

Title (en)
UNIVERSAL LIQUIDS HEAT TRANSFER ECONOMIZER

Publication
EP 0473654 A4 19930804 (EN)

Application
EP 90908177 A 19900524

Priority
• AU 5584590 A 19900523
• AU PJ438589 A 19890526
• AU PJ702089 A 19891024

Abstract (en)
[origin: WO9014556A1] The present invention relates to an energy conservation apparatus to recover the waste energy in various industrial processes. The general assembly of the single stage "Economizer" heat transfer unit (1) is provided with tube (4) and twisted baffle (4c) tube (5) and twisted baffle (6), tube plates (2 and 2a) which are welded to heat transfer tubes (4) and (5). The exhaust flue gas is passed through the tubes to heat the water or chemicals to 85 DEG -90 DEG C, the pre-heated or cold water is directed to solenoid valve (17), check valve (16) and pipe (8). When the water is heated to set up temperature control by thermostatic device (9), solenoid valve (10) with check valve (11) discharges the hot water into the storage tank (55). Pressure vessel (1) is provided with safety valve (13) which relieves the excess pressure which is discharged through the storage tank (55). To control flue gas temperature into heat transfer unit (1), thermocouples (15) and (15a) are fitted. Variable speed fan (14) with impeller (14a) intakes the exhaust heat (flue gas) from the boiler which increases or decreases the excess air and provides high efficiency heat transfer which maintains the pressure drops into boiler combustion chamber.

IPC 1-7
F22D 1/04; **F23N 3/08**; **F23M 9/08**

IPC 8 full level
F22D 1/24 (2006.01); **F22D 3/00** (2006.01); **F24D 12/02** (2006.01); **F28F 13/12** (2006.01)

CPC (source: EP)
F22D 1/24 (2013.01); **F22D 3/00** (2013.01); **F24D 12/02** (2013.01); **F28F 13/12** (2013.01); **F24D 2200/18** (2013.01); **Y02B 30/00** (2013.01)

Citation (search report)
• [X] US 1674049 A 19280619 - FRANZ LOSEL
• [X] US 1682674 A 19280828 - THEODORE HEDLUND WILLIAM
• [A] AU 559507 B2 19870312 - SULTAN M
• [A] US 1746564 A 19300211 - SUMMERS LOUIS D
• [A] EP 0012654 A1 19800625 - CREUSOT LOIRE [FR]
• See references of WO 9014556A1

Cited by
CN112879935A

Designated contracting state (EPC)
DE DK FR GB SE

DOCDB simple family (publication)
WO 9014556 A1 19901129; AU 5584590 A 19901129; AU 651315 B2 19940721; EP 0473654 A1 19920311; EP 0473654 A4 19930804

DOCDB simple family (application)
AU 9000216 W 19900524; AU 5584590 A 19900523; EP 90908177 A 19900524