April 9, 1963 H. HASSELROTH 3,084,360

BALL WASHING APPARATUS

Filed Feb. 15, 1961 2 Sheets-Sheet 1

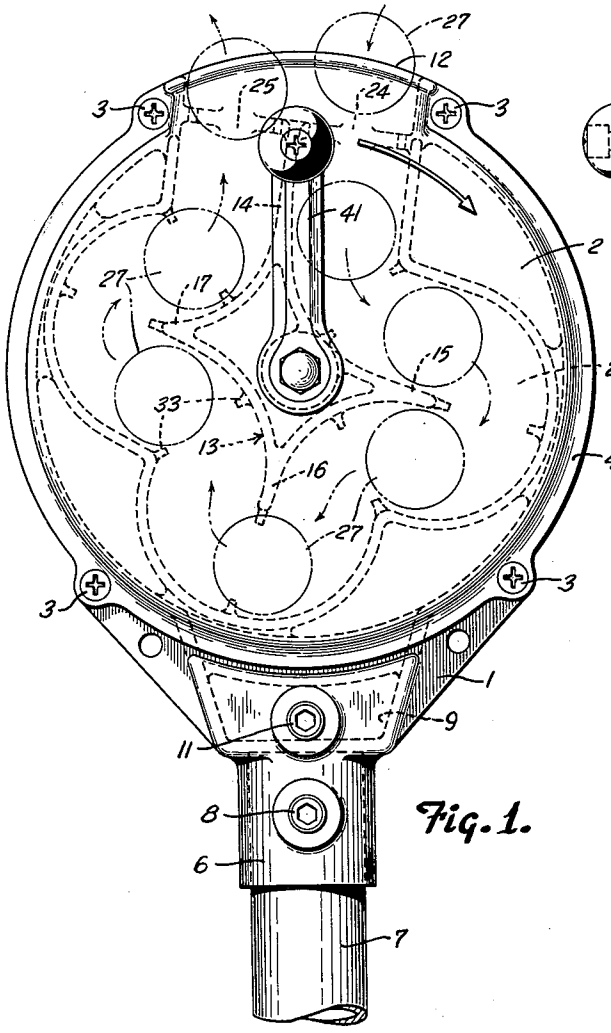


Fig. 1.

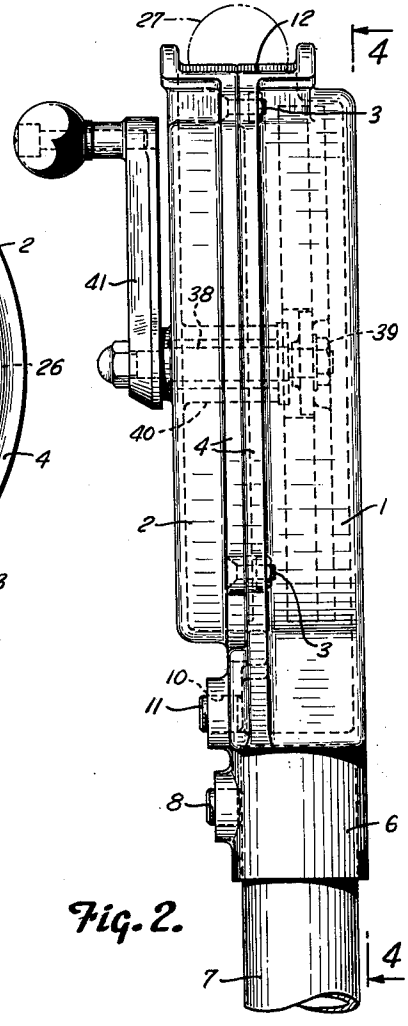


Fig. 2.

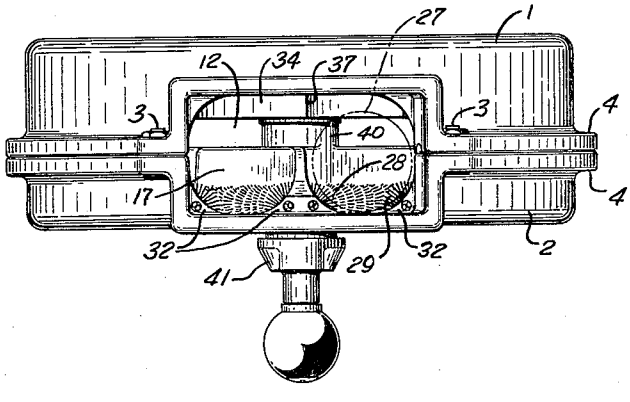


Fig. 3.

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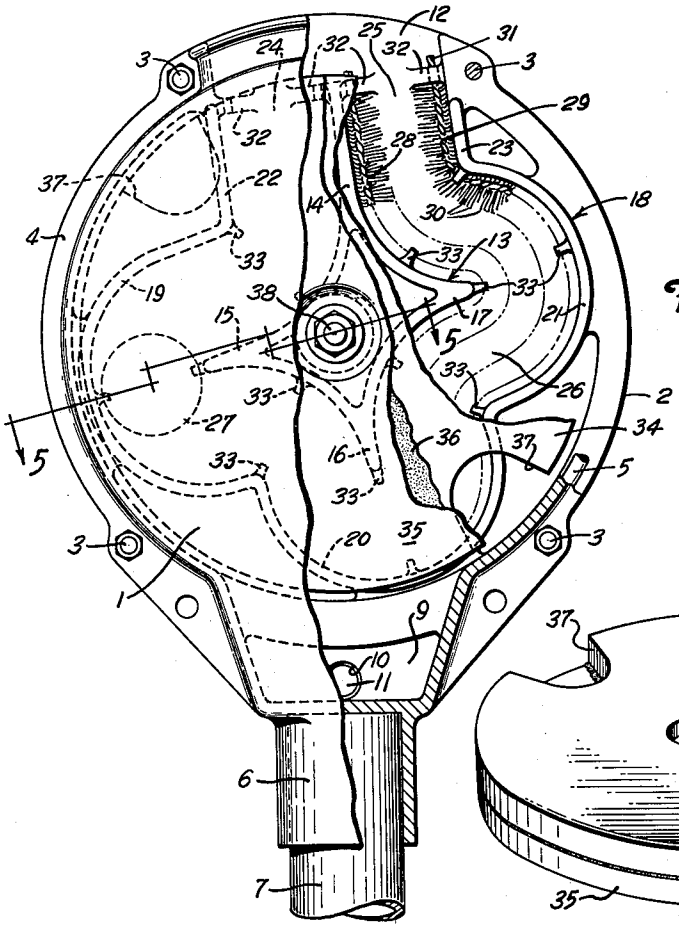


Fig. 4.

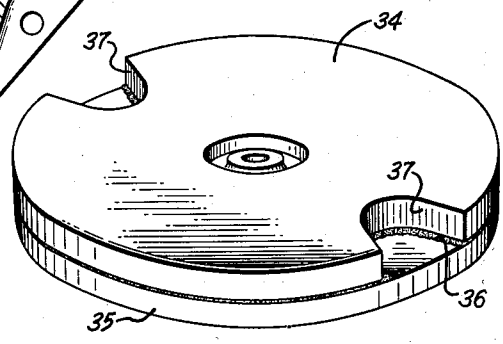
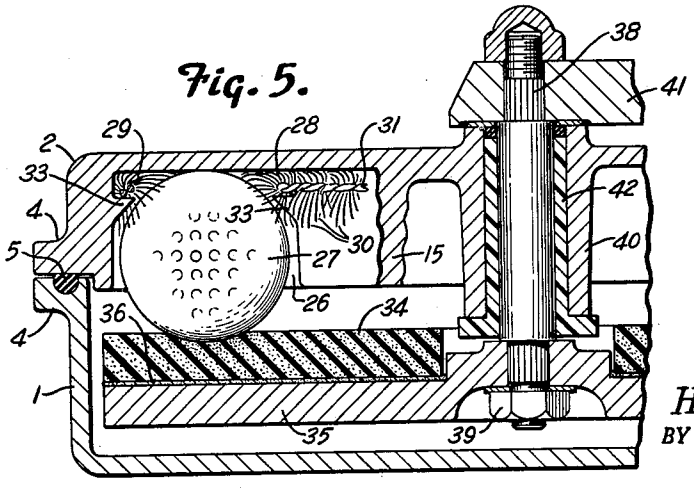


Fig. 6.

Fig. 5.



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BALL WASHING APPARATUS

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This invention relates to a ball washing apparatus and more particularly to an improved rotary golf ball washer.

There are two basic types of golf ball washers which are presently used, the reciprocating or paddle type and the rotary type. In the reciprocating type, the ball is inserted within an opening in an elongated paddle and is reciprocated between a pair of brushes or scrubbing members, while in the rotary ball washer, the ball is inserted within an opening in a casing and driven through a passage within the casing by a rotating drive member. The Patent 2,198,441 to Mollart discloses a rotary golf ball washer in which the golf ball is moved through a tortuous passage in the casing by a rotating brush. In a device of the type shown in this patent, the brush is the driving force and it has been found that there is not adequate frictional resistance between the brush and the golf ball to provide a complete scrubbing action.

The present invention is directed to a rotary golf ball washer having an improved scrubbing action. The golf ball washer comprises a casing having a passage through which the golf ball is adapted to be moved during the washing operation and a scrubbing member, such as a brush, is located within the passage. One side of the passage is closed off by a wall of the casing, and a rotatable resilient disc is spaced laterally from the opposite open side of the passage and is adapted to be rotated by an external crank. The ball is inserted within the inlet end of the passage and by rotating the resilient member, the ball is moved through the passage to the outlet end. The resilient member serves to move the ball within the passage and the frictional resistance of the ball against the scrubbing member serves to rotate the ball, so that the entire surface of the ball is thoroughly cleaned or scrubbed. As the passage through which the ball moves during the cleaning operation is of substantial length, a number of balls can be inserted into the passage and cleaned at the same time.

An automatic kickover feature is also provided which will automatically move the ball from the outlet end of the passage to the inlet end so that the ball can be recycled through the passage for additional scrubbing if desired.

The present ball washer is of simple construction and both the brush and the resilient disc can be readily replaced when worn.

Other objects and advantages will appear in the course of the following description.

The drawings illustrate the best mode presently contemplated of carrying out the present invention.

In the drawings:

FIGURE 1 is a front elevation of the ball washer of the invention;

FIG. 2 is a side elevation of the ball washer;

FIG. 3 is a top view of the washer;

FIG. 4 is a rear elevation taken along line 4—4 of FIG. 3 with parts broken away in section;

FIG. 5 is an enlarged fragmentary section taken along line 5—5 of FIG. 4; and

FIG. 6 is a perspective view of the driving disc.

The drawings illustrate a rotary golf ball washer which includes a generally circular casing 1 having an open face which is enclosed by a cover plate 2. The cover plate 2 is secured to the casing by a series of bolts 3 which extend through aligned openings in the matching flanges 4 of the casing and cover plate. The joint between the casing and the cover plate is sealed to prevent leakage of liquid from the casing by means of a resilient gasket 5.

The golf ball washer is adapted to be supported on a post or the like and thus the casing 1 is provided with a tubular extension 6 which is adapted to fit over the upper end of the supporting post 7. The extension 6 is provided with an opening and a set screw 8 is inserted through the opening and secures the casing to the post.

To prevent accumulation of dirt or other foreign material within the casing, the lower portion of the casing is provided with a sump 9 and a drain opening 10 provides communication between the sump 9 and the exterior. Normally the drain opening 9 is closed by a plug 11.

The casing 1 and cover plate 2 are provided with matching recesses which together define an opening 12 for inserting or withdrawing the golf ball or other article to be cleaned.

A spider 13 is mounted on the inner face of the cover plate 2 and is provided with a plurality of radially extending spokes or fingers 14, 15, 16 and 17, which extend radially outward with respect to the axis of the ball washer. The spider 13 is provided with generally curved surfaces between the spokes and the spoke 14 is preferably of greater length than the other spokes and extends to a point located generally centrally of the opening 12 in the casing.

A guide track 18 is also formed integrally with the inner face of the cover plate 2 and includes a series of generally semicircular surfaces 19, 20 and 21 which are disposed in spaced relation to the respective spokes 15, 16 and 17. In addition, the guide track is provided with a pair of generally vertical surfaces 22 and 23 which are spaced from the spoke 14 and define an inlet 24 and an outlet 25 which are disposed in communication with the opening 12 in the casing. The spider 13 and the guide track 18 define a tortuous passage 26 through which the ball 27 is moved during the washing operation, and the passage 26 has a width slightly greater than the diameter of the ball. The ball is inserted through the opening 12 into inlet 24 and moves through the passage 26 to the outlet 25 where it can be removed from the casing. The spoke or arm 14 which extends upwardly toward the opening 12 is preferably slanted or at an angle with respect to a radius of the casing to facilitate the automatic discharge of the ball to the outlet 25.

The ball 27 is cleaned as it moves through the passage 26 by a pair of brushes 28 and 29 which are disposed in the corner between the guide track 18 and the inner wall of the cover plate 2 and in the corner between the spider 13 and the inner wall of the casing. Each brush consists of a series of bristles 30 which are connected to a wire 31 and each wire is held in position within the passage by feeding the ends of the wire through openings in fillets 32 located at the upper portion of the cover plate. In addition, a series of lips 33 are provided in the passage 26 and serve to retain the wire 31 in position throughout the entire length of the passage.

While the scrubbing or cleaning member is shown as brushes 28 and 29, it is contemplated that any other type of cleaning member, such as a fabric, rubber nipples, and the like, can be substituted for the brushes.

The golf ball 27 is driven through the passage 26 by a generally circular resilient disc 34 which is secured to a backing plate 35 by a suitable resin or adhesive 36. The resilient disc 34 is formed of a resilient material such as rubber or the like and is provided with a pair of diametrically opposite recesses 37 into which the golf ball is inserted at the start of the washing operation and withdrawn at the completion of the washing operation.

The disc 34 is mounted on a central shaft 38 and the

inner end of the shaft **38** is threaded and is engaged by a nut **39** while the outer end of the shaft extends through a boss **40** formed on the cover plate **2** and is engaged by a crank **41**. The boss **40** is provided with a suitable bushing **42** within which the shaft is journaled. By rotating the crank **41**, the disc **34** will be rotated about the axis of the casing to thereby move the ball within the passage **26**.

The height of the boss **40** is such that the inner surface of the disc **34** will be spaced from the outer edge of the spider **13** and the guide track **18**, and the distance between the inner wall of the cover plate **2** and the opposing surface of the disc **34** will be slightly less than the diameter of the golf ball. Therefore the ball will be in contact with the inner surface of the wall **2** as it is moved through the passage **26** and the ball will also press into and deform the resilient disc **34** and provide an increased area of surface contact between the disc and the ball.

To operate the apparatus of the invention, the casing is partially filled with water or any other cleaning fluid to be employed. In most cases the cleaning fluid is water and a detergent or soap will be added to the water. The golf ball or other article to be cleaned is inserted through the opening **12** into the inlet **24**. The disc **34** is then rotated by turning the crank **41** and the ball **27** is driven through the tortuous passage **26**. Because of the shape or dimensions of the passage **26** and due to the frictional resistance of the brushes, the ball not only moves through the passage but is also rotated about its own axis. During the rotation and movement of the ball through the passage, all surfaces of the ball will come into contact with the brushes **28** and **29** so that the entire outer surface of the ball will be completely cleaned or scrubbed. This improved scrubbing action is due to the fact that the driving member itself, which is the disc **34**, is not intended to clean or scrub the ball and the ball is moved against the brushes so that the frictional resistance provides the scrubbing action.

The spongy resilient character of the disc will serve to absorb some of the water within the casing and a portion of this water will be squeezed out by the pressure of the ball against the disc, with the squeezed out water serving to wash the dirt from the ball and provide an increased cleaning effect.

As the passage **26** has a substantial length, a series of balls can be inserted through the opening **12** and all of them can be cleaned at the same time. Because of the shape of the spider **13** and the location of the outlet opening **25**, the ball being moved to the outlet **25** will be automatically kicked over to the inlet **24** without having to be manually reinserted within the inlet **24**.

The pair of brushes **28** and **29** provides a thorough scrubbing action for the ball and the brushes can be readily replaced when worn by merely removing the wire from the fillets **32** and lips **33**. Similarly, the driving disc **34** can be readily replaced when worn.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. A washing device, comprising a container having an opening and adapted to contain a cleaning media and having a firm non-resilient first wall and a second wall in opposed spaced relation, track means connected to said first wall for defining a passage disposed in communication with said opening, the second wall being spaced from said means to provide the passage with an open side, a drive member journaled for rotation about an axis disposed generally normal to said first wall and having a resilient rubber-like surface facing said first wall and spaced from said track means, said resilient surface being spaced from said first wall a distance slightly less than the cross sectional dimension of the article whereby the article bears against the first wall and depresses the resilient surface, means for rotating said drive member to thereby move the article through the passage, and a scrubbing member connected to the container and disposed within the passage for scrubbing the article as the same moves through the passage.

2. A ball washer, comprising a casing having an opening therein, a spider disposed within the casing and having a plurality of generally radially extending arms, a track disposed within the casing and defining in combination with the arms of the spider a generally tortuous passage through which the ball is to be moved during the washing operation with the inlet end and the outlet end of the passage communicating with the opening in the casing, said casing having a hard-surfaced wall closing off one side of the passage and the opposite side of the passage being open, a rubber-like resilient drive member spaced from the open side of the passage and having a flat surface disposed to engage the peripheral surface of a ball disposed within the passage, means for rotating the resilient drive member to thereby move the ball through the passage, and scrubbing means secured within the passage and disposed to be engaged by the ball as the ball is moved through the passage to thereby scrub the entire surface of the ball.

3. The structure of claim 2 in which the casing defines a sump disposed in communication with the passage and adapted to collect dirt and other foreign matter.

4. A ball washing apparatus, comprising a container having an opening and adapted to contain a cleaning media and having a hard non-resilient first wall and a second wall in opposed spaced relation, track means connected to said first wall for defining a passage disposed in communication with said opening, the second wall being spaced from said means to provide the passage with an open side, a drive member disposed within the container and journaled for rotation about an axis generally normal to said first wall and including a substantially rigid backing member and a generally flat resilient surface facing said first wall and spaced from the open side of said passage, said resilient surface having at least one peripheral recess to facilitate inserting and withdrawing the ball from the passage, means for spacing said resilient surface from said first wall of the casing with the distance between said first wall and said surface being slightly less than the diameter of the ball to be washed, driving means disposed externally of the casing for rotating the drive member to thereby move the ball through the passage, and frictional contact means disposed within the passage and disposed to be engaged by the ball as the ball is moved through the passage to thereby scrub the entire surface of the ball.

5. The structure of claim 4, in which the resilient surface is substantially circular in shape and is coextensive with substantially the entire length of the passage.

6. The structure of claim 4, in which the driving means is a crank journaled within said second wall and connected to the drive member.

7. A washing device, comprising a container having an opening and adapted to contain a cleaning media and having a hard-surfaced first wall and a second wall in opposed spaced relation, track means connected to said first wall for defining a passage disposed in communication with said opening, the second wall being spaced from said means to provide the passage with an open side, a drive member disposed within the container and journaled for rotation about an axis disposed generally normal to said first wall and having a generally flat resilient surface facing said first wall and spaced from said track means, said resilient surface being spaced from said first wall a distance slightly less than the cross sectional dimension of the article whereby the article bears against the first wall and depresses the resilient surface, means for rotating said drive member to thereby move the article through the passage, and a pair of scrubbing members

disposed within the passage and spaced on either side of the centerline of said passage, said article adapted to be in contact with said first wall and located between said scrubbing members and adapted to be moved through the passage by rotation of the drive member to thereby engage the entire surface of the article with the scrubbing members as the article is moved through the passage.

8. A ball washing device, comprising a container having an opening and adapted to contain a cleaning media and having a first wall and a second wall in opposed spaced relation, track means connected to said first wall for defining a passage disposed in communication with said opening, the second wall being spaced from said means to provide the passage with an open side, a drive member disposed within the container and journaled for rotation about an axis disposed generally normal to said first wall and having a flat rubber-like surface facing said first wall, means for spacing said rubber-like surface from said first wall with the distance between said surface and said first wall being slightly less than the diameter of the ball to be washed, means for rotating said drive member to thereby move the ball through the passage, and a pair of brushes disposed within the passage and located on either side of the centerline of the passage and extending substantially the entire length of the passage, said ball serving to deform the rubber-like surface and provide an increased surface contact between the ball and said surface and said brushes being disposed to be engaged by the ball as the ball is moved through the passage to thereby scrub the entire surface of the ball.

9. The structure of claim 8, and including means for removably securing the brushes within the passage.

10. A ball washer, comprising a casing having an opening therein, a spider disposed within the casing and having a plurality of generally radially extending arms, a track disposed within the casing and defining in combination with the arms of the spider a generally tortuous passage through which the ball is to be moved during the washing operation with the inlet end and the outlet end of the passage communicating with the opening in the casing, said casing having a wall closing off one side of the passage and the opposite side of passage being open, a rotatable drive disc disposed within the casing and having a deformable generally flat surface facing the open side of the passage and substantially enclosing the open side of the passage, the ball to be washed being disposed within the passage and bearing against said wall and deforming said flat surface of said drive disc, means for rotating the drive disc about an axis perpendicular to said flat surface to thereby move the ball through the passage, a first scrubbing member disposed within the passage at the junction between said spider and said wall, and a second scrubbing member disposed within the passage at the junction between said track and said wall, said scrubbing members extending substantially the length of said passage and disposed to engage the ball and scrub the same as the ball moves through the passage.

References Cited in the file of this patent

UNITED STATES PATENTS

1,796,704	Day	Mar. 17, 1931
1,954,738	Lerch	Apr. 10, 1934
2,198,441	Mollart	Apr. 23, 1940
2,339,573	Knipp	Jan. 18, 1944
2,540,687	Netterstrom	Feb. 6, 1951
2,672,633	Allen	Mar. 23, 1954
2,744,274	Procario et al.	May 8, 1956