

Title (en)
TAPERING SPIRAL GAS TURBINE WITH HOMOPOLAR DC GENERATOR FOR COMBINED COOLING, HEATING, POWER, PRESSURE, WORK, AND WATER

Title (de)
SPITZ ZULAUFENDE SPIRALGASTURBINE MIT HOMOPOLAREM GLEICHSTROMGENERATOR FÜR KOMBINIERTE KÜHLUNG, HEIZUNG, LEISTUNG, DRUCK, ARBEIT UND WASSER

Title (fr)
TURBINE À GAZ EN SPIRALE CONIQUE COMPRENANT UN GÉNÉRATEUR À COURANT CONTINU HOMOPOLAIRE POUR UNE COMBINAISON DE REFROIDISSEMENT, CHAUFFAGE, PUISSANCE, PRESSION, TRAVAIL ET EAU

Publication
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Application
EP 16889101 A 20161111

Priority
• US 201662290393 P 20160202
• IB 2016001359 W 20160705
• CN 2016105462 W 20161111

Abstract (en)
[origin: WO2017134481A1] Air is compressed by an electric motor in stages of Archimedes scroll spirals. Condensed air moisture is collected as potable water at the output of each stage of air compression. Heat of compression is used to produce hot water. The dried and cooled air could be stored in gas tanks as pressure energy storage. Pressurized air is useful for inflating tires and other devices but most of the pressurized air is used to drive the tapering spiral turbine. Pressurized air produces work when gas pressure is released gradually through the tapering exponential spiral. As air expands and yields its pressure energy to the spiral, it cools rapidly and can be used directly for air conditioning. Further evaporative cooling can be achieved by humidifying the previously dried air. To enhance work production, solar or combustion heat adds energy to the pressurized air at the center of the tapering spiral turbine. Hot and dense gas provides explosive force to drive the turbine. To convert work into electricity, permanent magnets on the periphery of the tapering spiral turbine induce electric voltage and current on solenoids on the spiral turbine enclosure. Residual heat of pressure expended gas could be used for cooking or space heating.

IPC 8 full level
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CPC (source: EP KR)
F01C 1/0215 (2013.01 - EP KR); **F01C 11/008** (2013.01 - EP KR); **F01D 1/22** (2013.01 - EP KR); **F01D 1/32** (2013.01 - EP KR); **F01D 1/36** (2013.01 - EP KR); **F01K 21/00** (2013.01 - EP KR); **F02C 3/16** (2013.01 - EP KR); **F03G 6/003** (2013.01 - EP KR); **F04C 18/0215** (2013.01 - EP KR); **F04C 23/008** (2013.01 - EP KR); **Y02E 10/46** (2013.01 - EP KR); **Y02E 20/16** (2013.01 - EP KR)

Citation (search report)
• [X] JP H0828461 A 19960130 - TOSHIBA CORP, et al
• [X] US 5145344 A 19920908 - HAGA SHUJI [JP], et al
• [X] US 6764288 B1 20040720 - LIEPERT ANTHONY G [US], et al
• See also references of WO 2017133294A1

Designated contracting state (EPC)
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DOCDB simple family (publication)
WO 2017134481 A1 20170810; CN 108603409 A 20180928; CN 108603409 B 20220118; EP 3411564 A1 20181212; EP 3411564 A4 20200122; JP 2019512058 A 20190509; JP 6903676 B2 20210714; KR 102146473 B1 20200824; KR 20180100700 A 20180911; SG 11201806590W A 20180927

DOCDB simple family (application)
IB 2016001359 W 20160705; CN 201680080586 A 20161111; EP 16889101 A 20161111; JP 2018541262 A 20161111; KR 20187024478 A 20161111; SG 11201806590W A 20161111