No. 721,233. PATENTED FEB. 24, 1903.

J. A. PRINCE.

MACHINE FOR WASHING BOTTLES.

APPLICATION FILED MAY 1, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

FIG. 1.

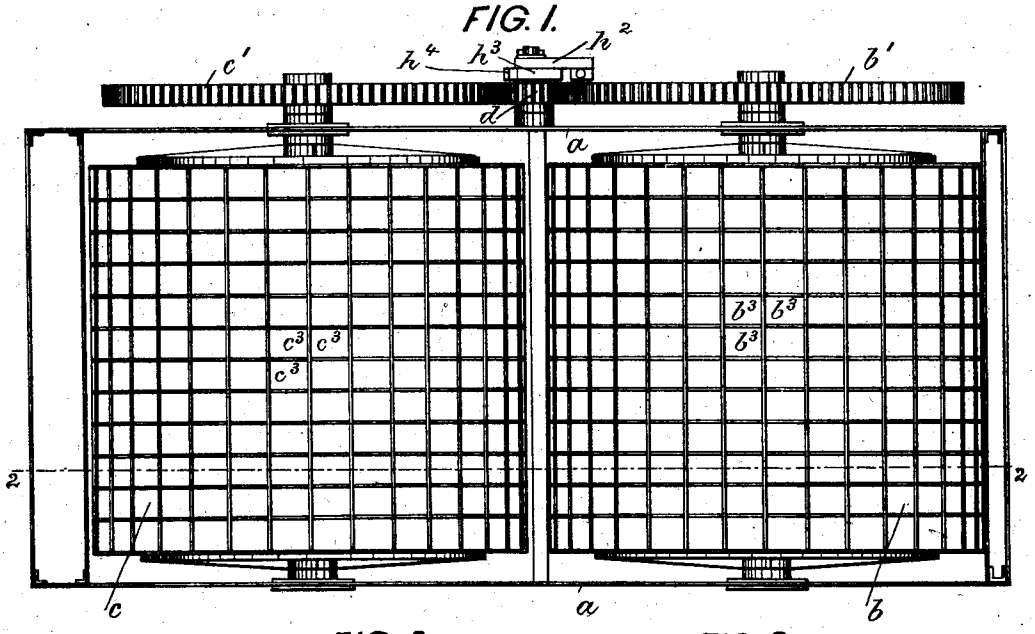


FIG. 5.

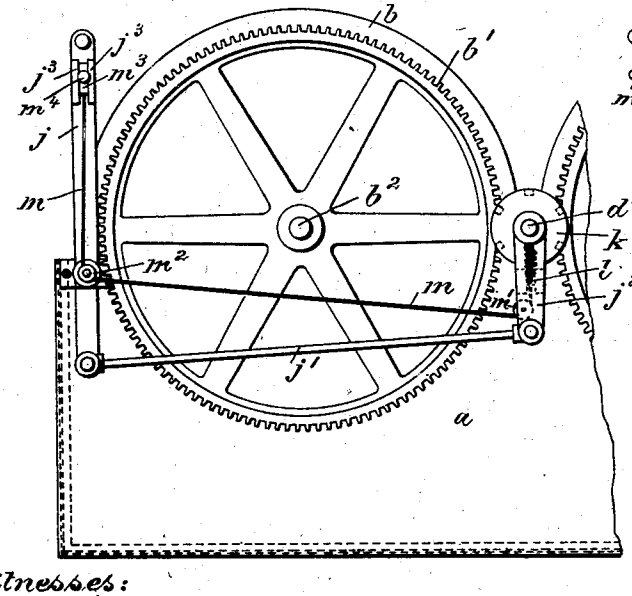


FIG. 6.

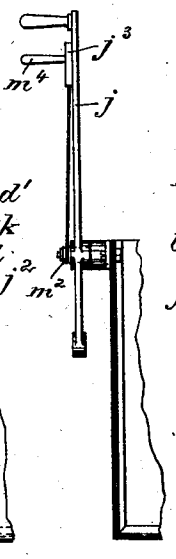
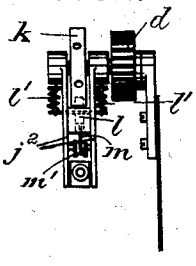


FIG. 7.



Witnesses:
Arthur Zimmer
Edward Ray.

Inventor:
John A. Prince
by his attorneys
Roberts & Brown

No. 721,233. PATENTED FEB. 24, 1903.

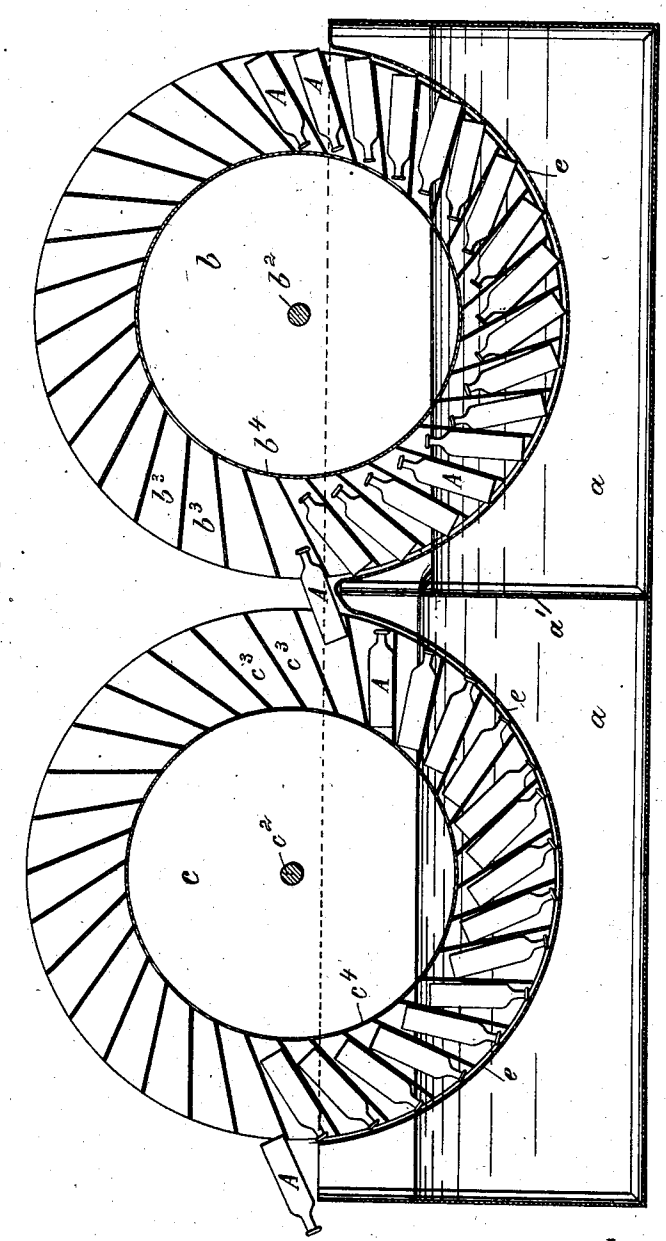
J. A. PRINCE.

MACHINE FOR WASHING BOTTLES.

APPLICATION FILED MAY 1, 1902.

NO MODEL. 3 SHEETS—SHEET 2.

FIG. 2.



Witnesses:
Arthur Gunyon
Edward Ray

Inventor:
John A. Prince
by his attorneys
Roeder & Briesen

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 721,233. PATENTED FEB. 24, 1903.

J. A. PRINCE.

MACHINE FOR WASHING BOTTLES.

APPLICATION FILED MAY 1, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

FIG. 3.

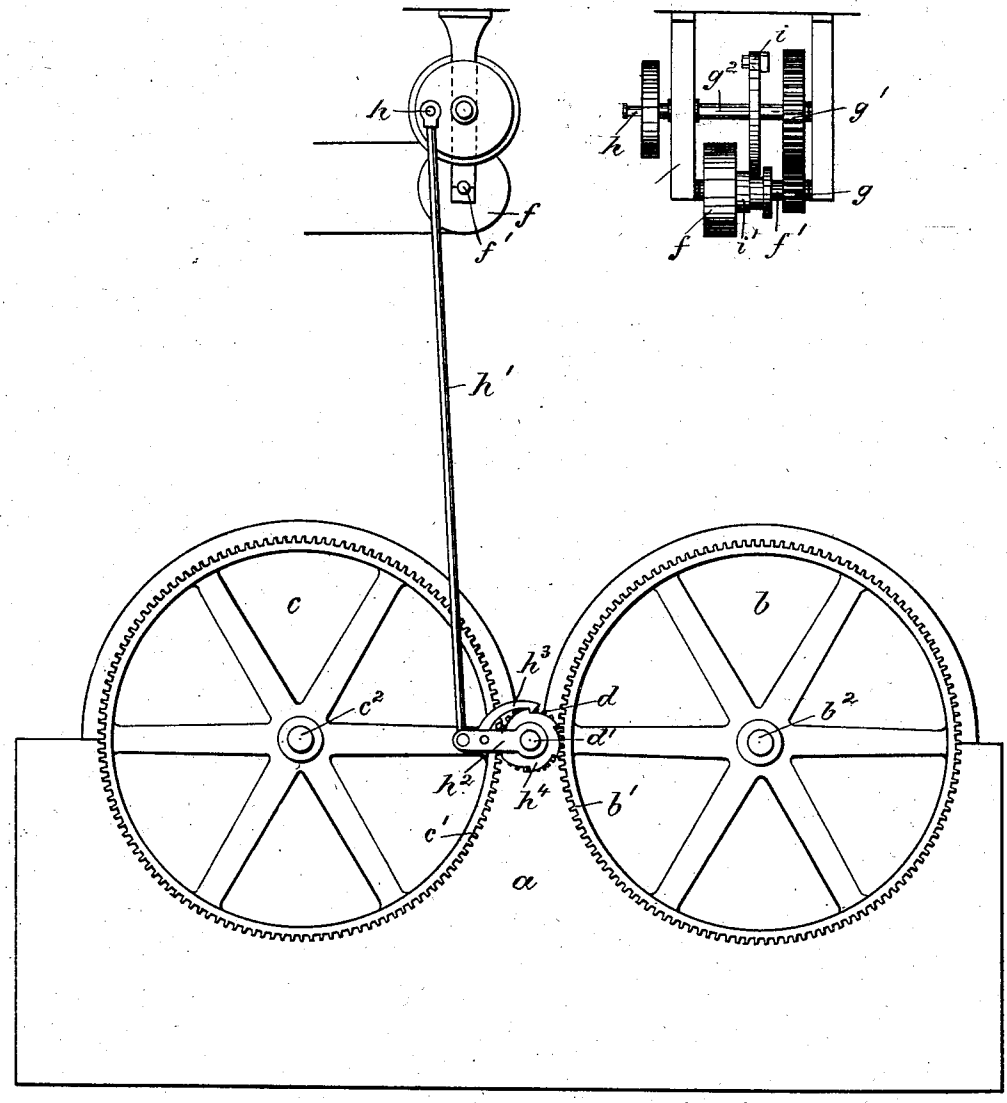


FIG. 4.

Fig. 4ª.

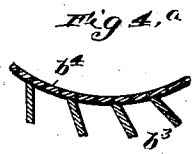
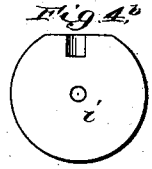


Fig. 4ᵇ.



Witnesses:
Arthur Gunyon.
Edward Ray.

Inventor:
John A. Prince.
by his attorneys
Roeder & Briesen

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN A. PRINCE, OF NEW YORK, N. Y.

MACHINE FOR WASHING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 721,233, dated February 24, 1903.

Application filed May 1, 1902. Serial No. 105,480. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. PRINCE, a citizen of the United States, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Machines for Washing Bottles, of which the following is a specification.

This invention relates to a machine for soaking labels off bottles and washing the bottles thoroughly from the interior and exterior. The machine is so constructed that the bottles will be automatically charged with the water and will then be automatically emptied, so that any handling of the bottles after they have been once placed into the machine is entirely avoided.

In the accompanying drawings, Figure 1 is a plan of my improved bottle-washing machine; Fig. 2, a vertical longitudinal section on line 2 2, Fig. 1; Fig. 3, a side elevation; Fig. 4, an end view of the power-transmitting mechanism shown in Fig. 3; Fig. 4^a, a detail of the perforated head of the drums; Fig. 4^b, a detail of the shifting cam; Fig. 5, a side view of a modification of the power-transmitting mechanism, and Figs. 6 and 7 are details thereof.

The letter a represents a tank adapted to contain water or other liquid for washing the bottles and soaking off the labels. Across this tank are hung two parallel drums b and c, which are intermittently rotated in the same direction by an intermediate gear-wheel d, meshing into gear-wheels b' c', fast on the shafts b^2 c^2 of the drums. Each of the drums b c is divided by longitudinal and transverse partitions into a number of compartments b^3 c^3 for the reception of the bottles A, such compartments being bound at their inner ends by a cylindrical perforated head b^4 c^4, which is arranged parallel to the circumference of the drum. The drums b c dip into the water, so that while the lower compartments are submerged the upper compartments remain empty. Below each drum there is arranged within the tank a, concentric to the perforated head b^4 and c^4, respectively, a perforated guard e, upon which the lower rows of bottles rest while passing through the tank. The drums b c are so spaced that the distance between them is less than the length of a bottle A, Fig. 2, so that the bottle may automatically pass from the drum b to the drum c in the manner hereinafter described. Between the drums the tank a may be provided with a short or perforated partition a', that permits the water in both compartments of the tank to find the same level.

In use a row of compartments of receiving-drum b is charged with bottles, which are placed with their neck inward or against the perforated head b^4. A slow intermittent rotary motion being imparted to the drums, the bottles will be gradually lowered and drawn through the water, their escape being prevented by the guard e, that supports their bottom. As the bottles are thus drawn through the water they are first gradually righted to become filled with water and are then again gradually inclined, so that as soon as they have cleared the guard e they will by gravity slip out of drum b and into a corresponding compartment of delivering-drum c; but in passing from the first into the second drum the relative position between drum and bottle will be changed, so that its neck and not its bottom will find support upon guard e. The result is that after the bottle has been drawn through the water for a second time by drum c the water will be automatically discharged from the bottle as soon as the latter has risen above the water-level. Thus when the bottle has cleared the guard e it will slip out of the drum c empty and thoroughly cleaned.

Of course various means may be employed for imparting a slow intermittent rotating movement jointly to both drums. In Figs. 1 to 4 I have shown means for operating the drums by power, while in Figs. 5 to 7 they are operated by hand. In Figs. 1 to 4 the power-pulley f turns, by shaft f', gearing g g', shaft g^2, eccentric h, and rod h', a lever h^2, to which is pivoted a pawl h^3. This pawl engages a ratchet-wheel h^4, fast on shaft d' of wheel d. Each complete rotation of the eccentric will cause a partial rotation of the ratchet-wheel h^4 and gear-wheel d sufficient to advance the drums b c through the distance of one row of compartments b^3 c^3. After this movement has been effected the machine will be arrested through the operation of a shifting cam i, that uncouples pulley f from shaft f' by clutch i'. A new row of compartments is now charged

and the machine restarted by coupling the pulley f to shaft f'. In Figs. 5 to 7 a hand-lever j is connected by rod j' to a slotted arm j^2, turning on shaft d'. This shaft carries a notched disk k, adapted to be engaged by a bolt l, influenced by springs l' and connected to a rope m, passing over roller m' of slotted arm j^2. From the roller m' the rope m passes over a roller m^2 of hand-lever j and terminates in a slide m^3. This slide is guided between rails j^3 of hand-lever j and carries a finger-piece m^4. In use the shaft d' will be rotated by tilting hand-lever j, while the bolt l is in engagement with the notched disk k. After a partial rotation has been thus effected the bolt is withdrawn by finger-piece m^4, and the hand-lever is swung back into its terminal position.

What I claim is—

1. In a machine for washing bottles, the combination of a receiving-drum having compartments with a delivery-drum having compartments, and means for rotating the drums simultaneously in the same direction, the distance between the drums being less than the length of the bottles to be washed, substantially as specified.

2. In a machine for washing bottles, the combination of a receiving-drum having compartments with a delivery-drum having compartments, means for intergearing the drums, means for simultaneously rotating the drums in the same direction, a tank, and a partition in the tank between the drums, substantially as specified.

Signed by me at New York city, New York, this 30th day of April, 1902.

JOHN A. PRINCE.

Witnesses:
WILLIAM SCHULZ,
F. V. BRIESEN.