

No. 841,299.

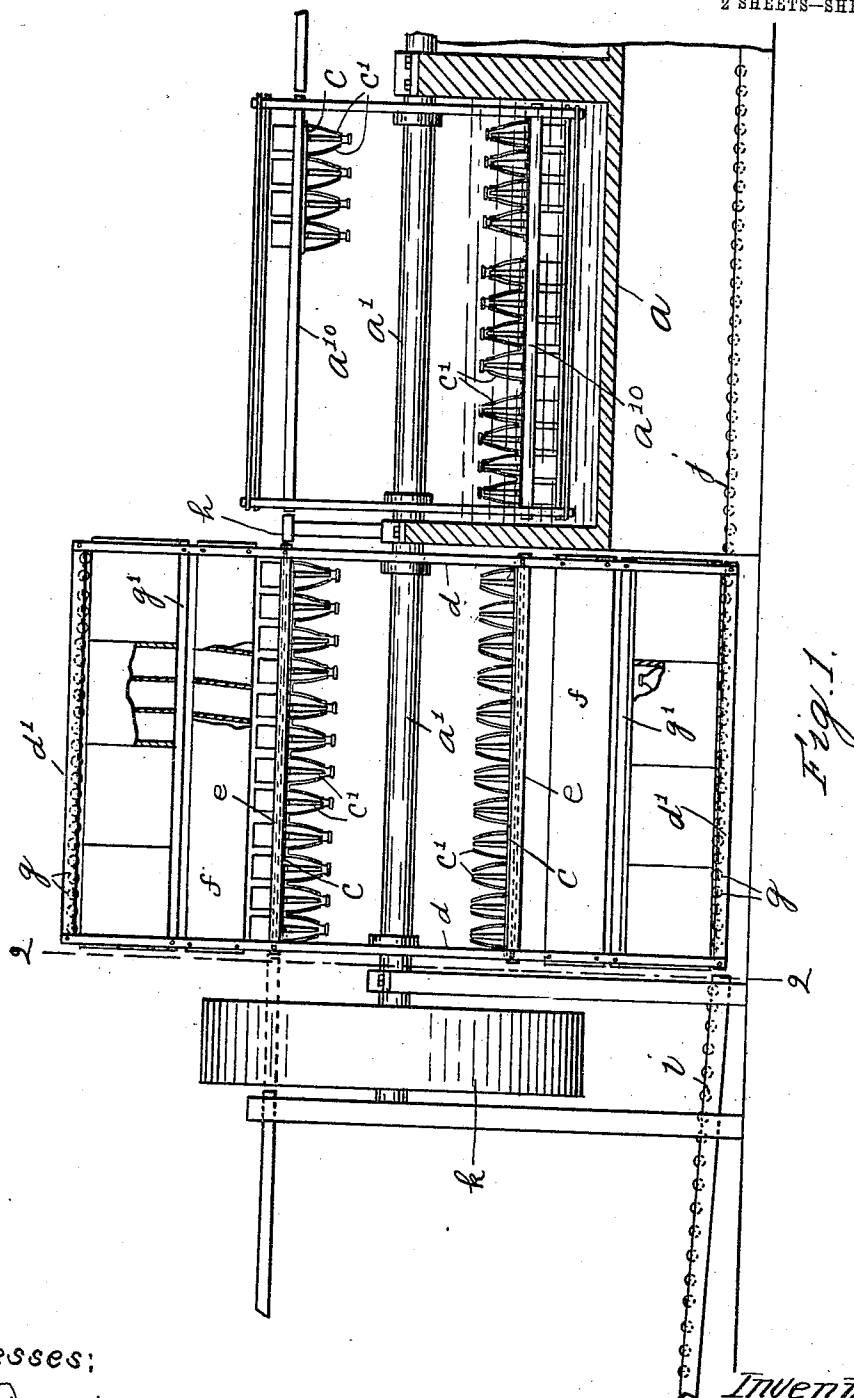
F. N. YOUNG.

PATENTED JAN. 15, 1907.

BOTTLE WASHING MACHINE.

APPLICATION FILED SEPT. 24, 1906.

2 SHEETS—SHEET 1.



Witnesses:
H. B. Davis,
Cynthia Doyle.

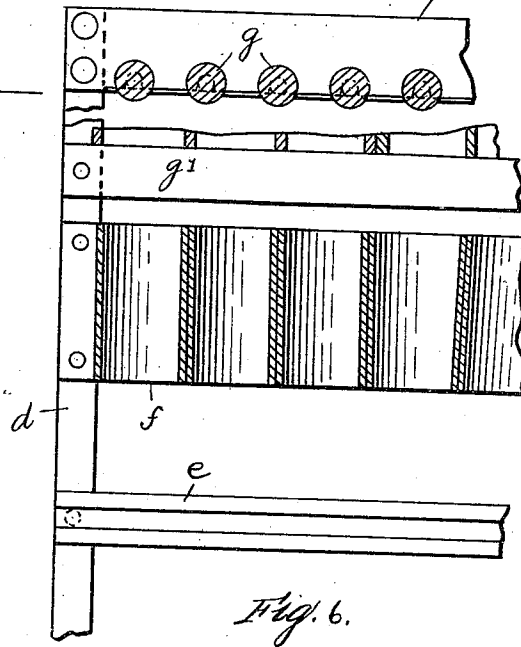
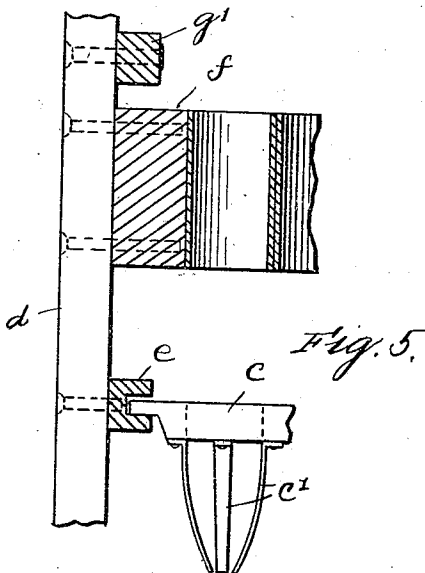
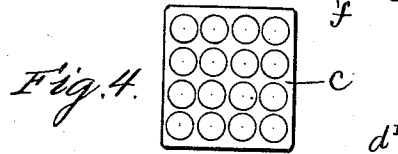
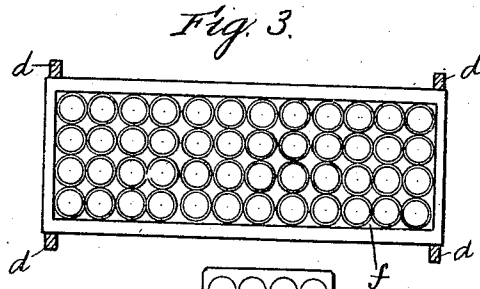
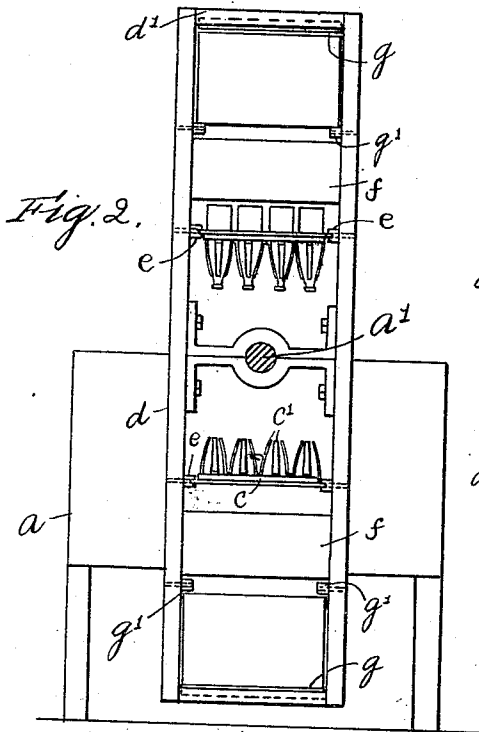
Inventor:
Freeman A. Young
By Hayes & Harman.
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2 SHEETS—SHEET 2.



Witnesses:
H. B. Davis
Cynthia Doyle

Inventor:
Freeman W. Young
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attys

UNITED STATES PATENT OFFICE.

FREEMAN N. YOUNG, OF ARLINGTON, MASSACHUSETTS.

BOTTLE-WASHING MACHINE.

No. 841,299.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed September 24, 1906. Serial No. 335,856.

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-Washing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

In United States Patent No. 780,488, dated January 17, 1904, a bottle-washing machine is shown wherein the bottles are held by suitable racks supported by a rotatable frame and are submerged in water which is contained in a suitable tank by the rotation of said frame. The rotatable frame which supports the bottle-racks is provided with open ends and with tracks which extend lengthwise thereof, and the bottle-racks are adapted to be moved along on said tracks, entering the frame at one end and leaving it at the opposite end. The bottle-racks are made as large as can be conveniently handled, and the bottles are placed therein and held by suitable bottle-engaging devices provided for the purpose.

Bottles for reuse are usually returned in the shipping cases or boxes and are taken from the boxes and placed in the bottle-racks, and considerable time is required and expense involved by this operation.

This invention has for its object to provide means for transferring the bottles from the cases or boxes to the bottle-racks and also for supporting said bottle-racks relative to the washing-machine, so that they may be moved along from the transferring device to the rotatable frame of said machine, thereby obviating the necessity of placing the bottles in the racks and of placing the filled racks in the machine. My invention, however, may be used in conjunction with other kinds of machines, if desired.

Figure 1 shows in side elevation and partial section a bottle-washing machine embodying this invention. Fig. 2 is a vertical section of the machine shown in Fig. 1, taken on the dotted line 2 2, the bottle-transferring device being shown in end elevation. Fig. 3 is a plan view of one of the guides provided for guiding the bottles from the boxes to the bottle-racks. Fig. 4 is a plan view of one of the bottle-racks. Fig. 5 is a sectional detail showing a portion of one of the guides for the bottles and a portion of one of the bottle-racks. Fig. 6 is a sectional detail

showing a portion of the bottle-guide and one of the guides for the bottle-racks.

Referring to Fig. 1, *a* represents a tank; *a'*, a horizontal shaft extending lengthwise the tank, which supports a frame which is constructed and arranged to carry the bottle-racks. *a*¹⁰ represents tracks carried by said frame, which support the bottle-racks and on which said racks slide. *c* represents the perforated plate of the bottle-rack, and *c'* the bottle-engaging devices attached thereto. The aforesaid parts are all substantially as shown in Letters Patent No. 780,488, above referred to. The tracks *a*¹⁰ extend throughout the length of the rotatable frame, and the bottle-racks enter the frame at one end and are discharged therefrom at the other end, and while supported upon the tracks are submerged in the water in the tank by the revolution of the frame.

At the entering end of the washing-machine thus described the bottle-transferring device is located, which will now be described. The device consists, essentially, of a rotatable frame secured to a horizontal shaft—as, for instance, it may be secured to the shaft *a'*, which is made long enough to provide for thus supporting it—or said frame may be otherwise supported. The rotatable frame comprises a pair of end frames *d d*, made substantially alike, which are rigidly secured together by horizontal bars *d'*, any number of which may be employed for this purpose. The end frames herein shown each comprise four bars rigidly secured together to thereby form an open quadrangular frame, and four connecting-bars *d'* are employed. A skeleton box-like structure is thus provided which is open at each end.

The rotatable frame has at each side of its supporting-shaft a pair of tracks *e*, adapted to receive a series of bottle-racks *c*, arranged in a row. The tracks *e* extend from end to end of the rotatable frame, so that the racks may enter at one end of the frame and be moved along on the tracks and then discharged at the opposite end thereof as new racks are supplied, said racks thereby passing through the frame from end to end. The tracks therefore serve as means extending throughout the frame for supporting a series of bottle-racks, permitting the discharge thereof at one end as new racks are supplied at the opposite end. The rotatable frame is also provided with a bottle-guide *f* at each side of the shaft *a'*, which is located beyond

the tracks *e*, said guide being made as a block extending from end to end of the frame and having holes through it for the passage of the bottles. The holes in the guide are arranged
 5 with respect to the holes in the bottle-racks so that the bottles will be directed by said guide into the racks in order that they may be engaged and held by the bottle-engaging devices. The rotatable frame is also pro-
 10 vided with means extending throughout its length for supporting a series of boxes at each side of its supporting-shaft just beyond the bottle-guides, said means permitting the discharge of the boxes at one end as new boxes
 15 are supplied at the opposite end. The box-supporting means consists of a track composed of a series of rollers *g*, which are located between and journaled in the bars *d'*, and horizontal bars *g'*, which are secured to the
 20 side bars of the end frames *d*, and the boxes rest on the rollers and are held in place by the bars *g'*.

The rotatable frame may be made of suitable dimensions to provide for as many boxes
 25 and also for as many bottle-racks as desired; but as herein shown provision is made for four boxes and for three bottle-racks at each side of the support-shaft, the number being unequal for the reason that the racks hold a
 30 greater number of bottles than the boxes, three racks holding the same number of bottles as are contained in four boxes. A row or series of boxes containing bottles having been pushed into the box-passage while said
 35 passage occupies a position at the lower end of the rotatable frame and a row of empty bottle-racks having been pushed into the rack-passage above said box-passage, the frame is reversed, and the bottles are thereby
 40 caused to move by gravity through the holes in the bottle-guide into the racks. When the bottles are thus supported by the bottle-racks, they are inverted, and when in this position the bottle-racks are moved along on
 45 the tracks *e* onto the tracks *a*¹⁰ of the washing-machine, thereby leaving the transferring-frame and entering the washing-frame. Then the rotatable frame is again inverted and another set of bottle-racks brought into
 50 position to be moved into the washer, and the empty boxes at the lower end of the frame are discharged from the box-passage by the introduction of new boxes at the opposite end thereof, and empty bottle-racks are
 55 supplied, and the frame is then ready to be again turned. To facilitate moving the bottle-racks from the transferring-frame to the washer, a pair of tracks *h* are located between the two frames. To facilitate moving
 60 the filled boxes into the box-passage and also to facilitate removing the empty boxes from said passage, roller-tracks *i* and *j* are provided at each end of the rotatable frame, into alinement with which the roller-track of the
 65 box-passage is brought by the rotation of the

frame. To turn the shaft *a'*, a belt-pulley *k* is secured to the shaft for the introduction through it of the empty bottle-racks, as shown in the aforesaid patent.

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

1. In an apparatus of the character described, the combination of a rotatable frame, means, extending throughout the
 75 length of the frame, for supporting a series of bottle-racks, means, extending throughout the length of the frame, for supporting a series of boxes and means for reversing the frame to cause the bottles to move by grav-
 80 ity from the boxes to the racks, substantially as described.

2. In an apparatus of the character described, the combination of a rotatable frame, means, carried by the frame, for temporarily
 85 holding a series of bottle-racks and permitting the discharge thereof, and means, carried by the frame, for temporarily holding a series of boxes and permitting the discharge thereof, and means for reversing said frame to
 90 cause the bottles to move by gravity from the boxes to the racks, substantially as described.

3. In an apparatus of the character described, a rotatable open-ended frame, a
 95 horizontal shaft bearing it, a pair of horizontal tracks carried by said frame which extend from end to end thereof and which are adapted to support a series of bottle-racks, means, extending throughout the length of said
 100 frame, for supporting a series of boxes, and means for reversing said frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

4. In an apparatus of the character de-
 105 scribed, the combination of a rotatable frame having an open-ended passage provided with tracks adapted to receive bottle-racks, and also having an open-ended passage adapted to receive boxes, and means for reversing
 110 said frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

5. In an apparatus of the character described, a rotatable frame, a horizontal shaft
 115 bearing it, means, extending throughout the length of said frame, for supporting a series of bottle-racks, an open-ended passage having upper and under guides for holding a series of boxes adjacent said bottle-racks and
 120 means for reversing the frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

6. In an apparatus of the character described, a rotatable frame, means, extended
 125 throughout the length of the frame, for supporting a series of bottle-racks, means, extending throughout the length of the frame, for supporting a series of boxes, means, extending throughout the length of the frame
 130

for guiding the bottles from the boxes to the racks, and means for reversing said frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

7. In an apparatus of the character described, a rotatable frame, means, extending throughout the length of the frame, for supporting a series of bottle-racks and permitting the discharge thereof at one end as the new racks are supplied at the opposite end, means, also extending throughout the length of said frame, for supporting a series of boxes and permitting the discharge thereof at one end as new boxes are supplied at the opposite end, and means for reversing the frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

8. In an apparatus of the character described, a rotatable frame, means, extending throughout the length of said frame, for supporting a series of bottle-racks and permitting the discharge thereof at one end as the new racks are supplied at the opposite end, means, also extending throughout the length of said frame for supporting a series of boxes and permitting the discharge thereof at one end as new boxes are supplied at the opposite end, and means, extending throughout the length of said frame, for guiding the bottles from the boxes to the racks, and means for reversing the frame to cause the bottles to move by gravity from the boxes to the racks, substantially as described.

9. In an apparatus of the character described, a rotatable frame, a bottle-rack support carried by it, a box-support also carried by it, and means for guiding the bottles from the boxes on the box-support to the racks on the rack-support as the frame revolves, substantially as described.

10. In an apparatus of the character described, the combination of a tank, a revolvable frame therein having an open-ended passage through it from end to end provided with a bottle-rack support, another revolvable frame having an open-ended passage

through it from end to end also provided with a bottle-rack support, means, extending throughout the length of said last-named frame, for supporting a series of boxes adjacent the bottle-rack support, and means for reversing said frame to cause the bottles to move by gravity from the boxes to the racks and for supporting the bottle-racks in alignment with the bottle-rack support which is carried by the other frame, substantially as described.

11. In an apparatus of the character described, the combination of a rotatable frame, means extending throughout the length of said frame for supporting a series of bottle-racks, means extending throughout the length of said frame for supporting a series of boxes, means for reversing the frame to cause the bottles to move by gravity from the boxes to the racks, and another rotatable frame having a bottle-rack support arranged in alignment with the aforesaid means for supporting the bottle-racks, substantially as described.

12. In an apparatus of the character described, a rotatable open-ended frame, a horizontal shaft bearing it, a pair of horizontal tracks carried by said frame which extend from end to end thereof and which are adapted to support a series of bottle-racks, means extending throughout the length of said frame for supporting a series of boxes, means for reversing said frame to cause the bottles to move by gravity from the boxes to the racks, and another rotatable open-ended frame having a pair of horizontal tracks which extend from end to end thereof arranged in alignment with the tracks on the aforesaid frame and adapted to support a series of bottle-racks, 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.