

Title (en)
Compact combustion apparatus.

Title (de)
Kompakter Verbrennungsapparat.

Title (fr)
Appareil compact pour la combustion.

Publication
EP 0093571 A2 19831109 (EN)

Application
EP 83302371 A 19830426

Priority
US 37279082 A 19820428

Abstract (en)
A compact combustion apparatus 12 comprises a plurality of radially aligned combustors 18 surrounding a central fan 22. The fan 22 draws in air from the outside and provides the air for primary and secondary combustion as well as for cooling the gases of that combustion. Each combustor 18 receives the air forced from the central fan 22 by means of an annular passage 60 formed between the outer shell 4 of the combustor 18 and its liner 52. The outside air travels countercurrent to the flow of the combustion gases and serves to cool the combustor liner 52 and outer shell 34 of each combustor 16. In turn, that outside air is heated as it passes through the annular passage so that it is warmed before being introduced into combustion chamber (or zone) 34 of each combustor 18 to be mixed with atomized liquid fuel supplied from the respective nozzle 84 to form a combustible mixture. Various holes 94 in the combustor liner 52 allow the air to enter a secondary combustion chamber (or zone) 56 as well as a dilution chamber (or zone) 58 to cool the gases of combustion for later use in transferring heat for various uses. In a preferred embodiment, the mixed combustion gases and outside air are passed through a heat exchanger 16 to utilize that heat to vaporize a liquid cryogenic substance such as nitrogen.

IPC 1-7
F23C 5/00; **F23C 7/00**

IPC 8 full level
F23D 11/24 (2006.01); **F17C 9/02** (2006.01); **F23C 6/04** (2006.01); **F23C 7/06** (2006.01); **F23D 11/00** (2006.01); **F23D 23/00** (2006.01); **F23M 5/08** (2006.01)

CPC (source: EP)
F17C 9/02 (2013.01); **F23C 6/045** (2013.01); **F23C 7/06** (2013.01); **F23D 11/001** (2013.01); **F23D 23/00** (2013.01); **F23M 5/085** (2013.01)

Cited by
CN107062225A; EP0825382A4; ITSA20110018A1

Designated contracting state (EPC)
CH DE FR GB IT LI

DOCDB simple family (publication)
EP 0093571 A2 19831109; AU 1273883 A 19831103; JP S591916 A 19840107; ZA 832158 B 19831228

DOCDB simple family (application)
EP 83302371 A 19830426; AU 1273883 A 19830323; JP 7602883 A 19830428; ZA 832158 A 19830325