

A B S T R A C T

A material structure prediction apparatus (1) includes a temperature calculator (103) calculating temperatures at calculation points in a calculation target region of a material, based on a temperature condition for applying a temperature variation to the material, a nucleation count calculator (104) calculating a nucleation count, based on the temperatures at the calculation points, a nucleation generator (105) determining, from the calculation points, a precipitated phase generation point where a nucleus of the precipitated phase is generated, based on the nucleation count, and a grain growth calculator (106) calculating a grain growth of the precipitated phase at the precipitated phase generation point. The apparatus predicts the structure of the material, based on the calculated grain growth of the precipitated phase.

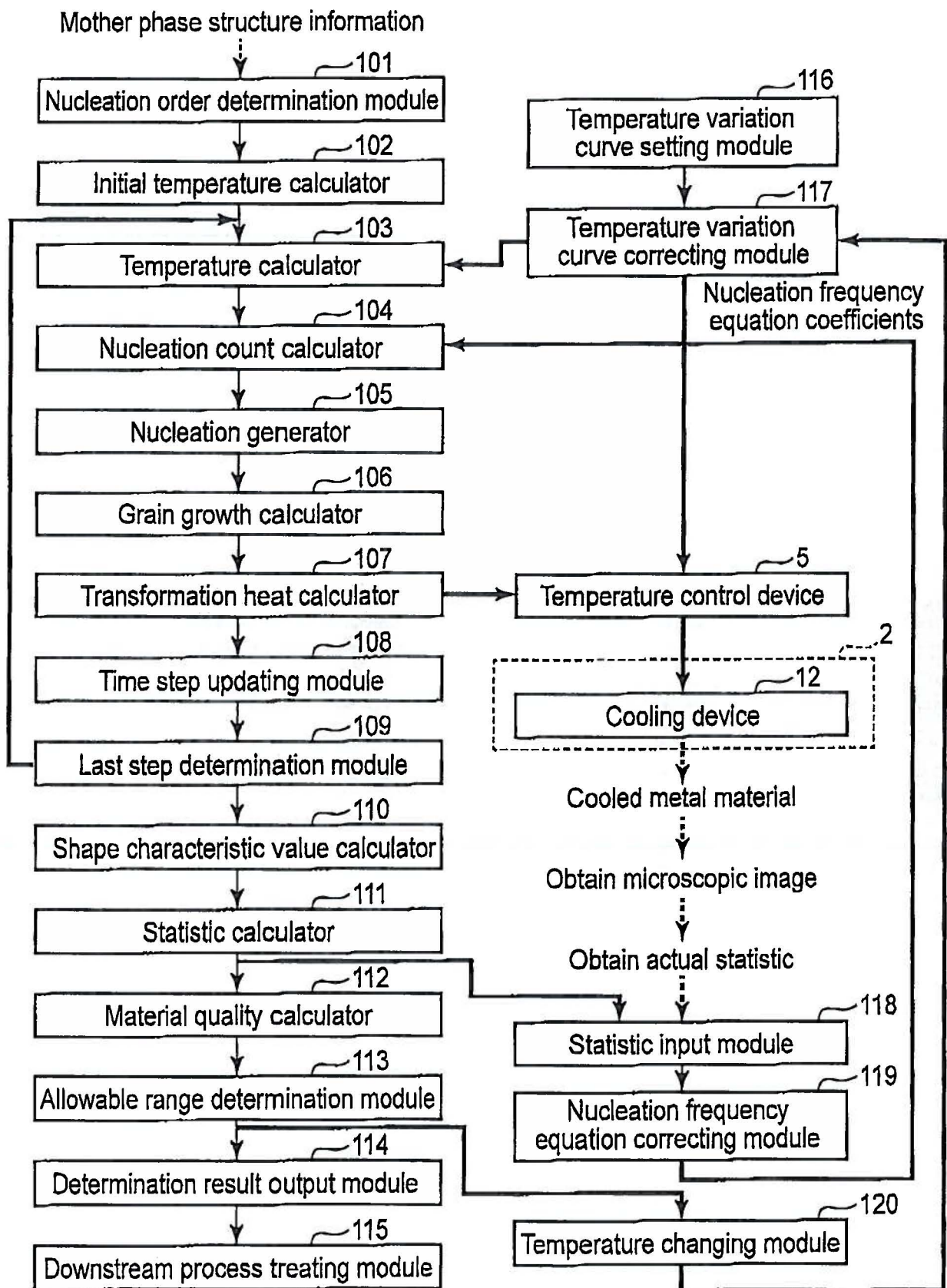


FIG. 1

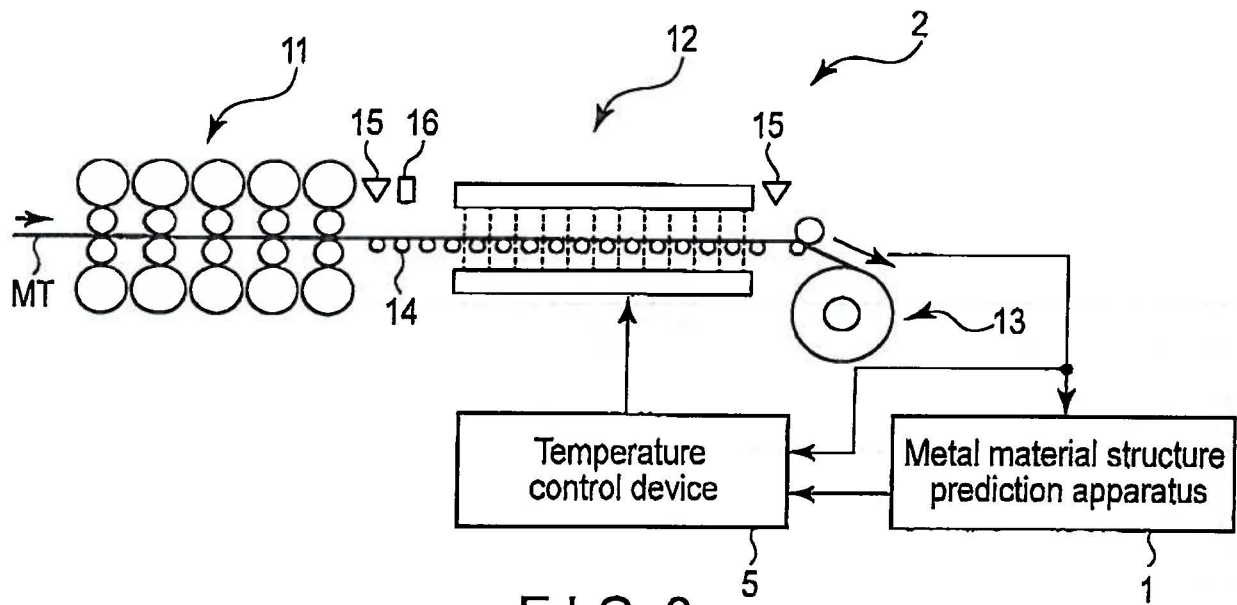


FIG. 2

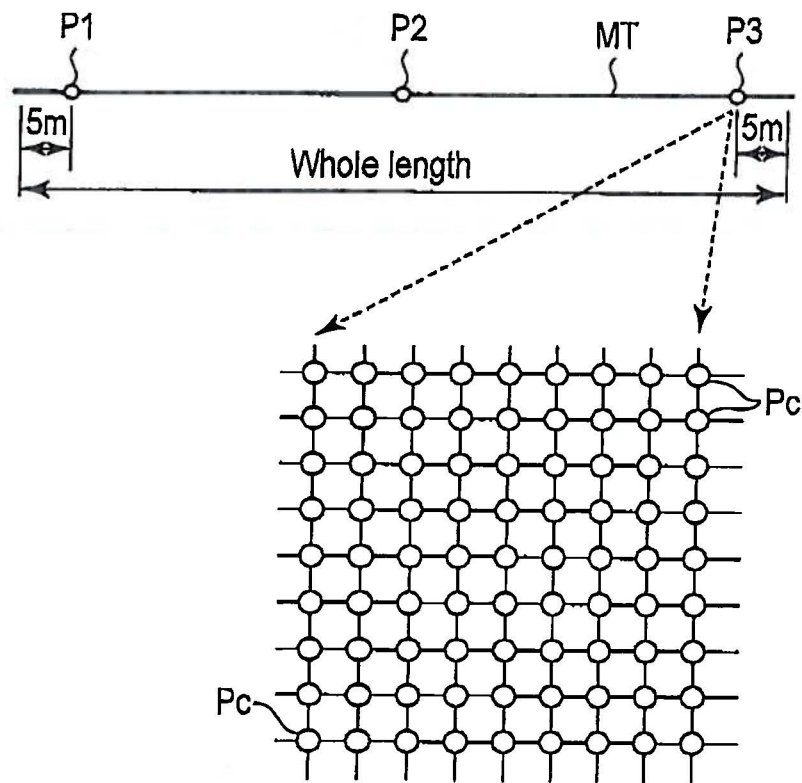


FIG. 3

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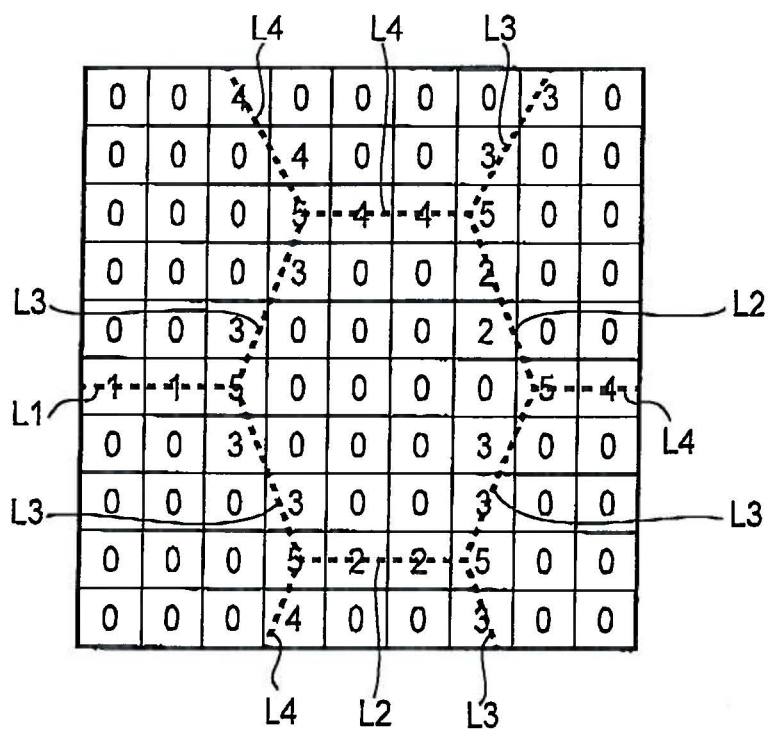


FIG. 4

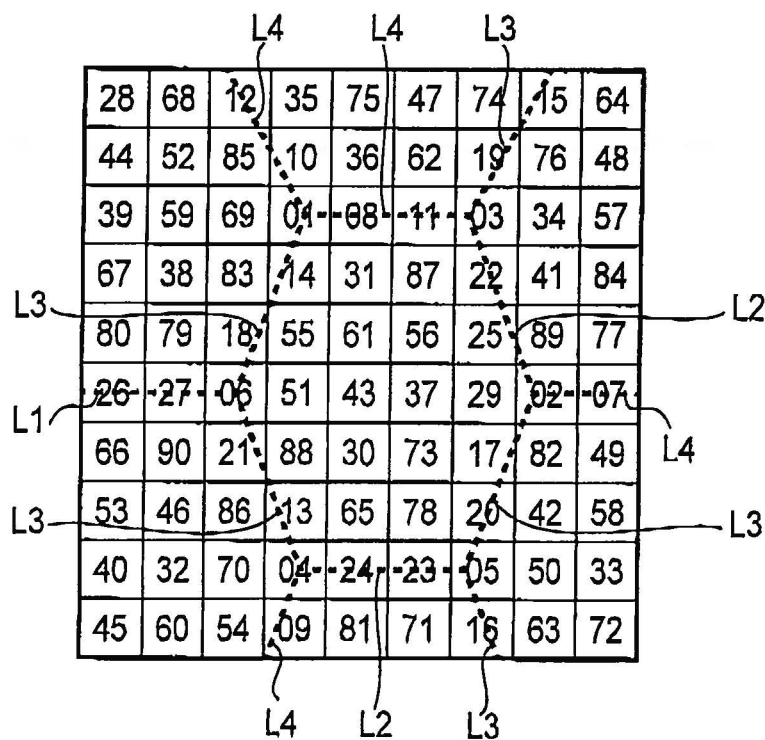


FIG. 5