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(54) **High frequency transducer**

(57) A high frequency transducer 10 having a dome diaphragm 52 with a configuration of a bisected ellipse to overcome the distortion and breaking point of prior art domes even at frequencies above 30kHz. The dome diaphragm having an annular skirt 54 extending therefrom in an integral fashion and connecting to a disc shaped plate 30 of the transducer. A voice coil 60 of cylindrical section is directly connected to the skirt at a region of

close proximity to said dome. The dome is constructed of a rigid material such as a metal, an alloy, a metalloid such as, but not limited to, titanium, aluminum, and boron, or a combination thereof. The dome is constructed in accordance with a general formula for an ellipse $(x^2/a^2)+(y^2/b^2)=1$, and $a>b$, wherein a is half of the length of a major axis and b is half of the length of a minor axis of the ellipse.

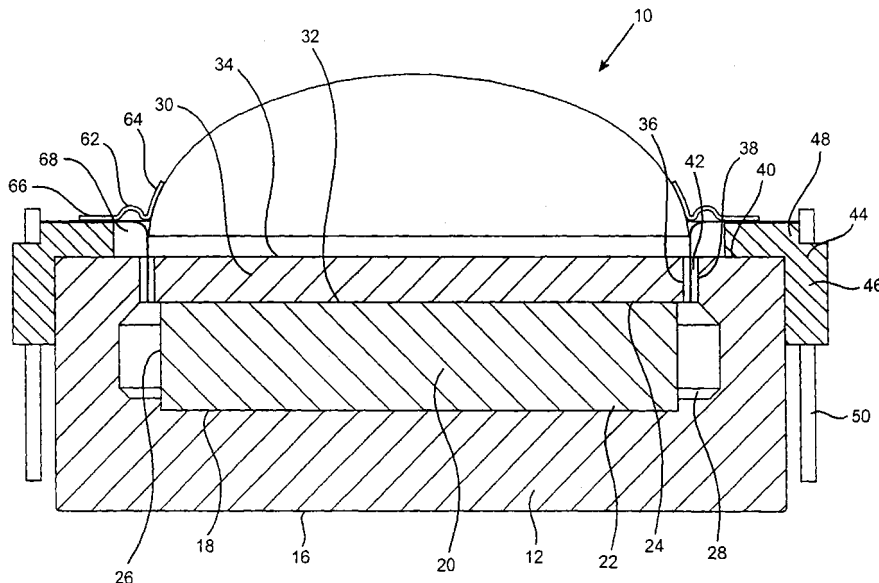


FIG. 3



European Patent
Office

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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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7) H04R
Place of search MUNICH		Date of completion of the search 5 March 2003	Examiner Kunze, H
<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>			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 00 30 9554

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