

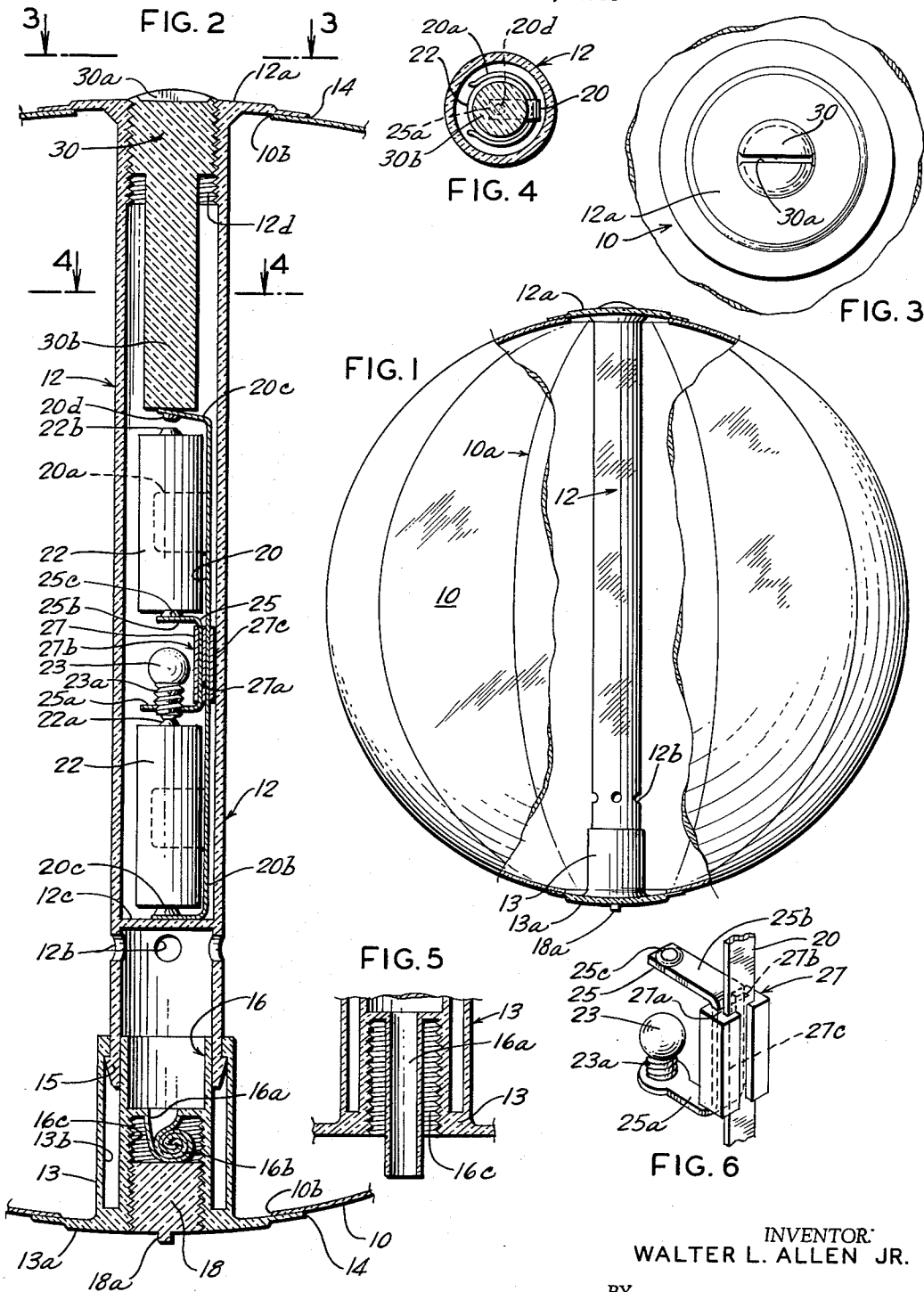
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ILLUMINATED BEACH BALLS

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ILLUMINATED BEACH BALLS

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My invention relates to the variety of large playing balls used on the beach, on a lawn or in the water. A ball of this type is usually made of pliable plastic material; and in some cases the material is translucent and the interior of the ball illuminated, so that the ball may be attractive and easy to follow or catch when it gets dark. Also, beach balls are usually inflatable in order to hold their shape and bounce on impact with the ground.

In the construction of a ball having the above properties, several factors dealing with the efficiency of the ball must be considered, such as means for inflating the ball, the manner of installing the lighting element and access to the latter for control, renewal or other attention. With these considerations in mind, it is one object of the present invention to provide a lighting element which is positioned in the central region, whereby to lend the ball uniform illumination on all sides.

A further object is to provide an electric light installation in the ball which extends in a medial course and imparts balance to the ball.

Another object is to employ two battery cells as the current source for the lighting element, such cells being positioned in the central region of the ball with the lighting element in alignment with them, whereby to stabilize the ball against rolling tendencies when it is left in a given place.

A still further object is to design an internal unit for the ball which contains the complete lighting facility, provides easy access to the latter and also contains an inflating device for the ball.

An additional object is to design the lighting facility in the form of a unit which may be controlled from the outer side of the ball and easily removed for the replacement of battery cells or other attention.

An important object is to design the lighting and inflating means as a tubular unit suitable for central installation in the ball and endwise sealing to the wall of the same.

A better understanding of the invention may be gained by reference to the accompanying drawings, in which—

FIG. 1 is an elevational view of the ball, broken away to reveal the novel lighting and inflating installation;

FIG. 2 is a magnified section of the said installation; FIGS. 3 and 4 are respectively, sections on the lines 3—3 and 4—4 of FIG. 2;

FIG. 5 is a duplication of the bottom portion of FIG. 2, with one part removed and another extended; and

FIG. 6 is a perspective view, partly in section, of a lighting installation seen in the center portion of FIG. 2.

Referring specifically to the drawing, 10 denotes the wall or casing of the beach ball, segmental lines 10a indicating the conventional method of its assembly. For the present purpose, the wall or casing is made of pliable plastic material which is translucent and preferably colored with contrasting or ornamental effects.

For the purpose of the invention the ball 10 is made with circular openings 10b on opposite sides suitable for receiving the novel lighting installation between them. The latter is mainly in the form of a long tube 12 of translucent plastic material and adapted to receive a cap 13 over one of its ends. The outer ends of the tube and cap are flared in the form of circular discs 12a and 13a for sealing application as external closures for the ball openings 10b along the areas indicated at 14.

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The cap 13 and tube 12 are assembled through the agency of an annular snap-joint 15 seen in the lower portion of FIG. 2, the material of the joint components having a factor of yieldability for that purpose. When installed as described, the tube 12 occupies a diametrical position in the center of the ball.

The tube 12 is employed as a facility for inflating the ball 10. Thus, the cap 13 contains a receptacle 16 which extends outwardly with a thin-walled tubular stem 16a normally rolled up as shown at 16b in FIG. 2; and the receptacle 16 is tapped in its outer end as indicated at 16c to receive a screw-plug 18 designed to bear against the roll 16b as shown, the screw-plug having an external rib 18a as a finger-hold to rotate it. When the ball is to be inflated, the screw-plug is removed and the stem 16a unrolled to the form shown in FIG. 5. When air is blown or pumped into the stem 16a, holes 12b made in the tube 12 serve to pass the air into the ball cavity. The stem 16b is rolled up to hold the air momentarily, while the screw-plug 18 follows as a permanent stopper.

The medial portion of the tube 12 serves as a housing for the holder 20 of two electric battery cells 22 which are arranged in longitudinally-spaced relation. The holder is a long spring metal strip from which clips 20a extend to engage the battery cells as seen in FIG. 4. The holder has a bottom end 20b which rests on a partition 12c in the lower part of the tube 12; and the bend 20b has a terminal 20c which is engaged by the casing of the lower battery cell.

Between the battery cells the holder 20 furnishes a support for the light bulb 23 in the form of a C-shaped bracket 25. The lower arm 25a of the latter is perforated for the threaded passage of the bulb base 23a to an extent engaging the center terminal of the light bulb with the center terminal 22a of the lower battery cell, as shown in FIG. 2. The bracket 25 is separated by insulation material from the holder 20, such material being in the form of a block 27 of yieldable plastic material. FIGS. 2 and 5 show that that the block has a medial web 27a which forms the insulating separator for the bracket 25 from the holder 20, the bracket lodging in an undercut receptacle 27b in one side of the block, and the holder passing through a similar receptacle 27c in the other side thereof. The bracket is movable along the holder by the frictional sliding of the block 27 along the same.

As seen in FIG. 2, the upper arm 25b of the bracket 25 has a terminal 25c in contact with the casing of the upper battery cell 22. The holder then rises to a point above such battery cell, where it terminates with an inclined blade portion 20c carrying a terminal 20d in a position directly over the center terminal 22b of the upper battery cell.

The outer end of the tube 12 is tapped as indicated at 12d for the insertion of a screw-plug 30 which is of yieldable plastic material and makes a hermetical closure for the tube when screwed down, the outer end of the screw-plug having a rib 30a as a finger grip. The screw-plug has an inward stem extension 30b meeting the blade portion 20c. The latter, therefore, serves as a switch to turn the light bulb 23 off when the screw-plug 30 is in the retracted position shown in FIG. 2, or on when the screw-plug is advanced.

It will now be apparent that the novel lighting and inflating installation has a number of advantageous features. First, it provides a light bulb in the center of the ball cavity, whereby to cast the light evenly in all directions. Further, the installation is axial in respect to the ball, so that the ball is not thrown out of balance. Further, the two battery cells are grouped in the central region, so that they stabilize the ball by their weight and against tendencies to roll when the ball is left in a given place. Further, all the features of the installation are concentrated

in a single column which occupies a minimum of space in the center of the ball. Further, the installation is not only sealed endwise to the walls of the ball, but is also yieldable inherently. Thus, the snap joint 15 is normally at the inner end of a long cavity 13b in the wall of the cap 13, which allows the cap and tube to telescope when the ball receives external impact or pressure in the end regions of the tube installation. In this respect the holes 12b in the sides of the tube pass the compressed air created by the impact or pressure to the general interior of the ball, whereby to distribute the pressure into all parts of the same. The yieldable nature of the tube installation therefore saves injury to internal parts or breakage of the light bulb. Further, switching of the light bulb is controlled from the outside of the ball by simple turning action. Further, access to the interior of the central tube is gained easily by removing the terminal screw plug. In this connection, it is apparent that the assembly of the internal holder, light bulb and battery cells is removable as a unit without deflating the ball, for handy access in case the light bulb or a battery cell has to be changed. Further, the battery cells not only hold their place in the holder by virtue of the clips 20a, but the bracket supporting the light bulb is slidable to insure the electrical engagement of the light bulb with the adjacent battery cell. Further, the installation is made water-tight endwise, whereby to keep out water or moisture when the ball rolls over wet ground or into the water. Finally, the installation is of a simple nature, and its parts are sufficiently sturdy to withstand such shocks or vibrations as the ball may encounter when used on a beach or lawn.

I claim:

1. An internal installation for hollow ball comprising an illuminating unit in the same, and means extending from said unit to opposite wall portions of the ball for purposes of support, said unit being a light bulb, a pair of battery cells aligned adjacent to the latter, a holder alongside the battery cells and extended with portions engaging them, and an insulated support for the light bulb carried by the holder, said support having a portion disposing the light bulb in contact with the center terminal of one battery cell and the opposite portion in contact with the casing of the other battery cell, said means comprising a tubular enclosure for the assembly of the light bulb, battery cells and holder.

2. An internal installation for a hollow ball comprising an illuminating unit in the same, and means extending from said unit to opposite wall portions of the ball for purposes of support, said unit being a light bulb, a pair of battery cells aligned on opposite sides of the latter, a holder alongside the battery cells and extended with portions engaging them, and a support for the light bulb carried by the holder, said support having a metallic element with one end portion disposing the light bulb in contact with the center terminal of one battery cell and the other end portion in contact with the casing of the other battery cell, and an insulation block between said element and the holder and slidable along the latter to maintain the first mentioned contact, said means comprising a tubular enclosure for the assembly of the light bulb, battery cells and holder.

3. An internal installation for a hollow ball comprising a translucent tube across the center portion of the ball and having a tapped entrance in one end, a light bulb in the center region of the tube, an outer and an inner battery cell aligned in the latter with the light bulb therebetween, a metal holder for the battery cells extending along the same, a metal support for the light bulb carried by the holder and slidable therealong and providing a circuit

between one terminal of the light bulb and one terminal of the outer battery; the other terminal of the light bulb engaging the terminal of the inner battery, said support contacting the other terminal of the inner battery and having a portion spaced from the other terminal of the outer battery, and a screw plug adapted to be advanced in said entrance moving said portion of said holder into contact with the other terminal of the outer battery the support yielding to pressure from the outer battery cell for maintaining electrical contact between the light bulb and the inner battery cell.

4. An illuminated ball assembly comprising an inflatable, yieldable ball, and an illuminating unit extending diametrically of said ball, said illuminating unit comprising a light-permeable tube extending diametrically of said ball and having an axial compartment opening into one end thereof, a manually-operable battery-and-bulb assembly disposed in said axial compartment and including switch means closing said one end of said tube, said tube comprising telescoped sections including a cap element at the other end of said tube, said cap element including a receptacle portion having an inflating stem thereon, said inflating stem communicating with the interior of said tube, said tube having an aperture portion inwardly of said stem connecting the interior of said tube with the interior of said ball, and a cap sealingly connected to said receptacle portion and retaining said inflating stem therein and permitting relative axial movement between said tube sections during impact to said illuminating unit.

5. The structure as claimed in claim 4 in which said battery-and-bulb assembly includes a normally open circuit including a displaceable contact portion disposed adjacent said one end of said tube, said switch means comprising a removable cap element displaceably supported in said one end of said tube and including a manually displaceable switch portion for closing the circuit of said battery-and-bulb assembly.

6. An illuminated ball assembly comprising an inflatable, yieldable ball, and an illuminating unit comprising a light-permeable tube extending diametrically of said ball and having an axial compartment opening into one end thereof, a manually-operable battery-and-bulb assembly disposed in said axial compartment and including switch means closing said one end of said tube, said tube comprising telescoped sections including a cap element at the other end of said tube, said tube having an aperture portion inwardly of said cap element and connecting the interior of said tube to the interior of said ball, said cap element including means thereon for inflating said ball through said tube and aperture portion, said tube sections having relative axial movement during impact to said illuminating unit whereby air compressed in said telescoped sections is discharged into said ball.

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