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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: THERMO-MECHANICAL PROCESSING OF NICKEL-BASE ALLOYS

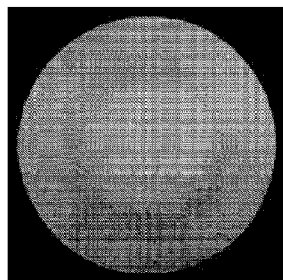


FIG. 3A

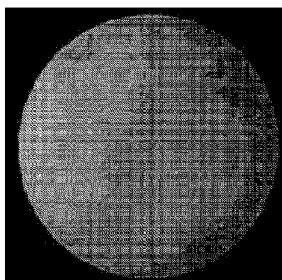


FIG. 3C

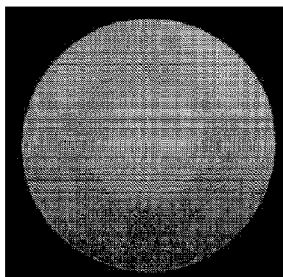


FIG. 3B

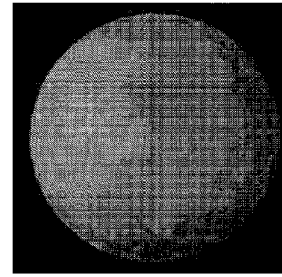


FIG. 3D

(57) Abstract: A thermo-mechanical treatment process is disclosed. A nickel-base alloy workpiece is heated in a first heating step to a temperature greater than the M23C6 carbide solvus temperature of the nickel-base alloy. The nickel-base alloy workpiece is worked in a first working step to a reduction in area of 20% to 70%. The nickel-base alloy workpiece is at a temperature greater than the M23C6 carbide solvus temperature when the first working step begins. The nickel-base alloy workpiece is heated in a second working step to a temperature greater than 1700 F (926 C) and less than the M23C6 carbide solvus temperature of the nickel-base alloy. The nickel-base alloy workpiece is not permitted to cool to ambient temperature between completion of the first working step and the beginning of the second heating step. The nickel-base alloy workpiece is worked to a second reduction in area of 20% to 70%. The nickel-base alloy workpiece is at a temperature greater than 1700 F (926 C) and less than the M23C6 carbide solvus temperature of the nickel-base alloy when the second working step begins.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *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))*

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