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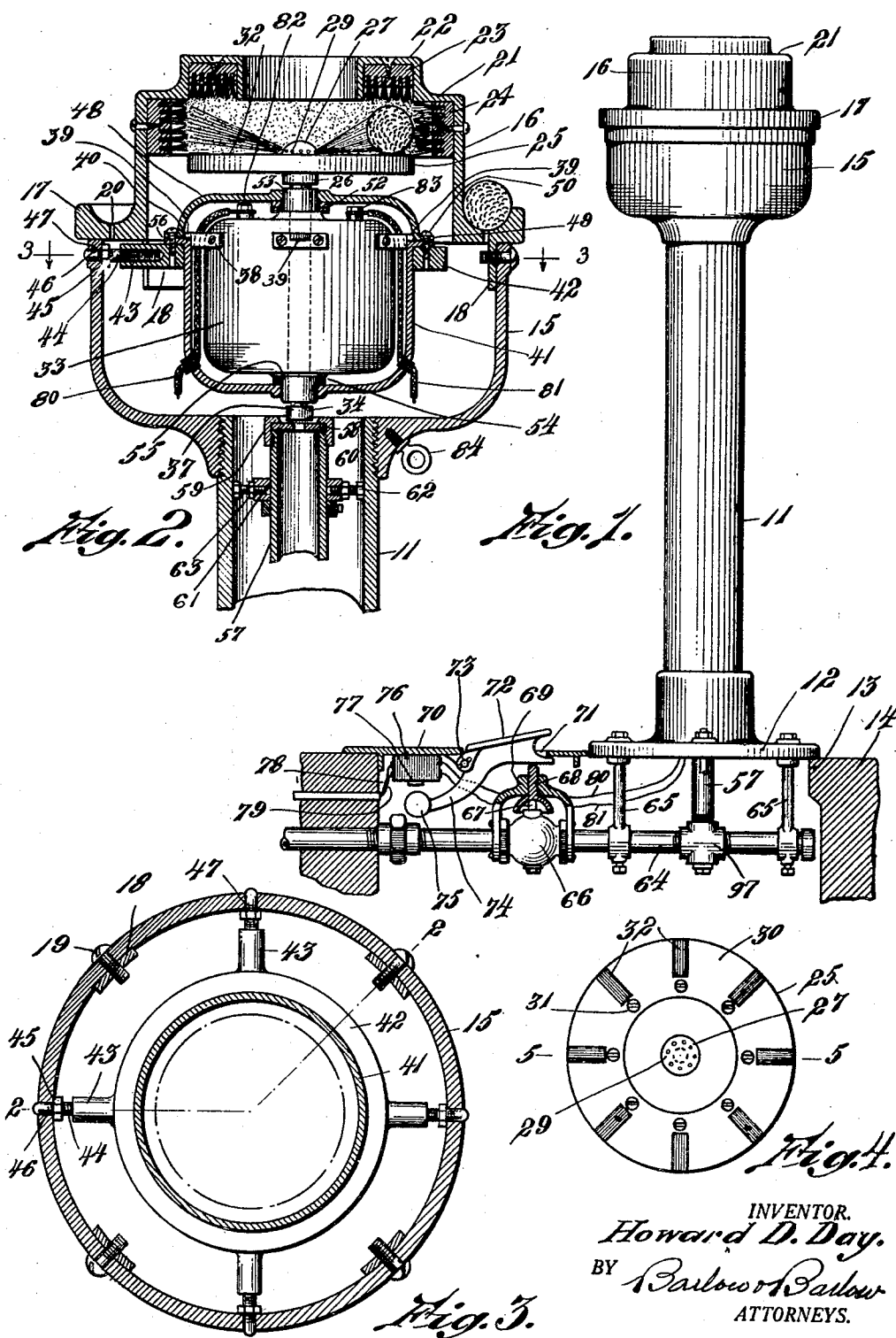
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DEVICE FOR WASHING GOLF BALLS

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2 Sheets-Sheet 1



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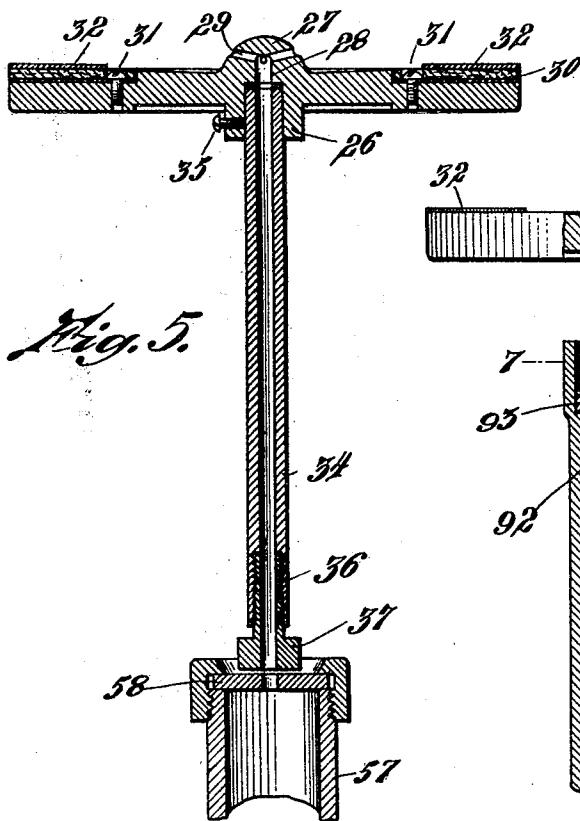
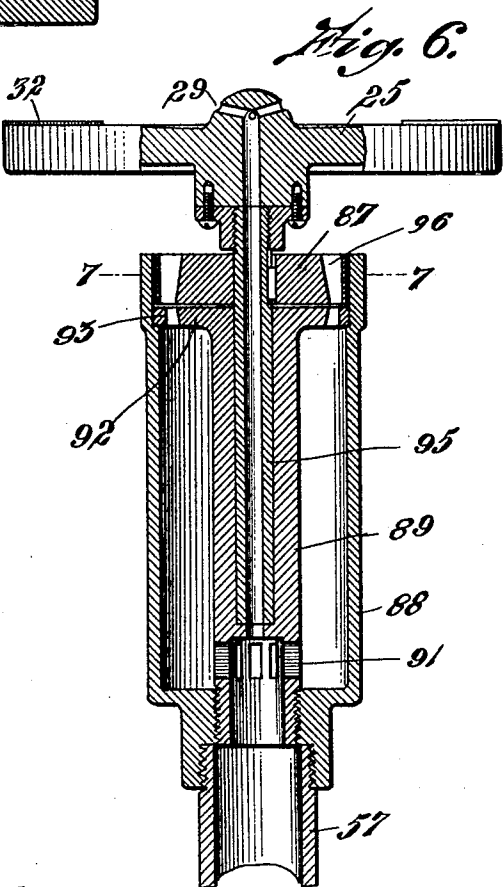
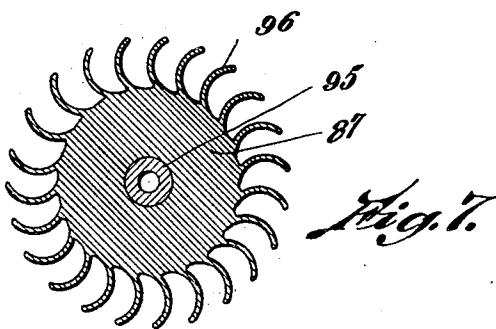
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DEVICE FOR WASHING GOLF BALLS

Application filed April 30, 1928. Serial No. 273,895.

This invention relates to machines for washing articles such as balls and the like, and is of the type shown in my Patent No. 1,702,202, Feb. 12, 1929.

5 An object of the invention is to provide a machine wherein golf balls and the like may be cleaned by subjecting the balls to scrubbing means in the presence of a cleansing fluid.

10 Another object is to provide a ball cleaning machine wherein the balls are rapidly vibrated between ring-shaped brushes disposed at right angles to each other.

15 Another object is to provide a rotary ball carrier with means which will cause the balls to move into contact with separate stationary brushes.

20 The invention further consists in the provision of a ball cleaning machine wherein the cleansing fluid is discharged radially from the center of a rotary ball carrier in the form of a fine spray.

25 Another object is to provide a ball cleaning machine wherein the rotary ball carrier is carried by one end of the hollow drive shaft of an electric motor and in which the cleansing fluid flows through the motor shaft and is discharged radially from the center of the ball carrier.

30 A still further object is to produce an efficient, strong and durable ball washing machine which may be economically constructed and operated.

35 With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:—

40 Figure 1 is an elevation, partly in section, of a ball washing machine constructed according to my invention;

Figure 2 is an enlarged section through the upper portion of the machine;

45 Figure 3 is a horizontal section taken on the line 3—3 of Figure 2;

Figure 4 is a plan of the rotary ball carrier;

50 Figure 5 is a vertical longitudinal section taken on the line 5—5 of Figure 4.

Figure 6 is a vertical section of a modification of the means for rotating the ball carrier; and

Figure 7 is a detail section taken on the line 7—7 of Figure 6.

55 In playing games with balls and sepecially games in which balls having a rough surface are used, such for instance as golf, the balls often become soiled and require to be cleaned frequently, in order that they may be more conspicuous and sightly and be more readily found, and to this end I have provided a machine adapted to be set in the playing field, for convenience, the machine being adapted to receive one or more balls and by a single foot operation be actuated to quickly clean the entire surface of the balls, the balls being rapidly turned and vibrated between a rotary carrier and a plurality of ring-shaped brushes, and upon the removal of the foot at the completion of the operation, the machine quickly stops permitting the cleaned ball to roll on the inclined surface inwardly to the center where it may be readily engaged and removed thru the center opening; and the following is a detailed description of the present embodiment of my invention and showing one means by which these advantageous results may be accomplished:

Referring to the drawings, and especially to Figures 1 to 5 inclusive, the machine comprises a hollow standard 11, having a flanged base 12 for supporting the machine over an opening 13 in a suitable foundation 14.

On the upper end of the standard 11 there is a head comprising a lower bowl-shaped body 15 and an upper body 16 that may be detachably connected to the body 15.

The body 16, which is of less diameter than the bowl 15, has a grooved flange 17 projecting from its lower edge. This flange rests on the upper edge of the bowl, and at intervals around the bottom of the flange there are depending plates 18 that are disposed on the interior of the bowl 15 and are fastened thereto by means of screws 19. The groove in the flange 17 should be made arcuate in cross section, as best shown in Figure 2, and this groove may be perforated, as at 20, to permit liquid to drain into the interior of the bowl.

The top of the body 16 has an inwardly extending horizontal flange 21, the inner portion of which is formed with an inverted annular rectangular groove 22 which may be raised above the flange 21 in the manner shown.

An annular disk brush 23 is mounted within the groove 22, being confined between the side walls of the groove. The bristles of the brush 23 extend downwardly.

A cylindrical brush 24 is mounted on the interior of the body 16 directly beneath the flange 21, the bristles of the brush extending radially inwardly of the body 16.

The brush 24 has a greater diameter than that of the brush 23 so that when the two brushes are disposed relative to each other in the manner shown an angular annular scrubber will be provided.

A turntable 25 is mounted within the body 16, directly beneath the brushes 23 and 24. This turntable provides a rotary carrier for the balls being cleaned, and it is adapted to be actuated at relatively high speeds so that the balls carried thereby will be directed towards the stationary brushes by centrifugal force to roll back to the center on the inclined surface of the turntable when the turntable stops rotating.

The under side of the turntable 25 has a centrally disposed boss 26, while on the center of the upper surface of the turntable there is a raised portion 27 that is disposed diametrically opposite the boss 26.

The center of the turntable is bored, as shown at 28, which opening extends vertically from the bottom of the boss 26 and terminates at a distance from the top of the raised portion 27. Laterally extending openings 29 are formed radially in the portion 27 from the top of the opening 28. In this way, liquid flowing upwardly thru the turntable will be distributed radially therefrom in the form of spray.

The top of the turntable has a circular pad 30 mounted thereon, such pad being retained in place by means of screws 31. The pad may be made of any suitable resilient material such as rubber, or the like, and at intervals around the periphery of the turntable the pad 30 has cemented thereto a plurality of radially disposed strips 32, also made from suitable resilient material, such as sheet rubber, or the like.

An electric motor 33 is mounted within the head of the machine for the purpose of rotating the turntable. The motor has a water-conducting tubular shaft 34 that extends into the bottom of the turntable and is fixed thereto by means of a set screw 35 mounted in the boss 26. The lower end of the shaft 34 is internally threaded, as indicated at 36, Figure 5, for receiving the threaded shank of a headed member 37 providing an enlarged

bearing surface for the end of the motor shaft.

The motor 33 has a plurality of plates 38 attached thereto near the upper end thereof. The plates 38 are provided with laterally extending lips 39 which rest on the upper flanged portion 40 of a casing 41.

The casing 41 is suspended within the bowl 15 by means of an annular carrier 42.

The carrier 42 comprises a main body portion in the form of a ring adapted to receive the flange 40 of the casing 41. At intervals around the ring there are outwardly projecting radially disposed arms 43. The arms 43 are internally threaded for receiving the threaded shanks of suspension bolts 44. The bolts 44 are formed with an enlarged portion 45 for receiving the jaws of a wrench or other tool (not shown) for turning the bolts inwardly or outwardly with respect to the arms 43. The bolts 44 terminate beyond the enlarged portions 45 in the form of an elongated head 46 which are mounted in correspondingly disposed openings 47 formed in the rim of the bowl 15.

Overlying the top of the motor is a casing 48 having an annular flange 49. The flanges of the casings 41 and 48 and the carrier 42 are provided with aligned openings for receiving screws 50. In this way the parts enclosing and supporting the motor can be firmly secured together.

For the purpose of excluding the cleansing liquid from the motor 33, I utilize a suitable washer 52 which surrounds a collar 53 on the upper portion of the motor shaft and is interposed between the casing 48 and the top of the motor body. Another washer 54 carried by a collar 55 on the lower portion of the motor shaft is interposed between the bottom of the motor and the contiguous portion of the casing 41. When the screws 50 are turned to draw the separate sections of the motor casing together the washers 52 and 54 will be compressed thereby sealing the openings thru each end of the casing. Furthermore, a suitable gasket 56 may be inserted between the abutting flanges of the casings 41 and 48, to provide a tight joint therebetween. In this manner foreign matter will be prevented from passing into the motor during the operation of the machine.

A pipe 57 is disposed within the standard 11 and is designed to deliver the cleansing liquid to the head of the machine. The top of the pipe is provided with a perforated washer 58, preferably of leather, the opening in which should align with the opening in the motor shaft. The washer 58 is retained in position by means of a cap 59 screwed on to the end of the pipe.

The pipe is adjustably threaded at its lower end into the cross 97 and may be adjusted vertically to cause the washer 58 to just touch the bottom of the plug 37 and so assist in

supporting the weight of the hollow motor shaft to minimize the amount of water that shall escape at the joint.

For the purpose of centering the pipe within the standard 11, I use a collar 60 which encircles the pipe and is provided with a plurality of radial openings 61. The openings 61 are threaded to receive the threaded shanks of bolts 60. The heads of the bolts are adapted to bear against the interior surface of the standard and by turning the bolts relatively to each other the pipe can be correctly positioned, as will be readily understood. Lock nuts 63 may be used on the shanks of the bolts for retaining the parts in their adjusted position.

The lower end of the pipe 57 is connected to a horizontally disposed supply pipe 64. If so desired the end of the pipe 64, which extends across the opening 13, may be suspended from the base 12 by means of hangers 65.

The pipe 63, to the rear of its connection with the pipe 57, is provided with a valve 66, the normal position of which is closed. This valve has a stem 67 projecting upwardly therefrom and received within a plunger 68 slidably mounted in a frame 69 carried by the pipe 64.

A plate 70 overlies the pipe 64 to the rear of the base 12. This plate has an opening 71 therein for receiving a treadle 72. The treadle is pivotally connected to the plate 70 by means of a pin 73. Extending downwardly and rearwardly from the treadle is an arm 74 terminating in an enlarged portion 75. The construction of the parts should be such that the portion 75 provides a counterweight for normally retaining the treadle at an angle in the opening 71.

Directly above the end of the arm 72, the plate 70 has fixed thereto a switch box 76 having a depending button 77 in juxtaposition to the end of the arm 74.

Electric conductors 78 and 79 from a suitable source of supply lead into the box 76, while conductors 80 and 81 lead from the switch box and pass upwardly through the standard 11 and are fixed to terminals 82 and 83 respectively, on the motor 33.

The arrangement of the parts should be such that when the treadle 72 is depressed by the foot of an operator, the portion 75 of the arm 74 will engage the button 77 and force the same upwardly thereby closing the circuit and causing rotation of the motor. Simultaneously the bottom of the treadle 72 will depress the stem 68 of the valve 66 thereby permitting the flow of the cleansing liquid, through the pipe 57 and upwardly into the head of the machine. As the liquid flows through the opening in the washer 58, some of the liquid will be deflected outwardly through the gap between the lower end of the motor

shaft 34 and the cap 59 thereby providing a cushion therebetween.

The liquid not deflected as above described will flow upwardly through the motor shaft and be distributed through the openings 29.

By the use of my improved device, it is only necessary to deposit the balls through the mouth of the head onto the turntable 25, and then depress the treadle 72, whereupon the turntable will be revolved rapidly by the motor and streams of the cleansing liquid will flow from the portion 27. The motion of the turntable will force the balls outwardly against the bristles of the brush 24 and when the balls contact with this brush they will be spun around in a direction perpendicular to the bed of the turntable. This action will also retard the movement of the balls around the periphery of the turntable, the rapidly spinning turntable tending to carry the balls forwardly with it and the bristles of the brush 24 retarding such action. Whereupon the turntable will of course have a greater peripheral speed than that imparted to the balls, and therefore the strips 32

will pass beneath balls and as such strips are disposed slightly above the face of turntable they will force the balls upwardly against the bristles of the brush 23. In actual practice the action obtained produces a vibrating movement of the balls as the strips 32 pass rapidly therebeneath. When the balls are forced into contact with the bristles of the brush 23, they will be further retarded, but in a direction at right angles to the resistance offered by the bristles of the brush 24. In this way the surface of the balls will be constantly moved and through the centrifugal action produced by the revolving turntable new sections of the surface of the balls will be continuously brought into engagement with the brush bristles. During this operation, the brushes and the balls will be supplied with a continuous stream of the cleansing liquid which assists in the cleaning operation by quickly washing the balls. The surplus liquid falls downwardly on the outside of the motor casing and into the bottom of the bowl 15, from which it will pass down through the standard into the opening 13.

At the completion of the cleaning operation the foot can be removed from the treadle 72, thereupon stopping the rotation of the turntable and cutting off the supply of water. The balls can then be removed from the head and deposited in the groove in the flange 17 to dry or to permit the surplus liquid to drain therefrom. If so desired a towel or other drying cloth (not shown) may be carried by an eye 84 fixed to the machine as shown in Figure 2.

It is observed that the inequalities of the surface of the brushes together with the general vibration produced by the rapidly ro-

tating turntable causes the ball to jump or bound about and at times come into contact with the upper brush, which causes the balls to rotate on an axis at right angles to that caused by contact with the brush 24 so that the general jumping about of the balls imparts a universal rotation thereto causing their whole surfaces to come into contact with the brushes and be cleaned.

While I have herein shown the employment of an electric motor for driving the turntable, obviously, any other means may be used, such for instance as a water motor 88 (see Figures 6 and 7). That herein shown is provided with a shell or casing 89, through the center of which extends the water-conducting tubular shaft 95 for supplying the ball cleaning water; the same as in the electric motor. A portion of this water from the main water tube 57 is permitted to pass outward through the slots 91 into the motor casing which portion is forced through the holes 93 in the upper plate 92 to impinge against the vanes 96 of the water wheel 87 to rapidly rotate the same, and as this wheel is attached to the center tubular shaft 95, this shaft with its ball supporting turntable is rapidly rotated the same as by the electric motor above described.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

The invention claimed is:—

1. In a cleaning machine for golf balls and the like, a housing, an annular disk brush and a cylindrical brush mounted in said housing in axial alignment with each other, a rotatable member supporting the balls within one of the brushes for revolving the balls against said brushes, and means for imparting a vibratory motion to said balls while revolving in contact with said brushes.

2. In a cleaning machine, an article carrier, stationary ring-shaped brushes, one of said brushes having its bristles extending down towards the carrier, and the other having its bristles centripetally directed, means for rotating the carrier to force articles carried thereby against the brushes, and means on the carrier for causing the articles to vibrate thereon during rotation of said carrier.

3. In a cleaning machine, an annular disk brush and a cylindrical brush mounted in axial alignment, their bristles being disposed at right angles to each other, a rotary article carrier, means for rotating the carrier so as to present articles to the brushes by centrifugal force, and means on the carrier for imparting a movement to the articles at right

angles to the movement produced by the centrifugal force.

4. In a cleaning machine, a housing having an opening, an inverted annular disk channel in said housing encircling said opening, an annular brush mounted in said channel, a cylindrical brush mounted in the said housing with its bristles extending inwardly and in juxtaposition to said first mentioned brush, the bristles of the two brushes being disposed at right angles to each other, and a rotary carrier mounted in the housing in juxtaposition to the said brushes.

5. In a cleaning machine, a hollow standard surmounted by a bowl-shaped body, stationary cleaning members carried within the bowl, a rotary article carrier beneath the said members, an electric motor for rotating the said carrier, adjustable means for supporting the motor in the bowl, a supply pipe disposed within the said standard, conduit means connected to said pipe and extending through said motor and said carrier, and adjustable means for supporting the said pipe in the standard whereby said pipe can be centered with respect to the said motor and the said carrier.

6. In a cleaning machine, in combination, a housing, stationary cleaning members therein, and a rotary article carrier operatively associated with said stationary members, a resilient pad on the upper surface of said carrier, and impact means on said pad for imparting a vibratory motion to the articles thereon.

7. In a cleaning machine, in combination, a housing, stationary cleaning members therein, a rotary article carrier operatively associated with the said members, a resilient pad on the upper surface of the said carrier, and strips overlying the said pad and radially disposed thereon in juxtaposition to the said stationary members.

8. In a cleaning machine for golf balls and the like, a housing, an annular disk brush mounted in said housing, a cylindrical brush mounted in said housing in axial alignment with said annular brush, the bristles of said brushes cooperating to form the top and side walls of an annular ball receiving recess, and a rotatable disk member in axial alignment with said brushes and forming the bottom wall of the recess to support a ball on the surface thereof in engagement with the bristles.

In testimony whereof I affix my signature.
HOWARD D. DAY.