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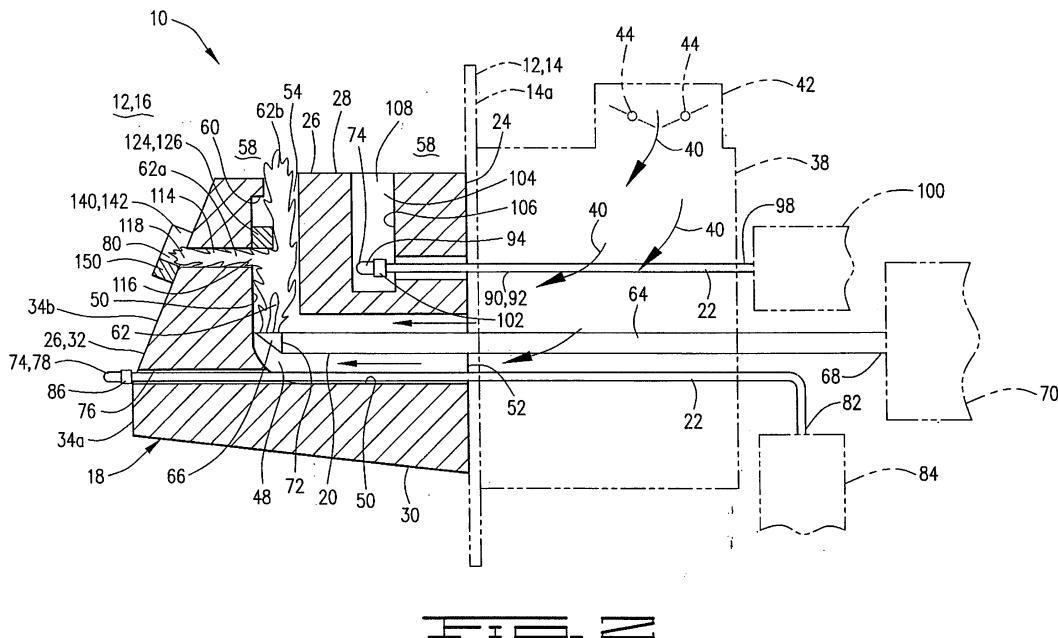
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### (54) Burner apparatus and methods

(57) A burner assembly for and method of combust-  
ing fuel gas in a furnace is provided. The burner assembly  
(10) includes a burner tile (18) having a burner throat (48)  
disposed therethrough. Combustion air is conducted  
through the burner throat into a combustion zone in the  
furnace. A pilot assembly (20) is used to generate a pilot  
flame (62) within the burner throat. Fuel gas is injected  
into an ignition zone (80) located outside the burner throat

and ignited therein. The pilot flame (62) generated in the  
burner throat (48) can be used to ignite the fuel gas in  
the ignition zone (80). The ignited fuel gas is admixed  
with combustion air in the combustion zone. The burner  
assembly can be operated without admixing a significant  
amount of fuel gas with combustion air in the burner  
throat, which can help control the formation of undesira-  
ble nitrogen oxides (NO<sub>X</sub>).





## EUROPEAN SEARCH REPORT

Application Number  
EP 09 25 1881

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	EP 1 867 923 A2 (JOHN ZINK CO LLC [US]) 19 December 2007 (2007-12-19)  * claim 1; figures 1, 4, 9 * * paragraphs [0001], [0011], [0013] * * paragraphs [0024], [0086], [0090] * * paragraphs [0099], [0101], [0103] * * page 11, line 20 - line 21 * * page 12, line 49 - line 52 * -----	1,2,4,6, 9-11,14, 15	INV. F23M5/02 F23D14/26 F23D14/22
X	US 5 073 105 A (MARTIN RICHARD R [US] ET AL) 17 December 1991 (1991-12-17)  * figures 1,7 * * column 1, line 40 * * column 3, line 35 - line 39 * * column 4, line 15 - line 19 * -----	1,3,6,9, 10,12,15 2	
A	US 5 980 243 A (SURBEY DAVID J [US] ET AL) 9 November 1999 (1999-11-09)  * claims 1-4; figures 1-4 * * column 1, line 30 - line 35 * * column 3, line 20 - line 30 * * column 3, line 49 - line 51 * -----	1,6, 8-10,15	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 13 September 2010	Examiner Harder, Sebastian
CATEGORY OF CITED DOCUMENTS		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	
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			

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.

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