Aug. 28, 1923. 1,466,609

J. W. WEAVER

RUBBER BALL

Filed June 19, 1922

Fig. 1.

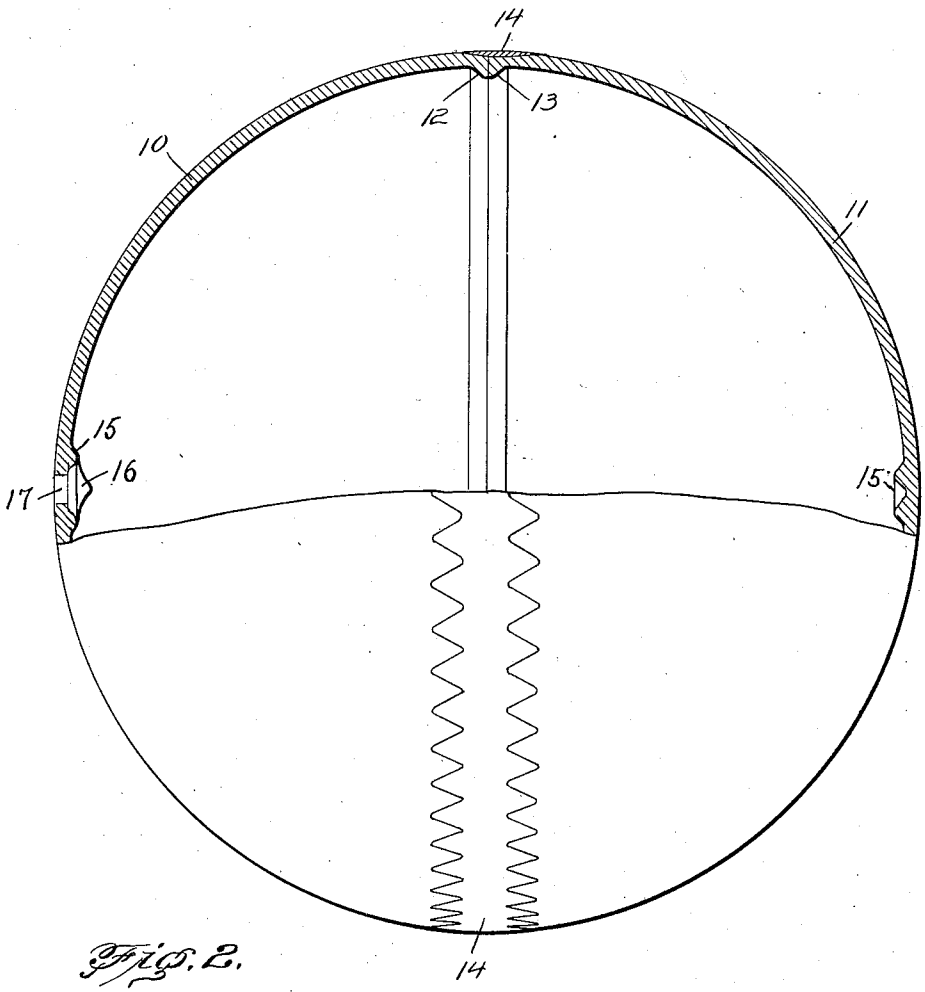
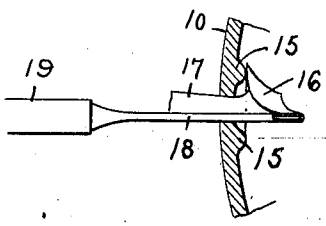


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH W. WEAVER, OF LEBANON, PENNSYLVANIA.

RUBBER BALL.

Application filed June 19, 1922. Serial No. 569,271.

To all whom it may concern:

Be it known that I, JOSEPH W. WEAVER, a citizen of the United States, residing at Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Rubber Balls, of which the following is a specification.

This invention relates to improvements in articles such as soft rubber balls and the like, and has for one of its objects to provide a device of this character of improved construction and increased strength and utility.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention:—

Figure 1 is an elevation partly in section of the improved ball.

Fig. 2 is a sectional detail illustrating the manner of inflating the ball.

The improved ball is initially molded in two semi-globular or semi-spherical portions 10 and 11 united by cement applied to their confronting edges. In the improved device the edges of the sections are enlarged inwardly as shown at 12 and 13 to form annular ribs and to increase the bearing surfaces at the contacting edges. By this means the structure at the juncture of the ball sections is materially strengthened and reinforced and the cement receiving surfaces also materially enlarged.

The confronting portions of the sections 10 and 11 are also reduced externally to receive a flat band 14 of substantially the same material as the sections 10 and 11, and preferably of a distinctive color, or other than the body portions, to distinguish it therefrom. The edges of the band 14 are also preferably serrated, or otherwise rendered irregular, as shown, to increase the bearing face, and distribute the receiving cement surface over a greater area, and thereby materially increasing the strength and stability of the "union" between the sections.

The members 10 and 11 are precisely alike and preferably cast in one mold, and formed on the interior of each section is a small annular rib 15. After the sections are united as above described, a puncture is made through the wall of one of the sections within the rib 15 thereon and the enlarged head portion 16 of a plug 17, of soft rubber, is forced through the puncture and the head permitted to expand against the rib 15. A blunt ended tubular needle device 18 coupled at its outer end to a conductor hose 19, is forced through the puncture alongside the plug 17, displacing one side of the head 16 as shown in Fig. 2. Air under pressure is then passed through hose 19 and needle device 18 to inflate the ball, and when the ball is sufficiently inflated the needle is withdrawn and the plug 17 pulled outwardly by force applied to the stem 17 to compress the enlargement against the rib 15 and the material of the ball section within the rib until the head assumes the form shown in Fig. 1. Previous to being inserted through the puncture in the ball section a suitable cement is applied to the inner face of the head 16 and the adjacent portion of the stem 17, so that when drawn outwardly the head 15 will be firmly cemented in place and effectually shut off all escape of air from the ball. The surplus portion of the stem 17 is then severed close to the ball section and the cut off smoothed in any suitable manner to correspond to the surrounding surface.

The ball sections will be constructed in various sizes and may be of any desired color or combination of colors.

Having thus described the invention, what is claimed as new is:—

1. A ball comprising a hollow sphere having a lateral puncture, an imperforate plug of relatively soft material having a lateral enlargement forming an annular shoulder at right angles to the body of the plug, said plug adapted to be forced by its enlargement through the puncture and the enlargement expanding by its resiliency against the inner face of the ball and held in place by cement, the ball adapted to be inflated by forcing a tubular air conductor through the puncture alongside the plug and deflecting the enlargement thereof and which automatically closes the puncture when the conductor is withdrawn.

2. A ball comprising a hollow sphere having a thickened annular reinforcing portion to form a seat and punctured within the seat, an imperforate plug of relatively soft material having a lateral enlargement directed at right angles to the body of the plug, said

plug adapted to be forced by its enlargement through the puncture and the enlargement expanding by its resiliency against the inner face of the ball within the seat and held in place by cement applied thereto, the ball adapted to be inflated by forcing a tubular air conductor through the puncture alongside the plug and deflecting the enlargement thereof and which automatically closes the puncture when the conductor is withdrawn.

3. A ball comprising a hollow sphere having a lateral puncture, an imperforate plug of relatively soft material and of greater length than the thickness of the wall of the ball and having a lateral enlargement forming an annular shoulder at right angles to the body of the plug, said plug adapted to be forced by its enlargement through the puncture and the enlargement expanding by its resiliency against the inner face of the ball and held in place by cement, the ball adapted to be inflated by forcing a tubular air conductor through the puncture alongside the plug and deflecting the enlargement thereof and which automatically closes the puncture when the conductor is withdrawn, and the surplus material of the plug severed after the inflation is completed.

4. A ball comprising a hollow sphere having thickened annular reinforcing portion to form a seat and punctured within the seat, an imperforate plug of relatively soft material having a lateral enlargement directed at right angles to the body of the plug and reduced to a thin web at the outer edge, said plug adapted to be forced by its enlargement through the puncture and the enlargement expanding by its resiliency against the inner face of the ball within the seat with the thin inner edge bearing over the reinforcing portion and held in place by cement applied thereto, the ball adapted to be inflated by forcing a tubular air conductor through the puncture alongside the plug and deflecting the enlargement thereof and which automatically closes the puncture when the conductor is withdrawn.

5. A ball initially of coacting hollow semiglobular sections engaging edge to edge with the edges increased in thickness internally to provide increased cementing surface and reduced externally to form annular seats, and a reinforcing band engaging in the seats and reduced toward the edges to merge into the exterior of the body of the ball.

In testimony whereof, I affix my signature hereto.

JOSEPH W. WEAVER.