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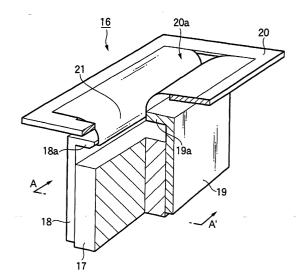
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(54) Electroacoustic transducer

Conductor pattern portions CLa1 and CLb1 are printed on a center portion of a polymeric resin film, and the center portion is folded and then bonded, thereby forming a diaphragm 21 which integrally has a flat platelike portion 23 having the conductor pattern portions CLa1 and CLb1, and first and second vibrating sections 21a and 21b having a curved shape. A magnet 17 and yokes 18 and 19 form a magnetic circuit and a magnetic gap MG. The flat plate-like portion 23 is inserted into the magnetic gap MG. The whole diaphragm 21 is supported by a support member 20 in a floating state. In this structure, when an audio signal is supplied to the conductor pattern portions CLa1 and CLb1, the flat platelike portion 23 is vibrated in a direction H by dynamic force generated by the magnetic field in the magnetic gap MG, and currentin the conductor pattern portions CLa1 and CLb1 which are inserted into the magnetic gap MG, and also the first and second vibrating sections 21a and 21b are vibrated in the direction H, so that a reproduced sound of excellent high-frequency characteristics is released.







EUROPEAN SEARCH REPORT

Application Number EP 01 30 7079

	DOCUMENTS CONSID	ERED TO BE REL	EVANT	····	
Category	Citation of document with ir of relevant passa			Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	US 4 276 449 A (SAW 30 June 1981 (1981- * column 1, line 40 * column 2, line 33 figures 1-5 *	06-30)) - column 1, li	ne 51 *	-3	H04R31/00 H04R9/04
A	PATENT ABSTRACTS OF vol. 008, no. 059 (17 March 1984 (1984 -& JP 58 207794 A (3 December 1983 (19 * abstract; figures	E-232), -03-17) SEIICHI SATOU), 83-12-03)	1-	-3	
A	WO 00 41492 A (RONA FERENC (HU); RONASZ 20 July 2000 (2000- * page 3, line 13 - figures 1,210,12 *	EKI LASZLO (HU) 07-20))	-3	
A	WO 94 14294 A (LINA 23 June 1994 (1994- * the whole documen	06-23)	1-	-3	TECHNICAL FIELDS SEARCHED (Int.CI.7)
			1		
	The present search report has b	een drawn up for all claim	S		
	Place of search	Date of completion		Ι ΄	Examiner
	MUNICH	3 April	2003	Kun	ze, H
X : parti Y : parti docu A : techi O : non-	NTEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anoth ment of the same category nological background written disclosure mediate document	E:e af ner D:d L:do &:n	eory or principle und arlier patent document ter the filling date coument cited in the coument cited for othe ember of the same pooument	nt, but publisl application er reasons	ned on, or

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 01 30 7079

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-04-2003

Patent document cited in search report			Publication date		Patent family member(s)		Publication date
US	4276449	A	30-06-1981	JP JP JP JP JP DE FR GB	1180593 54157618 58011158 1172546 55039448 58001600 2922216 2427753 2028054	A B C A B A1 A1	09-12-1983 12-12-1979 01-03-1983 17-10-1983 19-03-1980 12-01-1983 06-12-1979 28-12-1979 27-02-1980
JP	58207794	Α	03-12-1983	NONE			
MO.	0041492	A	20-07-2000	HU AU WO	9900096 2311800 0041492	Α	28-08-2000 01-08-2000 20-07-2000
WΟ	9414294	Α	23-06-1994	AU WO US	5685894 9414294 5570429	A1	04-07-1994 23-06-1994 29-10-1996
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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