GOLF CLUB WASHER

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Filed Oct. 9, 1969, Ser. No. 865,067
Int. Cl. A46B 13/04

ABSTRACT OF THE DISCLOSURE

A set of golf clubs are cleaned by insertion into guide troughs extending downwardly at an angle from the front panel of a washing machine having a pivotally supported brush assembly. Upon displacement of the brush assembly into contact with the heads of the inserted golf clubs, water jets are discharged into the brush elements while being rotated by a motor. The club heads are properly positioned in the guide troughs by stops.

This invention relates generally to the cleaning of golf club heads and more particularly to a golf club washer of the power driven brush type.

An important object of the present invention is to provide an effective washing machine for golf club heads that require a minimum amount of adjustment and maintenance and is operative to simultaneously clean all of the heads of a set of clubs.

In accordance with the present invention, the front panel of the washing machine is provided with a plurality of slots aligned diagonally across the panel for receiving a plurality of irons and a wood. Guide troughs extend from these slots downwardly to establish a support plane on which the inserted golf clubs are positioned by stops engaging the heads at the lower ends of the guide troughs. A power driven brush assembly is pivotally mounted for displacement from an inoperative position to an operative position wherein a plurality of rotary brush elements engage the heads of the clubs at the lower ends of the guide troughs. When the brush assembly is pivotally displaced to its operative position, an associated drive motor is energized and a solenoid operated valve is opened to supply water under pressure to nozzle orifices from which jets of water are discharged into the rotating brushes thereby effectively cleaning the golf club heads. The machine is maintained in an operating condition for a timed period, the timing cycle being initiated upon closing of a coin switch by coinage deposited into a coin mechanism.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective showing the machine of the present invention.

FIG. 2 is an enlarged sectional view taken substantially through a plane indicated by section line 2—2 in FIG. 1.

FIG. 3 is a partial sectional view taken substantially through a plane indicated by section line 3—3 in FIG. 2.

FIG. 4 is a partial transverse sectional view taken substantially through a plane indicated by section line 4—4 in FIG. 2.

FIG. 5 is a partial transverse sectional view taken substantially through a plane indicated by section line 5—5 in FIG. 2.

FIG. 6 is a partial top plan view of an internal portion of the machine.

FIG. 7 is a simplified electrical circuit diagram associated with the machine of the present invention.

Referring now to the drawings in detail, the golf club washing machine generally denoted by reference numeral 10 in FIG. 1 includes a housing or cabinet generally referred to by reference numeral 12 supported in a vertical position above a floor or ground surface by four corner legs 14. At least the bottom portion of the cabinet 12 is made water-tight for reasons which will become apparent hereinafter. The cabinet includes a front panel 16 interconnected with side panels 18 and 20 and a top panel 22. A back panel 24 is removable secured to the side and top panels. Angle iron frame members 26 of the machine. FIG. 2 is a simplified electrical circuit diagram associated with the machine of the present invention.

With continued reference to FIG. 1, four slots 30 are formed in the front panel 16 in order to receive golf club irons while a fifth slot 32 is adapted to receive a wood. The slots 30 and 32 are aligned at an angle to the vertical closer to the side panel 18. A water supply pipe 34 enters the cabinet through the other side panel 20 adjacent the top thereof. Also, an electrical power cable 22 enters the side panel 20 adjacent the top. The upper end portion of a coin mechanism 36 projects above the top panel 24 and is adapted to receive coins of proper denomination in order to initiate operation of the machine. Deposit of the proper coinage will initiate operation of the machine for a predetermined period of time as will be explained hereinafter. The operating condition of the machine is indicated by an indicator lamp 38 mounted on the front panel.

Referring now to FIG. 2, the water supply pipe is connected within the cabinet adjacent the side wall 20 to a solenoid operated valve assembly 40 through a manually operable cut-off valve 42. The solenoid valve 40 is normally closed so that when energized during a timed operating cycle, it will open to admit of flow of water under pressure through the flexible hose 44 to a pivotally mounted brush assembly generally referred to by reference numeral 46. The solenoid operated valve 40 is controlled by a timing mechanism associated with a control circuit within the control box housing 48 also containing the coin mechanism 36. Thus, the electrical power cable 22 enters the housing 48 for supply of electrical energy thereto. Electrical energy from the control circuit is also fed to a pair of solenoid devices 50 and 52 fixedly mounted by an internal frame structure 54 that extends at an incline to the vertical between the side panels 18 and 20 in order to support the brush assembly 56 and a cradle assembly 60 on which the brush assembly is movably supported. Pivotal displacement of the cradle assembly with the brush assembly mounted thereon is effected by energization of the solenoid devices 50 and 52 in order to move the brush assembly from an inoperative to an operative position.

Referring now to FIGS. 2, 3, 4 and 5, the cradle assembly 56 includes a pair of angle frame members 58 and 60 which are interconnected in parallel spaced relation to each other by end bars 62 and 64. Secured to each of the end bars is a bracket 66 providing spaced support for a pivot shaft 68 extending from each of the end bars through pivot journal assemblies 70 supported by the frame structure 54. The frame structure also mounts adjacent opposite ends of the cradle assembly, a pair of stop brackets 72 and 74 adjustably mounting stop elements 76 and 78. The lower stop elements 76 are adapted to be engaged by the frame member 60 of the cradle assembly.
in the operative position thereof as shown by solid line in FIG. 5. In the operative position as shown by dotted line in FIG. 5, the cradle assembly is engaged with the upper stop elements 78.

The cradle assembly is pivotally displaced about the axis extending through the pivot shafts 68 by means of the solenoid devices 50 and 52 each of which includes a solenoid 80 as more clearly seen in FIG. 5 secured by fastener assemblies 82 to the frame structure. An armature 84 projects upwardly from each solenoid device and is connected by a link 86 to the frame member 58 of the cradle assembly. Thus, when the solenoid devices are energized the cradle assembly is pivotally displaced from the solid line position to the dotted line position as shown in FIG. 5, the cradle assembly is pivotally displaced in a counterclockwise direction as viewed in FIG. 5 to an operative position. Pivotal movement of the cradle assembly is guided by means of a bar 88 which is slidable within channel 106 secured to the frame structure 54. Each end of the bar 88 is pivotally connected through links 92 to the frame member 58 of the cradle assembly as more clearly seen in FIG. 4. Twist of the cradle assembly is thereby avoided at locations where it is loaded by the brush assemblies supported thereon. Interconnected between the frame members 58 and 60 and depending therebelow, are a pair of support structures 94 having projecting arms 96 as more clearly seen in FIGS. 3 and 4 from which journal assemblies 98 depend. Said journal assemblies being secured by fastener assemblies 100 to the projecting arms 96. Thus, the journal assemblies 98 establish a rotational axis for the brush assembly which is parallel to the fixed pivotal axis of the cradle assembly extending through the pivot shafts 68. The journal assemblies 98 rotatably support therebetween the power shaft 102 of the brush assembly on which a plurality of brush elements 104 are fixedly mounted in axially spaced relation to each other. Each brush element 104 includes a plurality of circumferentially spaced bristle bundles 106. Each brush element is thereby effective to clean golf club heads when in contact therewith, with a sweeping action.

One end of the power shaft 102 extends sufficiently beyond the support frame assembly 94 to mount a driven pulley wheel 108 about which a drive belt 110 is entrained, as shown in FIGS. 3 and 4. The drive belt is also entrained about a drive pulley 112 connected to the output shaft of a drive motor 114. The drive motor is secured by fastener assemblies 116 to a support plate 118 welded to the frame members 58 and 60. Thus, upon energization of the drive motor 114, rotation is imparted through the power shaft 102 to each of the brush elements 104 of the brush assembly.

The brush elements 104 are respectively aligned above the lower ends of a plurality of guide troughs 120 that extend from the insert slots 30 and 32 at an angle to the front member 16 as more clearly seen in FIG. 5. Further, since the slots 30 and 32 are aligned along a downward incline, the guide troughs 120 also extend downwardly so that the lower ends 122 thereof are aligned below the brush elements 104 as shown in FIGS. 3 and 4.

Each of the guide troughs 120 is similar in construction and made of channel members having side legs 124 and bottom supporting webs 126, as shown in FIGS. 3 and 6. The spacing between the legs of the channel members is sufficiently wide to receive the heads of the golf clubs with clearance. Further, the legs 124 terminate at the edges of the slots 30 and 32 in the front panel while the webs and bottom edges of the troughs 120 establish a support plane parallel to the pivotal axis of the cradle assembly and the rotational axis of the brush assembly. A pair of stops 128 and 130 are mounted adjacent the ends 122 of each of the guide troughs as more clearly seen in FIG. 6 so that the head of an iron 132 may be properly positioned in the guide trough. Each of the guide troughs except for the one extending from the slot 32, is provided with a rest element 134 intermediate the ends thereof so as to support the golf club handle 136 of an iron in proper position against a channel leg 124 as shown in FIG. 6. The golf club irons when so positioned will have the heads 132 properly aligned below the brush elements 104. Thus, when the cradle assembly is displaced from the operative position, the brush element will contact the golf iron head 132 within each of the guide troughs. The guide trough extending from the slot 32 on the other hand is provided with an opening 138 so that the head 140 of the wood may project downwardly therethrough. A bracket 142 depending from the guide trough adjacent the end 122 and underlying the opening 138 supports the lower surface of the wood head 140 as more clearly seen in FIG. 4.

The flexible hose 44 through which water is supplied from the solenoid valve 40, is connected to the lower end of an orifice nozzle tube 144 secured as by welding to the cradle assembly 56 by means of the support structures 94 as more clearly seen in FIG. 4. The tube 144 will be provided with orifices aligned with each of the brush elements 104 so as to direct a jet of water into the brush element while it is being rotated in its operative position projecting into the guide troughs 120 at their lower ends 122 as shown by dotted line in FIG. 4 in order to engage and effectively clean the golf club head.

When a coin is deposited into the coin mechanism 36, it is operative to close a coin switch 146 as diagrammatically illustrated in FIG. 7 thereby completing an energizing circuit through a timer mechanism 148 to initiate a time cycle during which an energizing circuit for the drive motor 114 is completed through the timer switch 150 causing the brush elements to be rotated. At the same time, the solenoid devices 50 and 52 are energized in order to displace the cradle assembly and the brush assembly supported thereon to the operative position aforementioned. Also, the normally closed solenoid valve 40 is energized to admit water under pressure so that water may be discharged in jet form into each of the rotating brush elements as they engage the heads of the golf clubs. The heads of a complete set of golf clubs are thereby effectively cleansed at the same time without use of detergent and for a period of time determined by the timing cycle of the timer 148. At the end of the timing cycle, the timer switch 150 opens so as to de-energize the drive motor 114 and the solenoid devices 50 and 52 causing the cradle assembly and brush assembly supported thereon to pivot to its inoperative position under its own weight. The stop elements 76 and 78 will of course limit pivotal movement of the cradle assembly between its two positions. Also, the solenoid valve 40 is de-energized at the end of the timing cycle so as to close off the supply of water.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed is new as is follows:

1. Apparatus for cleaning golf club heads or the like comprising a housing having a receiving slot for receiving therein, brush means mounted within the housing for rotation about a rotational axis disposed at an acute angle to the vertical, guide means fixedly mounted within the housing and extending from the receiving slot downwardly below the rotational axis of the brush means adapted to position a golf club head in engagement with the brush means, and movable support means for the brush means for displacement of the rotational axis between operative and inoperative positions relative to the guide means.

2. The combination of claim 1 wherein the guide means includes a channel member having opposite ends respec-
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tively aligned with the receiving slot and the brush means, a rest element mounted in the channel member intermediate said ends adapted to support the handle of the golf club, and stop means mounted in the channel member at the end aligned below the rotational axis of the brush means adapted to engage the head of the golf club, said brush means projecting into the channel member at said latter mentioned end in the operative position of the rotational axis.

3. The combination of claim 2 including power operated means for rotating the brush means only when the rotational axis is in the operative position, and means for injecting fluid under pressure into the brush means during rotation thereof.

4. The combination of claim 1 including power operated means for rotating the brush means only when the rotational axis is in the operative position, and means for injecting fluid under pressure into the brush means during rotation thereof.

5. Apparatus for cleaning golf club heads or the like comprising a housing having a receiving slot formed therein, brush means mounted within the housing for rotation about a rotational axis disposed at an acute angle to the vertical, guide means fixedly mounted within the housing and extending from the receiving slot downwardly below the rotational axis of the brush means adapted to position a golf club head in engagement with the brush means, the guide means including a channel member having opposite ends respectively aligned with the receiving slot and the brush means, a rest elements mounted in the channel member intermediate said ends adapted to support the handle of the golf club, and stop means mounted in the channel member at the end aligned below the rotational axis of the brush means adapted to engage the head of the golf club.

6. The combination of claim 5 including power operated means for rotating the brush means, and means for injecting fluid under pressure into the brush means during rotation thereof.

7. Apparatus for cleaning articles comprising a housing having a front panel provided with a plurality of article receiving slots aligned at a downward incline, a plurality of guide troughs extending downwardly from the slots establishing an article support plane parallel to said downward incline and perpendicular to the front panel, brush means aligned above lower ends of the guide troughs, a power shaft rotatably mounting the brush means about a rotational axis parallel to said supporting plane, support means movably mounting the power shaft for displacement of the brush means to an operative position adjacent the lower ends of the guide troughs, and fluid supply means mounted on the support means for directing jets of fluid under pressure into the brush means.

8. The combination of claim 7 wherein said support means includes a cradle pivotally mounted within the housing about a fixed axis parallel to the rotational axis of the brush means.

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