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(19) **United States**(12) **Patent Application Publication**
Prat(10) **Pub. No.: US 2022/0360143 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **MOTORISED RESPIRATORY ASSISTANCE
DEVICE, WITH DOUBLE COOLING OF THE
MOTOR EQUIPPING THE DEVICE****H02K 5/20** (2006.01)**H02K 7/14** (2006.01)(52) **U.S. CL.****CPC** **H02K 9/06** (2013.01); **H02K 9/14**(2013.01); **H02K 5/20** (2013.01); **H02K 7/14**

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(57)

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A motorised respiratory assistance device with an integrated cooling system including an enclosure (1) forming a compartment (2) accommodating a motor unit (3) driving turbines (8a, 8b) generating a main respiratory assistance air flow (F1) and a secondary air flow (F2) for cooling the motor (5). The secondary air flow (F2) is conveyed by a secondary aerualic path (E2, E4, E5, 22, E3, S2) that includes an inner portion (E2, E4, E5, 22) extending into the motor (5) between the stator (6a) and the rotor (6b) and an outer portion (E3, S2) that extends into an annular space (E3) provided around the motor unit (3). The cooling air flow (F2) flows in opposing directions in the inner (E4) and outer (E3) portions, and the main aerualic path (E1, E6, S1) and the secondary aerualic path (E2, E4, E5, 22, E3, S2) are separated from each other by a partition (18).

