G. B. CHELIUS.

BOTTLE FILLING MACHINE.

APPLICATION FILED MAY 25, 1920.

1,379,249. Patented May 24, 1921.

Fig. 1.

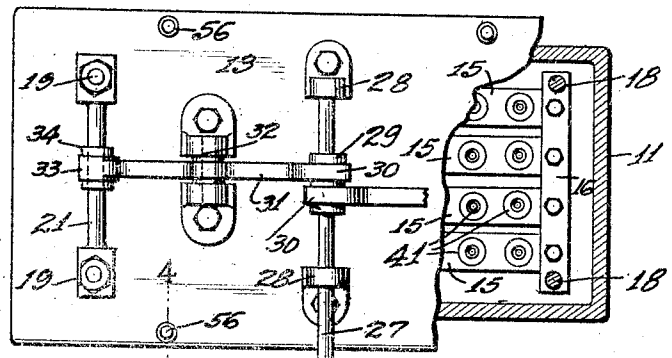


Fig. 2.

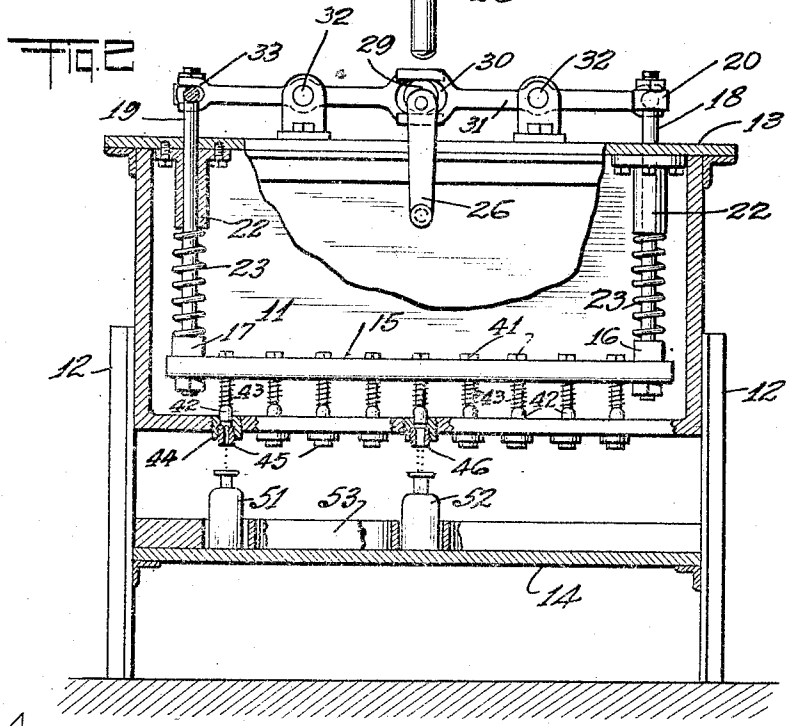


Fig. 4.

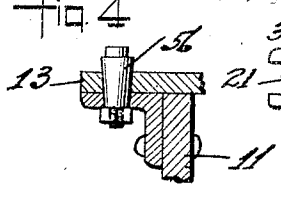
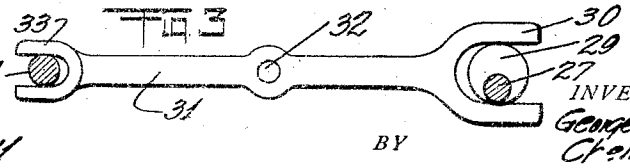


Fig. 3.



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BOTTLE-FILLING MACHINE.

1,379,249. Specification of Letters Patent. Patented May 24, 1921.

Application filed May 25, 1920. Serial No. 384,204.

To all whom it may concern:

Be it known that I, GEORGE B. CHELIUS, a citizen of the United States, and a resident of 19 West 45th street, Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Bottle-Filling Machines, of which the following is a specification.

This invention relates to a bottle-filling machine and has for an object to provide a means for rapidly filling bottles of various sizes by the operation of a mechanism which is simple in construction, self-adjusting and readily removable for cleaning purposes. These objects are obtained by the construction described in the following specification and shown in the accompanying drawings, in which Figure 1 is a plan view of a tank fitted with my invention and having part of the cover removed to show the interior. Fig. 2 is a side elevation partly in section showing the mechanism for operating the valves and Figs. 3 and 4 are detailed structural parts.

This invention is intended for filling a number of bottles arranged in a tray placed below a tank and manipulated by a hand lever, the bottles remaining in sight so that the operator may regulate the flow of the liquid necessary for filling the bottles. In the drawings, 11 represents the tank, 12 indicates the supporting legs, 13 is the cover for the tank and 14 is a support for the bottle tray placed beneath the tank. A frame 15 is provided inside the tank, consisting of a number of parallel bars bolted to the cross tie 16 at one end and the cross tie 17 at the other end, thus making a frame for supporting the valves. The posts 18 are rigidly secured to each end of the cross tie 16 and the posts 19 are similarly secured to the cross tie 17. These posts pass through guide sleeves 22 in the cover and the posts 18 terminate in the cross bar 20 and the posts 19 terminate in the cross bar 21, a screw connection being provided for this purpose so that the length of these posts may be readily adjusted. The crank handle 26 secured to shaft 27 and pivoted in cleats 28 bolted to the cover 13, carries the eccentric 29 which engages the jaws 30 of the links 31. These links are pivoted at 32 in brackets secured to the cover and in the opposite ends have jaw connections 33 engaging sleeves 34 on the cross bars 20 and 21. From this construction it will be observed that by rotating the crank handle 26 the cross bars 20 and 21 are raised and lowered simultaneously for each revolution of the handle and this in turn raises the frame 15 and compresses springs 23. Frame 15 is raised to exactly the same extent at each end and thus remains horizontal while it moves up and down. Secured to the bars of the frame 15 are the valve stems 41 which carry on the opposite end the valves 42 which aline with openings in valve seats 44 screwed into the base of the tank 11. A plug is screwed into each valve seat with the object of restricting and regulating the size of the valve orifice. For instance, plug 45 has a small orifice arranged above a small bottle 51, positioned on tray 53 and plug 46 has a larger orifice positioned above a larger bottle with wider neck indicated at 52. These plugs can easily be unscrewed and replaced with plugs of the size desired. It is desired to maintain a space between these plugs and the neck of the bottle as indicated and to use a comparatively fine stream for feeding the liquid into the bottle. These removable plugs offer considerable advantage in a device of this kind and being comparatively short, there is very little space for liquid to accumulate below the valve.

It will be noted that as the handle is rotated and the frame 15 moved up and down, springs 23 tend to hold the frame down. This in turn places tension on springs 43 holding the valves 42 in the valve seats. Each valve is thus individually controlled by a spring forcing it on its seat without regard to the extent of the vertical movement of the frame 15.

Machines of this kind are intended for use with liquids which congeal and therefore require frequent flushing. To facilitate this operation, I have arranged the entire mechanism including the valves dependent from the cover so that this mechanism including the valves may be removed integral with the cover. In order to secure proper alinement of the valves when the cover is replaced, I provide the taper pins 56 fitting corresponding openings in the frame of the tank, thus insuring proper alinement of the valves with the valve seats in the bottom of the tank.

Having thus described my invention, I claim:

In a machine of the class described the combination of a tank containing a fluid, a

cover for said tank, a rectangular frame supported near the bottom of said tank, a plurality of spring controlled valves controlling openings in the bottom of said tank, a post secured to each corner of said frame, sleeves secured to said cover, said posts passing through said sleeves and maintained in alinement thereby, a handle, an eccentric operated by said handle and operating levers on the outside of said cover, said levers alternately elevating and lowering said frame as said handle is operated.

Signed at New York, in the county of New York and State of New York, this 22nd day of May, A. D. 1920.

GEORGE B. CHELIUS.