

Jan. 20, 1942.

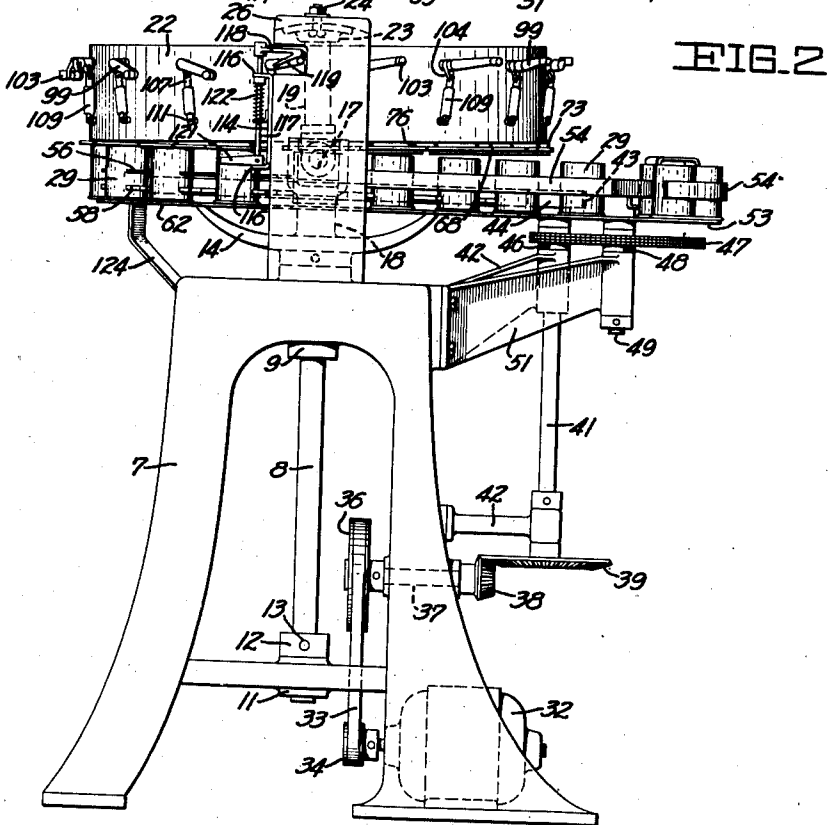
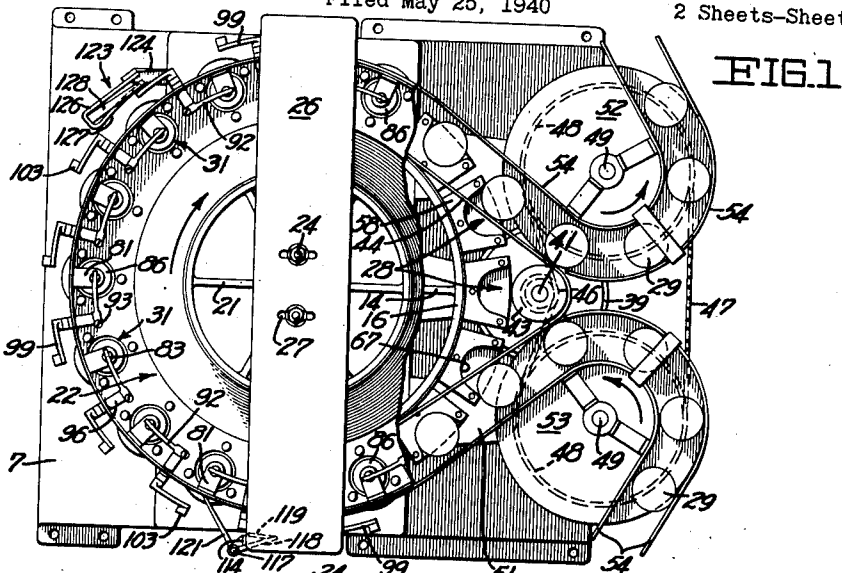
S. PITTALUGA

2,270,709

FRUIT AND VEGETABLE JUICE FILLING MACHINE

Filed May 25, 1940

2 Sheets-Sheet 1



INVENTOR
Stefano Petta
BY
Harry C. Schroeder
ATTORNEY

Jan. 20, 1942.

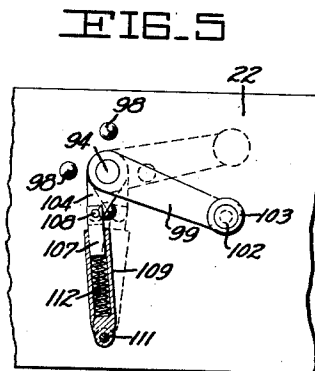
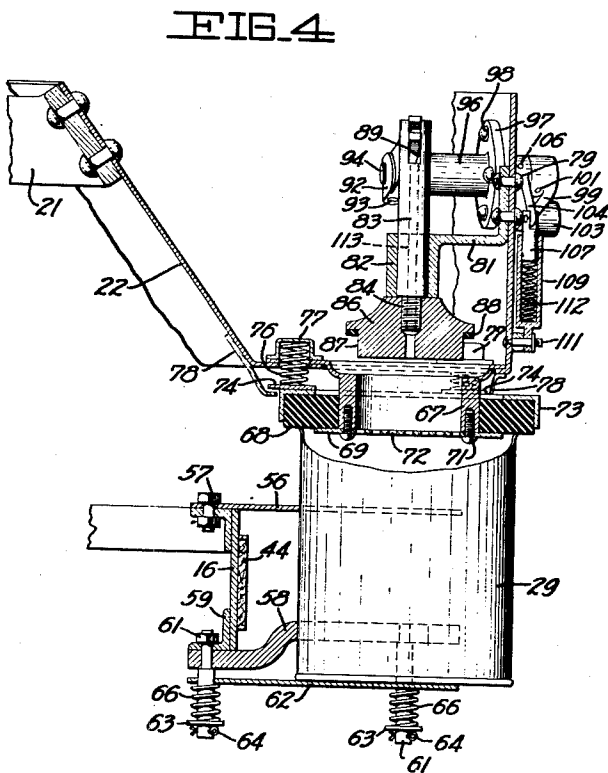
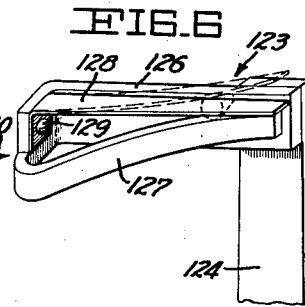
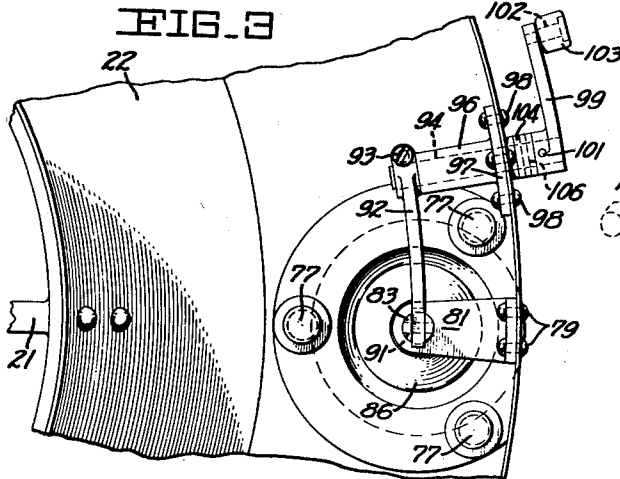
S. PITTALUGA

2,270,709

FRUIT AND VEGETABLE JUICE FILLING MACHINE

Filed May 25, 1940

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,270,709

FRUIT AND VEGETABLE JUICE FILLING
MACHINE

Stefano Pittaluga, San Leandro, Calif.

Application May 25, 1940, Serial No. 337,228

9 Claims. (Cl. 226—98)

This invention relates to means for valving the flow of fluid from one container into another and to the actuation of said valving means to institute or to disrupt said flow, and embodies improvements over the structure shown in my prior Patent No. 2,005,471 issued June 18, 1935.

It is an object of the invention to provide, in a can-filling machine, a rapid-operating wide-opening valve for controlling the flow of a fluid from a storage tank into a container to be filled.

Another object of the invention is to provide, in a filling machine, a valve which operates equally well on highly viscous fluids or on thicker pulpy materials.

A further object of the invention is to provide, in a filling machine which operates in a continuous cycle to successively fill containers fed to the machine in a continuous train, novel means for opening and closing the valving means, for controlling the flow of fluid from a common reservoir into the respective containers, at predetermined points during the cycles of operation of the machine.

A still further object of the invention is to provide, in a filling machine of the type described, novel safety means which permits opening of the filling valve to allow fluid from the reservoir to flow into the container only when a container, to receive the discharged fluid, is positioned in correct registry with the filling valve.

Yet another object of the invention is to provide, in a can-filling machine in which a spaced row of cans carried by a rotatable turntable moving in one plane is approached and engaged by sealing members moving in an angularly related plane, novel means for parallelly reconciling the respective planes of movement of the cans and sealing means upon relative engagement therebetween.

The invention possesses other objects and features of advantage which, together with the foregoing, will be specifically brought out in the detailed description of the invention hereunto annexed. It is to be understood that the invention is not to be limited to the specific embodiment thereof herein shown and described as various other embodiments thereof may be employed within the scope of the appended claims.

Referring to the drawings:

Figure 1 is a top plan view of a can filling machine in which the improvements of my invention are incorporated. A portion of the view is broken away so as to more clearly disclose the internal construction of the machine.

Figure 2 is a front elevational view of the structure shown in Figure 1.

Figure 3 is a fragmental top plan view of a portion of the reservoir containing one of the filling valves.

Figure 4 is a side elevational view, partly in vertical section so as to more clearly show the interior construction, of the structure illustrated in Figure 3.

5 Figure 5 is a front elevational view, of a portion of the structure shown in Figure 4, showing the valve lever latch.

Figure 6 is a fragmental perspective view of one of the valve lever trip cams.

10 The greater portion of the machine shown in the drawings has been covered in my above identified prior patent. However it is necessary here to show some of the old structure in order to disclose a completely operative mechanism and to more clearly bring out the operational and functional features of the new improvements. The portions of the device that are old and those that are new will be pointed out as the description proceeds.

20 In detail, my prior machine consists of a pedestal 7 having an axially vertical shaft 8 mounted thereon which is journaled for rotation in upper and lower bearings 9 and 11 respectively and which is maintained against axial displacement by a collar 12 suitably secured to the shaft, as by means of the pin 13, and resting against the upper face of the lower bearing 11. The upper end of the shaft 8 protrudes through the top of the pedestal 7 and carries a spider 14 to the outer ends of the arms of which is secured an annular pulley ring 16. A universal joint 17 has one stub shaft 18 thereof attached to and rising from the spider 14, so as to be rotated by and in synchronism with the shaft 8, and has the other stub shaft 19 thereof secured to a spider 21 which carries an annular fluid reservoir 22 and is journaled in an adjustable bearing 23 secured by bolts 24 to a yoke 26 secured to and extending across the top of the pedestal 7. Settings of the bolts 24 at positions along the elongated openings 27 will provide various angular settings of the shaft 19 so that the plane of movement of the reservoir 22 may be angularly inclined with respect to the plane of movement of the spider 14 and pulley ring 16. A plurality of circumferentially spaced cradles, generally indicated by the reference numeral 28, is provided on the pulley ring 16 in which the cans 29 or other receptacles to be filled are carried and directly above each cradle 28 and positioned in the bottom of the reservoir 22 is a filling valve, generally indicated by the reference numeral 31, which regulates the flow of fluid, with which the reservoir is filled, into the cans 29 so that the latter may be filled.

45 A motor 32, mounted on the pedestal 7, drives, through a belt 33 and pulleys 34 and 36, a countershaft 37 which is provided with a bevel pinion 38 meshing with a bevel gear 39 carried by the lower end of an axially vertical drive shaft 41

journaled in brackets 42 extending from the pedestal. The upper end of the drive shaft is provided with a pulley 43 tractionally engaging an endless belt 44, which passes circumferentially around the pulley ring 16, and with a sprocket 46 which meshes with an endless chain 47 engaging larger sprockets 48 carried by axially vertical shafts 49 which are journaled in brackets 51 secured to and extending from the pedestal. Horizontal feeder disks 52 and 53 are fixed to the upper ends of the shafts 49 and are rotatable by the chain drive, from the drive shaft 41, to feed the cans 29 into the cradles 28 and to receive the filled cans issuing from the machine. Guard rails 54 are provided for guiding the cans to and from the cradles 28 and suitable conveyors, not shown, may be provided for carrying the cans to and from the feeder disks. It will be seen that since the bottom of the reservoir 22, due to the tilt of the latter, is considerably elevated above the tops of the cans 29 where they enter and are discharged from the cradles 28, the passage of the cans from the feeder disk 53 into the cradles and from the cradles on to the feeder disk 52 will not be interfered with.

The cradles 28, which include novel features of my invention, each comprises an upper plate 56, extending radially from the pulley ring 16 and secured to the latter by bolts 57, an intermediate plate 58, similar to the plate 56 and secured to an angle ring 59, carried by the pulley ring, by downwardly extending studs 61, and a bottom plate 62 provided with apertures for receiving the studs 61 so that the plate 62 is mounted for slidable movement vertically on the studs. Each stud 61, at its lower end, is provided with a washer 63 held on the stud by a cotter pin 64 and between each washer 63 and the bottom of the plate 62 is interposed a spring 66 which urges the plate in an upward direction. Both of the plates 56 and 58 are provided with notches 67 shaped correspondingly to and to receive a can 29; the bottom of the can resting on the upper surface of the bottom plate 62.

Directly above the axis of the can, when the latter is positioned in one of the cradles, is the filling valve also including novel features of my invention. Each valve structure comprises a tubular spout 67, which forms a discharge port for the reservoir 22, which is brazed or otherwise secured to the bottom of the reservoir and which extends downwardly therefrom. An annular rubber sealing ring 68, concentric with the spout 67, is retained thereon by a plate 69 secured by screws 71 to and extending across the lower end of the spout; the plate being provided with apertures 72 through which fluid may flow from the spout into the can 29. The outer periphery of the sealing ring 68 is fitted with an annular angle ring 73 having a plurality of spurs 74 secured to and extending radially from the upper surface thereof and coil springs 76, each having one end thereof bearing against the top of a spur 74, pass through apertures formed in the bottom of the reservoir and have their other end bearing against the bottoms of recessed caps 77 which are secured to the interior bottom surface of the reservoir overlying the spring apertures. Brackets 78 secured to the reservoir extend to positions underlying the spurs 74 so as to form stops to limit the downward movement of the angle ring 73 and the sealing ring 68 under the pressure of the springs 76. It will be seen that, due to the angular inclination of the reservoir, the cans, as they pass from the feeder disk 53 into the cradles of the turn-

table, have their tops considerably spaced below the sealing rings 68. However, as the turntable rotates, the sealing rings will descend and engage the tops of the cans so as to form a fluid-tight connection between the cans and the spouts 67. This particular feature of the mechanism is not new, having been disclosed in my above-mentioned prior patent. However the resilient mounting of the bottom plate 62 and the sealing ring 68 by the springs 66 and 76 respectively is new and forms a floating support for the cans which not only insures a tight connection with the can as the fluid is passing thereinto from the reservoir but also compensates for any irregularities in the ends of the cans which would otherwise interfere with the tightness of the seal.

Means is provided for opening or closing the spout 67 so as to regulate the flow of fluid from the reservoir therethrough into the can. Secured to the vertical outer wall of the reservoir by rivets 79 is a bracket 81 having a centrally bored hub 82 which is axially concentric with the axis of the spout 67 and in which is slidably mounted a valve stem 83 having at its lower end a threaded stud 84 which is threadedly engaged in a cylindrical valve 86 overlying the upper end of the spout 67. A peripheral shoulder 87 on the valve carries an annular rubber gasket 88 which, when the valve is lowered, by movement of the valve stem 83, into the upper end of the spout, seals the spout against the entrance thereof of fluid from the reservoir. The upper end of the valve stem is provided with a transaxial notch 89 in which is positioned a pin 91 engaged by the notched end of an inner valve arm 92 which is clamped by a screw 93 to one end of a shaft 94. The shaft 94, which extends radially of the reservoir through the outer vertical wall thereof, is journaled in a hub 96 which carries a flange 97 secured by rivets 98 to the reservoir wall. An outer, substantially horizontally extending, valve arm 99 is secured by means of a pin 101 to the outer end of the shaft 94 and carries at its distal end a pin 102 upon which is journaled a roller 103. A relatively short, downwardly extending, latch arm 104 is also secured to the outer end of the shaft 94 by means of a pin 106. A plunger 107 is pivotally connected by means of a pin 108 to the distal end of the latch arm 104 and slidably enters the internal bore of a sleeve 109 which is pivotally mounted at its lower end and by means of a pin 111 on the side wall of the reservoir. A coil spring 112 positioned in the bore of the sleeve 109 engages the lower end of the plunger 107 so as to normally urge the plunger outwardly from the bore. It will be seen that the combination of arm 104, plunger 107, sleeve 109 and spring 112 form a toggle latch which will snap the valve, when the outer arm 99 is moved from its full line position to the dotted line position thereof shown in Figure 5, from opened to closed positions or vice versa. The actuating mechanism of the valve allows the latter to be opened wide so that very little obstruction is caused to the rapid flow of fluid from the reservoir through the spout 67 and into the can. Since it is necessary to vent air from the can during the time that the fluid is flowing thereinto, I may provide a suitable vent pipe which enters the can through the side wall of the spout 67 or I may, as indicated in Figure 4, simply drill a vent passage 113 concentrically through the valve 86 and the valve stem 83.

Means is provided, forming a novel feature of my invention, for opening and closing the valves at selected points in the rotational cycle of the

turntable and the reservoir. As is best shown in Figure 2, I provide a bracket 114, which is suitably secured to a vertical edge of the yoke 26, having at its upper and lower ends outwardly turned ears 116 apertured to provide journals for an axially vertical shaft 117. An arm 118, which is secured to the upper end of the shaft 117, has at its end a downwardly curved cam extension 119 while the lower end of the shaft has secured thereto a relatively long arm 121 which extends toward the turntable and which may traverse the path in which the cans 29 move. A torsion spring 122 is provided concentric with the shaft 117 and functions to normally urge the arm 121 inwardly toward the path of movement of the cans. It will be seen that as the turntable rotates, successive cans will come into engagement with the arm 121. Passage of the cans across the end of the arm will cause the latter to swing outwardly thereby swinging the arm 118 and the cam extension 119 inwardly toward the center of the turntable and into the path of movement of the valve arm rollers 103. When the arm 118 is in this latter position the cam roller of the approaching valve arm will contact the downwardly curved lower surface of the cam extension 119 which will, as the reservoir and turntable continue to rotate, force the roller 103 downwardly thus moving the arm lever 99 into the full line position shown in Figure 5 and causing the valve 86 to open so that fluid in the reservoir 22 may flow into and fill the can 29. When once fully depressed, the arm lever 99 will be releasably retained in this position by the toggle latch arrangement previously described. After passage of the can the arm 121 will be moved inwardly again by the torsion spring 122 and the arm 118 and its cam extension 119 will be correspondingly moved outwardly away from the path of movement of the valve arm rollers 103. It will be seen that should there not be a can in one of the turntable cradles, the passage of the empty cradle across the end of the arm 121 will, due to the absence of the can, not cause the arm 121 to swing outwardly so as to bring the cam extension 119 into operative relationship with the valve rollers. Thus the valve at this particular station will not be opened. This is a safety feature which insures that when fluid flows from the reservoir there will always be a can properly placed to receive the fluid.

Continued movement of the turntable and the reservoir, through about one-third of a complete revolution during which movement the cans whose valve arms 99 have been depressed by the cam extension 119 are being filled with fluid from the reservoir, will bring the depressed arms 99 into engagement with a valve-closing mechanism, generally indicated by the reference numeral 123, which consists of a bracket 124 rising from the pedestal 7 and carrying, as is best shown in Figure 6, a U-shaped bar 126 which has one portion thereof upwardly curved to form a cam bar 127. As is shown in Figure 6, the curved cam bar 127 lies in the path of movement of the valve arm rollers 103 so that when one of these rollers approaches the lower end of the cam bar, in the direction of the arrow 130, and thereafter engages the bar, the rotational movement of the turntable and reservoir will cause the roller to ride upwardly along the upper curved surface of the cam bar and thus swing the valve arm 99 into its upper position, shown by the dotted lines of Figure 5, wherein the valve 86 will be closed so as to stop the flow of fluid from the reservoir

into the can. A leaf spring 128, which is anchored to the U-shaped bar 126 by means of one or more screws 129, engages the roller 103 as it moves upwardly along the cam bar 127. This spring prevents the valve 86 from sudden slamming shut as the toggle latch passes over dead center thus materially reducing wear on the valve gasket 88 and also preventing splashing of the fluid in the reservoir over the vertical sides thereof. The upper surface of the spring 128 lies in a plane which is slightly below the lower surface of the roller when the latter is in its uppermost position so that when a valve arm is not depressed by the valve opening mechanism, due to the absence of a can at a particular station, the elevated roller may clear the valve closing mechanism without any interference from the latter. After the valve is closed by the mechanism 123 the turntable will continue its rotation to deposit the filled cans on the disk 52, the emptied cradles will move to pick up fresh cans from the disk 53 and the cycle of operations will be repeated as before.

It is believed that the foregoing detailed description of my invention will enable those skilled in the art to construct and use the same and, therefore, what I claim as new and desire to secure by Letters Patent is:

1. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having therein a discharge port, means on said turntable for engaging a receptacle and for positioning said receptacle in registry with the reservoir discharge port so that fluid from the reservoir may flow into the receptacle, means carried by said reservoir, and movable therewith and in the plane of movement thereof, engageable with said receptacle for sealing the connection between the reservoir and the receptacle so as to preclude leakage of fluid therefrom, means associated with said sealing means for resiliently transferring motion of said sealing means, after the latter engages the receptacle, from the angularly inclined plane of movement of the reservoir to a plane paralleling the horizontal plane of movement of the turntable, a valve for opening and closing said reservoir discharge port including a movable control element, and spaced means successively engageable by said control element for moving said control element to open and close said valve.

2. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having therein a discharge port, means on said turntable for engaging a receptacle and for positioning said receptacle in registry with the reservoir discharge port so that fluid from the reservoir may flow into the receptacle, means carried by said reservoir, and movable therewith and in the plane of movement thereof, engageable with said receptacle for sealing the connection between the reservoir and the receptacle so as to preclude leakage of fluid therefrom, means associated with said sealing means for resiliently transferring motion of said sealing means, after the latter engages the receptacle, from the angularly inclined plane of movement of the reser-

voir to a plane paralleling the horizontal plane of movement of the turntable, a valve within said reservoir, for opening and closing said reservoir discharge port, including a movable control element disposed exteriorly of said reservoir, and spaced means successively engageable by said control element and operative upon movement of said turntable and reservoir for moving said control element to open and close said valve.

3. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having therein a discharge port, means on said turntable for engaging a receptacle and for positioning said receptacle in registry with the reservoir discharge port so that fluid from the reservoir may flow into the receptacle, a sealing ring concentric with said reservoir discharge port, means connecting said sealing ring and reservoir together so that said sealing ring is mounted for rocking movement on and with respect to the reservoir, said sealing ring being movable with and in the plane of movement of the reservoir, being engageable with said receptacle for sealing the connection between the receptacle and reservoir so as to preclude leakage of fluid therefrom, and being movable, after engaging said receptacle, in a plane paralleling the horizontal plane of movement of the turntable, a valve for opening and closing said reservoir discharge port including a movable control element, first trip means operative only in the presence of a receptacle on said turntable for engaging and moving said control element to open said valve, and second trip means spaced from said first trip means engageable with and to move said control element to close said valve.

4. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having a plurality of spaced discharge ports therein, cradles on said turntable, one for each discharge port of the reservoir and registering with said discharge ports, for engaging a receptacle and for positioning said receptacle in registry with a reservoir discharge port so that fluid from the reservoir may flow into the receptacle, each of said cradles including a plate for engaging the bottom of a receptacle and connected by springs with said turntable, sealing rings surrounding each reservoir discharge port and engaging a receptacle for precluding leakage of fluid from the receptacle during passage of fluid thereinto, each of said sealing rings being provided with mounting springs interposed between it and the reservoir so as to mount the sealing ring for rocking movement about its reservoir discharge port, valves within said reservoir and movable to open and close the respective discharge ports, each valve having an operating arm, positioned exteriorly of the reservoir, which may be moved to move the valve between said open and closed positions, a first trip cam successively engageable by said valve operating arms, during movement of the turntable through its operational cycle, for opening said valves, and a second trip cam spaced from said first trip cam and successively engageable with said valve operating arms for closing said valves.

5. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having a plurality of spaced discharge ports therein, cradles on said turntable, one for each discharge port of the reservoir and registering with said discharge ports, for engaging a receptacle and for positioning said receptacle in registry with a reservoir discharge port so that fluid from the reservoir may flow into the receptacle, each of said cradles including a plate for engaging the bottom of a receptacle and connected by springs with said turntable, sealing rings surrounding each reservoir discharge port and engaging a receptacle for precluding leakage of fluid from the receptacle during passage of fluid thereinto, each of said sealing rings being provided with mounting springs interposed between it and the reservoir so as to mount the sealing ring for rocking movement about its reservoir discharge port, valves within said reservoir and movable to open and close the respective discharge ports, each valve having an operating arm, positioned exteriorly of the reservoir, which may be moved to move the valve between said open and closed positions, a first trip cam successively engageable by said valve operating arms, during movement of the turntable through its operational cycle, for opening said valves, a second trip cam spaced from said first trip cam and successively engageable with said valve operating arms for closing said valves, and spring pressed means associated with the respective valve operating arms for releasably holding said valves in open or closed positions.

6. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having a plurality of spaced discharge ports therein, cradles on said turntable, one for each discharge port of the reservoir and registering with said discharge ports, for engaging a receptacle and for positioning said receptacle in registry with a reservoir discharge port so that fluid from the reservoir may flow into the receptacle, each of said cradles including a plate for engaging the bottom of a receptacle and connected by springs with said turntable, sealing rings surrounding each reservoir discharge port and engaging a receptacle for precluding leakage of fluid from the receptacle during passage of fluid thereinto, each of said sealing rings being provided with mounting springs interposed between it and the reservoir so as to mount the sealing ring for rocking movement about its reservoir discharge port, valves within said reservoir and movable to open and close the respective discharge ports, each valve having an operating arm, positioned exteriorly of the reservoir, which may be moved to move the valve between said open and closed positions and each operating arm having thereon a roller movable in a circular horizontal path about the axis of rotation of the turntable and reservoir, a first trip cam movable from a position beyond said roller path to a position within said path, a member carried by said first trip cam engageable, as said turntable is moved, by a receptacle in a cradle of said turn-

table for moving said first trip cam into said roller path, said first trip cam, upon engaging an operating arm roller, causing movement of said valve operating arm to open the valve connected therewith, and a second trip cam fixedly positioned in said roller path for engaging said operating arm rollers to move the arms to close said valves.

7. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having therein a discharge port, means on said turntable for engaging a receptacle and for positioning said receptacle in registry with the reservoir discharge port so that fluid from the reservoir may flow into the receptacle, means carried by said reservoir, and movable therewith and in the plane of movement thereof, engageable with said receptacle for sealing the connection between the reservoir and the receptacle so as to preclude leakage of fluid therefrom, means associated with said sealing means for resiliently transferring motion of said sealing means, after the latter engages the receptacle, from the angularly inclined plane of movement of the reservoir to a plane paralleling the horizontal plane of movement of the turntable, a valve within said reservoir, for opening and closing said reservoir discharge port, including a movable control element disposed exteriorly of said reservoir, spaced first and second trip means to be successively engaged by said control element and operative upon movement of said turntable and reservoir for moving said control element to open and close said valve, said second trip means being positioned for repeated engagement by said control element during each operational cycle of the machine, and said first trip means being selectively movable out of engagement with said control element during each operational cycle of the machine.

8. In a can filling machine, including a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having therein a discharge port, means on said turntable for engaging a receptacle and for positioning said receptacle in registry with the reservoir discharge port so that fluid from the reservoir may flow into the receptacle, means carried by said reservoir, and movable therewith and in the plane of movement thereof, engageable with said receptacle for sealing the connection between the reservoir and the receptacle so as to preclude leakage of fluid therefrom, means associated with said sealing means for resiliently transferring motion of said sealing means, after the latter engages the receptacle, from the angularly inclined plane of movement of the reservoir to a plane paralleling the horizontal plane of movement of the turntable, a valve within said reservoir, for opening and closing said reservoir discharge port, including a movable control element disposed exteriorly of said reservoir, spaced first and second trip means to be successively engaged by said control element and operative upon movement of said turntable and

reservoir for moving said control element to open and close said valve, said second trip means being positioned for repeated engagement by said control element during each operational cycle of the machine, said first trip means being positioned normally out of engagement with, and movable into a position engageable by, said control element during each operational cycle of the machine, and means connected with said first trip means and extending across the path of movement of said turntable and engageable by receptacles carried thereby, for moving said first trip means into said position to be engaged by said control element.

9. In a can filling machine, including a supporting frame, a turntable movable in a substantially horizontal plane through an operational cycle and a fluid-containing reservoir above and movable with and in a plane angularly inclined with respect to the plane of movement of the turntable, said reservoir having a plurality of spaced discharge ports therein, cradles on said turntable, one for each discharge port of the reservoir and registering with said discharge ports, for engaging a receptacle and for positioning said receptacle in registry with a reservoir discharge port so that fluid from the reservoir may flow into the receptacle, each of said cradles including a plate for engaging the bottom of a receptacle and connected by springs with said turntable, sealing rings surrounding each reservoir discharge port and engaging a receptacle for precluding leakage of fluid from the receptacle during passage of fluid therein, each of said sealing rings being provided with mounting springs interposed between it and the reservoir so as to mount the sealing ring for rocking movement about its reservoir discharge port, valves within said reservoir and movable to open and close the respective discharge ports, each valve having an operating arm, positioned exteriorly of the reservoir, which may be moved to move the valve between said open and closed positions and each operating arm having thereon a roller movable in a circular horizontal path about the axis of rotation of the turntable and reservoir, a first bracket carried by said supporting frame and positioned adjacent said roller path, an axially vertical shaft journaled in said first bracket, a cam arm secured to and extending radially from the top end of said shaft, a cam extension, having a downwardly curving surface, carried by said cam arm, a contact arm secured to the bottom end of said shaft and extending radially therefrom toward and across the path of movement of the receptacles carried by said turntable, said receptacles, upon engaging said contact arm, moving said contact arm to rotate the shaft and move said cam extension into said roller path so as to be engaged by the rollers to cause the valve operating arms to be moved in one direction, a second bracket carried by said supporting frame, a cam bar mounted on said second bracket and having an upwardly curving surface positioned in said roller path, and said rollers of the valve operating arms upon engaging the upwardly curving surface of said cam bar, after the valve operating arms have been moved in said one direction by said cam extension, being moved thereby in a reverse direction.

STEFANO PITTALUGA.