No. 742,269. PATENTED OCT. 27, 1903

F. N. YOUNG.

BOTTLE RINSING MACHINE.

APPLICATION FILED APR. 29, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

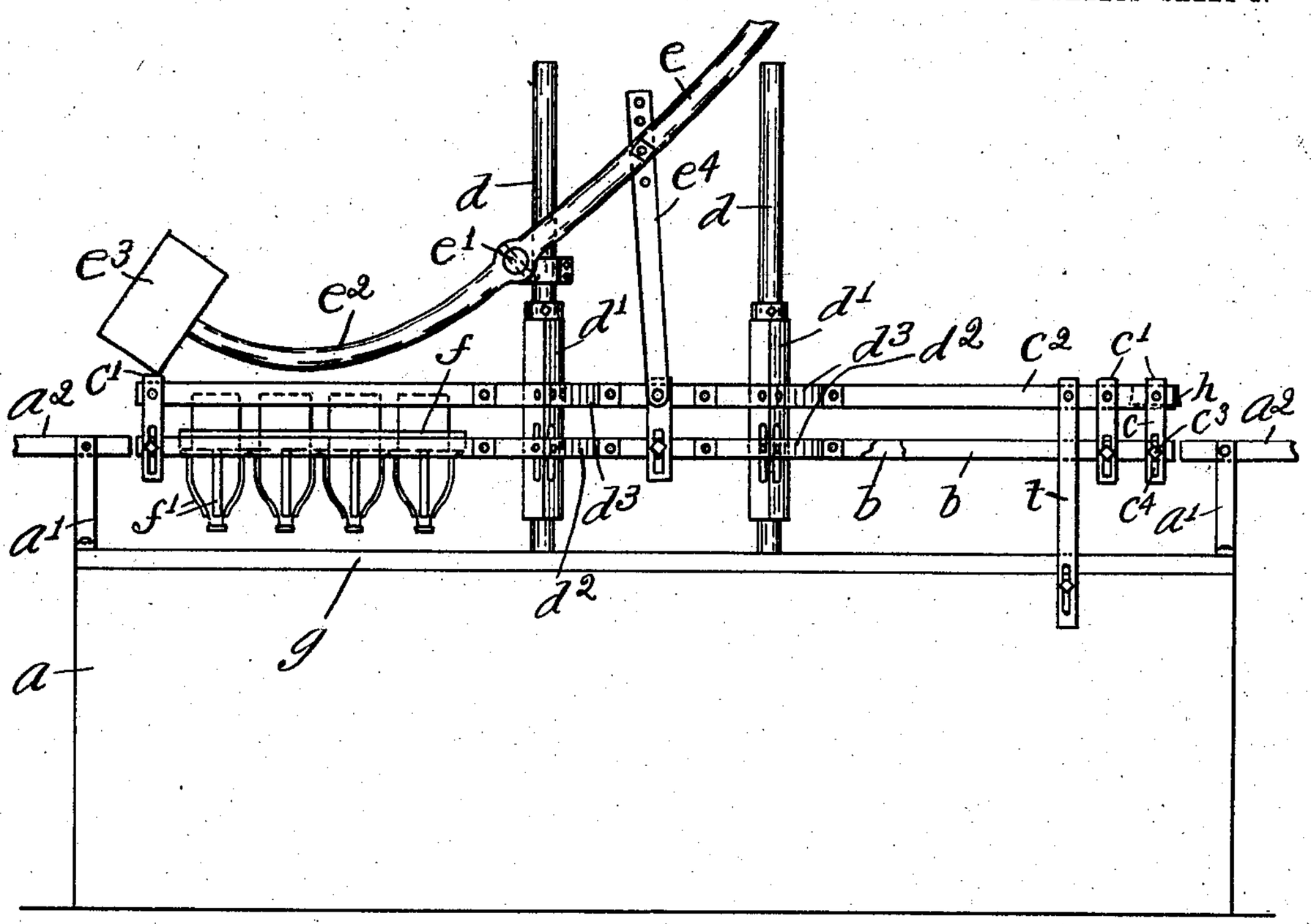


Fig. 1.

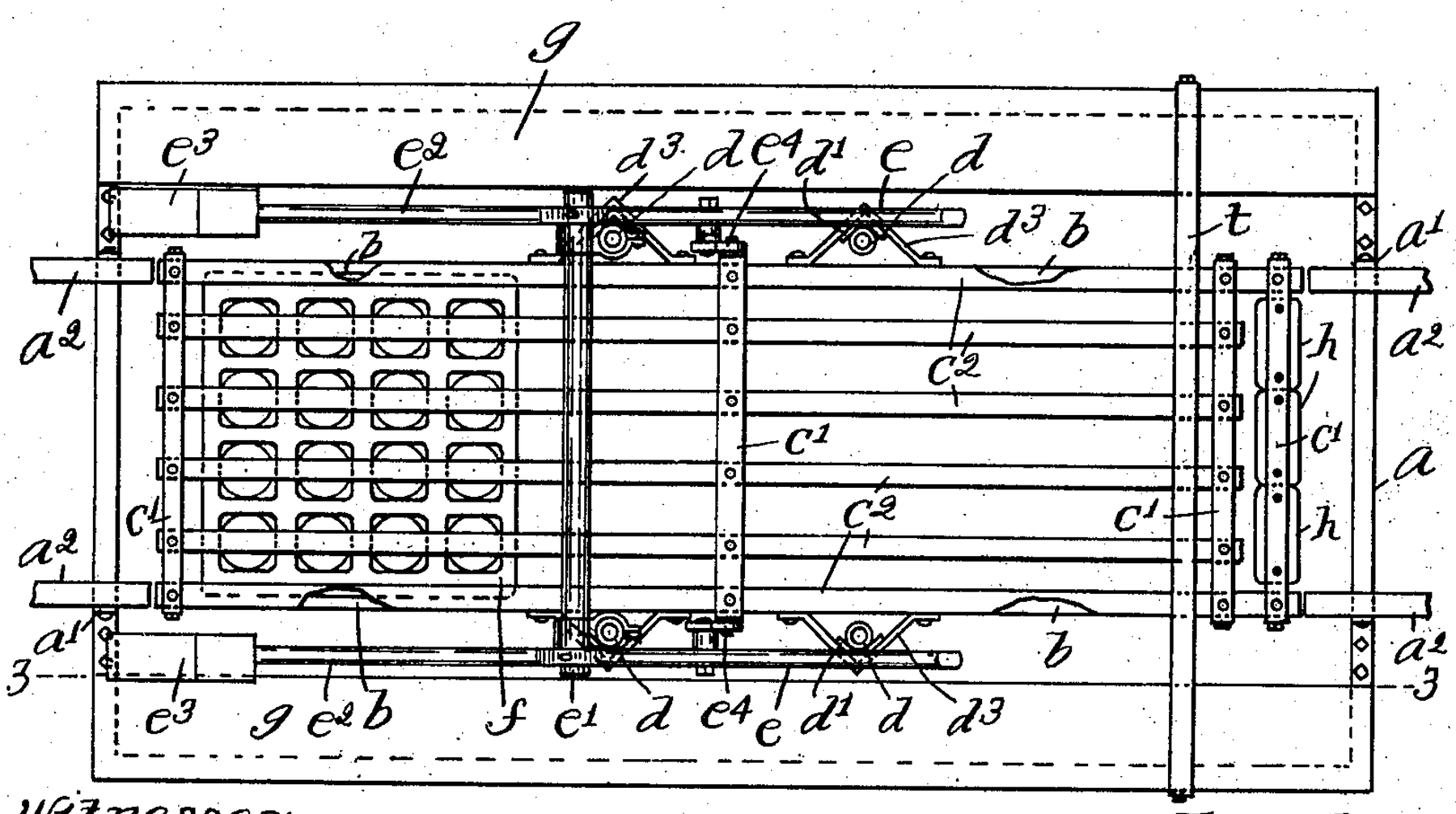


Fig. 2.

Witnesses:
H. B. Davis.
Maud M. Piper,

Inventor:
Freeman N. Young
by Sayles & Hamilton
attys.

No. 742,269. PATENTED OCT. 27, 1903.

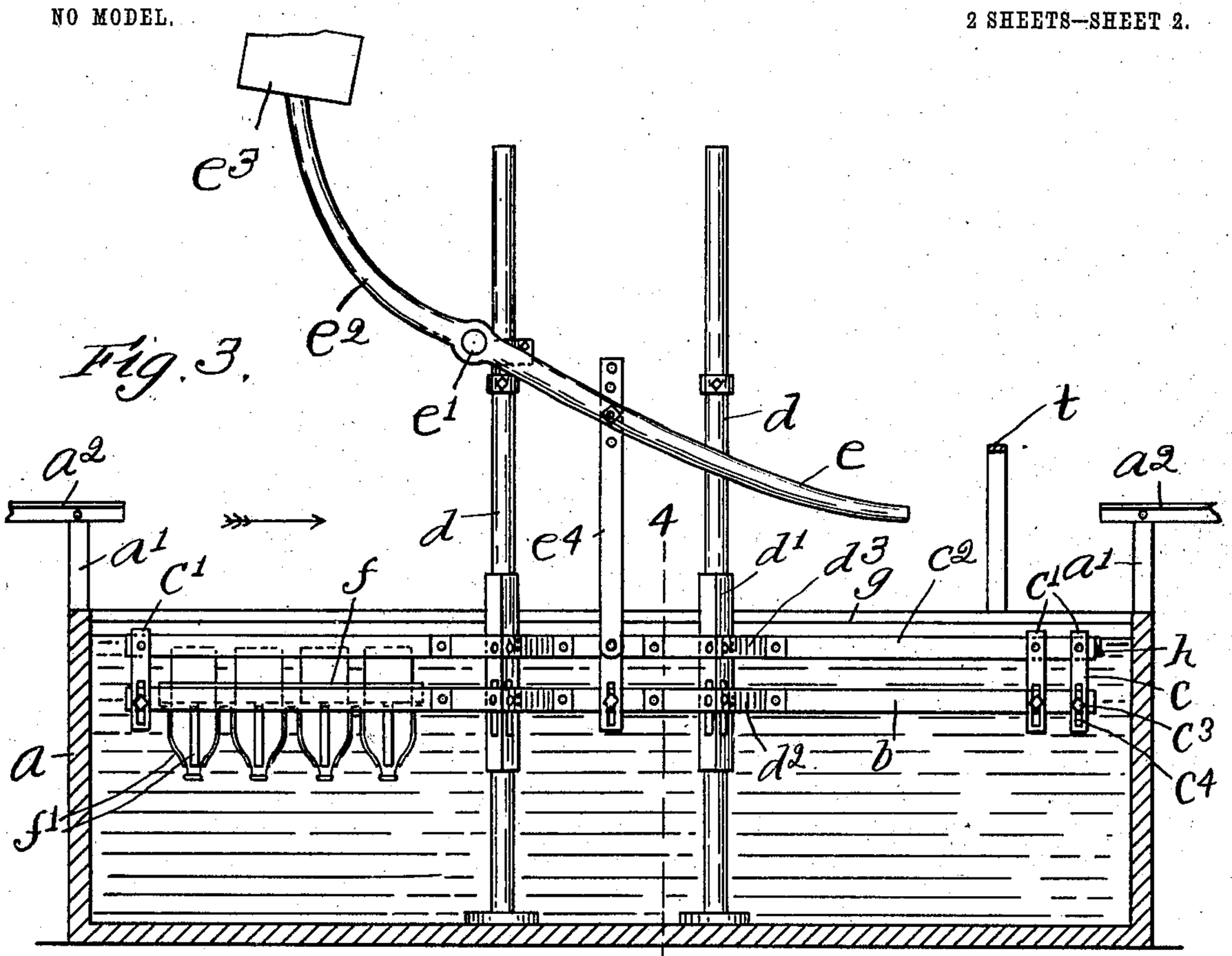
F. N. YOUNG.

BOTTLE RINSING MACHINE.

APPLICATION FILED APR. 29, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



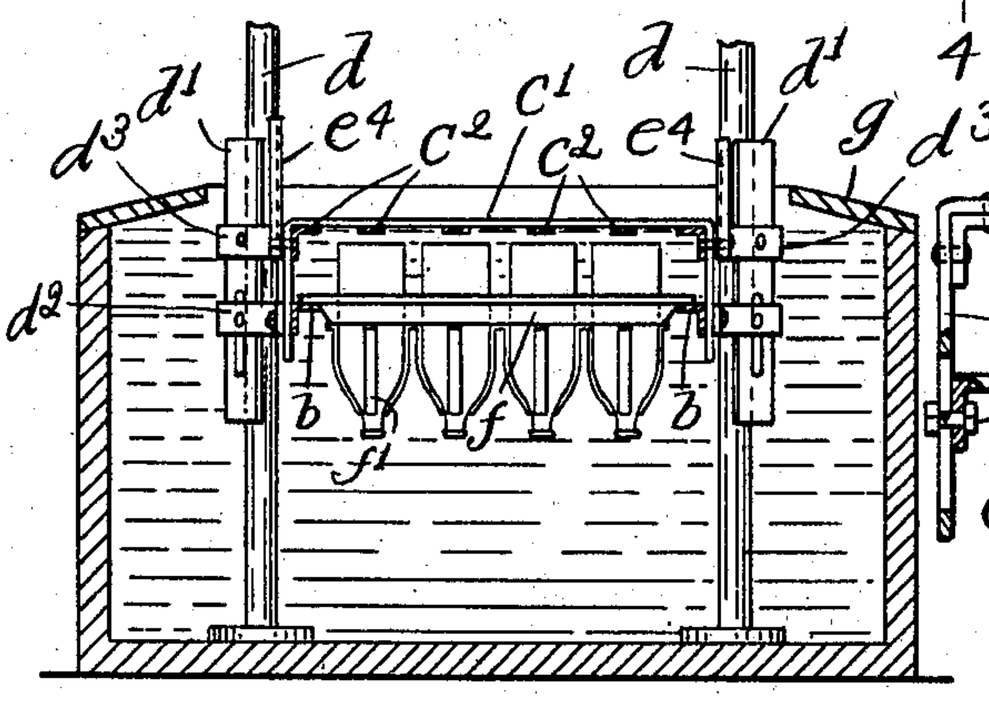
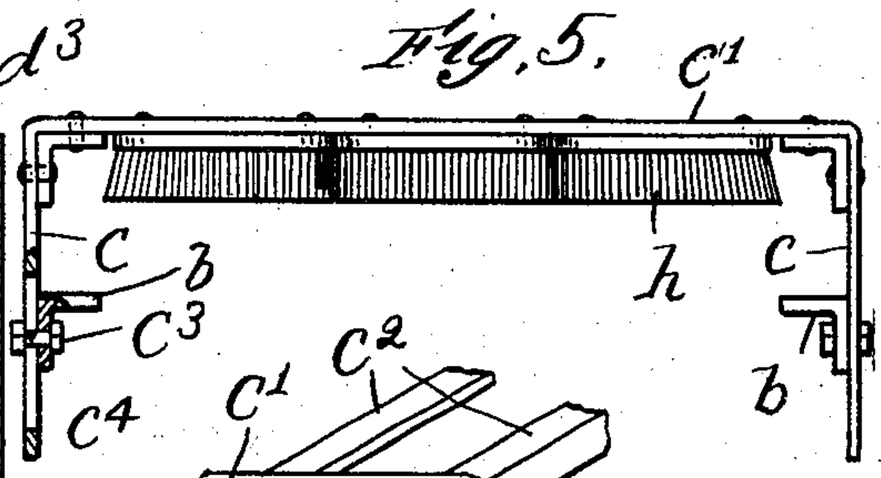


Fig. 4.

Fig. 5.



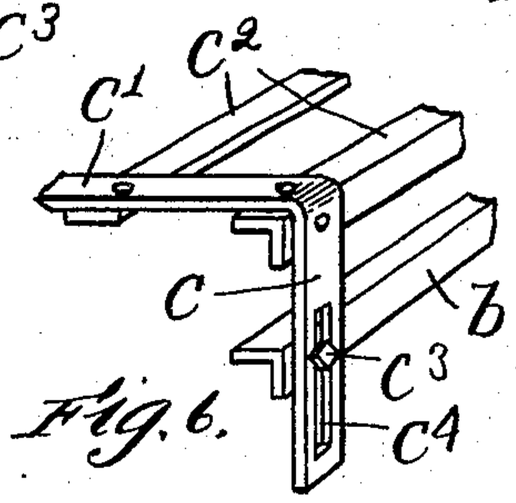


Fig. 6.

Witnesses:
H. B. Davis.
Maud M. Piper.

Inventor:
Truman N. Young
by Noyes & Hamman
Attys

No. 742,269. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

FREEMAN N. YOUNG, OF ARLINGTON, MASSACHUSETTS.

BOTTLE-RINSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,269, dated October 27, 1903.

Application filed April 29, 1903. Serial No. 154,763. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN N. YOUNG, of Arlington, county of Middlesex, State of Massachusetts, have invented an Improvement in Bottle-Rinsing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to bottle-rinsing machines, and has for its object to construct a machine having a frame provided with a passage through it from end to end adapted to receive and support one or more removable bottle-racks carrying quite a number of bottles which rest upon and are adapted to be slid along on tracks carried by said frame, being drawn into said frame at one end and withdrawn from the frame at the other end and while supported by said frame to be bodily submerged in the rinsing liquor by the frame as the latter is moved up and down. Upright guides are provided for said frame, which guide its up and down movements in the tank, and stationary tracks are provided at each end of the tank arranged to receive and support the bottle-racks as they enter and leave the open-ended reciprocating frame, and a stop is provided for limiting the upward movement of the reciprocating frame when the tracks borne by it are brought into a plane with said stationary tracks. The sides of the tank are provided at their upper edges with deflecting-walls, which act to deflect the rinsing liquor in a direction toward the middle of the tank, thereby throwing the rinsing liquor back onto the bottles carried by the reciprocating frame while the frame is being operated and the rinsing liquor is consequently being violently agitated. The bottle-racks are constructed and arranged to hold the bottles in inverted position and have parallel rests at the sides which rest on the tracks, and thereby support the racks. The upper side or wall of the longitudinal passage through the reciprocating frame serves as a means for holding the bottles in their racks while said frame is being operated. At or near the exit of the open-ended reciprocating frame a set of brushes are provided, so located as to engage the uppermost ends of the bottles and wipe them as the bottle-racks are withdrawn from the frame.

Figure 1 shows in side elevation a bottle-rinsing machine embodying my invention. Fig. 2 is a plan view of the bottle-rinsing machine shown in Fig. 1. Fig. 3 is a longitudinal vertical section of the machine shown in Fig. 2, taken on the dotted line 3 3. Fig. 4 is a transverse vertical section of the machine shown in Fig. 3, taken on the dotted line 4 4 looking toward the left, some of the parts being broken away. Fig. 5 is a detail showing the set of brushes which are supported by the open-ended reciprocating frame and adapted to be used for wiping the uppermost ends of the bottles as the bottle-racks are withdrawn from the frame. Fig. 6 is a detail of a portion of the bottle-rack-carrying frame, illustrating the means for adjusting one part or member thereof relative to the other.

a represents a tank which, as herein shown, is rectangular in shape, although it may be of any other suitable shape desired and also of any suitable size. At each end of said tank a pair of short upright posts *a'* are erected, each post supporting at its upper end a stationary track a^2 or one end thereof. The tracks a^2 at each end of the tank are disposed an equal width apart and in parallelism and are adapted to serve as runways on which the bottle-racks slide when passing into one end and out of the other end of the reciprocating frame, to be described.

The reciprocating frame which supports or carries the bottle-racks while the bottles are being rinsed comprises a pair of horizontally-arranged angle-iron bars *b b*, which serve as tracks on which the bottle-racks rest and also on which they are adapted to slide. These bars are disposed in parallelism and extend from nearly end to end of the tank, but so as to be moved freely up and down in the tank, and when the frame is brought into its most elevated position these bars or tracks will be brought into the same plane as the stationary tracks a^2 a^2 and will practically fill the space between the two pairs of stationary tracks, which are located at the opposite ends of the tank, so that the bottle-racks may be freely slid onto and off the tracks *b b* of the frame.

The bars *b b* are connected at several points intermediate their length into the downwardly-turned ends *c* of several cross-bars *c'*, the connection being of a rigid character, although preferably adjustable—as, for instance, the downwardly-turned ends of the cross-bars are formed with vertical slots c^4, through which bolts c^3 pass, which connect the bars or tracks *b b* to the cross-bars. The cross-bars *c'* occupy an elevation above the bars or tracks *b b*, so that between them a passage is provided which extends from end to end of the frame. Horizontally-arranged longitudinal bars c^2 are connected to the cross-bars. I may employ as many of these bars c^2 as desired, six being herein shown, and the side bars c^2 will preferably be made as angle-iron bars, while the intermediate bars will be made as flat plates.

Two pairs of upright rods or bars *d* are erected in the tank, which rest upon the bottom thereof, there being one pair at each side of the tank at a point intermediate its length, and said rods serve as vertical guides for the reciprocating frame. Right-angular or other shaped plates *d'* are placed against and bear upon the outer sides of said guide-rods, which are connected by similarly-shaped brackets d^2 to the bars *b* and by brackets d^3 to the side bars c^2. The brackets d^3 are rigidly connected to the plates *d'* and side bars c^2 by rivets or otherwise, and consequently are not adjustable, and the brackets d^2 are connected to the plates *d'* and bars or tracks *b* by bolts passing through vertical slots formed in said plates *d'*, thereby permitting adjustment of the bars or tracks *b* relative to the upper part of the frame. The plates *d'* slide up and down on the guide-rods as the frame is moved up and down in the tank. For the purpose of moving the frame up and down a hand-lever *e* is pivoted at *e'* to an ear on one of the guide-rods *d* and is loosely or pivotally connected by a link e^4 to the ends of one of the cross-bars *c'*, and as the lever is raised and lowered the frame will be correspondingly moved. The pivot *e'* will preferably be made as a rod extending crosswise the frame which is pivotally connected to an ear on the opposite guide-rod, and as the frame is quite wide two hand-levers, as *e*, will be employed—one at each side thereof. Each hand-lever will have a suitable extension or arm e^2 projecting from it, bearing a weight e^3.

The bottle-racks each consist of a quadrangular frame or plate *f*, having holes through it for the bottles and having attached to its under side around each hole several fingers *f'*, which support the bottles by engaging the downwardly-projecting portions thereof, and also having at each side a rest which is adapted to rest on the track *b*. The bottles are placed in the racks in inverted position, and the bottoms of the bottles project above the plate *f* for a short distance, and when the racks are placed in the frame the bottles will occupy a position beneath the bars or plates c^2 and by said bars or plates will be held in place while the racks are held by the reciprocating frame. Therefore the bars or plates c^2 are located so as to occupy positions above the bottles in the racks. When rinsing the bottles, the frame bearing the bottle-racks will be moved up and down rapidly, thereby violently agitating the rinsing liquor in the tank, and to assist in the rinsing operation a deflecting plate or wall *g* is secured to each side of the tank, at the upper edge thereof, which acts to deflect the rinsing liquor which rises at the sides of the tank as the frame is submerged back onto the bottles. At the end of the reciprocating frame the endmost cross-bar *c'* has secured to its under side several brushes *h*, which occupy a suitable elevation to engage and wipe the uppermost ends of the bottles as the bottles pass beneath them, which occurs when the bottle-racks are being withdrawn from the frame.

At any suitable point on the tank a cross-bar *t* is supported at a suitable elevation above the tank to be struck by the frame when said frame is raised to a position whereby the tracks *b* occupy the same plane as the tracks a^2.

In operation the frame is elevated against the stop *t*, and one or more bottle-racks are drawn into it at one end, moving in the direction of the arrow, Fig. 3, and then the frame is repeatedly submerged in the rinsing liquor and then again raised against the stop, when the bottle-rack will be withdrawn from the opposite end of the frame.

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

1. In a bottle-rinsing machine, a tank having stationary tracks at each end thereof, a reciprocating bottle-rack-carrying frame movable up and down in said tank, having a passage through it from end to end, one or more bottle-racks adapted to be carried by it, vertical guide-rods for said frame, and means for reciprocating the frame, substantially as described.

2. In a bottle-rinsing machine, a tank having stationary tracks at each end thereof, a reciprocating bottle-rack-carrying frame, movable up and down in said tank, having a passage through it from end to end, and a pair of tracks, one or more bottle-racks adapted to be carried by it, vertical guide-rods for said frame, means for reciprocating said frame, and a stop for limiting the upward movement of the frame at a point where the tracks of the frame occupy the same plane as the stationary tracks, substantially as described.

3. In a bottle-rinsing machine, a tank having stationary tracks at each end thereof, a reciprocating bottle-rack-carrying frame movable up and down in said tank having a passage through it from end to end and a pair of tracks, one or more bottle-racks adapted to hold the bottles in inverted position pro-

vided with rests which rest on said tracks, and means carried by the frame for holding the bottles in position in the racks, substantially as described.

4. In a bottle-rinsing machine, a tank, a bottle-rack-carrying frame movable up and down therein, means for moving it, and a deflecting wall at the upper edge of the tank, substantially as described.

5. In a bottle-rinsing machine, a tank, a bottle-rack-carrying frame movable up and down therein, having a passage through it from end to end, and brushes located at the exit of said passage adapted to wipe the bottles as they are withdrawn from the frame, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREEMAN N. YOUNG.

Witnesses:
B. J. NOYES,
H. B. DAVIS.