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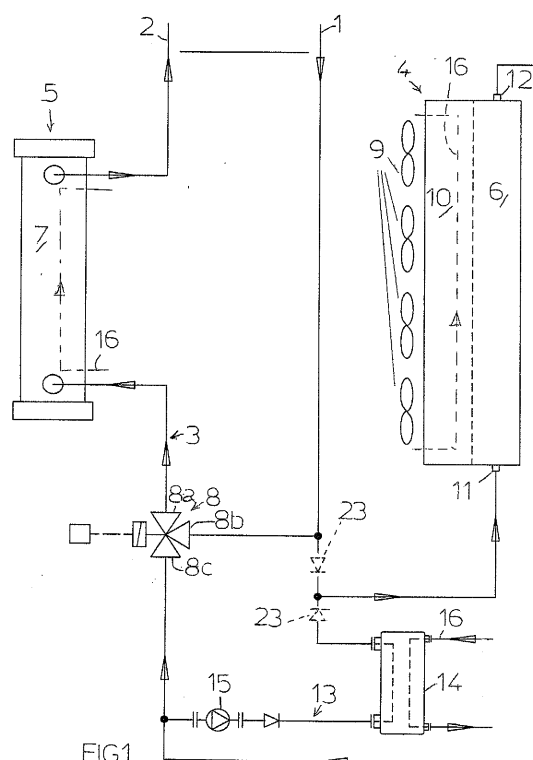
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(54) **System for the refrigeration of a liquid and method for controlling said system**

(57) A system for the refrigeration of a liquid suitable for circulating between at least one inlet (1) and at least one outlet (2) of a primary liquid cooling circuit (3), comprises at least a first air-cooled refrigeration unit (4) having at least a first air-cooled cooling coil (6) inserted on the primary liquid cooling circuit (3), at least a second refrigeration unit (5) with a cooling cycle having at least one evaporator (7) inserted on the primary liquid cooling circuit (3) in cascade with the first air-cooled cooling coil (6), means for shutting off the first air-cooled cooling coil (6) from the primary liquid cooling circuit (3), forced air ventilation means suitable for acting on at least the first air-cooled cooling coil (6) and on at least a second air-cooled cooling coil (10) provided for at least one condenser of the second refrigeration unit (5) for condensing the refrigerant fluid operating in the cooling cycle, there being further provided a secondary liquid circuit (13) on which at least the first air-cooled cooling coil (6) and at least one secondary exchanger (14) for subcooling the refrigerant fluid leaving the second air-cooled cooling coil are inserted.





## EUROPEAN SEARCH REPORT

Application Number  
EP 12 17 1665

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 233 863 A2 (JOHNSON CONTROLS TECHNOLOGY C [US]) 29 September 2010 (2010-09-29) * paragraphs [0005], [0006]; figure 8 * * paragraphs [0022], [0023], [0027] * * paragraph [0033] - paragraph [0035] * * paragraph [0046] *	1-4,6,7, 11-14	INV. F25B25/00 F25D16/00 F25B41/00
A	EP 1 134 523 A1 (RC GROUP S P A [IT]) 19 September 2001 (2001-09-19) * paragraph [0002] - paragraph [0014]; figures 1,3 *	1-4,6,7, 11-14	
A	GB 2 218 499 A (MITSUBISHI ELECTRIC CORP [JP]) 15 November 1989 (1989-11-15) * page 3 - page 7; figure 2 *	1-4,6,7, 11-14	
			TECHNICAL FIELDS SEARCHED (IPC)
			F25B F25D
<del>The present search report has been drawn up for all claims</del>			
Place of search Munich		Date of completion of the search 15 January 2015	Examiner Gasper, Ralf
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



Application Number

EP 12 17 1665

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

"see additional sheet(s) "

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION**  
**SHEET B**

Application Number

EP 12 17 1665

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4, 6, 7, 11-14

directed to the arrangement of a refrigeration system and a  
method to operate it

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2. claims: 1, 5, 8-10

directed to the design of heat exchangers

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 17 1665

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-01-2015

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