

Title (en)  
ULTRASONIC OBSTACLE DETECTION IN ALARM DEVICES

Title (de)  
ULTRASCHALLHINDERNISERKENNUNG IN ALARMVORRICHTUNGEN

Title (fr)  
DÉTECTION D'OBSTACLE ULTRASONORE DANS DES DISPOSITIFS D'ALARME

Publication  
**EP 4350655 A3 20240710 (EN)**

Application  
**EP 24159781 A 20200311**

Priority

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- EP 19166743 A 20190402
- EP 22212653 A 20200311
- EP 20162532 A 20200311

Abstract (en)

An alarm device (1) detects smoke and has a housing having a longitudinal axis and containing a sensor and having vents (3) for access by ambient air to the sensor, a signal processing circuit (15) with a processor linked with the sensor, a power supply for the circuit and the sensor. An obstacle detector detects presence of an unwanted obstacle to flow of ambient air to the sensor. The obstacle detector has an ultrasonic transducer (16) mounted to reflect emitted ultrasonic waves in radial directions relative to the longitudinal axis. The guide comprises a dish-shaped guide element (6) mounted to the housing (2) so that a single ultrasonic transducer can emit radially to cover a very large field of view, but also that the guide element (60) can act as a secondary source directing ultrasonic waves axially, and also to direct waves through the vents (3) so that there is immediate and effective detection of inadvertent blocking of the vents by tape. Also, there is in-built determination as to whether the air is stable enough for accurate obstacle detection.

IPC 8 full level  
**G08B 17/10** (2006.01); **G08B 17/113** (2006.01); **G08B 29/04** (2006.01)

CPC (source: EP)  
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Citation (search report)

- [Y] EP 2492882 A1 20120829 - HAGER CONTROLS [FR]
- [Y] EP 2348495 A1 20110727 - ATRAL SECAL GMBH [DE]
- [Y] EP 0549888 A1 19930707 - NOHMI BOSAI LTD [JP]
- [A] US 4975688 A 19901204 - GONZALES RONALD A [US]

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DOCDB simple family (publication)  
**EP 3719769 A1 20201007**; **EP 3719769 B1 20230118**; EP 3719768 A1 20201007; EP 3719768 B1 20230118; EP 4174812 A1 20230503; EP 4174812 B1 20240703; EP 4174812 C0 20240703; EP 4177860 A1 20230510; EP 4350655 A2 20240410; EP 4350655 A3 20240710; EP 4354410 A2 20240417; EP 4354410 A3 20240724

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