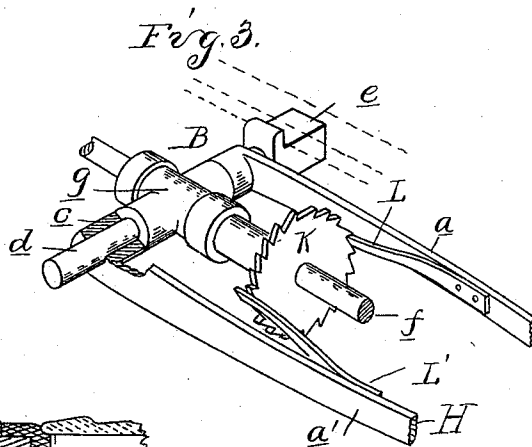
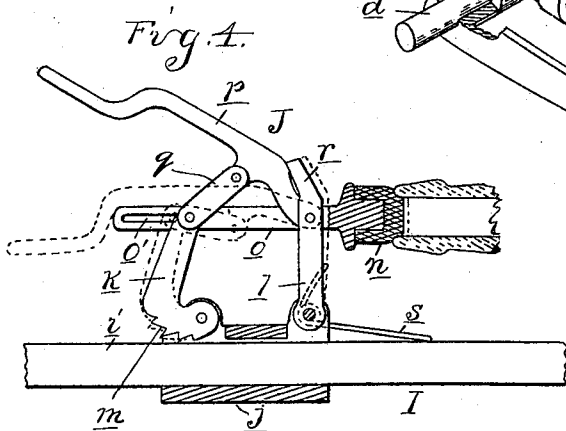
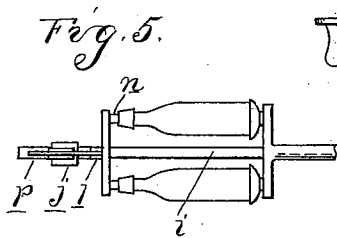
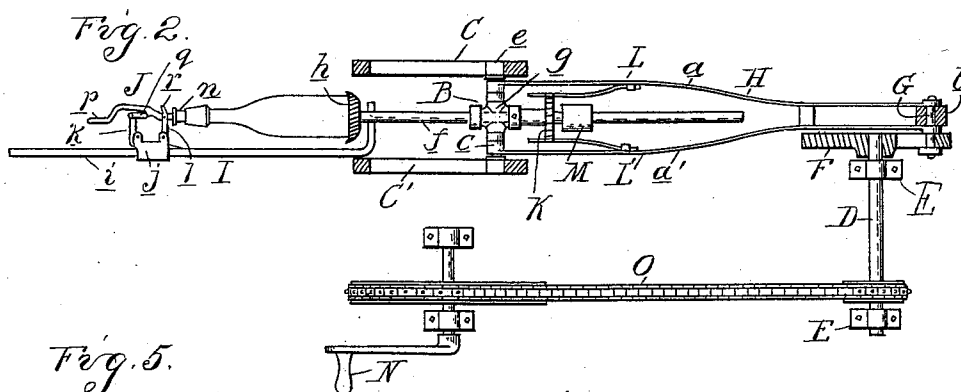
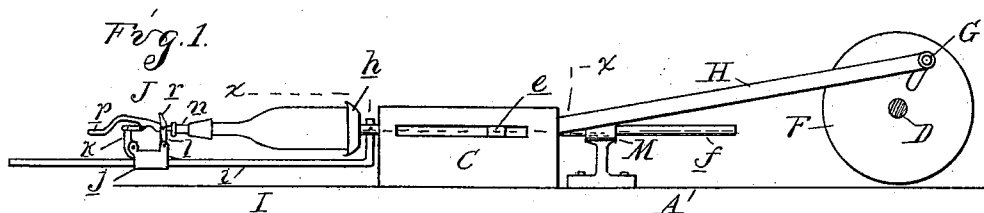


(No Model.)

H. H. MILLER.
BOTTLE WASHER.

No. 579,763.

Patented Mar. 30, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY H. MILLER, OF LAKESIDE, OHIO.

BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 579,763, dated March 30, 1897.

Application filed May 14, 1896. Serial No. 591,476. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. MILLER, a citizen of the United States, residing at Lakeside, in the county of Ottawa and State of Ohio, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of bottle-washing machines in which the bottles, first charged with shot and water or similar cleaning compound, are placed in a reciprocating and revolving carrier and agitated until thoroughly cleansed.

The invention consists in the means employed for reciprocating and revolving the carrier, the peculiar construction of the combined clamp and stopper, and the peculiar construction, arrangement, and combination of parts, as more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of my machine. Fig. 2 is a plan view, partly in section, of the machine. Fig. 3 is a perspective view of the mechanism for rotating the bottle-carrier. Fig. 4 is a sectional elevation of the combined clamp and stopper, and Fig. 5 is a plan of a modified form of bottle-carrier.

A is a base or table.

B is a reciprocating head slidingly secured to suitable bearings therein, preferably the parallel guides C and C'.

D is a shaft journaled in bearings E upon the base. F is a crank at one end of said shaft, and G is a crank-pin radially adjustably secured to said crank.

H is a pitman connecting the crank-pin G and head B. This is preferably formed of the separated bars *a a'*, connected at one end with the crank-pin bearing *b* and provided at their opposite ends with bearings *c*.

d are pins on opposite sides of the head B, with which the bearings *c* engage, having at their outer ends the blocks *e*, engaging with the parallel guides C C'.

I is a bottle-carrier rotatorily adjustably secured to the head B, preferably by being provided with a shank *f*, which passes through the bearing *g* in the head and extends between the separated arms of the pitman. This car-

rier may be constructed to hold one or more bottles, Figs. 1 and 2 showing it as arranged for a single bottle and Fig. 5 as modified to hold two bottles.

In the former construction, *h* is a plate or socket secured to the shank. *i* is an arm extending forward on one side of the socket, and J is a combined clamping device and stopper slidingly secured upon said arm and constructed as follows: *j* is a head slidingly engaging the arm *i*. *k* and *l* are arms pivotally secured to this head, the former having the eccentric clamping-face *m*, adapted to bear against the arm *i*. *n* is a stopper, preferably made of rubber or other elastic material and having the shank *o* pivotally secured to the arm *l* and the slotted bearing *o'* slidingly engaging the arm *k*. *p* is a lever pivoted to the arm *l* and connected, preferably, by the link *q* to the arm *k*, said link and lever forming a toggle-lever connection between the arms *k* and *l*. *r* is an extension of the arm *l*, forming a stop adapted to strike against the lever *p*, and *s* is a spring resisting the forward movement of the arm *l*. K is a ratchet-wheel secured to the shank *f*. L and L' are pawls secured to the separated bars *a a'* of the pitman and adapted to engage with the ratchet-wheel K, upon opposite sides thereof. M is a stationary bearing upon the table, with which the outer end of the shank *f* has a sliding engagement.

In practice the bottles, being first charged with a suitable quantity of shot and water or whatever cleaning compound is employed, are secured in the carrier I by placing the bottom of the bottle against the plate or socket *h* and then sliding the clamping device J along the arm *i* until the stopper *n* strikes against the mouth of the bottle. The lever *p* is then depressed, which first moves the arm *k* and presses the eccentric face *m* against the arm *i*, locking the head *j* in position. A further movement of the lever will move the arm *l* in the opposite direction against the tension of the spring *s*, pressing the stopper *n* into the mouth of the bottle and tightly corking the same. The parts are firmly locked in this position as the pivotal connection of the toggle-levers is pressed beyond the center, as shown in dotted lines in Fig. 4. The machine is next set in motion, being driven by any suitable

mechanism, such as the hand-crank N and sprocket-chain connection O, to the shaft D. The motion of the shaft D is imparted, through the crank E and pitman H, to the head B, rapidly reciprocating the latter and causing the shot to slide back and forth over the lower side of the bottle. With each reciprocation of the head the lateral oscillatory movement of the pitman will cause the pawls L and L' to turn the ratchet-wheel K, so that the carrier I is given a rotary as well as a longitudinal movement and causing all sides of the bottle to be cleaned alike.

When the bottle is cleaned, the lever *p* is thrown out again, which releases the clamp and allows the bottle to be taken out and another one to be put in its place.

With my construction the bottles may be quickly placed and taken out of the machine, even when of varying sizes, as the clamping device J may be freely slid along the arm *i* whenever the lever *p* is released.

In the construction of carrier shown in Fig. 5 a similar clamping device to that shown at J is employed, comprising a sliding sleeve, a locking-arm, and toggle-levers, but provided with a double stopper for the two bottles.

What I claim as my invention is—

1. The combination of a reciprocating slide, guiding means therefor, a pitman for actuating the slide, a bottle-carrier secured to said slide and free to rotate, and means for rotating said carrier comprising two members one on the carrier and one carried by and movable with the pitman.

2. The combination with a reciprocating slide, guiding means for the slide, a pitman for actuating the same, and a bottle-carrier secured to said slide free to rotate, of means for rotating said carrier comprising a ratchet-wheel thereon, and a pawl on the pitman adapted to turn said wheel in the lateral oscillation of the pitman.

3. The combination with a reciprocating slide, guiding means therefor, of a split pitman for actuating said slide, a bottle-carrier having a shank journaled in said slide and extending between the opposite sides of the pitman, a ratchet-wheel on said shank and pawls secured to the opposite sides of the pitman engaging with said ratchet-wheel and adapted to turn the same in the lateral oscillation of the pitman.

4. The combination of the parallel guides CC', the cross-head B slidably secured thereto, a bottle-carrier having a shank *f* journaled in said head, the pitman H, comprising the separated bars *a a'*, the bearing *b* at one end, the bearings *c* at the other end engaging with

pins *d* on the opposite sides of the cross-head, the ratchet-wheel K secured to the shank, the pawls L L', on the opposite bars of the pitman, the bearing M with which the rear end of the shank engages, the crank F and the adjustable crank-pin G engaging with the bearing *b*.

5. In a bottle-holder, the combination with a base-plate for the bottle, an outwardly-extending arm, and supporting means for the same, of a combined clamp and stopper comprising a head having a sliding engagement with said arm, a clamping-arm carried by said head, a stopper, means for connecting the stopper to the head, a lever, means for connecting the same to said clamping-arm, and a connection between the stopper and lever, the latter adapted to move the clamping-arm and stopper oppositely to clamp the head on the arm and press the stopper into the bottle.

6. In a bottle-holder, the combination with a base-plate for the bottle, an outwardly-extending arm, and supporting means for the same, of a combined clamp and stopper comprising a head having a sliding engagement with said arm, a clamping-arm carried by said head, a stopper, means for connecting the stopper to the head, a lever, means for connecting the same to said clamping-arm, a connection between the stopper and lever, the latter adapted to move the clamping-arm and stopper oppositely to clamp the head on the arm and press the stopper into the bottle, and a spring for holding the stopper from movement until the head is clamped.

7. In a bottle-holder, the combination with a base-plate and an outwardly-extending arm, of the combined clamp and stopper J comprising the head *j*, the arms *k* and *l* pivoted thereto, the former provided with the eccentric clamping-face *m*, the stopper *n* carried by the arm *l*, the toggle-lever connection between said arms *k* and *l* and the spring *s*, substantially as and for the purpose described.

8. In a bottle-washing machine, the combination of a reciprocating head, guiding means therefor, a bottle-carrier carried by said head comprising a base-plate, an arm lying parallel with the axis of the bottle, means for supporting said plate and arm, a slide working on said arm, a stopper, and a single means for locking said slide on the arm and forcing the stopper against the mouth of the bottle.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY H. MILLER.

Witnesses:

GEO. F. ANDERSON,
G. W. DOEIZBACH.