

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0213515 A1 AHMED et al.

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

(54) CYLINDRICAL BATTERY CELL WITH REDUCED INTERNAL WINDING RADIUS

(71) Applicant: VOLVO TRUCK CORPORATION,

Goteborg (SE)

(72) Inventors: Istaq AHMED, Göteborg (SE); Sophie

TINTIGNAC, Goteborg (SE); Benjamin MCCARTHY, Asa (SE); Youngjin CHOI, Vastra Frolunda (SE)

(73) Assignee: VOLVO TRUCK CORPORATION,

Goteborg (SE)

(21) Appl. No.: 18/534,044

(22) Filed: Dec. 8, 2023

(30)Foreign Application Priority Data

Dec. 22, 2022 (EP) 22215838.8

Publication Classification

(51) Int. Cl. H01M 10/04 (2006.01)H01M 4/66 (2006.01)H01M 50/107 (2006.01)

(52) U.S. Cl. CPC H01M 10/0431 (2013.01); H01M 4/661 (2013.01); H01M 50/107 (2021.01); H01M 2220/20 (2013.01)

(57)ABSTRACT

A battery cell includes a wound electrode assembly arranged in a cell casing. The wound electrode assembly includes a positive electrode substrate on which a positive electrode active material is coated; a negative electrode substrate on which a negative electrode active material is coated; a separator positioned between the positive and negative electrode substrates, wherein the separator insulates a positive electrode from a negative electrode; and core portion of the wound electrode assembly. The core portion includes a through hole extending in a vertical direction of said battery cell, and wherein said through hole has a diameter in the range of 4 to 7 mm.

