

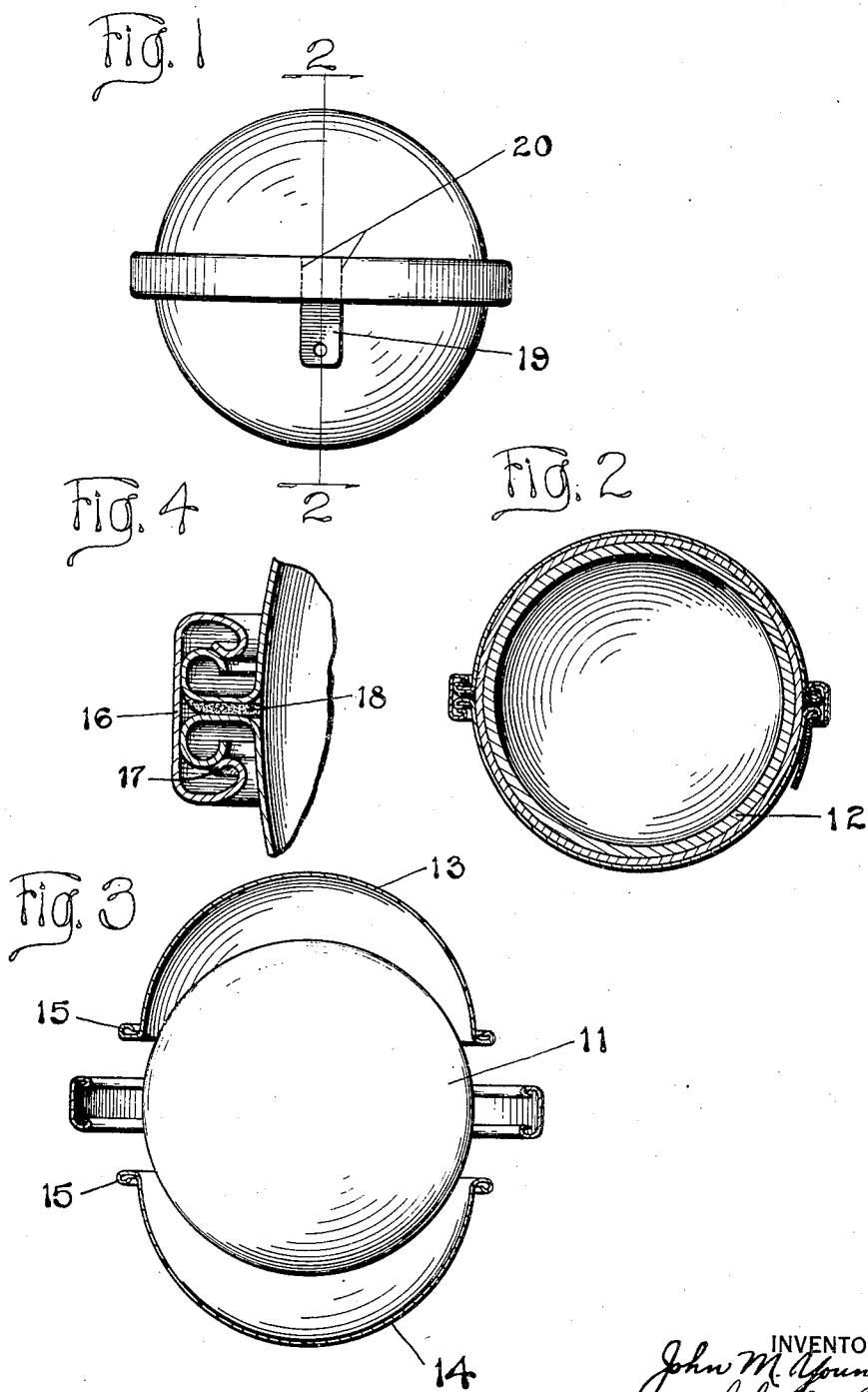
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PACKAGING OF GAS CONTAINING OBJECTS

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PACKAGING OF GAS CONTAINING OBJECTS

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This invention relates to the packaging of objects, such as tennis balls and the like, which contain a fluid under pressure and which are subject to deterioration through diminution of the pressure within the object while in storage.

Tennis balls are manufactured of a rubber body consisting of a thin shell and provided with a cloth covering. Air or gas under high pressure is provided within the rubber shell and experience has demonstrated that this pressure decreases with time where the tennis balls are handled and stored, this being occasioned by the passing of the air or gas or their constituent parts through the rubber itself. This action is, of course, extremely slow, but it is nevertheless sufficient to preclude long storage without loss of resiliency. Because of this action, players in tournament play have required balls newly filled with the gas under pressure and the usual player has been put to the necessity of carefully testing the balls for resiliency at the time of purchase.

My invention has for its principal object the maintenance of the pressure in a tennis ball or other object without the use of provided gas or air pressure outside of the ball and merely through a new and improved construction of the container itself.

My invention contemplates the provision of mold parts adapted to fit the ball or other object in full or substantially full surface contact therewith, leaving no external space to receive gas or air passing through the ball wall. My invention contemplates also a tight fit between the ball and mold parts which accomplishes two results; one of which is that the mold itself provides a counter external pressure, and the other of which is—that in slightly compressing the rubber wall of the ball its permeability is lessened by contraction of its pores.

My invention has for a further object the provision of a container at this source which may be readily opened without damage to the ball.

Numerous other objects and advantages of the invention will be apparent as the same is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing,

Figure 1 is a side elevation of a hermetic container, consisting of two half shells or molds, inclosing a tennis ball according to my invention;

Fig. 2 is a cross-sectional view taken substantially along the line 2—2 in Fig. 1, showing a tennis ball inclosed within the hermetic container, and also showing the closing elements for retaining the parts of the container in closed position;

Fig. 3 is a cross-sectional view of the hermetic container after it has been opened and the ball extracted;

Fig. 4 is an enlarged fragmental sectional detail of the closing elements in their relation to parts of the half shells.

For the purpose of illustrating my invention, I have shown on the drawing a tennis ball and a container therefor. The ball itself is generally indicated at 11 and comprises the inner rubber body 12 covered with cloth in the usual manner. This tennis ball is encased, preferably with light contact, in a shell consisting of two semi-spherical container parts 13, 14, such parts being dimensioned to fit the outer surface of the ball in substantially full faced engagement therewith. The dimensions of these semi-spherical parts are further preferably such that when they are positioned about the ball, as will be presently described, the ball is compressed slightly. This compression insures the full-faced contact between the ball and its container and further places the rubber structure of the ball itself under compression. Each of the semi-spherical parts 13 and 14 is provided with an outwardly extending continuous flange 15 at its open side, and this flange after extending out in flat condition for a ways is bent or curled back upon itself as may be seen in Fig. 4. A band 16 embraces the two flanges 15 when the container parts encompass the ball and this flange has an inwardly and backwardly curled edge 17 adapted to engage against and behind the curls of the flanges and to draw the mold or container parts tightly together. If desired, a gasket material 18 may be placed upon one or more of the flanges 15 to insure hermetic sealing. A tongue 19 is or may be provided to extend out from the flange at one point, this tongue being adapted to be torn away severing the band along lines of tear 20. This action may be facilitated, if desired, by scoring the material of the band.

It will be manifest that in thus holding the mold parts tightly together to form the container, the ball face is in engagement (preferably under some compression) with the container walls throughout substantially the entire superficial area of the ball. Air or gas within

the ball under pressure cannot escape through the rubber wall since no space is provided for its reception.

It is thought that this invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that many changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. The method of maintaining fluid pressure within an object as a tennis ball and objects containing fluid under pressure, which consists in arranging said object in a container having side walls accurately fitting the walls of the object of this contained pressure and hermetically sealing said container to contain said walls in substantially full faced contact with the entire outer surface of said object.

2. The method of maintaining fluid pressure within an object as a tennis ball and objects containing fluid under pressure, arranging the object in an impervious container of the general shape of the object and of dimensions somewhat compressing the object as an incident to the hermetic sealing of the container, and hermetically sealing the container to contain its walls pressed into substantially tight full faced contact with the entire outer surface of said object.

3. The method of maintaining the fluid pressure in a rubber ball as for tennis and the like, which comprises positioning the rubber ball in a sheet metal container of the shape of the ball and in full faced contact with the ball and hermetically sealing said container.

4. The method of maintaining fluid pressure in a cloth covered rubber ball as for tennis and the like, which comprises arranging the ball within a container of the shape of the ball and adapted to slightly compress the ball and hermetically sealing the same.

5. The method of maintaining fluid pressure within an object as a tennis ball and objects containing fluid under pressure, which comprises providing a container in parts approximating the shape of the object and of slightly less dimension, drawing said parts together about the object to slightly compress the same in surface contact with the container, and hermetically sealing said container as an incident to said compression of the object.

6. The method of maintaining fluid pressure within a resilient object which comprises providing a metal container of the shape of and adapted to tightly fit said object to slightly compress the same, arranging said object in said container and hermetically sealing said container.

7. An hermetically sealed container for packing and storing an object containing fluid pressure, comprising portions shaped to the configuration of the object and fitting the same in surface contact, and said object confining within itself fluid under pressure and arranged in said container.

8. An hermetically sealed container for packing and storing an object containing fluid pressure which comprises companionable parts fitting together and combinedly fitting the object and entirely enclosing it in substantially

full faced contact with said object, and retaining means hermetically securing said mold parts together, and said object confining within itself fluid under pressure and arranged in said container.

9. An hermetically sealed container for packing and storing an object containing fluid pressure, comprising half molds fitting together and completely enclosing the object, and retaining means holding said mold parts in object enclosing position and hermetically sealing the same, and said object confining within itself fluid under pressure and arranged in said container.

10. An hermetic container for packing and storing an object containing fluid pressure, which comprises sheet metal mold parts fitting and completely enclosing the object in substantially full surface contact therewith, retaining means holding said mold parts in retaining position and hermetically sealed, and a tear away member for removing said retaining means.

11. An hermetically sealed container for packing and storing an object containing fluid pressure comprising mold parts adapted together to fit the object in surface contact throughout substantially the entire outer surface of the object, said mold parts having outwardly extending flanges at adjacent edges and a band embracing said flanges for holding said mold parts to the article and hermetically sealing them together, and said object confining within itself fluid under pressure and arranged in said container.

12. An hermetic container for packing and storing an object containing fluid pressure comprising mold parts adapted together to fit the object in surface contact throughout substantially the entire outer surface of the article, said mold parts having outwardly extending flanges at adjacent edges and a band embracing said flanges for holding said mold parts to the article and hermetically sealing them together, said band having a lip to facilitate its removal.

13. An hermetic container for packing and storing an object containing fluid pressure comprising mold parts shaped to conform to the outer surface of the object and of slightly less dimension, means for drawing said mold parts about the object to slightly compress the same in substantially full faced contact with the mold parts.

14. The combination of a tennis ball and a container therefor adapted to prevent diminution of its contained fluid pressure, said container comprising sheet metal semi-spheres, enclosing the tennis ball in surface contact with the inner semi-spherical surfaces, and means hermetically connecting said semi-spheres.

15. The combination of a tennis ball and a container therefor adapted to prevent diminution of its contained fluid pressure, said container comprising two semi-spheres of slightly less internal diameter than the external diameter of said tennis ball, and means drawing said semi-spheres about said tennis ball to slightly compress the latter and into hermetically sealing relation.

16. A container for tennis balls and other objects containing a fluid under pressure and comprising confining walls shaped to correspond with the outer contour of the object and adapted to tightly confine and fit the same, whereby to prevent escape of fluid through the walls of said object.

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17. A container for tennis balls and other objects containing fluid under pressure and comprising confining walls shaped to correspond with the outer contour of the object and of slightly less dimension, means drawing said confining walls together to compress slightly the material of the walls of the tennis ball to decrease its permeability, and means holding said confining walls in confining position. 80
18. The method of preserving a tennis ball having fluid under pressure confined therein, which consists in bringing together the parts of a container so that said parts substantially conform with the exterior surface of the ball, and then securing together said parts and hermetically sealing the container. 85
19. The method of packing tennis balls containing fluid under pressure, which consists in sealing the ball hermetically within a container and leaving substantially no space between the exterior of the ball and the interior of the container. 90
20. A tennis ball having an elastic wall, a medium within the ball tending to distend its wall, and a removable preformed cover tightly embracing the surface of the ball and holding it against expansion. 95
21. A play ball designed, when put in play, to conform to a prescribed size and rebound requirement, the ball having a wall formed of a vulcanized rubber composition and containing a medium exerting superatmospheric pressure tending to stretch said wall, and a removable preformed restraining jacket having an internal diameter not greater than the aforesaid prescribed size of the ball, said jacket tightly embracing the surface of the ball and holding it from expansion. 100
22. The method of maintaining fluid pressure in a cloth covered rubber ball as for tennis and the like, which comprises arranging the ball within a container of the shape of the ball and slightly compressing the ball by the container and hermetically sealing the container. 105
23. A tennis ball having an elastic wall, a medium within the ball tending to distend its wall, and a removable preformed impervious cover tightly embracing and compressing the surface of the ball and holding it against expansion, said cover being hermetically sealed. 110
24. A container for an individual tennis ball containing a gaseous medium exerting superatmospheric pressure, comprising two preformed hemispherical shells, and means engaging contiguous portions of the shells for retaining them against separation after the application of the same to the ball. 115
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