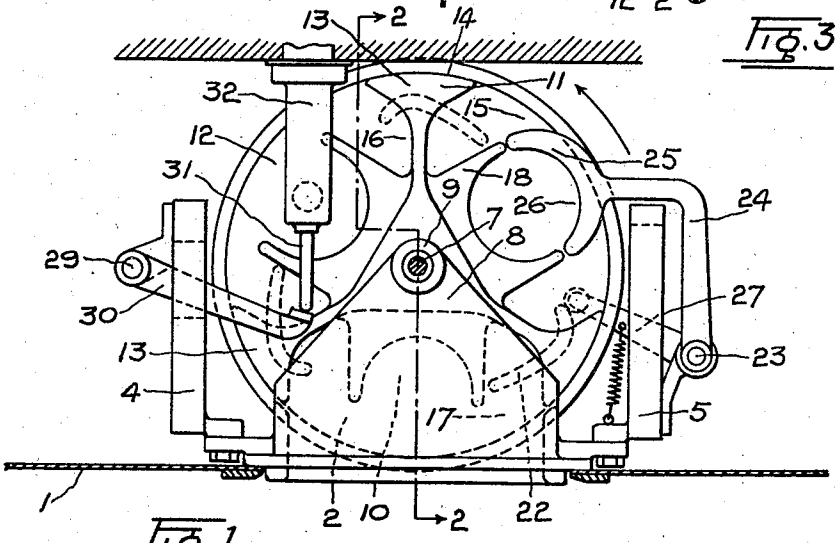



Fig. 1

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# UNITED STATES PATENT OFFICE

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## DISPENSING DEVICE

Application filed February 16, 1932. Serial No. 593,320.

My invention relates to improvements in dispensing devices which are particularly adapted for use with machines constructed according to that patented to me in 1927 in the United States of America and being numbered 1,634,036.

The objects of the invention are to provide means for receiving a cup from a stack, disposing it in position to be filled and after filling to carry it into a delivery recess where it is accessible to the purchaser; to provide a mechanism whereby the above functions can be performed by an intermittent, slow rotary movement; to support the cup, from the time of deposit to the time of delivery, from its rim, whereby the bottom of the cup is kept free from contact with any horizontal surface, and to provide means whereby the use of mechanically operated doors to the delivery recess is avoided.

The invention consists essentially of a carrier rotatable upon a vertical shaft and having divisions forming side walls for a delivery recess and means for carrying the cups, as will be more fully described in the following specification and shown in the accompanying drawing, in which:—

Fig. 1 is an enlarged plan view of the invention.

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

Fig. 3 is a front elevational view showing a part in section.

In the drawing like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally the front wall of a dispensing machine having a rectangular delivery opening 2, which is provided with a base plate 3. The base plate 3 is supported from side frame members 4 and 5 of the machine and extends inwardly between them in V formation to provide at its inner extremity a bearing 6 for a vertical shaft 7.

A further plate is provided above the opening 2 to form an upper wall 8, which plate is substantially similar to the base plate 3 and is also provided at its inner extremity with a bearing 9 for the shaft 7. The space defined between the plates 3 and 8 is hereinafter referred to as the delivery recess 10.

Journalled upon the vertical shaft 7 between the bearings 6 and 9 is a carrier 11 having a circular floor 12 and a plurality of radial divisions 13 which terminate adjacent the periphery of the floor with substantially segmental end walls 14, which are so spaced apart as to equal the width of the opening 2, so that each pair of radial divisions 13 and their end walls 14 may serve successively to form the rear and side walls of the recess 10 as shown in Figure 1. The spaces or pockets between the pairs of radial divisions 13 are respectively indicated by the numerals 15, 16 and 17. In each of the pockets 15, 16 and 17 a horizontally disposed U-shaped bracket 18 is provided, each of which comprises slightly more than a half circle in contour, so as to be capable of supporting a paper cup by its rim.

The carrier 11 is fitted below the floor with a gear wheel 19 which is driven from a pinion 20 mounted upon a suitably driven shaft 21 and fitted also below the floor is a plurality of cams 22.

Journalled from the frame member 5 is a rocking shaft 23 having an arm 24 terminating in a horizontal fork 25, which fork is slightly less than a half circle and is adapted to coact with each of the brackets 18 in turn to form a circular cup receiving opening 26.

Secured to the base of the shaft 23 is a spring tensioned lever 27 which is adapted to be moved by each of the cams 22 to swing the fork 25 away from the carrier that a cup deposited in the opening 26 may be carried around in its bracket 18 in the direction indicated by the arrow shown in Figure 1.

Mounted above the upper wall 8 is a cup depositing device 28 of any suitable type, which is preferably operated by the shaft 7 and is adapted to drop a cup into position with the bracket 18 adjacent to the fork 25, when said bracket and the fork are at rest in the position shown in Figure 1.

Suitably journalled from the support 4 is a vertical shaft 29 having an arm 30 which is adapted to rest normally in the position shown in Figure 1 and to be rocked at suitable inter-

vals to depress a plunger 31 fitted to a liquid supply valve 32 to permit a given quantity of liquid to flow from a tank 33 into a cup carried in the bracket 18 of the pocket 16.

In operation the machine is set in motion in response to the deposit of a coin into a coin lock. The shaft 29 is rocked by suitable mechanism to impart an inward movement to the plunger 31 and a given quantity of liquid is discharged through the valve 32 into the cup in the pocket 16, the shaft and its arm 30 is then returned to normal position.

When the cup is filled the shaft 21 is set in motion through any suitable train of gears and continues until a 120 degree turn has been imparted to the carrier 11. This movement of the carrier disposes the pocket 16 and its filled cup in position complementary to the opening 2 of the casing, the pocket then becoming the delivery recess 10 from which the filled cup can be withdrawn by the purchaser.

Simultaneously with the movement above described the cam 22, shown to the right of Figure 1, engages the lever 27 to swing it, and the arm 24 so that the fork 25 is moved away from the cup carried in the pocket 15, thus permitting this cup to be carried into filling position below the valve 32.

Prior to the termination of the 120 degree turning movement of the carrier 11, the lever 27 slips off the trailing end of the cam 22 and permits the fork 25 to resume its normal position of rest, so that when the carrier comes to rest another cup can be dropped from the cup depositing device 28 into the bracket 18 which is then substantially in contact with the fork.

What I claim as my invention is:

1. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a cup carrier mounted adjacent the delivery opening, said carrier having cup pockets adapted to be moved progressively into coacting relation with the opening, one of said pockets being disposed to receive a cup from the cup depositing device, another pocket being disposed in position for a cup therein to be filled from the valve and a further pocket being disposed adjacent the opening for the delivery of a filled cup.

2. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a rotatable cup carrier mounted adjacent the delivery opening, said carrier having cup pockets adapted to be moved progressively into coacting relation with the opening, one of said pockets being disposed to receive a cup from the cup depositing device, another pocket being disposed in position for a cup therein to be filled from the valve and a further pocket being disposed adjacent the opening for the delivery of a filled cup.

3. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a circular rotatable cup carrier mounted for rotation adjacent the delivery opening, said cup carrier being divided by radial divisions to define a plurality of pockets for receiving cups progressively from the cup depositing device for carrying the cups into filling position under the valve and for delivering the cups to the opening.

4. In a liquid dispensing machine as claimed in claim 3 wherein the radial divisions of the pocket adjacent the opening coact with the marginal edges of said opening to form a delivery recess.

5. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a cup carrier comprising a circular body having peripheral pockets, a bracket in each pocket having arms extending to support opposite sides of a cup by its rim, said carrier adapted to be rotated to progressively receive a cup in each of its pockets from the cup depositing device to position each of said cups adjacent the valve for filling and for disposing each of said cups after filling to the delivery opening, and means extending towards the carrier adapted to supplement the arms in support of the cup at the time that a cup is received by the arms from the cup depositing device.

6. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a cup carrier comprising a circular body having peripheral pockets, a bracket in each pocket having arms extending to support opposite sides of a cup by its rim, said carrier adapted to be rotated to progressively receive a cup in each of its pockets from the cup depositing device to position each of said cups adjacent the valve for filling and for disposing each of said cups after filling to the delivery opening, means extending towards the carrier adapted to supplement the arms in support of the cup at the time that a cup is received by the arms from the cup depositing device, said means comprising a swinging arm, and means for removing said arm from a position of support as the carrier is turned to move the deposited cup towards the valve for filling.

7. In a liquid dispensing machine equipped with a cup depositing device, a valve, means for operating the valve and a delivery opening, a cup carrier comprising a circular body having peripheral pockets, a bracket in each pocket having arms extending to support opposite sides of a cup by its rim, said carrier adapted to be rotated to progressively receive a cup in each of its pockets from the cup depositing device to position each of said cups adjacent the valve for filling and for disposing each of said cups after filling to the

delivery opening, a swinging arm extending from a vertical shaft towards the carrier adapted to supplement the arms in support of the cup at the time that a cup is received by the arms from the cup depositing device, a lever upon the shaft and a cam upon the carrier adapted to act upon the lever to remove the swinging arm from a position of support as the carrier is turned to move the deposited cup towards the valve.

Dated at Vancouver, B. C., this 27th day of January, 1932.

JAMES HOWARD McLELLAN.