

Title (en)  
ACOUSTICAL BURNER CONTROL SYSTEM AND METHOD

Publication  
**EP 0428373 A3 19910828 (EN)**

Application  
**EP 90312358 A 19901113**

Priority  
US 43594889 A 19891113

Abstract (en)  
[origin: EP0428373A2] An acoustically operated burner control system [1] for optimally controlling a flow of air and fuel into a flame producing combustion burner [3] throughout a range of firing rates is disclosed. The system includes separate valve assemblies for modulating the flow of air and fuel into a burner, [3] a microphone [103] for generating an electrical signal indicative of the intensity of all sounds generated by the combustion flame having a frequency in excess of about 10 kHz, and a controller [43] including a programmable microprocessor electrically connected to both the air and fuel valve assemblies [45,58] and the microphone [103]. The system further includes a wave guide [105] for remotely acoustically coupling the microphone [103] to the combustion flame [15] in order to isolate the microphone from both heat and corrosive combustion products. Prior to the operation of the system, empirically-derived sound intensities associated with optimum stoichiometric combustion and minimum pollution are entered into the memory of the microprocessor. During operation, the microprocessor equates the sound intensity sensed by the microphone with the optimum sound intensity in its memory by regulating the position of the air and fuel valve assemblies [45,58].

IPC 1-7  
**F23N 5/16**

IPC 8 full level  
**F23N 5/16** (2006.01); **F23N 1/02** (2006.01); **F23N 5/00** (2006.01)

CPC (source: EP)  
**F23N 5/16** (2013.01); **F23N 1/02** (2013.01); **F23N 5/006** (2013.01); **F23N 2221/12** (2020.01); **F23N 2225/04** (2020.01); **F23N 2227/20** (2020.01); **F23N 2235/06** (2020.01); **F23N 2235/10** (2020.01); **F23N 2235/12** (2020.01)

Citation (search report)  
• [Y] GB 2042221 A 19800917 - KOBE STEEL LTD  
• [Y] FR 2215583 A1 19740823 - GEN ELECTRIC [US]  
• [A] GB 861564 A 19610222 - BABCOCK & WILCOX LTD  
• [A] DE 2063363 A1 19710729 - WESTINGHOUSE ELECTRIC CORP  
• [A] FR 2490786 A1 19820326 - CENTRE NAT RECH SCIENT [FR]

Cited by  
CN114484495A; US5634786A; EP0926325A3; AT401197B; EP1091174A1; CN112313453A; EP0935098A1; US5616021A; ES2381512A1; EP2261562A3; EP3156629A1; US11022041B2; WO9639354A1

Designated contracting state (EPC)  
DE GB IT

DOCDB simple family (publication)  
**EP 0428373 A2 19910522; EP 0428373 A3 19910828**

DOCDB simple family (application)  
**EP 90312358 A 19901113**