

[54] **INFLATABLE AND ILLUMINABLE FIGURE**

[76] Inventor: **James G. Moran**, 122 N. Rose St.,  
Burbank, Calif. 91505

[22] Filed: **June 15, 1971**

[21] Appl. No.: **153,370**

[52] U.S. Cl. .... **40/126 B, 46/88**

[51] Int. Cl. .... **G09f 19/00**

[58] Field of Search .... **40/126 B, 130;  
46/87, 88, 90**

[56] **References Cited**

### UNITED STATES PATENTS

|           |        |             |            |
|-----------|--------|-------------|------------|
| 2,748,256 | 5/1956 | Moran ..... | 40/126 B X |
| 3,363,350 | 1/1968 | Moran ..... | 40/106.54  |

3,233,352 2/1966 Projector et al. .... 40/217 X

*Primary Examiner*—Robert W. Michell

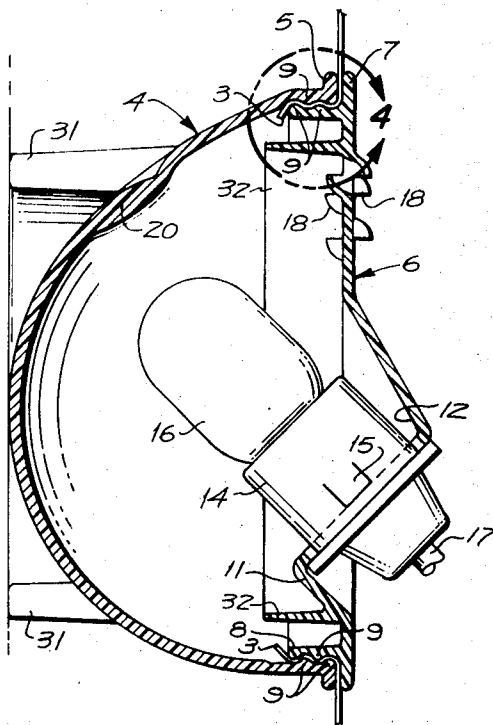
*Assistant Examiner*—John F. Pitrelli

*Attorney*—Lyon & Lyon

### [57] **ABSTRACT**

An inflatable and illuminable figure, including a cell formed of complementary members having interengaging margins which sealingly secure the margins of an opening formed in the figure, the cell forming members removably supporting a light source and being relatively rigid and fire resistant to prevent transfer of excessive heat to the inflatable figure whether the figure is inflated or deflated.

**10 Claims, 9 Drawing Figures**



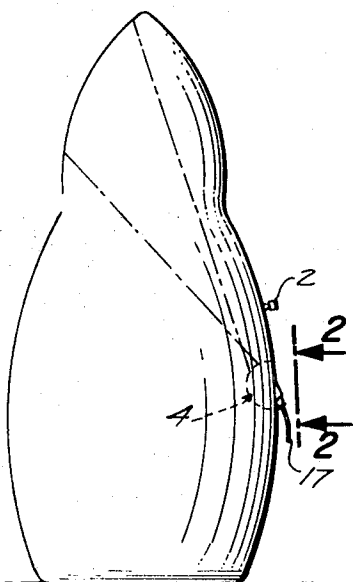


Fig. 1

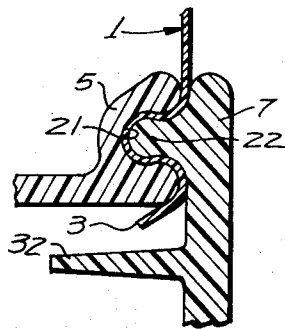


Fig. 4

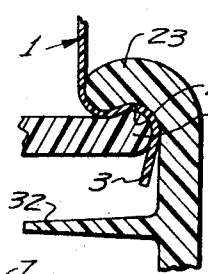


Fig. 5

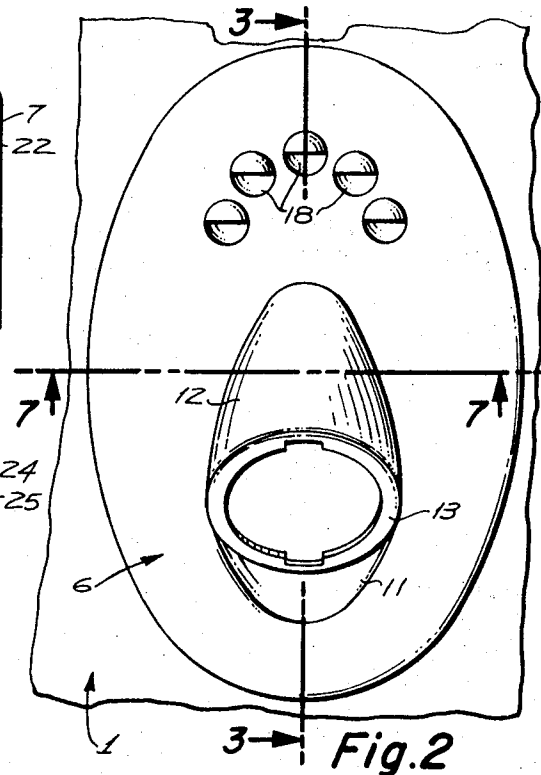


Fig. 2

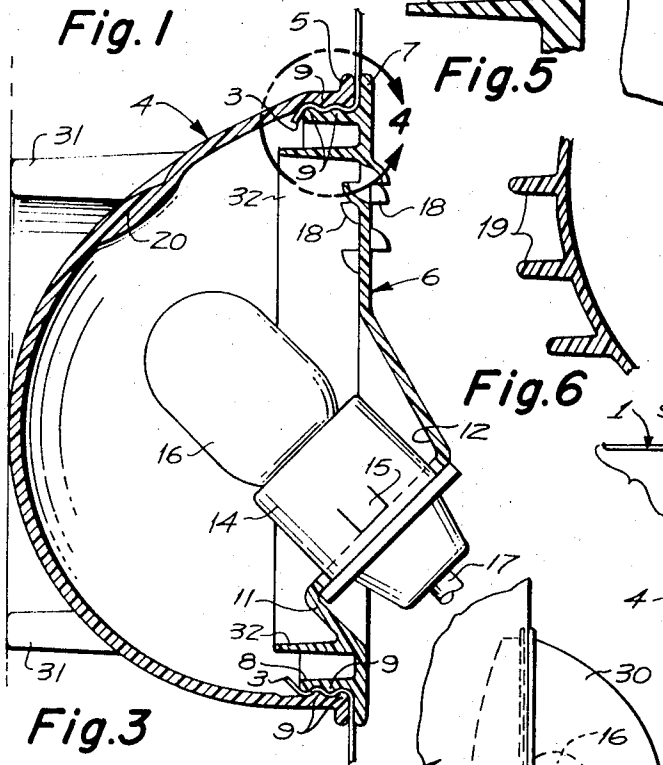


Fig. 3

Fig. 6

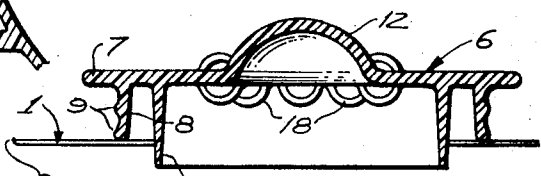


Fig. 7

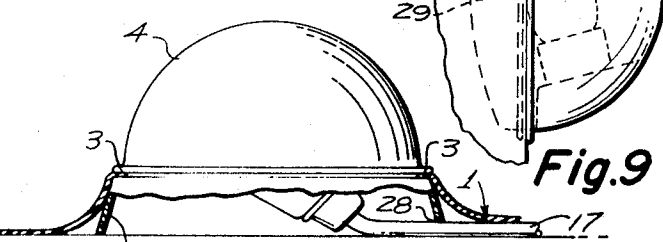
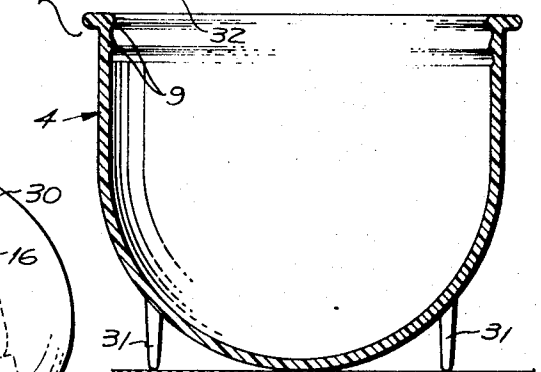


Fig. 8

Fig. 9

INVENTOR.  
JAMES G. MORAN  
BY  
*Lyon & Lyon*  
ATTORNEYS

## INFLATABLE AND ILLUMINABLE FIGURE

## BACKGROUND OF THE INVENTION

Reference is directed to my previous patents concerning illuminated inflatable figures, namely, U.S. Pat. No. 2,748,256 and U.S. Pat. No. 3,363,350 and my co-pending application, Ser. No. 42,968, filed June 3, 1970 now U.S. Pat. No. 3,672,083. Material suitable for inflation is easily damaged by excessive heat. While inflatable material may be selected which is fire resistant, the material may not be sufficiently so as to avoid, especially when deflated, catching fire if contacted by an operating high intensity light bulb. Also, it is essential that the cost of the materials as well as cost of assembly be maintained at a minimum.

## SUMMARY OF THE INVENTION

The present invention is directed to an improvement of the previous inventions and is summarized in the following objects:

First, to provide an inflatable and illuminable figure wherein a light source is removably contained in a cell set in a side of the figure, the cell including a pair of complementary members sealingly securing the margins of an opening therebetween, the outer member removably supporting a light source, and the inner member being translucent or transparent to distribute light within the figure.

Second, to provide an inflatable and illuminable figure, as indicated in the preceding object, wherein the complementary cell forming members are relatively rigid, fire resistant and tend to diffuse heat, thereby preventing excessive heating of the material comprising the inflatable figure should the material be brought into direct contact with the cell while the light source is active.

Third, to provide a cell for inflatable and illuminable figures, as indicated in the preceding object, wherein the surface of the inner cell member may be provided with projections tending to dissipate heat and to space the material when deflated from continuous contact with the cell wall, the projections also serving to produce a varied light pattern on the inflated walls of the figure.

Fourth, to provide an illuminable cell for inflatable figures wherein the walls of the cell may have integral focusing lenses for concentrating the light on selected portions of the figure.

Fifth, to provide an illuminable cell for inflatable figures which is particularly easy to install in that the inner portion of the cell is readily supported in a stable position within the inflatable figure, and the outer portion of the cell fits in and is retained by the margins of an opening in the figure for clamping and sealing engagement with the inner portion.

## DESCRIPTION OF THE DRAWINGS

FIG. 1 is an essentially diagrammatic side view of the inflatable figure.

FIG. 2 is an enlarged side view of the illuminating cell, taken from 2—2 of FIG. 1, with adjacent portions of the inflatable figure shown fragmentarily.

FIG. 3 is a longitudinal sectional view of the illuminating cell, taken through 3—3 of FIG. 2, with adjacent portions of the illuminable figure shown fragmentarily.

FIG. 4 is a fragmentary sectional view, showing a modified form of the connection between the two cell

members, the view being taken within a circle corresponding to Circle 4 of FIG. 3.

FIG. 5 is a similar fragmentary sectional view, showing a further modified form of the connection.

FIG. 6 is a fragmentary sectional view of the inner cell member, showing projections thereon.

FIG. 7 is a transverse sectional view of the cell, taken through 7—7 of FIG. 2, showing the portions of the cell as they appear just prior to sealing engagement with the margins of an opening in the inflatable figure.

FIG. 8 is a partial side view, partial sectional view, of a modified form of the luminating cell, intended to be mounted in the bottom wall of the figure, the adjacent portions of the figure being shown in section.

FIG. 9 is a side view of a further modified form of the cell, in which the outer portion thereof is bulbular, with adjacent portions of the figure being shown fragmentarily.

An inflatable FIG. 1 is provided, which may except for the provision of illuminable means, be conventional. The figure is formed of fluid tight fabric or a combination of fabric and pastic material, or of sheet plastic material. Its shape may simulate an animate or inanimate object. Its base may include a water fillable base ring, such as suggested in the previously mentioned U.S. Pat. No. 3,363,350. A conventional inflation fitting 2 is provided.

In the exercise of the present invention, the inflatable figure is provide with a wall opening, having a flexible margin 3. Fitted within the opening is an illuminable cell which includes an inner cell member 4, which is bulbular or generally spherical in contour. The cell member 4 includes a peripheral flange 5, dimensioned to underlie the flexible margin 3 of the opening, with the flexible margin folded over the radially inner side of the flange 5. A relatively flat outer cell member 6 is provided with a flange 7, which overlies the flange 5, and a rim 8 which fits within the radially inner side of the flange 5 so as to clamp the margin 3.

The confronting portions of the flange 5 and rim 8 are preferably provided with interlocking beads 9, so proportioned that the outer cell member and the inner cell member may be snapped together. The connection thus provided between the inner and outer cell members, with the margin 3 firmly held between them, constitutes a complete seal so that the figure may be inflated. If desired, a sealant or bonding agent may be applied to the flexible margin 3, or the contacting parts of the cells 4 and 6 may be coated. However, a full seal is provided without such coating, the coating serving mainly to prevent disassembly of the parts.

The outer cell member 6 is provided with a lamp socket mounting, formed by inwardly and outwardly pressed complementary portions 11 and 12, defining a plane 13 disposed in acute angular relation with the normal surface of the outer cell member. Formed in the plane 13 is an aperture having notched margins and arranged to receive a lamp socket 14, having connecting means 15 so arranged that the lamp socket may be inserted partially into the opening and turned to a locked position from which it may be subsequently turned for removal of the lamp socket. The lamp socket receives a lamp 16, which is supported by the socket in spaced relation to the walls of the inner cell member 4. An appropriate lamp cord 17 extends from the socket. Louvered vent openings 18 are provided in the outer cell member to permit circulation of air.

The inflatable FIG. 1 is formed of fire resistant material; however, being relatively thin and flexible, contact with the lamp 16, while the lamp is connected, could damage the material comprising the figure. This could only happen if the figure was in a deflated condition and if the inner cell member 4 were flexible or yieldable. To avoid this, both cell members 4 and 6 are formed of relatively rigid and tough plastic material, such as a polycarbonate resin. Still further, the inner cell member may have projections 19, as shown in FIG. 6, to minimize surface contact. As a result, the illuminable figure is particularly safe even though mishandled.

Both cell members are preferably injection molded. The outer cell member is preferably opaque, whereas, the inner cell member 4 is transparent or translucent to distribute the light. Furthermore, the inner cell member may be formed so that portions of its surface may have special optical properties; in fact, may form lenses so that light may be concentrated on desired portions of the inflatable figure. Such lenses, suggested by 20 in FIG. 3, may be arranged to concentrate light in, for example, the face portion of an animate figure. Also, the projections 19 may have optical properties to produce a pattern of spots in which the light is intensified, this being accomplished without increasing the cost of injection molding the inner cell member.

The clamping and sealing means provided between the cell members 4 and 6 and the intervening flexible margin 3 of the inflatable figure may take various forms. For example, as shown in FIG. 4, the flanges 5 or 7 may be provided with an annular recess 21, and the other member provided with a mating bead 22. Or, as shown in FIG. 5, the outer cell member 6 may be provided with an outer rim 23, having an internal channel 24, which fits over an outwardly extending bead 25 provided around the inner cell member 4. In each case, the flexible margin 3 is not only clamped but sealed with respect to the inner cell member 4.

While the illuminable cell so far described is shown as mounted on the back side of the figure, it is possible to mount the cell in the bottom wall of the figure, as shown in FIG. 8. If the cell is so mounted, the construction is the same as previously described, except that the contour of the inner cell member 4 may differ, and, it is preferred to provide the outer cell member with a peripheral spacing wall 27, having one or more slots 28 to accommodate the lamp cord.

Reference is now directed to FIG. 9. While it is preferred to provide a bulbular inner cell member 4, a relatively flat inner cell member 29 and an bulbular outer cell member 30 may be provided. In this respect, the cells are similar to the construction shown in the copending application, Ser. No. 42,968, but their interconnection being as described hereinbefore.

To facilitate assembly of the illuminable cell, the inner cell member 4 may be provided with extensions forming feet 31, which, after insertion of the cell member through the opening, rest on the inside surface of the side of the figure opposite from the opening. The outer cell member 6 is provided with a skirt 32 disposed inwardly from its margin and of such dimension to fit snugly within the margins 3 of the opening. The outer cell member 6 is easily guided into registry with the inner cell member, then pressed downwardly. As the beads 9 are forced in a relative axial direction, the margin 3 is sealingly clamped. The interference fit be-

tween the beads is calculated to permit some initial slippage of the margin 3 and ensure a good seal.

The embodiments shown in FIGS. 4 and 5 may also be provided with the centering skirt 32.

While particular embodiments of this invention have been shown and described, it is not intended to limit the same to the details of the constructions set forth, but instead, the invention embraces such changes, modifications and equivalents of the various parts and their relationships as come within the purview of the appended claims.

I claim:

1. An inflatable and illuminable figure, comprising:
  - a. a figure formed of foldable light transmitting material and adapted to be inflated, the figure having initially, an opening, the margin of which is flexible;
  - b. inner and outer cell members having interengaging annular rims including radially extending confronting portions and axially extending confronting portions to effect a mechanical connection between the cell members, portions of the rims adapted to sealingly receive and retain the margin of said opening therebetween;
  - c. the inner cell member having a light transmitting wall;
  - d. the outer cell member having means for removably mounting a lamp and its socket therein to position the lamp within the cell
  - e. the cell members being relatively rigid and the lamp being secured in spaced relation to walls thereof, thereby to space the inflatable material, when deflated, from the lamp.
2. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the outer cell member includes an axially directed wall extending inward for insertion into the opening in the figure to retain the cell members in concentric relation to the opening during interengagement of their rims.
3. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the cell members are disposed at the bottom of the figure;
  - b. the lamp mounting means includes a downwardly projecting portion;
  - c. and the outer cell member includes a downwardly directed spacing skirt.
4. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the axially extending portion of the interengaging rim of the outer cell member fits within the rim of the inner cell member.
5. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the interengaging rim of the outer cell member fits over the rim of the inner cell member.
6. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the interengaging rim of one of the cell members has an axially directed circular channel and the other cell member has a mating axially directed rib.
7. An inflatable and illuminable figure, as defined in claim 1, wherein:
  - a. the inner cell member is provided with external projections for supporting the inner cell member during assembly of the outer cell member thereon,

5

6

and also spacing the material comprising the figure from contact with the normal outer surface of the inner cell member when the figure is collapsed.

8. An inflatable and illuminable figure, as defined in claim 1, wherein:

a. the wall of the inner cell member includes at least one integral lens to concentrate light from the lamp on a selected portion of the figure.

9. An inflatable and illuminable figure, as defined in claim 1, wherein:

a. the initial opening in the figure permits insertion of the inner cell member for disposition in confronting relation with the margins of the opening;

b. and the outer cell member is provided with a marginal skirt dimensioned to fit snugly in the opening to retain the margins thereof until engaged by the rims of the inner and outer cell members.

10 An inflatable and illuminable figure, comprising:

a. a figure formed of translucent foldable material capable, when deflated, to form a compact bundle, and having an opening in its side wall;

b. a relatively rigid inner cell member including a marginal portion underlying the margin of the

opening;

c. a relatively rigid outer cell member including a marginal portion overlying the margin of the opening and means for retaining the outer cell member in concentric relation with the opening;

d. the marginal portions of the cell members being shaped to interlock and sealingly secure the margin of the opening therebetween to form a fluid tight figure capable of being inflated;

e. the outer cell member conforming to the curvature of the inflated figure and having an outwardly extending portion and a complementary inwardly extending portion forming a socket mounting aperture, defining an acute angle to the normal surface of the outer cell member;

f. a lamp socket removably received in the mounting aperture and supporting a lamp in spaced relation to the walls of the inner cell member;

g. the inner cell member projecting into the inflated figure and having optical properties to effect a predetermined distribution of light within the inflated figure.

\* \* \* \* \*

25

30

35

40

45

50

55

60

65