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EUROPEAN PATENT APPLICATION

⑳ Application number: 81303307.3

⑤① Int. Cl.³: **F 28 D 7/00**, **F 28 F 1/32**,
F 28 F 9/22

㉔ Date of filing: 20.07.81

③① Priority: 23.07.80 GB 8024041

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④③ Date of publication of application: 27.01.82
Bulletin 82/4

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⑧④ Designated Contracting States: **DE FR GB IT NL SE**

⑧⑧ Date of deferred publication of search
report: 21.07.82 Bulletin 82/29

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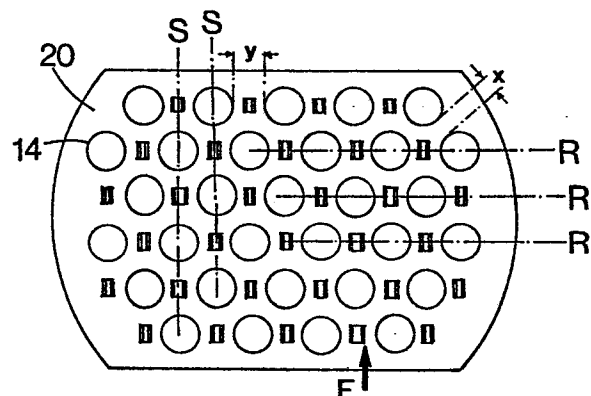
⑤④ **Heat exchanger.**

⑤⑦ A heat exchanger has a number of parallel tubes 14 enclosed within a shell 10 and having an inlet 12 and an outlet 13 for passing fluid through the tubes. Fin elements 20 extend across the tubes to form secondary heat exchange surfaces and another fluid is fed between the tubes to pass over the elements.

The elements 20 have openings 25 between the tubes 14 and the openings are flanked by tags 26.

The tubes are spaced apart such that the available cross-section for the other fluid is constant.

The tubes 14 are in rows R transverse to the flow and the spacing between tubes in the rows R is greater than between tubes in adjacent rows R.





European Patent
Office

EUROPEAN SEARCH REPORT

0044734

EP 81 30 3307

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
DY	<p><u>GB - A - 1 544 927</u> (BORG-WARNER)</p> <p>* Page 2, line 110 - page 3, line 39; page 4, line 43 - page 4, line 1; figures 1,5,8,13,14 *</p> <p>--</p>	1,7	<p>F 28 D 7/00</p> <p>F 28 F 1/32</p> <p>F 28 F 9/22</p>
Y	<p><u>FR - A - 2 346 660</u> (VOLKSWAGEN-WERK)</p> <p>* Page 2, line 35 - page 4, line 11; figures 1,2 *</p> <p>& US - A - 4 169 502</p> <p>--</p>	1,2,5,6	<p>TECHNICAL FIELDS SEARCHED (Int.Cl. ³)</p>
A	<p><u>GB - A - 1 313 973</u> (HUTOGEPIGYAR)</p> <p>* Page 3, line 40 - page 4, line 19; figures 11-22 *</p> <p>--</p>	1	<p>F 28 D</p> <p>F 28 F</p>
A	<p><u>DE - A - 2 306 562</u> (VOLKSWAGEN-WERK)</p> <p>* Page 4, line 2 - page 6, line 4; figures 1-3 *</p> <p>--</p>	1	
A	<p><u>DE - A - 2 530 064</u> (VOLKSWAGEN-WERK)</p> <p>* Page 2, line 17 - page 3, line 15; figures 1,2 *</p> <p>--</p>	1,2,6	<p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone</p> <p>Y: particularly relevant if combined with another document of the same category</p> <p>A: technological background</p> <p>O: non-written disclosure</p> <p>P: intermediate document</p> <p>T: theory or principle underlying the invention</p> <p>E: earlier patent document, but published on, or after the filing date</p> <p>D: document cited in the application</p> <p>L: document cited for other reasons</p>
DA	<u>GB - A - 818 589</u> (CHAUSSEON)		
DA	<u>GB - A - 717 613</u> (SERCK)		

X	The present search report has been drawn up for all claims		<p>&: member of the same patent family, corresponding document</p>
Place of search		Date of completion of the search	Examiner
The Hague		19-04-1982	WEIS