

Title (en)
HIGH EFFICIENCY RADIANT BURNER

Title (de)
HOCHLEISTUNGSSTRAHLUNGSBRENNER

Title (fr)
BRÛLEUR RADIANT À RENDEMENT ÉLEVÉ

Publication
EP 1920191 A4 20101020 (EN)

Application
EP 06789552 A 20060807

Priority
• US 2006030814 W 20060807
• US 70609605 P 20050805

Abstract (en)
[origin: WO2007027379A1] A radiant burner (10) and optional heat exchanger (90) arrangement where the radiant burner (10) has a generally enclosed cavity (24) defined, at least in part, by fuel gas impermeable surroundings (12,14) and a lower surface (62) of fuel gas permeable burner element (60), wherein cavity (12) preferably has two opening (16a,16b) exposed to an oxidizer source. Sealingly coupled to openings (16a,16b) are mix tubes (50a,50b), each having respective first ends (52a,52b) and second ends (54a,54b), wherein first ends (52a,52b) occupy openings (16a, 16b) and second ends (54a, 54b) extend into and are exposed to cavity (12). Fuel gas injectors (48a,48b), which during use are in fluid communication with fuel gas (100), are positioned to introduce fuel gas into mix tubes (50a,50b). Pre-combustion gasses migrate to upper surface (64) and are available for ignition. A thermal fuel flow interrupt may be positioned between fuel gas (100) and gas injectors (48a,48b) to isolate the fuel gas in the event of an overheat malfunction. Because burner (60) functions as a radiant body, increased thermal transfer efficiency over the prior art can be achieved by exploiting this fact, such as by creating a dedicated heat exchanger arrangement (90) for containers (70) placed on or proximate to burner (60). Exposed surfaces (80,82,84) are established to exploit the relative slow velocity of heated combustion gasses, thereby increasing heat transfer flux into container (70).

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Citation (search report)
• [X] EP 0465679 A1 19920115 - NIPPON KOKAN KK [JP]
• [X] US 5511974 A 19960430 - GORDON MICHAEL W [US], et al
• [X] US 5240411 A 19930831 - ABALOS MARTIN [US]
• [X] GB 907061 A 19621003 - FIRELESS GAS HEATER CORP
• See also references of WO 2007027379A1

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