



- (51) **International Patent Classification:**
A61F 13/496 (2006.01) *A61F 13/15* (2006.01)
- (21) **International Application Number:**
PCT/US2013/026978
- (22) **International Filing Date:**
21 February 2013 (21.02.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/401,907 22 February 2012 (22.02.2012) US
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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, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) **Title:** APPARATUSES AND METHODS FOR SEAMING SUBSTRATES

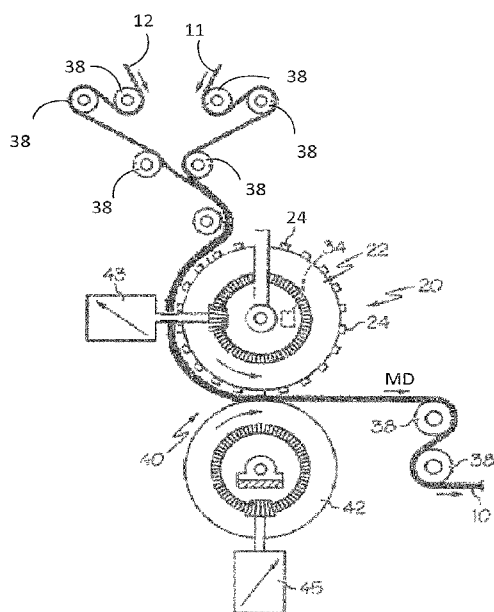


FIG. 2

(57) **Abstract:** A method of joining substrate portions includes positioning the substrate portions such that the substrate portions overlap at an overlap area. The substrate portions each have a melting temperature and an outer surface. A fluid is heated to a temperature sufficient to at least partially melt the substrate portions. A jet of the heated fluid is directed from a fluid orifice onto the substrate portions at the overlap area. The heated fluid penetrates at least one of the outer surfaces of the substrate portions. The substrate portions are at least partially melted using the heated fluid. The substrate portions are compressed using a pressure applying surface adjacent the fluid orifice to join the substrate portions together at the overlap area.