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C. H. AYARS
CAN FILLING MACHINE

Filed March 24, 1927

2 Sheets-Sheet 2

FIG. 2.

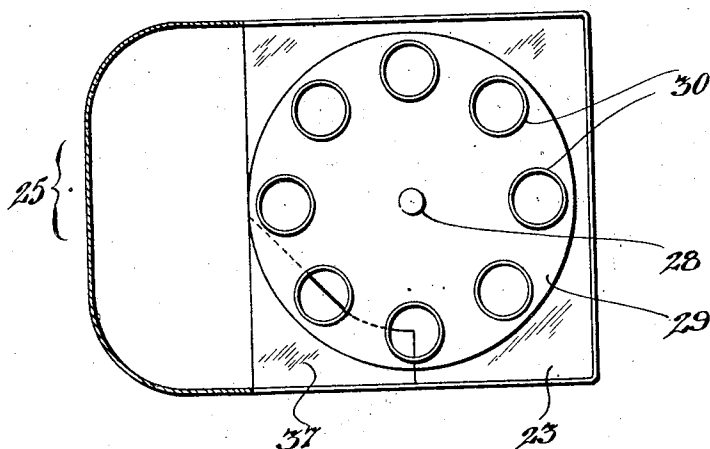
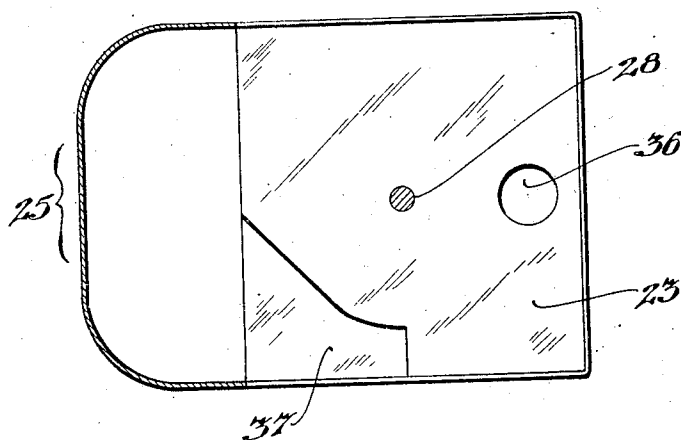


FIG. 3.



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CAN-FILLING MACHINE.

Application filed March 24, 1927. Serial No. 177,871.

My invention relates to can filling machines and more particularly to a machine, such as that covered by Patent No. 1,533,536, issued to me on April 14, 1925, which is adapted to simultaneously deliver measured quantities of vegetables and brine or liquor into cans.

This machine is adapted to run at a high rate of speed and deliver the liquor into the cans without splashing so that it is unnecessary to seal the can while it is receiving its charge of brine. However, the brine cups enter the liquor in the tank at such speed that the air contained in them does not have sufficient opportunity to escape, and thus causes splashing of the liquor in the tank itself.

The object of my invention is to provide simple means whereby the brine cups may be filled gradually from the bottom, without interfering with the speed of the machine, and the air may escape freely from the top of the cups.

This object, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which

Figure 1 is a central vertical sectional view of a canning machine, similar to that shown in Patent No. 1,533,536, on which my invention has been installed; the lower part of the machine having been omitted.

Figure 2 is a view taken substantially on line 2-2 on Figure 1 but with the displacement member omitted, and

Figure 3 a view similar to Figure 2 but with the brine measuring unit omitted.

Referring now more in detail to the drawings, the machine is provided with a hopper 5 into which the material to be canned is placed and which is supported on a hopper plate 6 resting on the top section 7 of the measuring wheel. A bed plate 8, which is suitably secured to the frame 9, supports the lower section 10 of the measuring wheel while top section 7 is supported on a shaft 11 and adapted to be raised and lowered, relatively to lower section 10, by means of a screw 12 threaded through an extension 13, formed on upper section 7, and abutting the top of shaft 11. Lower section 10 is keyed to shaft 11 and adapted to make contact with the top of bed plate 8 as it rotates while the top of sec-

tion 7 makes contact with the bottom of hopper plate 6, thus effectively sealing in the contents of the measuring cups during rotation of the measuring wheel.

Measuring cups 14 consecutively communicate with hopper 5 through an opening 15 formed in hopper plate 6 and are adapted to discharge their contents through an opening 16 formed in bed plate 8 and communicating with the funnel 17 which directs the material into cans 18 fed thereunder in the well known manner. It is evident that raising and lowering top section 7 by means of screw 12 will change the cubical contents of measuring cups 14 and consequently regulate the measured quantities delivered to cans 18. In order to avoid crushing the material on the tops of measuring cups 14 and to provide for inequalities in sizes of the material being canned, I provide a relief channel 19 which extends from hopper 5 to a point above discharge opening 16. Measured quantities of liquor are directed into cans 18, simultaneously with the charge of granular material, through a chute 20 communicating with a brine measuring device by means of a pipe 21.

The brine feeding mechanism includes a brine tank 25, a bed plate 23, mounted at an incline to the horizontal and having its lower end extending into the tank and substantially to the bottom thereof. A disk 29, keyed to an inclined shaft 28 is rotatable upon bed plate 23 and carries a series of open-ended brine measuring cylinders 30. The disk, like the bed plate, extends substantially to the bottom of the brine tank so that rotation of the disk carries each cylinder downwardly into the brine tank, then upwardly out of the brine to a discharge opening 36 in the bed plate through which the measured quantity of brine is discharged. The inner end of the brine tank is open to receive the lower end of the bed plate and the lower part of the brine measuring disk. The bottom 24 of the tank preferably has an integral and upward extension 22 upon which the bed plate rests.

Tank 25 is partially filled with liquor, the level 31 of which should always be above the top of the lowermost brine cup 30 but which is preferably kept at a point well above the center of disk 29. In order to regulate the amount of liquor contained in brine cups 30,

I provide a displacement member 32 having a central hub 33 which telescopes over the upper end of shaft 28 and which is adapted to be raised or lowered, relatively to brine cups 30, by means of a screw 34 threaded through hub 33 and abutting the top of shaft 28. Displacement member 32 is provided with a plurality of displacement plugs 35 which depend into cups 30 and it is evident that the amount of liquor which these cups can hold may be regulated by raising and lowering displacement member 32 by means of screw 34.

Brine cups 30 are filled by rotating disk 29 and plunging the cups successively into the liquor in tank 25 and the liquor is retained in the cup by reason of the fact that the bottom of disk 29 and the top of plate 23 are ground or otherwise suitably finished so as to prevent leakage of liquor from the bottoms of the cups.

As disk 29 is adapted to rotate at a high speed, cups 30 are violently plunged into the liquor in tank 25, so that but little opportunity is given for the air contained in them to escape, with the result that the liquor is splashed and churned and, when the level of the liquor is comparatively low, the cups are not evenly filled. To overcome this objection, I form a recess 37 in the upper face of the low part of the bed plate. The recess is in that side of the bed plate over which the brine disks travel in their downward movement and preferably extends rearward about one half the length of the plate and inward to approximately the same distance. The recess communicates with the brine tank and with the brine cup as the brine measuring disk travels over it, and serves as a feed channel. The result is that the brine cup is gradually submerged and gradually filled from the bottom as it passes into the brine. There is therefore no splashing and the air, instead of being trapped within the cup, passes out freely at the top. As the cups leave channel 37, the liquor is effectively held against leakage therefrom by the bottom of disk 29 sliding on the upper surface of plate 23 until the bottoms of the cups come into registry with opening 36 when it is discharged through this opening and directed into cans 18 by way of pipe 21 and chute 20; it being led into the can at an angle so that the can is evenly

filled with granular material and brine without any splashing of its contents.

While I have described my invention as taking a particular form, it will be understood that modifications may be made without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth; but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a can filling machine, a brine tank; a bed plate sloping downwardly into the tank, and a series of open ended measuring cylinders carried above the bed plate and slidable thereon in a curved path extending into the tank, the bed plate having a reduced part extending upwardly from its lower edge under the downward path of travel of the brine cylinder.

2. In a can filling machine, a brine tank; a bed plate sloping downwardly into the tank; a disk rotatable thereon and extending into the tank, and a series of open ended brine measuring cylinders carried by the disk, the bed plate having a reduced part extending upwardly from its lower edge under the downward path of travel of the brine cylinders.

3. In a can filling machine having a liquor tank, a base plate extending into the tank at an angle thereto, and brine cups slidable on the base plate; means for filling said cups including a reduced portion on the base plate extending from the lowest portion thereof upwardly in the path of the measuring cups.

4. In a can filling machine having a liquor tank, a base plate extending into the tank at an angle thereto, and brine cups slidable on the base plate; means for filling said cups including a reduced portion on the base plate extending from the lowest portion thereof upwardly in the path of the measuring cups and from the path of said cups to the edge of the plate.

In testimony whereof I have signed my name to this specification.

CHARLES H. AYARS.