

Title (en)
JOULE-THOMSON COOLING DEVICE

Publication
EP 0373445 B1 19921104 (DE)

Application
EP 89122190 A 19891201

Priority
DE 3841635 A 19881210

Abstract (en)
[origin: US4993230A] A cooling apparatus utilizing the Joule-Thomson effect contains a lead conduit including an inlet end connectable to a source of pressurized gas, and an outlet end, a relief nozzle provided at the outlet end of the lead conduit whereby pressurized gas inflowing through the lead conduit is depressurized at the relief nozzle with cooling, a return for the cooled and depressurized gas, and a countercurrent heat exchanger by which the pressurized gas inflowing through the lead conduit is in heat conductive contact with the cooled and depressurized gas outflowing through the return. Peltier elements serve for additional cooling of the inlet end of the lead conduit and have cold sides which are in immediate contact with the inlet end of the lead conduit. A heat exchanger is provided at the warm sides of the Peltier elements and is throughflowed by the gas from the return.

IPC 1-7
F25B 9/02; **F25B 25/00**

IPC 8 full level
F25B 9/02 (2006.01); **F25B 21/02** (2006.01); **F25B 25/00** (2006.01)

CPC (source: EP US)
F25B 9/02 (2013.01 - EP US); **F25B 21/02** (2013.01 - EP US); **F25B 25/00** (2013.01 - EP US)

Cited by
FR2734942A1; FR2725779A1; US5465581A; EP0561114A1; WO2010037364A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 0373445 A2 19900620; **EP 0373445 A3 19910703**; **EP 0373445 B1 19921104**; DE 3841635 A1 19900613; DE 58902619 D1 19921210; US 4993230 A 19910219

DOCDB simple family (application)
EP 89122190 A 19891201; DE 3841635 A 19881210; DE 58902619 T 19891201; US 44764889 A 19891208