F. C. ALTPETER.

BOTTLE CLEANING DEVICE.

APPLICATION FILED OCT. 10, 1914.

1,213,445.

Patented Jan. 23, 1917.

2 SHEETS—SHEET 1.

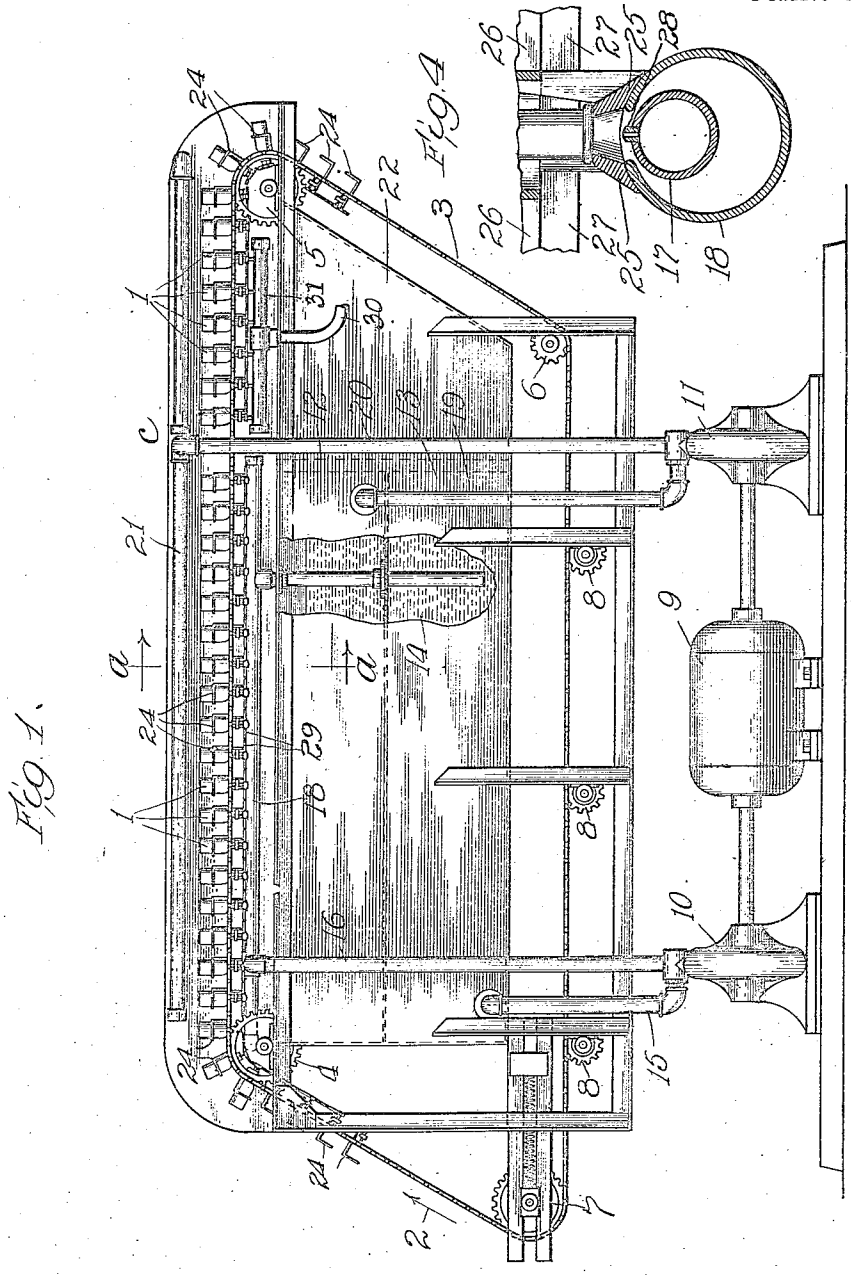


Fig. 1.

Fig. 4

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Inventor:
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2 SHEETS—SHEET 2.

Fig. 2.

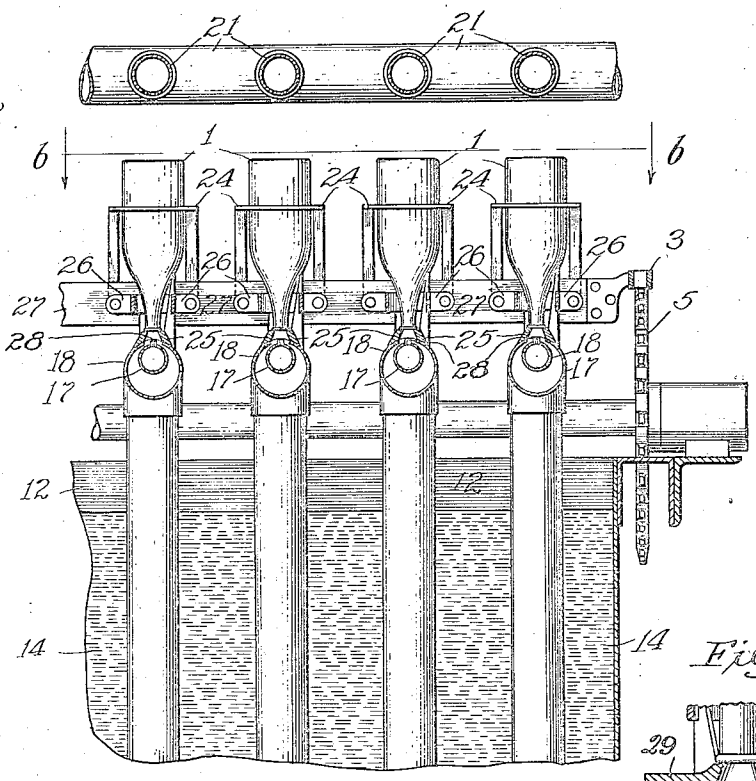


Fig. 5.

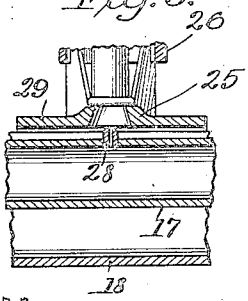
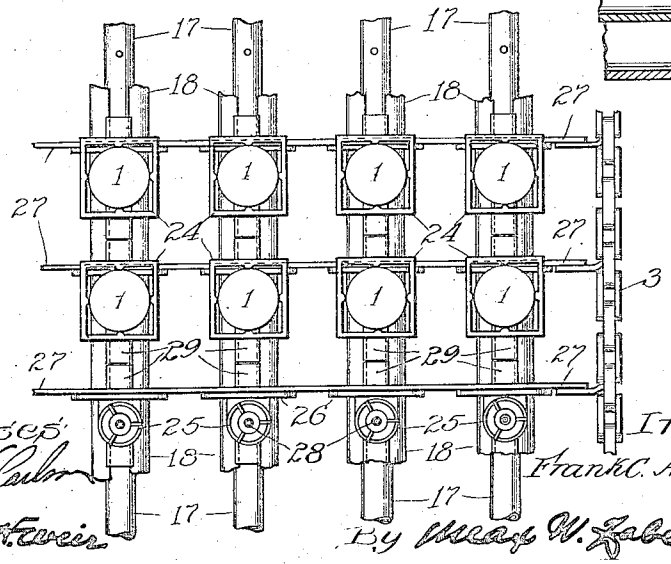


Fig. 3.



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BOTTLE-CLEANING DEVICE.

1,213,445. Specification of Letters Patent. Patented Jan. 23, 1917.

Application filed October 10, 1914. Serial No. 866,022.

To all whom it may concern:

Be it known that I, FRANK C. ALTPETER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bottle-Cleaning Devices, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to bottle cleaning devices or bottle washing machinery and has for its object more particularly the provision of a device adapted to wash a great multitude of bottles in such a way that the liquid used for the interior of the bottle after use is returned to a given receptacle from which it may be again used, and in which the liquid used for the exterior of the bottle is returned to a different receptacle from which it may again be withdrawn for reuse.

It is well understood that the exterior of the bottle as a general proposition is provided with a label placed thereon through the use of glue or other adhesive, and it is undesirable to have the used liquid which contains this washed off adhesive and the paper pulp used for the interior of the bottle in that the pulp and adhesive if applied to the interior may find lodgment from which it is difficult to displace them. It is thus highly essential that the distributing systems for the liquid used for the interior and the exterior of the bottles be kept separate, and my invention concerns itself with the provision of a machine having means to accomplish these results.

I will explain my invention more in detail by referring to the accompanying drawings illustrating one embodiment which my invention may take in which—

Figure 1 is a side view partly in section of a machine constructed in accordance with my invention; Fig. 2 is a sectional view along line *a*—*a* of Fig. 1; Fig. 3 is a top view on line *b*—*b* of Fig. 2; Fig. 4 is an enlarged detail view of the collecting means for the liquid from the interior of the bottle, and Fig. 5 is a longitudinal sectional detail view of the parts shown in Fig. 4.

Referring more particularly to Fig. 1, I show a device in which a plurality of bottles 1, 1 are carried along throughout the machine in the direction of the arrow 2, these bottles being suitably supported by a chain 3 passing about sprockets 4, 5, 6, 7, and idlers 8, 8. The machine is also provided with a suitable motor 9 adapted to drive two pumps 10 and 11, one pump, the pump 10 for instance being used for the liquid adapted to wash the interior of the bottles, and the pump 11 being used to wash the exterior of the bottles. The machine is so arranged that two tanks are provided respectively the tank 12 and the tank 13. The tank 13 through the agency of the pipe 14 receives the used water from the interior of the bottles and the tank 12 directly receives the water used for washing the exterior of the bottles. A pipe 15 leads from the tank 13 through the pump 10 and the liquid is then forced through the pipe 16 into the pipes 17 from whence it is forced into the interior of the bottles. The water as it drains from the interior of the bottles is caught in the tube 18 and is led from the tube 18 through the agency of the tube 14 to the tank 13. The liquid from the tank 12 which is directly under the bottles and which catches the water used for washing the exterior of the bottles is connected by means of the pipe 19 with the pump 11 and is through the agency of this pump forced through the pipe 20 into the pipes 21 from which this liquid flows outwardly over the outside of the bottles to wash the exterior thereof. After the bottles have passed the point *c* of Fig. 1 they are then rinsed internally and externally by means of clear water, which water may be caught in a suitable tank 22 to be suitably drained off.

From what has been so far stated it is readily seen that the two liquids used for the interior and exterior of the bottles are kept separate by passing through separate circulating systems. It may be pointed out that this liquid which is used over and over again from the tanks 12 and 13 is given some suitable reactive agent such as caustic soda or the like to aid its cleansing powers.

My invention concerns itself primarily with the arrangement of the pipes 17 and 18 and the mechanism by which the water used for the interior of the bottle is forced through the tube 17 into the bottle and is then all collected by the tube 18 and returned to the particular container designated therefor, in this case the tank 13.

The bottles 1 may be arranged on chains

so that a plurality of bottles may be arranged side by side. These bottles may be suitably held in square containers or frameworks 24 so that they maintain their upright position in close proximity to lips 25 situated contiguous to the pipe 18. The bottles when in position, and as shown more clearly in Figs. 2 and 4, are so mounted in the framework that they rest upon the lips 25 which are carried by arms 26 mounted upon cross-pieces 27 uniting the opposite chains 3, 3. These lips 25 thus move along with the chains 3 as the bottles are being carried progressively through the machine. The pipes 18 are open as shown at the top so that nozzles 28 protruding from the pipes 17 can direct a jet into the interior of the bottle 1. The water as it runs out of the bottle is guided by the lips 25 and drops into the interior of the pipes 18, from which it is returned through the tubes 14 to the tank 13. The bottles move along by a step-like progression and as each bottle stops over a nozzle 28 a jet is directed into the interior of the bottle. The bottles thus are subject to quite a plurality of jets in their progress through the machine and the liquid from the interior of the bottle is collected as set forth. The water from the exterior of the bottles falls directly into the tank 12 as has already been explained.

Guard caps 29 project from the opposite sides of the frameworks 24 so that their ends come together to close the central longitudinal opening in the upper portion of the pipe 18 between bottles so that the water from the exterior of the bottles will not enter this pipe or tube 18.

A pipe 30 which comes from any suitable fresh water main furnishes clean water to the pipe 31 to rinse the interior of the bottles as shown in Fig. 1.

From the above description the nature of my invention will be readily clear to those skilled in the art.

Having however thus described one form which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. In a bottle washing machine the combination of means for directing a jet of cleaning liquid against the outer portions of the bottle, of means for simultaneously directing a jet of liquid into the interior of said bottle, and means for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle.

2. In a bottle washing machine the combination of means for directing a jet of cleaning liquid against the outer portions of the bottle, means for simultaneously directing a jet of liquid into the interior of said bottle, means for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

3. In a bottle washing machine the combination of means for directing a jet of cleaning liquid against the outer portions of the bottle, means for collecting the used liquid from the exterior of said bottle, means for simultaneously directing a jet of liquid into the interior of said bottle, means for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

4. In a bottle washing machine the combination of means for directing a jet of cleaning liquid against the outer portions of the bottle, means for collecting the used liquid from the exterior of said bottle, means for forcing the liquid collected through the means for directing the liquid against the outer portions of the bottle, means for simultaneously directing a jet of liquid into the interior of said bottle, means for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

5. In a bottle washing machine the combination of means for directing cleaning liquid against the outer portions of the bottle, a plurality of nozzles and a pipe for directing liquid into the interior of said bottle, and a second pipe inclosing said first aforesaid pipe having openings adjacent to said nozzles for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle.

6. In a bottle washing machine the combination of means for directing cleaning liquid against the outer portions of the bottle, a plurality of nozzles and a pipe for directing liquid into the interior of said bottle, a second pipe inclosing said first aforesaid pipe having openings adjacent to said nozzles for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

7. In a bottle washing machine the combination of means for directing cleaning liquid against the outer portions of the bottle, means for collecting the used liquid from the exterior of said bottle, a plurality of nozzles and a pipe for directing liquid into the interior of said bottle, a second pipe inclosing said first aforesaid pipe having open-

ings adjacent to said nozzles for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

8. In a bottle washing machine the combination of means for directing cleaning liquid against the outer portions of the bottle, means for collecting the used liquid from the exterior of said bottle, means for forcing the liquid collected through the means for directing the liquid against the outer portions of the bottle, a plurality of nozzles and a pipe for directing liquid into the interior of said bottle, a second pipe inclosing said first aforesaid pipe having openings adjacent to said nozzles for collecting the used liquid from the interior of the bottle to the exclusion of the liquid used for the exterior of the bottle, and means for forcing the collected liquid again through the means for directing liquid into the interior of said bottle.

In witness whereof, I hereunto subscribe my name this 5th day of October, A. D. 1914.

FRANK C. ALTPETER.

Witnesses:
MAX W. ZABEL,
HAZEL A. JONES.