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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

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A handwritten signature in black ink that reads "Jon W. I. Dudas". The signature is written in a cursive style with a large, looped initial 'J'.

Director of the United States Patent and Trademark Office



US006877419B2

(12) **United States Patent**
Öhrle et al.

(10) **Patent No.:** US 6,877,419 B2
(45) **Date of Patent:** Apr. 12, 2005

- (54) **COMPOSITE DIAPHRAGM FOR DIAPHRAGM PUMPS**
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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 22 days.

(21) Appl. No.: **10/430,075**

(22) Filed: **May 6, 2003**

(65) **Prior Publication Data**

US 2003/0230191 A1 Dec. 18, 2003

(30) **Foreign Application Priority Data**

Jun. 18, 2002 (DE) 102 27 193

(51) **Int. Cl.⁷** **F16J 3/00**

(52) **U.S. Cl.** **92/103 R; 92/98 R; 92/103 F**

(58) **Field of Search** **92/103 R, 96, 92/98 R, 103 F**

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(57) **ABSTRACT**

A composite diaphragm for diaphragm pumps comprises an elastomer body and a polytetrafluoroethylene (PFTE) coating on its back side. The elastomer body has a shape of a circular dish that has an edge region with a clamping area, a bottom and a flexible section of the diaphragm that connects the edge of the dish with the bottom. The flexible section of the diaphragm comprises a multitude of naps forming elevations on the coated side of the elastomer body. The PFTE coating is a plane ring surface with the area of the flexible section of the diaphragm.

14 Claims, 9 Drawing Sheets

