

Title (en)

Method and apparatus for discriminating sounds due to the breakage of glass.

Title (de)

Verfahren und Vorrichtung, um verursachte Schall durch den Bruch von Glas zu unterscheiden.

Title (fr)

Procédé et dispositif pour distinguer des bruits causés par le bris de verre.

Publication

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Application

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Priority

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Abstract (en)

The invention provides a method and apparatus for discriminating between the sound of breaking glass and other sounds. The sound of breaking glass is represented in Figure 1 as comprising a low frequency or thump sound at the moment of breakage, followed by a tinkle sound caused by collision of the glass fragments, this sound being of lower amplitude. The invention turns on the discovery that, irrespective of the size and shape of the glass and the characteristics of the surroundings, the thump has substantial low frequency components at about 350 Hz, and the tinkle has substantial high frequency components at about 6.5 KHz. The method of the invention lies in identifying the high and low frequency components in that order and separated by a short time interval. Apparatus according to the invention comprises a microphone feeding into a high frequency and a low frequency channel. The low frequency channel has a bandpass filter centred on 350 Hz, the output of which triggers a time delay establishing a time window during which a signal is applied to one input of an AND gate. The high frequency channel includes a bandpass filter centred on 6.5 KHz, an output from which is applied to the other input of the AND gate. An output from the AND gate indicates that a signal characteristic of breaking glass has been detected and this output may be applied to trigger alarm circuits. A suitable bandwidth for the high frequency bandpass filter is ± 2 KHz and a suitable delay between the detection of the thump signal and the commencement of the time window is 200 milliseconds.

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G08B 13/04

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

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