April 2, 1963 K. R. WITTEK 3,083,389

GOLF BALL WASHER

Filed Oct. 9, 1962 3 Sheets-Sheet 1

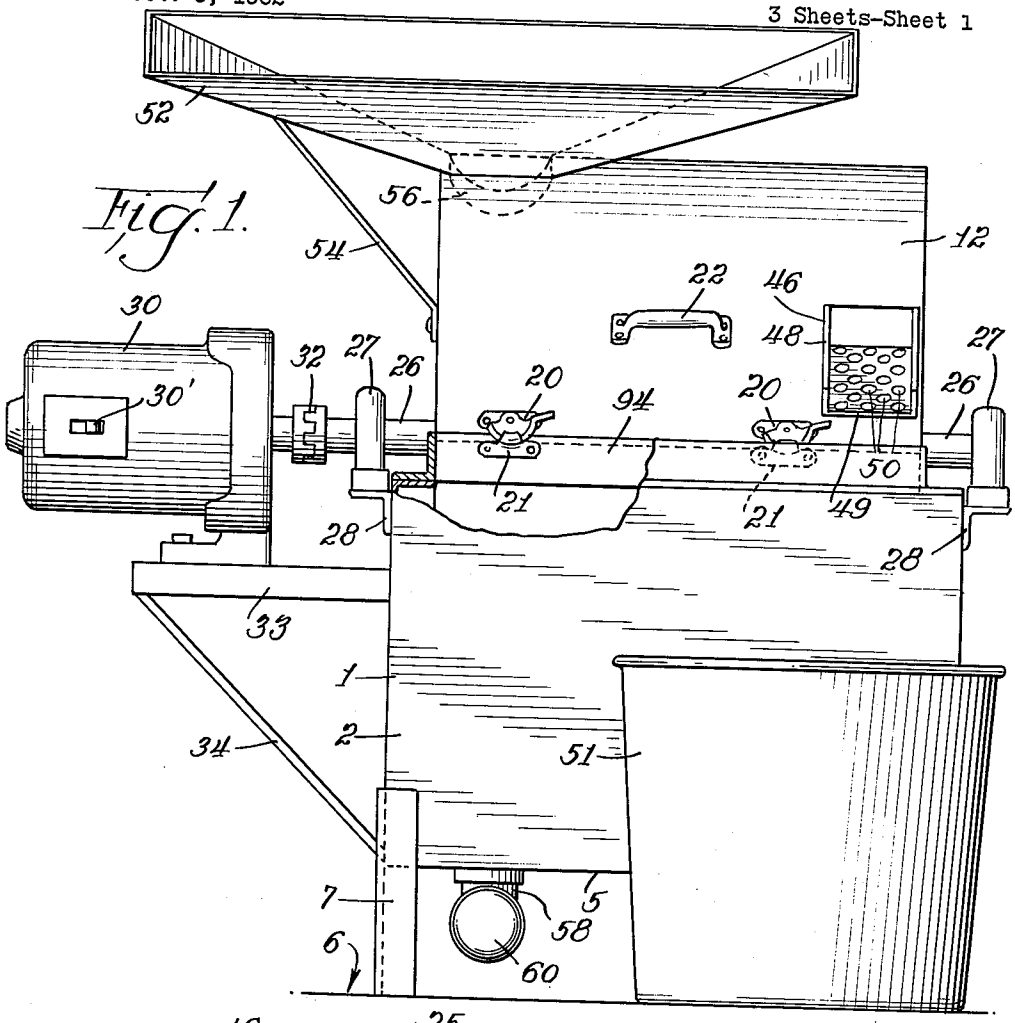

Fig. 1.

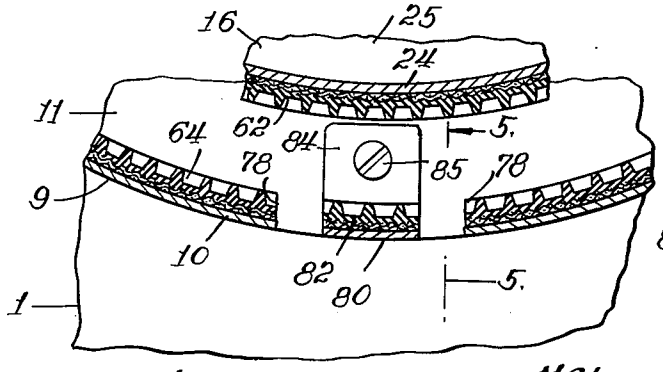

Fig. 4.

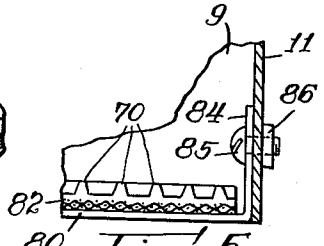

Fig. 5.

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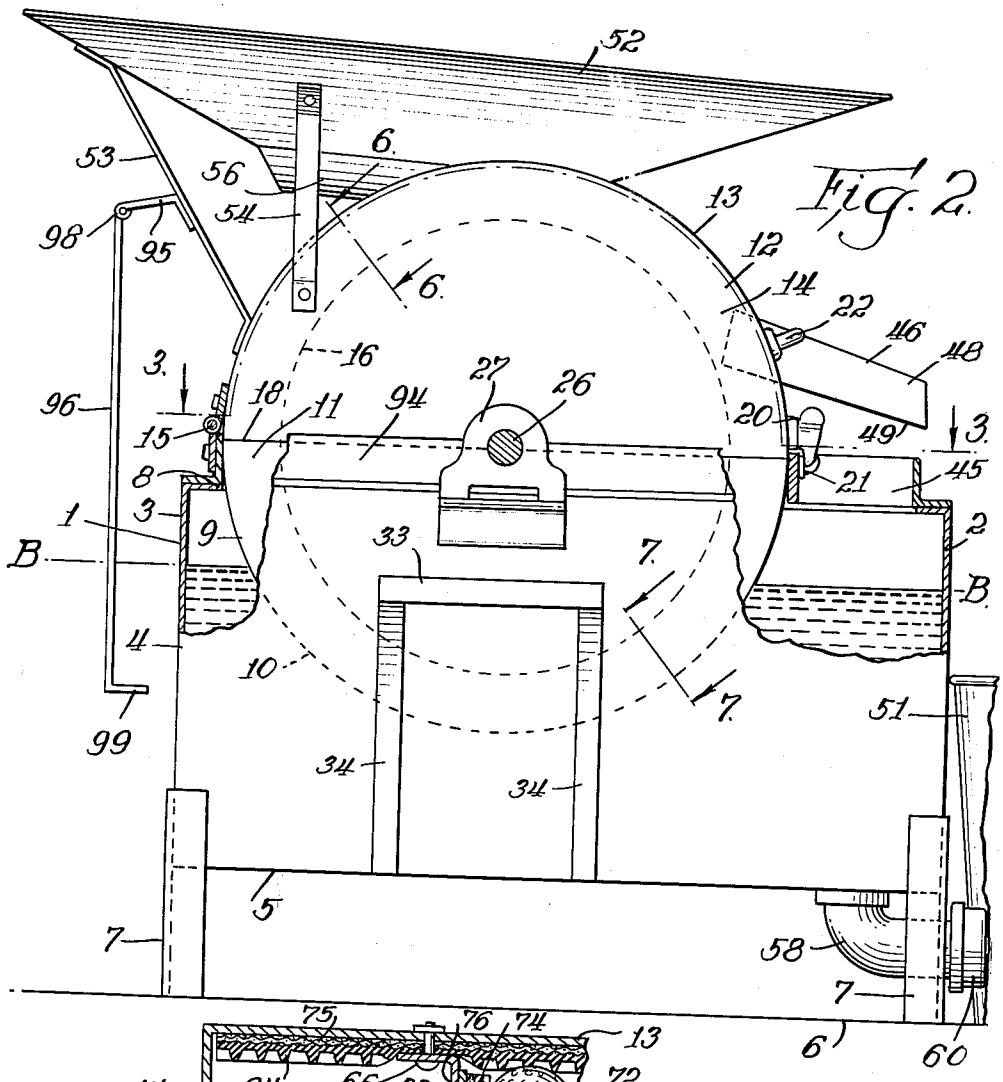

Fig. 2.

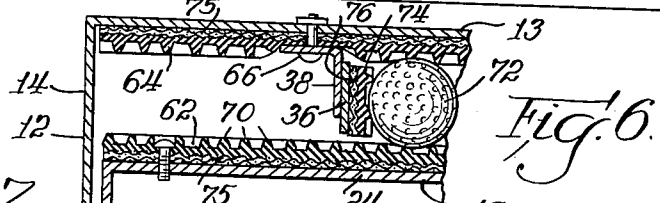

Fig. 6.

Fig. 7.

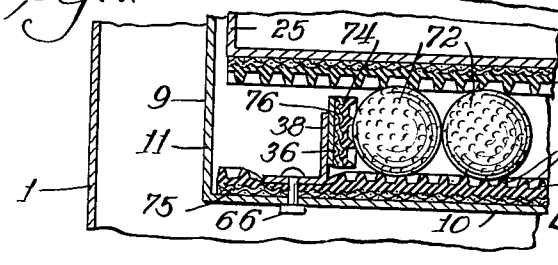

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Fig. 3

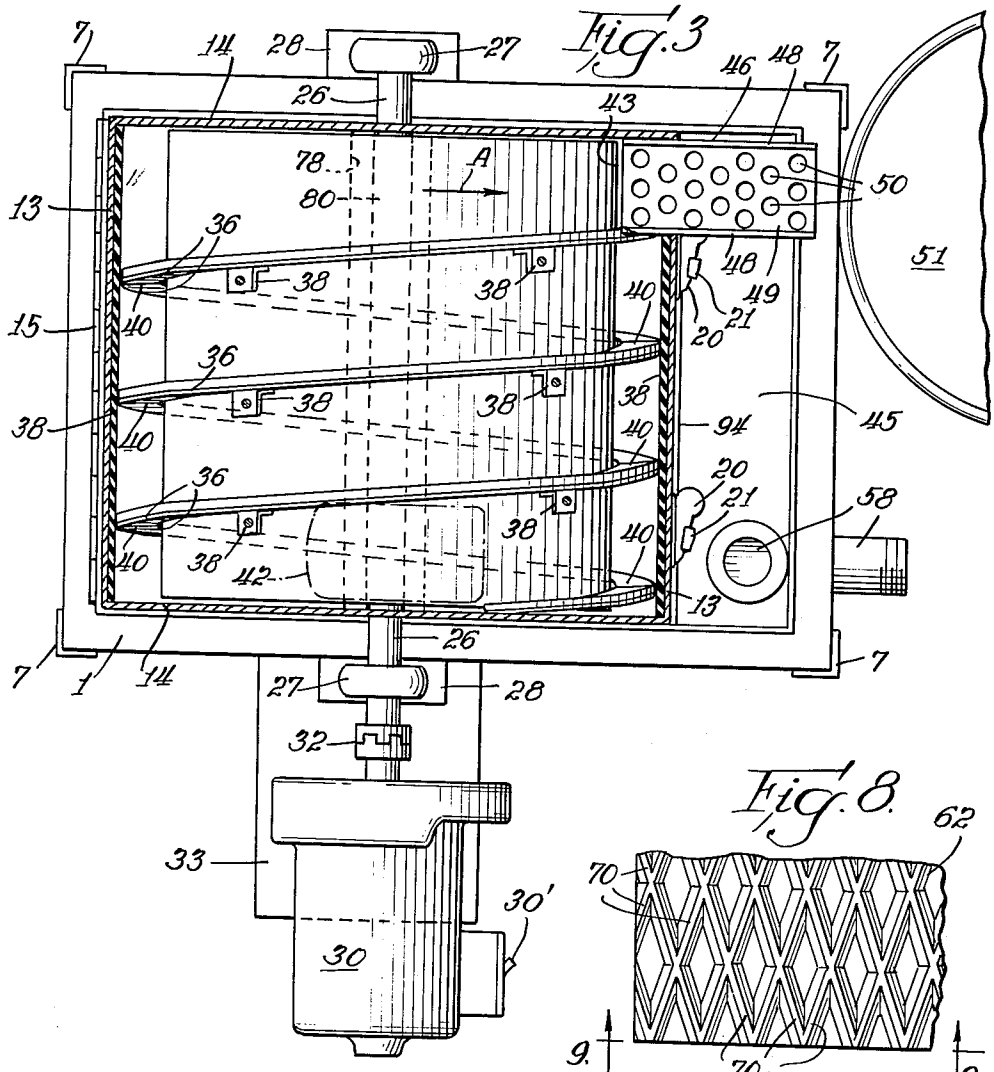


Fig. 8.

Fig. 10.

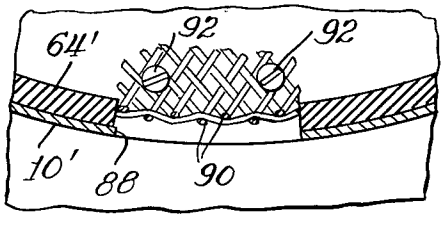
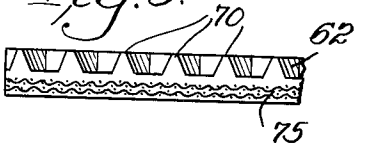


Fig. 9.



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GOLF BALL WASHER

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12 Claims. (Cl. 15—97)

This invention relates to a golf ball washer and has particular relation to an improved golf ball washer of the rotary type and capable of washing large quantities of golf balls in a short time.

Practice driving ranges and the practice areas with which some golf courses are provided are often faced with a considerable problem in keeping the golf balls washed and cleaned. The player who wishes to practice obtains, for example, a pail or basket of golf balls and practices golf shots, driving the balls into a practice field. Frequently a considerable number of people practice simultaneously and, as a result, a large number of golf balls must be available for use. It is often necessary to wash the balls between the time they are used by different people to remove dirt, grass, sand, weeds, rocks and other foreign matter from the surfaces of the balls.

The present invention provides an improved golf ball washer which will effectively wash and work dirt and other foreign matter from the surfaces of large quantities of golf balls in a short time, and a golf ball washer in which the dirt, grass, sand, weeds, rocks, or other foreign matter washed and worked from the surfaces of the balls are discharged from the path of the washer where the washing and cleaning of the balls takes place without requiring additional operations for removing such foreign matter.

The illustrated embodiment of the present invention comprises a rotatable cylindrical drum and a casing having a curved surface spaced outwardly from the drum. Spiral rib means is attached to the curved surface of the casing and disposed in the space between the drum and the curved surface. The spiral rib means defines a spiral path for the balls from an inlet through which the balls are introduced into the spiral path adjacent one end of the drum to an outlet from which the balls are discharged from position adjacent the opposite end of the drum. Live molded rubber covers the outer surface of the drum and the interior of the curved surface of the casing and has patterns therein between which the balls are gripped and advanced spirally within the spiral path from the inlet to the outlet. The rotation of the drum relative to the curved surface produces a turning of the balls relative to the drum and the curved surface of the casing for working dirt and other foreign matter from the surfaces of the balls. The lower portion of the drum rotates within a pan for holding water with a detergent therein for washing the balls with a scrubbing action in their movement through the spiral path from the inlet to the outlet. The curved surface of the casing has an outlet in the bottom thereof through which dirt and other foreign matter removed from the balls is discharged from the spiral path between the drum and the curved surface of the casing.

Another feature resides in the provision of a golf ball washer of the aforementioned character, wherein the outlet in the bottom of the curved surface of the casing discharges into the pan or vessel which holds the water with detergent.

Another feature resides in the provision of a golf ball washer wherein the outlet in the bottom of the curved surface of the casing comprises a pair of circumferentially spaced outlet openings extending longitudinally beneath the entire longitudinal extent of the spiral path and each of a width less than the diameters of the golf balls.

Another feature resides in the provision of a golf ball washer, wherein the outlet in the bottom of the curved surface of the casing comprises an outlet opening extending beneath the entire longitudinal extent of the spiral path, and wherein there is a perforated screen covering the outlet opening to prevent passage of the balls through this opening and through which screen dirt and other foreign matter removed from the balls is discharged from the spiral path between the drum and the curved surface.

Another feature resides in the provision of a golf ball washer, wherein the outlet in the bottom of the curved surface of the casing comprises an opening extending longitudinally beneath the entire longitudinal extent of the spiral path, and wherein there is a member of less width than the opening extending longitudinally through the opening and secured to the ends of the drum with each of the longitudinal edges of the member spaced from the sides of the opening to form a pair of circumferentially spaced outlet openings.

Another feature resides in the provision of a golf ball washer, wherein there is a discharge spout having a perforated bottom over which the balls are discharged from the outlet from the spiral path.

Another feature resides in the provision of a golf ball washer, wherein the top of the pan is open along one side of the curved surface of the casing and wherein there is a discharge spout having a perforated bottom over which the balls are discharged from the outlet from the spiral path with the perforated bottom of the discharge spout extending over the opening in the top of the pan.

Another feature resides in the provision of a golf ball washer, wherein there is an upwardly opening hopper for receiving the golf balls and overlying the casing and having a chute for discharging the balls into the inlet end of the spiral path in the direction of rotation of the drum.

Another feature resides in the provision of a golf ball washer of the character described, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum.

Another feature resides in the provision of a golf ball washer, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum and wherein there is a support elevated above the supporting surface for the washer when the upper half of the casing is closed and movable into cooperation with the supporting surface to support the upper half of the casing when in open position.

Another feature resides in the provision of a golf ball washer, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum and wherein there is flange means on the top of the pan bridging the junction between the upper and lower parts of the casing externally thereof.

Another feature resides in the provision of a golf ball washer of the character described, wherein there is a drain outlet opening from the bottom of the pan.

Further features and numerous advantages and adaptations of the invention will be apparent from the following detailed description taken in connection with the accompanying drawings, it being understood that the invention is limited only within the scope of the appended claims and not to the particular embodiment selected for illustration.

In the drawings:

FIGURE 1 is a front view of a golf ball washer embodying the present invention;

FIGURE 2 is an end view partially broken away and in section viewed from the left hand end of FIGURE 1;

FIGURE 3 is a horizontal sectional view taken along the line 3—3 of FIGURE 2;

FIGURE 4 is a fragmentary sectional view through the bottom of the drum and the bottom of the curved

surface of the casing and showing outlet openings for discharging dirt and other foreign matter removed from the balls from the spiral path between the drum and the curved surface and into the pan;

FIGURE 5 is a fragmentary sectional view taken along the line 5—5 of FIGURE 4;

FIGURE 6 is a fragmentary sectional view taken along the line 6—6 of FIGURE 2;

FIGURE 7 is a fragmentary sectional view taken along the line 7—7 of FIGURE 2;

FIGURE 8 is a fragmentary view of the live molded rubber covering showing one form of pattern in the surface thereof;

FIGURE 9 is a view of the live molded rubber covering taken along the line 9—9 of FIGURE 8; and

FIGURE 10 is a view similar to FIGURE 4 showing another form of outlet in the bottom of the curved surface of the casing with a perforated screen covering the outlet opening.

Referring to the drawings, the golf ball washer according to the present invention comprises a pan or vessel 1 having front and rear walls 2 and 3, side walls 4 and a bottom wall 5. The bottom of the vessel 1 is supported in position elevated above the ground or other supporting surface 6 by supports 7 at the corners thereof.

The top of the vessel 1 is open at 8 and fixed in this opening and depending into the interior of the vessel 1 is the lower half 9 of a casing. The lower casing half has a semi-cylindrical wall 10 and end walls 11 and is open at the top.

The upper half 12 of the casing has a semi-cylindrical wall 13 and end walls 14 and is open at the bottom. The upper casing half 12 is hinged at 15 for swinging movement to open position to allow access to the interior of the casing and to the rotatable cylindrical drum 16 within the casing as will be presently described. When closed, the lower edges of the semi-cylindrical wall 13 and the lower edges of the end walls 14 seat upon the upper edges of the semi-cylindrical wall 10 and the upper edges of the end walls along the junction 18. Conveniently releasable latch means is provided at 20 and 21 on the upper and lower casing parts 12 and 9 for latching the upper part 12 in closed position as shown in FIGURE 2. The upper casing part 12 has a handle 22 for swinging the same to open position when the latch means is released and for returning the same to closed position.

The drum 16 is of hollow cylindrical form having a cylindrical wall 24 and end walls 25 and is fixed to turn with a shaft or shaft parts 26 journaled for rotation in suitable bearings 27 attached, for example, at 28 to the vessel 1. The shaft or shaft parts 26 and the drum 16 are rotated by an electric motor 30 and a suitable coupling is provided at 32. The motor 30 is supported on a support 33 on the vessel 1 and the support 33 is braced at 34.

The outer periphery of the drum 16 is spaced inwardly from the curved surfaces presented by the semi-cylindrical walls 10 and 13. Complementary spiral ribs 36 are attached to the inner surfaces of the upper and lower casing parts 12 and 9, for example, by suitable clips or angular members 38. When the upper casing part 12 is closed, the ends of the spiral ribs 36 attached thereto meet the ends of the ribs 36 attached to the lower casing part as shown at 40 in FIGURE 3. These meeting ends 40 are at the junction 18 between the upper and lower casing parts 12 and 9.

The spiral ribs 36 are disposed in the space between the outer periphery of the drum 16 and the inner peripheries of the semi-cylindrical walls 10 and 13 and define a spiral path for the balls from an inlet 42 through which the balls are introduced into the spiral path adjacent one end of the drum 16 to an outlet 43 from which the balls are discharged from position adjacent the opposite end of the drum 16.

The top of the pan or vessel 1 is open at 45 along one side of the casing part 9. A discharge spout 46 is attached to the casing part 12 and delivers the washed and cleaned balls from the outlet 43, for example, to a pail or basket 51 which may be supported on the ground or other supporting surface 6. The spout 46 is of trough shaped form having upright flanges 48 and a bottom 49 perforated at 50. The perforated bottom of the spout 46 extends over the opening 45 and as a result any water, so forth etc., on the balls will drop down into the vessel 1.

Mounted upon the upper casing part 12 is an upwardly opening hopper 52 with metal supporting straps 53 and 54 between the hopper and the upper casing part 12. The hopper 52 overlies the casing part 12 and opens upwardly for receiving the balls to be washed and cleaned. The bottom of the hopper 52 opens into a chute 56 which discharges the balls from the hopper into the spiral path between the drum 16 and casing parts 9 and 12 through the inlet 42. The chute 56 discharges the balls into the spiral path in the direction of rotation of the drum 16 as shown by the arrow A in FIGURE 3.

A drain outlet 58 opens from the bottom of the vessel 1 and forwardly from the washer and has a closure cap 60 screwed on its forward end. Removal of the cap 60 permits draining the contents of the vessel 1 therefrom. The discharge may be out onto the ground, or into a sewer, or otherwise as desired.

Live molded rubber 62 covers and is secured to the outer surface of the cylindrical wall 24 of the drum 16. Live molded rubber 64 also covers and is secured to the inner surfaces of the semi-cylindrical walls 10 and 13 of the lower and upper casing parts 9 and 12.

In FIGURES 6 and 7 the angular members 38 are shown as secured to the casing parts 9 and 12 by fastener means 66 passing through the rubber coverings and through the walls 10 and 13 of the casing parts 9 and 12. The spiral ribs 36 may be welded or otherwise secured to the angular members 38.

The live molded rubber covering 62 and the live molded rubber lining 64 have patterns in their opposite surfaces, for example, as shown in FIGURES 8 and 9. In FIGURES 8 and 9 these patterns are of cross-work form with connected generally triangular ends and with the inner and outer edges 70 relatively thin. The edges 70 of the covering 62 are spaced from the edges 70 of the lining 64 an amount less than the diameters of the golf balls. As a result, the golf balls 72 are gripped between the edges 70 with some distortion of these edges 70 and are advanced spirally within the spiral path from the inlet 42 to the outlet 43.

The surfaces of the spiral ribs 36 presented to the balls 72 are covered with live molded rubber 74 secured to the ribs 36 and having a pattern in the surface thereof, which may, for example, be similar to the pattern shown in FIGURES 8 and 9. The molded rubber cover 62 and the molded rubber lining 64 may have cloth-like bases 75 formed in layers and the molded rubber covering 74 on the ribs 36 may likewise have a cloth-like base 76 formed in layers.

In the operation of the machine the vessel 1 is filled with water having a suitable detergent in it, for example, to the level shown by line B—B in FIGURE 2. The motor 30 is turned on by means of a switch 30' to rotate the drum 16 and the golf balls are introduced into the open top of the hopper 52 and enter the spiral path between the drum 16 and the casing parts 9 and 12 through the inlet 42. The balls 72 are gripped between the edges 70 of the live molded rubber covering 62 and lining 64 and are advanced spirally within the spiral path from the inlet 42 to the outlet 43 from which outlet 43 the washed balls are discharged through the spout 46.

The lower portion of the drum 16 rotates in the water with detergent in vessel 1. The rotation of the drum 16 relative to the rubber covered surfaces of the casing parts 9 and 12 produces a turning of the balls relative to the drum 16 and casing parts 9 and 12 and relative to the molded rubber covering 74 on the ribs 36 in the spiral

movement of the balls from the inlet **42** to the outlet **43**. As a result, the molded rubber edges **70** effectively scrub and work dirt and other foreign matter, such, for example, as rocks, grass, sand, weeds, so forth etc., from the surfaces of the golf balls and out of the dimples in the surfaces of the balls.

The bottom of the wall **10** of the lower casing part **9** and the molded rubber lining **64** on the inner surface of the wall **10** have an outlet opening **78** therethrough. This opening extends longitudinally beneath the entire longitudinal extent of the spiral path between the drum and casing. A member **80** of less width than the opening **78** and having a live rubber covering **82** on its inner surface, similar to the coverings previously described, extends longitudinally through the opening **78**. The edges of the member **80** and its covering **82** are spaced from the sides of the opening **78** as shown in FIGURE 4 to form a pair of circumferentially spaced outlet openings from the spiral path between the drum **16** and the casing parts **9** and **12** into the vessel **1**. Thus, dirt and other foreign matter washed, worked, or otherwise removed from the balls are discharged from the spiral path into the vessel **1** for discharge through the drain outlet **58**.

The two openings into which the opening **78** is divided by the member **80** and its covering **82** are of widths considerably less than the diameters of the golf balls **72** so that the balls will not be discharged through or become engaged in the discharge openings. The ends of the member **80** are turned inwardly as shown at **84** in FIGURE 5 and these ends **84** are secured to the ends of the lower casing part **9**, for example, by screws **85** and nuts **86**.

In FIGURE 10 the bottom of the wall **10'** of the lower casing part and the molded rubber lining **64'** on the inner surface thereof, have an outlet opening **88** therethrough through which dirt and other foreign matter washed, worked, or otherwise removed from the golf balls is discharged from the spiral path between the drum and casing parts and into the water with detergent containing vessel **1**. In this form of the invention, the opening **88** is covered by a perforated screen **90**. The screen **90** prevents passage of the golf balls through the opening **88** and permits dirt and other foreign matter removed from the balls to discharge from the spiral path between the drum and casing and into the pan or vessel containing water with a detergent.

The ends of the screen **90** are turned inwardly and secured to the ends of the lower casing part, for example, by screws **92**.

The top of the pan or vessel **1** has flange means **94** which bridges or covers the junction between the upper and lower parts of the casing externally thereof when the upper casing part is in closed position as shown in FIGURE 2.

The strip **53** has an angular member **95** attached thereto. A support **96** is pivoted to this member **95** at **98** and has a lower angular end **99**. The support **96** is elevated above the ground or other supporting surface for the washer when the upper half of the casing is closed and the lower angular end **99** of the support moves into cooperation with the ground or other supporting surface to support the upper half of the casing when in open position.

The embodiments of the invention disclosed in the drawings and the specification are for illustrative purposes only, and it is to be expressly understood that said drawings and the specifications are not to be construed as a definition of the limits or scope of the invention, reference being had to the appended claims for that purpose.

I claim:

1. A golf ball washer comprising a rotatable cylindrical drum, a casing having a curved surface spaced outwardly from said drum, spiral rib means attached to the curved surface of said casing and disposed in the space between said drum and said curved surface, said spiral rib means defining a spiral path for the balls from an inlet through which the balls are introduced into said spiral path adjacent one end of the drum to an outlet from which the balls are discharged from position adjacent the opposite end of the drum, live molded rubber covering the outer surface of the drum and the curved surface and having patterns therein between which the balls are gripped and advanced spirally within said spiral path from said inlet to said outlet, the rotation of the drum relative to said curved surface producing a turning of the balls relative to the drum and curved surface for working dirt and other foreign matter from the surfaces of the balls, and a pan for holding water with a detergent therein within which the lower portion of the drum rotates for washing the balls with a scrubbing action in their movement through said spiral path from said inlet to said outlet, said curved surface of said casing having an outlet in the bottom thereof through which dirt and other foreign matter removed from the balls is discharged from the spiral path between said drum and said curved surface.

2. A golf ball washer according to claim 1, wherein the outlet in the bottom of the curved surface of the casing discharges into the pan.

3. A golf ball washer according to claim 1, wherein the outlet in the bottom of the curved surface of the casing comprises a pair of circumferentially spaced outlet openings extending longitudinally beneath the entire longitudinal extent of said spiral path and with each of said openings of a width less than the diameters of the golf balls.

4. A golf ball washer according to claim 1, wherein the outlet in the bottom of the curved surface of the casing comprises an outlet opening extending beneath the entire longitudinal extent of the spiral path, and a perforated screen covering said outlet opening to prevent passage of the balls through said opening and through which screen dirt and other foreign matter removed from the balls is discharged from the spiral path between the drum and the curved surface.

5. A golf ball washer according to claim 1, wherein the outlet in the bottom of the curved surface of the casing comprises an opening extending longitudinally beneath the entire longitudinal extent of said spiral path, and a member of less width than said opening extending longitudinally through said opening and secured to the ends of the drum, each of the longitudinal edges of said member being spaced from the sides of the opening to form a pair of circumferentially spaced outlet openings.

6. A golf ball washer according to claim 1, wherein there is a discharge spout having a perforated bottom over which the balls are discharged from the outlet from said spiral path.

7. A golf ball washer according to claim 1, wherein the top of the pan is open along one side of the curved surface of the casing, and a discharge spout having a perforated bottom over which the balls are discharged from the outlet from said spiral path, said perforated bottom of said discharge spout extending over the opening in the top of the pan.

8. A golf ball washer according to claim 1, wherein there is an upwardly opening hopper for receiving the golf balls, said hopper overlying said casing and having a chute for discharging the balls into the inlet end of said spiral path in the direction of rotation of the drum.

9. A golf ball washer according to claim 1, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum.

10. A golf ball washer according to claim 1, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum, and a support elevated above the supporting surface for the washer when the upper half of the casing is closed and movable

into cooperation with said supporting surface to support said upper half of said casing when in open position.

11. A golf ball washer according to claim 1, wherein the upper half of the casing is hinged for swinging movement to open position for access to the drum, and flange means on the top of the pan bridging the junction between the upper and lower parts of the casing externally thereof.

12. A golf ball washer according to claim 1, wherein there is a drain outlet opening from the bottom of the pan.

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