United States Patent [19]

Michelson

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[54] **FLUID LENS**

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[*] Notice: The portion of the term of this patent subsequent to Aug. 21, 2001 has been disclaimed.

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[22] Filed: **Aug. 10, 1984**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 432,409, Sep. 30, 1982, Pat. No. 4,466,705.

[51] **Int. Cl.**[4] **G02B 1/06;** G02C 7/04; A61F 2/16; A61K 9/22

[52] **U.S. Cl.** ..... **350/418;** 351/160 H; 604/893; 604/895; 623/6

[58] **Field of Search** 350/418, 419; 351/160 R-162; 623/6; 604/893, 895

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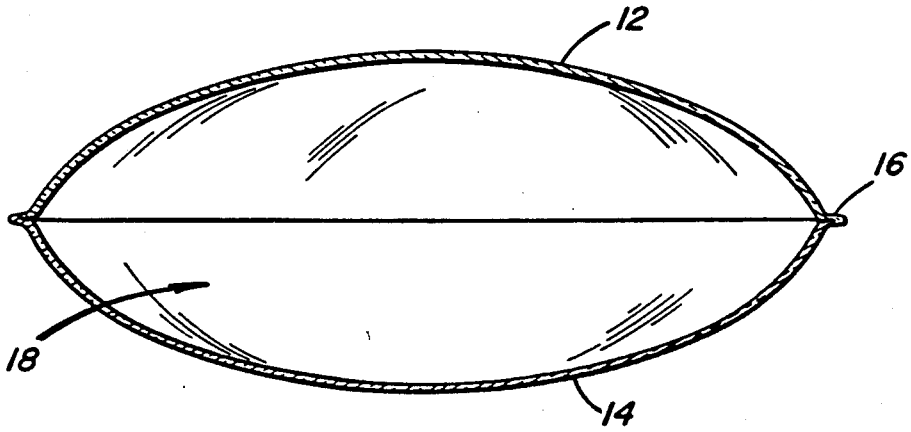
[57] **ABSTRACT**

A device for forming a fluid lens when immersed in a liquid medium. The device includes a semipermeable transparent sheath defining a fully enclosed cavity and having a plurality of pores for permitting a liquid to flow into the cavity, and a hydrophilic polymer array disposed in the cavity, presenting a pressure differential across the sheath when the sheath is immersed in the liquid medium for causing liquid medium to flow into the cavity and to hydrate the array, causing the array to expand and to completely fill the cavity, thereby causing the sheath to expand and to assume a defined lenticular shape, wherein the hydrated array assumes a shape having an outer contour defined by the expanded sheath and constitutes a fluid lens.

13 Claims, 5 Drawing Figures