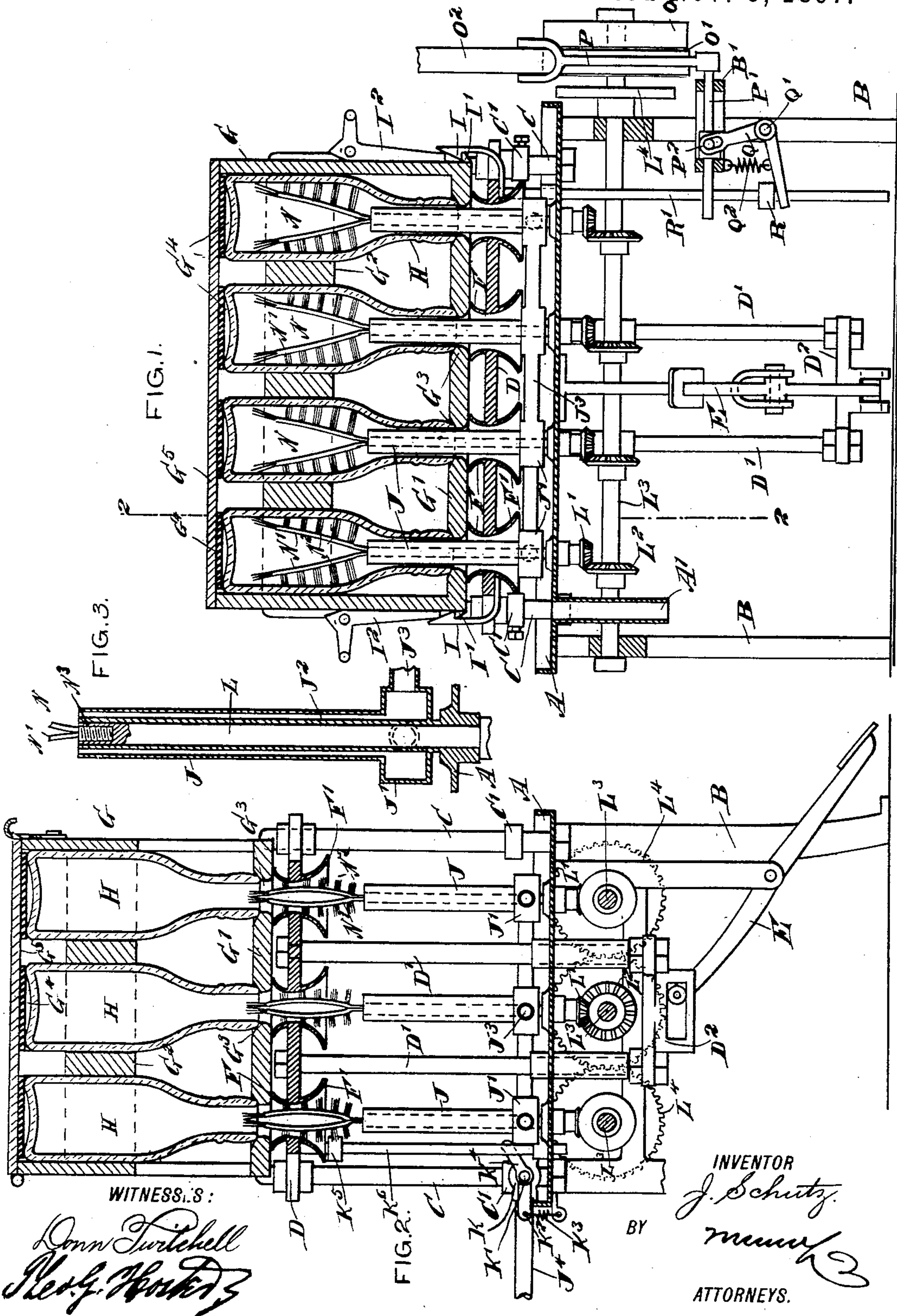


(No Model.)

J. SCHUTZ.  
BOTTLE WASHER.

No. 593,437.

Patented Nov. 9, 1897.





# UNITED STATES PATENT OFFICE.

JOHN SCHUTZ, OF NEW YORK, N. Y., ASSIGNOR TO JOHN SCHUTZ, THEODORE  
HAEBLER, AND PAUL LEID, OF SAME PLACE.

## BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 593,437, dated November 9, 1897.

Application filed September 4, 1896. Serial No. 604,853. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SCHUTZ, of New York city, in the county and State of New York, have invented a new and Improved  
5 Bottle Washing and Rinsing Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a  
10 new and improved bottle washing and rinsing machine which is simple and durable in construction and arranged to thoroughly and quickly clean and rinse a case full of bottles at one time.

The invention consists principally of a box  
15 adapted to contain the bottles to be cleaned and rinsed, a vertically-movable platform adapted to support said box and provided with fixed nozzles, fixed water-supply pipes extending through the said nozzles, revoluble  
20 shafts extending through the said fixed pipes and carrying at their upper ends cleaning devices projecting beyond the top of the said water-supply pipes and adapted to be closed by the said nozzles in the up-and-down move-  
25 ment of said platform, the cleaning devices being also adapted to pass into the bottles and clean the same.

The invention also consists of certain parts and details and combinations of the same, as  
30 will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indi-  
35 cate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1, and Fig. 3 is an enlarged sectional side elevation of the  
40 water-supply pipe and cleaning device.

The improved bottle washing and rinsing machine is provided with a tray A, mounted on suitable legs B and formed with a water-discharge pipe A' for carrying off the water  
45 and impurities washed out of the bottles. On the tray A are secured upwardly-extending guides C, on which is fitted to slide a platform D, provided with downwardly-extending rods D', connected with each other at their  
50 lower ends by a cross-piece D<sup>2</sup>, engaged by one end of a treadle E, under the control of

the operator's foot, to enable the operator to raise and lower the platform D, sliding on the guides C.

On the platform D are formed or secured  
55 upwardly-extending fixed nozzles F, continued at their lower ends into a bell-shaped mouth F', extending below the platform, as plainly indicated in Figs. 1 and 2. On the top of the nozzles F is adapted to rest the bot-  
60 tom G' of a box G, adapted to contain the bottles H to be washed and rinsed, said bottles being fitted loosely in an upside down position in a grate G<sup>2</sup>, held in the body of the box, with the mouth of the bottles resting in  
65 seats G<sup>3</sup>, formed in the bottom G' and registering with the nozzles F on the top of the platform D. The bottles H are held in position on the seats G<sup>3</sup> by rubber cushions G<sup>4</sup>, pressing on the bottoms of the bottles, the  
70 cushions being secured to the under side of a cover G<sup>5</sup>, hinged or otherwise attached to the box G.

In order to hold the box G in position on the top of the nozzles F, I provide spring-catches  
75 I, secured to the platform D and engaging projections I', formed or attached to the ends of the box G, as plainly indicated in Fig. 1. Levers I<sup>2</sup> are fulcrumed on the ends of the said box G to engage the catches I, so as to  
80 open the same and release the box G and permit the operator to remove the box whenever desired.

Through each of the nozzles F in the corresponding seat G<sup>3</sup> in the bottom G' is adapted  
85 to extend a fixed water-pipe J, connected at its lower end with a reservoir J', and provided with a concentric pipe J<sup>2</sup> to form a circular water-space for the passage of the water from the reservoir J' up through the pipe J and  
90 out at the upper end thereof. The pipes J J<sup>2</sup> and reservoir J' are secured on the top of the tray A, and the several reservoirs J' are connected by branch pipes J<sup>3</sup> with a general  
95 water-supply pipe J<sup>4</sup>, connected with a water-supply to allow water under pressure to flow through the pipes J<sup>3</sup> into the reservoirs J' and through the water-space through the pipes J into the bottles, as hereinafter more fully described.

In the water-supply pipe J<sup>4</sup> is arranged a  
100 valve K, carrying at its valve-stem K' an arm



K<sup>2</sup>, drawn on by a spring K<sup>3</sup> for holding the valve K normally in a closed position to shut off the water from the pipes J<sup>3</sup> and reservoirs J'. On the valve-stem K' is also secured a second arm K<sup>4</sup>, adapted to be engaged by a stop-collar K<sup>5</sup>, adjustably held on a rod K<sup>6</sup>, secured to the platform D and moving with the same, so that the platform upon descending causes the collar K<sup>5</sup> to engage the arm K<sup>4</sup> and impart a swinging motion to the valve-stem, so as to open the valve K and admit water to the pipes J. When the platform D rises, the collar K<sup>5</sup> moves out of engagement with the arm K<sup>4</sup>, and the spring K<sup>3</sup>, acting on the arm K<sup>2</sup>, causes an automatic closing of the valve K to shut off the water. The concentric pipe J<sup>2</sup>, previously mentioned, besides forming with the pipe J a water-space, also forms a bearing for a shaft L, carrying at its upper end a cleaning device N, projecting above the pipes J J<sup>2</sup>, the said cleaning device consisting of flexible arms N', provided with bristles N<sup>2</sup>, as shown in Figs. 1 and 2.

The flexible arms N' are attached or formed on a screw N<sup>3</sup>, screwing into the upper end of the shaft L, as indicated in Fig. 3. The threads of the screw N<sup>3</sup> run in an opposite direction to the movement of the shaft L, so that the screw N<sup>3</sup> is not liable to unscrew during the operation of the machine, but at the same time the screw permits of readily disconnecting the cleaning device from the shaft in case said cleaning device is worn out or broken and must be replaced by a new one.

The shaft L extends through the tray A, and on the lower end of the shaft is secured a beveled gear-wheel L', in mesh with a beveled gear-wheel L<sup>2</sup>, secured on a longitudinally-extending shaft L<sup>3</sup>, journaled in suitable bearings in the legs B. The several longitudinal shafts L<sup>3</sup> are connected with each other by gear-wheels L<sup>4</sup>, and one of said shafts is provided with fast and loose pulleys O O', connected by a belt O<sup>2</sup> with suitable machinery for imparting a rotary motion to the shaft L<sup>3</sup>, so that the several shafts are rotated and a rotary motion is simultaneously given to all the shafts L of the machine. A shifting fork P engages the belt O<sup>2</sup>, and the said fork is attached to a rod P', fitted to slide in suitable bearings B', attached to one of the legs B. (See Fig. 1.)

On the rod P' is held a pin P<sup>2</sup>, engaged by the slotted end of one arm of a bell-crank lever Q, fulcrumed at Q' on the leg B. A spring Q<sup>2</sup> draws on the other arm of the bell-crank lever, and this arm is adapted to be engaged by a stop-collar R, adjustably held on a rod R', secured to the platform D, so that when the latter moves into a lowermost position the stop-collar R engages the bell-crank lever and imparts a swinging motion thereto to shift the rod P' and the fork P to the left to move the belt O<sup>2</sup> from the fast pulley O upon the loose pulley O' and stop the rotation of the shafts L<sup>3</sup>, shaft L, and

cleaning devices N. When the platform D moves upward, the collar R moves upward from the bell-crank lever, and the latter is returned to its former position by the action of the spring Q<sup>2</sup>, so that the belt O<sup>2</sup> is shifted back to the pulley O.

The operation is as follows: In starting the machine the several parts are in the position shown in Fig. 2—that is, with the platform D in a raised position, with the valve K closed and with the belt O<sup>2</sup> on the fast pulley O to revolve the cleaning devices N. The cleaning devices at this time extend in the nozzles F and are held by the same in a closed position, as plainly indicated in Fig. 2, so that the operator can conveniently place the box G, filled with bottles H to be cleaned, upon the said nozzles, with the upper closed ends of the cleaning device extending through the seats G<sup>3</sup> into the mouth of the bottles. The operator now releases the pressure on the treadle E, so that the platform D, with its load, descends, and in doing so the cleaning devices N pass into the bottles and with their bristles engage and clean the inner surfaces of the bottles. During the descent of the platform D and its load the collar K<sup>5</sup> finally engages the arm K<sup>4</sup>, so as to partly open the valve K at the time the mouths of the bottles have passed upon the upper ends of the pipes J. Water now passes through the said pipes J into the bottles H to supply the brushes with water and insure a proper cleaning of the inner surfaces of the several bottles, it being understood that the cleaning devices still revolve and aided by the water can properly scrub the bottles to clean the same. When the platform D finally moves into a lowermost position, the stop-collar R actuates the bell-crank lever Q to shift the fork P, whereby the belt O<sup>2</sup> is moved from the fast pulley O and upon the loose pulley O', and the rotary motion of the cleaning devices N ceases. At the same time the stop-collar K<sup>5</sup> has opened the valve K below, so that a large amount of water under pressure flows into the bottles and rinses the same, the water after the rinsing process flowing out of the bottles H through the seats G<sup>3</sup> and through the nozzles F F' down upon the tray A, from which the water, with the impurities removed from the bottles, can pass through the outlet-pipe A' to a suitable place of discharge. When this has been done, the operator presses the treadle E, so as to again lift the platform D and move the same into an uppermost position. (Shown in Fig. 2.) The above operation can then be repeated, if desired, as many times as necessary to insure a perfect washing and rinsing of the several bottles H. When the washing and rinsing has been completed, the box G is removed from the machine and another box filled with bottles to be cleaned is placed on the nozzles F and the above-described operation is repeated. Thus it will be seen that a large number of bottles can be simultaneously thoroughly washed



and rinsed, it requiring but one attendant for the machine.

Having thus fully described my invention, I claim as new and desire to secure by Letters

5 Patent—

1. The combination of a supported tray, guide-rods arising from the tray, a platform sliding vertically on the guide-rods and moving toward and from the tray, rods in connection with the platform and movable through the tray whereby the platform is actuated, an additional rod in connection with the platform and moving therewith, a belt-shifter, and a spring-actuated bell-crank lever in connection with the belt-shifter and operated by the said additional rod as it moves with the platform, substantially as described.

2. In a bottle-cleaning machine, the combination of a supported tray, a platform moving vertically toward and from the tray, guides on which the platform slides, a rod connected to the platform, a treadle connected to the rod, an additional rod also connected to the platform, a bell-crank lever actuated by the rod when moving with the platform, and a belt-shifter in connection with the bell-crank lever, substantially as described.

3. A bottle-washing machine, having a mounted tray, cleaning devices carried on the tray, a platform mounted to move toward and from the tray, a box supported on the platform, two catches carried by the platform and engaging the box to hold the same in position on the platform, and a lever for each catch, the levers being fulcrumed on the box engaging the catches and being capable of disconnecting the catches and box upon the movement of the levers, substantially as described.

4. The combination of a platform, a box movable thereon, catches holding the box immovable on the platform, and levers fulcrumed on the box and forming handles by

which the box may be moved, the levers engaging the respective catches and being capable of releasing the catches as the levers are grasped to move the box, substantially as described.

5. The combination of a supported tray, a platform slidably mounted to move toward and from the tray, a rod in connection with the platform and moving therewith, a belt-shifter, and a spring-actuated bell-crank lever in connection with the belt-shifter and operated by said additional rod as it moves with the platform, substantially as described.

6. The combination of two parts having relative movement, a catch carried on one part and a projection on the other part and capable of holding the two parts in proximity to each other, and a handle pivotally carried on the latter part and engaging the catch and capable upon having pressure applied thereto of moving the catch to release the said parts and permit the relative movement thereof.

7. A bottle-washing machine having a mounted tray, a platform slidably mounted on the tray and moving toward and from the same, a box mounted on the platform, means for removably holding the box on the platform, the box having an orifice therein and being capable of carrying a bottle, a nozzle projecting through the platform and registering with the orifice in the box, a tube standing on the tray and in position to be received within the nozzle of the platform and within the orifice of the box as the platform moves toward the tray, an operated brush the shank of which runs through the tube, and means for feeding liquid to the tube, substantially as described.

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Witnesses:

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JNO. M. RITTER.