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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2023/0231350 A1**
(43) **Pub. Date:** **Jul. 20, 2023**(54) **SLIDABLE CURRENT COLLECTOR AND METHOD FOR CONTACTING CONDUCTOR RAIL**(52) **U.S. Cl.**
CPC *H01R 41/00* (2013.01); *B60L 5/16* (2013.01); *B60L 5/08* (2013.01); *H01R 2201/26* (2013.01)(71) Applicant: **Caterpillar Global Mining Equipment LLC**, Denison, TX (US)(72) Inventor: **Igor Strashsny**, Tucson, AZ (US)(57) **ABSTRACT**(73) Assignee: **Caterpillar Global Mining Equipment LLC**, Denison, TX (US)(21) Appl. No.: **17/829,528**(22) Filed: **Jun. 1, 2022****Related U.S. Application Data**

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A slidable current collector has frame formed as central substrate and sloped shoulders on opposing lateral sides of the central substrate. Electrical terminals pass through orifices arranged in at least two rows within the central substrate. At least one bumper is disposed on an underside of the central substrate between the at least two rows. During sliding on a power rail, the electrical terminals contact a rail surface, and the current collector can shift laterally on the rail surface across a distance between the bumper and one of the sloped shoulders. If disengagement of the electrical terminals from the rail surface occurs, angles on the sloped shoulders and the at least one bumper resist excessive lateral shifting and urge the electrical contacts to reengage with the rail surface.

