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NATARAJAN et al.(10) **Pub. No.: US 2022/0361382 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **ELECTRICAL DEVICES WITH
BUOYANCY-ENHANCED COOLING**(71) Applicant: **Vertiv Corporation**, Columbus, OH
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(2013.01); **H02M 7/003** (2013.01)(57) **ABSTRACT**

An electrical device with buoyancy-enhanced cooling is provided. The electrical device includes a housing having a first portion including a heat sink and a second portion coupled to the first portion. The heat sink includes a plurality of hollow fins. A cover plate is positioned within the housing and is coupled to the first portion of the housing. The cover plate defines openings between an interior of the housing and the plurality of hollow fins and the openings are located at each end of each hollow fin. Further, an electrical component is positioned within the interior of the housing. Air heated by the electrical component is permitted to circulate within the housing and is directed through the hollow fins based on buoyancy forces (e.g., such that the air is permitted to cool within the hollow fins based on conduction, convection, and/or radiation).

