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(71) Applicant: **THE LEAPFROG NUCLEAR COMPANY**
[US/US]; 20716 11th Ave S, Des Moines, WA 98198 (US).

(72) Inventor: **REED, Mark, Wilbert**; 5422 Chinook Drive
NE, Tacoma, WA 98422 (US).

(74) Agent: **HUSSAIN, Daniar**; American Patent Agency PC,
187 Pearl Street, Cambridge, MA 02139 (US).

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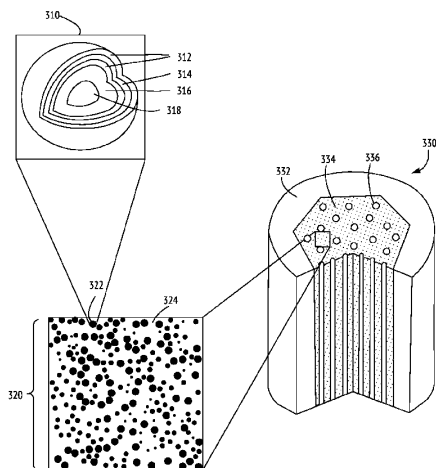


FIG. 3

(57) Abstract: Disclosed are embodiments of a nuclear fuel element for use in various types of nuclear reactors. One embodiment of the nuclear fuel element comprises a plurality of solid nuclear fuel particles, such as tristructural-isotropic (TRISO) fuel particles, intermixed in a non-solid matrix that is substantially stagnant relative to the plurality of solid nuclear fuel particles. The non-solid matrix may comprise a liquid metal, a liquid metal alloy, and a liquid salt. Various embodiments of the non-solid matrix include tin, lead, sodium, aluminum, bismuth, and alloys thereof. A method of manufacturing a nuclear fuel and embodiments of a nuclear fuel core comprising the nuclear fuel element are also disclosed.

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