

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2020/037096

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. B01D53/50(2006.01)i, B01D19/04(2006.01)i, B01D53/14(2006.01)i, B01D53/78(2006.01)i, B01D53/92(2006.01)i
 FI: B01D53/50 245, B01D53/14 200, B01D53/92 215, B01D53/92 331, B01D19/04 Z ZAB, B01D53/78 ZAB

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)

Int. Cl. B01D53/50, B01D19/04, B01D53/14, B01D53/78, B01D53/92

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

Published examined utility model applications of Japan 1922-1996
 Published unexamined utility model applications of Japan 1971-2020
 Registered utility model specifications of Japan 1996-2020
 Published registered utility model applications of Japan 1994-2020

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	JP 11-197449 A (ISHIKAWAJIMA-HARIMA HEAVY INDUSTRIES CO., LTD.) 27 July 1999, claims, paragraphs [0017]-[0037], fig. 1-8	1-7, 17 15-16 8-14
X Y A	JP 11-244649 A (ISHIKAWAJIMA-HARIMA HEAVY INDUSTRIES CO., LTD.) 14 September 1999, claims, paragraphs [0017]-[0037], fig. 1-7	1-3, 6, 17 15-16 4-5, 7-14
X Y A	JP 2004-12226 A (ISHIKAWAJIMA-HARIMA HEAVY INDUSTRIES CO., LTD.) 15 January 2004, claims, paragraphs [0020]-[0032], fig. 1, 2	1-3, 6, 17 15-16 4-5, 7-14

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
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 "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
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Date of the actual completion of the international search 11.11.2020	Date of mailing of the international search report 01.12.2020
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Name and mailing address of the ISA/ Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer Telephone No.
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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.
X Y A	JP 2000-202204 A (BABCOCK-HITACHI KABUSHIKI KAISHA) 25 July 2000, claims, paragraphs [0015]-[0024], fig. 1-8	1-3, 6, 8-10, 17 15-16 4-5, 7, 11-14
X Y A	JP 2001-120947 A (BABCOCK-HITACHI KABUSHIKI KAISHA) 08 May 2001, claims, paragraphs [0014]-[0024], fig. 1-3	1-7, 11-12, 17 15-16 8-10, 13-14
X Y A	CN 204364956 U (PETROCHINA CO LTD.) 03 June 2015, claims, Examples, fig. 1	1-3, 6, 13, 17 15-16 4-5, 7-12, 14
X Y A	CN 208465257 U (DATANG ENVIRONMENT INDUSTRY GROUP CO., LTD.) 05 February 2019, claims, paragraphs [0017]-[0024], fig. 1	1-3, 6, 14, 17 15-16 4-5, 7-13
A	WO 2016/158781 A1 (MITSUBISHI HITACHI POWER SYSTEMS, LTD.) 06 October 2016, claims, examples, fig. 1-4	1-17

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/JP2020/037096

Patent Documents referred to in the Report	Publication Date	Patent Family	Publication Date
JP 11-197449 A	27.07.1999	(Family: none)	
JP 11-244649 A	14.09.1999	(Family: none)	
JP 2004-12226 A	15.01.2004	(Family: none)	
JP 2000-202204 A	25.07.2000	(Family: none)	
JP 2001-120947 A	08.05.2001	(Family: none)	
CN 204364956 U	03.06.2015	(Family: none)	
CN 208465257 U	05.02.2019	(Family: none)	
WO 2016/158781 A1	06.10.2016	US 2016/0279564 A1	
		fig. 1-4, paragraphs	
		[0046]-[0114], claims	
		US 2018/0104646 A1	
		EP 3275529 A1	
		CA 2980264 A1	
		CN 107427766 A	