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COMBINED BALL AND CAP
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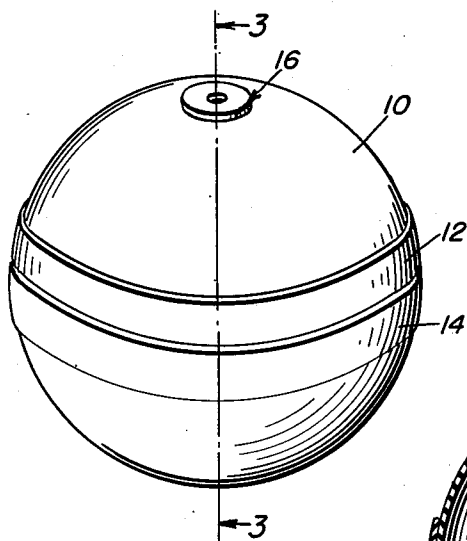


Fig. 1

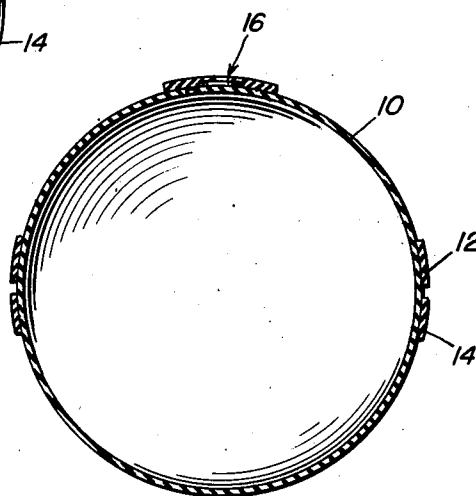


Fig. 3

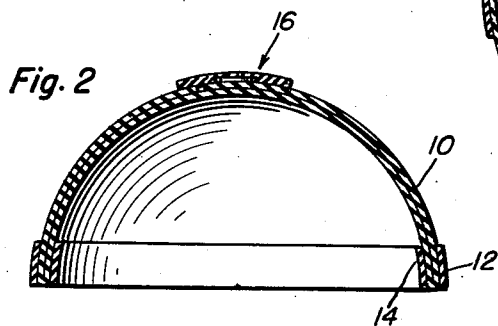


Fig. 2

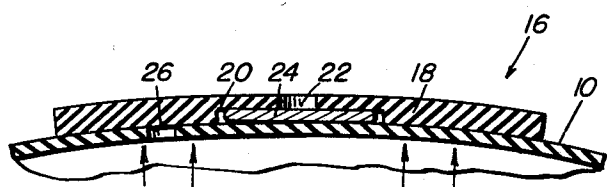


Fig. 4

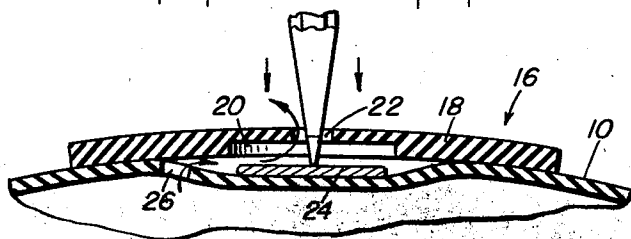


Fig. 5

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COMBINED BALL AND CAP

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6 Claims. (Cl. 2-196)

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This invention comprises novel and useful improvements in a combined ball and cap and more specifically pertains to a hollow spherical body of flexible air impermeable material together with a valve assembly therein and selectively usable as an inflated spherical ball or a hemispherical collapsed cap of the beanie or skull cap type.

The primary object of this invention is to provide an inflatable and deflatable spherical article capable of use selectively as an inflated ball or collapsed to function as a beanie or skull cap.

A further object of the invention is to provide a spherical article as set forth in the preceding object which shall be specifically adapted for more effectively performing the above mentioned functions.

Still another object of the invention is to provide an improved hollow body in conformity with the foregoing objects having an improved air valve assembly therein.

Yet another important object of the invention is to provide an improved article as recited in the above mentioned objects having spaced, equatorial reinforced and thickened zones which serve in the inflated position of the article as reinforcing rings therefor, and function in the collapsed condition of the article as hat bands on the interior and exterior surfaces of the hat.

These, together with various ancillary objects and features of the invention which will later become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a side elevational view showing a suitable embodiment incorporating therein the principles of this invention and illustrated in its inflated position for functioning as a ball;

Figure 2 is a vertical sectional view through the article of Figure 1 but showing the same in its collapsed or deflated position for functioning as a cap;

Figure 3 is a vertical sectional view through the article of Figure 1 showing the same in its position for use as a ball, the view being taken substantially upon the plane indicated by the section line 3-3 of Figure 1;

Figure 4 is an enlarged vertical sectional view through the valve assembly forming a part of the invention and showing the valve in its closed position; and,

Figure 5 is a view similar to Figure 4 but show-

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ing the valve in its open position, the arrows indicating the direction of air flow through the valve while the device is being deflated.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, it will be seen that the invention comprises a spherical body 10 which is hollow and may be constructed of any suitable flexible material of an air impermeable nature such as rubber, plastic or the like, and of any desired size. As will be readily understood, the body 10 may consist of a single sheet or of integral construction; or may be formed of a number of pieces of material secured together in any desired manner.

About what may be termed the equatorial region of the body illustrated in Figure 1, there is provided a pair of reinforced, thickened zones, indicated by the numerals 12 and 14, which zones are spaced from each other. Preferably, these zones are positioned equidistantly from the true equator of the body as illustrated. These zones may be formed by integral thickened portions of the material of the body 10; but preferably consist of separate strips or bands of material which are suitably attached as by vulcanizing or the like to the exterior surface of the body. In any event, these bands 12 and 14 constitute spaced strengthening and reinforcing means which serve to strengthen the body in its inflated position as shown in Figures 1 and 3; which serve to produce a zone of relatively less rigidity between the bands and thus contribute to and facilitate the collapsing of the lower hemisphere into the upper hemisphere as the body is deflated into the position shown in Figure 2. In this deflated position, the band 12 will constitute an outer hatband, while the band 14 will constitute an inner hatband, the bands thus serving to strengthen the rim of the hat.

The device further includes a valve assembly indicated generally by the numeral 16 and which is located in one of the polar regions of the body, so that the same will be positioned upon the exterior of the two hemispherical members forming the hat or deflated body as shown in Figure 2.

Attention is now directed more specifically to Figures 4 and 5 for an explanation of a satisfactory construction of the valve assembly 16. As shown in these figures, the valve assembly comprises a plate 18 or sheet of any suitable material such as that of which the body 10 is constructed, this plate being of any desired shape

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such as the disk-like shape depicted and being vulcanized or otherwise rigidly and fixedly secured in an airtight manner to the exterior surface of the body 10. Upon that surface of the plate 18 which is adjacent the surface of the body 10, there is provided a recess 20 which constitutes a valve chamber, this recess having an aperture or opening 22 opening to the atmosphere. Upon that portion of the body 10 which underlies the recess 20, there is mounted a valve member in the form of a disk or plate 24 of any suitable material, this plate not necessarily being of the same material as the members 10 or 18. The plate 24 is adapted to be received within the chamber 20 in the closed position of the valve assembly as shown in Figure 4 and when so positioned serves to close and prevent the escape of air from the interior of the body 10 to the atmosphere through the opening 22. It will be especially noted that the valve member 24 is of a thickness which is substantially equal to that of the recess 20 so that the valve will be maintained in the recess and in the closed position by the pressure of air in the body 10.

The body 10 is provided with an opening 26 which is disposed beneath the plate 18, but out of registry with the chamber or recess 20 as will be readily apparent from Figures 4 and 5. The opening 26 thus constitutes an outlet from the interior of the hollow body into the valve assembly; while the opening 22 constitutes an escape or exhaust from the valve assembly to the atmosphere, the latter opening being directly controlled by the valve 24, while the first opening is controlled by the position of the same relative to the under surface of the plate 18.

From the foregoing, it is thought that the operation of the valve assembly will now be readily understood. It is evident that when the device in the position shown in Figure 2, with the valve assembly being closed as shown in Figure 4, it is merely necessary to apply a source of compressed air or other fluid to the opening 22 whereupon the pressure of the same will open the valve and inflate the interior of the body 10. Alternatively, the valve member 24 may be unseated from the port 22 as by inserting a pencil point or the like through the opening 22, as shown in Figure 5, whereupon the relative vacuum existing within the collapsed body 10 will permit the flow of air from the atmosphere thereinto.

When it is desired to deflate the inflated body to convert the same to the cap shown in Figure 2, it is merely necessary to open the valve 24 by inserting a pencil or similar member through the opening 22 as shown in Figure 5, and thrusting the valve 24 away from the opening 22 and from its seated engagement with the recess 20, against which it is maintained by the pressure of the air confined within the body 10. When the valve is thus open, air will flow from the interior of the body as shown by the arrows in Figure 5 and escape to the atmosphere, and during this escape, the lower hemisphere of the body may be pressed into the upper hemisphere until all of the air has been exhausted and the body is collapsed into the position shown in Figure 2.

This collapsing action of the body will be facilitated by the above mentioned weakened zone produced between the stiffening members 12 and 14 above mentioned, thus producing a tendency of the body to fold upon the equator of the same and position the reinforcing bands 12 and 14 as shown in Figure 2.

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The disk 24, in addition to the valving operation described hereinbefore, also functions to prevent puncturing of the member 10, when a sharp pointed member is inserted in the opening 22, as illustrated in Figure 5.

It will thus be apparent that there has been provided a simple and inexpensive construction selectively capable of use as a ball or as a cap, and which possesses the appreciable advantages of the above mentioned dual functions, simplicity of construction, inexpensiveness and ease of operation; the attractions of a novelty or advertising medium.

From the foregoing, it is thought that the construction and operation of the device together with its many advantages will now be readily apparent and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not desired to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

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

1. A combined ball and cap comprising a hollow spherical body of flexible, air impermeable material, a valve assembly in a portion of said body and spaced equatorial reinforced thickened zones on said body, said zones comprising inner and outer cap bands when one hemisphere of said body is pushed into the other.

2. A combined ball and cap comprising a hollow spherical body of flexible, air impermeable material, a valve assembly in a portion of said body and spaced equatorial reinforced thickened zones on said body, said zones comprising inner and outer cap bands when one hemisphere of said body is pushed into the other, said valve assembly being located at one of the poles of said body.

3. A combined ball and cap comprising a hollow spherical body of flexible, air impermeable material, a valve assembly in a portion of said body and spaced equatorial reinforced thickened zones on said body, said zones comprising inner and outer cap bands when one hemisphere of said body is pushed into the other, said zones comprising bands secured to the exterior surface of said body.

4. A combined ball and cap comprising a hollow spherical body of flexible, air impermeable material, a valve assembly in a portion of said body and spaced equatorial reinforced thickened zones on said body, said zones comprising inner and outer cap bands when one hemisphere of said body is pushed into the other, said zones comprising bands secured to the exterior surface of said body, and at equal distances from the equator thereof.

5. A combined ball and cap comprising a hollow spherical body of flexible, air impermeable material, a valve assembly in a portion of said body and spaced equatorial reinforced thickened zones on said body, said zones comprising inner and outer cap bands when one hemisphere of said body is pushed into the other, said valve assembly comprising a plate secured to said body and having a recess in its side adjacent said body and a passage extending into said recess, said body having a valve disk secured thereto and movable into and out of said

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recess for controlling said passage, said body having an opening beneath said plate and out registry with said recess.

6. A combined ball and cap comprising a hollow ball like body comprising a unitary sheet of flexible, air impermeable and elastic material, a pair of annular equidistantly spaced reinforcing bands disposed about and secured upon a circumferential portion of said body, said reinforcing bands being adapted to comprise inner and outer cap bands when the body is folded about the space between the bands whereby one-half of the body is pushed into the other half to constitute a cap, and a valve assembly for selectively admitting, retaining and discharging a gas into the interior of said body.

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