(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 17.12.2014 Bulletin 2014/51 (51) Int Cl.: F24H 9/20 (2006.01) F23G 5/50 (2006.01)

F23N 5/10 (2006.01)

(43) Date of publication A2: 09.11.2011 Bulletin 2011/45

(21) Application number: 11162931.7

(22) Date of filing: 19.04.2011

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR **Designated Extension States:**

BA ME

(30) Priority: 22.04.2010 PL 39104210

12.08.2010 PL 39211810

- (71) Applicant: Cebula, Artur 45-111 Opole (PL)
- (72) Inventor: Cebula, Artur 45-111 Opole (PL)
- (74) Representative: Korga, Leokadia Kancelaria Rzecznika Patentowego ul. Bereniki 6/7 44-117 Gliwice (PL)

(54)A method for regulating the combustion process in solid fuel central heating boilers

The method for regulating the combustion processes in solid fuel central heating boilers, whereby the energy parameters of the combustion are set at the level relevant for the type of solid fuel and the type of boiler and the combustion process is regulated by changing the amount of solid fuel and air introduced on the basis of temperature measurements, consists in that the temperature t_{ma} of the heating medium is measured as well as temperature t_{sp} of the combustion product in at least one place in the bottom layer of the solid fuel aftercombustion zone or additionally temperature to of the combustion product in the ash zone is measured and then the temperature t_{mq} of the heating medium is compared with the preset temperature, and that the amount of primary air pp introduced into the process is measured or additionally also the amount of secondary air $\boldsymbol{p_w}$ and then the amount of primary air p_p or the total amount of primary p_p and secondary air p_w is compared with the preset amount and subsequently, based on the algorithm appropriate for the given boiler, it is converted into an impulse for adjusting the settings of solid fuel and/or air inflow, whereby the algorithm takes into account a relevant deviation of the primary air Δp_p or primary and secondary air Δp_{pw} and the known deviation of temperature Δt_{mg} of the heating medium and temperature t_{sp} of the combustion product or additionally also the corresponding in time temperature t_p of the combustion product in the ash zone.

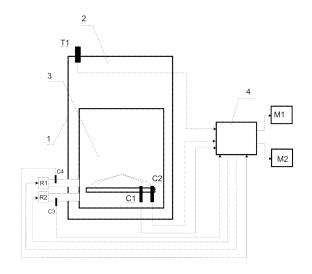


Fig. 2



EUROPEAN SEARCH REPORT

Application Number EP 11 16 2931

	DOCUMENTS CONSIDERED				
Category	Citation of document with indicatio of relevant passages	n, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)	
Υ	US 2010/083883 A1 (H0FE 8 April 2010 (2010-04-0 * pages 3-7; figures 1-	8)	1-4	INV. F24H9/20 F23N5/10 F23G5/50	
Υ	WO 90/09552 A1 (STEINMU [DE]) 23 August 1990 (1 * pages 2-8; figures 1-	990-08-23)	1-4	F23d3/30	
Υ	JP S60 196512 A (EBARA 5 October 1985 (1985-10 * abstract; figures 1-6	-05)	1-4		
A	EP 1 489 355 A1 (SAR EL 22 December 2004 (2004- * the whole document *	 EKTRONIC GMBH [DE]) 12-22)	1-4		
A	EP 1 589 283 A1 (ABB RE 26 October 2005 (2005-1 * the whole document *		1-4		
				TECHNICAL FIELDS SEARCHED (IPC)	
				F24H	
				F23N	
				F23G	
			4		
	The present search report has been dr				
Place of search		Date of completion of the search	C = 1	Examiner	
	Munich	7 November 2014		nwaiger, Bernd	
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		E : earlier patent do after the filing dat D : document cited i L : document cited f	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		

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

EP 11 16 2931

5

10

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.

07-11-2014

15	

20

25

30

35

40

45

50

55

	Patent document ed in search report		Publication date	Patent family member(s)	Publication date
US	2010083883	A1	08-04-2010	NONE	
WO	9009552	A1	23-08-1990	DD 292068 A5 DE 3904272 A1 EP 0458822 A1 WO 9009552 A1	18-07-1991 23-08-1990 04-12-1991 23-08-1990
JP	S60196512	Α	05-10-1985	NONE	
EP	1489355	A1	22-12-2004	AT 443236 T DE 10327471 B3 EP 1489355 A1	15-10-2009 07-04-2005 22-12-2004
EP	1589283	A1	26-10-2005	AT 336695 T CN 1947073 A DE 602004001972 T2 EP 1589283 A1 JP 2007533947 A WO 2005103565 A2	15-09-2006 11-04-2007 06-09-2007 26-10-2005 22-11-2007 03-11-2005
FORM P0459					