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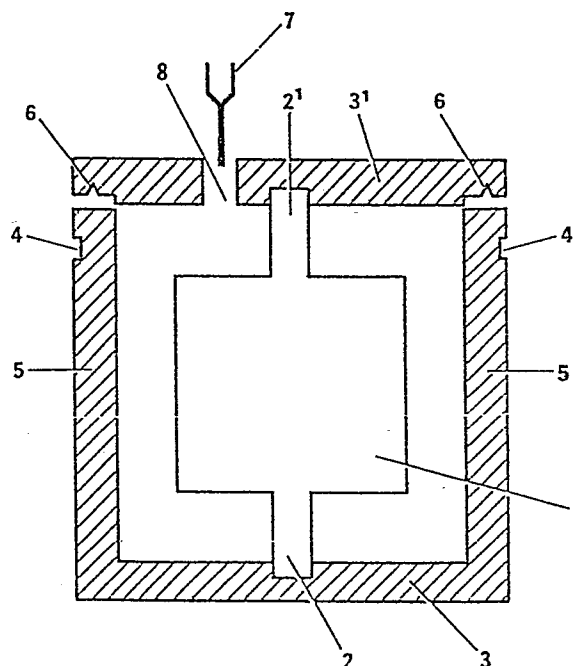
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⑤④ **Crystalline alumina loaded cavity resonator.**

⑤⑦ This invention describes a crystalline alumina loaded cavity resonator which has low loss and high frequency stability such that its frequency is well-defined and only weakly perturbed by temperature, pressure and mechanical changes in its environment. Basically the resonator is a single crystal of sapphire (1) having protrusions (2) and (2') fitting closely into recesses in the base (3) and lid (3') of a niobium housing. The lid (3') is clamped by groove (4) and having an indium seal to seal the lid (3') to the side walls (5) at groove (6) in lid (3'). A microwave probe (7) is used to couple microwave power into the cavity through hole (8).





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# EUROPEAN SEARCH REPORT

0173545

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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.4)
D, Y	IEEE TRANSACTIONS ON MAGNETICS, vol. MAG-17, no. 1, January 1981, pages 955-957, IEEE, New York, US; V.B. BRAGINSKII et al.: "The properties of superconducting resonators on sapphire" * Page 955, left-hand column, section 2 - right-hand column, section 1 with figure 1 *	1-5, 7	H 01 P 7/10 H 01 P 7/06
Y	--- US-A-4 028 652 (K. WAKINO et al.) * Column 2, lines 1-20; column 7, lines 4-26 with figure 13; column 11, lines 13-49 with figures 27-30 *	1-5	
A	--- IEEE PROCEEDINGS SECTION AAI, vol. 129, no. 4, part H, August 1982, pages 183-187, Old Working, Surrey, GB; C. VEDRENNE et al.: "Whispering-gallery modes of dielectric resonators" * Page 184, section 2 with figures 1A, 1B, 2D, 2E, 3 *	1, 5	TECHNICAL FIELDS SEARCHED (Int. Cl.4)  H 01 P H 05 H
A	--- GB-A-2 129 228 (MURATA) * Figures 17A-D *	1, 6	
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 13-06-1986	Examiner ANGRABEIT F.F.K.
<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 &amp; : member of the same patent family, corresponding document</p>			



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Y	J. PHYSICS E, vol. 10, no. 12, 1977, pages 1193-1207; A. SEPTIER et al: "Microwave applications of superconducting materials" * Page 1197, section 5; page 1200, sections 5.2,5.3 *	7	
A	DE-B-1 284 491 (TELEFNKEN) * Claim 4 * -----	1,7	
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