Jan. 4, 1938. C. H. AYARS 2,104,445

CAN FILLING MACHINE

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Fig. 1.

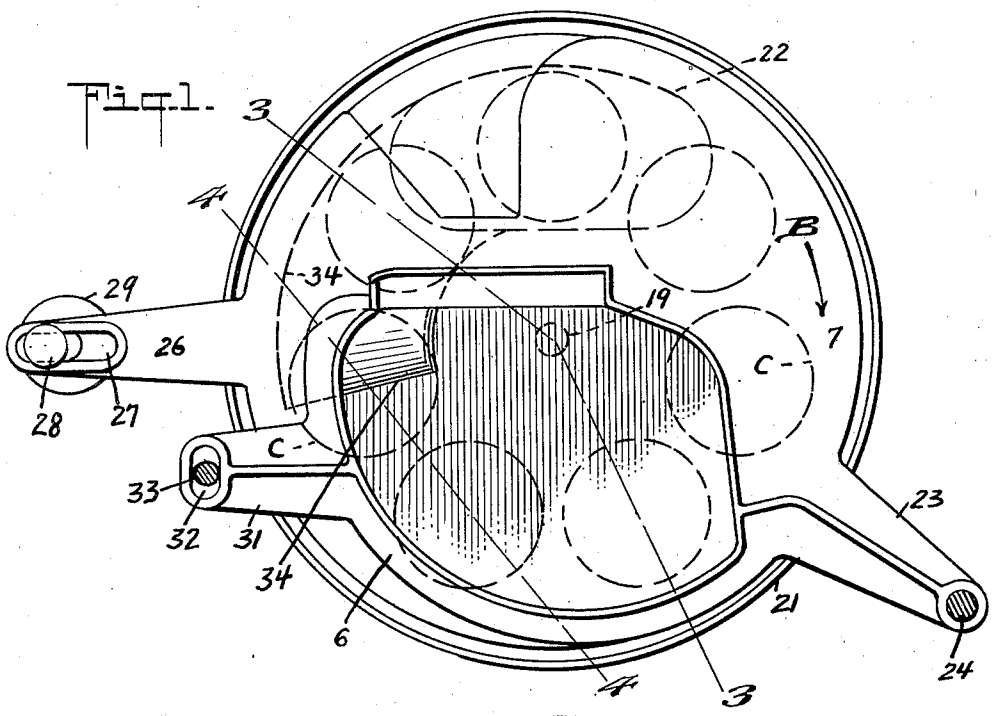
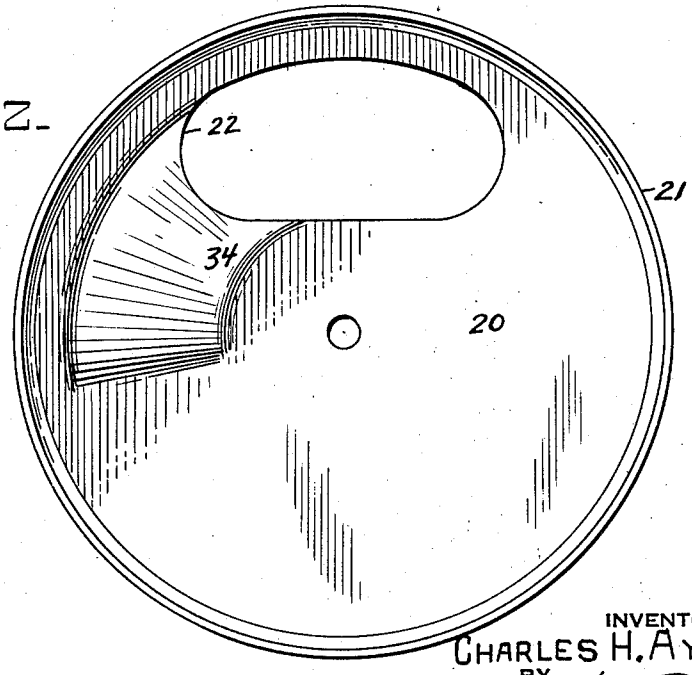


Fig. 2.



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Fig. 3.

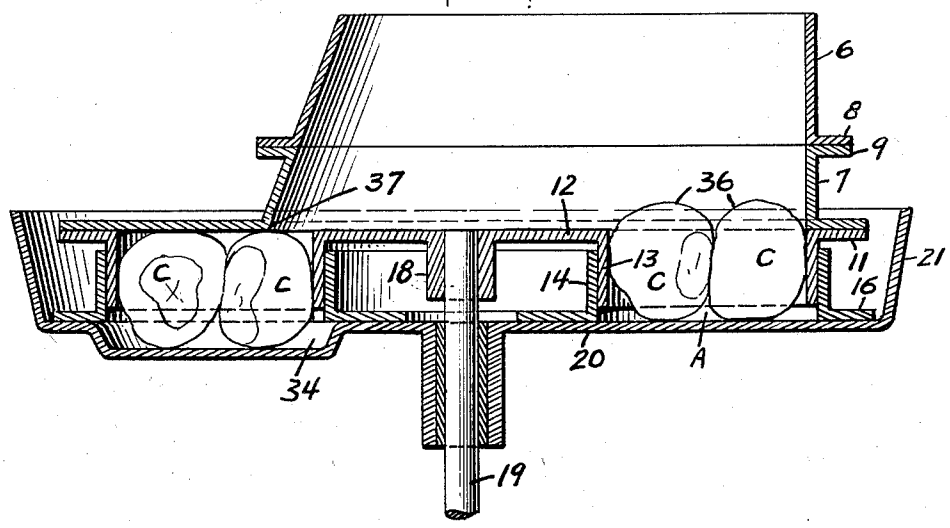
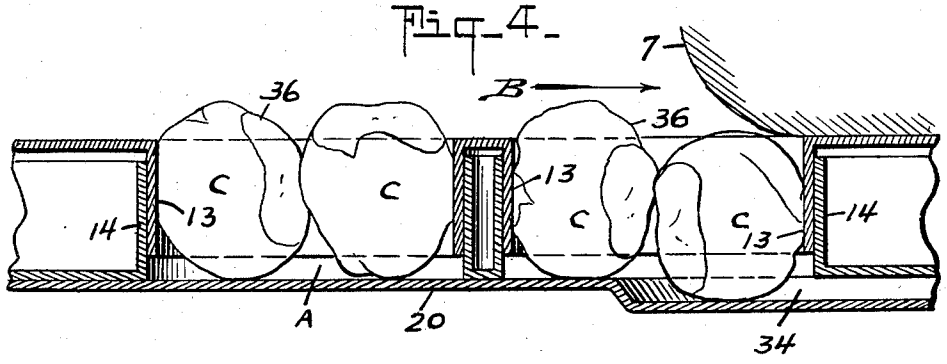


Fig. 4.



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CAN FILLING MACHINE

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Application January 8, 1937, Serial No. 119,550

11 Claims. (Cl. 226—102)

This invention relates to can filling machinery, and has particular reference to a machine for filling cans with material of a delicate nature, such as tomatoes.

In depositing tomatoes, which have previously been scalded and the skins removed, into cans in high speed machinery, it has been found that in the most carefully designed machines, the whole tomatoes are often disrupted, so that the proportion of unbroken tomatoes in the cans is greatly reduced.

The object of the present invention is to provide mechanisms whereby a greater percentage of whole unbroken tomatoes, or the like, may be deposited in cans by high speed machinery.

A further object of the invention is to provide such mechanism without sacrifice of either speed or any other consequential pertinence of the machine.

A still further object of the invention is to provide mechanisms for carrying out the above objects, and in which the same are of simple construction and may be readily applied to machines now in use.

According to the invention, the can filling machine of the type which has adjustable telescopic pockets and a reciprocating hopper above an agitator or shaker is provided with a juice pan, which has a depressed channel in the same leading into the discharge opening, so that the whole tomato or the like may be dropped in the telescopic pocket just prior to passing under the edge of the shaker or agitator.

The drawings illustrate an embodiment of the invention and the views therein are as follows:—

Figure 1 is a top plan view of the machine showing the juice pan agitator or shaker and hopper casting with the telescopic pockets indicated in dotted lines,

Figure 2 is a top plan view of the juice pan.

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 1, and

Figure 4 is a like view taken on the line 4—4 of Figure 1, the movement being in the direction of the arrow "B".

The general type of machine to which the present invention applies is shown in Figure 1 of my United States Patent No. 1,883,460, granted October 18, 1932, and the agitator or shaker member is more clearly shown in my United States Patent No. 1,818,780, granted August 11, 1931. The details of mechanism and the machine in general to which this invention applies by reason of same being well known, are not shown in the drawings in this application.

The material to be filled in the cans is contained in a hopper (not shown) whose lower end is fixed in the hopper casting 6 (see Figure 3). This hopper casting is mounted on the agitator or shaker 7 by the respective flanges 8 and 9. The agitator or shaker is mounted on the flange 11 of the upper turret member 12. This member has depending flanges 13 which fit in the upstanding flanges 14 on the lower turret member 16, so that measuring cups "A" are provided, and these flanges are vertically adjustable so as to provide for the regulation of capacity in said cups. The upper turret member has a central hub 18 which is affixed to a shaft 19 operated by suitable power (not shown). The turret members 12 and 16 operate in a juice pan 21, which has a substantially flat bottom 20 acting as a base or bottom for the telescopic cups. The juice pan has a discharge opening 22 through which the measured material falls through funnels into the cans which are successively fed thereunder. The funnels and cans are not shown in this application, but in the first patent above set forth. The agitator or shaker has an arm 23 pivotally mounted on a shaft 24. It is also provided with another arm 26 which has a longitudinal slot 27 providing for the operation of a pin 28 mounted off-center on the disk 29, thus forming an eccentric providing reciprocating movement for the said shaker.

The hopper and its casting 6 have relative movement with the shaker. The casting has an arm (not shown) pivotally mounted on the shaft 24 and another arm 31 having a slot 32 through which a shaft 33 extends. The slot 32 on the arm 31 of the casting permits a limited movement of the hopper, such movement being due to the friction between the lower end of the hopper casting and the shaker member. The movement, of course, is limited by the slot 32. The mechanism described up to this point is the same as found on the standard machines shown by the patent first mentioned.

Let us consider the rotation of the turrets 12 and 16 in the direction of the arrow B in Figure 1. The cups "A" shown in dotted lines pass under the horizontal shaker plate and within the opening of the shaker, so as to take their charge from the hopper, passing along until, in the conventional machine, the shaker member contacts the material extending above the rim of the cup, and either squeezes pulpous material into the can and the juice out, or shears off the tops of whole tomatoes or the like, in order that the cup may pass under the same. This crushing or shearing

naturally disrupts the whole object, such as tomatoes, and in order to provide for the passage of tomatoes or the like whose tops extend above the top of the telescopic cups, I have provided in the juice pan 21 a concentric depression 34 which merges into the discharge opening 22. This depression extends to a point just within the opening of the shaker member, so that whole objects, such as tomatoes, may settle below the bottoms of the telescopic cups, and into this recess where they are conveyed around to the discharge opening, and dropped through the funnels into the cans.

Figure 3 illustrates tomatoes "C" whose upper ends 36 extend a considerable distance above the top of the upper turret, and consequently above the edges of the telescopic cup "A". In the conventional machine, when these tomatoes were brought into contact with the edge 37 of the shaker, they were either crushed down into the cup and a like amount of juice displaced from the cup, or their tops were sheared, thereby disrupting them. With the mechanism of the present invention, these tomatoes "C", prior to the cup "A" in which they are lodged passing under the point 37 of the shaker, drop down into the recess 34, so that their upper ends are either below the upper edge of the cups, or only very slightly above the same, so that they are easily packed down into the cup by the shaker without disrupting the same, or serious crushing thereof.

Figure 4 shows the manner in which the whole tomatoes "C" will settle into the recess when the cup in which they are lodged contacts same, and this view is intended to illustrate the dropping of the whole tomatoes into this recess 34 just prior to the cup in which they are lodged passing under the tapered part of the shaker.

It has been found that with the juice pan constructed as described herein, the percentage of whole tomatoes or the like packed in the cans is greatly in excess of heretofore, and that the conventional machine may be readily equipped with the type of juice pan described herein.

Of course, the machine illustrated and described herein as well as the juice pan illustrated and described may be modified and changed in various ways without departing from the invention herein set forth and hereafter claimed.

The invention is hereby claimed as follows:—

1. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a non-rotatable base plate forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and a depressed channel in said base plate merging into said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

2. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a stationary juice pan having a flat base forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and a depressed channel in said base merging into said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

3. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a non-rotatable base plate forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and a depressed channel in said base plate extending from under said hopper to said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

4. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a stationary juice pan having a flat base forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and a depressed channel in said base extending from under said hopper to said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

5. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a non-rotatable base plate forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and an arcuate depressed channel in said base plate merging into said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

6. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a stationary juice pan having a flat base forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and an arcuate depressed channel in said base merging into said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

7. In a can filling machine having a hopper, measuring cups adapted to pass under said hopper to receive a charge of material therefrom, a non-rotatable base plate forming the bottoms of said cups and having a discharge opening for discharging the contents of said cups, and a concentric depressed channel in said base plate merging into said discharge opening to permit the contents of said cups to settle therein prior to discharge through said opening.

8. A juice pan for can filling machines comprising a flat base having an upstanding flange and a discharge opening, and a depressed channel in said base merging into said opening.

9. A juice pan for can filling machines comprising a flat base having an upstanding flange and a discharge opening, and a concentric depressed channel in said base merging into said opening.

10. A base plate for can filling machines having rotating measuring cups, said plate forming the bottom of said cups and having a discharge opening therein, and a depressed channel in said plate merging into said opening.

11. A base plate for can filling machines having rotating measuring cups, said plate forming the bottom of said cups and having a discharge opening therein, and a concentric depressed channel in said plate merging into said opening.

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