

A. WOLFENSBERGER.
BOTTLE RINSING MACHINE.
APPLICATION FILED APR. 26, 1909.

Patented Sept. 21, 1909.
2 SHEETS—SHEET 1.

934,870.

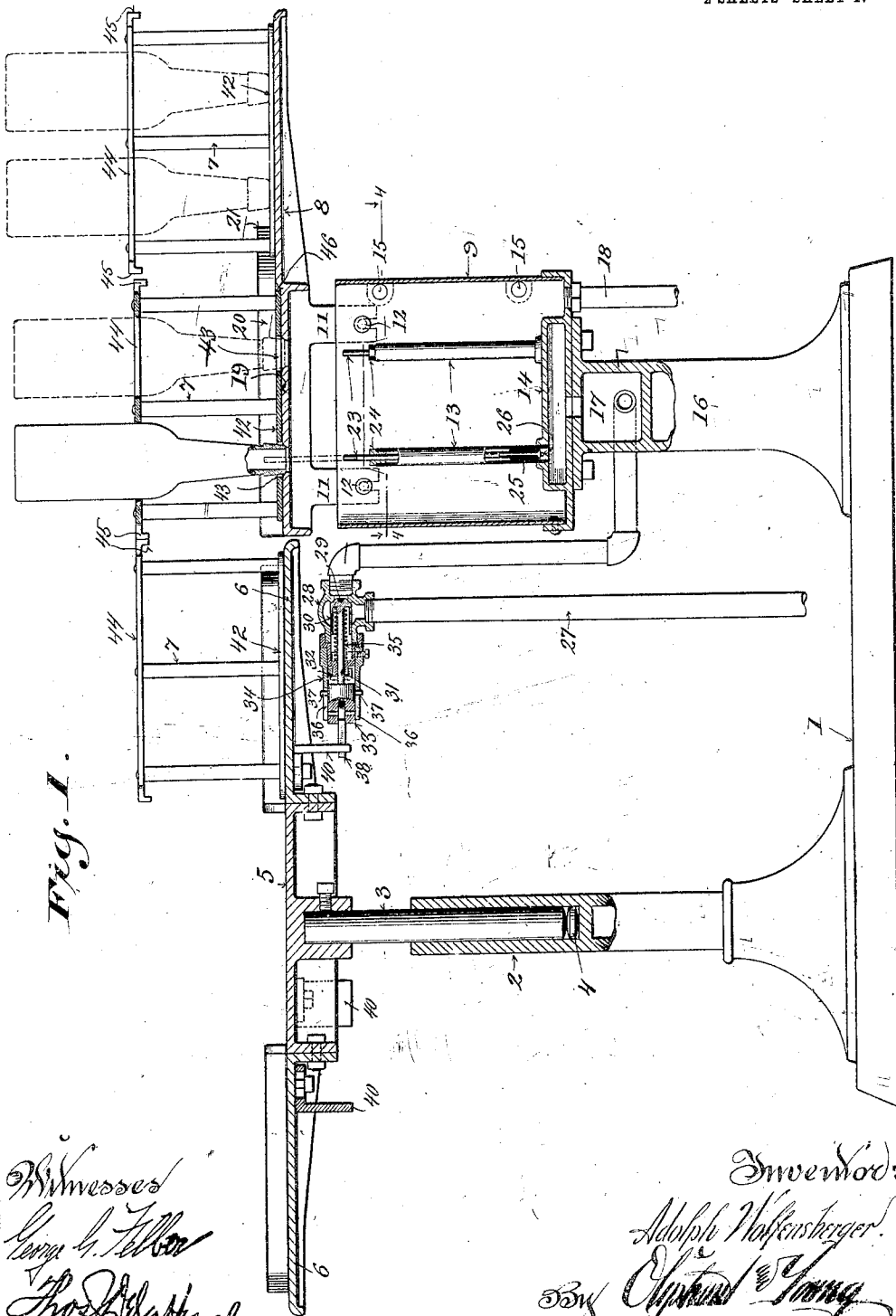


Fig. 1.

Witnesses
George L. Filler
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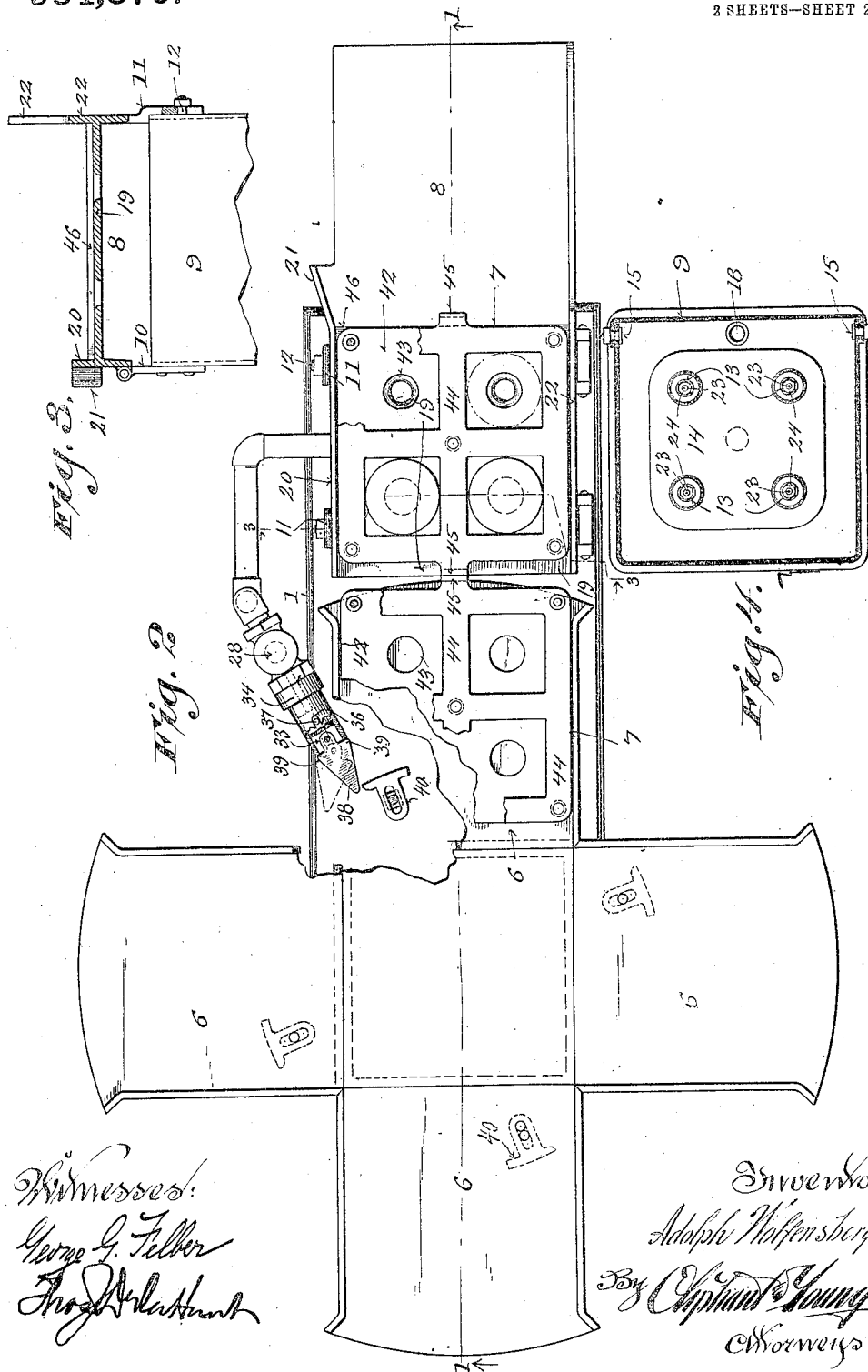
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UNITED STATES PATENT OFFICE.

ADOLPH WOLFENSBERGER, OF MILWAUKEE, WISCONSIN.

BOTTLE-RINSING MACHINE.

934,870.

Specification of Letters Patent. Patented Sept. 21, 1909.

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To all whom it may concern:

Be it known that I, ADOLPH WOLFENSBERGER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Bottle-Rinsing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a simple, economical and rapid rinsing machine for bottles or the like, its arrangement and construction being such that a tray of bottles may be readily adjusted over a stationary series of spray-nozzles constituting a fixed rinser, the water-supply to the spray-nozzles being controlled by a rotatory table, incidental to movement thereof, by the operator, which movement carries off a tray of bottles from the stationary rinser that had previously been operated upon by said rinser.

The invention therefore consists in certain peculiarities of construction and combination of parts as hereinafter fully set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1, represents a longitudinal sectional view of a rinsing-machine embodying the features of my invention, the section being indicated by line 1—1 of Fig. 2; Fig. 2, a plan view of the same with parts broken away and parts in section to more clearly show certain structural features; Fig. 3, a detail cross-section of the tray-supporting table illustrating the method of attaching the same to the rinser-mechanism; the section being indicated by line 3—3 of Fig. 2, and, Fig. 4, is a cross-section on line 4—4 of Fig. 1, illustrating the incased spray-nozzles in plan.

Referring by numerals to the drawings, 1 represents a base provided with a hollow standard 2, into which standard is loosely mounted a spindle 3, the lower end of the spindle being supported by an anti-friction button 4. The spindle 3 supports a rotatory table 5, which table, as best shown in Fig. 2, is provided with a plurality of wings 6, having parallel flanged edges that serve as guides for bottle-trays 7, the flanges of the wings being flared at their outer terminals in order to more readily guide the bottle-trays as the latter are slid upon the wings from a stationary table 8. The stationary table 8 is supported by a housing 9, being hinged to straps 10, which straps are secured to one

side of said housing. The stationary table is supported upon the opposite side of the housing, by means of feet 11, which feet have slotted ends that engage bolts 12 extending from the said housing, the bolts being provided with suitable nuts, as shown.

The housing 9 serves as a water-tight shield for a series of spray-nozzles 13, which nozzles project from a central water-chamber 14 formed in the base of the housing, one side of the latter being detachably secured by bolts 15, whereby access may be had to the spray-nozzles. The hinge-connection between the stationary tray 8 and housing is also provided for the purpose of convenience in reaching the spray-nozzles in case of repairs, the said table being simply swung back upon its hinges after loosening the nut and bolt connection which serves as a clamping means for the feet 11. The housing is supported by a hollow column 16, which extends from the base 1, the upper part of the column being provided with a water-cavity 17, which communicates with the chamber 14 of the spray-nozzles, there being a drain-pipe 18 leading from the base of the housing to a suitable waste. The face of the stationary table 8 is formed upon two planes, the lower plane 19 being apertured to correspond with the series of spray-nozzles thereunder, the apertures and nozzles being alined. A flange 20 projects from the upper face 19 of the table having a flared rear terminal 21 which projects rearward and partly over the upper plane of the table. The opposite side of the table 8 is also provided with a flange 22, which flange rises in width at a point starting from the lower plane 19 and extends backward to the rear edge of said table.

Each spray-nozzle 13 is provided with an internal telescopic tube 23, being guided in the upper end of the spray-nozzle by means of a gland 24, while the lower end of said tube is expanded to form a piston-head 25, which normally rests upon a cross-pin 26 fast in the outer shell of the spray-nozzle, as shown in Fig. 1, of the drawings. A water-supply-pipe 27 is connected to a valve 28, which valve is radially disposed with relation to the rotary table axis, being located directly under the face of said table. An outlet-port of this valve is in pipe-connection with the water-cavity 17 of the hollow column 16, the port being controlled by a valve closure 29, which closure is pre-

vided with a sleeve-extension 30, having its bearing in the valve-casing. A valve-stem 31 projects from the valve-closure and extends through a stuffing-box 32, the end of the valve-stem being provided with a cylindrical head 33, which head is guided in a shell 34 secured to the valve-casing, there being a coil-spring 35 surrounding the valve-stem within the valve-casing, which spring is arranged to exert a closing-pressure upon the valve-closure. The head 34 is provided with lateral slots 36, which serve as guides for a pin 37 that extends from the head 34. The end of the head 34 is also slotted for the reception of the shank of a tappet 38, the shank-portion of which tappet is fulcrumed in the head, there being shoulders 39 extending from the shank-portion of said tappet arranged to impinge against the end of the shell 34.

Secured to the underside of each of the wings 6 of the rotatory table is an adjustable wiper 40, which wipers are arranged to engage the tappet 38 as the table is revolved, causing the said tappet shoulder 39 to rock upon the end of the shell and thereby open the outlet-port from the valve 28 to admit water to the spray-nozzles. The adjustment of the wipers 40 with relation to the tappet-end thus controls the interval of time in which the valve is held open.

The upper faces of the rotatory table wings as shown are upon the same plane as the lower face of the fixed table 8, whereby the bottle trays 7 containing rinsed bottles may be slid from the stationary table to a wing of the rotatory table alined therewith. The bottle-trays 7 may be of any desired construction and form no part of my invention, except that it is necessary that their base-plates 42 are provided with apertures 43 through which the inverted mouths of the bottles are arranged to extend, being fitted therein. The rack-portion 44 of the bottle-trays, which support the bodies of the bottles, have lug-extensions 45 at either end thereof, which extensions serve, when engaged by an alined tray to push the same forward.

In operating my device, one operator places a tray of bottles upon the rear portion of the table 8, adjusting it firmly against the flange 22. The tray is then pushed forward between the flanges 20 and 22, until such time as it drops upon the lower plane 19 thereof, the operator then draws the tray rearward until the rear edge of its base-plate 42 engages the shoulder 46 formed between the upper and lower planes of said table. In this position, the mouths of the bottles are in register with the apertures in the lower plane of the table, in which apertures they drop slightly and seat therein. The operator who receives the cleansed bottles from the rotatory table, now

gives said table a quarter turn in order to bring one of its wings in alinement with the stationary table 8, this movement causing the valve 28 to be opened by one of the wipers 40. Water being admitted to the spray-nozzles causes the telescopic tubes therein to rise and enter the necks of the bottles and thoroughly spray the same by the jets of water discharged through said tubes. As the wiper passes the tappet 38, the valve is closed and a wing of the table being now alined with the stationary table, the operator who feeds the bottles to the rinser, now places another tray upon the rear end of table 8 and pushes the same forward to its rinsing position previously described, this action causes the lug-extensions 45 of the tray previously acted upon by the rinser to be engaged by the lug 45 of the rear tray, the engagement thus forces the tray of rinsed bottles from the rinsing table 8 to the wing 6 of the rotatory table, and the receiving operator then rotates the table as before mentioned, removing a tray of rinsed bottles after each operation, thus the bottles may be quickly and thoroughly cleansed with the greatest possible speed.

By using a rotatory table or other form of movable conveyor to carry off the rinsed bottles from a fixed rinsing mechanism, I avoid complications in the water-connections employed in rotary rinsers, it being necessary in such rinsers to provide ground-joint connections of some form between the water-supply pipe, which is fixed and the rotatory spray-nozzles. And while I have shown and described wipers in connection with the conveyor or rotatory table for actuating the water-supply valve, in some instances this valve may be twisted outwardly from the position as shown in Fig. 2, so as to be actuated by vertically reciprocative bottle-washing machines of any well known construction, which machines are commonly placed adjacent to a rinser. In this case, the tappet 38 in place of being arranged to operate horizontally would be twisted so as to operate in a vertical direction, thereby conforming to the vertical movement of the bottle-washer. Furthermore in providing a conveyor for carrying off the bottles from the rinser in a rotary form, in place of rotating the rinser, the friction of the rotatory member is thereby reduced to a minimum, which friction in a rotatory rinser is detrimental and requires a greater expenditure of power and also constant care in adjusting the ground-joint connection before mentioned that are necessary in the class of rotatory rinsers.

I claim:

1. A rinsing-machine comprising a base having a water-chamber supported thereon and in fixed relation thereto, spray-nozzles extending from the water-chamber, a hous-

ing surrounding the spray-nozzles, a fixed table disposed above the spray-nozzles having apertures therein alined with the aforesaid nozzles, the face of the table being divided into two planes, the lower plane of which face contains the apertures, guide flanges extending from the edges of the table, and a controlling valve in connection with the water-chamber; the combination of a series of slidable bottle-trays and engaging lugs in connection with the trays, whereby the forward tray is displaced by the succeeding tray, when the latter is moved upon the table to a centering position relative to the spray-nozzles.

2. A rinsing machine comprising a base having a water-chamber supported thereon and in fixed relation thereto, spray-nozzles extending from the water-chamber, a housing surrounding the spray-nozzles, a hinged table disposed above said spray-nozzles having apertures therein alined with the aforesaid nozzles, and a controlling valve in connection with the water-chamber; the combination of a series of trays arranged to have slidable engagement with the table, and means in connection with the table for centering the bottle-trays relative to the spray-nozzles.

3. A rinsing-machine comprising a series of rigidly supported spray-nozzles and a water-chamber common to all nozzles, a valve in connection with the water-chamber, a fixed table disposed above the spray-nozzles having apertures therein alined with said nozzles; the combination of a series of slidable bottle-trays arranged to have engagement with the fixed table, means in connection with the fixed table for centering

the bottle-trays relative to the spray-nozzles, a rotatory conveyer having horizontal faces upon a plane common to the fixed table and adapted to travel past the adjacent edges of the fixed table, and means in connection with the conveyer for controlling the water-supply valve incidental to movement of said conveyer.

4. A rinsing machine comprising a series of rigidly supported spray-nozzles and a water-chamber common to all nozzles, a valve in connection with the water-chamber, a fixed table disposed above the spray-nozzles having apertures therein alined with said nozzles; a tappet in connection with the valve; the combination of a series of slidable bottle-trays arranged to have engagement with the fixed table, and means in connection with said fixed table for centering the bottle-trays relative to the nozzles, a rotatory conveyer, tray-supporting wings in connection therewith and arranged to travel past the adjacent edge of the fixed table with which said wings are alined for the reception of trays discharged from the stationary table, and wipers in connection with said rotatory conveyer for engagement with the valve-tappet incidental to movement of any one of the conveyer wings past the adjacent edge of the aforesaid fixed table.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

ADOLPH WOLFENSBERGER.

Witnesses:

GEO. W. YOUNG,
GEO. G. FELBER.