Nov. 16, 1971 G. F. RUSSELL ET AL 3,619,841

GOLF CLUB WASHER

Filed Oct. 9, 1969 3 Sheets-Sheet 1

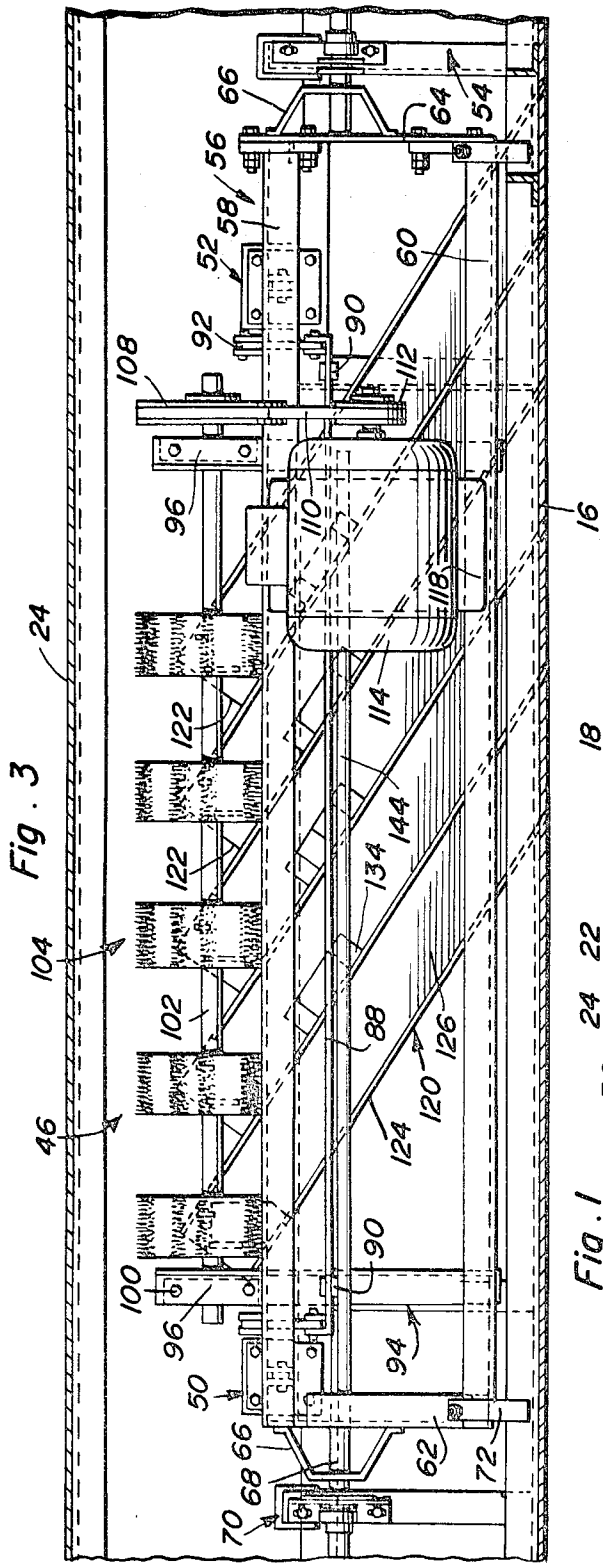


Fig. 3

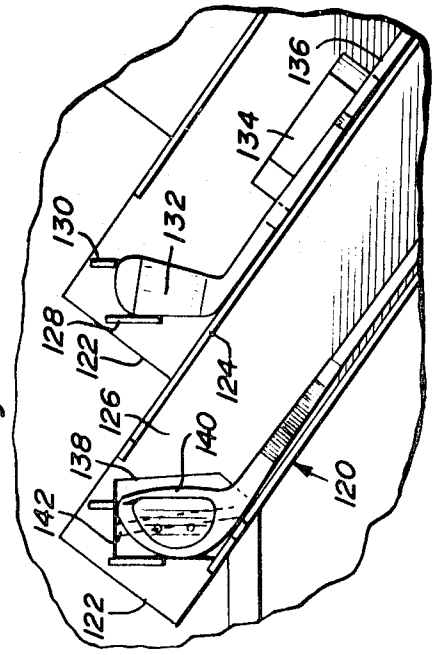


Fig. 6

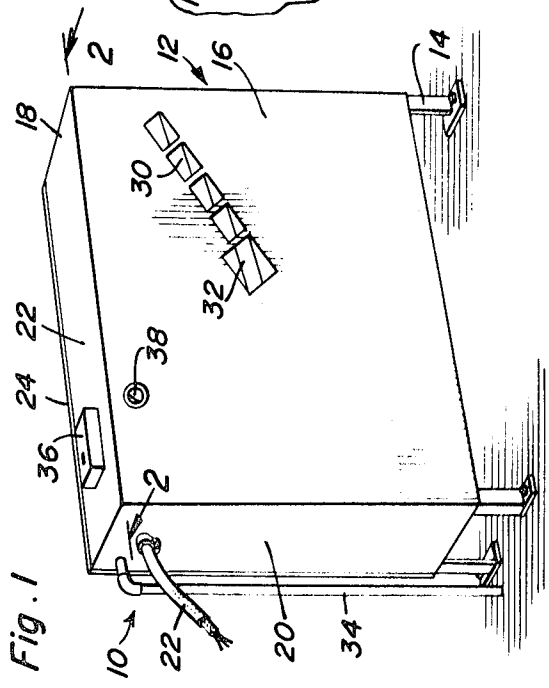


Fig. 1

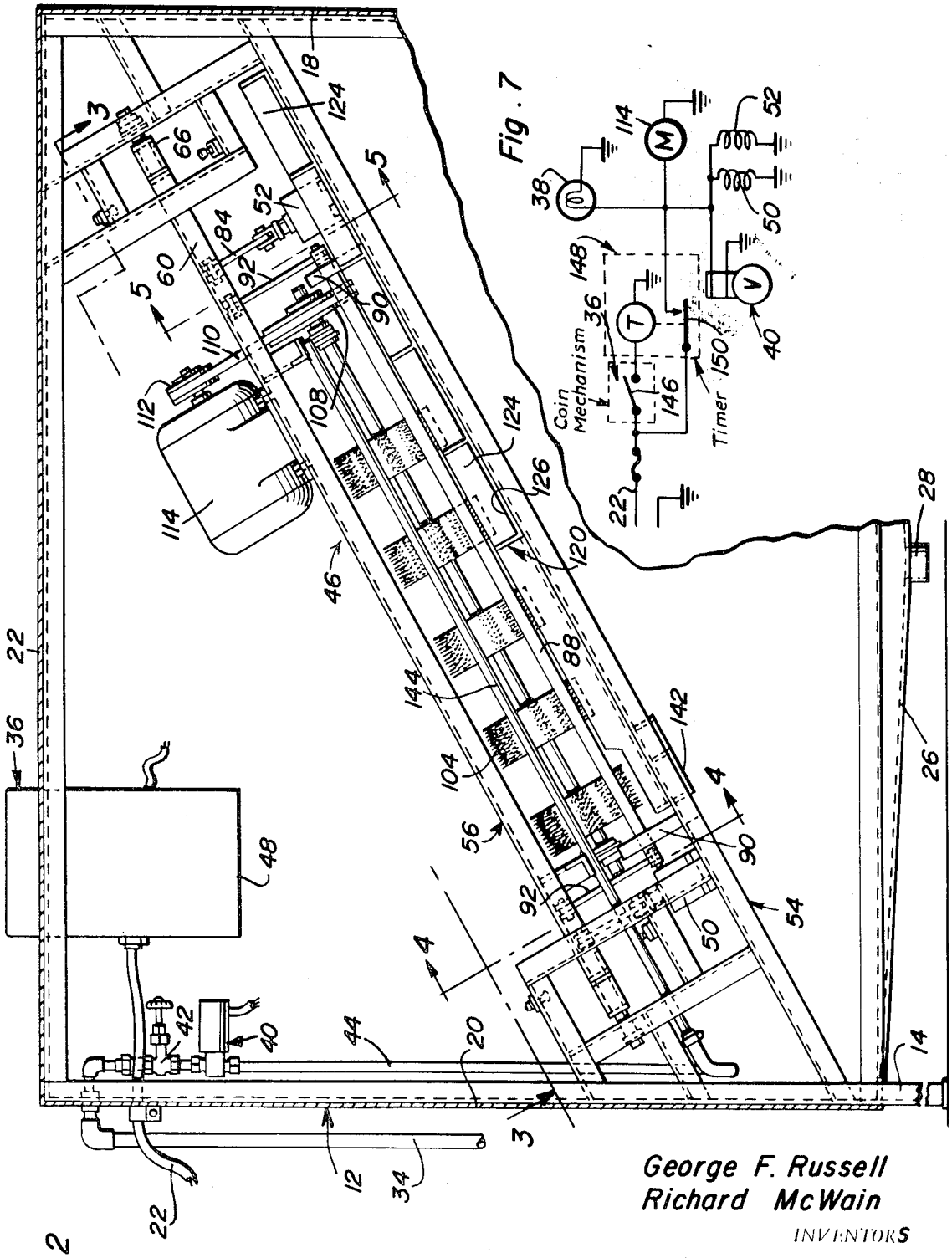
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Fig. 4

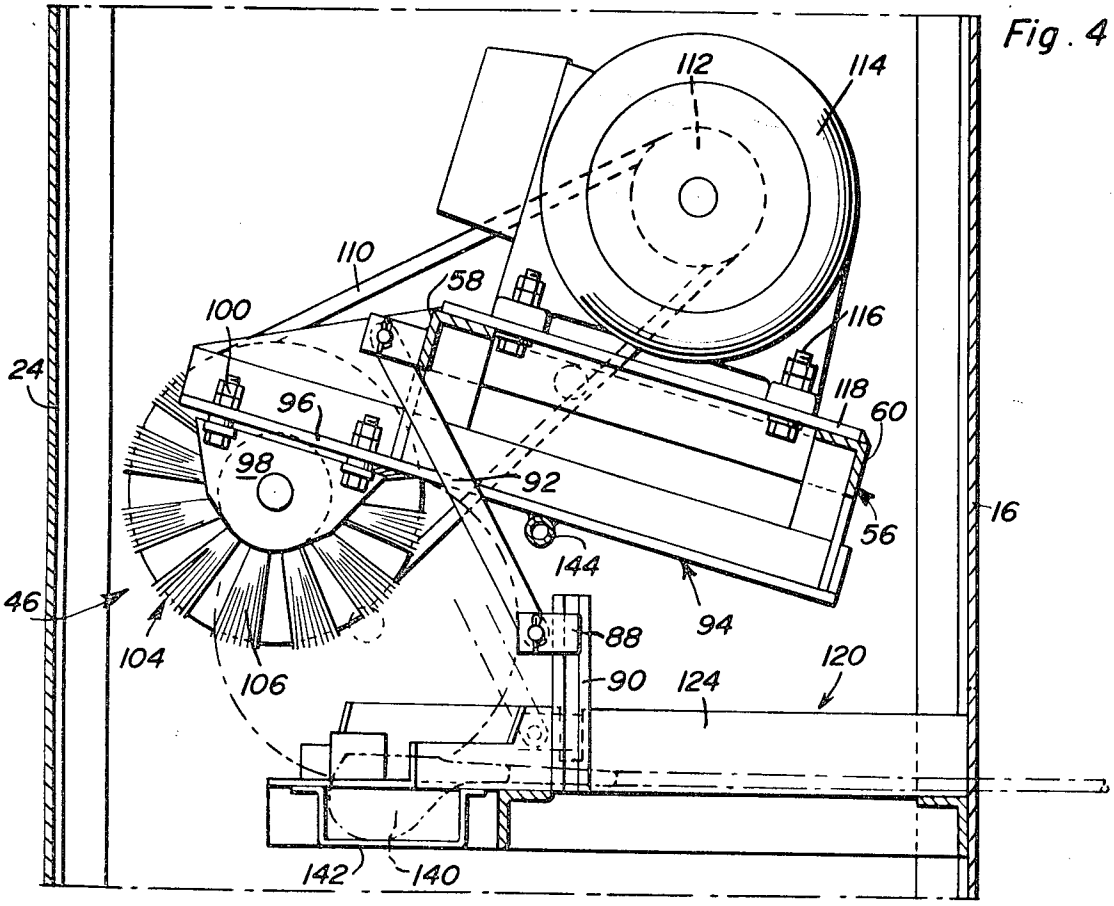
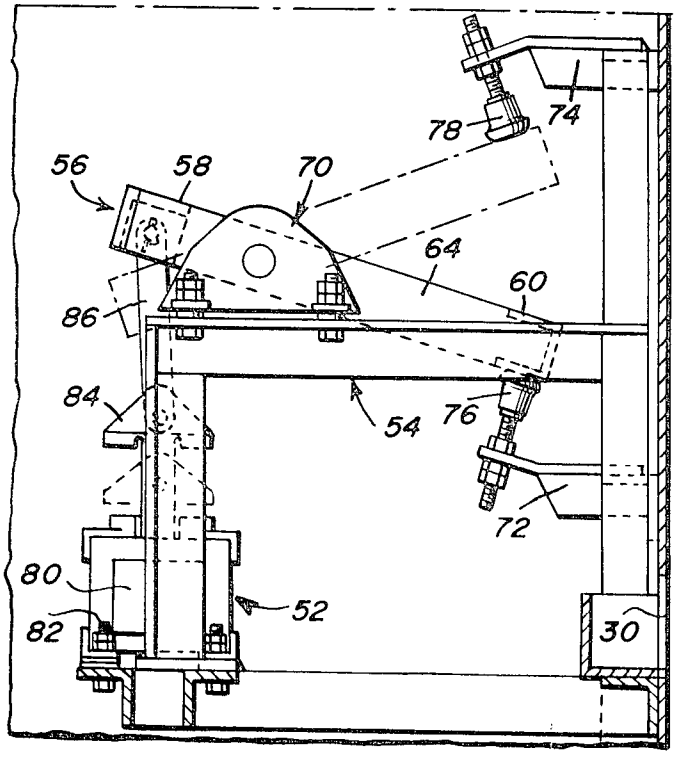


Fig. 5



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GOLF CLUB WASHER

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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 hereafter. 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 including extensions of the legs **14** are fastened to the panels of the cabinet for support thereof. The cabinet panels also enclose a chamber within which water is collected at the bottom. Accordingly, as shown in FIG. 2, the bottom wall **26** of the cabinet is inclined downwardly toward a central portion at which a drain **28** is located. Water collected within the cabinet chamber may therefore be conducted away through the drain **28** to any suitable location.

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 washing machine. Deposit of the proper coinage will initiate operation of the machine for a predetermined period of time as will be explained hereafter. 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 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 **46** and a cradle assembly **56** 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 pivotal 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, downwardly displacing the armature elements **84** 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 between guides **90** secured to the frame structure **54**, the ends of the bar **88** being 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 panel **16** as more clearly seen in FIG. 3. 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 are 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 **126** are flush with the bottom edges of the slots to 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 an inoperative position to an 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 effecivtely clean a 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 theb rush 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 cleaned 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 as new is as follows:

1. 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, and movable support means mounting 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-

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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