



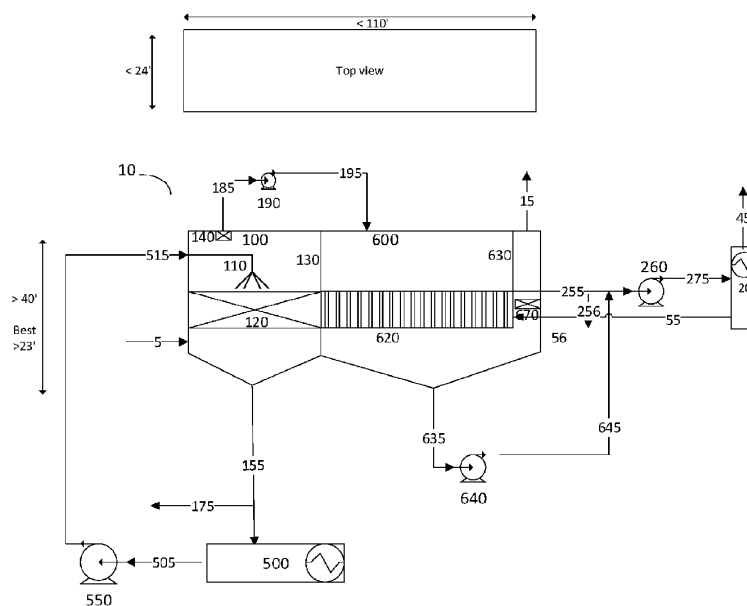
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(54) Title: INTEGRATED OPTIMIZED MEMBRANE-BASED HORIZONTAL BOXED LIQUID SOLVENT CARBON CAPTURE SYSTEM FOR POST-COMBUSTION EMISSIONS



(57) Abstract: A post-combustion CO₂ capture process designed with thin walled, connected chambers for the low pressure direct contact cooling and membrane-based absorption steps. An amine/water blend for the solvent to optimize the membrane-based absorption capture step and to allow for a high pressure membrane-based solvent regeneration step to reduce transport compression. The combination of membranes and the amine/water blend reduces the number of processing steps needed and also reduces the weight (and cost) of construction through modular, reduced footprint, lower pump heads, with common internal walls and thinner material of constructions.

(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, 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, UZ, VC, VN, WS, ZA, ZM, ZW.

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