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WU et al.(10) **Pub. No.: US 2022/0368151 A1**(43) **Pub. Date: Nov. 17, 2022**(54) **UNDER-FLOOR CHARGING STATION****Publication Classification**(71) Applicant: **Taiwan Semiconductor Manufacturing Company, Ltd.**,
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County (TW)(57) **ABSTRACT**

An under-floor charging station can be mounted under a floor such that a top plate of the under-floor charging station is substantially flush with a top surface of the floor without touching the ground. Openings in the top plate allow charging elements to extend when in use to charge a mobile robot, and to retract under the floor when not in use. The retractable charging elements prevent tripping hazards and allow the mobile robot to move freely throughout a clean room. Moreover, because the charging elements can be retracted in an unobtrusive position when the under-floor charging station is not in use, the under-floor charging station is permitted to be positioned in locations in the clean room that allow the mobile robot to continue working while charging and/or allow non-stop running of the mobile robot.

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