



(19)

Europäisches Patentamt

European Patent Office

## Office européen des brevets



(11)

EP 1 170 557 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
**30.07.2003 Bulletin 2003/31**

(51) Int Cl.<sup>7</sup>: **F24H 1/10**

(43) Date of publication A2:  
**09.01.2002 Bulletin 2002/02**

(21) Application number: **01660119.7**

(22) Date of filing: 21.06.2001

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE TR**  
Designated Extension States:

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(30) Priority: 03.07.2000 FI 20001  
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#### (54) Heat production arrangement

(57) The present invention relates to a heat production arrangement for heating service water. Such an arrangement comprises a burner for producing hot gases, a boiler part (1) including a combustion chamber (3) and heat exchange means (5, 5a, 6) for receiving the gases and a condenser (2) fixedly fastened on top of the boiler part for recovering heat energy from the gases. The structure of the boiler part according to the invention is substantially cylindrical so that a main axis (7) in the boil-

er part is arranged in a substantially vertical direction. The heat exchange means (5, 5a, 6) in the boiler part include radiator vessels (5, 5a) and tap water vessels (6) for receiving and circulating the service water, and the vessels comprise envelope surfaces, which are at least partly in direct contact with the gases. The structure of these vessels substantially comprises cylinders and/or ring-shaped cylinders, and the radiator vessels are thus at least partly connected to one another.

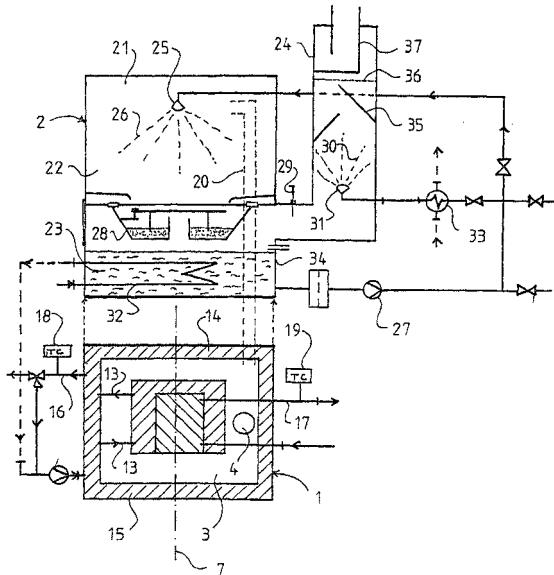


FIG. 1



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	EP 0 097 631 A (JOHANSSON ULF) 4 January 1984 (1984-01-04) * page 6, line 14,15; figure 2 *	1,8,12	F24H1/10
Y	GB 2 062 196 A (WARMINGHOUSE SRL) 20 May 1981 (1981-05-20) * the whole document *	1,8,12	
A	US 3 994 281 A (GODART JOSEPH RAOUL) 30 November 1976 (1976-11-30) * the whole document *	1-14	
A	FR 2 543 663 A (CENTRE TECH IND AERAULIQ) 5 October 1984 (1984-10-05) * the whole document *	1-14	
A	US 4 017 277 A (VAN DYKE SR BINGHAM H ET AL) 12 April 1977 (1977-04-12) * the whole document *	1-14	
A	US 4 031 862 A (SMITH FRANK J) 28 June 1977 (1977-06-28) * figure 1 *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) F24H F28D F28C
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
MUNICH	4 June 2003	García Moncayo, 0	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 66 0119

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.

04-06-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0097631	A	04-01-1984	DK	275583 A	18-12-1983
			EP	0097631 A2	04-01-1984
			FI	832140 A	18-12-1983
			NO	832186 A	19-12-1983
			SE	8203757 A	18-12-1983
GB 2062196	A	20-05-1981	DE	3018267 A1	14-05-1981
			FR	2468852 A1	08-05-1981
			SE	8003307 A	03-05-1981
			YU	127680 A1	28-02-1983
			BE	883241 A1	01-09-1980
			JP	56066640 A	05-06-1981
US 3994281	A	30-11-1976	BE	805296 A1	16-01-1974
			DE	2445841 A1	03-04-1975
			ES	430313 A1	01-10-1976
			FR	2244968 A1	18-04-1975
			GB	1455750 A	17-11-1976
			NL	7412583 A ,B,	27-03-1975
FR 2543663	A	05-10-1984	FR	2543663 A1	05-10-1984
US 4017277	A	12-04-1977	NONE		
US 4031862	A	28-06-1977	CA	1067484 A1	04-12-1979