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Published:

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

[Continued on next page]

(54) Title: PRINTING SCREEN UNITS AND METHODS OF FABRICATING THE SAME

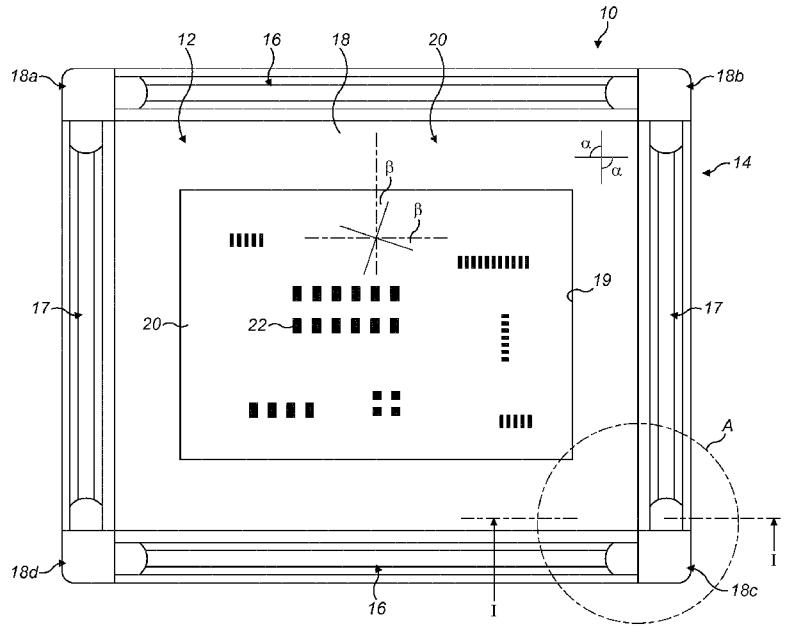


FIG. 1

(57) Abstract: A printing screen unit comprising a mesh printing screen and a supporting frame which is attached to the printing screen, wherein the printing screen comprises a first, outer mesh which is attached to sides of the supporting frame and includes an aperture therein, and a second, inner mesh which is attached to the outer mesh, wherein threads, providing warp and weft, of the outer mesh are aligned so as to be substantially orthogonal to the sides of the supporting frame, wherein threads, providing warp and weft, of the inner mesh being aligned so as to have acute angles of between 0 degrees and 45 degrees to the respective sides of the supporting frame, wherein the printing screen is tensioned by an external tensioning assembly to a first tension when the printing screen is attached to the supporting frame, and the sides of the supporting frame are displaceable such that the sides of the supporting frame are displaced on release of the first tension by the external tensioning assembly, and the printing screen has a second, residual tension lower than the first tension.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. B41N1/24 B41F15/36 B41C1/14 B41M1/12
ADD.

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)
B41C B41M B41F B41N B41L H05K

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, CHEM ABS Data, INSPEC, IBM-TDB, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2010 042612 A (HITACHI PLASMA DISPLAY LIMITED) 25 February 2010 (2010-02-25) paragraphs [0013] - [0014] paragraphs [0020] - [0037] paragraphs [0053] - [0062] paragraphs [0067] - [0078] claims 1-9; figures 1-16	1-52, 57-80
X	US 2005/284561 A1 (BAAN ROBERT L [US] ET AL) 29 December 2005 (2005-12-29)	57-80
A	paragraphs [0008] - [0015] claims 1-4; figure 1	1-52
X	US 6 012 388 A (SHIRAKAWA YOSHIMI [JP] ET AL) 11 January 2000 (2000-01-11)	57-80
A	column 2, line 22 - line 46 column 3, line 13 - line 67 claim 1; figure 2	1-52

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[X] Further documents are listed in the continuation of Box C.

[X] 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 another citation or other special reason (as specified)

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 July 2015	12/01/2016

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/061032

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP S62 104750 A (SONY CORPORATION) 15 May 1987 (1987-05-15)	57-80
A	abstract	1-52

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2015/061032

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.:
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:

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:

see additional sheet

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 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.:

1-52, 57-80----------

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-52, 57-80

   Printing screen unit comprising a mesh printing screen and a supporting frame, said printing screen comprising a first, outer mesh attached to the sides of the supporting frame and including an aperture therein, and a second, inner mesh attached to the outer mesh, wherein the printing screen is tensioned by an external tensioning assembly to a first tension when the screen is attached to the frame, and the sides of the frame are displaceable such that the sides of the frame are displaced on release of the first tension by the external tensioning assembly, and the screen has a second, residual tension lower than the first tension.

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2. claims: 53-56

   Mesh printing screen comprising one mesh layer coated with a first layer of emulsion including printing apertures, and a second stand-off layer beneath the emulsion layer and including a plurality of apertures in registration with the printing apertures in the first layer.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2015/061032

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2010042612 A	25-02-2010	NONE	
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JP S62104750 A	15-05-1987	NONE	