

Title (en)  
DIAPHRAGM PUMP WITH A MECHANICALLY OPERATED DIAPHRAGM

Publication  
**EP 0418644 B1 19930609 (DE)**

Application  
**EP 90117011 A 19900904**

Priority  
DE 3931516 A 19890921

Abstract (en)  
[origin: EP0418644A1] In the case of a diaphragm pump with a mechanically operated diaphragm and a device for signalling fracture of the diaphragm, in which the diaphragm 2 is clamped at the edges between pump body 3 and pump cover 4 and firmly connected at the centre to a backing plate 5 serving to drive the diaphragm, the design is arranged in such a way that the diaphragm is designed as a multi-layer sandwich diaphragm 2, the individual layers or diaphragm plies of which are clamped together in the edge area between pump body 3 and pump cover 4. The sandwich diaphragm 2 consists of a working diaphragm 18 with at least one diaphragm ply and a protective diaphragm 20 also with at least one diaphragm ply. The latter is designed in such a way that if the working diaphragm 18 is intact it is stressed by the delivery pressure significantly less than the working diaphragm 18. Finally the device for signalling fracture of the diaphragm has at least one duct 22, 25 arranged between the diaphragms 18, 20 and led out to the outside for signalling a fracture of the working diaphragm 18. <IMAGE>

IPC 1-7  
**F04B 43/00**

IPC 8 full level  
**F04B 43/02** (2006.01); **F04B 43/00** (2006.01)

CPC (source: EP US)  
**F04B 43/009** (2013.01 - EP US)

Cited by  
CN108194347A; DE102014008321B3; US5171132A; DE4328559C5; EP2949931A1

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0418644 A1 19910327; EP 0418644 B1 19930609**; DE 3931516 A1 19910404; DE 3931516 C2 19931014; DE 59001694 D1 19930715; ES 2023108 A4 19920101; ES 2023108 T3 19940201; JP H03206378 A 19910909; US 5074757 A 19911224

DOCDB simple family (application)  
**EP 90117011 A 19900904**; DE 3931516 A 19890921; DE 59001694 T 19900904; ES 90117011 T 19900904; JP 25046890 A 19900921; US 58350490 A 19900917