No. 810,034. PATENTED JAN. 16, 1906.

A. CERRUTI.

CAN FILLING APPARATUS.

APPLICATION FILED JAN. 31, 1905.

Fig. 1.

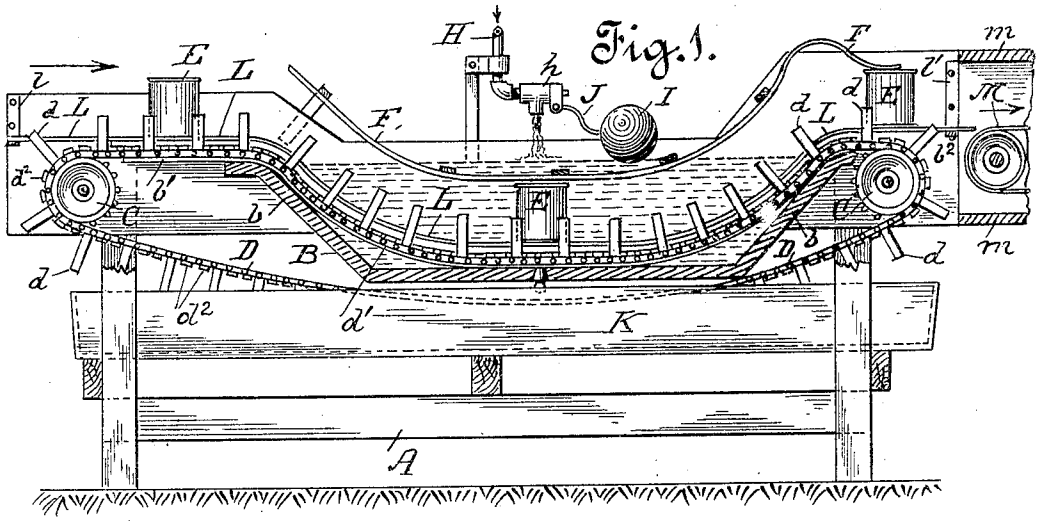


Fig. 2.

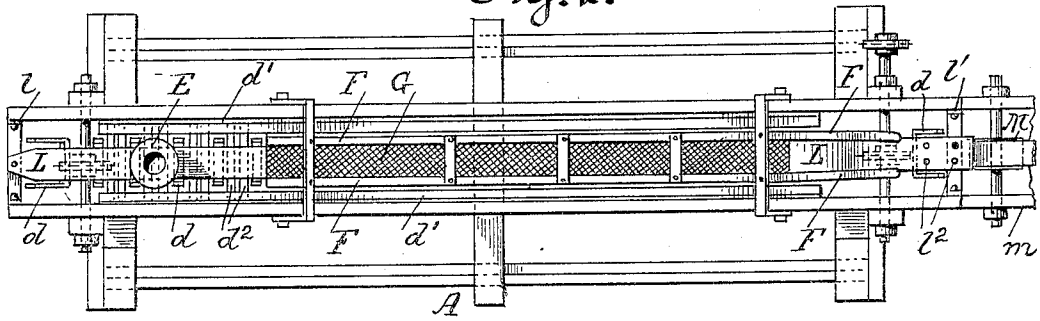


Fig. 5.

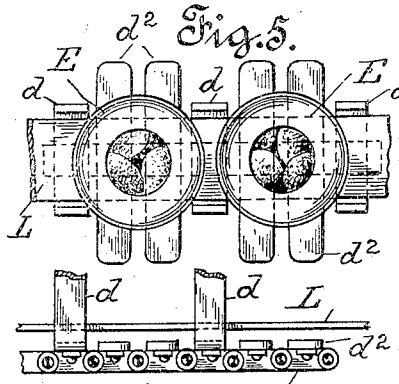


Fig. 3.

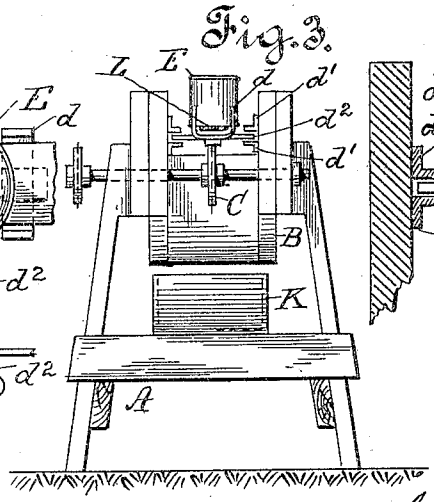


Fig. 4.

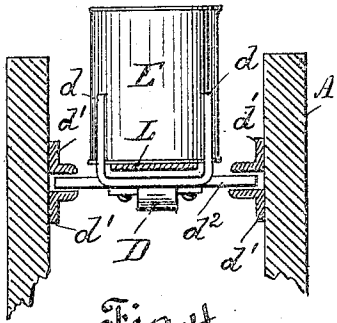


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

ANTONIO CERRUTI, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO CALIFORNIA FRUIT CANNERS ASSOCIATION, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

CAN-FILLING APPARATUS.

No. 810,034. Specification of Letters Patent. Patented Jan. 16, 1906.

Application filed January 31, 1905. Serial No. 243,516.

To all whom it may concern:

Be it known that I, ANTONIO CERRUTI, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Can-Filling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of apparatuses or machines for supplying the fruit-filled but still open cans with syrup, in which the cans are immersed in a body of syrup through which they are carried by a suitable conveyer, whereby they are filled with the syrup preparatory to their entrance to the steam-box or other device, which may follow in the general system of what is known in the art as "processing" fruit.

The object of my invention is to provide a simple, effective, and capacious device for filling cans with syrup and advancing them to the succeeding step in the system of processing; and to this end my invention consists in the novel construction and arrangement of the apparatus, which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus, a portion being in section. Fig. 2 is a top plan of the same, partly broken. Fig. 3 is an elevation of the apparatus at the receiving end. Fig. 4 is an enlarged detail end view of the conveyer and resting-plate with a can thereon. Fig. 5 is a top plan, enlarged, partly broken, showing the cans on the resting-plate with the conveyer underneath. Fig. 6 is a detail side elevation of the same, but without the cans.

A is a stand in which is supported a vessel B, which contains the syrup. This vessel is preferably provided with sloping ends b, one of which joins the entrance end b' and the other the discharge end b^2. In the ends of the stand A are the terminal sprockets C, over which travels the endless conveyer D, the upper run of which is directed by suitable guides d', Figs. 1, 2, and 4, in the following course—namely, over the entrance-platform, down the sloping entrance end of the vessel B, along the bottom of said vessel, up the discharge end thereof, and over the discharge end, its lower run returning under the vessel, all as shown in Fig. 1.

Suitable power is to be supplied to operate the conveyer, giving it a continuous travel. The conveyer is fitted to the guides d' by means of its lateral arms d^2. (Shown particularly in Figs. 4 and 5.) To the conveyer are secured the upright arms d, which fit against the cans E (see particularly Fig. 4) and cause their advance through the vessel B. The cans are supported upon a resting-plate L, which at the receiving end of the apparatus is secured firmly to a suitable bracket l. This plate is bent to follow the course of the upper run of the conveyer and lies just above it, reaching beyond it at the discharge end. This discharge end of the resting-plate is supported upon a bracket l', and, as is shown in Figs. 1 and 2, said end lies in close proximity to the endless conveyer M, which represents the conveyer of the succeeding device—such, for example, as the steam or exhaust box, a part of which is here indicated by m.

The resting-plate L is in practice a thin metallic strip and is sufficiently flexible to enable its uprising slope, emerging from the vessel B at the discharge end, to have its inclination readily varied in order to vary the angle at which the cans rise from the body of liquid, as I shall presently more fully describe. This adjustability of the angle of the slope of the resting-plate at its discharge end is best effected by means of varying the point of its connection with the bracket l'. For this purpose I have here shown two sets of holes l^2 in the said resting-plate at different distances from its end. It is obvious that if said plate is secured to the bracket l' by those holes which are nearer the end the slope of the resting-plate in rising from the syrup-body will have its angle increased, and by securing it in the holes farther back from its end this angle will be diminished.

The cans E are placed upon the resting-plate L and are embraced by the uprising arms d of the conveyer D and by said arms are carried along upon the plate to the discharge end thereof, which delivers them upon the succeeding conveyer M.

In the upper part of the vessel B extend fixed guides F parallel with the resting-plate. These guides hold the cans down upon the resting-plate L as they pass through the vessel.

Secured to the guides F is a screen G, which lies immediately over the open tops of the cans

and which serves the double purpose of excluding extraneous matter and of holding down or guarding the contents of the cans from floating upwardly from their open tops as the cans pass through the syrup in the vessel.

H is a pipe which may be supposed to extend from a suitable source of syrup and is adapted to discharge the syrup into the vessel B.

As indicated in Fig. 1, the level of the syrup in the vessel B is above the greater portion of the screen-guard G and the fixed guides F, so that the cans are carried by the conveyer-arms *d* down into the syrup until they are completely submerged, and in this submerged condition they pass through the body of the syrup until they emerge therefrom. In order to maintain the required quantity of syrup in the vessel B, any suitable automatically-operated controlling means may be employed—such, for example, as the float I, Fig. 1, lying in the body of syrup, said float connected by the lever J with the controlling-cock *h* of the syrup-pipe H. K is a drip vessel under the vessel B.

The full operation of this apparatus is as follows: The vessel B is first filled with syrup from the pipe H, the proper level being controlled and maintained by the float I. The fruit-filled but still uncapped cans are placed successively upon the resting-plate L at the feed end, each can lying between the upright arms *d* of the conveyer D. The conveyer being set in motion, the cans are pushed along by the arms *d* down the entrance-slope of the resting-plate L into the body of syrup until they are completely submerged. The syrup enters the open-topped or uncapped cans and fills them, this filling being insured by the length of time during which the cans are traveling through the syrup in a submerged condition. The cans are prevented from buoyantly rising by the overlying guides F, while the fruit within the cans is prevented from floating out through the open tops by the overlying screen G.

In syruping cans care must always be taken not to fill the cans too full with the syrup. This important feature is provided for by the sloping exit end of the vessel B, which, as the cans travel up the slope of the resting-plate at that end, causes them to tilt or tip sufficiently to spill out the required amount of syrup, so that when the cans reach the level discharge they are not filled full of syrup, but have only the required amount in them. In some cases, however, it is necessary to spill out more of the syrup than in other cases. To accomplish this, the cans in rising up the slope must be tilted more. This is effected in my apparatus by adjusting the end of the resting-plate L so that its uprising slope is at a greater angle. Likewise, to spill out less of the syrup the cans should be tilted less, and to effect this the uprising end of the resting-plate has its angle decreased. Both these adjustments are effected by changing the point of connection of the end of the plate with the fixed bracket *l'*, as heretofore described. This resting-plate performs a second important function, as follows: It is a difficult matter to accurately deliver a can directly from one conveyer to another, for there must always be a space between the adjacent ends of the two, especially in the present instance, where one conveyer has such arms as *d* upon it. In traversing this necessary space between the adjacent ends of the two conveyers the can is liable to, and often does, tip over; but by having the cans rest upon the plate L and be delivered from its end directly upon the succeeding conveyer M the juxtaposition may be so close and of such a character as to effect the delivery of the cans from one to the other without any danger whatever of tipping them over. This resting-plate also furnishes a more stable support and a better guide for the cans in their passage through the syrup than if carried directly on the conveyer. As the level of the syrup of the vessel B lowers, due to the subtraction of the syrup therefrom by the outgoing cans, the float permits a fresh supply sufficient to return the syrup to the proper level.

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

1. A can-filling apparatus, comprising a liquid-containing vessel, a flexible resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, the emerging end of said plate having an adjustable connection with said vessel whereby the plate may be adjusted longitudinally thereof to vary the inclination of said emerging end.

2. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, and means for adjusting the plate longitudinally and thereby varying the inclination of the emerging-slope thereof, and means for advancing the cans along said resting-plate.

3. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, a variable connection for the delivery end of said resting-plate adapted to vary the inclination of its emerging-slope, and means for advancing the cans along said resting-plate.

4. A can-filling apparatus, comprising a liquid-containing vessel, a flexible resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid and the other end disposed to direct the emerging cans to their destination, means for varying the inclination of said plate at its discharge end by a longitudinal adjustment thereof, fixed guides above and parallel with the resting-plate, to hold the cans down thereon, and means for advancing the cans along said resting-plate.

5. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, fixed guides above and parallel with the resting-plate, to hold the cans down thereon, an overlying screen secured to said guides and parallel with said plate to confine the contents of the cans while passing through the liquid, and means for advancing the cans along said resting-plate.

6. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing the conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom of the vessel, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel, and to discharge them from the end of said plate, and means for varying the inclination of the emerging-slope of the resting-plate.

7. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing the said conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, and a variable connection for the delivery end of said resting-plate adapted to vary the inclination of the emerging-slope of said plate.

8. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing said conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom thereof, a flexible resting-plate for the cans lying above and conforming to the course of the conveyer, means for varying the inclination of the emerging end of said plate by a longitudinal adjustment thereof, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, and fixed guides above and parallel with the plate to hold the cans down upon said plate as they pass through the liquid.

9. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing said conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel, and to discharge them from the end of said plate, fixed guides above and parallel with the plate to hold the cans down upon said plate as they pass through the liquid, and an overlying screen secured to said guides and parallel with the plate to cover the open tops of the cans during their passage through the liquid.

10. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing said conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, means for adjusting to varying angles the emerging-slope of said resting-plate, and overlying fixed guides for holding the cans down upon the plate, as they pass through the liquid vessel.

11. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing the conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and parallel with the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, means for adjusting to varying angles the emerging-slope of said resting-plate, overlying fixed guides for holding the cans down upon the plate as they pass through the liquid vessel, and an overlying screen secured to said guides to cover the open tops of the cans during their passage through the liquid.

12. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the

cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to a conveyer, means for advancing the cans along said resting-plate, the said conveyer arranged adjacent the discharge end of said resting-plate, and a variable connection for the delivery end of said resting-plate.

In witness whereof I have hereunto set my hand.

ANTONIO CERRUTI.

In presence of—
J. COMPTON,
D. B. RICHARDS.