

Title (en)

MULTI STAGE CENTRIFUGAL PUMP SYSTEM

Title (de)

MEHRSTUFIGES KREISELPUMPENAGGREGAT

Title (fr)

AGRÉGAT DE POMPE CENTRIFUGE À PLUSIEURS ÉTAGES

Publication

EP 2505842 B1 20191225 (DE)

Application

EP 11002578 A 20110329

Priority

EP 11002578 A 20110329

Abstract (en)

[origin: EP2505842A1] The assembly has two impeller groups (4, 8) arranged one after another in a flow direction and provided with impellers (2, 6). A backflow channel (24) connects an exit side and an entry side of one of the impeller groups, and is arranged in the impeller group. The backflow channel runs out of a stage of the impeller group into a suction port, and a valve is arranged in the backflow channel for closing the backflow channel to reach a predefined fluid pressure in the backflow channel. The impeller group at the exit side comprises a separating element (20) for separating air and fluid.

IPC 8 full level

F04D 9/02 (2006.01); **F04D 1/06** (2006.01); **F04D 9/00** (2006.01); **F04D 13/10** (2006.01)

CPC (source: EP US)

F04D 1/063 (2013.01 - EP US); **F04D 9/005** (2013.01 - EP US); **F04D 9/02** (2013.01 - US); **F04D 13/10** (2013.01 - EP US)

Citation (examination)

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- DE 1703603 A1 19720406 - MUANYAGIPARI KUTATO INTEZET
- US 2005196269 A1 20050908 - RACER DONALD W [US], et al
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Citation (opposition)

Opponent : Behr, Wolfgang

- JP S58143189 A 19830825 - FUJI ELECTRIC CO LTD
- DE 610778 C 19350316 - CARL METZ FEUERWEHRGERAETEFABR
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DOCDB simple family (publication)

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DOCDB simple family (application)

EP 11002578 A 20110329; AU 2012201654 A 20120321; CN 201210094251 A 20120329; CN 201910559567 A 20120329; IN 817DE2012 A 20120321; RU 2012112043 A 20120328; US 201213433398 A 20120329