

Title (en)

Bladeless pump and method of using same.

Title (de)

Reibungspumpe und deren Funktion.

Title (fr)

Pompe centrifuge sans aubages et son fonctionnement.

Publication

EP 0002592 A1 19790627 (EN)

Application

EP 78300777 A 19781208

Priority

US 85865477 A 19771208

Abstract (en)

A bladeless pump (A) that includes a housing (B) that defines a circular confined space (C) of substantial width into which either a single phase fluid or multiphase fluid is sequentially introduced through a centrally disposed inlet (22, 18, 20, 16) in a first side (10) of the housing (B) to be subjected to boundary layer rotational drag by at least one substantially smooth disc (46) that rotates in the confined space (C) intermediate the first and second side pieces (10, 12) of the housing (B) and parallel thereto. The pump is capable of pumping a multiphase fluid such as that from a geothermal well that includes water, dissolved solids, steam and gas vapor, or a fluid in which the outer phase is water and the inner phase may range through such diverse materials as particled coal, marine animals such as fish, shrimp and crustaceans, and edibles that include fruits, vegetables, and berries, as well as metallic objects of which steel ball bearings is an example. The pump has the capability of pumping beer without appreciable frothing the latter. Also, the pump is particularly adapted for pumping a multiphase liquid in which the inner phase is extremely frangible, of which blood is an important example. The boundary layers on the rotating discs (46) prevent objects in the inner phase of a fluid contacting the discs and as a result there is little or no abrasion of the latter. Also, the boundary layers on the discs protect the latter from contact with bubbles in the fluid, and as a result there is no cavitation on the discs due to abrupt collapse of the bubbles.

IPC 1-7

F04D 11/00; B65G 53/00; F04D 7/04

IPC 8 full level

F04D 5/00 (2006.01)

CPC (source: EP)

F04D 5/001 (2013.01)

Citation (search report)

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