Jan. 13, 1953 T. O. SMITH 2,624,900

PORTABLE BALL CLEANER

Filed June 10, 1949

FIG. 1.

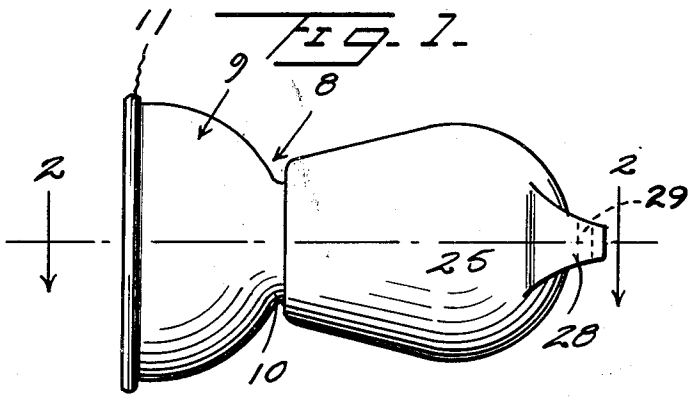


FIG. 2.

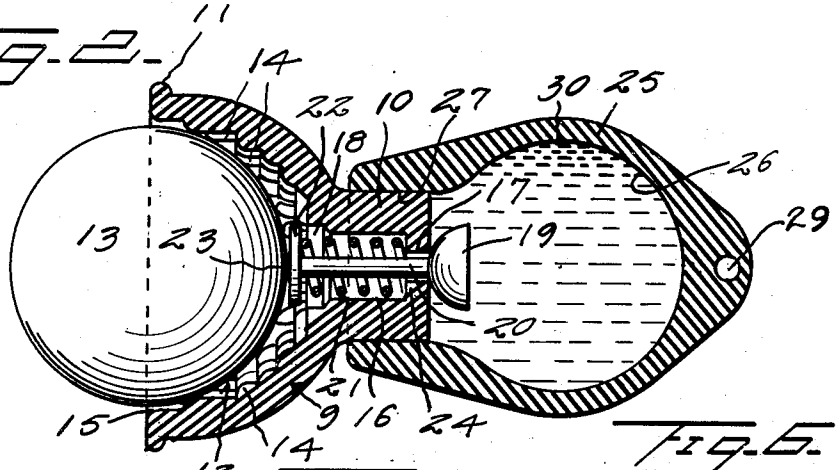


FIG. 3.

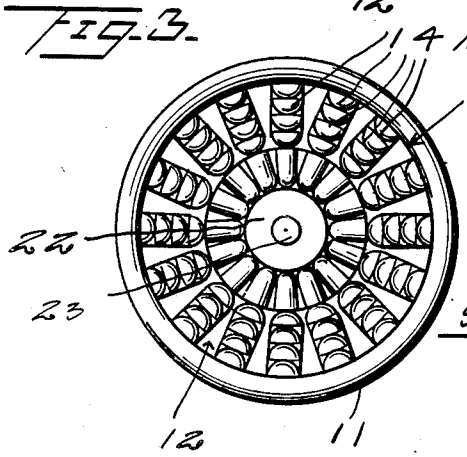


FIG. 4.

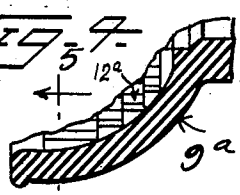
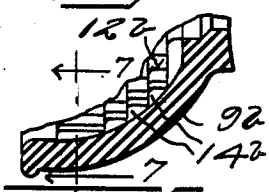


FIG. 6.



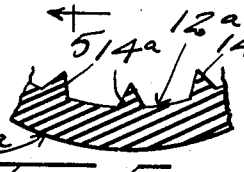


FIG. 7.

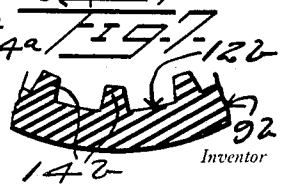


FIG. 5.

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PORTABLE BALL CLEANER

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5 Claims. (Cl. 15—136)

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This invention relates to a portable device for cleaning balls and constitutes a combination washer and scrubber having a source of supply for a cleansing liquid which is released therefrom into a ball receiving portion by engagement of the ball with the device.

More particularly, it is a primary object of the present invention to provide a portable cleaner primarily intended for use in cleaning golf balls but which may obviously be made in various sizes to clean balls or other spherical members of different diameters.

Another object of the invention is to provide a cleaning device of extremely simple construction which may be easily held in one hand while the ball is held and applied thereto with the other hand for quickly and efficiently cleaning the ball.

A further object of the invention is to provide a cleaning device which may be readily filled with a cleaning liquid or from which the cleaning liquid may be readily drained.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating presently preferred embodiments thereof, and wherein:

Figure 1 is a side elevational view of the ball cleaner;

Figure 2 is a longitudinal, substantially central view thereof taken substantially along a plane as indicated by the line 2—2 of Figure 1 and showing a ball applied thereto;

Figure 3 is an end elevational view of the device looking from left to right of Figure 1;

Figure 4 is a fragmentary longitudinal sectional view of a portion of a modified form of the ball receptacle or socket;

Figure 5 is a fragmentary transverse sectional view thereof taken substantially along a plane as indicated by the line 5—5 of Figure 4;

Figure 6 is a view similar to Figure 4 but showing another modified form of the ball receiving receptacle or socket, and

Figure 7 is a fragmentary cross sectional view thereof taken substantially along a plane as indicated by the line 7—7 of Figure 6.

Referring more specifically to the drawing, and first with reference to the embodiment of the invention as illustrated in Figures 1, 2 and 3, the ball cleaner comprising the invention is designated generally 8 and includes a hollow, substantially hemispherical receptacle or socket, designated generally 9, which is preferably formed of relatively hard rubber and which is provided with

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an integral extension or shank 10 which projects outwardly from its restricted portion and which is disposed substantially axially of said socket 9. The enlarged, open end of the socket 9 is preferably provided with an annular external flange 11. The hollow interior or recess 12 of the receptacle or socket 9, which is adapted to receive a ball or sphere 13, as seen in Figure 2, is provided with a plurality of yieldable projections 14 which project into said recess 12 and which constitute an integral part of the receptacle 9. The projections 14 are disposed in rows extending both longitudinally and circumferentially of the recess 12 from adjacent its open end 15 to adjacent the bottom, central portion of said recess 12.

The extension or shank 10 is provided with a longitudinally extending bore 16 having a restricted outer end portion 17 which opens outwardly of the free end thereof and an enlarged opposite, inner end portion 18 which opens into the bottom, central portion of the recess 12. The projections 14 extend to adjacent the enlarged bore portion 18, as clearly illustrated in Figures 2 and 3.

A valve 19, which is illustrated as being of hemispherical shape but which could be of other shapes, is mounted beyond the free end of the extension or shank 10 and is provided with a stem 20 which projects from the central portion of its hemispherical part and which extends loosely through the bore portions 16, 17 and 18. The stem 20 is preferably formed integral with the valve 19 and is of a length slightly longer than the length of the bore 16 including the portions 17 and 18. After the stem 20 has been applied to the shank 10 by being extended inwardly therethrough, an expansion coiled spring 21 is positioned on the stem 20 and loosely within the enlarged portion of the bore 16. A rigid disk or head 22 is then applied to the opposite, inner end of the valve stem 20 and is secured thereto in any suitable manner as by flattening said inner end of the stem on the outer side of the head 22, as seen at 23 for retaining said head nondetachably thereon. One end of the spring 21 then seats against the inner side of the head or disk 22 and the opposite end of said spring seats against the inner side of the annular wall of the stem 19, defining the restricted bore portion 17 and designated 24 so that the spring 21 urges the parts 19, 20 and 22 from right to left of Figure 2 for normally retaining the valve 19 in a position to close the outer end of the bore portion 17.

A compressible bulb 25, preferably formed of a

relatively resilient waterproof material such as rubber and which is considerably more flexible and resilient than the material of which the receptacle 9 is formed, is provided with a hollow interior defining a chamber 26 which opens outwardly of one end of the bulb 25, said bulb being somewhat elongated in shape and preferably being tapered toward the open end of the chamber 26. Said open end 27 of the chamber 26 is smaller than the remainder of said chamber and is adapted to be stretched to engage around the outer wall of the extension or shank 10 and may either be held applied thereto by its resilient engagement therewith or may be additionally adhesively secured or bonded to the shank 10 by any suitable means, not shown. The opposite, closed end of the bulb 25 is substantially hemispherical in shape and is provided with an integral external flange or rib 28 having a transverse opening 29 extending therethrough and transversely thereof.

Assuming that the ball or sphere 13 is a golf ball, to wash the ball 13 the cleaning device 8 is first submerged in a cleaning liquid such as water and the head or disk 22 is engaged by the finger and pressed inwardly of the socket 12 for moving the valve and valve stem from left to right of Figure 2 for unseating the valve to open the bore end 17 so that the cleaning liquid may flow through the recess 12 and bore 16 to fill the bulb cavity 26. To hasten this operation and to insure a complete filling of the cavity 26, the bulb 25 may be manually compressed for restricting the cavity 26 to expel air therefrom and to create a suction therein when the bulb is released so that the cleaning liquid will substantially fill the cavity 26, as indicated at 30. The cleaning device 8 is then removed from the cleaning liquid and turned clockwise through an arc of 90° from its position of Figures 1 and 2 and so that the receptacle or socket 9 thereof will open upwardly. While holding the cleaning device 8 with one hand by the bulb and receptacle 9, the ball 13 is placed in the receptacle recess 12 and pressed downwardly therein so that by engagement with the stem end 23 or disk 22, the stem 20 and valve 19 will be displaced toward the bulb 25 for again unseating said valve and so that the bulb 25 can be compressed for ejecting the cleaning liquid 30 from the cavity 26 into the receptacle recess 12. While the parts are thus held, the ball is revolved in different directions with the fingers of one hand so that all portions of its periphery will be scrubbed by the projections 14 and while the bottom half of the ball 13 is substantially submerged in the liquid 30, then in the recess 12, for thoroughly cleaning the ball. The opening 29 may be employed for hanging up the cleaning device, in an inverted position, when not in use. The recess 12 of the socket 9 is sized to receive approximately a half of the ball or sphere 13 and so that the other half may be readily grasped by the fingers for rotating and turning the ball so that the first mentioned half will be scrubbed by the projections 14 and for thereafter turning the ball to position the last mentioned half within the receptacle or socket 9, to be scrubbed and cleansed.

Figures 4 and 5 illustrate a slightly modified form of the socket or receptacle, designated 9*a* and which differs from the receptacle 9 in that instead of being provided with rounded projections, the recess 12*a* thereof is provided with tapered projections 14*a* which are likewise disposed in longitudinally and circumferentially extending rows and which are formed by circumferentially spaced ribs having longitudinally spaced outwardly facing steps, as best illustrated in Figure 4.

Figures 6 and 7 illustrate another form of the receptacle, designated 9*b* and wherein the integral projections 14*b* thereof which extend into the receptacle recess 12*b* instead of being substantially V-shaped in cross section as the projections 14*a*, are provided with substantially flat outer surfaces and outwardly converging side walls, as seen in Figure 7. The projections 14*b* are formed in substantially the same manner as just previously described with respect to the projections 14*a*.

Obviously, the cleaning device 8 may be made in various sizes to accommodate other balls or spheres of different sizes and various other modifications and changes are likewise contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A cleaning device for spherical objects comprising a substantially hemispherical receptacle provided with a hollow interior opening outwardly of its enlarged end and adapted to receive a portion of a spherical object to be cleaned, the opposite end of said receptacle being provided with an integral extension, a compressible bulb secured to said extension and provided with an internal cavity adapted to contain a cleansing liquid, said integral extension having a bore extending therethrough forming a communicating passage between the hollow interior of the receptacle and said bulb cavity, and a normally closed valve for closing said passage, said bulb being compressible for ejecting the cleansing liquid into the hollow interior of the receptacle when the valve is in an open position.

2. A cleaning device as in claim 1, said valve including a stem extending into the cavity of the receptacle and adapted to be engaged by the ball or sphere to be cleaned for displacing the valve into an open position.

3. A cleaning device as in claim 1, said receptacle having integral, yieldable projections extending into the cavity thereof for engaging the ball or sphere for scrubbing the surface thereof when the ball or sphere is revolved relatively to said receptacle.

4. A cleaning device comprising a body member having one end provided with an outwardly opening recess defining a cavity adapted to receive a portion of an article to be cleaned, the opposite end of the body member being hollow to define a storage chamber for a cleaning liquid, said body member having a restricted passage connecting the storage chamber and cavity for supplying the cleaning liquid from the storage chamber to the article receiving cavity, and means movably disposed in the body member and displaceable therein by the article being positioned in the cavity to permit the liquid to move through the passage from the storage chamber to the cavity, said body member having projections extending into the cavity for engaging and scrubbing the article when it is revolved relatively to the cavity.

5. A cleaning device comprising a body member having one end provided with an outwardly opening recess defining a cavity adapted to receive a portion of an article to be cleaned, the opposite end of the body member being hollow

to define a storage chamber for a cleaning liquid, said body having a restricted passage connecting the storage chamber and cavity for supplying the cleaning liquid from the storage chamber to the article receiving cavity, means in said cavity defining an irregular surface engageable with the article for scrubbing the same when the article is revolved relative to the body member, and means movably disposed in the body member and displaceable therein by the article being positioned in the cavity to permit the liquid to move through the passage from the storage chamber to the cavity.

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