

INTERNATIONAL SEARCH REPORT

International application No. PCT/JP2019/036220
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A. CLASSIFICATION OF SUBJECT MATTER
Int. Cl. F25D23/00 (2006.01) i

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. F25D23/00

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	1971-2019
Registered utility model specifications of Japan	1996-2019
Published registered utility model applications of Japan	1994-2019

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.
Y A	JP 2015-152211 A (MITSUBISHI ELECTRIC CORP.) 24 August 2015, paragraphs [0041]-[0043], [0091], [0112], [0116], fig. 1-19 (Family: none)	1-4, 8-9 6-7
Y	US 2007/0069867 A1 (FLEISCH) 29 March 2007, paragraphs [0071], [0075], [0076] & WO 2005/088494 A1 & EP 1723597 A1	1-4, 8-9
Y	WO 2018/174080 A1 (PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD.) 27 September 2018, paragraphs [0014], [0032], [0078] (Family: none)	1-4, 8-9
Y	JP 2016-23852 A (TOSHIBA CORP.) 08 February 2016, paragraphs [0008], [0016]-[0018] (Family: none)	3-4

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

* Special categories of cited documents:	“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
“A” document defining the general state of the art which is not considered to be of particular relevance	“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
“E” earlier application or patent but published on or after the international filing date	“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
“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)	“&” document member of the same patent family
“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	

Date of the actual completion of the international search 07.10.2019	Date of mailing of the international search report 29.10.2019
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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.
Y	JP 2006-64320 A (TOSHIBA CORP.) 09 March 2006, paragraphs [0012], [0037], [0038], [0041] (Family: none)	4
A	JP 2010-121784 A (TOSHIBA CORP.) 03 June 2010, entire text, all drawings (Family: none)	1-4, 6-9
P, X	WO 2019/017323 A1 (PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD.) 24 January 2019, entire text, all drawings (Family: none)	1, 8-9

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/JP2019/036220**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 5
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

[see extra sheet]

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

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(continuation of Box No. II)

The meaning of claim 5 is unclear.

It is also not clear to what disclosure in the description claim 5 corresponds. The description (paragraph [0049]) does have a disclosure that resembles claim 5, but the disclosure of paragraph [0049] is also unclear.

As such, it is impossible to make a judgment of novelty and inventive step for the invention in claim 5.

Scope of search

As indicated in Box II, the meaning of claim 5 is unclear, and it is therefore impossible to make a judgment of novelty and inventive step for the invention in claim 5.

Claims 6-7 cite claim 5, directly or indirectly, and the invention as in claims 6-7 is therefore also unclear.

However, a judgment of novelty and inventive step for the invention as in claims 6-7 was made by interpreting claim 6 as citing claim 4.