

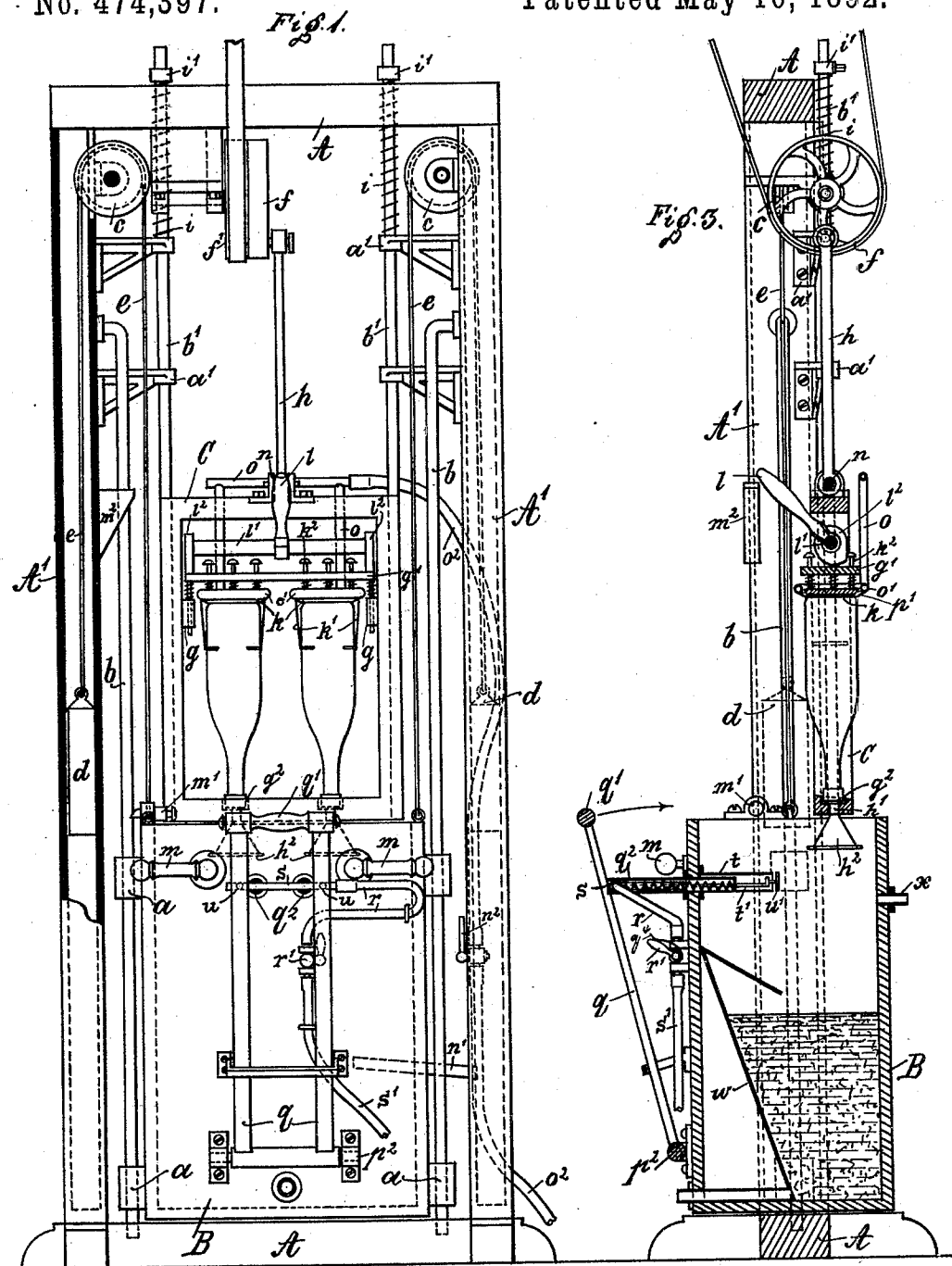
(No Model.)

3 Sheets—Sheet 1.

J. MASSON.
BOTTLE WASHING MACHINE.

No. 474,397.

Patented May 10, 1892.



Witnesses:
Wm. Schulz.
A. Goughmans.

Inventor:
J. Masson
by his attorneys
Rector & Brown

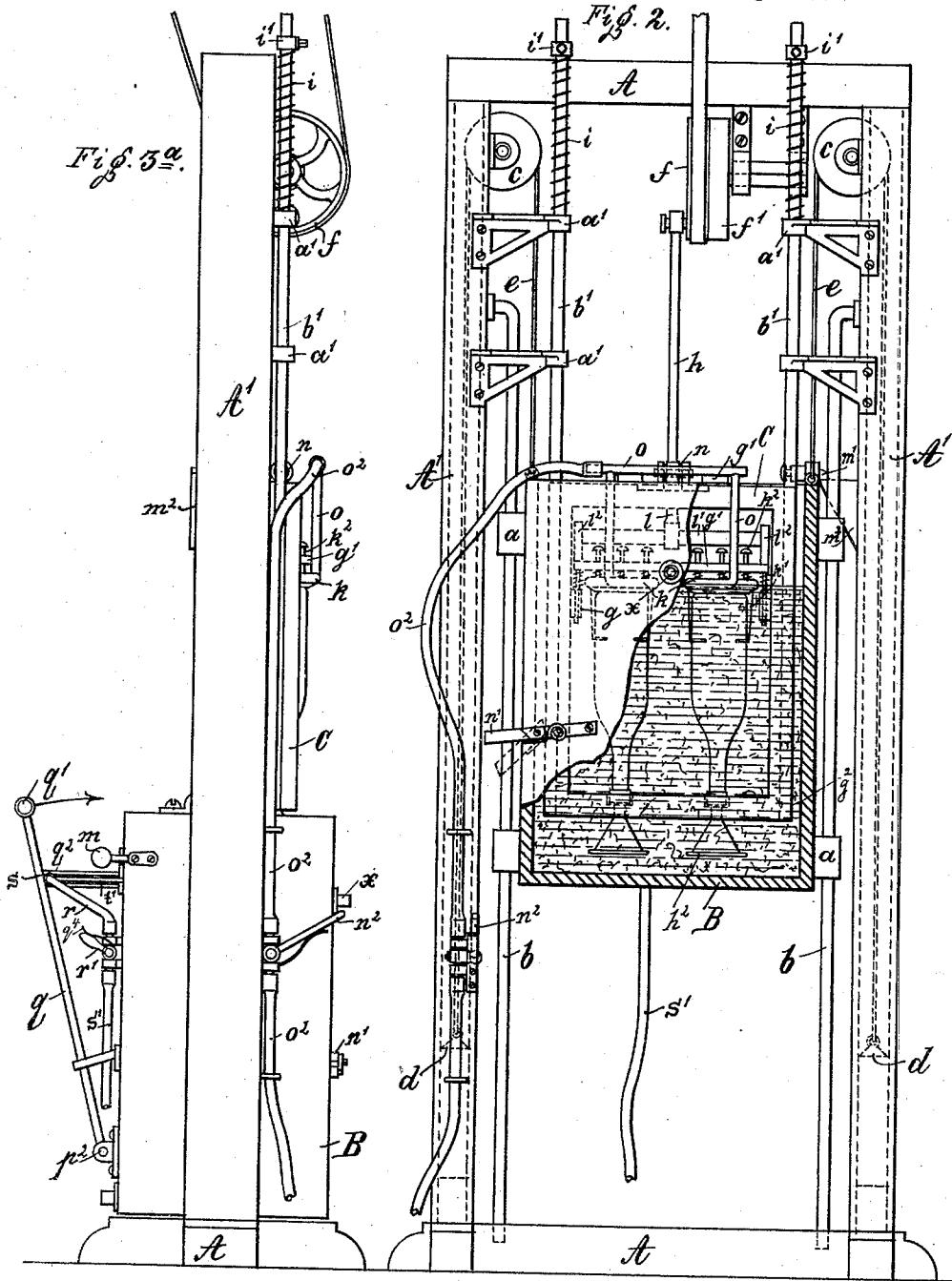
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3 Sheets—Sheet 2.

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BOTTLE WASHING MACHINE.

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Patented May 10, 1892.



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UNITED STATES PATENT OFFICE.

JOHN MASSON, OF HASLACH, BADEN, GERMANY.

BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,397, dated May 10, 1892.

Application filed May 1, 1891. Serial No. 391,305. (No model.)

To all whom it may concern:

Be it known that I, JOHN MASSON, of Haslach, Baden, Germany, have invented certain new and useful Improvements in Machines for Washing Bottles, of which the following is a specification.

This invention relates to an improved machine for washing and rinsing bottles; and it consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine. Fig. 2 is a rear elevation of the same; Fig. 3, a vertical cross-section thereof. Fig. 3^a is an end view of the machine; Fig. 4, a vertical central section through the clamping mechanism; Fig. 5, a horizontal section through frame C, and Fig. 6 a vertical central section through one of the plates *k*. Figs. 4 to 6 are drawn on a larger scale than the remaining figures.

The letter A represents the horizontal beams of the machine-frame, connected by hollow upright columns A'. To the columns A' and the lower beam A there are secured the upright parallel rails *b*, upon which are guided the blocks *a* of a vertically-movable box B. This box is counterbalanced by weights *d*, contained in the columns A' and connected to the box by means of chains *e*, running over pulleys *c*. The box B is filled with sand and water.

f f' are a pair of power-pulleys hung beneath the upper beam of the frame A. The pulley *f* is by pitman *h* connected to a vertically-reciprocating frame C. The frame C is provided at both sides with guide-rods *b'*, which are guided in journals *a'* and embraced by spiral springs *i*, adjustable by means of nuts *i'*. To the frame C there are secured inwardly-projecting blocks *g*, that carry a plate *g'*, supported by intermediate springs. Beneath the plate *g'* are placed the plates or disks *k*, provided with bottle-retaining clamps *k'*. Each plate *k* is surrounded by an annular water-pipe *o'*, secured thereto by small angle-plates *j* and connected to the leader *o*. The plate *k* is held to the plate *g'* by a number of spring-pins *k²*. The bottles to be washed are reversed and are placed with their necks into notches *g²*, cut into the lower cross-piece of frame C. The bottoms of the bottles bear

against the lower faces of plates *k* and are held in place by the clamps *k'*, Figs. 1, 2, 4, and 6. Above the plate *g'* there is journaled in frame C a shaft *l'*, having handle *l*. This handle is thrown up to revolve the shaft *l'*. The latter is provided with a pair of eccentrics *l²*, which will depress the plate *g'*, and with it the plates *k*, to tightly lock the bottles in place. The box B, being filled somewhat less than half with sand and water, is now raised by means of handles *m* until funnels *h²*, secured within openings *h'* of frame C, reach nearly to the bottom of the box. In this position the box is retained by the automatic engagement of a bolt *m'* with a projection *m²* or in similar manner. The pulley *f* being now revolved, the frame C, with the bottles, will be rapidly reciprocated, so as to cause an intimate mixture of sand and water to be forced into the bottles from the funnels *h²*. This mixture will thoroughly clean the interior of the bottles. During the reciprocating motion of frame C the rods *b'* and springs *i* will prevent any jolting action of the frame. At the same time that the interiors of the bottles are thus cleaned their exteriors are also properly cleaned by the rapid motion of the bottles in the mixture of water and sand. The machine is now stopped, the handle *l* thrown up, and the box B lowered, so that the sand and water will run down from the bottles back into the box. A spring-bolt *n*, attached to the back of box B, Fig. 2, will simultaneously press against a spring-cock *n²* of the water-pipe *o²*, running up in column A' and connected to pipe *o*. Thus the cock is opened and fresh water is admitted into the annular tubes *o'*. These tubes are perforated, as at *p'*, Fig. 6, so as to discharge the water beneath inclined deflectors *p* uniformly against the sides of the bottles. This will properly rinse the bottles and remove any particles of adhering sand. (During the upward motion of the box the bolt *n'* clears the cock *n²*, as indicated by dotted lines, Fig. 2.) The attendant now throws upward a handle *q'*, that connects a pair of levers *q*, turning in journals *p²*. The levers will press inward a tube *s*, connected to the cock *r'* of water-pipe *s'* by a hose *r*. To the tube *s* are connected the tubes *t'*, reciprocating in housings *t* and having upwardly-turned discharge-nozzles *t²*. To these nozzles there

are attached covers u' , adapted to close the housings t when the covers are pressed against them. By the inward motion of tube s the nozzles t^2 are brought directly under the funnels h^2 . At the same time one of the levers q presses upward the cock r' to open the same and to admit fresh water through the parts s' $s' t^2$ and the funnels h^2 into the interior of the bottles, which will properly rinse the same.

After the interiors and exteriors of the bottles have thus been properly rinsed the handle q' is released, so that a spring q^3 contained within a tubular casing q^2 will throw the tube s outward, and the covers u' will close the housings t . At the same time the cock r' will be closed by leaf-spring q^4 . By depressing the handle l the eccentrics l^2 on shaft l' will permit the plate g' and the plates k to ascend. This will release the bottles, so that they may be withdrawn from their clamps k' and replaced by others. This box B is provided with an inclined partition w , Fig. 3, so as to concentrate the mixture of sand and water beneath the frame C. An overflow x permits any excess of water to escape. To render the frame C adjustable vertically to accommodate bottles of different heights, the shaft l' and blocks g are attached to rails c^{10} , dovetailed into the frame Fig. 5. These rails are vertically adjustable in the frame and may be locked in position by the screw-bolts h^{10} .

The advantages of this machine are that

the bottles will be thoroughly cleaned by a single introduction, that the manipulation is inexpensive, and that a large number of bottles can be cleaned by a single hand in a short time.

What I claim is -

1. The combination of frame A with vertically-movable box B and the independently-movable frame C, having clamps k' , tubes o' , and funnels h^2 , substantially as specified.

2. The combination of frame A with box B, having water-pipe t' , and with vertically-movable frame C, having plates $g' k$, clamps k' , and eccentrics l^2 for depressing plate g' , substantially as specified.

3. The combination of frame A and box B with the vertically-movable frame C, plates k , annular perforated tubes o' , deflectors p , clamps k' , and funnels h^2 , substantially as specified.

4. The combination of frame A, box B, and frame C with cock n^2 , bolt n' , and with the spring-cock r' , tubes $s t'$, and levers q for throwing the tubes inward and opening cock r' , substantially as specified.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN MASSON.

Witnesses:

FELIX S. JOHNSON,
GEO. E. JOHNSON.