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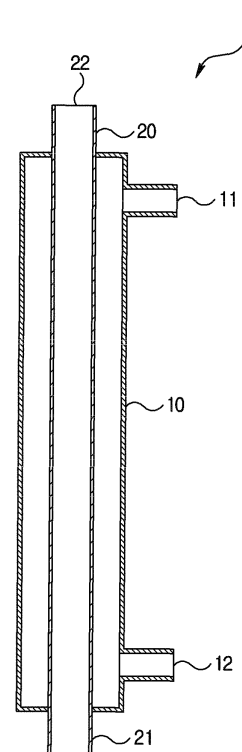
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(54) Pipe in pipe heat exchanger with vibration reduction

(57) A heat exchanger is provided, including a first pipe, into which a first fluid may be introduced and flow, and a second pipe disposed in the first pipe, into which a second fluid may be introduced and flow. The first and second pipes may contact each other, to prevent the second pipe from vibrating.

Fig. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 0196

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	DE 20 2007 010274 U1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 27 September 2007 (2007-09-27) * the whole document *	1,2, 13-15	INV. F28D7/10
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X	EP 1 431 693 A1 (MATSUSHITA ELECTRIC IND CO LTD [JP]) 23 June 2004 (2004-06-23) * abstract; figures 1-4 *	1,4,13, 14	
A		5-8	
X	DE 196 24 030 A1 (KME SCHMOELE GMBH [DE]) 18 December 1997 (1997-12-18) * column 4, lines 5-26; claims 3,6-12; figures 8-9 *	1,4,13, 14	TECHNICAL FIELDS SEARCHED (IPC) F28D F28F
A	* column 3, lines 10-15 *	9-12	
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A	FR 2 608 264 A1 (BRACON DANIEL [FR]) 17 June 1988 (1988-06-17) * abstract; figures 1-5 *	4	
A	CA 2 499 865 A1 (RYBAK MILAN [CA]) 24 September 2006 (2006-09-24) * figures 1-11 *	4	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 September 2012	Examiner Leclaire, Thomas
<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</p> <p>& : member of the same patent family, corresponding document</p>			

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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:

☐ 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

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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: 1-15

pipe-in-pipe heat exchanger, first and second pipe contact each other

1.1. claims: 2, 15

first pipe cylindrical, second pipe wave shaped

1.2. claim: 3

first pipe wave shaped, second pipe cylindrical

1.3. claims: 4-12

vibration preventing member between first and second pipe

1.4. claims: 13, 14

first and second pipe shaped different

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

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

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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
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82