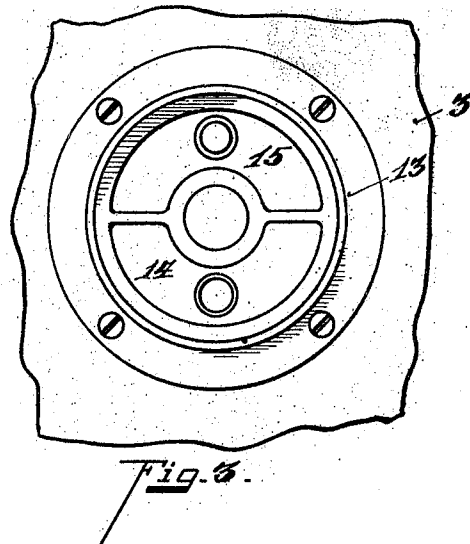
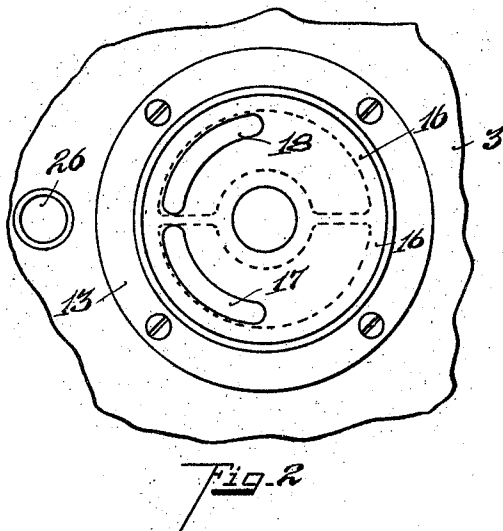
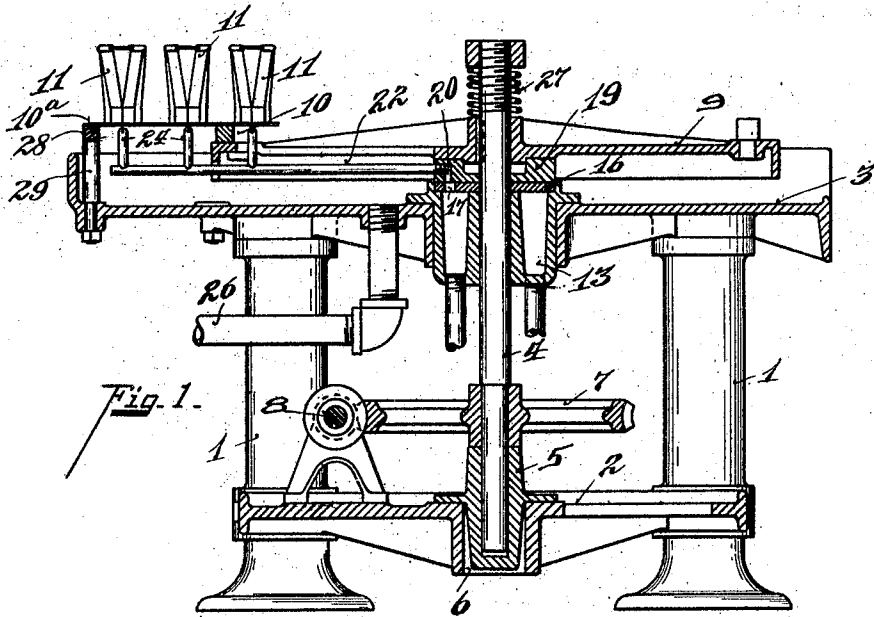


W. L. BODMAN.
BOTTLE WASHING MACHINE.
APPLICATION FILED OCT. 14, 1908.

948,586.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



Inventor

Witnesses
Oliver B. Kaiser
Robert Graf

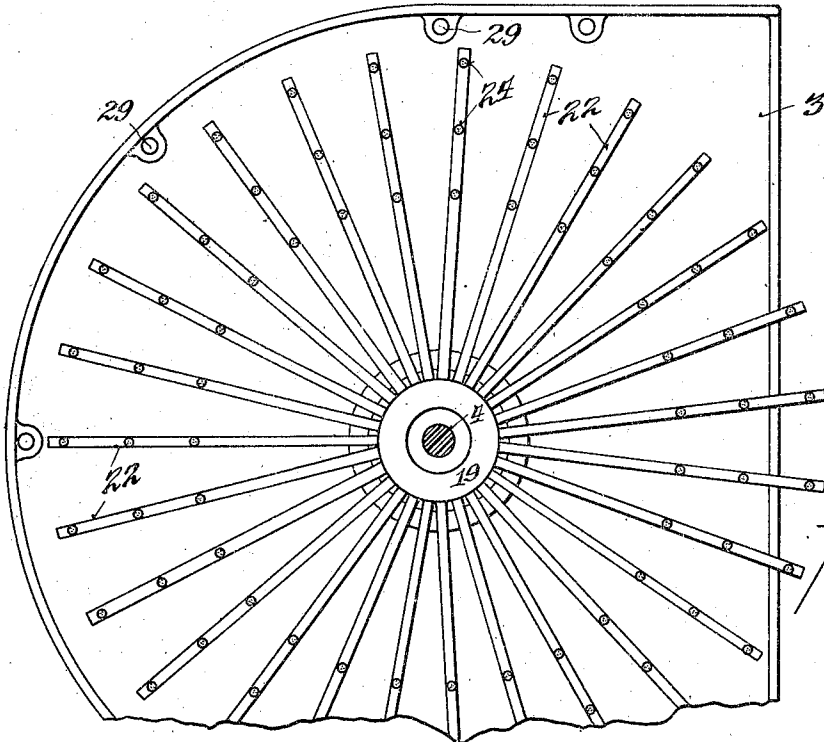
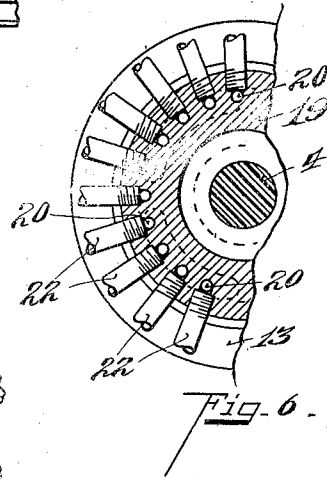
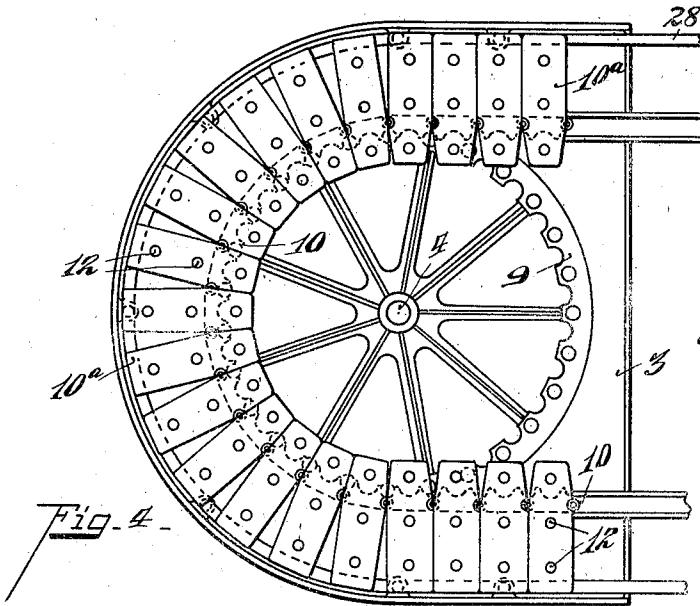
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UNITED STATES PATENT OFFICE.

WALTER L. BODMAN, OF CINCINNATI, OHIO, ASSIGNOR TO ISAAC RHEINSTROM, OF CINCINNATI, OHIO.

BOTTLE-WASHING MACHINE.

948,586.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed October 14, 1908. Serial No. 457,696.

To all whom it may concern:

Be it known that I, WALTER L. BODMAN, subject of the King of Great Britain, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

My invention relates to an improvement in bottle washing machines, having particular application to present day brewery uses and needs.

My invention provides a high pressure wash water injection, in which a plurality of bottles can be simultaneously under operation during the uniform and continuous progressive movements of the bottles, but which system, in its preferred form, permits of the simultaneous rinsing operation of the previously washed bottles while they are under the control of one mechanism. It may be advantageous to subject the bottles to several washing or rinsing processes of distinct character and this organization readily adapts itself to such usage.

Other features of the invention relate to the character and organization of the mechanism, which are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a central vertical section through my improved bottle washing machine. Fig. 2 is an enlarged detailed top plan view of the valve member above the water supply chamber. Fig. 3 is an enlarged detailed top plan view of the water supply chamber. Fig. 4 is a top plan view of the endless carrier relative to the washing machine with the water tubes omitted. Fig. 5 is an enlarged top plan view of water tubes. Fig. 6 is an enlarged horizontal section through the valve.

The supporting frame preferably consists of the pedestals 1, having the cross-head 2 for supporting the driving mechanism, and having the table 3, upon which the washing and rinsing are conducted.

4 represents the main shaft, the lower end of which is journaled in a sleeve 5, placed in an orifice 6, in the cross-head 2. Shaft 4 is driven by a worm wheel 7 to which motion is imparted from worm shaft 8, which in turn is driven from any suitable source.

Upon the upper end of shaft 4, above the

table, is the sprocket wheel 9, engaging and driving a sprocket form of endless carrier 10, carrying the holder plates 10^a, upon which are mounted the series of bottle holders 11. The holders, as shown in Fig. 1, are adapted to hold the bottles in an inverted position with the mouths registering with the orifices 12 of the holder plates, through which the wash and rinse waters are forced. The other end of the sprocket drive for the endless carrier is not shown.

From the center of the table is dependently supported a water supply member 13, through which shaft 4 concentrically passes. The member 13 is divided into two compartments, a wash water chamber 14 and a rinse water chamber 15, receiving their supply of respective fluids, under pressure, from any suitable source. The member 13 has a valve plate 16, provided with segmental ports 17, for the wash and rinse waters respectively, see Fig. 2.

19 is a valve carried by the hub of the sprocket wheel 9 and provided with orifices 20, adapted to communicate with ports 17, during the revolution of the sprocket wheel to admit the wash and rinse waters simultaneously into the different respective segments of the valve.

22 represents a series of water pipes extending radially from the valve: they communicate with the valve orifices 20 at their inner ends and have spray tubes 24 at their outer ends, in position to jet water through the orifices 12 of the bottle holder plates.

The top wash and rinse portion of the table 3 is of tray formation, from which water is conducted by the drainage pipe 26.

27 represents a coil spring on shaft 4 for holding the sprocket wheel and valve which are vertically movable on the shaft under tension, against the valve plate 16.

28 represents a rail with the loop thereof supported upon the table 3 by means of the posts 29. This rail supports the outer ends of the holder plates 10^a, upon which they travel.

The operation is very simple, the bottles preferably previously soaked, are placed upon the holders serially while the carrier is in motion, the ports of valve 19 in passing over the segmental port 17, admit a wash water of any suitable composition into a series of the tubes 22, and the water is jetted into the inverted bottles. The continued

movement of the sprocket wheel 9 shuts off the supply of wash water and admits rinse water as the valve ports come into registration with the segmental valve port 18 and the bottles may be removed after the rinsing operation while the carrier is in motion, so that the operations of loading, washing, rinsing and removing are carried on simultaneously at different segmental portions of the circuitous path of the bottle holders during one continuous carrier revolution.

Having described my invention, I claim:—

1. In a machine of the class described, an endless carrier having a series of bottle holders, a water chamber, a valve having a series of radiating tubes adapted to communicate with the bottle holders, and means for rotating the carrier and the valve, intermeshing means relatively provided on said carrier and carrier rotating means for positively aligning the bottle holders respectively with the radiating tube, said valve and chamber having ports adapted to communicate during a segmental portion of the carrier rotation, substantially as described.

2. In a machine of the class described, an endless carrier, a wheel for driving the same, bottle holders on the carrier, a valve rotatable with the wheel, a series of tubes radiating from the valve and adapted to communicate with the holders, a water chamber, said chamber and valve having ports adapted to communicate during a segment of the carrier rotation, and means for driving the wheel, substantially as described.

3. In a machine of the class described, an endless carrier, a series of bottle holders thereon, a rotatable valve, a series of tubes radiating from the valve and adapted to communicate with the bottle holders, means for rotating the valve and carrier in unison, intermeshing means relatively provided on said carrier and carrier rotating means for

positively aligning the bottle holders respectively with the radiating tube, a water compartment having a plurality of water chambers with segmental orifices adapted to simultaneously communicate with different valve ports, whereby the plurality of washing operations of different character may be conducted during one revolution of the carrier, substantially as described.

4. In a machine of the class described, an endless carrier, bottle holders thereon, a wheel for driving the carrier, a valve rotatable with the wheel, a series of tubes radiating from the valve and adapted to communicate with the holders, a water compartment concentric with the valve and having a plurality of segmental chambers and ports adapted to communicate with the valve ports at different portions of the carrier travel, and means for rotating the valve and carrier in unison, whereby the plurality of washing operations of different character may be conducted during one revolution of the carrier, substantially as described.

5. In a machine of the class described, an endless carrier, bottle holders thereon, a wheel for rotating the carrier, a shaft for the wheel, a concentric valve for the wheel having tubes radiating therefrom and adapted to deliver water to the bottle holders, a water supply tank having a plurality of chambers provided with segmental ports adapted to cooperate with the valve to simultaneously supply different waters to the bottle holders during a continuous revolution of the carrier, substantially as described.

In testimony whereof, I have hereunto set my hand.

WALTER L. BODMAN.

Witnesses:

OLIVER B. KAISER,
LUISE BECK.