

Title (en)
APPARATUS FOR CLEARING OBSTRUCTED FLUID PASSAGEWAYS

Publication
EP 0392113 A3 19901227 (EN)

Application
EP 89308668 A 19890825

Priority
US 33576189 A 19890410

Abstract (en)
[origin: EP0392113A2] Apparatus for clearing obstructed fluid passageways has a control manifold (10) with first and second inlets (28, 24) to a pressure source and a vacuum source and an inlet/outlet port (42) for connection to the obstructed passageway. An interior chamber (40) is divided into a pressure chamber (34) communicating with the first inlet (28) and a vacuum chamber (32) communicating with the second inlet (24). A displaceable member (62) in alternate positions thereof communicates between the vacuum chamber (32) and said inlet/outlet port (42), and between the pressure chamber (34) and said inlet/outlet port (42). Displacing means (52) moves the displaceable member (62) between its positions thereby connecting the port (42) sequentially to either the pressure chamber (34) or the vacuum chamber (32). This displacing means (52) also simultaneously connects the other of the pressure chamber (34) and vacuum chamber (32) to atmosphere via a porting means (50, 48).

IPC 1-7
E03C 1/308; **E04H 4/12**; **A47L 7/00**; **B08B 9/02**

IPC 8 full level
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Citation (search report)
• [A] CH 150274 A 19311031 - INVENTIA PATENT VERWERT GES [CH]
• [A] US 3619851 A 19711116 - BOLZAN JAMES J JR, et al
• [AD] US 3238556 A 19660308 - MARTIN ELMER A
• [A] US 2673986 A 19540406 - VALENTINE SCHAEFER

Cited by
CN111921993A; CN115055453A; CN111790700A; CN104944013A

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EP 0392113 A2 19901017; **EP 0392113 A3 19901227**; **EP 0392113 B1 19930804**; AT E92564 T1 19930815; AU 5306990 A 19901011; AU 639230 B2 19930722; CA 1331424 C 19940816; DE 68908161 D1 19930909; DK 82590 A 19901011; DK 82590 D0 19900402; JP 2732303 B2 19980330; JP H0361798 A 19910318; NO 901204 D0 19900314; NO 901204 L 19901011

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