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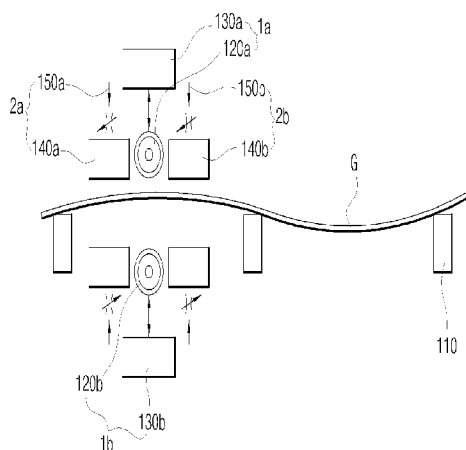
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(54) Title: SCRIBE APPARATUS AND METHOD THEREOF OF CUTTING OBJECT BY SUSTENANCE CONTACTLESS FLATNESS

[Fig. 2]



(57) Abstract: A scribing head apparatus having a function of maintaining a flatness of an object to be cut in a non-contact manner and a scribing method using the same are disclosed. The scribing head apparatus, adapted to sequentially cut both surfaces of the object while moving in X-axis and Y-axis directions, includes first and second head drive modules provided above and below the object to be cut, respectively, and adapted to be moved toward the object so as to perform a cutting operation on the object while coming into contact with the object, and first and second flatness maintaining modules provided at opposite sides of the respective first and second head drive modules and serving to maintain a flatness of a cutting section of the object via air floating of the object. This configuration eliminates a response speed problem that may occur in a feedback control system, thereby achieving an improvement in management of the overall scribing apparatus and an enhancement in production yield by virtue of reduced defective products.



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PCT208-0172	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/KR2008/004720	International filing date (<i>day/month/year</i>) 14 AUGUST 2008 (14.08.2008)	(Earliest) Priority Date (<i>day/month/year</i>) 14 AUGUST 2007 (14.08.2007)
Applicant AVACO CO., LTD. et al		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed

a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2

as suggested by the applicant.



because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

b. none of the figure is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2008/004720

A. CLASSIFICATION OF SUBJECT MATTER		
<i>C03B 33/00(2006.01)i</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) IPC: C03B 33/00		
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 since 1975 Japanese Utility Models and applications for Utility Models since 1975		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPASS(KIPO internal) & keywords: scribe, cutting object		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR10-2007-0041494A(OC OERLIKON BALZERS AG) 18 APRIL 2007 See page 3, line 20 - page 6, line 27; Figures 1-4.	1-10
A	KR10-2004-0095381A(SUNTECHWIN CO., LTD.) 15 NOVEMBER 2004 See page 3, line 6 - page 4, line 20; Figures 1-2.	1-10
A	US7131562B2(HIROKI UEYAMA, AKIRA EJIMATANI) 07 NOVEMBER 2006 See column 6, line 45 - column 9, line 19; Figures 1-4	1-10
A	JP08-119654A(CASIO COMPUT CO., LTD.) 14 MAY 1996 See paragraph 9 - paragraph 22; Figures 1-7	1-10
A	JP10-209086A(MATSUSHITA ELECTRIC IND CO., LTD.) 07 AUGUST 1998 See paragraph 11 - paragraph 21; Figures 1-5	1-10
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 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		
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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