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(71) Applicant: Mitsubishi Jidosha Kogyo K.K. Tokyo 108-8410 (JP)

(72) Inventors:

 CHUMA, Masahiro Tokyo, 108-8410 (JP)

 ISHII, Kohei Tokyo, 108-8410 (JP)

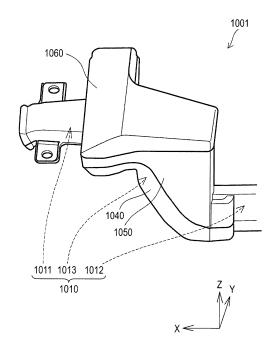
 SUZUKI, Kenji Tokyo, 108-8410 (JP)

(74) Representative: Vossius & Partner Patentanwälte Rechtsanwälte mbB Siebertstrasse 3 81675 München (DE)

## (54) AIR INTAKE DEVICE OF INTERNAL COMBUSTION ENGINE

(57) An air intake device of an internal combustion engine includes: a first resonator and a second resonator which have a first volume chamber and a second volume chamber, respectively, the first and second volume chambers communicating with an intake air flow passage feeding air to the internal combustion engine; and a first member, a second member and a third member which form the first resonator and the second resonator. The first resonator is formed by the first member and the second member; and the second resonator is formed by the second member and the third member.

FIG. 1



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#### **EUROPEAN SEARCH REPORT**

**Application Number** EP 16 19 6610

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**DOCUMENTS CONSIDERED TO BE RELEVANT** CLASSIFICATION OF THE APPLICATION (IPC) Citation of document with indication, where appropriate, Relevant Category of relevant passages to claim 10 US 4 874 062 A (YANAGIDA KOUICHI [JP] ET AL) 17 October 1989 (1989-10-17) \* column 4, line 29 - column 6, line 6; Χ 1-4 INV. F02M35/12 γ 5-8 figures 1-6 \* US 6 105 547 A (SAKAMOTO KAZUYA [JP] ET 15 γ 5-8 AL) 22 August 2000 (2000-08-22) \* column 3, line 47 - column 4, line 56; figures 1-4 \* EP 3 112 654 A1 (MANN+HUMMEL GMBH [DE]) 4 January 2017 (2017-01-04) Ε 1,2 20 \* paragraph [0060] - paragraph [0064]; figure 8 \* BE 643 017 A (CITROEN) Α 1 15 May 1964 (1964-05-15) 25 \* page 2, line 24 - page 4, line 14; figure 2 \* TECHNICAL FIELDS SEARCHED (IPC) 30 F<sub>0</sub>2M 35 40 45 The present search report has been drawn up for all claims 1 Place of search Date of completion of the search Examiner 50 (P04C01) Munich 14 March 2017 Marsano, Flavio 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 CATEGORY OF CITED DOCUMENTS 1503 03.82 X : particularly relevant if taken alone
 Y : particularly relevant if combined with another document of the same category L: document cited for other reasons A : technological background
O : non-written disclosure
P : intermediate document 55 & : member of the same patent family, corresponding

document



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Application Number

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	CLAIMS INCURRING FEES						
	The present European patent application comprised at the time of filing claims for which payment was due.						
10	Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):						
15	No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.						
20	LACK OF UNITY OF INVENTION						
	The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:						
25							
	see sheet B						
30							
	All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.						
35	As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.						
40	Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:						
45	None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention						
50	first mentioned in the claims, namely claims:						
55	The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).						



# LACK OF UNITY OF INVENTION SHEET B

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requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-8

The Search Division considers that the present European patent application does not comply with the

An air intake device of an internal combustion engine, the air intake device comprising: a first resonator and a second resonator which have a first volume chamber and a second volume chamber, respectively, the first and second volume chambers communicating with an intake air flow passage feeding air to the internal combustion engine; and a first member, a second member and a third member which form the first resonator and the second resonator, wherein the first resonator is formed by the first member and the second member; and the second resonator is formed by the second member and the third member.

2. claims: 9-15

An air intake device of an internal combustion engine, the air intake device comprising: an intake air flow passage which is a flow passage of air to be fed to the internal combustion engine; and a resonator which includes a communication pipe communicating with the intake air flow passage, and a volume chamber communicating with the intake air flow passage through the communication pipe, wherein the communication pipe is provided to extend along the intake air flow passage.

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

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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.

14-03-2017

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82