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Jacob et al.

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[54] **FUME HOOD EXHAUST TERMINAL
HAVING AN ULTRASONIC MOTOR DRIVE
ACTUATOR**

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[51] **Int. Cl.**⁷ **F16K 31/04**

[52] **U.S. Cl.** **251/129.12; 318/453; 454/61**

[58] **Field of Search** 251/129.11, 129.12;
454/61; 307/66; 318/453

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,205,783	6/1980	Dietsche et al.	251/129.11 X
4,915,074	4/1990	Arai	251/129.11 X
4,930,746	6/1990	Reinicke et al.	251/129.11
5,100,101	3/1992	Shah	251/129.11
5,169,121	12/1992	Blanco et al.	251/129.12

5,178,361	1/1993	Gilbert et al.	251/129.11 X
5,184,593	2/1993	Kobayashi	251/129.11 X
5,278,454	1/1994	Strauss et al.	307/66 X
5,411,241	5/1995	Nilsson et al.	251/129.11 X
5,518,446	5/1996	Jacob	454/61
5,519,295	5/1996	Jatnieks	307/66 X
5,833,529	11/1998	Jacob	251/129.12 X

OTHER PUBLICATIONS

R.B. Pressly and C.P. Montesana, "Piezoelectric Motor Development at AlliedSignal Inc. Kansas City Division", AlliedSignal Inc. publication, Nov. 1994.

R.J. Babyak, "Motor, Fans & Blowers", *Appliance Manufacturer*, Mar. 1994.

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[57] **ABSTRACT**

A fume hood exhaust terminal for controlling gas flow in an exhaust duct has an electrically powered ultrasonic motor driven actuator for angularly positioning a damper in the terminal. The circuitry of the terminal includes a power failure detection circuit which includes the capability of storing sufficient power to place the damper in a preferred position until power is restored to the exhaust terminal.

7 Claims, 2 Drawing Sheets

