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(19) **United States**(12) **Patent Application Publication****Kaiser et al.**(10) **Pub. No.: US 2023/0231437 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **MOTOR STATOR COOLANT DISTRIBUTION VIA INTERNAL CHANNELS**(71) Applicant: **GM GLOBAL TECHNOLOGY OPERATIONS LLC**, Detroit, MI (US)(72) Inventors: **Edward L. Kaiser**, Orion, MI (US);
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Cheongun Han, Novi, MI (US)(73) Assignee: **GM GLOBAL TECHNOLOGY OPERATIONS LLC**, Detroit, MI (US)(21) Appl. No.: **17/578,722**(22) Filed: **Jan. 19, 2022****Publication Classification**(51) **Int. Cl.**
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(57)

ABSTRACT

A motor stator includes a plurality of stacked annular stator laminates defining a stator core having an inner circumference, an outer circumference, a plurality of stator teeth on the inner circumference, and a plurality of ears extending outward from the outer circumference with a respective bolt hole defined in each ear. A first set of the stator laminates includes a plurality of coolant openings therethrough, wherein the coolant openings of adjacent stator laminates communicate with one another in order to define cooling channels inside the stator core. A second set of the stator laminates each include one or more generally radially extending first openings therethrough, wherein the first openings of adjacent stator laminates communicate with one another to define one or more first radial channel segments inside the stator core for providing radial coolant flow between one or more bolt holes and one or more cooling channels.

