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

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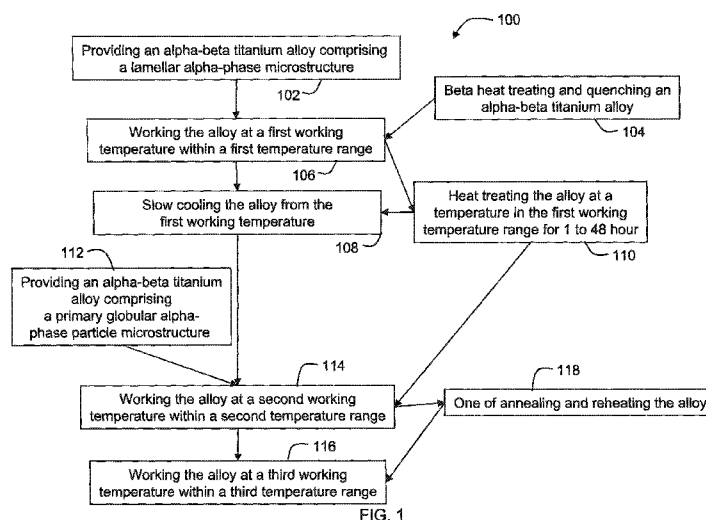
(54) **Title:** THERMOMECHANICAL PROCESSING OF ALPHA-BETA TITANIUM ALLOYS

FIG. 1

(57) **Abstract:** One embodiment of a method of refining alpha-phase grain size in an alpha-beta titanium alloy comprises working an alpha-beta titanium alloy at a first working temperature within a first temperature range in the alpha-beta phase field of the alpha-beta titanium alloy. The alloy is slow cooled from the first working temperature. On completion of working at and slow cooling from the first working temperature, the alloy comprises a primary globularized alpha-phase particle microstructure. The alloy is worked at a second working temperature within a second temperature range in the alpha-beta phase field. The second working temperature is lower than the first working temperature. The alloy is worked at a third working temperature in a third temperature range in the alpha-beta phase field. The third working temperature is lower than the second working temperature. After working at the third working temperature, the titanium alloy comprises a desired refined alpha-phase grain size.

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