

Title (en)

METHOD AND APPARATUS FOR THE ENERGY-SAVING RECOVERY OF USEFUL AMBIENT HEAT OR OF WASTE HEAT

Publication

EP 0041244 A3 19820120 (DE)

Application

EP 81104105 A 19810528

Priority

DE 3020565 A 19800530

Abstract (en)

[origin: US4413670A] A process for the energy-saving recovery of useful heat from the environment or from waste heat with the use of a reversible chemical reaction comprising, charging and discharging alternately and successively by pressure variation with hydrogen two vessels which are interconnected by lines and filled with a metal hydride and the hydride-forming metal and removing as useful heat the heat of compression and of hydride formation thereby liberated by heat exchange and replacing consumed heat of expansion and hydrogen evolution of the hydride by heat exchange with the environment or by waste heat.

IPC 1-7

F24J 3/04; **F24J 1/04**

IPC 8 full level

F24J 1/00 (2006.01); **F24J 3/00** (2006.01); **F24V 30/00** (2018.01); **F25B 17/12** (2006.01); **F25B 27/02** (2006.01); **F28D 20/00** (2006.01)

CPC (source: EP US)

F25B 17/12 (2013.01 - EP US)

Citation (search report)

- DE 2758727 A1 19780706 - BRUNBERG ERNST AKE
- DE 2810360 A1 19791004 - BRODALLA DIETER, et al
- EP 0007143 A1 19800123 - STANDARD OIL CO [US]
- US 4044819 A 19770830 - COTTINGHAM JAMES G
- DE 2820671 A1 19781214 - STANDARD OIL CO
- US 4039023 A 19770802 - MCCLAIN ANDREW W
- US 4161211 A 19790717 - DUFFY THOMAS E [US], et al
- DE 2808876 A1 19790913 - HEIDENHEIMER WAERMEVERTRIEBS G

Cited by

GB2174191A; EP0054298A3; EP0055855A3; EP0425368A1; FR2653541A1; EP0385472A1; US5056318A

Designated contracting state (EPC)

AT BE CH DE FR GB IT LU NL SE

DOCDB simple family (publication)

EP 0041244 A2 19811209; **EP 0041244 A3 19820120**; **EP 0041244 B1 19860813**; AT E21449 T1 19860815; CA 1158935 A 19831220; DD 160199 A5 19830511; DE 3020565 A1 19811210; DE 3175104 D1 19860918; DK 154734 B 19881212; DK 154734 C 19890508; DK 229581 A 19811201; IE 52196 B1 19870805; IE 811200 L 19811130; JP H0355751 B2 19910826; JP S5721789 A 19820204; US 4413670 A 19831108; ZA 813581 B 19820630

DOCDB simple family (application)

EP 81104105 A 19810528; AT 81104105 T 19810528; CA 378663 A 19810529; DD 23066581 A 19810529; DE 3020565 A 19800530; DE 3175104 T 19810528; DK 229581 A 19810526; IE 120081 A 19810529; JP 8371581 A 19810529; US 26897081 A 19810601; ZA 813581 A 19810527