Title: APPARATUS OF FABRICATING OPTICAL SHEET, METHOD FOR FABRICATING OPTICAL SHEET, AND OPTICAL SHEET FABRICATED USING THE SAME

Abstract: Provided are an apparatus of fabricating an optical sheet, a method for fabricating an optical sheet, and an optical sheet fabricated using the same. The apparatus of fabricating the optical sheet includes a master roll, and a mold film including a pattern and rotated by contacting one side of the pattern with at least one portion of the master roll. Also included are at least one coating roll for supplying a polymer resin to the pattern of the mold film, at least one squeezing roll for pressing the polymer resin on a surface of the pattern of the mold film to the inside of the pattern of the mold film to fill the inside of the pattern of the mold film with the polymer resin, a tension control roll for controlling a tension of the mold film to consistently control overall mold film, a uniting roll for uniting the mold film to a transparent member intended to be formed with the pattern of the polymer resin on the master roll, a hardening agent for hardening the pattern of the polymer resin, and a separation roll for separating the mold film from the transparent member formed with the pattern of the polymer resin.

Fig. 1
Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published: with international search report

Date of publication of the international search report: 2 April 2009
A. CLASSIFICATION OF SUBJECT MATTER

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 8 B29D, B05C, B05D, G02B, B32B

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), CAS(ONLINE), DELPHION

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>KR 1020050089286 A (MIRAE NANO TECHNOLOGIES CO , LTD ) 08 September 2005 See abstract, figures 1-6, and claims 1-17</td>
<td>1-14</td>
</tr>
<tr>
<td>A</td>
<td>US 5468542 A (EARL T CROUCH) 21 November 1995 See abstract, claims 1-14, and figure 1</td>
<td>1-14</td>
</tr>
<tr>
<td>A</td>
<td>KR 102005005286 A (LGS CORPORATION LTD ) 13 January 2005 See abstract, figures 1-7, and claims 1-19</td>
<td>1-14</td>
</tr>
<tr>
<td>A</td>
<td>US 5003915 A (DAMATO et al ) 02 April 1991 See abstract, figures 1-8, and claims 1-8</td>
<td>1-14</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C

* 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

Date of the actual completion of the international search
13 JANUARY 2009 (13 01 2009)

Date of mailing of the international search report
13 JANUARY 2009 (13.01.2009)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seogu, Daejeon 302-701, Republic of Korea
Facsimile No 82-42-472-7140

Authorized officer
Kim, Kwang Chul
Telephone No 82-42-481-8293

Form PCT/ISA/210 (second sheet) (July 2008)
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>KR 1020050089286 A</td>
<td>08.09.2005</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 5468542 A</td>
<td>21.11.1995</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>KR 1020050005286 A</td>
<td>13.01.2005</td>
<td>NONE</td>
<td></td>
</tr>
<tr>
<td>US 5003915 A</td>
<td>02.04.1991</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>

Form PCT/ISA/210 (patent family annex) (July 2008)