

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0213791 A1 **MURAKAMI**

Jun. 27, 2024 (43) **Pub. Date:**

(54) REDUNDANT POWER SUPPLY CONTROL DEVICE AND CONTROL METHOD

(71) Applicant: TOYOTA JIDOSHA KABUSHIKI

KAISHA, Toyota-shi (JP)

Makoto MURAKAMI, Toyota-shi (JP) Inventor:

Assignee: TOYOTA JIDOSHA KABUSHIKI

KAISHA, Toyota-shi (JP)

(21)Appl. No.: 18/490,249

Filed: Oct. 19, 2023 (22)

(30)Foreign Application Priority Data

(JP) 2022-210211

Publication Classification

(51) Int. Cl. H02J 7/00 (2006.01) (52) U.S. Cl. CPC H02J 7/0068 (2013.01); H02J 7/0047 (2013.01)

(57)ABSTRACT

A redundant power supply control device controls a subbattery capable of backing up the main battery. The control device includes an acquisition unit, an estimation unit, and a determination unit. The acquisition unit obtains a voltage value and a current value of the sub-battery. The estimation unit estimates the storage rate of the sub-battery by current integration. The determination unit determines whether the sub-battery can be backed up. The determination unit calculates a first resistance value that is an internal resistance value of the sub-battery estimated based on the measured voltage value and the measured current value, and calculates a second resistance value that is an internal resistance value of the sub- battery estimated based on the estimated voltage value and the measured current value. The determination unit determines whether the sub-battery can be backed up based on the larger one of the first resistance value and the second resistance value.

