F02C

GAS-TURBINE PLANTS; AIR INTAKES FOR JET-PROPULSION PLANTS; CONTROLLING FUEL SUPPLY IN AIR-BREATHING JET-PROPULSION PLANTS (construction of turbines F01D; jet-propulsion plants F02K; construction of compressors or fans F04; gas-turbine combustion chambers F23R; using gas turbines in compression refrigeration plants F25B11/00 ; using gas-turbine plants in vehicles, see the relevant vehicle classes)

Definition statement

This subclass/group covers:

- Combustion product or hot gas turbine plants.
- Internal combustion turbines or turbine plants.
- Turbine plants in which the working fluid is an unheated, pressurised gas.

References relevant to classification in this subclass

This subclass/group does not cover:

Construction of turbines	F01D
Jet-propulsion plants	F02K
Construction of compressors or fans	F04D
Gas-turbine combustion chambers	F23R
Using gas turbines in compression refrigeration plants	F25B 11/00
Steam turbine plants	F01K
Special vapour plants	F01K

Special rules of classification within this subclass

In this subclass the Indexing Code scheme R05D is used as follows:

- F05D 2200/00 Mathematical features

- F05D 2210/00 Working fluid
- F05D 2220/00 Application
- F05D 2230/00 Manufacture
- F05D 2240/00 Components
- F05D 2250/00 Geometry
- F05D 2260/00 Function
- F05D 2270/00 Control
- F05D 2300/00 Materials

F02C 1/00

Gas-turbine plants characterised by the use of hot gases or unheated pressurised gases, as the working fluid (by the use of combustion product F02C3/00, F02C5/00)

Definition statement

This subclass/group covers:

Gas-turbine plants characterised by the use of hot gases or unheated pressurised gases, as the working fluid, e.g. heated indirectly by solar power, nuclear power or the like; unheated pressurized gas that is stored and prior to use the expansion of the pressurized gas is used to drive a turbine;

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gas-turbine plants characterized by the use of combustion products	F02C 3/00, F02C 5/00

F02C 3/00

Gas-turbine plants characterised by the use of combustion products as the working fluid (generated by intermittent combustion F02C5/00)

Informative references

Attention is drawn to the following places, which may be of interest for search:

The working fluid being generated by	F02C 5/00

intermittent combustion	

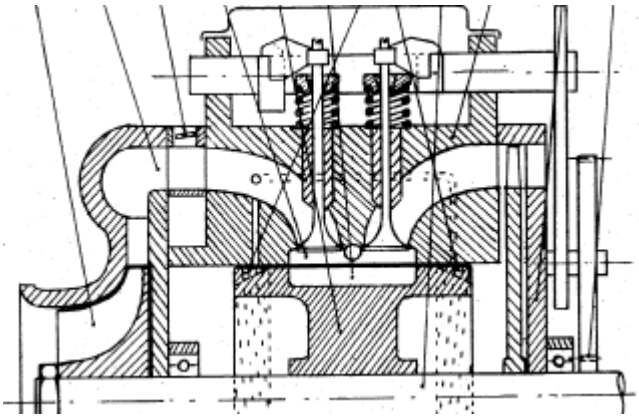
F02C 5/00

Gas-turbine plants characterised by the working fluid being generated by intermittent combustion

Definition statement

This subclass/group covers:

Gas-turbine plants characterised by the working fluid being generated by intermittent combustion, i.e. non continuous combustion e.g. in a combustion chamber having valves



taken from FR2210718

F02C 6/00

Plural gas-turbine plants; Combinations of gas-turbine plants with other apparatus; Adaptations of gas- turbine plants for special use

F02C 6/04

Gas-turbine plants providing heated or pressurised working fluid for other apparatus, e.g. without mechanical power output (F02C6/18 takes precedence; [N: for a fluidised-bed combustor F02C3/205])

Informative references

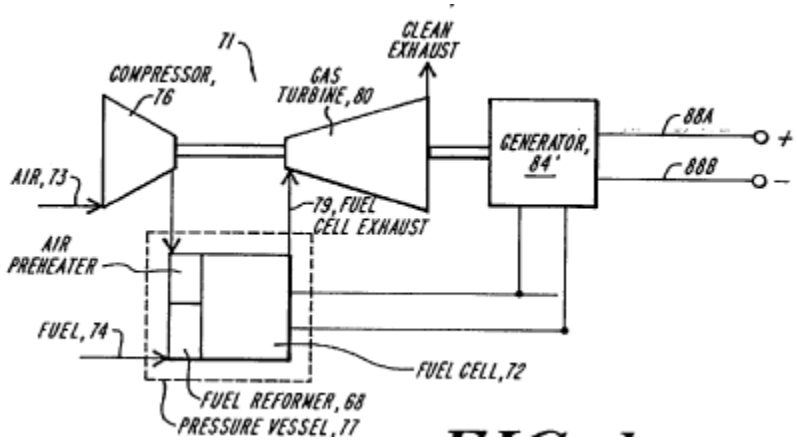
Attention is drawn to the following places, which may be of interest for search:

If related to a fluidised-bed combustor	F02C 3/205

If waste heat from the gas turbine and usage thereof is concerned	F02C 6/18

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 6/04



taken from US2003012997

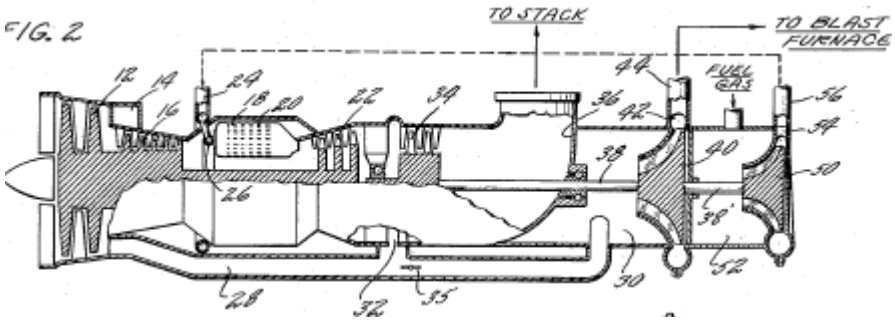
If recovery of waste heat from the gas turbine to a second process or plant is concerned, classify only in F02C 6/18, which takes precedence.

F02C 6/06

providing compressed gas (F02C6/10 takes precedence)

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 6/06



taken from US3216712

F02C 6/08

the gas being bled from the gas-turbine compressor

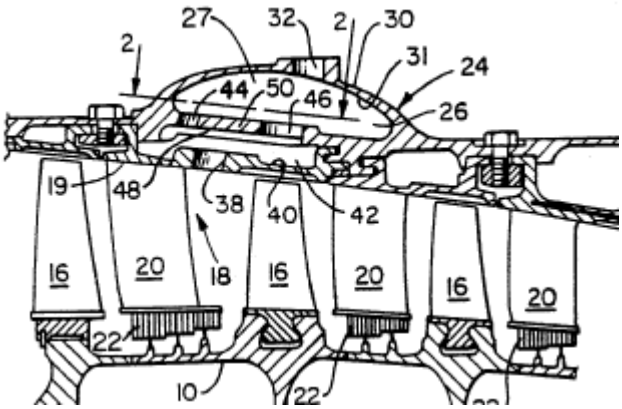
Informative references

Attention is drawn to the following places, which may be of interest for search:

For controlling of working fluid flow by bleeding or bypassing	F02C 9/18

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 6/08



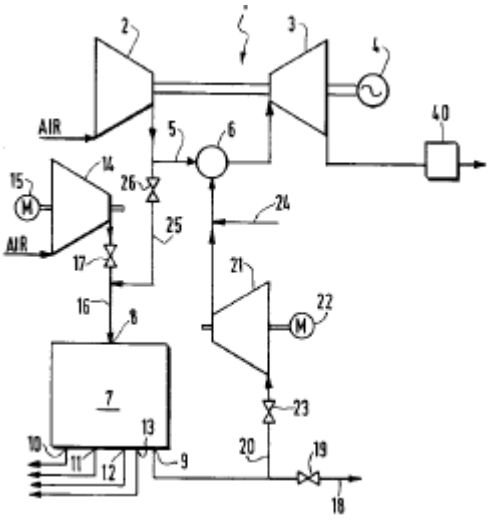
taken from US5203162

F02C 6/10

supplying working fluid to a user, e.g. a chemical process, which returns working fluid to a turbine of the plant

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 6/10



Taken from EP568431

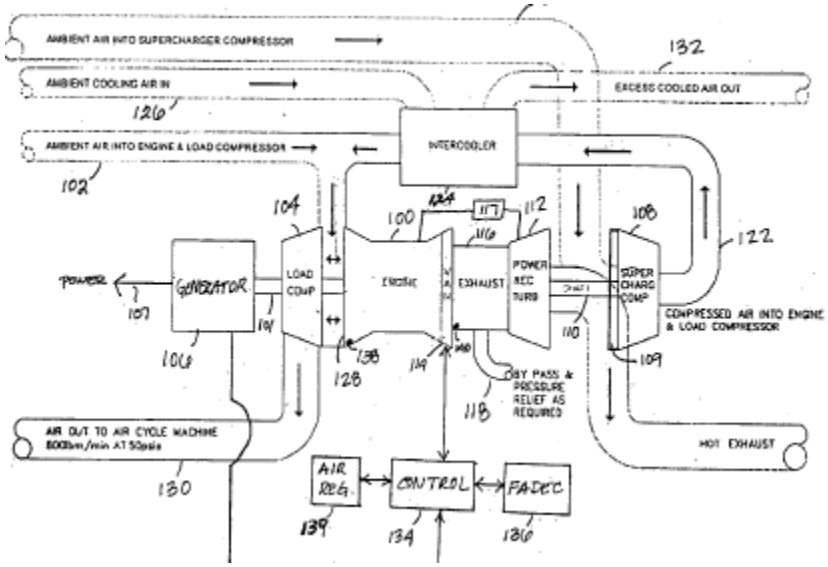
F02C 6/12

Turbochargers, i.e. plants for augmenting mechanical power output of internal-combustion piston engines by increase of charge pressure

Definition statement

This subclass/group covers:

Either turbochargers and details thereof if not covered elsewhere or plants/cycles with supercharging apparatuses or processes



taken from US2006016196

References relevant to classification in this group

This subclass/group does not cover:

Seals	F01D 11/00
Variable geometry turbines	F01D 17/14, F01D 17/16
Bearings	F01D 25/16
Lubrication	F01D 25/18
Casings	F01D 25/24

Special rules of classification within this group

Use F05D 2220/40 for classifying additional information

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

VGT	variable turbine geometry

F02C 6/18

Using the waste heat of gas-turbine plants outside the plants themselves, e.g. gas-turbine power heat plants (using waste heat as source of energy for refrigeration plants F25B27/02; using the waste heat of a gasturbine for steam generation or in a steam cycle see F01K23/10)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Using the waste heat of a gasturbine for steam generation or in a steam cycle	F01K 23/10
Using waste heat as source of energy for refrigeration plants	F25B 27/02

Special rules of classification within this group

Do not classify here if gas turbine is just an otherwise unspecific feature of a HRSG system, consider F01K and subgroups instead

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

HRSG	heat recovery steam generator

F02C 7/00

Features, components parts, details or accessories, not provided for in, or of interest apart from groups F02C1/00 to F02C6/00; air intakes for jet-propulsion plants (controlling F02C9/00)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Controlling or regulation of gas turbine plants	F02C 9/00

F02C 7/05

having provisions for obviating the penetration of damaging objects or particles

Relationship between large subject matter areas

Separation of particles from gases in general: B01D 45/00

F02C 7/22

Fuel supply systems

References relevant to classification in this group

This subclass/group does not cover:

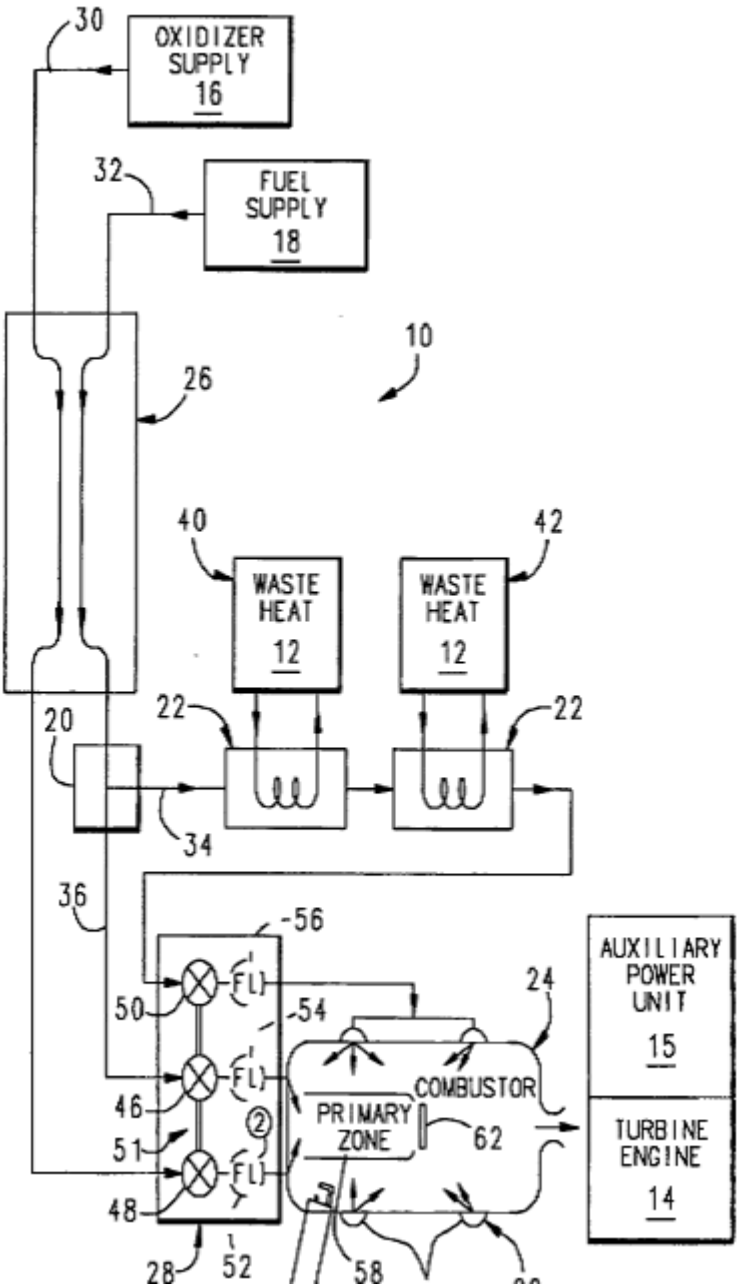
Injectors, mixing or premixing devices	F23D 14/00

F02C 7/224

Heating fuel before feeding to the burner

Definition statement

This subclass/group covers:
Illustrative example of subject matter classified in this group: US6105370



Relationship between large subject matter areas

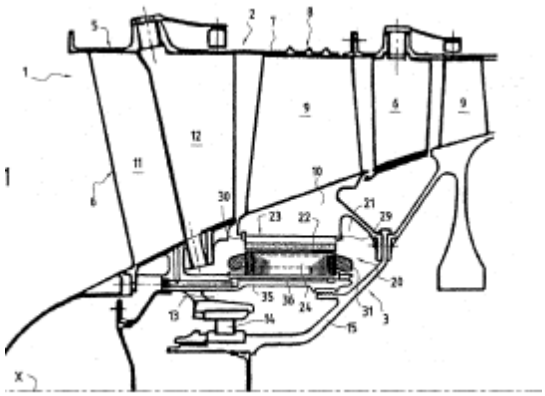
Relates to F02C 7/08, F02C 7/10 and F02C 7/105 or F02C 7/12, i.e. cooling potential of the fuel is used for cooling purposes in other parts of the engine;

F02C 7/268

Starting drives for the rotor, [N: acting directly on the rotor of the gas turbine to be started]

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 7/268



taken from EP1382802

F02C 7/27

Fluid drives (turbine starters F02C7/277)

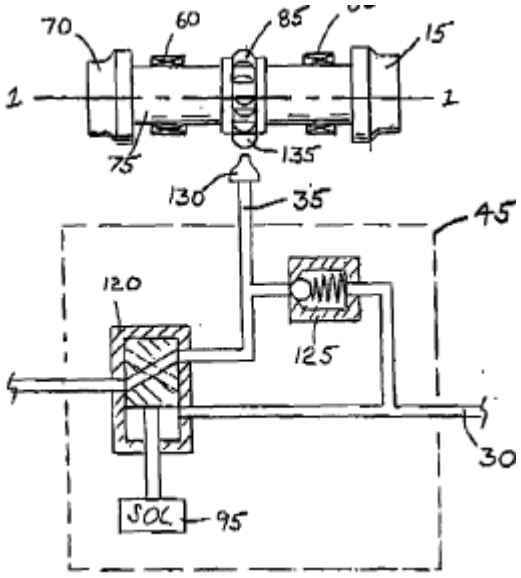
Informative references

Attention is drawn to the following places, which may be of interest for search:

Turbine starters	F02C 7/277

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 7/27



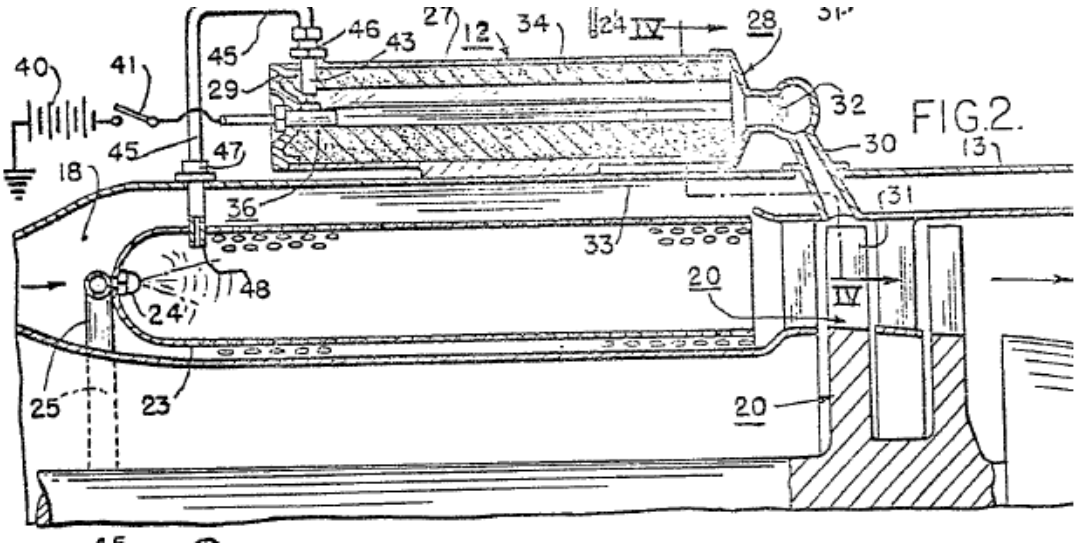
Taken from EP1298298

F02C 7/272

generated by cartridges

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 7/272



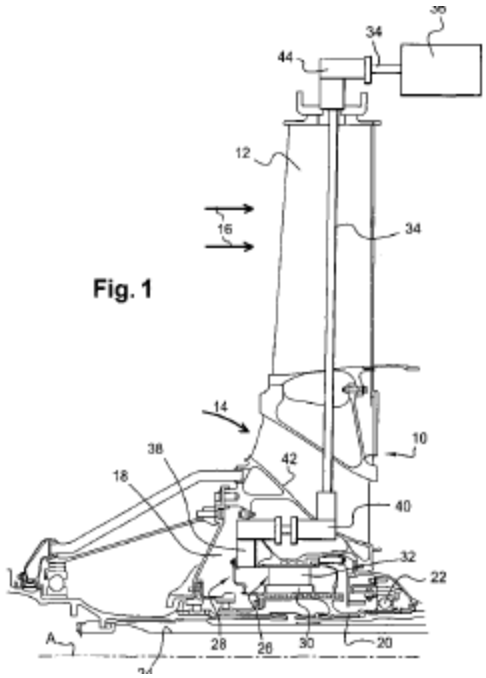
Taken from GB889105

F02C 7/275

Mechanical drives

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 7/275



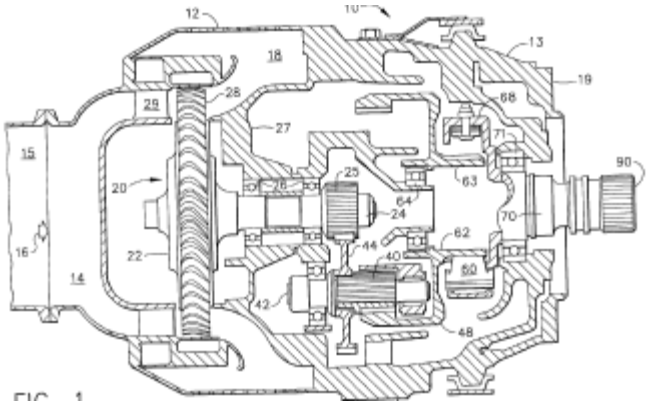
taken from EP1811132

F02C 7/277

the starter being a [N: separate] turbine

Special rules of classification within this group

Illustrative example of subject matter classified in F02C 7/277



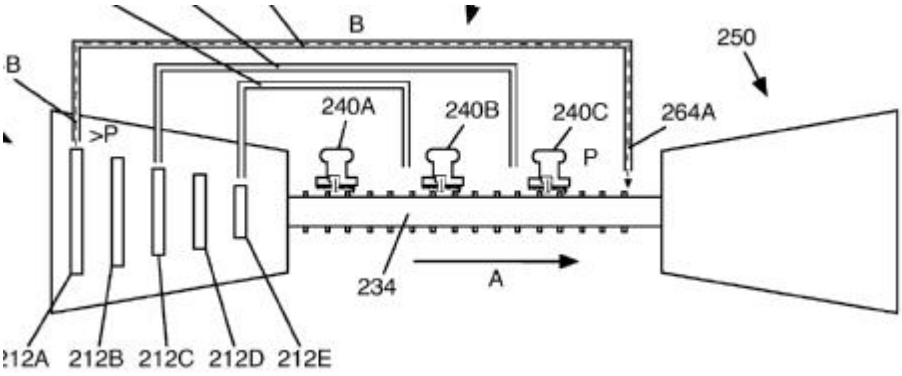
taken from US2001028845

F02C 7/28

Arrangement of seals

Definition statement

This subclass/group covers:
Arrangement of seals in a gas or steam turbine in a macroscopic sense



taken from US2010284782

Relationship between large subject matter areas

For details of seals in gas turbine applications: F01D 11/00.

Sealing in general: F16J.

F02C 7/30

Preventing corrosion [N: or unwanted deposits] in gas-swept spaces

References relevant to classification in this group

This subclass/group does not cover:
If related to blade treatment F01D 5/286

F02C 7/32

Arrangement, mounting, or driving, of auxiliaries such as e.g. fuel or lubricant pumps, electrical generators or reduction gearboxes

Relationship between large subject matter areas

Gearboxes	F16H

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

PTO	Power Take Off

F02C 9/00

Controlling gas-turbine plants, controlling fuel supply in air-breathing jet-propulsion plants (controlling air intakes F02C7/057; controlling turbines F01D; controlling compressors F04D27/00 ; controlling in general G05)

Definition statement

This subclass/group covers:

Controlling gas-turbine plants, controlling fuel supply in air- breathing jet-propulsion plants

Relationship between large subject matter areas

Controlling air intakes; F02C 7/057

Controlling compressors; F04D 27/00

Monitoring of gas turbines/performance monitoring; G05B, G05D

Informative references

Attention is drawn to the following places, which may be of interest for search:

Modelling of gas turbines	G05B 17/00