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ABE(10) **Pub. No.: US 2024/0178725 A1**(43) **Pub. Date: May 30, 2024**(54) **TRILATERAL CYCLE SYSTEM****F01D 25/12** (2006.01)**H02K 7/18** (2006.01)(71) Applicant: **ISUZU MOTORS LIMITED,**
Shinagawa-ku, Tokyo (JP)(52) **U.S. Cl.****CPC** **H02K 9/20** (2013.01); **F01D 15/10**
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ABSTRACT

A temperature adjustment mechanism for a vehicle includes a battery-applied pump and circulation paths, and adjusts a temperature of a battery chargeable from an external power supply outside the vehicle to be within a predetermined temperature range. The temperature adjustment mechanism further includes a vacuum insulation tank in which either cold water generated by a cold energy source or hot water heated by a hot energy source is stored according to an ambient temperature during charging of the battery from the external power supply. At a time of input and output of electric power in the battery excluding a charge from the external power supply, the vacuum insulation tank is connected to the circulation paths, the cold water or the hot water stored in the vacuum insulation tank is supplied to the battery by driving the battery-applied pump, and a battery temperature is kept within the temperature range.

