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Sarraf et al.(10) **Pub. No.: US 2023/0231372 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **VEHICLE CHARGING SYSTEM FOR AN  
ELECTRIC VEHICLE HAVING ARC  
DETECTION****Publication Classification**

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NC (US)(21) Appl. No.: **18/155,823**(22) Filed: **Jan. 18, 2023****Related U.S. Application Data**(60) Provisional application No. 63/300,845, filed on Jan.  
19, 2022, provisional application No. 63/346,266,  
filed on May 26, 2022.(57) **ABSTRACT**

A vehicle charging system includes a housing having a mating end for mating with a charging component for the electric vehicle. The vehicle charging system includes a DC charging terminal held in a cavity of the housing and having a mating end for mating with the charging component. The vehicle charging system includes a charging controller for controlling vehicle charging. The vehicle charging system includes an arc sensor in the internal cavity configured to detect an arc event at the mating end of the DC charging terminal. The arc sensor is operably coupled to the charging controller to control the vehicle charging when the arc event is detected.

