

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2017/108513

A. CLASSIFICATION OF SUBJECT MATTER

H01F 27/12 (2006.01) i; H01F 27/22 (2006.01) i; F15D 1/06 (2006.01) n

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H01F 27/-; F28F 13/-; F15D 1/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, DWPI, CNTXT, CNKI: 螺旋, 片, 油, 油道, 散热器, 油管, 扰流; spiral, sheet, oil, channel, radiator, radiation, disturbed, turbulent, turbulator, spoiler

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 206541708 U (CHANGSHU YOUBAND RADIATOR CO., LTD.) 03 October 2017 (03.10.2017), claims 1-10	1-10
PX	CN 106816275 A (CHANGSHU YOUBAND RADIATOR CO., LTD.) 09 June 2017 (09.06.2017), claims 1-10	1-10
A	CN 104047668 A (HUAI'AN BINHU MACHINERY CO., LTD.) 17 September 2014 (17.09.2014), entire document	1-10
A	CN 202562358 U (CHINA NABAICHUAN HOLDING CO., LTD.) 28 November 2012 (28.11.2012), entire document	1-10
A	CN 205243624 U (LINZHOU YINPENG HEAT EXCHANGER CO., LTD.) 18 May 2016 (18.05.2016), entire document	1-10
A	US 2005056408 A1 (GREGORY C T) 17 March 2005 (17.03.2005), entire document	1-10

Further documents are listed in the continuation of Box C.

See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&” document member of the same patent family</p>
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<p>Date of the actual completion of the international search</p> <p style="text-align: center;">12 December 2017</p>	<p>Date of mailing of the international search report</p> <p style="text-align: center;">17 January 2018</p>
<p>Name and mailing address of the ISA</p> <p>State Intellectual Property Office of the P. R. China</p> <p>No. 6, Xitucheng Road, Jimenqiao</p> <p>Haidian District, Beijing 100088, China</p> <p>Facsimile No. (86-10) 62019451</p>	<p>Authorized officer</p> <p style="text-align: center;">WU, Xuli</p> <p>Telephone No. (86-10) 62089428</p>

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 205593226 U (BEIJING AOTWA REFRIGERATION EQUIPMENT CO., LTD.) 21 September 2016 (21.09.2016), entire document	1-10

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2017/108513

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 206541708 U	03 October 2017	None	
CN 106816275 A	09 June 2017	None	
CN 104047668 A	17 September 2014	None	
CN 202562358 U	28 November 2012	None	
CN 205243624 U	18 May 2016	None	
US 2005056408 A1	17 March 2005	US 7128136 B2	31 October 2006
CN 205593226 U	21 September 2016	None	