

A. R. THOMPSON.

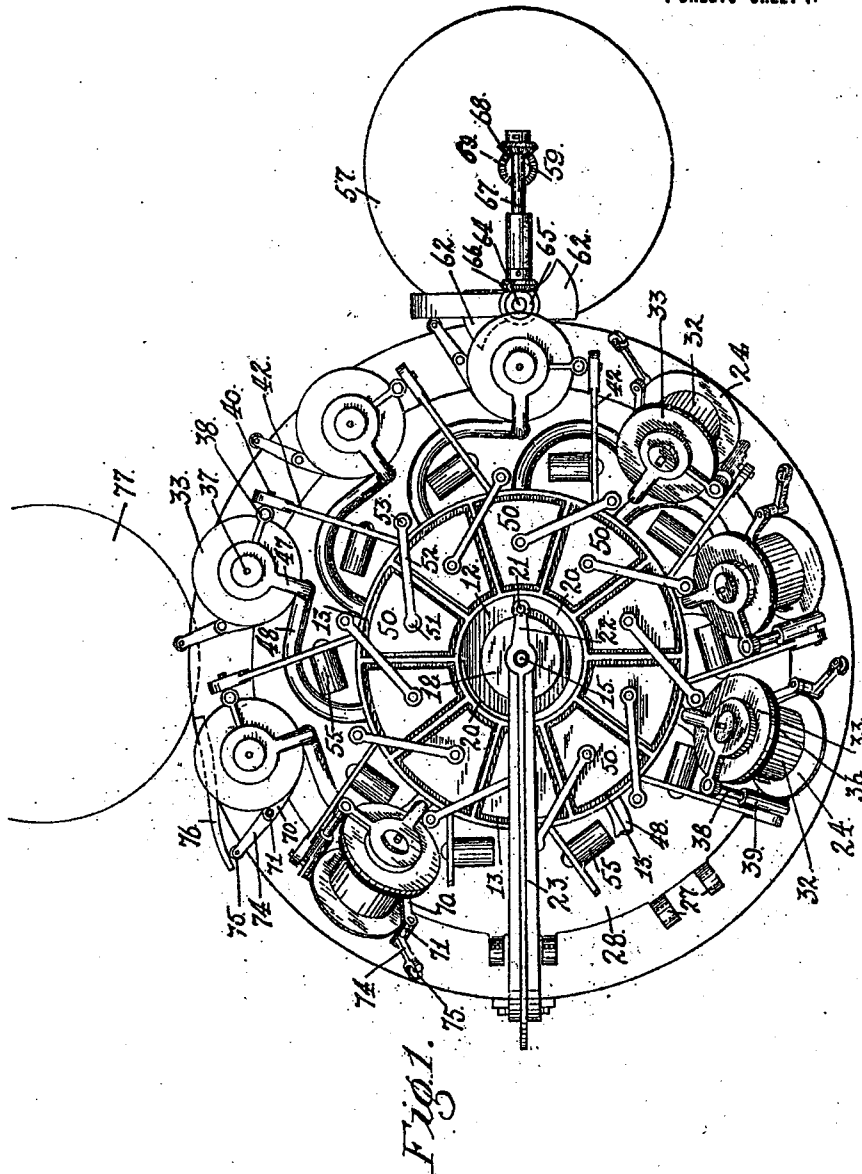
SYRUPER.

APPLICATION FILED FEB. 3, 1913.

1,147,345.

Patented July 20, 1915.

4 SHEETS—SHEET 1.



WITNESSES

Ch. A. Stock
S. Courtnie

INVENTOR

Albert R. Thompson

BY

Wm. F. Booth

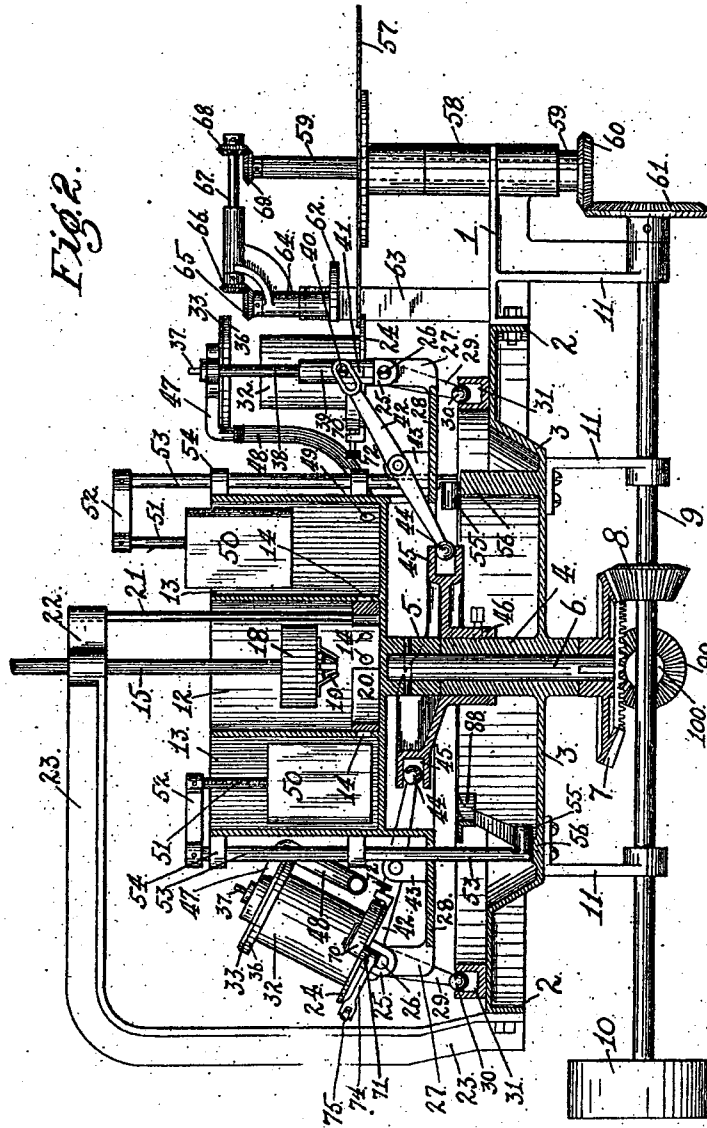
ATTORNEY

A. R. THOMPSON,
 SYRUPER.
 APPLICATION FILED FEB. 3, 1913.

1,147,345.

Patented July 20, 1915.

4 SHEETS—SHEET 2.



WITNESSES

H. A. Stock
S. Constantine

INVENTOR

Albert R. Thompson

BY

Wm. F. Booth

ATTORNEY

A. R. THOMPSON.
SYRUPER.
APPLICATION FILED FEB. 3, 1913.

1,147,345.

Patented July 20, 1915.

4 SHEETS—SHEET 3.

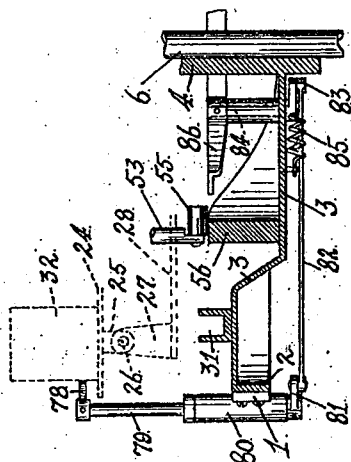


Fig. 4

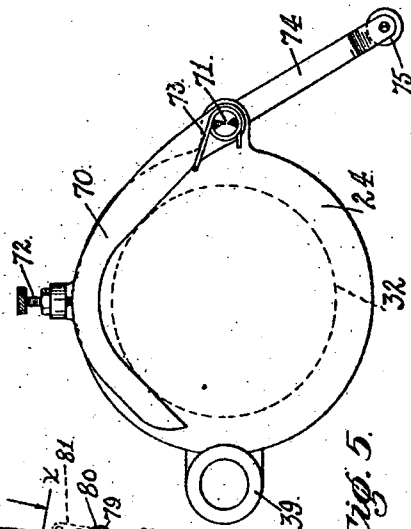
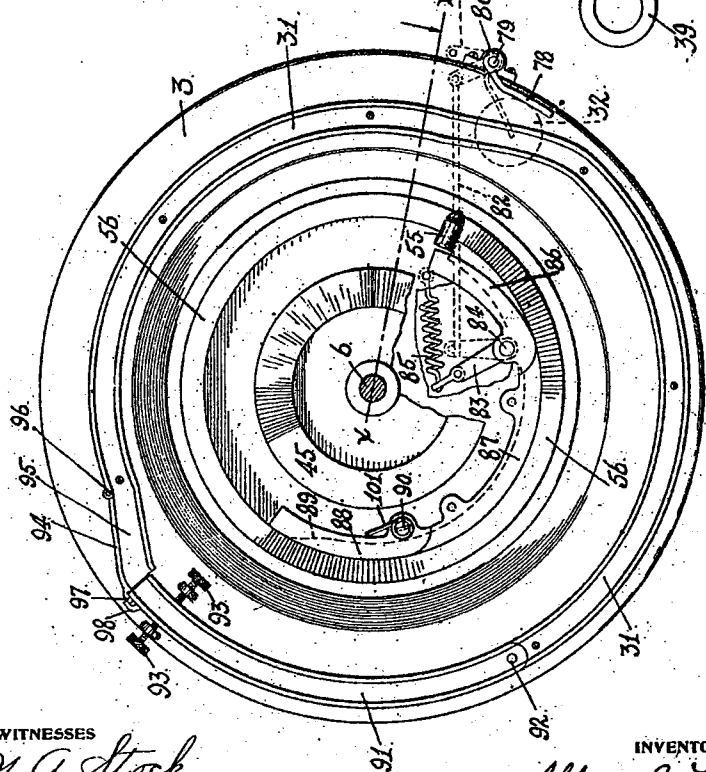


Fig. 5



A. R. THOMPSON.
 SYRUPER.
 APPLICATION FILED FEB. 3, 1913.

1,147,345.

Patented July 20, 1915.

4 SHEETS—SHEET 4.

Fig. 8.

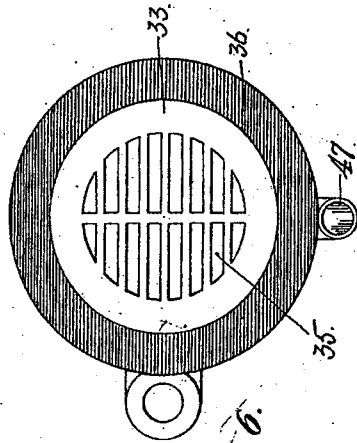
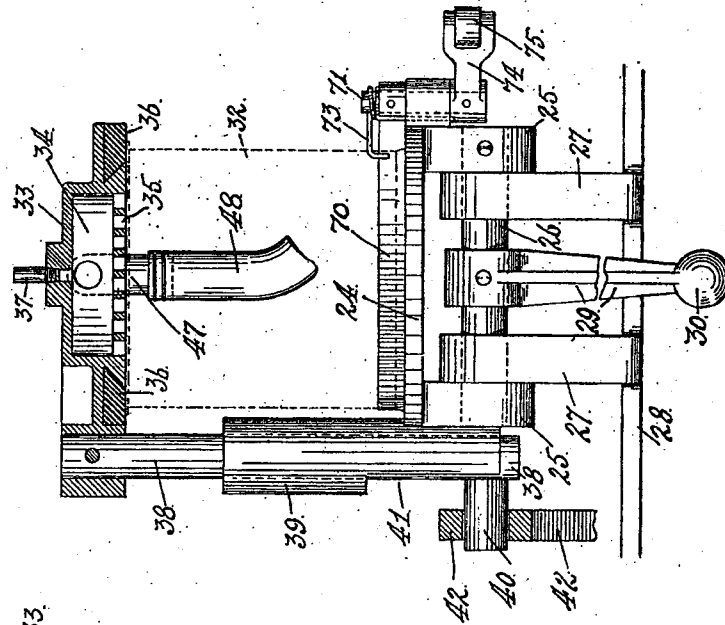
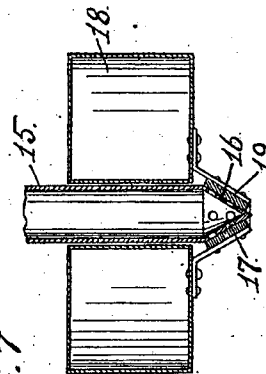


Fig. 6.

Fig. 7.



WITNESSES

Chas. A. Stock
S. Constance

INVENTOR

Albert R. Thompson

BY

Wm. F. Booth

ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT R. THOMPSON, OF SAN JOSE, CALIFORNIA, ASSIGNOR TO ANDERSON-BARNGBOVER MFG. CO., OF SAN JOSE, CALIFORNIA, A CORPORATION OF CALIFORNIA.

SYRUPPER.

1,147,345.

Specification of Letters Patent.

Patented July 20, 1915.

Application filed February 3, 1913. Serial No. 745,811.

To all whom it may concern:

Be it known that I, ALBERT R. THOMPSON, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Syrupers, of which the following is a specification.

My invention relates to the class of syrupers.

10 The object of my invention is to provide a simple and effective machine for supplying containers in continuous succession with syrup, and especially for giving to fruit-filled cans the exact amount of syrup in
15 cleanly fashion and without waste.

To this end my invention consists in the novel machine and in the various combinations, arrangements, and construction of its several parts, and operative mechanisms
20 which I shall now fully describe by reference to the accompanying drawings in which—

Figure 1 is a plan of my machine, portions being broken away and others omitted for
25 the sake of clearness. Fig. 2 is a vertical diametrical section of my machine. Fig. 3 is a top plan partly broken of the fixed or non-rotary portion of the machine, the rotary superstructure being removed. Fig. 4
30 is a detail section on the line $x-x$ of Fig. 3. Fig. 5 is a detail plan view, enlarged, of one of the can-tables showing the adjustable centering-bar thereon. Fig. 6 is a bottom view of a can-cap. Fig. 7 is a sectional view of
35 the float-valve device for controlling the supply of syrup to the machine. Fig. 8 is a vertical sectional view and elevation of one of the can-caps and can-tables.

1 is a portion of a stand, the legs or supports of which are not here shown. To the
40 stand is bolted by its rim 2, a pan-like structure 3 which forms the stand top, serving to carry the various cam-tracks and to support the rotating superstructure; such support
45 and rotation being afforded and effected by the pan-hub 4, the superstructure-hub 5, and the shaft 6 mounted in the former hub and secured in the latter hub. The shaft 6 is
50 driven by the gear 7 on its lower end meshing with the pinion 8 on the main drive shaft 9, which has a pulley 10 and is carried by brackets 11. The main body of the rotating superstructure is formed with a central syrup-supply chamber 12, and with

an annular series of can-filling chambers 13, 55 surrounding the central chamber, the latter chamber communicating with each of said can-filling chambers through ports 14.

The syrup is conducted to the supply chamber 12 through a pipe 15 which leads
60 from any suitable source of syrup, and extends down into said chamber. The quantity of syrup thus supplied and its level in said chamber are controlled automatically by the means shown in detail in Fig. 7. The
65 lower end 16 of the pipe 15 is cone-shaped and provided with delivery holes 17. Freely fitted to the pipe is a float 18, which carries a cone-shaped valve 19 adapted to control
70 the holes 17. As the level of syrup in the chamber 12 lowers, the float falls and carries its valve away from and thus exposes the holes. Syrup then flows in, and as the float rises, its valve closes the holes, and thus
75 keeps the syrup at the predetermined level.

The ports 14 through which the syrup flows from the central chamber 12 to the can-filling chambers 13 are controlled and
timely communication afforded by a valve
80 20 which is shown in Figs. 1 and 2. This valve is a part circle ring fitted in the base of the chamber 12 and immovable with relation thereto, so that as the chamber rotates on its axis certain of said ports will
85 open and certain others passing behind the ring will be closed. The valve-ring is held fixed by a rod 21 which is secured at its lower end to one end of said ring and above
is secured to an extension arm 22 of an overhanging bracket 23, secured below to the rim
90 2 of the pan 3, as seen in Fig. 2.

24 are the can-tables. There is an annular series of these tables, and they revolve with the general rotating superstructure. Each table 24 is connected by ears 25, as
95 shown best in Fig. 8, with a rock-shaft 26 which is mounted in bearings 27 rising from a flange 28 of the general superstructure. Thus the tables are adapted for a tilting movement, and said movement is timely effected by means of an arm 29 secured to
100 each rock-shaft 26, said arm having at its lower end a stud 30 which travels in a fixed cam 31 carried by the pan 3. The said cam 31 is eccentric to the axis of revolution of
105 the annular series of can-tables 24, its eccentricity consisting, as shown in Fig. 3, in having one arc or portion of its circumfer-

ence nearer the axis than the remainder of its circumference, the former acting to hold the can-tables horizontal, while the latter tilts and holds them at an angle, sloping inwardly as shown in Fig. 2.

32 are cans. For each can there is a cap 33 which serves as a syrup filler, a cover and a presser to hold the can contents down. Each cap 33 as seen best in Fig. 8 is formed with a central chamber 34, guarded below by a screen 35 to prevent fragments of fruit from rising into the chamber and syrup connections. The cap has a gasket 36 to form a tight joint with the can-top and from its chamber 34 rises an air vent 37. The cap 33 is carried and moved down and up by a rod 38 secured to it at one side, said rod being fitted to and slidable in a guide 39 secured to the side of the can-table. A stud 40 on the rod (see Fig. 2) plays in a limiting slot 41 in the guide, and upon this stud is slotted one end of a lever 42 which is pivoted to a standard 43 rising from the superstructure flange 28. The other end of the lever 42 has a stud 44 which plays in a fixed cam 45 carried by a hub 46 secured as shown in Fig. 2, to the hub 4 of the pan 3.

The fixed cam 45 is on different levels, whereby, through the lever 42 and the rod 38, the can-cap 33 is brought down to its seat on the can and is again, in due time, raised from said can; and, also, by the pivotal connection of the lever 42 with the stud 40 of the rod 38, the tilting movement of the can-table is not interfered with. Each can-cap 33 has connected with it and communicating with its central chamber a filling pipe 47, the other end of which is connected with a flexible pipe or hose 48. The hose 48 is connected and communicates with the outlet-opening 49 of the adjacent can filling chamber 13. This flexible communication permits the tilting of the can, and also the rise and fall of the cap.

In each can-feed chamber 13 is loosely fitted a displacement body 50. These bodies are individually movable vertically. Each has secured to its top a rod 51 from which a cross bar 52 extends to a rod 53 mounted slidably in bearings 54 on the outside of the can-filling chamber 13. The lower end of the outer or slidable rod 53 carries a roller stud 55 which travels on a cam-track 56 on the pan 3. This cam-track 56 is at different levels, as seen in Fig. 2, so that the displacement bodies 50 are timely lifted and lowered.

Before describing further details of the machine, it will be well, at this point, to follow the general operation. The whole superstructure, including the syrup chambers, the can-tables, the can-caps and their several operating connections, is given a continuous rotary movement by the shaft 6 which is driven by the shaft 9. The pan 3

with its several cams and cam-tracks remain stationary. A can is placed upon a table 24 which is horizontal at the time. At this time also the can-cap 33 is held up above the can. As the table with the upright can upon it moves in its circular path, the overlying cap 33 descends upon the top of the can and both closes it tight and clamps it on its table. At the same time, the can table with its can and cap tilts inwardly. Then the displacement body 50 in the filling chamber 13 which belongs to this can descends in said chamber 13. At this time the ring valve 20 has cut off the communication of the central supply chamber 12 with this filling chamber 13, so that the effect of the descending displacement body 50 is to raise the level of the syrup in said chamber 13 to a height sufficient for the syrup to flow out, under its gravity head, through the flexible base 48 and pipe 47 into and through the cap 33 and into the tilted covered can, and to fill said can to its limit. In due course, while the syrup filled can is still tilted, and the cap is still down on the can, the displacement body 50 rises and thereby so lowers the syrup level in the filling chamber 13, that the excess of syrup in the can flows by gravity from the top of the can and from the chambered cap back into the filling chamber 13. Then when in due course the can table is righted and the can restored to its upright position, said can will have in it just that amount of syrup which its contents requires. After the can is thus righted, the cap rises and the can is removed from the machine. At this time the port 14 is clear of the separated ends of the partial ring valve 20, and the filling chamber 13 is again supplied with syrup. The can is introduced to the machine from a can-feed table 57. This is of the rotary disk type, supported as shown in Fig. 2 on the top of a bearing 58 carried by the fixed stand 1, and driven by a shaft 59 in said bearing, which shaft is rotated by a bevel gear 60 on its lower end meshing with a bevel gear 61 on the shaft 9. The edge of the can-feed table 57 slightly overlaps the course of the annular series of can-tables 24 so that the can may pass easily from one to the other. This passage of the can is effected by a double armed pusher plate 62, seen in Figs. 1 and 2, which is supported on a post 63 rising from the stand 1, said pusher plate being rotated by a shaft 64 which carries it, the shaft being driven by a bevel gear 65 on its top with which meshes a bevel gear 66 on a cross shaft 67, the latter being driven by a bevel gear 68 on its other end, meshing with a bevel gear 69 on the top of the shaft 59 which carries the can-feed table 57. This pusher-plate 62 by its rotation engages and advances successive cans from the feed table 57 to successive can-tables 24.

In order to center the can on the can-table 24, and to provide for different sizes of cans, and to further provide for removing the can from the can-table 24, the following mechanism is provided. Referring to Figs. 5 and 8, it will be seen that the can-table 24 has overlying it a curved centering-bar 70 which lies in approximately the semi-circumferential area of the table opposite to that upon which the can is entered. This centering bar 70 is carried by a spindle 71 journaled in a bracket on one side of the table, and its position is affected by a set screw 72 carried by the table. By setting this screw 72 in or out the centering bar 70 is moved in or out to adjust it for receiving and centering different sizes of cans. 73 is a spring affecting the centering bar 70 to control it. The lower end of the spindle 71 has a crank arm 74 carrying a roller stud 75 at its free extremity. Referring now to Fig. 1, it will be seen that when the can reaches its point of discharge from the machine, the stud 75 of the arm 74 comes in contact with a fixed rail 76 which has the effect of retarding or pushing back on the arm, thereby swinging the centering bar 70 across the table 24 with the result of pushing the can off onto the discharging disk or plate 77. When the rail 76 is passed, the spring 73 returns the centering bar 70 to its normal position against the adjusting screw 72.

In order to provide for a suspension of individual operation in case no can is advanced upon a given can-table, I have the following switching or throwout mechanism. This is best shown in Figs. 3 and 4 to which reference must now be had. For a clear understanding it may be well to state that the cessation of operation is imposed only upon the action of the displacement body 50, which if held elevated will according to the description previously given result in no flow of the syrup from the filling chamber 13, for in such case the level of said syrup in such chamber will not be high enough to permit it to flow.

Immediately following the point at which a can should be advanced to a can-table 24, as seen in Fig. 3, is an arm 78 which lies directly in the path of the can, as seen in Figs. 3 and 4, being shown dotted in Fig. 3. This arm is carried on the upper end of a vertical spindle 79, mounted to oscillate in a bearing 80 secured to the rim 2 of the pan 3. (Fig. 4). The lower end of the spindle has a crank 81 from which a rod 82 extends horizontally to a crank 83 on the lower end of a rocking spindle 84. A spring 85 holds these parts in normal position. The spindle 84 passes upward through the pan 3 and carries on its top the switch section 86 of the throw-out track 87, as shown in Fig. 3. This switch section 86, with rela-

tion to the cam-track 56 upon which travels the stud 55 of the displacement-body-operating-connections, lies beside said track and begins at the point where said track commences its downward slope, as shown in Fig. 4, by which slope the stud 55 is allowed to descend in order to let the displacement-body drop down in the filling chamber 13. But said switch section 86 and the throw-out track 87 as a continuation thereof lie as high as the high portion of the cam-track 56, and said throw-out track with a hinged extension 88 thereof continues around to the point where the low portion of the cam-track 56 again rises to the full height of said cam-track, as indicated in Fig. 3. The under surface of the hinged extension 88 has an inclined shoulder shown by the dotted lines at 89, in Fig. 3.

The operation will now be understood. Under the influence of the spring 85, the switch arm 78 is held in to the path of the cam, as shown by the dotted lines in Fig. 3, and the switch section 86 is held against the cam-track 56 as appears by dotted lines in said Fig. 3. When no can is on the table this normal position persists and the stud 55, which is long enough for the purpose instead of entering and passing down the slope of the cam-track 56, rides on the elevated switch section 86 and the elevated throw-out track 87 and its extension 88, thus holding the displacement body up, with the result that no syrup will flow from the chamber 13 through the flexible tube 48 to the cap 33; and this continues all the way around, for at the end of the throw-off track extension 88 the stud 55 passes again onto the elevated portion of the cam-track 56. But when a can is on the tables 24, it will press outward the arm 78, as shown in Fig. 3, which has the effect of throwing inward the free end of the switch section 86 and removing it far enough from the cam-track 56 to enable the stud 55 to miss or clear it, and said stud will, therefore, run down the slope of the cam-track 56 and travel along on said track below and free of the overlying switch section, and throw-off track, thus allowing the displacement-body to perform its proper function. As the stud 55 passes below the throw-off track extension 88 and is rising again on the track 56, its end will run against the inclined shoulder 89 of said extension and will push the free end of said extension inwardly turning on its hinge or pivot at 90, so that said stud will thereby clear and pass by said extension and will rise ultimately to the full height of the cam-track 56. A spring 101 around the pivot 90 returns the extension 89 to place.

In order to provide for varying the angle to which the cans may be tilted during that portion of their course in which they are

pouring their excess of syrup back into the filling chambers 13, so that a greater or less amount may thus be returned as may suit given cases, I have the following construction, shown clearly in Fig. 3. The cam 31 which as before described effects through the arm 29 the tilting of the cans, has two main portions of different radius, that with the shorter radius holding the cans upright and the other tilting them to an inward angle. The portion of the cam with the longer radius or as it may be termed the tilting portion is itself divided into two parts, an earlier and a later one. The later one or section is marked 91. It is hinged to the former at 92 and is free of the pan 3 so that it may be moved. The other extremity of this hinged section is free, and against it, on each side, bear the set screws 93. The outer wall 94 of the inclined or eccentric terminal 95 of the shorter radius portion of the cam 31, which said terminal joins the two main portions of the cam, is hinged at 96, and has at 97 and 98 a lap joint with the movable end of the hinged section 91. By properly manipulating the set screws 93, the hinged section 91 may be moved outwardly to greater radius, the outer wall 94 of the terminal 95 moving with it, and thus the cans may be caused to tilt to a greater angle.

In Fig. 2, 99 is a bevel gear which is driven by the gear 7 of the shaft 6. The gear 99 is carried by the shaft 100, which may be supposed to extend across under the machine and through suitable transmitting mechanism unnecessary to show, drives the discharge disk or plate 77 of Fig. 1.

I claim:—

1. In a syruper, the combination of a support for the can; a syrup-containing vessel; a pipe leading from the lower portion of said vessel to the top of the can; a movable displacement body in said vessel proportioned to raise by its descent the level of the syrup in the vessel to a height sufficient to cause a syrup-flow to fill the can, and by its rise to lower the level of the syrup below the top of the can to effect a return flow of an excess of syrup from the upper portion of said can, and means for holding said can in a tilted position during the syrup-flow.

2. In a syruper, the combination of a support for the can; a syrup-containing vessel; a cap adapted to move to and from the can top to close and to open it; a pipe leading from the lower portion of the vessel to said cap and communicating therethrough with the can; and a movable displacement body in said vessel proportioned to raise by its descent the level of the syrup in the vessel to a height sufficient to cause a flow of the syrup through the pipe and cap to fill the can, and by its rise to lower the level of the syrup to effect a return flow through the

cap and pipe of an excess of syrup from the can.

3. In a syruper, the combination of a support for the can; a syrup-containing vessel; a cap adapted to move to and from the can top to close and to open it; a pipe leading from the lower portion of the vessel to said cap and communicating therethrough with the can; a movable displacement body in said vessel proportioned to raise by its descent the level of the syrup in the vessel to a height sufficient to cause a flow of the syrup through the pipe and cap to fill the can, and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can, and means for holding said support and cap with their intervening can in a tilted position during the syrup flow.

4. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, and an annular series of can-tables for the cans, each of said can filling chambers having a pipe communication with a can on the corresponding table; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow to fill the can and by its rise to lower the level of the syrup to effect a return flow from the can of an excess of syrup; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies, and means for automatically throwing out of action the operating means of any given displacement body when there is no can on its corresponding table.

5. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, and an annular series of can-tables for the cans, each of said can filling chambers having a pipe communication with a can on the corresponding table; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow to fill the can and by its rise to lower the level of the syrup to effect a return flow from the can of an excess of syrup; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies, and means actuated by the rotation of the structure for holding said can-tables with their cans in a tilted position during the syrup flow.

6. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, an annular series of can-tables for the cans, and an annular series of can-caps each with a pipe communicating

with its corresponding can-filling chamber, in connection with means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; and means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies.

7. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, an annular series of can-tables for the cans, and an annular series of can-caps each with a pipe communicating with its corresponding can-filling chamber, in combination with means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies, and means actuated by the rotation of the structure for holding said can-tables and caps with their intervening cans in a tilted position during the syrup-flow.

8. In a syruper, a rotating structure comprising a central chamber to which the syrup is initially supplied, an annular series of can-filling chambers about said central chamber and having individual communications therewith, an annular series of can-tables for the cans and an annular series of can caps each with a pipe communicating with its corresponding can-filling chamber, in combination with means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; and means actuated by the rotation

of the structure for effecting the timely descent and elevation of the displacement bodies.

9. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, an annular series of can-tables for the cans, and an annular series of can-caps each with a pipe communicating with its corresponding can-filling chamber, in combination with means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies; means actuated by the rotation of the structure for holding said can-tables and caps with their intervening cans in a tilted position during the syrup-flow; and means within the central chamber affected by the rotation of the structure to timely control the communications with the can-filling chamber.

10. In a syruper, a rotating structure comprising a central chamber to which the syrup is initially supplied, an annular series of can-filling chambers about said central chamber and having individual communications therewith, an annular series of can-tables for the cans and an annular series of can caps each with a pipe communicating with its corresponding can-filling chamber, in combination with a stationary arc shaped valve plate within the central chamber adapted by the rotation of said chamber to timely open and close its successive communications with the can-filling chambers; means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; and means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies.

11. In a syruper, a rotating structure comprising a central chamber to which the syrup is initially supplied, an annular series

of can-filling chambers about said central chamber and having individual communications therewith, an annular series of can-tables for the cans and an annular series of can caps each with a pipe communicating with its corresponding can-filling chamber, in combination with a stationary arc shaped valve plate within the central chamber adapted by the rotation of said chamber to timely open and close its successive communications with the can-filling chambers; means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables, and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies; and means actuated by the rotation of the structure for holding said can-tables and caps with their intervening cans in a tilted position during the syrup-flow.

12. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying said chambers with syrup, an annular series of can-tables for the cans, and an annular series of can-caps each with a pipe communicating with its corresponding can-filling chamber, in combination with means actuated by the rotation of the structure for effecting the timely descent of the can-caps upon the cans on the can-tables and their elevation therefrom; a displacement body in each can-filling chamber proportioned to raise by its descent the level of the syrup in the chamber to a height sufficient to cause a syrup-flow through the communicating pipe and cap to fill the can and by its rise to lower the level of the syrup to effect a return flow through the cap and pipe of an excess of syrup from the can; means actuated by the rotation of the structure for effecting the timely descent and elevation of the displacement bodies; and means for automatically throwing out of action the operating means of any given displacement body when there is no can on its corresponding can-table.

13. In a syruper, a rotating structure comprising an annular series of can-filling chambers, and means for supplying them with syrup, in combination with an annular series of can-tables; rock shafts carrying said can-tables; said shafts being mounted in the rotating structure and each having an arm; a fixed cam coacting with said arms to swing each can-table to tilt and to up-

right its can; a flexible pipe from each can-filling chamber to convey the syrup to its corresponding can; a vertically movable displacement body in each can-filling chamber, adapted by its descent and its rise to effect a syrup-flow to fill the can and a return flow of the excess of syrup therefrom; and means actuated by the rotation of the structure to operate the displacement bodies while the cans are tilted.

14. In a syruper, a rotating structure comprising an annular series of can-filling chambers and means for supplying them with syrup, in combination with an annular series of can-tables; rock-shafts carrying said can-tables, said shafts being mounted in the rotating structure and each having an arm; a fixed cam coacting with said arms to swing each can-table to tilt and to upright its can; a cap for each can; a rod carrying the cap and slidably mounted on the can-table; a lever for sliding the rod to move the cap to and from its can; a fixed cam for operating the lever of the slide rod; a flexible pipe connecting each can-filling chamber with its corresponding can-cap; and a vertically movable displacement body in each can-filling chamber adapted by its descent to raise the syrup level to a height sufficient to effect a syrup flow through the flexible pipe and can-cap to fill the can and by its rise to lower said level to effect a return flow of an excess of syrup from the can.

15. In a syruper, a rotating structure comprising an annular series of can-filling chambers and means for supplying them with syrup, in combination with an annular series of can-tables; rock-shafts carrying said can-tables, said shafts being mounted in the rotating structure and each having an arm; a fixed cam coacting with said arms to swing each can-table to tilt and to upright its can; a cap for each can; a rod carrying the cap and slidably mounted on the can-table; a lever for sliding the rod to move the cap to and from its can; a fixed cam for operating the lever of the slide rod; a flexible pipe connecting each can-filling chamber with its corresponding can-cap; a vertically movable displacement body in each can-filling chamber adapted by its descent to raise the syrup level to a height sufficient to effect a syrup flow through the flexible pipe and can-cap to fill the can and by its rise to lower said level to effect a return flow of an excess of syrup from the can; and means for operating said displacement bodies consisting of a rod connected with each body, a second rod connected with the first rod and passing down outside the can-filling chamber, and a fixed cam track coacting with said second rod.

16. In a syruper, a rotating structure comprising an annular series of can-filling

chambers, means for supplying them with syrup, an annular series of can-tables, and connections from the chambers to convey the syrup to the cans on said tables, in combination with a vertically movable displacement body in each can-filling chamber adapted by its descent to raise the syrup level to a height sufficient to effect a syrup flow to fill the can and by its rise to lower said level to effect a return flow of an excess of syrup from the can; means for operating said displacement bodies consisting of a rod connected with each body, a second rod connected with the first rod and passing down outside the can-filling chamber, and a fixed cam track coacting with said second rod, and means for throwing said displacement body operating means out of action in case of the absence of a can comprising a supplemental track for holding the second rod up, switch sections of said track for transferring said second rod to and from said supplemental track, connections for normally holding one of said switch sections in action and an arm in the path of the cans for holding said switch section out of action.

17. In a syruper, the combination of a can-table, a can-centering bar pivotally connected with said table and a set screw for adjusting said bar for different sizes of cans.

18. In a syruper, the combination of a can-table, means for causing said table to travel from a point of can-entrance to a point of can discharge; a can-centering bar pivotally connected with said table and lying above its surface; an arm connected with the pivot of said bar for swinging it across the table; a fixed rail at the point of can discharge coacting with said arm to swing the bar and push the can from the table; and a spring affecting the bar to return it.

19. In a syruper, the combination of a rotating series of can-tables, a rotating can feed plate, a rotating pusher for advancing the cans successively from the plate to successive tables; a spring controlled can-centering bar pivotally connected with each table and lying above its surface; an arm connected with the pivot of said bar for swinging it across the table; a fixed rail

coacting with said arm to swing the bar and push the can from the table; and a rotating discharge plate to receive said can.

20. In a syruper, a rotating structure comprising an annular series of can-filling chambers, means for supplying them with syrup, an annular series of can-tables, and connections from the chambers to convey the syrup to the cans on said tables, in combination with means for tilting said can-tables consisting of rock-shafts carrying said tables, arms of said rock-shafts and a fixed cam coacting with said arms; and means for varying the angle to which the tables are tilted consisting of a laterally movable section of said cam and set screws to effect and control its adjustment.

21. In a syruper, a rotating structure comprising a central syrup supply chamber, an annular series of can-filling chambers each having a communication with the central chamber, an annular series of can-tables; a vertically movable cap for a can on each table, and a pipe for conveying the syrup from each chamber through the cap to its corresponding can, in combination with a main syrup pipe leading into the central chamber; a float actuated valve in said chamber to automatically control the syrup supply; a fixed valve-bar in said chamber to control by the rotation of the structure the communications between said central chamber and the can-filling chambers; means actuated by the rotation of the structure to move the caps to and from their cans; means actuated by the rotation of the structure to tilt the can-tables with their cans and caps; a displacement body in each can-filling chamber adapted by its movement to effect a flow of the syrup to fill the can and to effect a return flow therefrom of a syrup excess, and means actuated by the rotation of the structure to operate the displacement bodies.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT R. THOMPSON.

Witnesses:

F. L. BURNELL,
CHAS. C. PHILLIPS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."