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**Marleau et al.**

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(54) **POWERED DIAPHRAGM AIR EXTRACTOR AND CONTROL SYSTEM**  
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(57) **ABSTRACT**

An air extractor assembly for an automotive vehicle includes a diaphragm seat attached to a panel of the vehicle's interior, a diaphragm movable between a closed position and an open position with respect to the diaphragm seat, and a position controller that regulates movement of the diaphragm. The position controller may be any one of a variety of linear movers and may be selected from the group consisting of a solenoid, a motor, a vacuum, and a plunger. The diaphragm includes a resilient member so that when the diaphragm is in its closed position, a tight seal is formed between the diaphragm seat and the diaphragm. The position controller is by any one of a variety of several regulating mechanisms operating alone or in combination. The regulating mechanism may include but is not limited to the vehicle HVAC system, an oxygen sensor, door latches, and a humidity sensor.

**15 Claims, 5 Drawing Sheets**

