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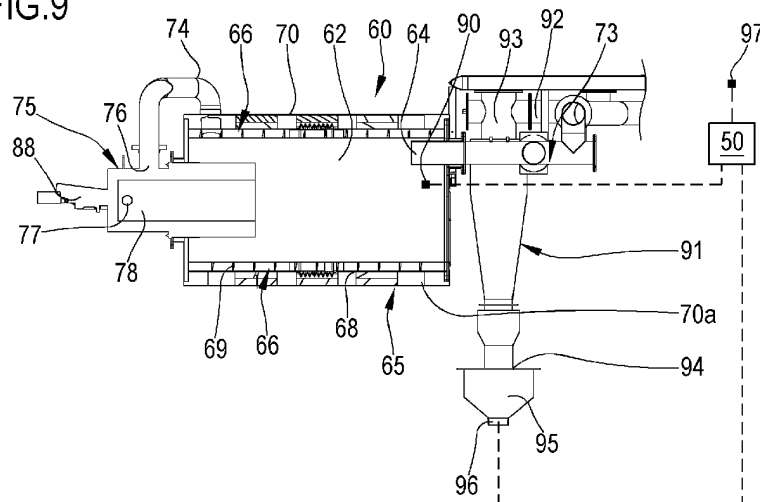
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(54) **APPARATUS FOR COMBUSTION OF SYNTHETIC GASES DERIVING FROM TREATMENT OF ORGANIC MATERIAL, PLANT AND PROCESS FOR TREATMENT OF ORGANIC MATERIAL**

(57) An apparatus for combustion of synthetic gases comprises a burner (75), a combustion chamber (62) cooperating with the burner (75) and having an outlet (64) destined to eject exhaust gases, a fluid supply circuit (65) configured for supplying a comburent gas to the burner (75), wherein the fluid supply circuit (65) is at least

partially outside the combustion chamber (62) and has one or more channels (66) in contact with an outer surface (62a) of the combustion chamber (62) for exchanging heat with the combustion chamber itself. A plant and a process using the above combustion apparatus are also described.

FIG.9





EUROPEAN SEARCH REPORT

Application Number

EP 24 18 2437

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 736 707 A2 (HITACHI LTD [JP]) 27 December 2006 (2006-12-27)	1, 8	INV. F23G5/027
A	* paragraph [0001] - paragraph [0003]; figure 1 *	2, 9	F23G7/00 F23G7/06
	* paragraph [0009] - paragraph [0015] *		F23L15/00 F23C6/04
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X	EP 2 634 486 A1 (HITACHI LTD [JP]) 4 September 2013 (2013-09-04)	1, 8	
	* paragraph [0001] - paragraph [0003]; figures 1-4 *		
	* paragraphs [0011], [0012] *		
	* paragraph [0019] *		
	* paragraph [0022] - paragraph [0026] *		
	* paragraph [0038] *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F23G F23L F23C F23D
Place of search		Date of completion of the search	Examiner
Munich		8 November 2024	Hauck, Gunther
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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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.

☐ 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):

☐ 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.

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:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ 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:

☒ 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 first mentioned in the claims, namely claims:

1, 2, 8, 9

☐ 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**

Application Number

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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:

1. claims: 1, 2, 8, 9

Method and apparatus for the combustion of synthetic gases deriving from the treatment of organic material, wherein comburent supplied to a burner (of a combustion chamber) is heated by a supply circuit featuring a channel being in contact with the outer surface a combustion chamber for exchanging heat.

The burner features a mixing chamber mixing the comburent and the synthetic gas.

2. claims: 3, 4, 6, 7, 10

Method and apparatus for the combustion of synthetic gases deriving from the treatment of organic material, wherein comburent supplied to a burner (of a combustion chamber) is heated by a supply circuit featuring a channel being in contact with the outer surface a combustion chamber for exchanging heat.

Multiple channels (or sections of one channel) of specific arrangements.

3. claim: 5

Method and apparatus for the combustion of synthetic gases deriving from the treatment of organic material, wherein comburent supplied to a burner (of a combustion chamber) is heated by a supply circuit featuring a channel being in contact with the outer surface a combustion chamber for exchanging heat.

The combustion chamber features two longitudinally delimiting terminal walls.

4. claims: 11-15

Method and apparatus for the combustion of synthetic gases deriving from the treatment of organic material, wherein comburent supplied to a burner (of a combustion chamber) is heated by a supply circuit featuring a channel being in contact with the outer surface a combustion chamber for exchanging heat.

A plant comprises the apparatus and features a a reactor for treatment of organic material, wherein the reactor comprises a main conveyor operating in a treatment chamber having a heater.

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