May 23, 1933. W. E. MORRIS 1,910,930

METHOD OF AND MEANS FOR PRESERVING TENNIS BALLS OR THE LIKE

Filed July 2, 1930

FIG. 1.

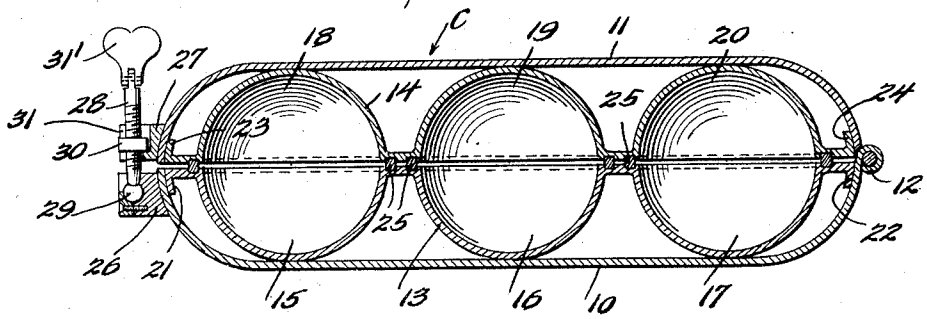


FIG. 2.

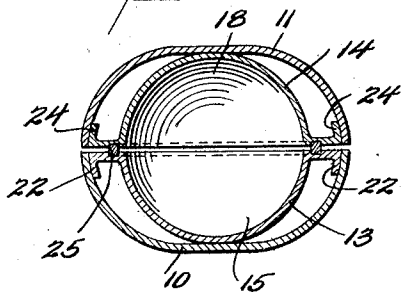


FIG. 3.

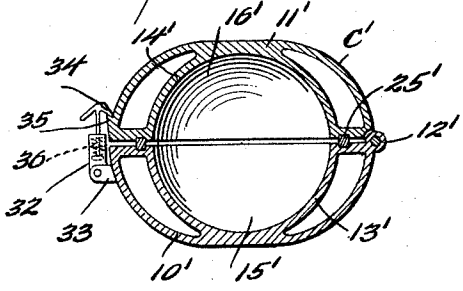


FIG. 5.

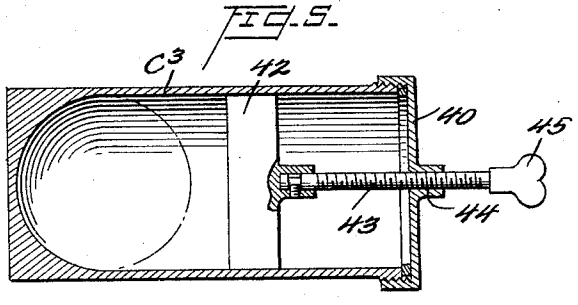
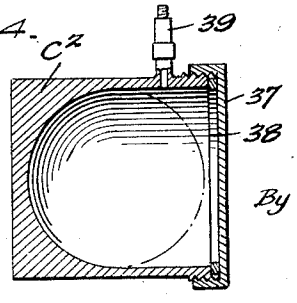


FIG. 4.



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UNITED STATES PATENT OFFICE

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METHOD OF AND MEANS FOR PRESERVING TENNIS BALLS OR THE LIKE

Application filed July 2, 1930. Serial No. 465,409.

This invention relates to the method of and means for placing tennis or similar balls under compression whereby to preserve their resiliency or to maintain the lively quality of the balls.

The primary object of the invention is the provision of a container in which one or more balls may be kept under compression.

A further object of the invention is the provision of a compression container of the kind described in which the balls are kept under compression by mechanical means.

A still further object of the invention is the provision of a compression container in which pneumatic pressure may be maintained to thereby place the balls under compression.

In order to disclose my invention I have illustrated and will presently describe a number of specific embodiments thereof, but it will be understood that the accompanying illustrations and the following description are not exhaustive of the possible specific embodiments which may be made in accordance with the teachings of this disclosure which, therefore, is to be considered as illustrative of the invention and not as limited to the specific forms shown and described, except as required by the appended claims.

In the drawing:

Figure 1 is a longitudinal sectional view of one form of my compression container;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a sectional view of another form of compression container;

Figure 4 is a sectional view of a container in which one or more balls are adapted to be maintained under pneumatic pressure;

Figure 5 is a sectional view of a modified form of a pneumatic compression container.

Referring to the drawing in detail, the compression container C shown in Figure 1 comprises two members or casing parts 10 and 11 hinged together at the edge 12. Compartment forming members 13 and 14 are positioned within the casing parts 10 and 11 respectively. The compartment forming member 13 comprises a plurality of substantially semi-spherical recesses 15, 16, and 17. The compartment forming member 14 comprises similar recesses 18, 19 and 20 which over-lie or are in alignment with the similarly disposed compartments in the member 13. Thus the over-lying or aligned recesses together constitute a substantially spherical recess. The members 13 and 14 may be secured within the casing in any suitable manner. As here shown, the edges of the member 13 have reflexed portions 21 and 22 which may be secured to the inside of the casing member 10, as by rivets, or by spot welding, or in any other manner. The compartment forming member 14 has similar reflexed portions 23 and 24 secured to the casing section 11. Packing rings 25 are provided as shown for maintaining a fluid tight joint between the companion recessed members in the two compartment forming members 13 and 14.

A clamping device is provided for securing together the hinged casing sections 10 and 11 and for exerting pressure on these members whereby to place under compression the balls within the cells or recesses formed in the members 13 and 14. As here shown the clamping device is formed by two lugs 26 and 27 secured to the sections 10 and 11, a screw threaded swivel pin 28 having a ball joint 29 in the lug 26, and a nut 30 longitudinally movable and rotatably immovable within a recess 31 in the lug 27. The swivel pin 30 has a head 31′ pivoted thereto to afford a convenient means for operating the clamping device to exert the desired pressure on the balls within the casing.

The construction shown in Figure 3 is generally similar to that shown in Figures 1 and 2. As shown in this figure the casing C′ includes two sections 10′ and 11′ hinged together at the edge 12′. The compartment forming members 13′ and 14′ are formed integrally with the outer casing sections 10′ and 11′ respectively and are provided with recesses 15′ and 16′ and an annular packing ring 25′. The casing and compartment forming sections may be formed in any suitable manner as by a casting operation. The casing sections may be clamped together by

a spring hook device comprising a cylindrical member 32 pivotally secured to an ear 33 on the casing section 10′ and a hook 34 which engages a ledge or projection 35 on the casing section 11′, a spring 36 bearing on the hook to clamp together the casing sections 10′ and 11′. The compression container shown in this figure has one compartment or cell, but it will be understood that a plurality of compartments may be provided in this structure. It will also be understood that in the structure shown in Figure 1 the number of compartments may be increased or diminished.

Instead of placing the balls under compression by means of mechanical pressure provision may be made for compressing the balls by fluid, preferably, pneumatic pressure. In Figures 4 and 5 of the drawing I have illustrated two specific embodiments of compression containers in which the balls may be kept under pneumatic pressure. The container shown in Figure 4 comprises a fluid tight casing C2 which includes a removable cover 37 which engages a gasket 38 forming a fluid-tight joint. The casing C2 is provided with a check valve 39 which may be of any suitable construction, such as that of the ordinary tire valve, through which air under pressure may be supplied to the casing. The compression container shown in Figure 5 comprises a fluid tight casing C3 having a removable cover 40. This casing is provided with means for compressing the air therein. This air compressing means comprises a piston 42 slidably mounted within the casing and provided with a peripheral packing (not shown) which engages the inner side wall of the casing. A screw-threaded rod 43 is connected to the piston 42 and engages a screw-threaded opening 44 in the cover 40 and is provided with a finger-piece 45 whereby the rod may be rotated to operate the piston whereby to compress the air within the casing.

The several pressure containers herein described constitute a number of specific embodiments which are believed to adequately illustrate the invention, although certain changes in the construction and arrangement of parts might be made without departing from the fundamental inventive concept. It will also be understood that the compression containers may vary in size and shape to a considerable degree although I prefer that the container be of such size and shape as to be readily received within the ball compartment usually provided in the ordinary tennis racket cover. Thus, as shown in Figure 3 the casing C′ can be constructed so that it is but slightly larger than the ordinary tennis ball. The intensity of compression pressure should be about equal to the internal pressure of the ball. While I have referred specifically to tennis balls, it will be understood that other elastic balls having internal super-atmospheric pressure may be preserved in the same way. The containers may be made of any suitable material, such as wood, metal, phenolic condensation products, hard rubber, or the like.

While, I prefer that the size of the ball compartments be such as to result in the compression of the ball when the sections of the casing are clamped together, the size of the compartments may be such that the ball is received snugly therein without being compressed, the snug fit preventing expansion of the ball.

Having thus described my invention, what I claim is:

1. A ball compression container comprising a casing adapted to contain a ball, said casing comprising two separable, hingedly secured parts, each part having a recess conforming to the curvature of the ball, said recesses forming together substantially spherical recesses slightly smaller than the ball, and means carried by the casing parts for holding said parts together against said ball whereby to exert pressure thereon.

2. A ball compression container comprising a casing adapted to contain a ball, said casing comprising two separable, hingedly secured parts, each part having a recess conforming to the curvature of the ball, said recesses forming together substantially spherical recess slightly smaller than the ball, means forming a fluid-tight joint between said casing parts, and means carried by the casing parts for holding said parts together against said ball whereby to exert pressure thereon.

3. A ball compression container comprising a casing adapted to contain a ball, said casing comprising two parts hinged together at one edge thereof, each of said casing parts having a recess conforming to the curvature of the ball, said recesses together forming a substantially spherical recess smaller than the ball, and a clamp at an edge of said casing opposite to said first mentioned edge for holding said casing parts together under pressure whereby to compress the ball.

4. A ball compression container comprising a casing adapted to contain a plurality of balls under compression comprising a casing adapted to contain said balls, said casing comprising two separable parts, each part having a plurality of recesses conforming to the curvature of a ball, the recesses in one part overlying the recesses in the other part forming a plurality of substantially spherical recesses, one for each ball, and means carried by the casing parts for clamping said parts together to place the balls under compression.

5. A ball compression container comprising a casing adapted to contain a plurality of balls under compression, said casing comprising a plurality of substantially spherical cells, each cell adapted to contain one ball, and means secured to said casing for compressing the ball in each cell.

6. A ball compression container comprising a casing adapted to contain a plurality of balls under compression, said casing comprising two parts hinged together at one edge thereof, each part having a plurality of substantially semi-spherical recesses, the recesses in one part being in alignment with the recesses in the other part, forming a plurality of cells adapted to contain said balls, and a clamping device secured to the edge of said casing opposite to said first mentioned edge for placing the balls under compression.

7. A container for tennis balls or the like comprising a casing including two sections pivotally secured to each other, said sections having complementary recesses forming together a substantially spherical cell adapted to snugly embrace a tennis ball therein and means carried by said container to prevent expansion of said ball.

8. A container for a plurality of tennis balls, having a width and depth substantially equal to the diameter of a tennis ball, and a length substantially equal to the sum of the diameters of the tennis balls carried in said container, the latter having portions of the shape of the balls, and means for placing said balls under pressure by said container.

9. A container for a plurality of tennis balls, having a width and depth substantially equal to the diameter of a tennis ball, and a length substantially equal to the sum of the diameters of the tennis balls carried in said container, said container comprising two complemental parts pivotally secured at one edge, and a quick detachable connection at another edge opposite said first mentioned edge.

10. A container for a plurality of tennis balls, having a width and depth substantially equal to the diameter of a tennis ball, and a length substantially equal to the sum of the diameters of the tennis balls carried in said container, said container having rounded out end portions for insertion within the customary tennis racket cover.

11. A container for a plurality of tennis balls, said container having portions of the shape of the balls, a width and depth substantially equal to the diameter of a tennis ball, and a length substantially equal to the sum of the diameters of the tennis balls carried in said container.

In witness whereof I hereunto affix my signature.

WOODBRIDGE E. MORRIS.