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(54) Title: HYBRID 3D PRINTED HEAT SINK

(57) Abstract: The present invention describes heat sinks (100) in which fins (120) are hybrid 3D printed using laser powder-bed fusing (LPBF) or selective laser melting (SLM) (200) of a fin powder (122) deposited directly over a substrate (140). The fin powder (122) forms a powder-bed, which height is increased, layer by layer, and the fins (120) are being built up, layer by layer, by laser melting and fusing the fin powder (122). The fin powder (122) may be copper, copper alloy, aluminium or aluminium alloy, whilst the associated substrate (140) is copper-based or aluminium-based. The substrate (140) is prepared by conventional machining, hence, the process (200) is called hybrid LPBF or SLM. The heat sinks (100) obtained have excellent heat dissipation and temperature stability performances.

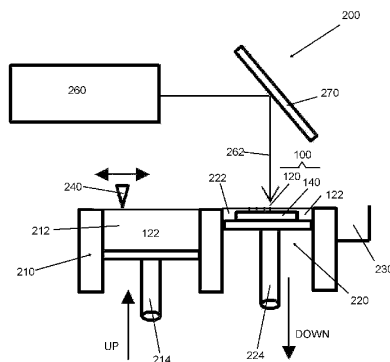


FIG. 10

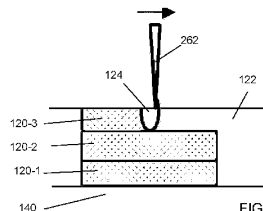


FIG. 11

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).

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