(No Model.)

B. BINNINGTON.

BOTTLE CLEANING MACHINE.

No. 399,477. Patented Mar. 12, 1889.

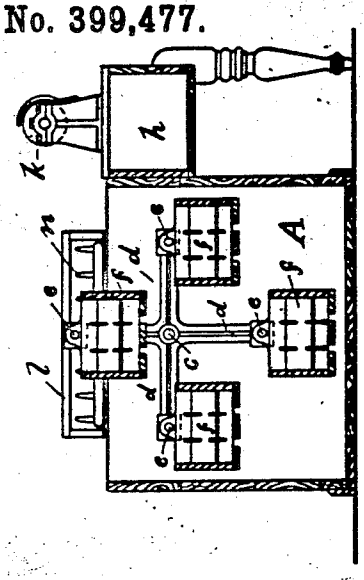


Fig. 3.

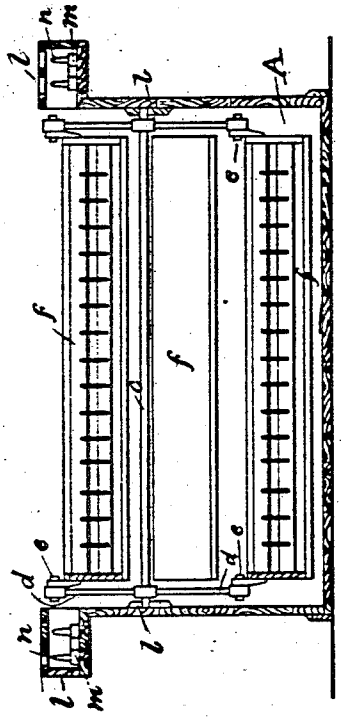


Fig. 1.

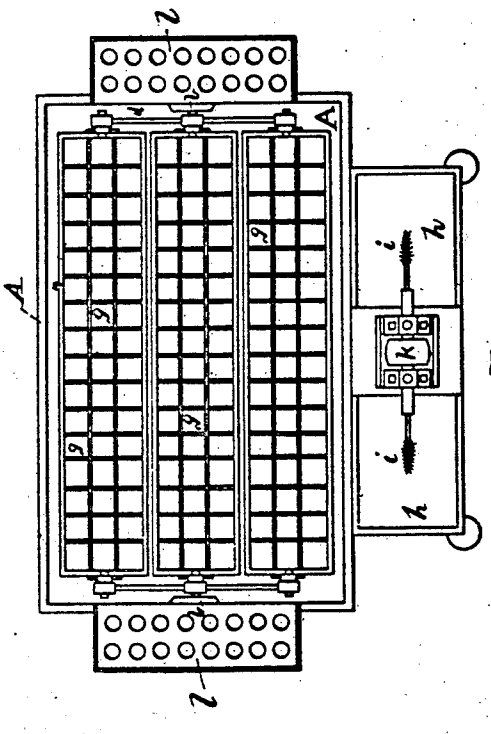


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

BARTHOLOMEW BINNINGTON, OF HULL, COUNTY OF YORK, ENGLAND.

BOTTLE-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 399,477, dated March 12, 1889.

Application filed October 9, 1888. Serial No. 287,610. (No model.) Patented in England October 22, 1887, No. 14,365.

To all whom it may concern:

Be it known that I, BARTHOLOMEW BINNINGTON, a subject of the Queen of Great Britain, and a resident of No. 84 Mytongate, Hull, in the county of York, England, have invented certain new and useful Improvements in Bottle-Cleaning Machinery, of which the following is a specification.

My invention relates to bottle-cleaning machinery for the continuous soaking, brushing, and rinsing of bottles; and the object of my invention is to construct apparatus whereby said soaking, brushing, and rinsing can be done in a quicker and more thorough manner than heretofore. I attain this by the arrangement of vessels and mechanism shown in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the entire machine. Fig. 2 is a plan of the same. Fig. 3 is a vertical cross-section of the entire machine.

Similar letters refer to similar parts throughout the several views.

Inside the vessel A, for containing the water in which the bottles are to be soaked and working in bearings *b*, is a horizontal shaft, *c*, having secured to it at either end four or more radial arms, *d*, forming a cross, any two corresponding arms of said crosses lying in the same plane with each other and the shaft *c*. From the extremity of each pair of arms *d* is suspended, by pins *e e*, a containing-box, *f*, of equal length to the distance between the arms *d*, and divided into compartments *g*, for containing the bottles to be soaked and cleaned. The suspension-pins *e* are placed above the center of gravity of the box *f*, so that when the shaft *c* is rotated the boxes do not invert or tip and their contents remain vertical. On one side of the soaking-vessel A is a second vessel, *h*, on the top of which is mounted the revolving brushes *i*, suitably formed for passing into the bottles and brushing them on the inside, the said brushes being rotated by a belt on the pulley *k*, as shown.

At each end of the soaking-vessel A is arranged a rinsing-chamber, *l*, provided with water-pipes *m m* and nozzles *n n*, for passing inside the bottles to be rinsed.

In operation the operator is to stand (see Fig. 3) at the revolving brushes. Upon filling the uppermost box *f* with bottles to be cleaned and pushing the same away from him, the weight of the bottles in the filled box raises the next box *f* to be filled. This being done another box is brought up, while the bottles in the box first filled are submerged and soaking. Inasmuch as the boxes remain constantly vertical the mouths of the bottles are kept upward, and any light dirt or substances are floated out. As soon as all the boxes are filled, the operator begins removing the soaked bottles as they emerge from the soaking-water, brushes them at *i*, and places them mouth down over the nozzles *n n* to be rinsed, and also replaces all the bottles which have been soaked with dirty bottles, and thus the process goes on continuously.

The bottles are removed from the nozzles *n* and dried in the ordinary manner.

Obviously a greater or less number of containing-boxes *f* may be used, and they may be suspended between disks instead of arms, if desired.

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

In a bottle-cleaning machine, the combination of the soaking-vessel A, the horizontal shaft journaled therein and having radial arms, and the containing-boxes pivotally suspended from the outer ends of the said radial arms and divided into compartments adapted to receive the bottles with their mouths upward, whereby the bottles constantly remain in an upright position, and are submerged, filled, and raised from the liquid in the tank by the rotation of the shaft, all substantially as shown and set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 7th day of September, 1888.

BARTHOLOMEW BINNINGTON.

Witnesses:

R. W. E. WHITEHEAD,
Not. Pub., Hull, England.

G. AUDSLEY,
His Clerk.