

E. UTARD & A. GIMONET.
MACHINE FOR WASHING BOTTLES.
APPLICATION FILED MAR. 18, 1909.

932,193.

Patented Aug. 24, 1909.

3 SHEETS—SHEET 1.

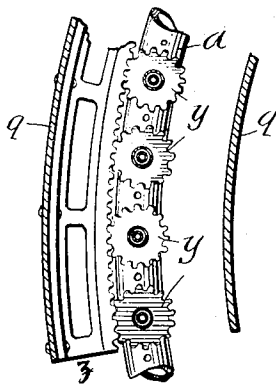
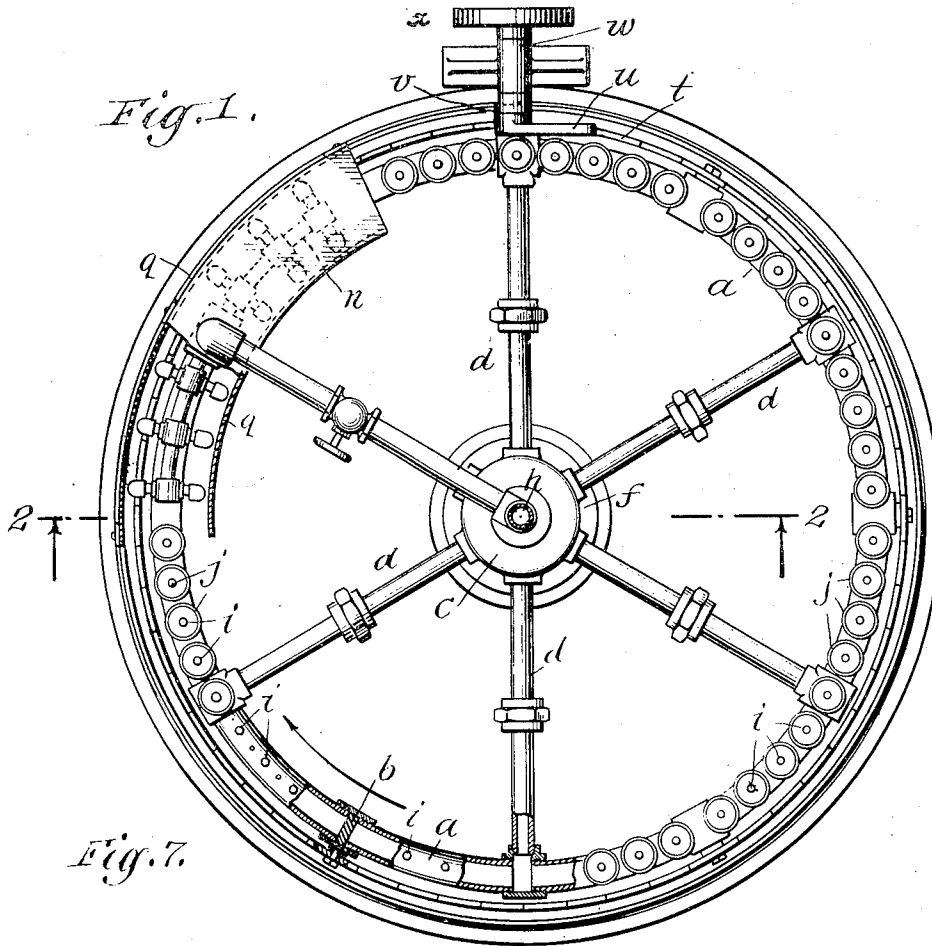


Fig. 8.

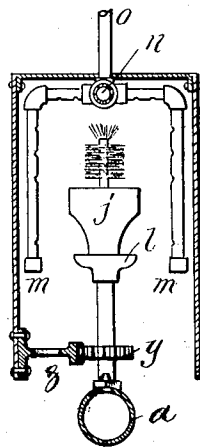
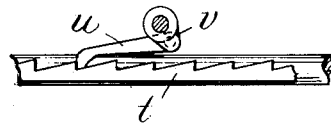


Fig. 4.



WITNESSES
H. Crocker
J. C. McKibbin

Emile Utard
Alexandre Gimonet
INVENTORS

BY
Alfred Thedlock.
ATTORNEY.

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8 SHEETS—SHEET 2.

Fig. 3.

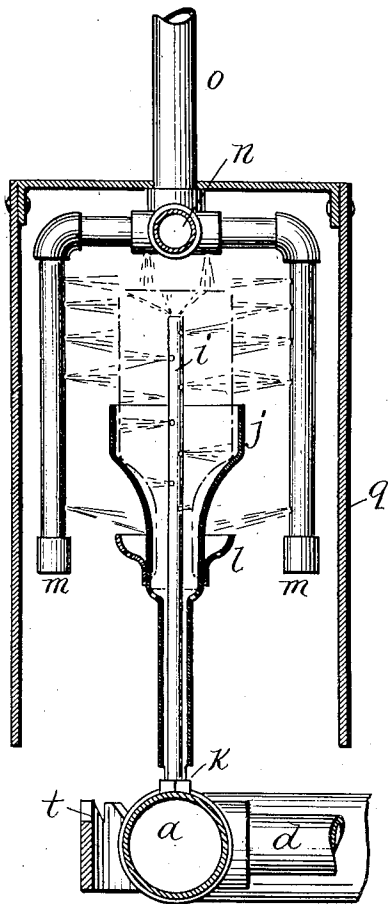


Fig. 9.

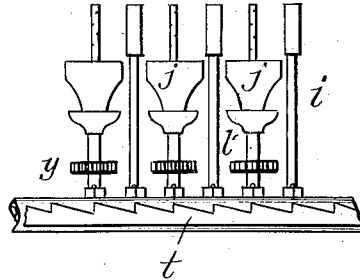
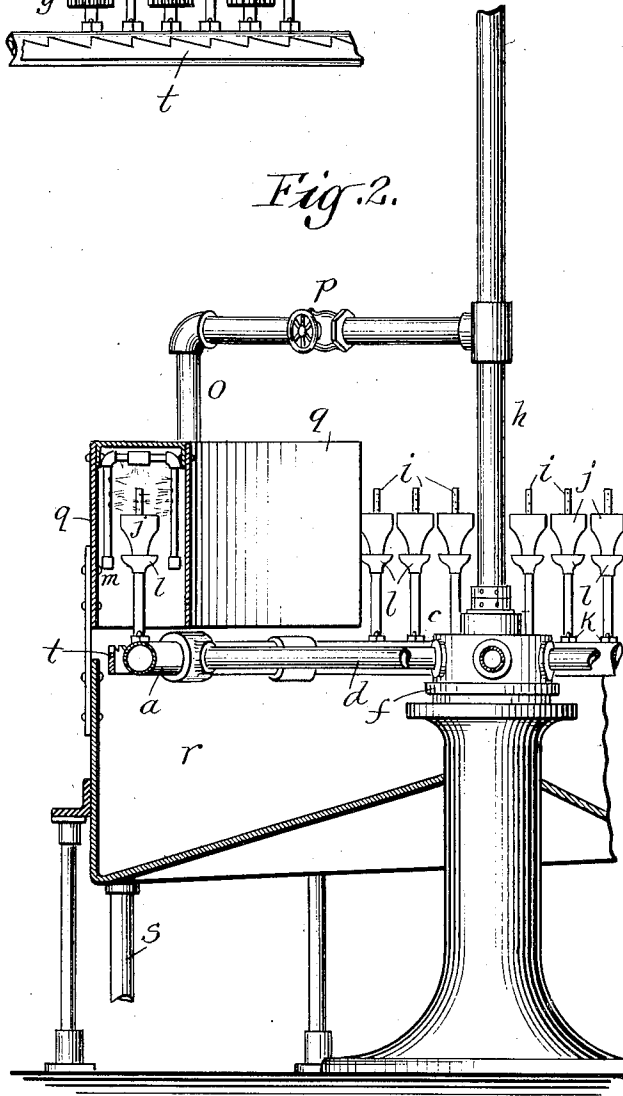


Fig. 2.



WITNESSES

Albrocheron
J. C. McKibbin

INVENTORS

Emile Utard
Alexandre Gimonet
BY
Alfred H. Lock
ATTORNEY

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3 SHEETS—SHEET 3.

Fig. 6.

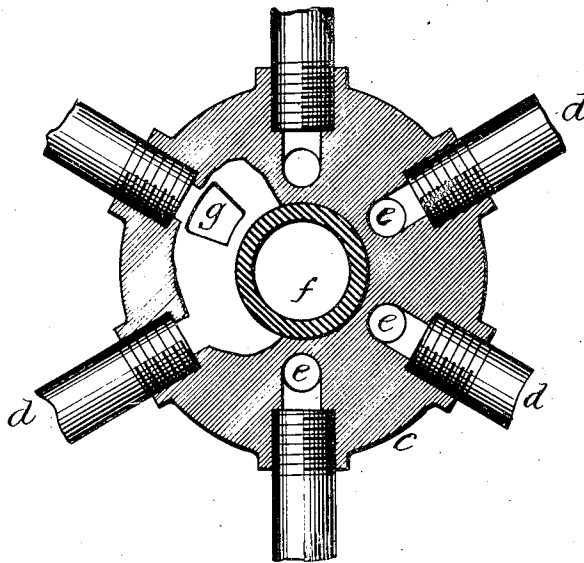
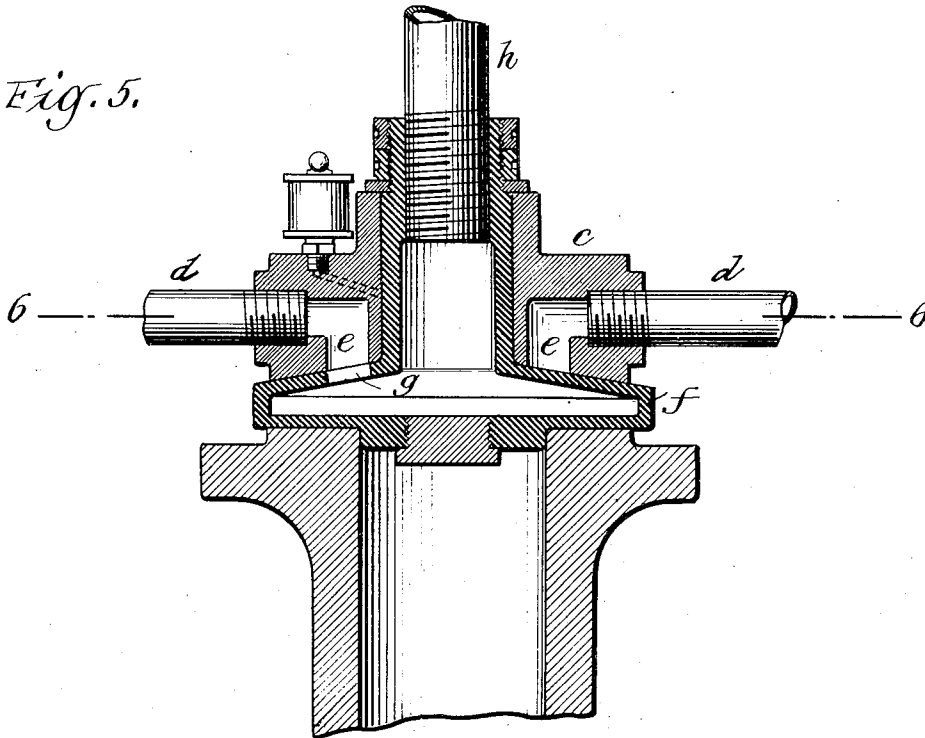


Fig. 5.



WITNESSES

St. Rocher
J. C. McKibbin

INVENTORS:

Emile Utard
Alexandre Gimonet
BY
Alfred H. Lock
ATTORNEY

UNITED STATES PATENT OFFICE.

EMILE UTARD AND ALEXANDRE GIMONET, OF NEW YORK, N. Y., ASSIGNORS TO H. & G. KLOTZ & CO., OF NEW YORK, N. Y., A FIRM.

MACHINE FOR WASHING BOTTLES.

932,193.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed March 18, 1909. Serial No. 484,274.

To all whom it may concern:

Be it known that we, EMILE UTARD and ALEXANDRE GIMONET, citizens of the United States, and residents of New York, county and State of New York, have invented Improvements in Machines for Washing Bottles, of which the following is a specification.

The machine for washing bottles, the subject of this invention, comprises a rotatable circular bottle carrier mounted upon a central support having a hollow rim divided into separate compartments, each compartment by a connecting hollow arm or spoke being in communication with a valve device in the hub which seats on the central support; perforated spraying nozzles extending upwardly from the rim of the carrier; bottle supports located on the nozzles for holding the bottles in position with the spraying nozzles extending within them; cups connected to or forming part of the bottle supports at the lower ends of the same for the reception of the stoppers of the bottles as the bottles are placed on the supports, it being desirable that each bottle and its stopper, when made of glass, be kept together, as such stoppers are generally individually ground to a fit in the neck of each bottle; a water supply pipe having downwardly extending branches located on each side of a portion or section of the bottles on the supports and provided with perforations for directing the water onto the bottles and also onto the stoppers; a hood or shield covering the outside spraying pipes and the section of bottles whose outer surfaces are subjected to the action of the water issuing from these spraying pipes; a pan located beneath the rotating carrier for collecting the water as it drips from the insides and the outsides of the bottles; means for axially rotating the bottles as they pass between the outside spraying pipes; and means for rotating the bottle carrier, preferably consisting of a ratchet ring attached to the rim of the carrier and an operating pawl attached to a small crank, whose shaft may be continuously rotated by any suitable means.

To fully describe these and other features of construction we will refer to the accompanying drawings, in which:

Figure 1 is a plan view of the machine, showing one of the parts in section; Fig. 2 is a vertical sectional view taken on the line 2, 2 Fig. 1; Fig. 3 is a transverse section, on

an enlarged scale, of the device for washing the outer surfaces of the bottles; Fig. 4 is a detached view of the bottle carrier's rotating operating means; Fig. 5 is a vertical section of the bottle carrier's central support showing the water controlling valve; Fig. 6 is a horizontal section of the same taken on the line 6, 6, Fig. 5; Fig. 7 shows in plan a portion of the means for rotating the bottles as they pass through the outside washing device; Fig. 8 is a vertical section of the same, and Fig. 9 illustrates the plan adopted when bottles of large size are to be washed.

In its general construction this machine for washing bottles is similar to the machine for drying bottles patented to us October 20, 1908, and under No. 901,757.

The bottle carrier has a hollow rim *a*, divided into compartments or sections by partitions *b*, each section being connected to the hub *c* by a hollow arm or spoke *d*, the openings through the hub extending downwardly to the ports *e* at the lower bearing face of the hub which face corresponds to and rests upon the conical valve face of the hollow piece *f*, and in this valve face is formed a port *g*, through which communication is provided between one of the spokes *d* and the water supply pipe *h*, attached to the upper end of the hollow piece *f*, for a certain interval of time to insure the proper cleansing of the bottles on the section to which said spoke belongs, the remainder of the ports *e* belonging to all of the other sections being during such time cut off.

Suitably spaced on the upper surface of the rim *a* are vertical nozzles *i* secured firmly in place to be open to the chambers of the rim, the upper part of the nozzles being perforated to direct streams of water to all parts of the interior of the bottles placed over the nozzles. The bottles are held, inverted, in the supports *j*, which have lower hollow necks fitting loosely on the nozzles, the lower ends of the necks having openings *k* for the escape of the water which drains from the bottles. Just below the bottle holding parts of each of the supports *j* is located a cup *l*, into which may be placed the stopper of the bottle placed in the support when it is advantageous to keep the bottles and their stoppers together, particularly when hard stoppers, as glass, are specially ground to fit individually in the necks of the bottle. These cups *l* have drainage holes for the es-

cape of the washing water, applied as hereafter described.

Extending over a portion or section of the bottles carried on the rotating carrier are means for washing the outsides of the bottles placed in the supports *j* and the stoppers in the cups *l*, consisting of downwardly projecting pipes *m*, perforated to direct streams on both sides of the bottles and on the stoppers, connected to a main pipe *n*, which is joined to the supply pipe *h*, by a branch pipe *o*, in which is placed a valve *p*, for governing the flow of water from the perforated pipes *m*. A hood *q* is provided to prevent splashing of the water from the pipes *m*, and to direct such water and the dripping from the bottles, both externally and internally, into a draining pan *r*, which extends under the whole of the bottle carrier, is suitably supported and is provided with an escape pipe *s*.

The device shown, which is simple and effective, for rotating the bottle carrier consists of a circular ratchet rack *t* actuated by a pawl *u* carried on a crank pin of the crank arm *v* the shaft of which is carried by a standard bearing *w* and is continuously rotated, as by a pulley *x*, which may be connected to any source of power.

It is advantageous, particularly when very dirty bottles are to be washed, to rotate the bottles as they pass between the outside washing pipes, this is accomplished by fixing on the pinion gears *y* on the necks of the bottle supports *j* and attaching a segmental gear rack *z* to any convenient stationary part of the machine, as for instance as shown to the hood *q*, and into which the pinions mesh as the bottle supports to which they belong travel through the hood *q*. This rack gear *z* may extend beyond the ends of the hood, but ordinarily such location of it will be sufficient. It will be observed that the nozzles *i* being rigidly secured to the rim *a* of the bottle carrier and the bottle holders being loosely seated over them no leakage can occur at the junctures of the nozzles and the rim, as but little power will be required to rotate the bottle supports.

A greater part of the time the bottles are being treated, during one revolution of the carrier, is devoted to draining the bottles after water has been applied to the insides and outsides of them, the interval of the washing process is shown as being about one-sixth of the revolution of the carrier, only one at a time of the six ports *e* of the hub part of the central valve being in communication with the port *g* of the seat of the valve *f*; the proportioning of the washing time and the draining time may of course be varied at pleasure. The bottles and their stoppers when drained are removed from and bottles and their stoppers to be washed are placed in their respective supports just before the water flows through the section of the rotat-

ing carrier that is about to pass through the outside washing pipes and protecting hood.

As in our before mentioned patent for machine for drying bottles various sizes of bottles may be treated on this machine by placing suitable holding supports on the nozzles *i* and closing the perforations of the intervening nozzles by cups as shown at Fig. 9.

We claim as our invention:—

1. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, a water supply pipe and connections for supplying water to sections of the nozzles successively, series of stationary perforated pipes connected to the water supply pipe and arranged to direct streams of water against the outsides of the bottles as the bottles pass between them, and a hood covering the series of outside washing pipes.

2. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, a water supply pipe and connections for supplying water to sections of the nozzles successively, series of perforated pipes connected to the water supply pipe and arranged to direct streams of water against the outsides of the bottles as the bottles pass between them, a hood covering the series of outside washing pipes, a ratchet rack secured to the bottle carrier, an operating pawl carried by a crank, and means for rotating the crank.

3. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, cups on the bottle supports for holding the stoppers of the bottles, a water supply pipe and connections for supplying water to sections of the nozzles successively, series of perforated pipes connected to the water supply pipe and arranged to direct streams of water against the outsides of the bottles and the stoppers placed in the cups as the bottles pass between them, and a hood covering the series of outside washing pipes.

4. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, a water supply pipe and connections for supplying water to sections of the nozzles successively, series of stationary perforated

pipes connected to the water supply pipe and arranged to direct streams of water against the outsides of the bottles as they pass between them, and means for rotating the bottle supports on the nozzles.

5 5. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, a water supply pipe and connections for supplying water to sections of the nozzles successively, means for rotating the bottle carrier, as a ratchet rack attached to the carrier, and an operating pawl carried by a continuously rotating crank.

6. In a machine for washing bottles, a bottle carrier, means thereon for holding bottles in inverted position, means for applying streams of water to the interiors of some of the bottles, means for applying streams of water to the exteriors of some of the bottles, means for moving the carrier, and means for rotating the bottles as the streams of water are applied to their exteriors.

7. In a machine for washing bottles, a bottle carrier, means thereon for holding bottles in inverted position, means for applying streams of water to the interiors of some of the bottles, stationary perforated pipes for applying streams of water to the exteriors of some of the bottles, means for moving the carrier, means for rotating the

bottles as the streams of water are applied to their exteriors, a hood located to extend over the bottles receiving the exterior washing water, and a draining pan for catching the water that drips from the bottles and hood.

8. A machine for washing bottles, comprising a rotatable circular hollow bottle carrier, perforated nozzles attached to the rim of the carrier, bottle supports located on the nozzles adapted to hold bottles with the nozzles extending in their interiors, a water supply pipe and connections for supplying water to sections of the nozzles successively, series of perforated pipes connected to the water supply pipe and arranged to direct streams of water against the outsides of the bottles as the bottles pass between them, a hood covering the series of outside washing pipes, cups on the bottle supports for holding the stoppers of the bottles, a ratchet rack carried by the bottle carrier and an operating pawl therefor carried by a continuously rotating crank, pinion gears on the bottle supports, and a stationary gear rack located to act on the pinion gears when the bottles are passing through the hood.

In testimony whereof, we have hereunto subscribed our names this 15th day of March, 1909.

EMILE UTARD.
ALEXANDRE GIMONET.

Witnesses:

CHAS. J. VAN GUNTEN,
JOHN E. CAHALAN.