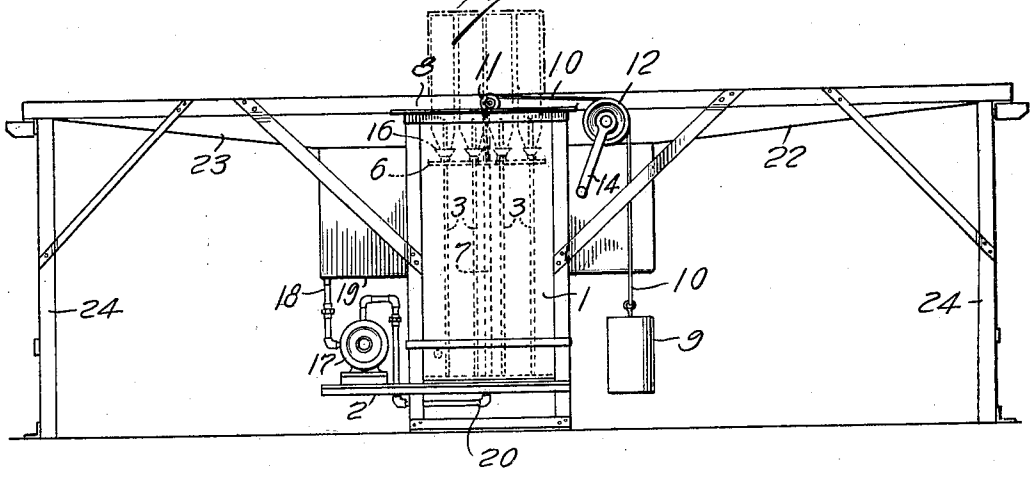
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MACHINE FOR WASHING BOTTLES

Filed Feb. 23, 1929 2 Sheets-Sheet 1

Fig. 1.



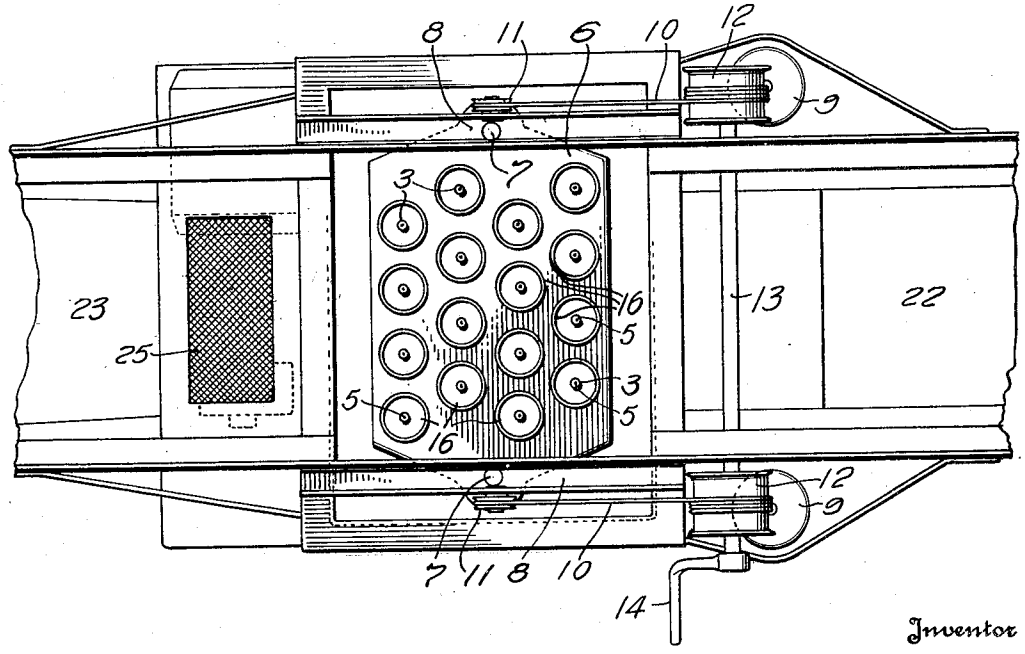


Fig. 2.

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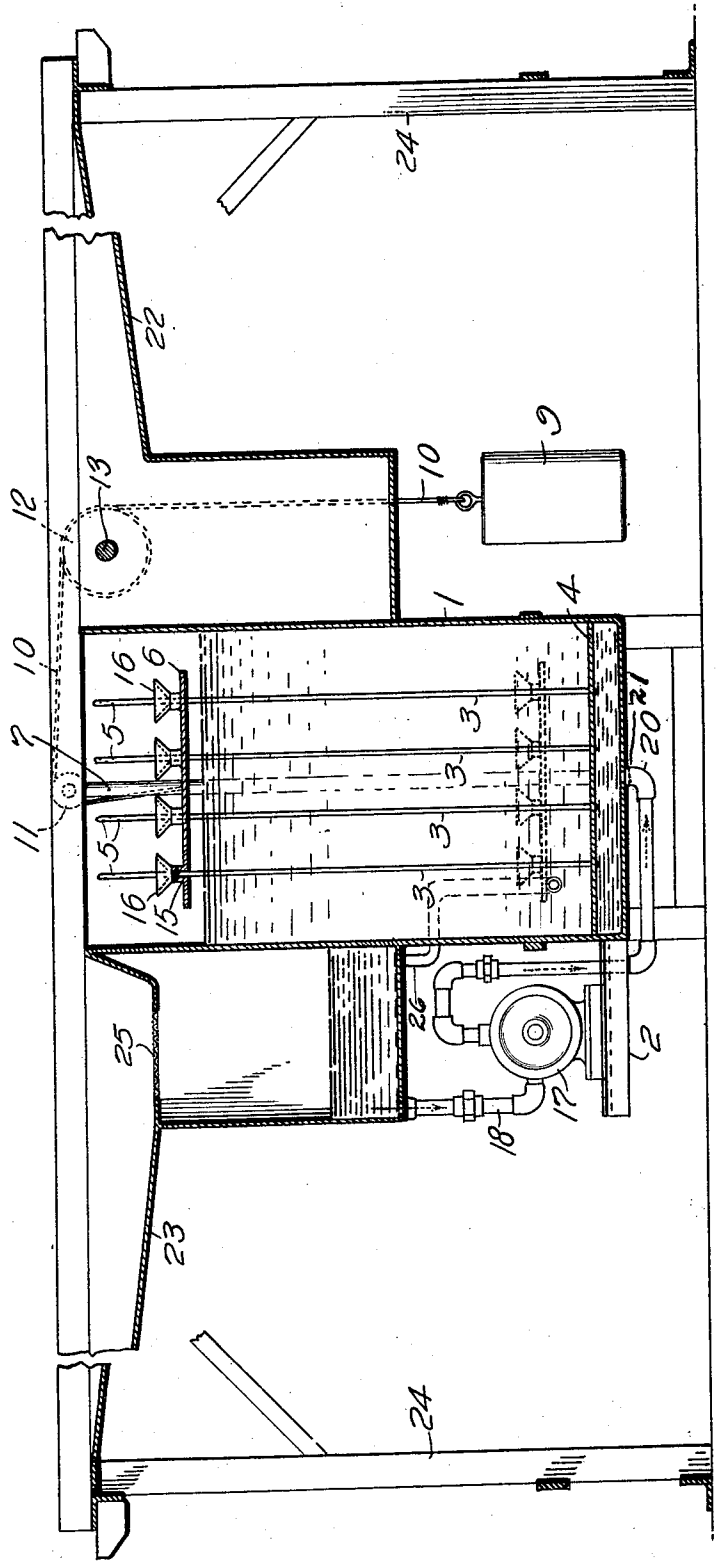
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Sept. 20, 1932. F. D. GATCHELL 1,877,843

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Filed Feb. 23, 1929 2 Sheets-Sheet 2

Fig. 3.



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UNITED STATES PATENT OFFICE

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MACHINE FOR WASHING BOTTLES

Application filed February 23, 1929. Serial No. 342,168.

This invention is directed to an improvement in bottle washing machines, wherein a plurality of bottles while in crated form may be simultaneously washed interiorly and exteriorly.

The primary object of the present invention is the provision of a plurality of washing tubes grouped within a tank open to the washing fluid under pressure, the grouping of the tubes permitting an inverted crate of bottles to be moved downwardly to cause the respective tubes to enter the aligned bottles for the admission of washing fluid under pressure to the interior of the bottles.

A further object is the provision of a platform on which the inverted bottles are arranged and which is designed for manually-controlled vertical movement within the washing tank, the platform being provided with means to insure a correct placement of the bottles in alinement with the tubes.

The invention is illustrated in the accompanying drawings, in which:—

Fig. 1 is a view in elevation of the improved bottle washing machine, the tubes being shown in dotted lines.

Fig. 2 is a plan of the machine.

Fig. 3 is a vertical central section through the machine.

The bottle-washing machine comprises a metal tank 1, supported on a suitable base 2, a series of washing tubes 3 being vertically arranged within the tank. The lower ends of the tubes connect with a manifold 4, while the upper end of each tube terminates near the upper end of the tank and is formed with a plurality of small openings or outlets 5.

A platform 6 is mounted for vertical movement in the tank, being guided in this movement on rods 7, depending from a frame 8 at the upper end of the tank. The weight of the platform and bottles carried thereby is compensated by weights 9, having cables 10, terminally connected to the platform and passing over idlers 11 carried by the frame 8. Beyond the idlers, the cables are wrapped over drums 12, fixed in a shaft 13, one end of which has an operating handle or crank 14. Thus the platform may be moved vertically within the tank by means of the handle 14 with little labor.

The platform is formed with openings 15, each of which is aligned with a particular washing tube 3, so that as the platform is lowered the tubes pass through the openings 15. A cup-shaped retainer 16 is arranged on the platform in alinement with each opening 15 therein, the retainers being perforated to permit the passage of the tubes 3 therethrough, and being shaped to more or less snugly receive the mouths of the bottles to be washed.

A motor driven pump 17 is mounted on the base 2, immediately beyond the tank, the suction line 18 of which leads from a source of washing fluid supply, as 19, and the pressure line 20 leading into the bottom of the tank 1, below the manifold 4. Thus under operation of the pump washing fluid is forced through the tubes 3 and outlets 5 thereof, accumulating in the tank 1 from which it is delivered to the supply tank 19 in any suitable way. For example, via the return connection 26. It is preferred that a filter 21 be arranged in the pressure line 20 of the pump.

Supported in the upper plane of the tank 1, and preferably inclined downwardly with respect thereto, are oppositely extending runways 22 and 23. These runways are supported beyond the tank on uprights 24, and provide one for the convenient delivery of the crated bottles to the platform, and the other for reception of the bottles after washing. The latter, may if desired, have a perforated section 25, by which the washing fluid draining from the bottles may be returned to the supply tank 19.

The bottles in their crated form, that is within the cells of the crate or container in which such bottles are handled as a unit, are placed in inverted form on the platform 6, each bottle being arranged within one of the retainers 16. The platform is then lowered through use of the handle 14, so that the upper end of each washing tube 3 enters one of the bottles. The pump is then started, forcing the washing fluid through the tubes 3 and outlets 5 with considerable force,

and thoroughly searching and cleansing the interior of each bottle. By moving the platform through several reciprocations, the washing fluid in the tank will reach and cleanse the exterior of the bottles. After washing, the crate is placed on the runway 23 for draining.

The retainers 16 and of course the tubes are grouped so as to effectively cooperate with the bottles as the latter are arranged in the crate, thus requiring only that the crate of bottles be inverted onto the platform 6, and the bottle mouths placed in the retainers 16.

The runways facilitate the easy successive handling of the crated bottles, while the compensating weights 9 render the operation of the platform with the crated bottles a matter of little effort.

Having thus described the invention, what is claimed as new, is:—

Apparatus of the character stated, comprising an elongated rectangular frame having at the top a crate runway, a tank interrupting the runway and having its mouth flush therewith, a manifold below the tank, means for supplying fluid under pressure to the manifold, fluid discharge connections extending from the manifold upwardly in the tank to near the mouth thereof, a crate receiving platform mounted for vertical movement on said fluid discharge connections and arranged so that inverted bottles carried by the crate will telescope the respective fluid discharge connections, a fluid supply tank flanking the main tank and open to drainage from the runway and operatively connected with said means for supplying the manifold, and a fluid return connecting the main tank with the supply tank.

In testimony whereof, I affix my signature.

FREDERICK D. GATCHELL.