No. 769,238. PATENTED SEPT. 6, 1904.

A. SATTERFIELD.

TUMBLER WASHER.

APPLICATION FILED NOV. 9, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

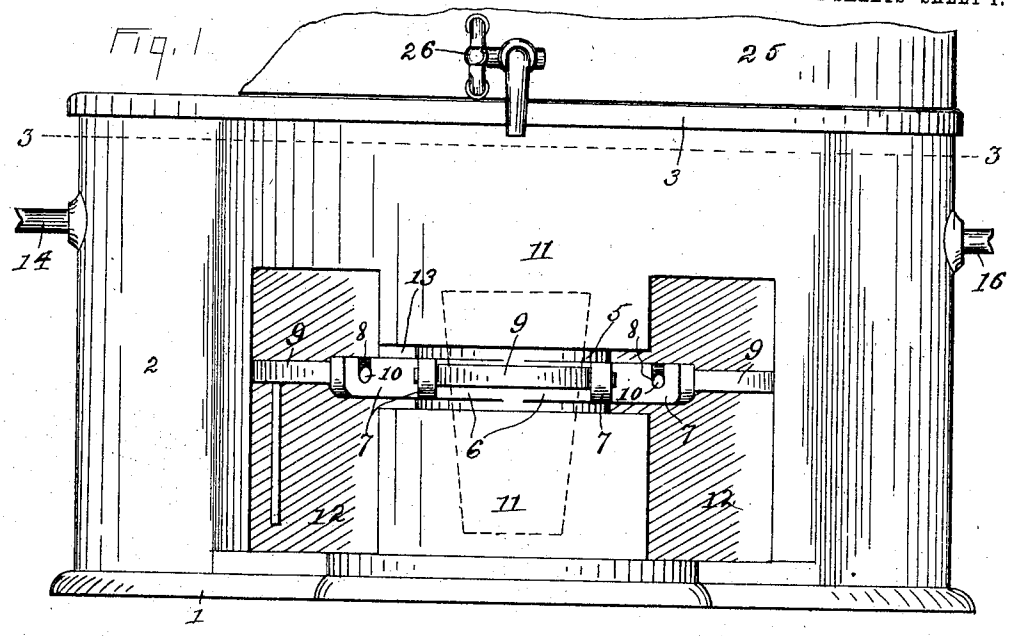
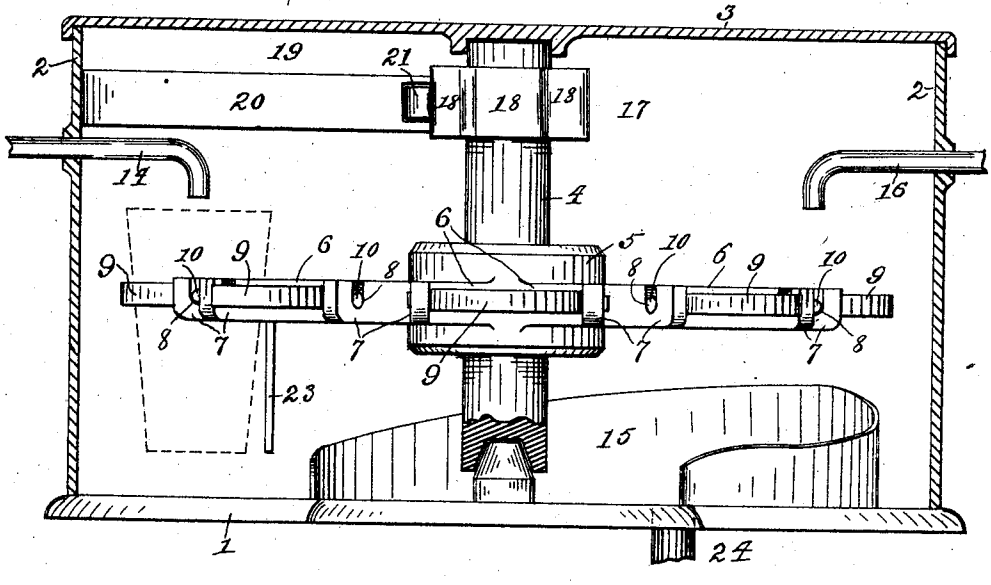


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

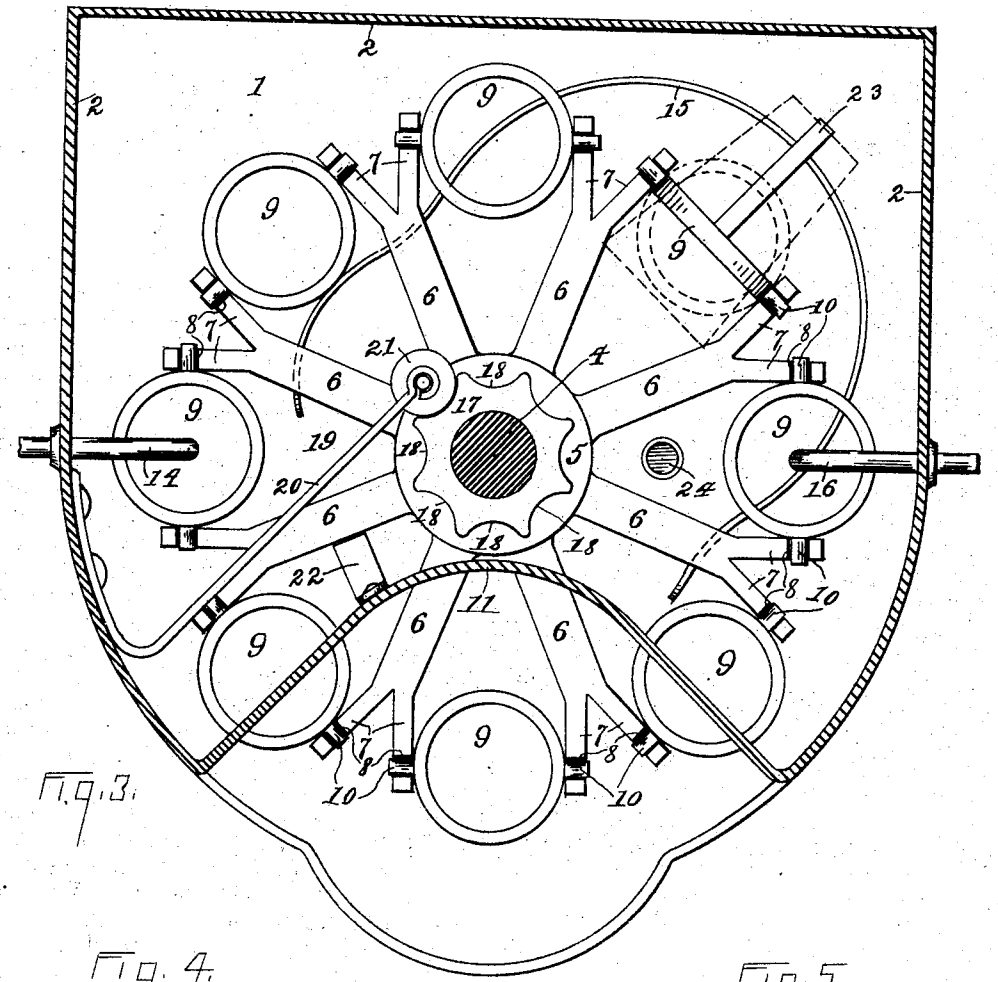
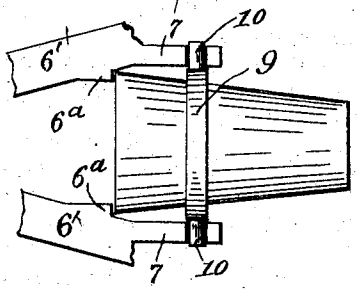


Fig. 3.

Fig. 4.

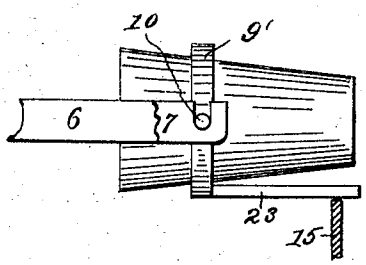


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Fig. 5.



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No. 769,238. Patented September 6, 1904.

UNITED STATES PATENT OFFICE.

AZ SATTERFIELD, OF KNOXVILLE, TENNESSEE.

TUMBLER-WASHER.

SPECIFICATION forming part of Letters Patent No. 769,238, dated September 6, 1904.

Application filed November 9, 1903. Serial No. 180,335. (No model.)

To all whom it may concern:

Be it known that I, AZ SATTERFIELD, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Tumbler-Washers, of which the following is a specification, reference being had to the accompanying drawings.

My improvement relates to the class of tumbler-washers which are mainly automatic in their operation.

The object of the invention is to provide an apparatus adapted to hold a series of tumblers, from which series one tumbler may be taken and used and restored to its place and the next in the series then taken and used, while that previously used is moved to and operated upon by special washing mechanism.

In the accompanying drawings, Figure 1 is a front elevation of an apparatus embodying my improvement. Fig. 2 is a view of the same structure with the front portion of the casing cut away. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a detail plan of one of the tumbler-holders. Fig. 5 is a detail side elevation of one of the tumbler-holders.

The apparatus has a case or housing consisting of the base 1, upright walls 2, and the top 3. It is to be understood that this portion of the structure may be modified or varied to any desired extent. Within this case is a rotary tumbler-support or turn-table adapted to hold any suitable number of tumblers. The support shown in the drawings is adapted to receive eight tumblers. Said support always presents one tumbler outside of the case, and at one point within the case the tumblers are brought one at a time beneath a water-nozzle, and at another point the tumbler is tilted to discharge the water which it received from said nozzle, and the tumbler is thereafter restored to the upright position. As shown in the drawings, said turn-table consists of a vertical shaft 4, a hub 5, and eight radial spider-arms 6, located in the same horizontal plane and equally spaced around said hub and of equal length. The outer end of each of said arms is bifurcated to form two subarms 7, and each of said subarms is provided with a horizontal bearing 8. In the space between the adjacent arms 6 is located a ring 9, having at each side a journal 10, extending into the adjacent bearing 8. Said construction adapts said ring to be rotated upon said journals. The interior diameter of each of said rings is such as to adapt it to receive a tumbler and engage the latter when the greater portion thereof is below said ring to the end that the weight of the tumbler will normally hold the tumbler in the upright position and the ring in the horizontal position, as shown by dotted lines in Figs. 1 and 2. The front of the wall 2 is provided with a recessed or re-entering portion 11, said portion of the wall extending far enough rearward to cross the annular path traversed by the tumblers when the turn-table is rotated. Said portion 11 of the wall is provided with upright openings 12 in the path of said tumblers and of proper size to permit the passage of the tumbler in the upright position, and extending from one to the other of said openings 12 said wall is provided with a horizontal slot 13 for the passage of the spider-arms 6. The normal radial position of the turn-table is preferably such as to place one of the rings 9 at the middle of the front of the apparatus, as shown in Fig. 3, and the places to be occupied by the rings may be called "tumbler-stations." A nozzle 14, leading from a suitable source of water-supply, extends through the case and is directed downward above one of the tumbler-stations within the case, preferably above a station to which the tumblers come soon after entering the case. In the drawings said nozzle is shown as located above the second station from the front. Farther on in the course taken by the tumblers (assuming that the rotation of the holder is clockwise) there is a cam 15 for tilting the tumbler into the horizontal position to discharge the water recived from the nozzle 14. Obviously said cam may be of any suitable form and supported in any suitable manner. The drawings show it in the form of a piece of sheet metal rising from the base 1, its beginning being between the path of the tumblers and the shaft 4, and extending thence gradually across said path and to a sufficient height to move the lower end of the tumbler

outward and upward until the horizontal position is assumed, as shown in Figs. 3, 4, and 5. Thence the cam again extends downward and toward the shaft 4, so that the lower end of the tumbler may again descend and restore the tumbler to the upright position. Following said cam a nozzle 16, communicating with any suitable source of air-supply, may extend through the case and downward above one of the tumbler-stations. The purpose of said nozzle is to blow air into the tumbler for the evaporation of any liquid adhering to the interior of the tumbler after the latter has been tilted by the cam 15.

With the turn-table I combine means for determining the positions in which it may stop. For such purpose I use an indented wheel 17 and a yielding presser 19. Said wheel surrounds the upper portion of the shaft 4 and is immovably secured thereto, and it has equally-spaced indentations or yielding presser-engaging devices 18 corresponding in number to the number of rings 9. The presser 19 consists of a blade-spring 20 and an antifriction-roller 21. One end of said blade-spring is secured to the wall 2, and the other end bears said roller in proper position to press it into one of the indentations 18 on the wheel 17 when one of the rings 9 is at the middle of the front of the apparatus. When the turn-table is turned forcibly by engaging the arms 6, which are exposed within the recessed portion 11 of the case, the roller 21 is pressed outward until it passes into the next indentation. When the support is then released by the hand of the operator, the roller will press against the nearest lateral face of said indentation and turn the turn-table in the direction of said face until said roller bears equally upon the two lateral faces of said indentation. In other words, said roller turns the turn-table until said roller becomes "centered" in said indentation. Thus said presser mechanism performs the function of fixing the tumbler-stations. To prevent the turn-table from rotating in the reverse direction, I place a spring-pawl 22 on the inner side of the wall of the part 11 of the case, the free end of said pawl pointing in the direction of movement of the adjacent arm 6 and extending into the path of the arms and adapted to be pressed upward by the passing arm and then descend behind said arm and oppose its reverse movement.

Instead of requiring an engagement between the lower portion of the tumbler and the cam 15 an arm 23 may extend downward from the inner portion of the ring 9 a sufficient distance to be engaged by said cam. Obviously this portion of the structure may be further modified.

By reference to Fig. 3 it will be observed that the space between the arms 6 converges from the subarms 7 toward the hub 5, and these parts are so proportioned as that when the tumbler is brought into the horizontal position the rim of the tumbler will rest against said arms 6 either while the tumbler is in its normal position within the ring 9′ or after it slips slightly toward the shaft 4. Thus said arms 6 constitute stops for preventing the dislodgment of the tumbler from its ring.

In Fig. 4 the arms 6′ are provided with shoulders 6^a, against which the tumbler may bear when tilted.

The liquid poured from the tumbler when the latter is tilted by the cam 15 and the overflow and waste from the nozzle 14 fall upon the base 1 of the case and discharge through a waste-pipe 24.

This apparatus may be combined in any desired manner with other apparatus for the serving of liquids into the tumbler at the front station. A tank 25 may be located on top of the case 1 2 3, and a faucet 26 on said tank may be located directly over said front station. I contemplate also using my apparatus in connection with an automatic liquid-vending apparatus, which is to be described in another application for Letters Patent.

I claim as my invention—

1. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, and means for tilting said tumbler-receiving members, substantially as described.

2. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, and a cam for tilting the tumblers, substantially as described.

3. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving rings arranged upon said turn-table, and means for tilting said rings, substantially as described.

4. In a tumbler-washer, a turn-table having, concentric to its axis, a series of equally-spaced yielding presser-engaging devices, a yielding presser to be engaged by said engaging devices, a series of hinged tumbler-receiving members arranged upon said turn-table, and means for tilting said tumbler-receiving members, substantially as described.

5. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, means for tilting said tumbler-receiving members, a yielding presser for determining the radial position of the turn-table, and means for preventing the rotation of said turn-table in reverse direction, substantially as described.

6. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, a casing exposing a portion of said turn-table and inclosing the remainder thereof, and means located within said casing for tilting said tumbler-receiving members, substantially as described.

7. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members ar-

ranged upon said turn-table, a casing exposing a portion of said turn-table and inclosing the remainder thereof, a nozzle within said casing above the path of said tumbler-receiving members, and means located within said casing for tilting said tumbler-receiving members, substantially as described.

8. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, means to hold the turn-table in predetermined positions, a casing exposing a portion of said turn-table and inclosing the remainder thereof, a nozzle located within said casing above the path of said tumbler-receiving members, and means located within said casing for tilting said tumbler-receiving members, substantially as described.

9. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, means to hold the turn-table in predetermined positions, means for preventing the rotation of the turn-table in reverse direction, a casing exposing a portion of said turn-table and inclosing the remainder thereof, a nozzle located within said casing above the path of said tumbler-receiving members, and means located within said casing for tilting said tumbler-receiving members, substantially as described.

10. In a tumbler-washer, a turn-table, a series of hinged tumbler-receiving members arranged upon said turn-table, a casing exposing a portion of said turn-table and inclosing the remainder thereof, said casing being provided with a waste-aperture, and means located within said casing for tilting said tumbler-receiving members, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 4th day of November, 1903.

AZ SATTERFIELD.

Witnesses:

CYRUS KEHR,

CARRIE R. IVY.