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(54) **Audible warning devices**

(57) An audible warning device e.g. for a fire alarm system is arranged to generate an audible output signal having a first frequency $1/T_1$ and comprises an audible output transducer 10 and a driver circuit 12 for applying an alternating drive signal, having a second and higher frequency $1/T_2$, to the transducer 10 over successive distinct periods, the frequency of the periods being equal to the first frequency $1/T_1$. The (second) frequency at which the transducer 10 is driven is at or near the resonant frequency of the transducer 10. However, the (second) frequency signal is only applied in successive

distinct periods at the (first) lower frequency and thus the transducer appears to produce an audible output signal at this lower frequency.

There is also disclosed a method of tuning the a transducer to output an audible output signal at the (first) lower frequency by determining the (second) frequency at which the audible output of the transducer is high and driving the transducer 10 with a drive signal at the determined (second) frequency over successive distinct periods, the frequency of the periods being equal to the desired (first) frequency.

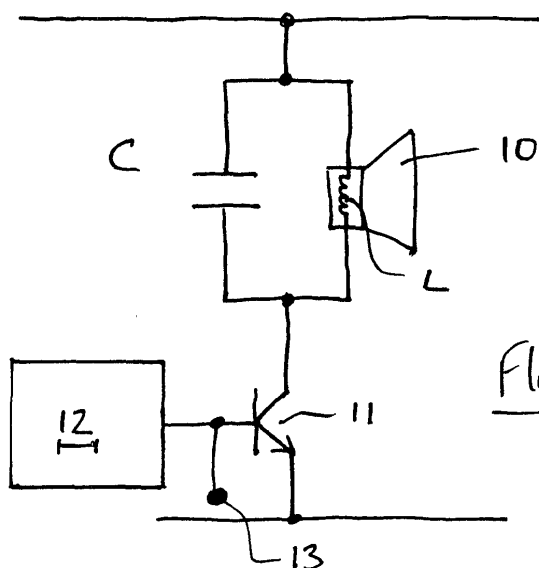


FIGURE 1

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EUROPEAN SEARCH REPORT

Application Number
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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y	* page 1, line 5 - line 6 * * page 1, line 87 - line 90 * * page 1, line 108 - line 123; figures 3A, 3B * * figures 1, 5 *	5	
Y	US 5 293 149 A (WILSON CARL R ET AL) 8 March 1994 (1994-03-08) * column 3, line 10 - line 13 * * column 4, line 1 - line 4 * * column 8, line 54 - line 57 * * column 8, line 59 - column 9, line 4 *	5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G08B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 January 2003	Examiner Meister, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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The members are as contained in the European Patent Office EDP file on
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