(No Model.)

H. PALMER.

BOTTLE WASHING MACHINE.

No. 381,638. Patented Apr. 24, 1888.

Fig. 1.

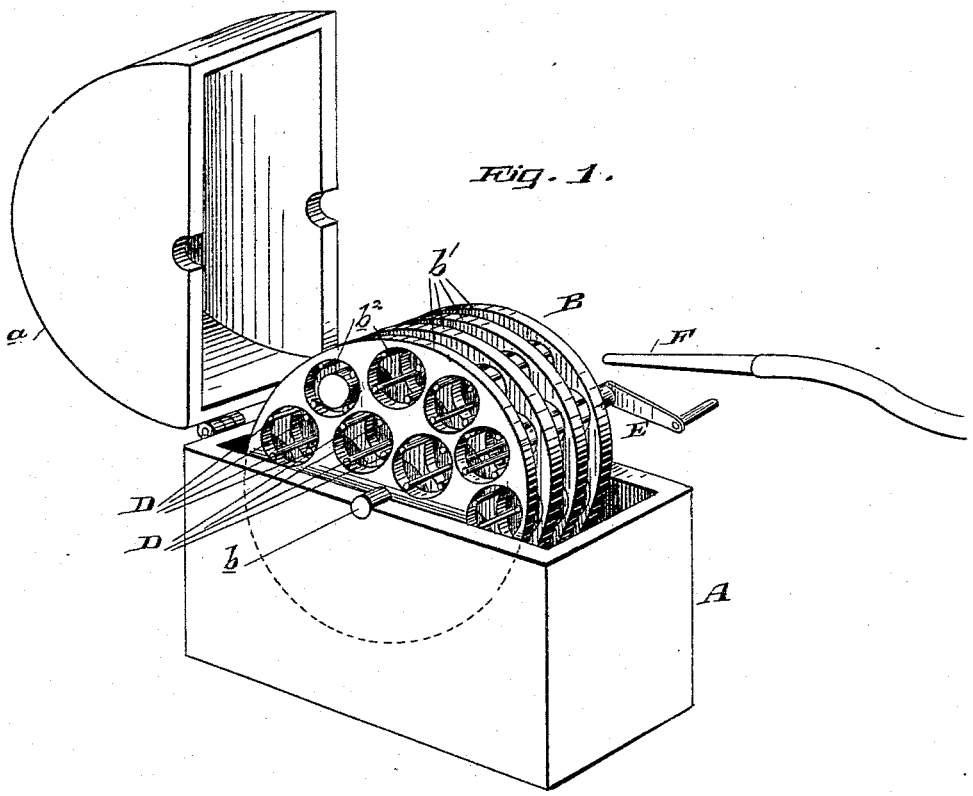
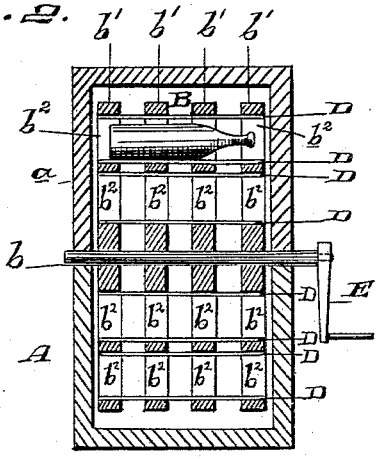


Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY PALMER, OF SAN FRANCISCO, CALIFORNIA.

BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 381,638, dated April 24, 1888.

Application filed September 10, 1887. Serial No. 249,402. (No model.)

To all whom it may concern:

Be it known that I, HENRY PALMER, of the city and county of San Francisco, State of California, have invented an Improvement in Bottle-Washing Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of bottle-washing machines in which the bottles are supported and carried in a drum or frame mounted and adapted to rotate in a vessel containing water; and my invention consists in an improved drum or frame, whereby the bottles are supported in a horizontal position parallel with the axis of the frame, and by which their exterior surfaces are scraped clean, all of which I shall hereinafter, together with details of construction, fully describe.

The object of my invention is to provide a simple, effective, and rapidly-operating automatic machine for washing bottles.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my bottle-washing machine, the lid of the tank being open. Fig. 2 is a horizontal section of same.

A is a tank or basin for containing water, and provided with a hinged lid, *a*, which covers the upper portion of the bottle-carrier or drum. This bottle-carrier or drum, which is designated by B, consists of a shaft or axis, *b*, mounted in suitable journals in the sides of the tank, and a number of parallel-spaced plates, disks, or open-work frames, *b'*, provided with perforations or holes b^2, in transverse rows, to receive the bottles C, which, as here shown, occupy a horizontal position and traverse the several disks parallel with the axis of the frame and in any number of annular series, as may be desired. The holes or sockets b^2, which receive the bottles, have a diameter enough greater than the diameter of the bottles themselves to allow said bottles considerable play in their sockets, though not enough to render them liable to be broken.

To the rims of each row of holes b^2 are soldered or fastened transverse bars, rods, wires, or cords D, preferably four in each transverse series of holes, separated by about ninety degrees. These therefore project into the inner periphery of the holes, and come in contact with the exterior surfaces of the bottles. They serve as ties for holding the disks or plates of the drum or frame B together, in addition to their primary purpose of acting as scrapers or frictional surfaces for cleaning the exterior surfaces of the bottles.

Any suitable means may be employed for rotating the bottle-carrying drum or frame—such, for example, as the crank E here shown—or when preferred a nozzle, F, may be used for directing the stream of water against the bottles, so as to effect the rotation of the drum.

The drum B may be made, if desired, of wire-work.

The operation of the machine is as follows: The bottles, which are left uncorked, are placed in their seats b^2 and lie horizontally—that is to say, parallel with the axis of the drum or frame extending through the aligned holes of each disk. In order to clean the inside of the bottles, I place shot in them in the usual manner. The drum is now given a rapid rotary motion, whereby all the bottles are carried through a rapid revolution, and in addition each bottle, being loose in its seat, has a rotary motion on its own axis, so that on the inside they are thoroughly cleansed by the agitation of the shot and the water which enters their open mouths, and their outside surfaces are cleansed by dashing through the water, and also by the frictional contact of the wires, rods, or bars D. Therefore any labels or other matter on the outside of the bottle are cut up and washed off, so that both inside and outside of the bottles are thoroughly cleansed.

I am aware that bottle-washing machines have been proposed in which the bottles are carried by a frame which is rotated, said bottles being mounted, however, in radial planes and having means for holding them in place when assuming a vertical; but by such position it is evident that the bottle is not presented to the water to an advantage nor given an opportunity to turn on its own axis, and the shot which is placed within them simply falls from the bottom to the top, so that neither the outsides nor the insides of the bottles are thoroughly cleansed. Moreover, when the bottles are arranged in radial planes the shot will escape unless the bottles are corked, and if corked no water can get in them. In my machine, by

mounting them horizontally, parallel with the axis, I bring their full surfaces in direct opposition to the water through which they are dashed, allowing them to rotate axially, and also provide for the most perfect action of the shot on the inside of the bottle by exposing the entire surface of its inner circumference to their action. Also, I am enabled to leave them uncorked, so that water may get in, and yet prevent the shot from escaping because of the position of the bottles.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bottle-washing machine, a tank for water, in combination with a rotary bottle-carrying drum or frame mounted in said tank, said drum having rows of aligned perforations or holes for receiving the bottles in a horizontal position parallel with its axis, substantially as herein described.

2. In a bottle-washing machine, a tank for water, in combination with a rotary drum therein, forming a carrier for the bottles and consisting of a series of parallel separated plates, disks, or open frames provided with rows of aligned holes or sockets for receiving the bottles in a horizontal position parallel with the axis of the drum, substantially as herein described.

3. In a bottle-washing machine, a tank for water, in combination with a rotary drum mounted therein and consisting of parallel-spaced plates or disks having rows of aligned holes to receive the bottles in a horizontal position parallel with the axis of the drum, said holes being enough larger in diameter than the bottles they receive to allow said bottles a play without danger of breaking, substantially as herein described.

4. In a bottle-washing machine, a tank for water, in combination with a rotary bottle-carrying drum or frame mounted in said tank and having rows of aligned holes for receiving the bottles in a horizontal position parallel with its axis, and transverse bars, rods, wires, or cords secured to the rims of the holes for scraping the bottles, substantially as herein described.

In witness whereof I have hereunto set my hand.

HENRY PALMER.

Witnesses:
S. H. NOURSE,
H. C. LEE.