

No. 650,201.

Patented May 22, 1900.

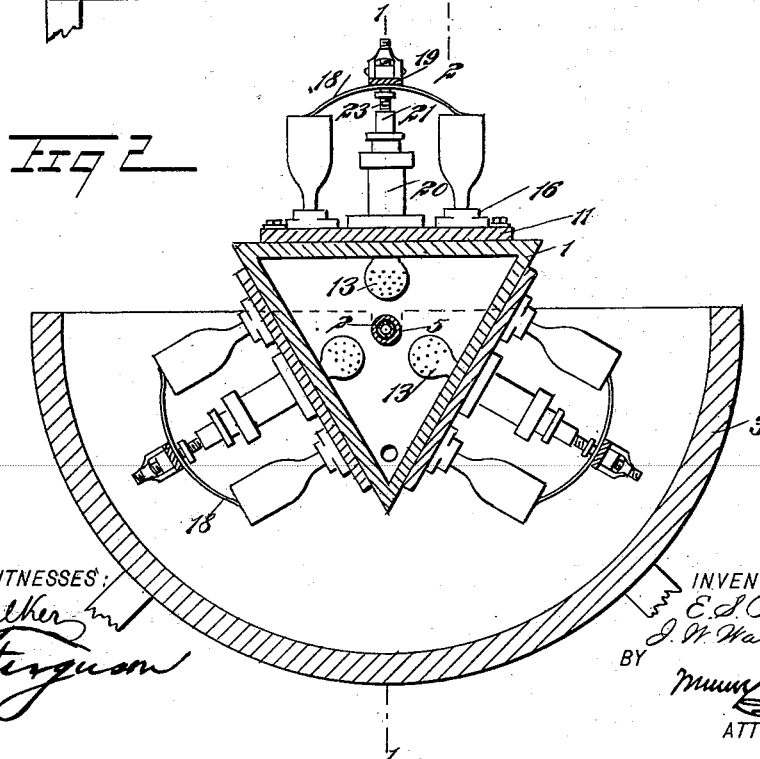
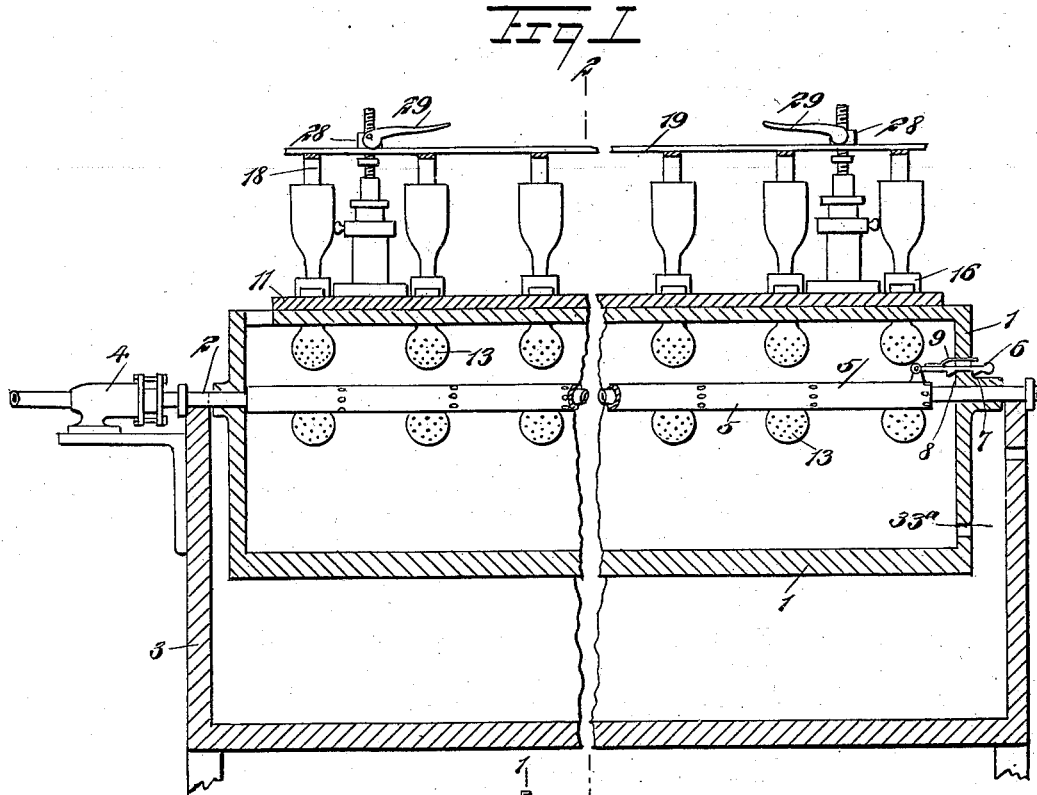
E. S. PURDY & J. W. WASHBURN.

BOTTLE WASHER.

(Application filed Sept. 19, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:
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BY *Munn*
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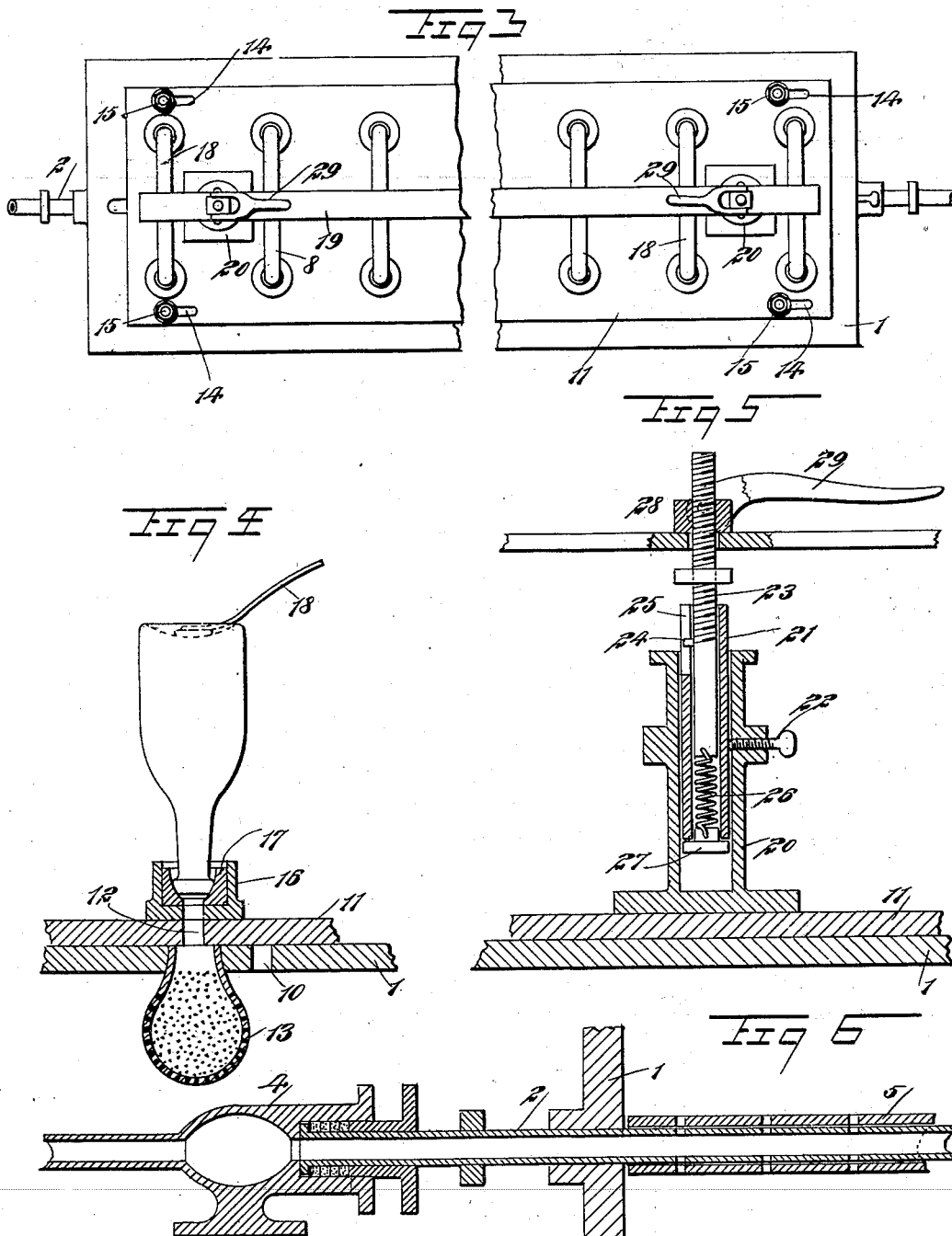
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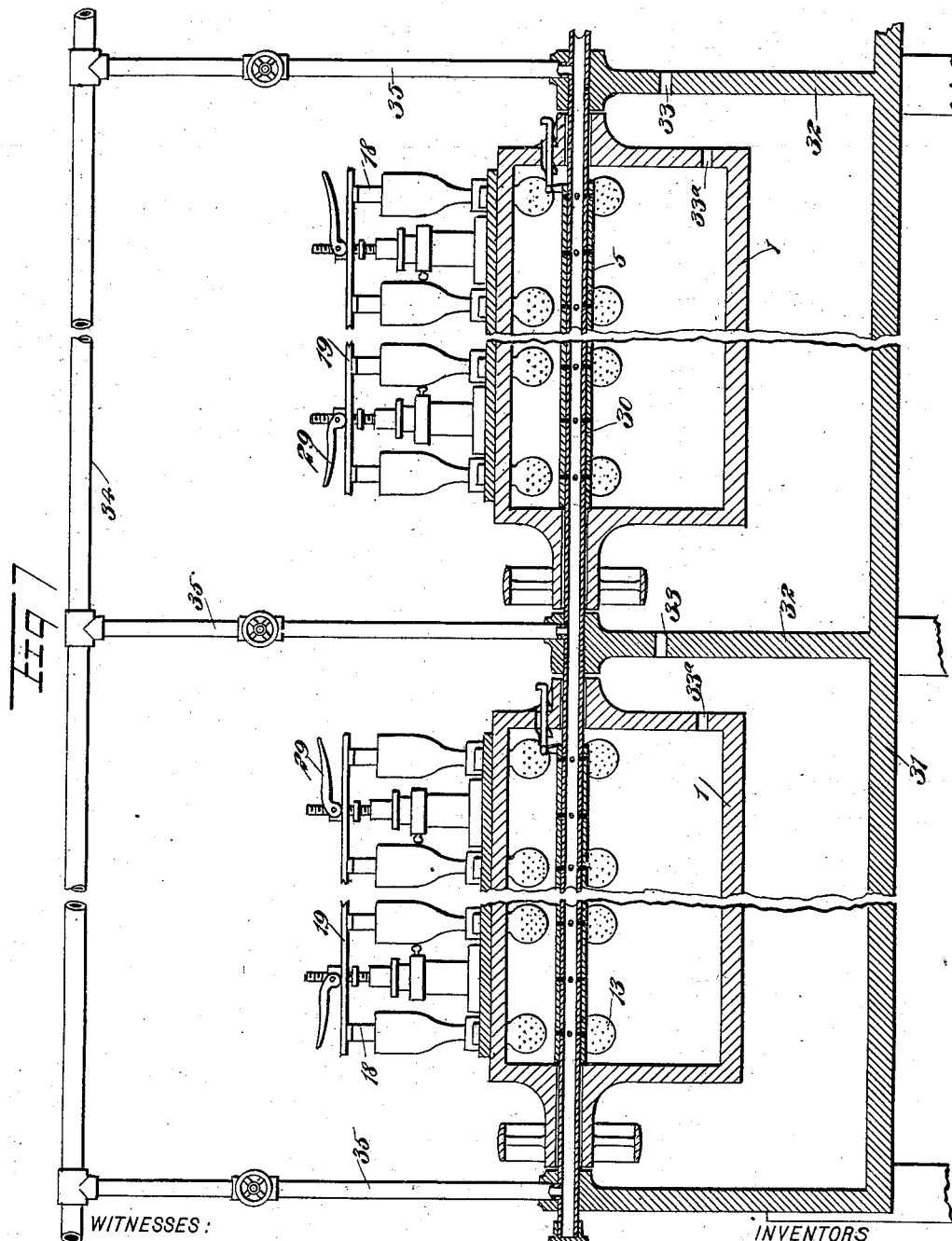
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UNITED STATES PATENT OFFICE.

EDMUND S. PURDY AND JESSE W. WASHBURN, OF PORTAGE, WISCONSIN;
SAID WASHBURN ASSIGNOR TO SAID PURDY.

BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 650,201, dated May 22, 1900.

Application filed September 19, 1899. Serial No. 730,998. (No model.)

To all whom it may concern:

Be it known that we, EDMUND S. PURDY and JESSE W. WASHBURN, of Portage, in the county of Columbia and State of Wisconsin, have invented a new and Improved Bottle-Washer, of which the following is a full, clear, and exact description.

This invention relates to improvements in machines for washing bottles of all kinds; and the object is to provide a machine for this purpose of simple construction and by means of which a number of bottles may by one operation be very rapidly and thoroughly washed both inside and outside.

We will describe a bottle-washer embodying our invention and then point out the novel features in the appended claims.

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

Figure 1 is a section, substantially on the line 1 1 of Fig. 2, of a bottle-washer embodying our invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a plan view of the bottle-carrier removed from the tub. Fig. 4 is a sectional view showing certain parts in position for discharging shot into the bottles. Fig. 5 is a sectional view of a clamp-supporting post employed. Fig. 6 is a section showing a water-supply pipe employed, and Fig. 7 is a section showing that a series of the machines may be placed in line in practically a single tub.

The washer comprises a water-tank 1, here shown as triangular in cross-section and adapted to support bottles on its three sides. The tank is mounted on a tubular shaft 2, having perforations through it within the tank. This shaft has bearings in the end walls of a tub 3, and at one end it has rotary connection with a chambered block 4, designed to be connected with a water-supply pipe.

Surrounding the shaft 2, within the tank 1, is a cut-off for the perforations in the tubular shaft. This cut-off consists of a sleeve 5, provided with perforations and mounted to slide longitudinally of the shaft 2. At one end a draw-rod 6 has connection with the sleeve 5, said draw-rod extending through an

opening in an end wall of the tank. This draw-rod is provided with lugs 7 and 8, either one of which is designed to engage with the outer surface of the end wall. To hold the sleeve 5 in either of its adjusted positions and to prevent accidental detachment of the draw-rod from its engagement with the tank, we employ a spring 9, attached at one end to the rod 6 and engaging with the upper wall of the opening through the end wall of the tank. By moving the sleeve 5 in one direction it is obvious that the perforations through it may be put in register with the perforations of the tubular shaft, so that water may pass from the shaft into the tank; and when a sufficient amount of water shall have been supplied to the tank the sleeve may be moved to close the perforations through the shaft. This sleeve is particularly useful when several machines are connected, as in Fig. 7. Each side of the tank 1 is provided with water-outlet ports 10, equal in number to the number of bottles designed to be supported on the side, and mounted to slide in each flat side of the tank is a controlling-plate 11, provided with ports 12, designed to be placed in communication with the ports 10 and also designed to be placed in communication with shot-pockets 13, supported in the inner side of the tank and opening through the sides thereof. The said shot-pockets are perforated to allow water to flow therein to wash the shot and furnish water for the shooting. The controlling-plate 11 is provided at its ends with slots 14, through which bolts from the tank pass, and at the outer ends these bolts are provided with clamping-nuts 15. Obviously by this construction the plates 11 may be moved to place the proper ports in communication. Mounted on the plate 11 at each port 12 is a boxing 16, within which is a rubber gasket or cup 17 to receive the mouth end of a bottle. An opening is provided through the bottom of the gasket or cup and through the bottom of the boxing 16 to communicate with the port 12.

The bottles are held in position by means of springs 18, attached to a bar 19, extending longitudinally of the tank. Each spring is connected at its center with a bar 19, so that each of its opposite ends may be engaged with

a bottle, as clearly indicated in the drawings, which show the two rows of bottles supported on each side of the tank.

Secured to the regulating-plates 11 are adjustable posts, each one consisting, as here shown, of a tubular section 20, attached to the plate 11, and a tubular section 21, movable longitudinally in the section 20 and held as adjusted by means of a set-screw 22. Movable yielding in the section 21 is a screw-threaded rod 23, which at one side has a lug 24, movable in a slot 25, formed in one side of the tubular section 21, and the lower end of the rod 23 is connected, by means of a spring 26, with a block 27, engaging with the lower end of the post-section 21. The rods 23 pass loosely through openings in the bar 19, and a nut 28 on each screw-rod engages with the top side of the bar 19, and eccentrically pivoted to each nut 28 is a clamping-lever 29, adapted to engage with the upper side of the bar 19. By this construction it is obvious that the holding means may be adjusted for different sizes or lengths of bottles. Upon loosening the levers 29 the bars carrying the springs 18 may be moved, so that the bottles may be placed in position with their mouth ends engaging in the gaskets 17. Then after moving the bars 19 so that the springs engage against the bottoms of the bottles the levers 29 are to be turned downward to clamp the bars 19, and consequently clamp the bottles in position. By employing the springs 18 in connection with the spring 26 there will be no danger of breaking the bottles and they will allow for variations in the length of bottles.

In Fig. 7 we have shown a series of tanks 1, each independently mounted to rotate on a fixed tubular perforated shaft 30. Each tank is arranged in a section of a tub 31, divided by partitions 32, the partitions being provided near the top with ports 33, through which water may flow from one section to another. It may be here stated that each tank is provided with an outlet-port 33^a, through which water is supplied to the tub. Water is supplied to the tank from a main pipe 34 through valved branch pipes 35, leading into the perforated shafts. By this construction one or more tanks may be at rest for receiving a new charge of bottles, while the others are in operation.

In the operation of the machine the operator first disengages the levers 29, thereby allowing the bottles to be placed in position, as shown in Fig. 1, each side of the tank or tanks being filled for the same number of bottles, and when each side is filled or such number less, as desired to be washed, are in place, the levers 29 are thrown down, thus holding the bottles in place. The slide 11 is thrown so as to open the port 10 and give free passage of water from the tank to the bottles. After necessary rotation for rinsing the slide 11 is thrown so that the port 12 is in communication with the shot-pocket 13, which allows a

free communication of the shot with the full length of the bottles at each revolution of the tank. The perforation of the shot-pockets allows sufficient water for shotting purposes. After the bottle has been sufficiently shotted the slide 11 is so placed as to place the port 12 in communication with the port 10, at the same time closing the shot-pocket and allowing the free flow of fresh water for final rinsing of the bottle. During the above operation of shotting and rinsing the outside of the bottle is thoroughly washed by the revolution of the tank 1 in the tub 3. To empty the machine, we proceed in the same manner as in filling—viz., lift the levers 29 and remove the bottles.

In connection with the above description we beg to state that where a water-motor is used for power the water used by it is used by the washer, and the entire bottle is washed inside and out with the supply of water used for power by the machine.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A bottle-washing machine, comprising a tank mounted to rotate and having ports in its sides, shot-carrying pockets arranged in said tank and having outward openings, plates movable on the outer side of the tank and having ports adapted to be placed in communication with the ports of the tank, and also in communication with the perforated shot-pockets, boxes arranged at the ports through the controlling-plate, for receiving the mouth end of the bottles, and clamping devices for the bottles, substantially as specified.

2. A bottle-washing machine, comprising a tank triangular in cross-section, a tub in which the tank is mounted to rotate, a plate mounted to slide on each surface of the tank, and having ports adapted to be placed in communication with ports through the sides of the tank, shot-pockets arranged within the tank, and opening outward to be placed in communication with the ports through the sliding plates, devices for receiving the mouth ends of bottles placed at the ports in the plates, and spring-yielding holding devices for the bottles, substantially as specified.

3. A bottle-washing machine, comprising a tub, a tank mounted to rotate in said tub, a tubular perforated shaft extended through the tank, a perforated sleeve mounted to move longitudinally on said shaft, means for holding said sleeve as adjusted, and means for supporting bottles on the tank for receiving water therefrom, substantially as specified.

4. A bottle-washing machine, comprising a tank mounted to rotate, shot-holding pockets arranged in said tank and opening outward through the same and means for closing said openings while opening other ports through the tank-walls, substantially as specified.

5. A bottle-washing machine, comprising a tank mounted to rotate, means for supplying water to said tank, bars adjustably supported on the tank, and springs connected to said bars for engaging with the bottom of bottles, substantially as specified.

6. A bottle-washing machine, comprising a series of tanks arranged longitudinally on a continuous tubular shaft, means for rotating each tank one independently of the other on the shaft, each of said tanks having discharge-ports for discharging water into bottles, shot-holding pockets supported in each tank and having outward openings, and means for controlling the openings and ports one being opened while the other is closed, substantially as specified.

7. In a bottle-washing machine, a bottle-holding device, comprising posts consisting of tubular telescopic sections supported on the tank of the machine, screw-rods yieldingly

mounted in the inner sections of the posts, bars through which said screw-rods pass, nuts on the screw-rods, clamping-levers pivoted to the nuts, adapted for engagement with the bars, and springs attached to said bars for engaging with the bottom of bottles, substantially as specified.

8. In a bottle-washing machine, a tub, a tank mounted to rotate in said tub, the said tank being triangular in cross-section, means for supplying water to the tank, means within the tank for cutting off said supply of water, and means for supporting bottles on the tank for receiving water therefrom, substantially as specified.

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Witnesses:

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