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Fluhrer

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(54) **ULTRASOUND SENSOR FOR A FUMES EXTRACTOR HOOD**

5,074,281 * 12/1991 Fluhrer et al. 126/299
5,991,234 * 11/1999 Sejalon et al. 367/13

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FOREIGN PATENT DOCUMENTS

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19510731-A1 * 2/1996 (DE) .
0 443 141 B1 8/1991 (EP) .
603539-A1 * 6/1994 (EP) .

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* cited by examiner

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(52) **U.S. Cl.** **73/1.82**

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627, 629

(57) **ABSTRACT**

Provided is to an ultrasound sensor for a fumes extractor hood, wherein the sensor monitors the vapor rising from the cooking to the extractor hood. Automatic compensation in respect of temperature and ageing drift of the sensor is effected. For that purpose checking of the resonance frequency is implemented cyclically during on-going operation of the sensor, in which case a shift in the resonance frequency is recognized, and the new resonance frequency is established by a statistical calculation method and used for further operation of the sensor.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,967,143 * 6/1976 Watanabe et al. 310/8.1

8 Claims, 2 Drawing Sheets

