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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.

Therefore, this

United States Patent

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Jon W. Dudas

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

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(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 160 days.

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(52) **U.S. Cl.** ..... **92/103 R**; 92/103 F
(58) **Field of Search** ..... 92/96, 103 F, 103 R, 92/103 SD, 104

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(57) **ABSTRACT**

A composite diaphragm for diaphragm pumps comprises an elastomer body and a polytetrafluoroethylene (PTFE) 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 elastomer backside of the elastomer body. The PTFE coating is a plane ring surface with the area of the flexible section of the diaphragm.

13 Claims, 10 Drawing Sheets