

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/118347

A. CLASSIFICATION OF SUBJECT MATTER

B23K 37/02(2006.01)j

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)

B23K

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; CNTXT; CNKI; SIPOABS; DWPI; USTXT; EPTXT; WOTXT: 筒, 桶, 管, 法兰, 焊接, 轨, 转, flange?, weld+, tube?, pipe?, tank?, rail?, rotat+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 109332968 A (KINGTO WATER TREATMENT CO., LTD.) 15 February 2019 (2019-02-15) claims 1-8	1-8
X	JP S5171243 A (MITSUBISHI ELECTRIC CORP) 19 June 1976 (1976-06-19) description, column 1, line 16 to column 8, line 13, and figures 1-7	1-8
A	CN 103659139 A (SHANDONG ZHONGDE EQUIPMENT CO., LTD.) 26 March 2014 (2014-03-26) entire document	1-8
A	JP H06254677 A (MITSUI MIKE MACHINERY CO., LTD.) 13 September 1994 (1994-09-13) entire document	1-8

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“E” earlier application or patent but published on or after the international filing date

“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)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“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

“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

“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

“&” document member of the same patent family

Date of the actual completion of the international search

08 January 2020

Date of mailing of the international search report

22 January 2020

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2019/118347

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	109332968	A	15 February 2019	CN	209110434	U	16 July 2019
JP	S5171243	A	19 June 1976	None			
CN	103659139	A	26 March 2014	None			
JP	H06254677	A	13 September 1994	None			