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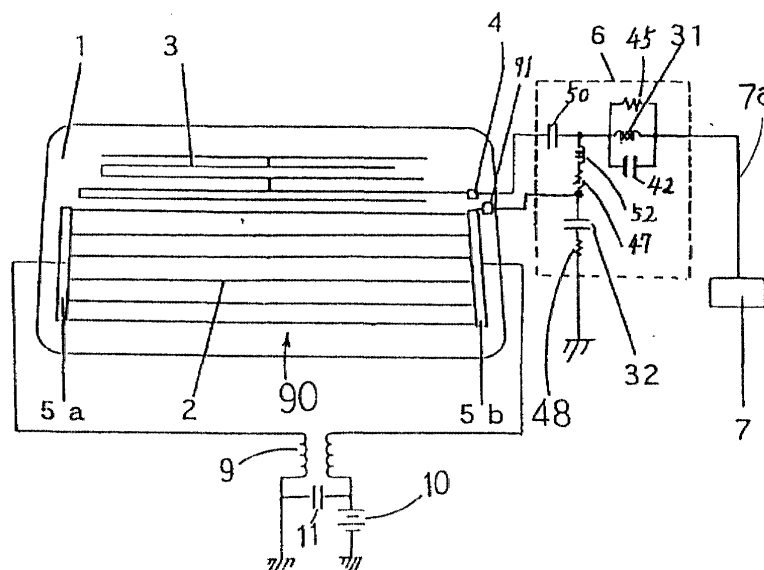
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(54) **Glass antenna device for an automobile**

(57) A glass antenna device for an automobile capable of receiving well signals in a long wave broadcast band and an FM broadcast band wherein a series resonance is generated by a coil 31 disposed between an antenna conductor 3 and a receiver 7, a parallel resonance is generated by a choke coil 9 disposed between

a defogger 90 and the automobile body as the earth, and a high frequency choking coil 52 for blocking an FM broadcast band signal is connected between the antenna conductor 3 and the defogger 90 to prevent the FM broadcast band signal exited in the antenna conductor 3 from leaking to the automobile body.

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EUROPEAN SEARCH REPORT

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EP 99 11 7464

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 856 904 A (ASAHI GLASS CO LTD) 5 August 1998 (1998-08-05) * column 6, line 23 - column 7, line 46 * * column 13, line 5 - column 16, line 6; figures 12,13; example 6 *	1-8	H01Q1/12 H01Q1/32
A	EP 0 506 333 A (NIPPON SHEET GLASS CO LTD ;SUMITOMO CHEMICAL CO (JP)) 30 September 1992 (1992-09-30) * abstract *	1,2,5	
A	EP 0 807 987 A (NIPPON SHEET GLASS CO LTD) 19 November 1997 (1997-11-19) * figures 1,2 *	1,2,5	
A	US 5 548 298 A (NAKASE KAZUHIKO) 20 August 1996 (1996-08-20) * figures 4,5 *	1,2,5	
A	US 5 408 242 A (NAKASE KAZUHIKO) 18 April 1995 (1995-04-18) * figures 4,5 *	1,2,5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			H01Q
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 31 August 2001	Examiner Van Dooren, G
CATEGORY OF CITED DOCUMENTS 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		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	

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

EP 99 11 7464

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
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31-08-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0856904 A	05-08-1998	JP 11205023 A	30-07-1999
		TW 423180 B	21-02-2001
		US 6072435 A	06-06-2000
		US 6243043 B	05-06-2001
EP 0506333 A	30-09-1992	JP 4298121 A	21-10-1992
		JP 4298123 A	21-10-1992
		DE 69221355 D	11-09-1997
		DE 69221355 T	22-01-1998
		US 5602558 A	11-02-1997
		US 5699071 A	16-12-1997
EP 0807987 A	19-11-1997	JP 9307333 A	28-11-1997
		US 5907308 A	25-05-1999
US 5548298 A	20-08-1996	US 5278879 A	11-01-1994
US 5408242 A	18-04-1995	JP 4249404 A	04-09-1992