Title: LOUDSPEAKER WITH FRAME COOLING STRUCTURE

Abstract: A loudspeaker comprises a frame mounted to a motor structure, an upper suspension connected between the voice coil of the motor structure and the frame, and, a lower suspension extending from the voice coil to the frame in position to form a cavity between the top plate of the motor and the lower suspension. The frame includes a bottom plate having a number of spaced vanes which rest atop the top plate of the motor and form passages therebetween through which a comparatively high volume of air is circulated at relatively high velocity in and out of the cavity between the lower suspension and lower end of the frame in response to excursion of the voice coil during operation of the speaker. The passages are positioned to direct such air flow over the top plate, and in some embodiments along at least a portion of the voice coil, to aid in cooling of these elements.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04R9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>Y</td>
<td>FR 2 667 212 A (PHIL AUDIO) 27 March 1992 (1992-03-27) cited in the application page 1, line 8-17</td>
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<td>A</td>
<td>CA 2 245 351 A (FABIAN F.W.) 8 September 1998 (1998-09-08) page 3, line 1-page 4, line 13</td>
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<td>A</td>
<td>US 4 939 975 A (BUTTON DOUGLAS J.) 12 June 1990 (1990-06-12) cited in the application column 3, line 19-23 column 4, line 3-column 7, line 5</td>
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* Special categories of cited documents:

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"A" document member of the same patent family

Date of the actual completion of the international search

25 April 2002

Date of mailing of the international search report

06/05/2002

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Zanti, P
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column 1, line 5-9  
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