

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2019/018501

A. CLASSIFICATION OF SUBJECT MATTER

B21D 22/02(2006.01)i, B21D 37/16(2006.01)i, C22C 38/38(2006.01)i, C22C 38/32(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)

B21D 22/02; B21B 3/02; B21D 35/00; C21D 7/13; C21D 8/02; C22C 38/00; C22C 38/04; C22C 38/32; C22C 38/38; B21D 37/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 Korean utility models and applications for utility models: IPC as above
 Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 eKOMPASS (KIPO internal) & Keywords: hot stamping, silicon(Si), manganese(Mn), chrome(Cr), martensite

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-2019-0001493 A (HYUNDAI STEEL COMPANY) 04 January 2019 See paragraphs [0012], [0086] and claim 1.	1-7
Y	KR 10-1508861 B1 (ARCELORMITTAL FRANCE) 07 April 2015 See paragraphs [0079]-[0147] and figure 1.	1-7
A	JP 2010-150612 A (NIPPON STEEL CORP.) 08 July 2010 See claims 1-4.	1-7
A	KR 10-2018-0011004 A (HYUNDAI STEEL COMPANY) 31 January 2018 See claims 1, 5.	1-7
A	KR 10-1938092 B1 (HYUNDAI STEEL COMPANY) 11 April 2019 See claims 1, 4.	1-7

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"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

03 JUNE 2020 (03.06.2020)

Date of mailing of the international search report

03 JUNE 2020 (03.06.2020)

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2019/018501

Patent document cited in search report	Publication date	Patent family member	Publication date
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		KR 10-2021200 B1	11/09/2019
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