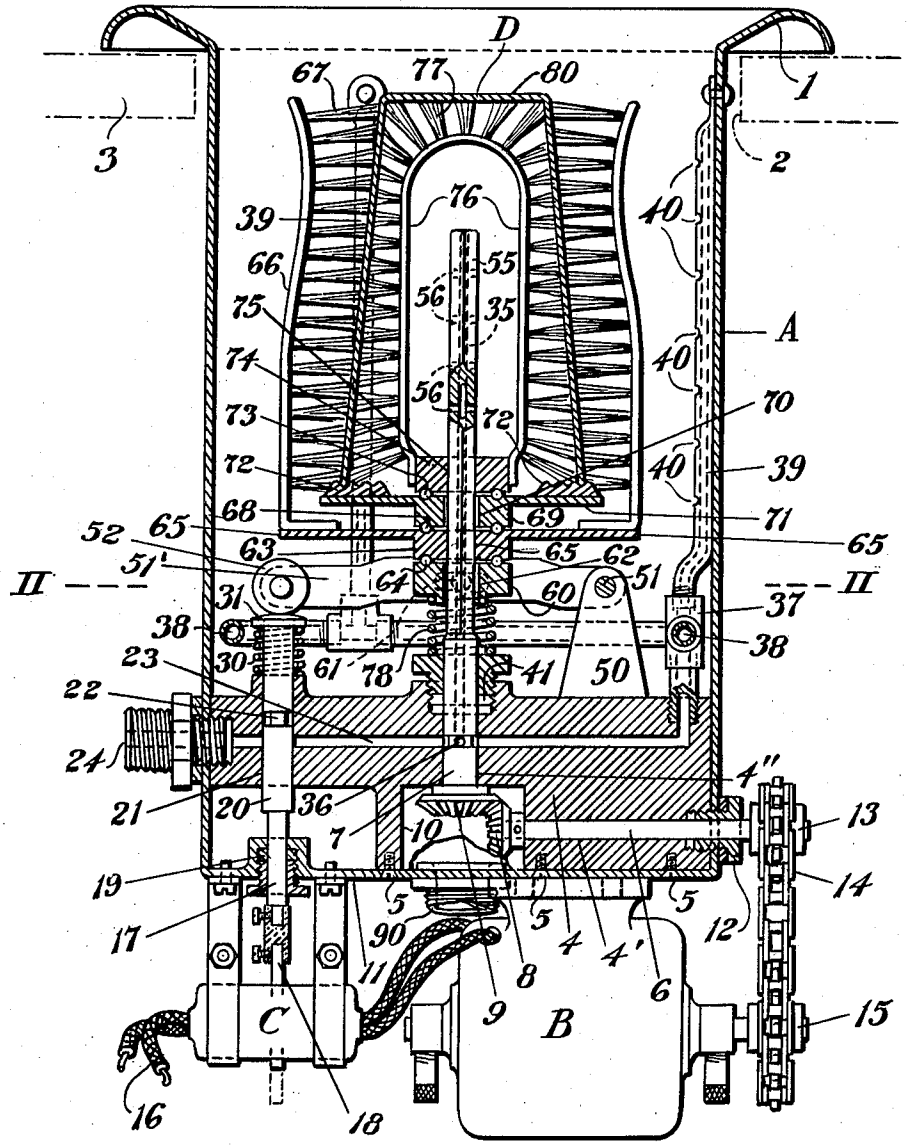
March 19, 1929. O. LEAVY 1,706,302

APPARATUS FOR WASHING TUMBLERS

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Fig. 1



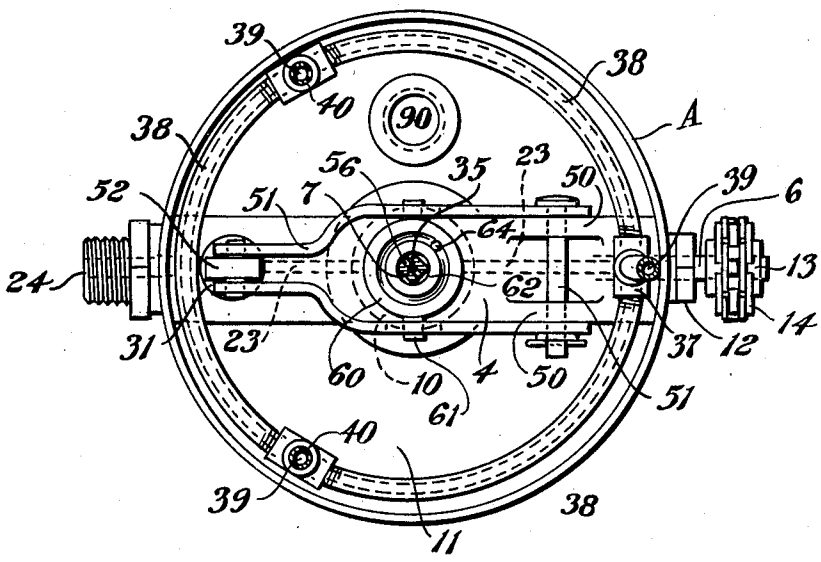
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Fig. 2



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UNITED STATES PATENT OFFICE.

OSCAR LEAVY, OF NEW YORK, N. Y.

APPARATUS FOR WASHING TUMBLERS.

Application filed December 31, 1925. Serial No. 78,645.

This invention relates to apparatus for washing tumblers and the like. The object of the invention is to combine the cleaning action of both inner and outer brushes with inner and outer jets of cleansing fluid upon a tumbler manually held stationary and in such a way that power for moving the brushes and for imparting force to the jets of cleansing fluid are independent one from the other and are both under automatic manual control through a simple manipulation of the tumbler itself. To this end I contemplate the employment of electric power functioning through a motor to impart a controllable rotation to the cleansing brushes and the utilization of city water pressure under the control of a valve to supply and operate the jets of cleansing fluid. It is a further object of my invention in carrying out my general purposes to effect the control of my apparatus solely by axial movement of the tumbler to be washed. In making this axial movement of the tumbler to be washed effective, I contemplate objectively the combination of a central spindle power rotated in combination with a plurality of bosses pierced by said spindle and coordinated therewith and with each other so that certain bosses besides having a free axial movement on the spindle are rotatably driven by the spindle while others have the axial movement on said spindle but may remain at rest while said spindle rotates.

The above and further objects will better be understood by reference to the illustrative embodiment of the invention to which the claims are directed solely for purposes of illustration and not limitation.

In the drawings,

Fig. 1 is a vertical cross-section with parts shown in elevation; and

Fig. 2 is a section taken through the plane of line II—II of Fig. 1, parts being shown in plan.

An outer shell or container A preferably of sheet metal and preferably finished with an out-turned lip or flange 1 to engage a supporting wall shown in dot and dash lines is provided. This structure is preferably cylindrical about a central vertical axis and is adapted to be mounted through the circular opening 2 in a supporting shelf 3 so that the flange 1 rests upon the shelf 3. The shell A is watertight. In the bottom of the shell A is provided a metal casting 4 suitably secured as by screws 5. This casting provides a bearing 4′ for shafts 6 and 4″ for the spindle 7 intergeared by bevel gears 8 and 9. These gears are preferably positioned in a pocket 10 formed between the hollow walls of the casting 4 and the bottom 11 of the shell A. This pocket may be packed with grease.

The outer end of the shaft 6 preferably passes through a stuffing box 12 and is fitted with a sprocket gear 13 driven by the sprocket chain 14 from the sprocket gear 15 of motor B which may be mounted conveniently on the bottom wall 11 of the shell A. It is this motor which controllably supplies the operating power for the moving parts of the apparatus. The motor B is under the control of a snap switch C which controls the current from the power line 16 and may likewise be mounted on the bottom wall 11. An actuator stem 17 for operating the push button 18 of the snap switch C preferably passes through a stuffing box 19.

The actuator 17 is a downward extension from the valve stem 20 riding in a vertical cylindrical passage 21 through the casting 4. The stem 20 is provided with a groove 22 functioning as a valve to control the passage of washing fluid through the duct 23 in casting 4. This duct 23 is fed from a nipple 24 adapted to be connected with a source of washing liquid under pressure such as warm water. A spring 30 reacting between the casting 4 and a cap 31 on the upper end of stem 20 tends to hold both the valve 22 closed to prevent the flow of water and the switch C closed against the flow of electricity to operate the motor B.

The duct 23 embraces the central spindle 7 which itself is provided with a central duct 35, a surface groove and cross-ducts 36. The duct 23 then extends to supply the tube system 37 which comprise a distributor ring 38 and upright tubes 39 which are provided with inwardly directed perforations 40 adapted when operating to drive cleansing fluid forcibly against the outer face of a tumbler D. It is to be understood that stuffing boxes may be provided wherever required. As for example, in addition to those described, the spindle 7 may be provided in like manner as indicated by one or more stuffing boxes 41. This applies likewise to the valve stem 20. Upwardly projecting from the casting 4 is a bracket formation 50 mounting the hinge pin 51 which hinges the operating yoke 51′, the free end of which

terminates in a roller 52 cooperating with the cap 31 to apply operative pressure on the valve and the electric switch.

The upper portion 55 for the spindle 7 is a non-circular cross-section preferably square and the central duct therein discharges outwardly through water discharge ports 56 and adapted to throw water against the inner face of the tumbler D.

A lower boss 60 is swivelled by trunnions 61 to the yoke 51 and has a central perforation 62 permitting the rotation of the stem 7 independently thereon. Riding upon the lower boss 60 is an intermediate boss 63 having a ball-bearing support 64 upon the lower boss 60. The perforation 65 within this boss 62 is complementary to the outer cross-section of the stem portion 55, namely preferably square, and is therefore adapted to be forcibly rotated by the stem 7 and to rotate with a frictionless support from the lower boss 60. This boss 62 has means preferably extending outwardly in the form of a spider or arms 65, each supporting a resilient brush arm 66 carrying inwardly directed bristles 67 and functioning both to press them against the tumbler and to revolve them about and in contact with the outer face of the tumbler D. A second frictionless ball-bearing support 68 on boss 62 carries a third boss 69, which has a central perforation 70 large enough to permit the free rotation therein of the stem 70. This boss is extended outwardly to constitute an operator in the form of a spider or platform 71 carrying a cushion ring 72 to be engaged by the lower rim of the tumbler D. Again, a third anti-friction support 73 is interposed between the top of the boss 69 and a top-most boss 74 having a central perforation 75 complementary to the cross-section of the stem portion 55 and therefore driven thereby. This boss is fitted with upwardly projecting resilient brush arms 76 preferably in the form of a metal loop and carrying upwardly directed bristles 70.

All the bosses are axially movable upon the stem 7 and are normally spring-pressed upwardly by the spiral compression spring 78 and spring 30.

In its operation, a tumbler is inserted into the position shown in Fig. 1. The operator's hand holds the tumbler by a finger pressure on top of its bottom 80. Sufficient finger pressure imparts pressure through the bosses to the yoke 51 and thence to the valve stem 20 and actuator stem 17 against the reacting force of the springs 30 and 78. This results in the opening of the valve 22 to supply the duct system with cleansing liquid under pressure, which liquid is directed against both the inner and outer faces of the tumbler. At the same time a positive bristle brushing of both inner and outer faces of the tumbler is effected by electric motive power independently of any undependable power which may be sometimes available from water pressure.

When in operation, the bottom and the next to the top bosses 60 and 69 remain rightfully stationary. The other two bosses rotate carrying the bristles around at the same angular velocity as that of the rotation of the central stem 70.

The cleansing liquid may be discharged from the shell A in any approved manner as from the discharge nipple 90 which may be plumbed to the sewer.

What I claim and desire to secure by United States Letters Patent is:

1. In combination in washing apparatus for tumblers and the like, an exterior shell open at the top, a central upstanding spindle rotatably mounted therein having a non-circular cross-sectional contour; an electric motor mounted exteriorly to said shell; driving means operatively connecting said motor with said spindle, a switch controlling said motor and mounted exteriorly to said shell; a fluid pressure conductor leading to the interior of said shell from the exterior thereof; means connected with said conductor for transmitting fluid through said central spindle and into positions laterally spaced from said central spindle and including fluid delivery nozzles directed outwardly from said spindle and inwardly towards said spindle; relatively rotatable and non-rotatable bosses mounted upon said spindle including a boss controller non-rotatable, an outer rotatable brush boss, and an actuator cooperating with the switch and fluid conductor and operated by said controller boss and functioning to operate said electric switch and to control the fluid flow through said ducts.

2. In combination in washing apparatus for tumblers and the like, an exterior shell open at the top; a central upstanding non-circular spindle; an electric motor mounted upon the outside of said shell; driving means operatively connecting said motor with said spindle; a switch for controlling said motor mounted outside of said shell; a fluid pressure conduit to the interior of said shell from the exterior thereof; a packed connection; a valve for controlling the flow of fluid from said conduit to the interior of said spindle; and a platform movable axially of and idly mounted upon said spindle for actuating said valve and said switch in response to a downward pressure of a tumbler.

3. In combination in tumbler washing apparatus, a central rotary spindle provided with a fluid duct for the delivery of washing fluid within the tumbler to be washed, and provided with brushing means for cleaning the interior of the tumbler to be washed; an exterior rotatable frame driven by said spindle and mounted thereon, and provid-

ing exterior brushes for brushing the exterior of said tumbler to be washed; a motor for driving said parts and a valve controlled source of washing fluid under pressure; and an operator idly mounted upon said spindle and adapted to be engaged by the rim of said tumbler and to have imparted thereto an axial movement by a hand thrust upon said tumbler to be washed when it is held by the hand in non-rotating position; and connections from said operator for controlling the operation of said motor and said source of cleansing fluid.

OSCAR LEAVY.