

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
18 September 2025 (18.09.2025)



(10) International Publication Number
WO 2025/191525 A1

(51) International Patent Classification:

B31F 1/07 (2006.01) *B31D 5/00* (2017.01)
A24D 3/02 (2006.01) *A24D 3/06* (2006.01)
A24D 3/10 (2006.01)

(21) International Application Number:

PCT/IB2025/052706

(22) International Filing Date:

14 March 2025 (14.03.2025)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/IB2024/052484

14 March 2024 (14.03.2024)

IB

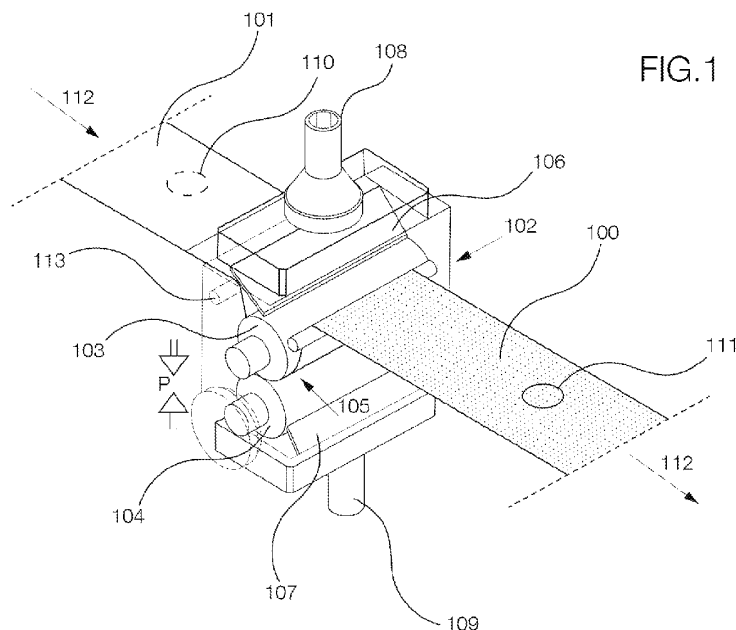
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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,

(54) Title: METHOD AND DEVICE FOR MANUFACTURING AN EMBOSSED SHEET OF SUBSTRATE WITH A CONTROLLED THICKNESS VALUE AND A REDUCED CONTENT OF CLUSTERS



(57) Abstract: A method for manufacturing an embossed sheet of substrate configured to produce a controlled thickness value of the embossed sheet of substrate and to reduce a content of clusters present in the non-embossed substrate. The method comprises providing a sheet of substrate comprising a first material, the sheet of substrate having an average starting thickness; providing an embossing roller system comprising at least a first and a second embossing roller, having respectively a first radial profile and a corresponding second radial profile congruent to the first radial profile, the first radial profile comprising embossing structures protruding from or recessed in a base surface of the first embossing roller, and forming radially oriented ridges and grooves respectively; inserting the sheet of substrate in a nip formed between the first and the second embossing roller; adjusting an embossing pressure between the first

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NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UY, UZ, VC, VN, WS, ZA, ZM, ZW.

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

Published:

- *with international search report (Art. 21(3))*
- *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))*

and the second embossing roller to obtain a determined nip value of the nip, smaller than the average starting thickness; embossing the sheet of substrate; thereby obtaining the controlled thickness value of the embossed sheet of substrate smaller than the average starting thickness; compressing in the nip at least a first type of cluster comprising the first material inside the embossed sheet of substrate; processing at least a second type of cluster made of a second material different from the first material in any one of the following manners: compressing and maintaining the at least one second type of cluster in the embossed sheet of substrate; extracting the at least one second type of cluster as debris from the sheet of substrate by means of the embossing pressure (P), which causes the at least one second type of cluster to emerge from the embossed sheet of substrate and adhere as debris to a surface of the embossed sheet of substrate; extracting the at least one second type of cluster as debris from the sheet of substrate by means of the embossing pressure, which causes the at least one second type of cluster to emerge from the embossed sheet of substrate and adhere as debris to any one of the base surfaces and the embossing structures of the first and the second embossing rollers. The method further comprises detaching the debris from the base surfaces and the embossing structures by means of a roller cleaning tool; and removing the detached debris from the embossing roller system by means of an air-depression cleaning system.