

Title (en)  
Cooling device.

Title (de)  
Kühlvorrichtung.

Title (fr)  
Dispositif de refroidissement.

Publication  
**EP 0432583 B1 19931020 (DE)**

Application  
**EP 90122816 A 19901129**

Priority  
DE 3941314 A 19891214

Abstract (en)  
[origin: US5150579A] A cooling apparatus for cooling a pivotable detector contains a first cooler which serves for cooling the detector and contains a depressurization outlet through which pressurized argon which has been precooled below its inversion point, is depressurized and thereby cooled. A second cooler is operated using pressurized methane and serves for precooling the pressurized argon. The second cooler constitutes a Joule-Thomson cooler containing a depressurization nozzle for depressurizing and thereby cooling the pressurized methane, and a countercurrent heat exchanger arranged upstream of the depressurization nozzle for precooling the infed pressurized methane by the depressurized and cooled methane. The first cooler constitutes an expansion cooler containing a depressurization outlet and a heat exchanger upstream of the depressurization outlet for exclusive heat exchange between the pressurized argon and the depressurized and cooled methane. The argon exiting from the depressurization outlet of the first cooler, is depressurized and cooled down to its boiling point and directed toward the object to be cooled.

IPC 1-7  
**F25B 9/10**; **F25B 9/02**

IPC 8 full level  
**F25B 9/02** (2006.01); **F25B 9/10** (2006.01)

CPC (source: EP US)  
**F25B 9/02** (2013.01 - EP US); **F25B 9/10** (2013.01 - EP US); **F25B 2309/023** (2013.01 - EP US); **F25B 2400/12** (2013.01 - EP US)

Cited by  
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**EP 90122816 A 19901129**; DE 3941314 A 19891214; DE 59003155 T 19901129; US 62818690 A 19901214