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(51) **Int.Cl.:**

(54) **Title:** AUTONOMOUS CLEANING DEVICE

(57) **Abstract:** An autonomous cleaning device is disclosed, comprising a robot that is controlled by a programmable Atmega microcontroller and which is coupled with sensors and actuators for 5 autonomous locomotion. As shown in Fig. 3 below, the said invention provides a novel embodiment comprising exhaust port (5) protruding from the top cover (3), dirt bin (4) fixed adjacent to the dirt bin, on/off switch (6) connected on top slightly above the charging port (7) and ultrasonic sensors (8) fixed on both sides of the device. In addition, the invention discloses a series of touch sensors (9) fixed in proximity to the bottom to detect objects. The optimum 10 forward speed of the device and suction fan is 0.16 m/s and 8500 rpm respectively. The device's rate is 0.47 m²/min and a cleaning duration of 41.11 minutes on full charge. The cleaning efficiency of the device is around 82.2%.