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SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
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(54) Title: EDGE DIRECTORS INCLUDING AN INTERIOR HEATING DEVICE

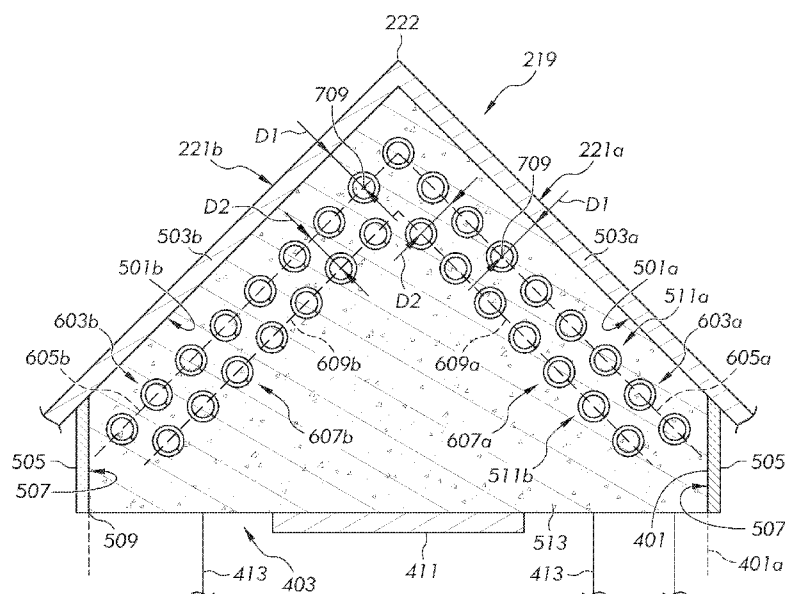


FIG. 5

(57) Abstract: An apparatus can include a wedge including a pair of inclined surface portions converging along a downstream direction to form a root of the wedge. The apparatus can further include an edge director intersecting with at least one of the pair of inclined surface portions. The edge director can include an interior cavity. In some embodiments, the apparatus can further include a heating device positioned within the interior cavity, wherein the heating device can include a plurality of heating segments. In further embodiments, the apparatus can further include a plurality of coils of wire positioned within the interior cavity, wherein each of the plurality of coils of wire can include windings that may be wound about a corresponding linear coil axis that extends in the downstream direction.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/029744**A. CLASSIFICATION OF SUBJECT MATTER****C03B 17/06(2006.01)i, C03B 5/43(2006.01)i, C03B 5/02(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)

C03B 17/06; C03B 5/43; C03B 5/02

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: edge director, heating device, wedge, glass ribbon, monolithic block, cement, alumina, wire, coil

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011-0209502 A1 (AHDI EL KAHLOUT et al.) 01 September 2011 See paragraphs [0016], [0017], [0035], [0040]; and figures 1-3.	21-23
Y		1-4
A		12-17, 32-37
Y	US 2014-0144183 A1 (MEMDUH DEMIRBAS et al.) 29 May 2014 See paragraphs [0032]-[0034]; claims 1, 5, 8-10; and figures 1, 2.	1-4
X	US 2016-0311716 A1 (CORNING INCORPORATED) 27 October 2016 See paragraphs [0020]-[0027], [0048], [0049]; and figures 1-3.	21-23
Y		1-4
X	KR 10-2015-0097697 A (CORNING INCORPORATED) 26 August 2015 See paragraphs [0017]-[0021], [0029], [0030], [0037]; and figures 1-3.	21-23
Y		1-4
A	US 2012-0272688 A1 (TOMONORI KANO et al.) 01 November 2012 See the whole document.	1-4, 12-17, 21-23, 32-37



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

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"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

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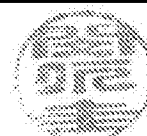


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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/029744

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.: 6,8,10,19,25,28,30,40
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:
Claims 6, 8, 10, 19, 25, 28, 30 and 40 each refer to one of claims which are not drafted in accordance with PCT Rule 6.4(a).

3. ☒ Claims Nos.: 5,7,9,11,18,20,24,26,27,29,31,38,39
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 an additional fees, this Authority did not invite payment of any 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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2018/029744

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