July 25, 1967 R. E. REITER 3,332,099

GOLF CLUB WASHING MACHINE

Filed Oct. 15, 1965 2 Sheets-Sheet 1

Fig. 1

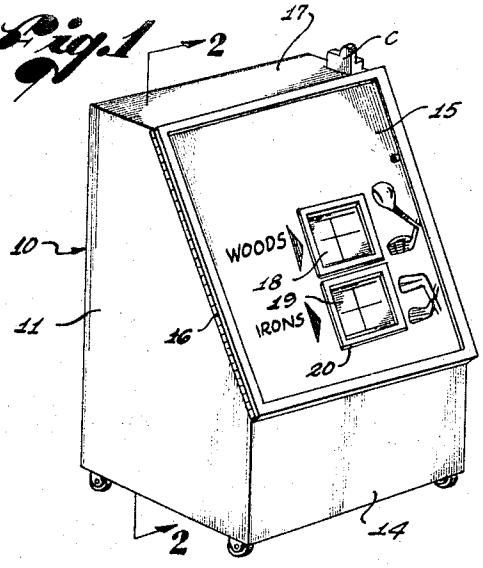


Fig. 2

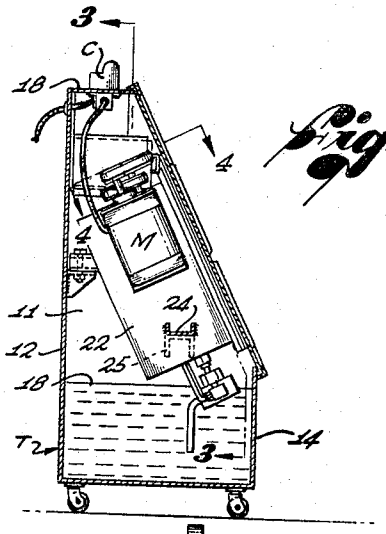
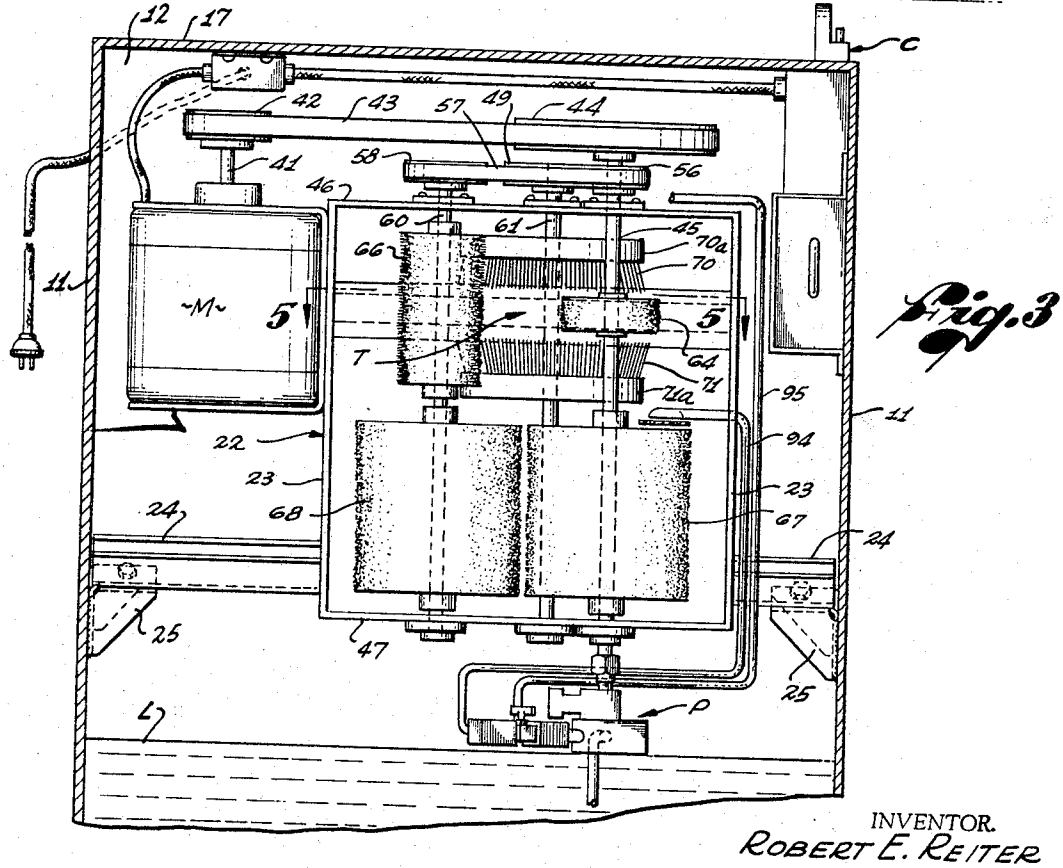


Fig. 3



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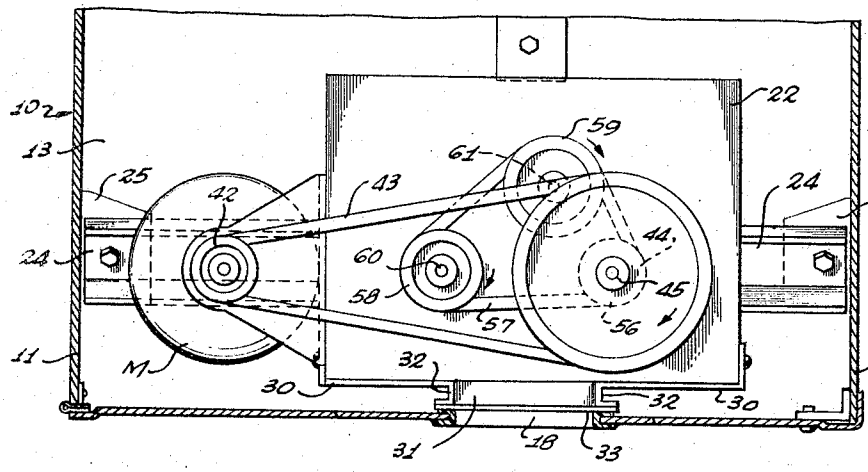


Fig. 4

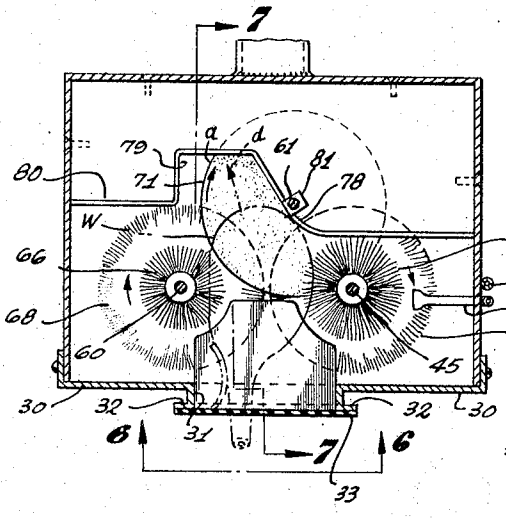


Fig. 5

Fig. 7a

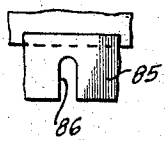


Fig. 6

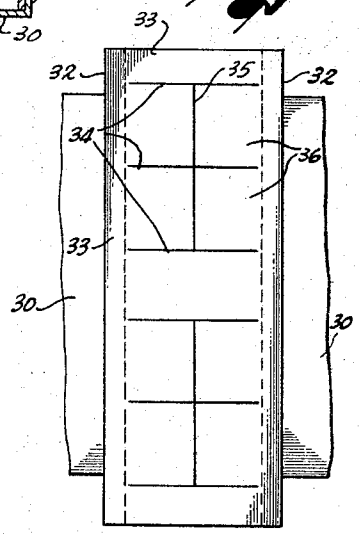
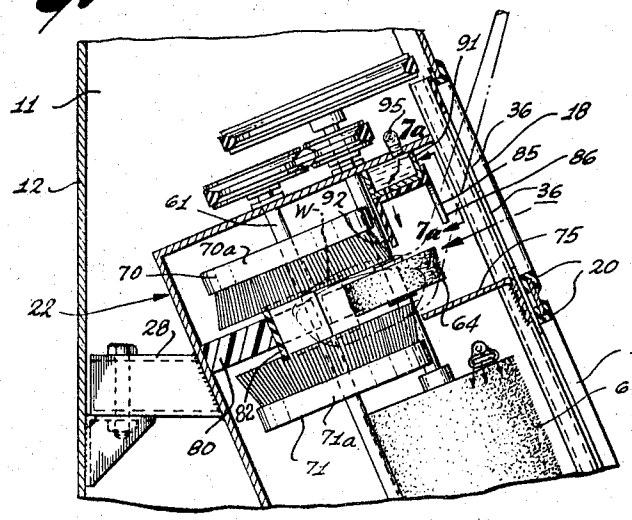


Fig. 7



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GOLF CLUB WASHING MACHINE

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Filed Oct. 15, 1965, Ser. No. 496,452
9 Claims. (Cl. 15—21)

This invention relates generally to machines for cleaning the heads of golf clubs.

The machine of the invention is of a type providing power-driven brushes for cleaning the heads of "irons," and a separate set of power-driven brushes for cleaning the heads of "woods." In each case, the brushes are so arranged that the club head can be inserted between them for scrubbing. The brushes are enclosed inside a housing, with access doors for the heads of the clubs in front of the pairs of brushes. A cleaning fluid is circulated to the brushes. The sets of brushes for the irons and the woods are spaced apart properly to receive these two types of club.

An object of the present invention is to provide a machine of the general type mentioned, having a unique brush arrangement for the woods by which scrubbing on all surfaces of the heads of the wood is very greatly facilitated.

A further object is to provide a guiding arrangement by which the wood club heads are constrained to move between the brushes.

The various features of the invention will be understood by referring to a present illustrative embodiment thereof, reference being had to the accompanying drawings, in which:

FIG. 1 is a perspective view of a present illustrative embodiment of the invention;

FIG. 2 is a transverse section taken in accordance with line 2—2 of FIG. 1;

FIG. 3 is a view taken in accordance with the broken line 3—3 of FIG. 2;

FIG. 4 is a section taken in accordance with line 4—4 of FIG. 2;

FIG. 5 is a section taken on line 5—5 of FIG. 3;

FIG. 6 is a fragmentary elevational view taken in accordance with the arrows 6—6 of FIG. 5;

FIG. 7 is a view taken in accordance with the broken line 7—7 of FIG. 5; and

FIG. 7*a* is a fragmentary detail taken in accordance with line 7*a*—7*a* of FIG. 7.

The illustrative golf club washing machine illustrated has an exterior housing **10** comprising sides **11**, a back **12**, a bottom **13**, a low vertical front panel **14**, a rearwardly sloping front panel or door **15**, hinged at one side to a side **11**, as at **16**, and a top **17**. These walls are fluid tight below the upper edge of panel **14**, and form a tank for liquid cleaner L. The front panel is formed with two rectangular, vertically aligned club-head receiving or access windows **18** and **19**, one for the woods, in this instance upper window **18**, and one for the irons, in this instance lower window **19**. The windows **18** and **19** are preferably framed with rubber moldings **20**. A coin box C is mounted on top **17**, and controls energization of electric drive motor M for a predetermined time interval, as 5 minutes. The details of the coin controlled mechanism and motor control circuit are not a part of the present invention and need not be further disclosed.

A generally rectangular box frame **22** is mounted inside the housing, parallel to slanting door **15**; and as here shown, its side walls **23** have welded thereto channels **24**, detachably fastened to brackets **25** on the side walls of exterior housing **10**. To the back wall **26** of box frame **22** is welded a channel **28** detachably fastened to a bracket **29** on exterior housing back wall **12**. The box frame **22** mounts all of the working parts of the machine, and is installed in the housing **10** through the access opening formed by opening or removal of the front panel **15**.

The front side of the box frame **22**, which is relatively close-spaced behind front panel **15**, is comprised of two vertical panels **30**, spaced by a vertical medial slot or window **31**, whose vertical edges align with the opposite vertical edges of the club head windows **18** and **19** in front panel **15**, and the adjacent edges of the panels **30** are provided with channels **32** to which is fixed a flexible rubber wall **33** that extends across the window **31**, and is formed with certain cuts designed to pass the heads of the clubs to be cleaned. Thus (see FIG. 6), in the upper half of the wall **33**, as well as in the lower half thereof, there are three parallel horizontal cuts **34**, and an intermediate vertical cut **35**, forming flexible doors or flaps **36**. These flaps **36** readily pass the head of a club, and then close, the upper pair of flaps closing closely about the club shaft, and the lower pair closing completely. Thus splash-out from the brush action inside is adequately contained.

On and to one side **23** of box frame **22** is mounted the electric drive motor M, arranged with its shaft **41** extending upwardly, parallel to sloping front panel **15**, and this shaft **41** carries a pulley **42** connected by belt **43** to a larger pulley **44** on a main drive shaft **45**. The latter is journaled in suitable bearings on the upper and lower walls **46** and **47**, respectively, of box frame **22**, and carries certain brushes, as well as driving, at its lower end, a later described circulation pump, designated generally at P. The drive shaft **45** is preferably located just to the right, or outside, the aligned right-hand boundaries of the access windows **18** and **19**, as viewed in FIG. 4, and as may be fully understood from considering also FIGS. 1 and 3.

On drive shaft **45**, just below pulley **44**, is a pulley **56** connected by a belt **57** to pulleys **58** and **59** on a pair of shafts **60** and **61**, respectively, also journaled in bearings mounted on the upper and lower walls of frame **22**. The shaft **60** is located directly across from shaft **45**, just outside the left-hand boundary of the line of the club head access windows **18** and **19**, the two shafts **45** and **60** being substantially equally spaced to the rear of the slopping front panel **15**. The shaft **61** is spaced in back of the plane defined by the shafts **45** and **60**, and somewhat closer to shaft **45** than shaft **60**, the angle made by lines joining shafts **45** and **60** with shaft **61** being approximately a right angle in the present illustrative embodiment. The shaft **45** mounts, in line with window **18**, a relatively flat or narrow cylindrical brush **64**, adapted for peripheral engagement with the rearward side or back of the head *w* of a wood club (FIG. 5).

On shaft **60**, directly across from brush **64**, is a cylindrical rotary brush **66**, which is preferably substantially longer than the brush **64**, extending both above and below the latter. The spacing of the shafts **45** and **60**, and the diameters of the brushes **64** and **66**, is such as permits the head of a wood to be inserted therebetween by a substantial deflection of the bristles of the two brushes (see FIG. 5 showing typical relative spacings). It will be seen that while the brush **64** engages and will scour the rearward side of the club, the brush **66** engages the driving face of the club and surrounding front surfaces thereof.

In line with lower window **19**, the shaft **45** mounts a long cylindrical rotary brush **67**, preferably with strong and stiff synthetic plastic bristles, such as Nylon. It may here be mentioned that the bristles for the wood-scrubbing brushes should be of any conventional softer type, so as to avoid scratching the woods. On shaft **60**, directly across from brush **67**, is a cylindrical brush **68** identical

to brush **67**, and the peripheries of these brushes are closely spaced, so that when the head of an iron is inserted and moved about between them, all surfaces of the head are quickly scoured.

The top and bottom surfaces of the woods are scoured by two flat upper and lower rotary disk brushes **70** and **71**, respectively, spaced axially on the shaft **61** just above and below brush **64**. The brushes **70** and **71** have disk-like heads **70***a* and **71***a* mounted axially on the shaft **61**, in planes at right angles thereto, and these heads mount axial bristles, i.e., bristles which extend generally parallel with the axis of the shaft **61**. For purpose of identification and definition, herein and in the claims, radially bristled brushes of the type of **64**, **66**, **67** and **68** are referred to as cylindrical brushes, and brushes **70** and **71** are referred to as disk brushes. The brushes **70** and **71** are disposed with their bristles in opposition to one another, and are positioned a distance apart which is less than the vertical thickness of the head of a wood club (FIG. 7), so that the bristles will be substantially deflected by a wood head thrust therebetween, and thereby caused to work over and around the entire curved top and bottom surfaces of the head. The brushes are driven so that disk brushes **70** and **71** turn in the direction of arrow *a* in FIG. 5, so that the club head tends to be dragged inwardly by these brushes.

As will appear in FIG. 5, the shaft for the brushes **70** and **71** is located rearwardly of the shafts **45** and **60**, and preferably shortly to the right of a perpendicular bisector of a line joining the axes of the two shafts **45** and **60**. Also, the spacing and the diameters of the brushes are such that the peripheries of brushes **70** and **71** lie closely adjacent the shaft **45**. The axes of the three shafts will be seen to be at the apices of a triangle, which is preferably, in the particular illustrative embodiment here shown, nearly or substantially a right triangle, with nearly a right angle at the shaft **61**.

Further, the disk brushes **70** and **71** are so spaced and located that the narrow cylindrical brush **64** is positioned axially in line with the space between them; and nearly half of the narrow cylindrical brush **64** overlaps and runs between the disk brushes **70** and **71**. The cylindrical brush **66**, on the other hand, is close spaced to the peripheries of the disk brushes **70** and **71**.

A novel arrangement is thereby provided whereby the head of a wood club can be effectively brushed on all its surfaces by a simple combination of rotary cylindrical and disk brushes. While the combination of brushes as described is capable of cleaning the head of a wood when the user thrusts it between the several brushes of the set, the cleaning operation is greatly facilitated and improved by use of certain guides which assure travel of the head into the proper cleaning positions between the brushes. Thus, for the woods, a first or bottom guide plate **75** is provided, and extends from the lower boundary of the wood entrance window **18** parallel to the planes of the upper and lower disk brushes **70** and **71**, and the level of this guide plate is spaced a suitable distance below the plane of the tips of the bristles on the lower disk brush **71**, as shown. The wood club head, after insertion through window **18**, and which, with its flaps **36**, functions as a first guide or directing means, is guided and received into a throat or "tunnel" T defined horizontally by the cylindrical brushes **64** and **66** and vertically first by the guide **75** and then by the disk brushes **70** and **71**. It will be seen that this throat or tunnel T is of smaller cross-section than that of the wood head, so that the brush bristles are deflected and spread over the surfaces of the club head. As the toe of the club emerges from between the cylindrical brushes **64** and **66**, and is forced ahead still further between the disk brushes **70** and **71**, it is guided just to the left of brush shaft **61**, along the curved path represented by the arrow *d*, by engagement with a curved cam surface **78** formed at one side of a notch **79** in the edge of a guide wall **80** mounted in box frame **22**. The shaft **61** is received in a small notch **81** formed in cam surface **78**, and the club is guided along the cam edge **78** just slightly to the side of shaft **61**. Preferably, the cam face of the guide wall **80** is faced with a somewhat flexible fabric-reinforced rubber strip **82**, which serves to protect against scratching of the toe of the club. This strip **82** is also made wide enough to prevent the toe of the club head from traveling either over or under the wall **80** and thus possibly becoming wedged in or stuck. Notch **79** is deep enough to accept the toe of the club well past the shaft **61**.

By moving the club head back and forth in the path described, and at the same time turning it somewhat from side to side by its shaft and otherwise moving it about, it can be effectively brushed and cleaned on all surfaces with great rapidity under the combined action of the brushes and the cleaning fluid continuously distributed onto the latter.

It is possible that, on rare occasions, a user might try to insert the club head into the machine upside down. To guard against this possibility, I prefer to use a flexible vertical rubber wall **85** just in back of the window **18** and the rubber flap doors **36** (FIGS. 7 and 7*a*), with a vertical guide notch **86** therein for the shaft of the club. The lower edge of this wall **85** is spaced just above the brush **64**, and the notch **86** extends upwardly from this lower edge, in the plane normally occupied by the shaft of a club when its head is properly thrust between the two brushes **64** and **66**, as is the case in FIG. 5.

As here shown, the wall **85** comprises one side wall of an inverted molded rubber channel **90**, the upper wall of which is fastened to the underside of a liquid cleaner well **91**, and the other flexible side wall **92** of which comprises a further guide to aid in guiding the club head, if initially inserted too high, down and into the proper path between the brushes. The guide slot **86** does not interfere with proper manipulation of the club head between the brushes, and has the advantage that it indicates immediately to the user that the club head should be inserted sole down, so that the shaft will go nicely through the guide slot **86**.

As mentioned earlier, the bottom portion of the outside housing serves as a tank for the cleaning liquid L. Pump P draws from this liquid cleaner (FIG. 3), and delivers to two lines **94** and **95**. The former discharges over brush **67**, wetting it thoroughly, and by splash-over, wetting the brush **68** as well. The other line **95** discharges into well **91**, which is suitably perforated in the bottom so as to drip cleaning liquid both onto brush **64** and brush **70**. The liquid, by running, dripping and splashing, wets the remaining brushes.

It will be understood that the particular machine illustrated and specifically described herein will be understood to be for illustrative purposes only, and that various changes in design, structure and arrangement can be made without departing from the spirit and scope of the appended claims.

I claim:

1. In a golf club head cleaning machine, a pair of parallel, rotatably mounted, power rotated shafts, a cylindrical brush mounted on one of said shafts; a pair of opposed, axially spaced disk brushes mounted on the other of said shafts and whose peripheries are immediately adjacent to said cylindrical brush, said brushes defining a slot for reception of a wood club head with the face thereof adjacent to said cylindrical brush and the top and bottom thereof simultaneously swept by said disk brushes, all in such manner that the face, top and bottom of said club head are simultaneously scrubbed by said brushes, also a third rotatably mounted, power rotated shaft parallel to the first-mentioned shafts and defining therewith the third apex of a triangle, and

a relatively narrow, rotary cylindrical brush on said third shaft projecting between and being substantially overlapped by portions of said disk brushes, said

relatively narrow brush being positioned to engage the back surface of a wood club head thrust into said slot.

2. In a golf club head cleaning machine, the combination of:

a relatively elongated cylindrical brush mounted for rotation on its axis,

a pair of opposed coaxial and axially spaced disk brushes rotatably mounted on an axis parallel to that of said cylindrical brush and positioned peripherally adjacent to opposite end portions, respectively, of said cylindrical axis, said disk brushes being axially spaced to receive a wood golf club head therebetween with top and bottom surfaces of said head in bristle-deflecting engagement with said disk brushes,

a relatively narrow, rotatable cylindrical brush mounted on a third axis parallel to the first two mentioned axes, and defining a triangle therewith, said relatively narrow brush projecting between and being substantially overlapped by portions of said disk brushes,

said relatively narrow, cylindrical brush being spaced from said rotatively elongated brush to permit passage of a wood golf club head therebetween, with the driving face and back thereof in bristle-deflecting engagement with the respective relatively elongated and relatively narrow cylindrical brushes, and

means for rotating said brushes.

3. The subject matter of claim 2, including also means for guiding the club head into the space between said brushes.

4. The subject matter of claim 3, wherein said guiding means includes a flexible wall with a slot therein for guiding reception of the shaft of the club.

5. The subject matter of claim 3, wherein said guiding means afford a guiding surface for the sole of the club head positioned to cause the lower portion of the club head to engage the corresponding disk brush at a level spaced inward of the tips of the bristles of said disk brush.

6. The subject matter of claim 2, including also a cam means engageable by the toe and rearward surface of the club head upon passage from between said cylindrical brushes for guidance of the club head between portions of said disk brushes.

7. In a cleaning machine for wood heads of golf clubs fitted with shafts, the combination of:

a housing,

a pair of parallel, rotatably mounted, power rotated shafts,

a cylindrical brush mounted on one of said power rotated shafts,

a pair of opposed, axially spaced disk brushes mounted on the other of said shafts and whose peripheries are relatively closely adjacent to said cylindrical brush, said cylindrical and disk brushes defining a slot for reception of a wood club head with the face thereof adjacent to said cylindrical brush and the top and bottom thereof simultaneously swept by said disk brushes, all in such manner that the face, top and bottom of said club head are simultaneously swept and scrubbed by said brushes, and

a window in said housing for entrance of said club head thereinto followed by its shaft, said window and said slot being positioned to define a guide path for said club head and its shaft when said head is thrust through said window and thence into said slot, said path extending diagonally of a line intersecting the axes of said shafts and between said axes, and said cylindrical brush being closer to said window than said disk brushes so that said head moves first into engagement with said cylindrical roller, and then, while still in such engagement with said cylindrical brush, between said disk brushes.

8. The subject matter of claim 7, including also a club head guide cam for engagement by the toe end of the club head for deflecting said club head laterally in the last portion of said path of travel.

9. In a golf club head cleaning machine, a pair of parallel, notably mounted, power rotated shafts, a cylindrical brush mounted on one of said shafts; a pair of opposed, axially spaced disk brushes mounted on the other of said shafts and whose peripheries are immediately adjacent to said cylindrical brush, said brushes defining a slot for reception of a wood club head with the face thereof adjacent to said cylindrical brush and the top and bottom thereof simultaneously swept by said disk brushes, all in such manner that the face, top and bottom of said club head are simultaneously scrubbed by said brushes, also a third rotatably mounted, power rotated shaft parallel to the first-mentioned shafts and defining therewith the third apex of a triangle, and

a rotary cylindrical brush on said third shaft positioned to close said slot and to engage the bark surface of a wood club thrust into said slot.

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