

F02K

JET-PROPULSION PLANTS (arrangement or mounting of jet-propulsion plants in land vehicles or vehicles in general B60K; arrangement or mounting of jet-propulsion plants in waterborne vessels B63H; controlling aircraft attitude, flight direction or altitude by jet reaction B64C; arrangement or mounting of jet-propulsion plants in aircraft B64D; plants characterised by the power of the working fluid being divided between jet-propulsion and another form of propulsion, e.g. propeller, F02B, C; features of jet-propulsion plants common to gas-turbine plants, air intakes or fuel supply control of air-breathing jet-propulsion plants F02C)

Definition statement

This subclass/group covers:

Jet propulsion plants

References relevant to classification in this subclass

This subclass/group does not cover:

Arrangement or mounting of jet-propulsion plants in land vehicles or vehicles in general	B60K
Arrangement or mounting of jet-propulsion plants in waterborne vessels	B63H
Controlling aircraft attitude, flight direction or altitude by jet reaction	B64C
Arrangement or mounting of jet-propulsion plants in aircraft	B64D
Plants characterised by the power of the working fluid being divided between jet propulsion and another form of propulsion, e.g. propeller	F02B or F02C
Features of jet-propulsion plants common to gas-turbine plants, air intakes or fuel supply control of air-breathing jet-propulsion plants	F02C

Special rules of classification within this subclass

In this subclass the Indexing Code scheme [F05D](#) 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

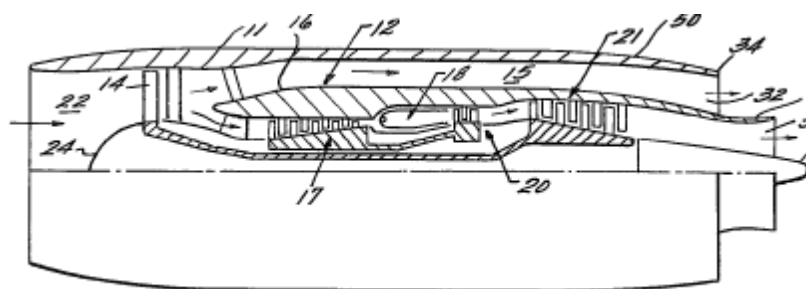
F02K 1/00

Plants characterised by the form or arrangement of the jet pipe or nozzle; Jet pipes or nozzles peculiar thereto (rocket nozzles F02K9/97)

Definition statement

This subclass/group covers:

Plants characterised by the form or arrangement of the jet pipe or nozzle, jet pipes or nozzles peculiar thereto.



taken from US3881315

Informative reference

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

Rocket nozzles	F02K 9/97
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F02K 1/002

[N: with means to modify the direction of thrust vector (F02K1/54 takes precedence; thrust vectoring of rockets F02K9/80 ; aerodynamic vectoring surfaces B64C)]

Informative references

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

Aerodynamic vectoring surfaces	B64C
Thrust vectoring of rockets	F02K 9/80

Special rules of classification within this subgroup

[F02K 1/54](#) takes precedence

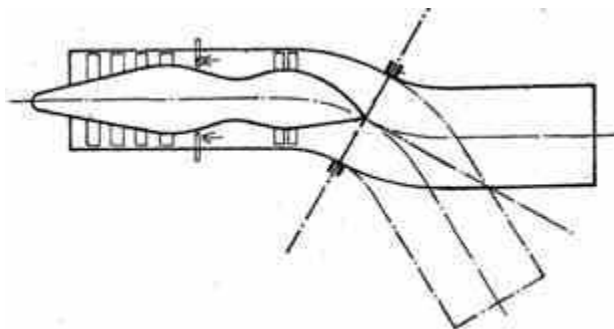
F02K 1/004

[N: by using one or more swivable nozzles rotating about their own axis]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from DE1049711

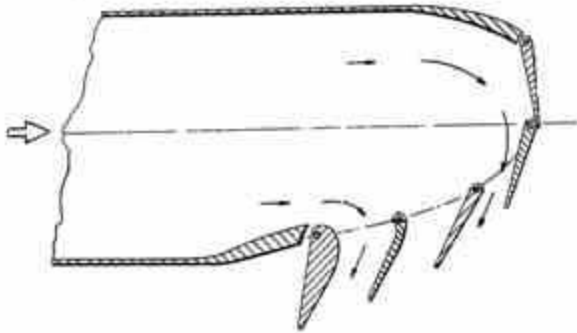
F02K 1/006

[N: within one plane only]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US3258206

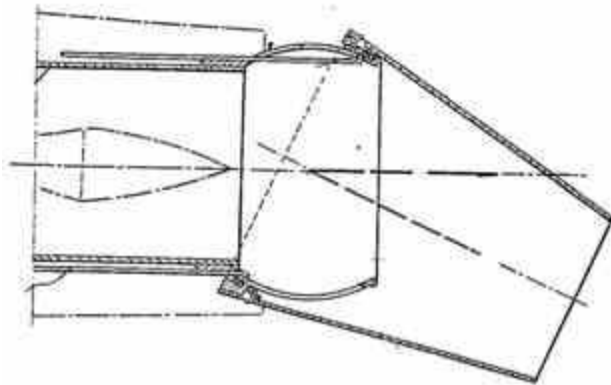
F02K 1/008

[N: in any rearward direction]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from FR1025827

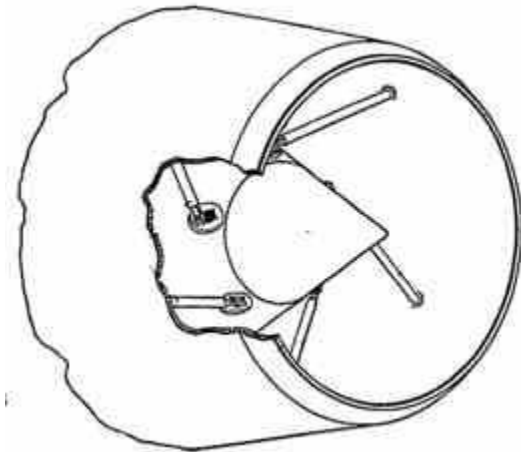
F02K 1/04

Mounting of an exhaust cone in the jet pipe

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from GB812513

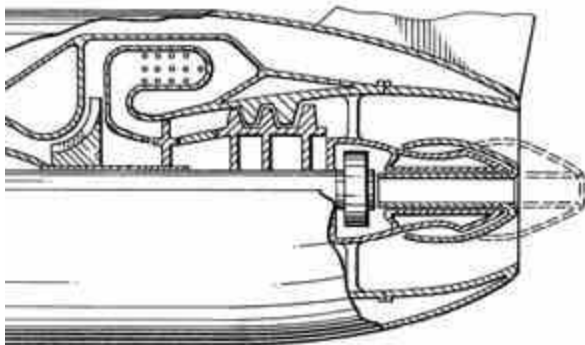
F02K 1/08

by axially moving or transversely deforming an internal member, e.g. the exhaust cone

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US4244294

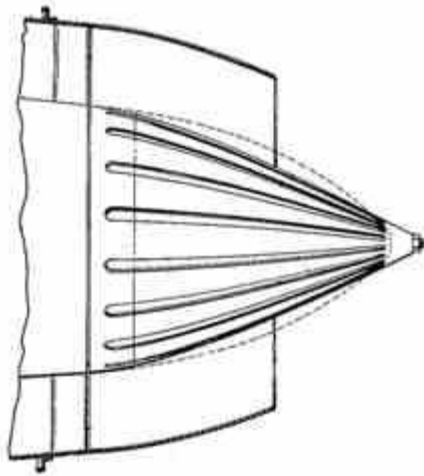
F02K 1/085

by transversely deforming an internal member

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US2641104

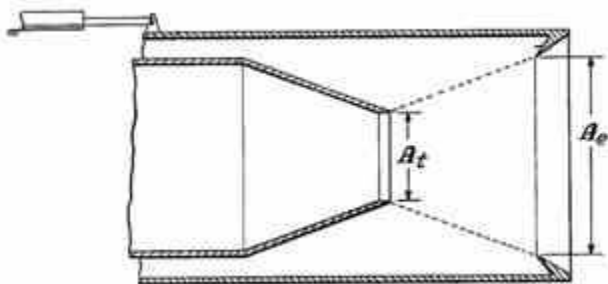
F02K 1/09

**by axially moving an external member, e.g. a shroud
(F02K1/12 takes precedence)**

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US3138921

Special rules of classification within this subgroup

[F02K 1/12](#) takes precedence

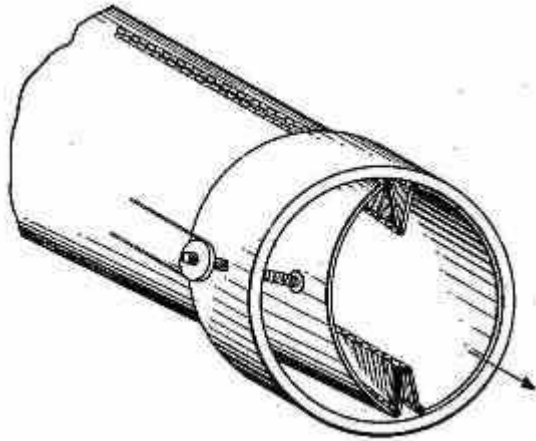
F02K 1/10

by distorting the jet pipe or nozzle

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US2593420

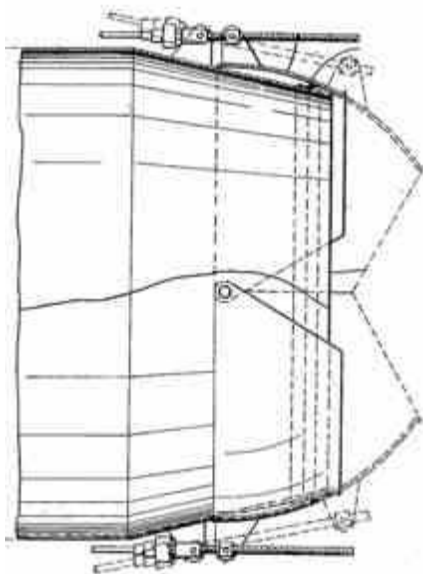
F02K 1/11

by means of pivoted eyelids

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US2637972

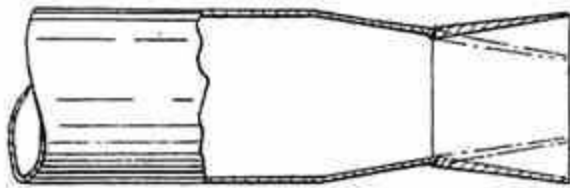
F02K 1/1207

[N: of one series of flaps hinged at their upstream ends on a fixed structure (F02K1/1215 to F02K1/1276 take precedence)]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from GB750307

Special rules of classification within this subgroup

[F02K 1/1215](#) to [F02K 1/1276](#) take precedence

F02K 1/1215

[N: of two series of flaps, the upstream series having its flaps hinged at their upstream ends on a fixed structure, and the downstream series having its flaps hinged at their downstream ends on a fixed structure]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from GB871274

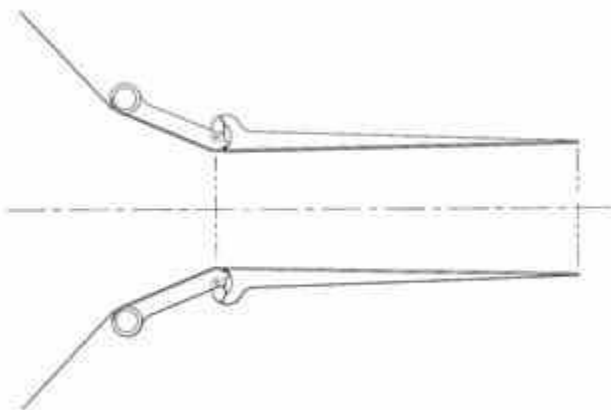
F02K 1/1223

[N: of two series of flaps, the upstream series having its flaps hinged at their upstream ends on a fixed structure and the downstream series having its flaps hinged at their upstream ends on the downstream ends of the flaps of the upstream series]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US6352211

F02K 1/123

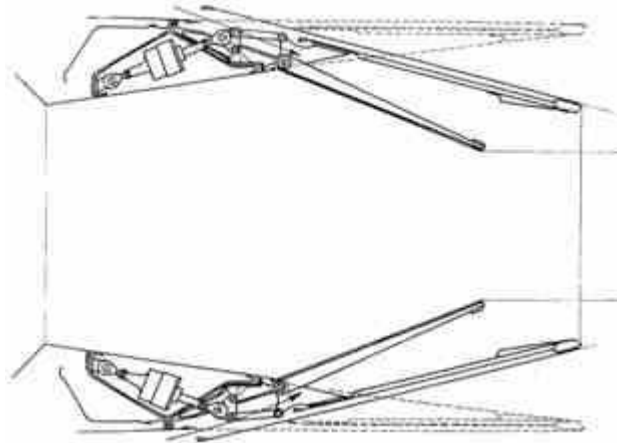
[N: of two series of flaps, both having their flaps hinged at

their upstream ends on a fixed structure]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from FR1602540

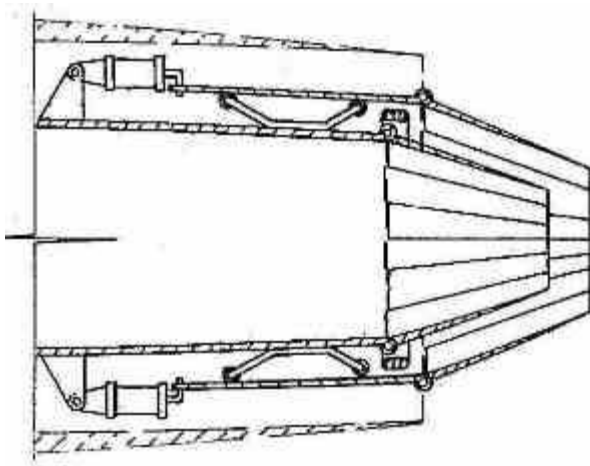
F02K 1/1238

[N: of two series of flaps, the upstream series having its flaps hinged at their upstream ends on a fixed structure and the downstream series having its flaps hinged at their upstream ends on a substantially axially movable structure]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US2870600

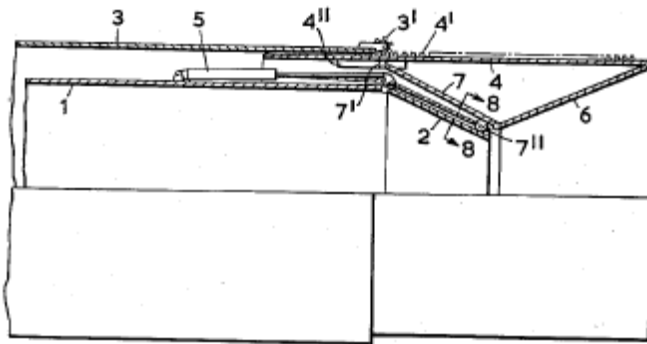
F02K 1/1246

[N: of two series of flaps, the upstream series having its flaps hinged at their upstream ends on a fixed structure and the downstream series having its flaps hinged at their downstream ends on a substantially axially movable structure]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US2974481

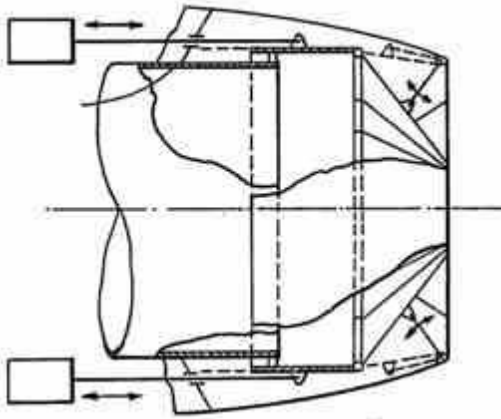
F02K 1/1261

[N: of one series of flaps hinged at their upstream ends on a substantially axially movable structure]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US5273213

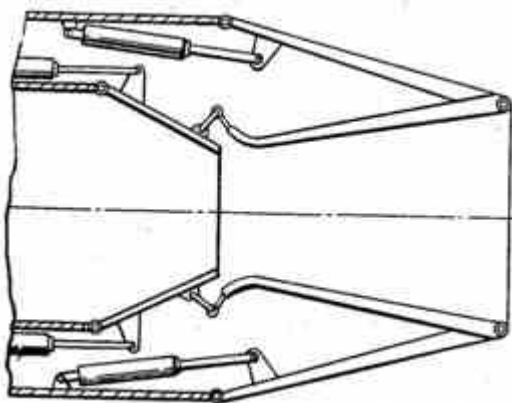
F02K 1/1269

[N: of three series of flaps, the upstream series having its flaps hinged at their upstream ends on a fixed structure and the internal downstream series having its flaps hinged at their downstream ends on the downstream ends of the flaps of the external downstream series hinged on a fixed structure at their upstream ends]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



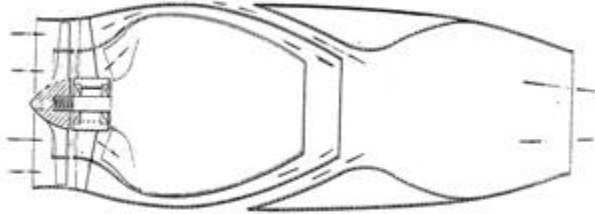
F02K 1/36

having an ejector

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



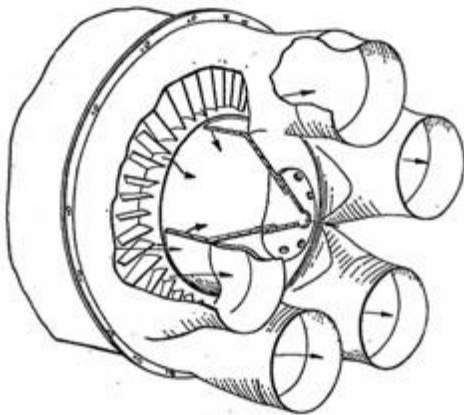
F02K 1/40

Nozzles having means for dividing the jet into a plurality of partial jets or having an elongated cross-section outlet

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



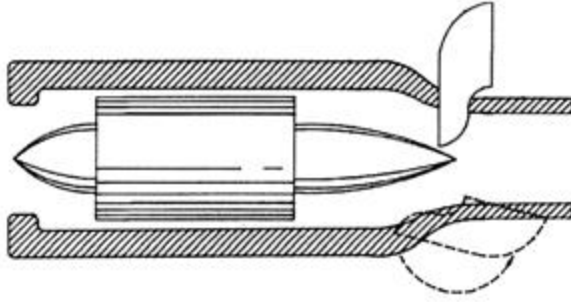
F02K 1/42

the means being movable into an inoperative position

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



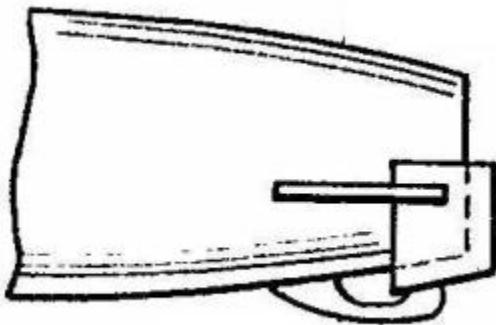
F02K 1/44

Nozzles having means, e.g. a shield, reducing sound radiation in a specified direction (F02K1/40 takes precedence)

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



Special rules of classification within this subgroup

[F02K 1/40](#) takes precedence

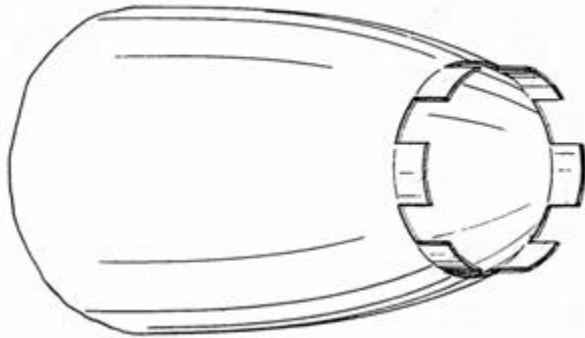
F02K 1/46

Nozzles having means for adding air to the jet or for augmenting the mixing region between the jet and the ambient air, e.g. for silencing (F02K1/28, F02K1/36, F02K1/38 take precedence)

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



Special rules of classification within this subgroup

[F02K 1/28](#), [F02K 1/36](#), [F02K 1/38](#) take precedence

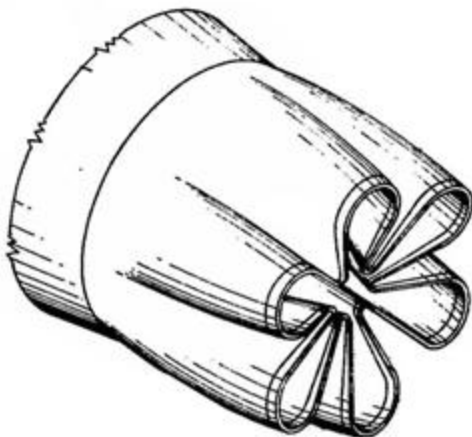
F02K 1/48

Corrugated nozzles

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



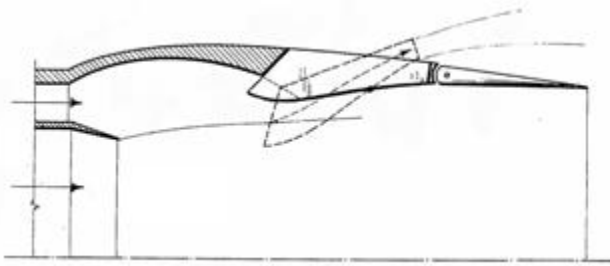
F02K 1/50

Deflecting outwardly a portion of the jet by retractable scoop-like baffles

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



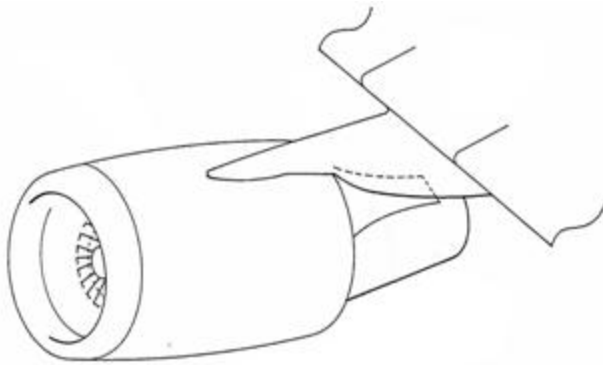
F02K 1/52

Nozzles specially constructed for positioning adjacent to another nozzle or to a fixed member, e.g. fairing

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



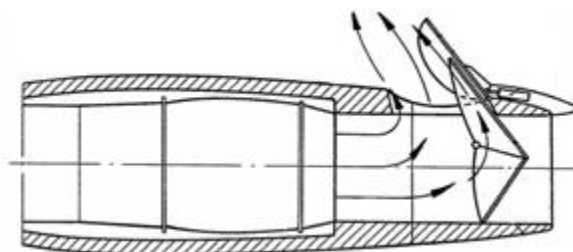
F02K 1/563

[N: in specified direction, e.g. to obviate its reinjection]

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



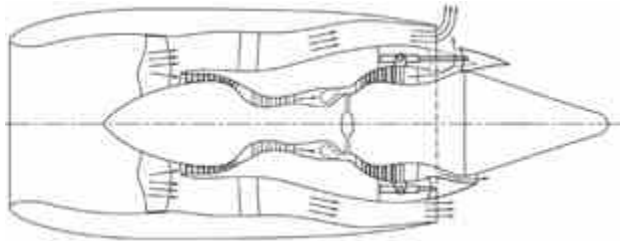
F02K 1/566

by blocking the rearward discharge by means of a translatable member

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



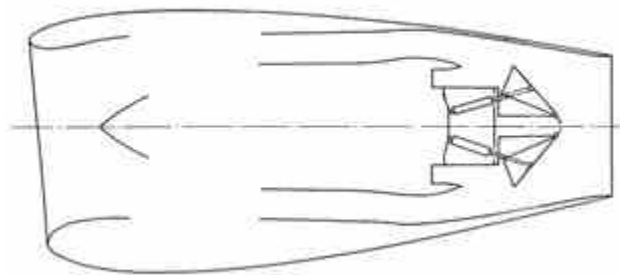
F02K 1/58

Reversers mounted on the inner cone or the nozzle housing or the fuselage

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



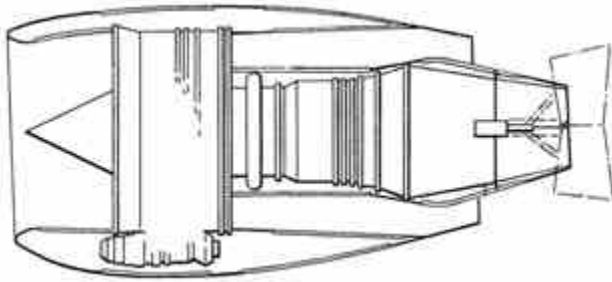
F02K 1/60

by blocking the rearward discharge by means of pivoted eyelids or clamshells, e.g. target-type reversers

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



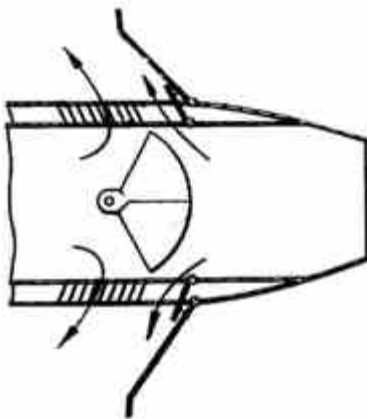
F02K 1/605

the aft end of the engine cowling being movable to uncover openings for the reversed flow

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



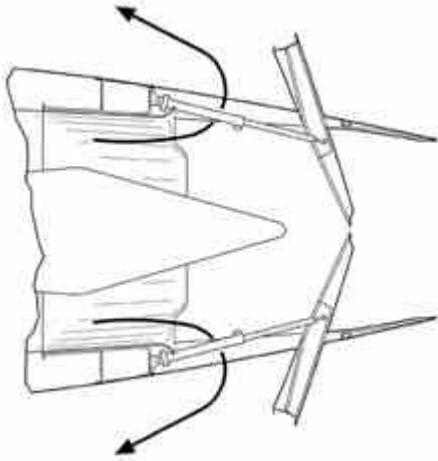
F02K 1/62

by blocking the rearward discharge by means of flaps

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



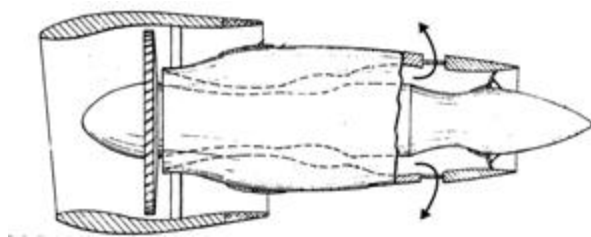
F02K 1/625

the aft end of the engine cowling being movable to uncover openings for the reversed flow

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



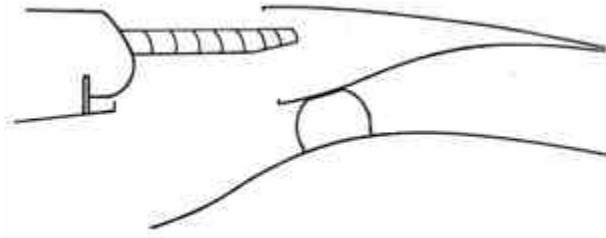
F02K 1/645

using inflatable diaphragms

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



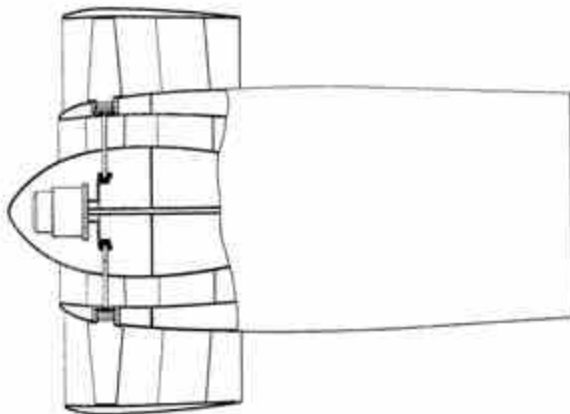
F02K 1/66

using reversing fan blades

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



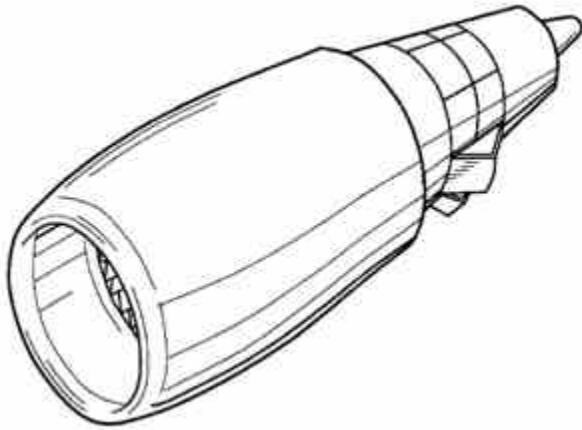
F02K 1/68

Reversers mounted on the engine housing downstream of the fan exhaust section

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



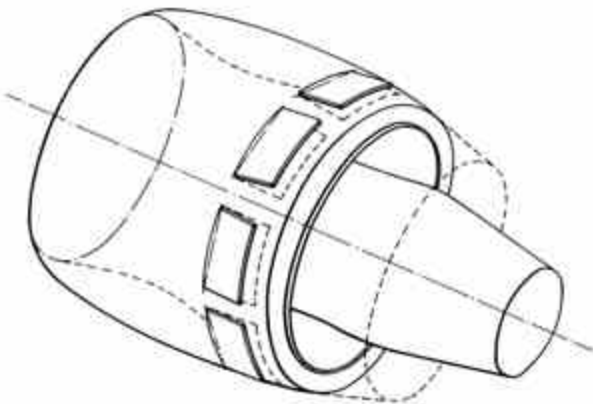
F02K 1/70

using thrust reverser flaps or doors mounted on the fan housing

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



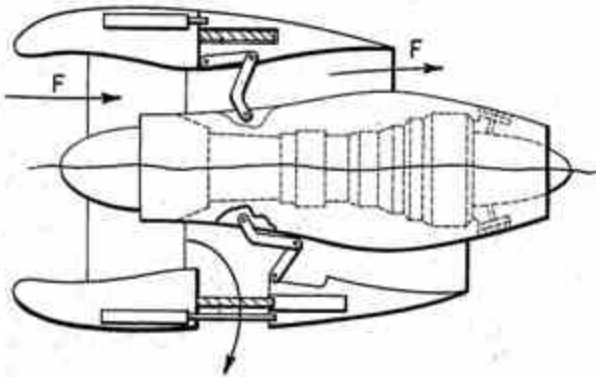
F02K 1/72

the aft end of the fan housing being movable to uncover openings in the fan housing for the reversed flow

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



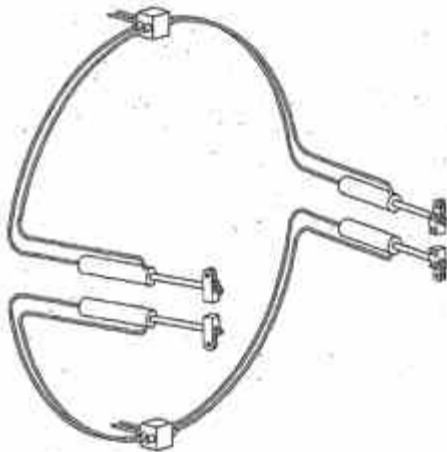
F02K 1/76

Control or regulation of thrust reversers

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



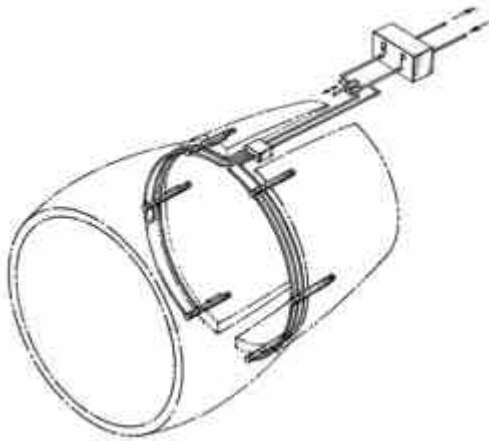
F02K 1/763

with actuating systems or actuating devices; Arrangement of actuators for thrust reversers

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



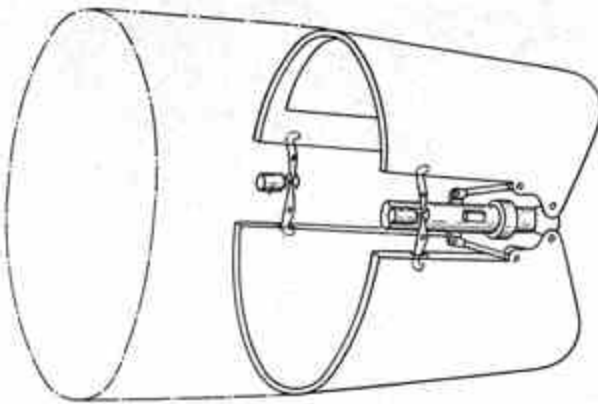
F02K 1/766

with blocking systems or locking devices, arrangement of locking devices for thrust reversers

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



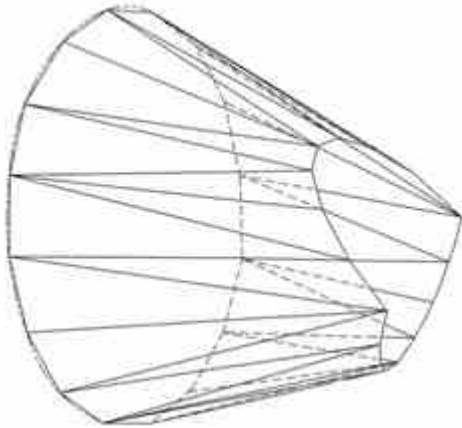
F02K 1/78

Other construction of jet pipes

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



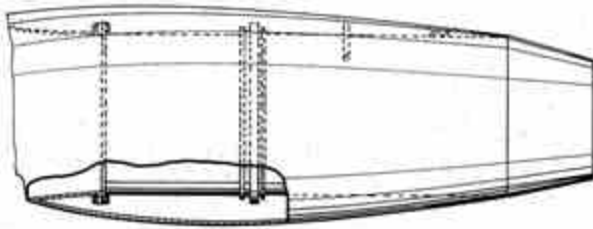
F02K 1/80

Couplings or connections

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



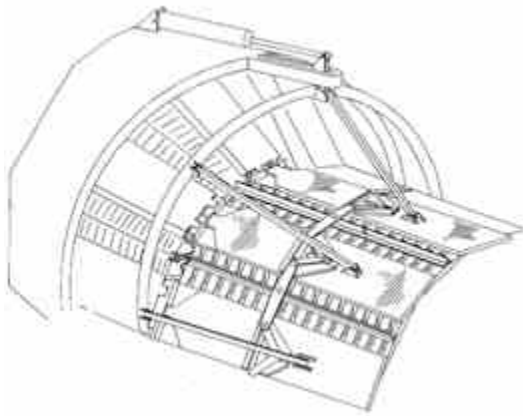
F02K 1/805

Sealing devices therefor, e.g. for movable parts of jet pipes or nozzle flaps

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



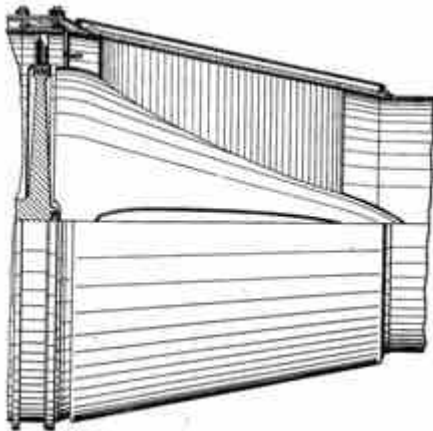
F02K 1/82

Jet pipe walls, e.g. liners

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



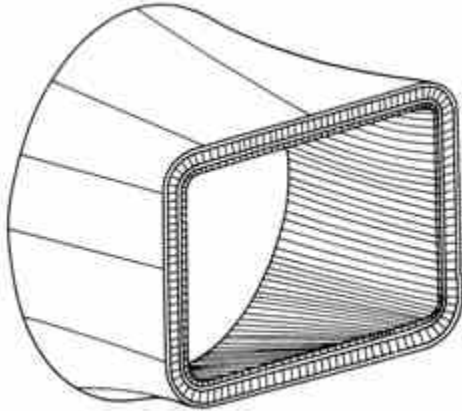
F02K 1/822

Heat insulating structures or liners, cooling arrangements, e.g. post combustion liners; infra-red radiation suppressors

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



Informative reference

Wall structures in combustion chambers	F23R 3/002
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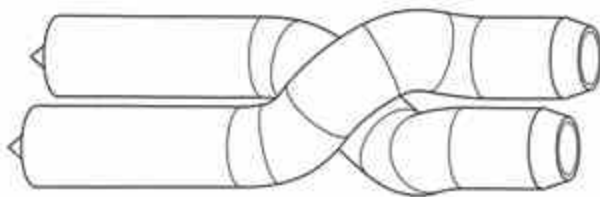
F02K 1/825

Infra-red radiation suppressors

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



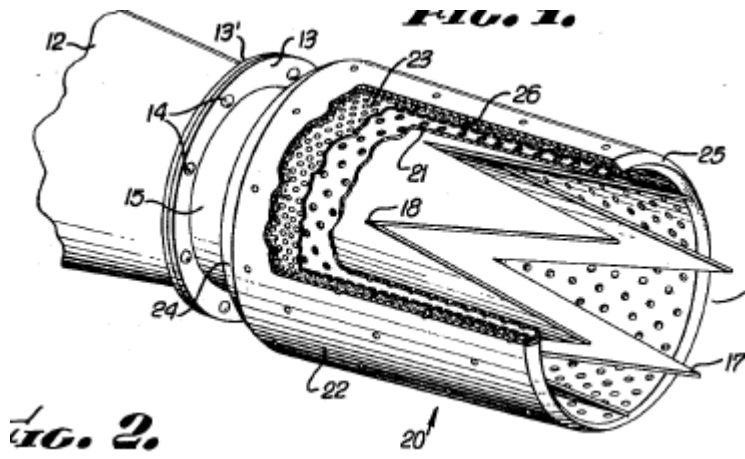
F02K 1/827

Sound absorbing structures or liners

Definition statement

This subclass/group covers:

Illustrative example of subject matter classified in this group.



taken from US3215172

Informative reference

Acoustic liners	G10G 11/00
Noise suppression in air intakes	F02C 7/045

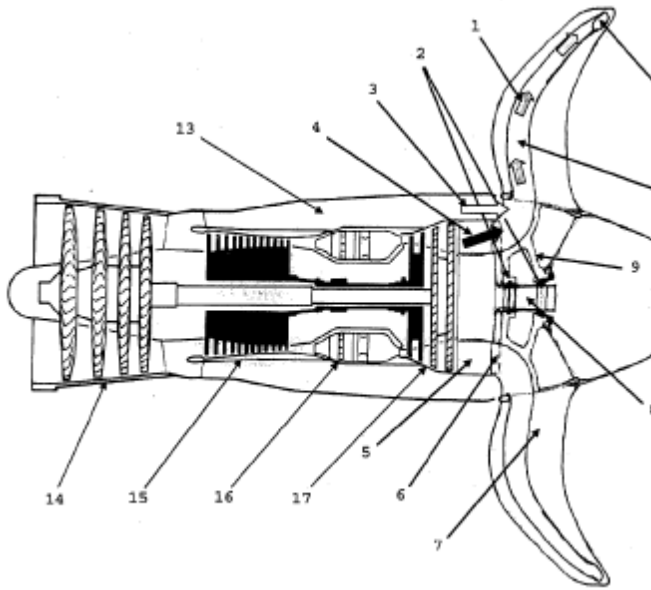
F02K 3/00

Plants including a gas turbine driving a compressor or a ducted fan

Definition statement

This subclass/group covers:

Mainly ducted gas turbine plants with ducted fans, whereby the main flow which is only slightly compressed by a fan or the like bypasses the core engine; Heating of the bypass flow; Afterburners.



taken from DE102009036011

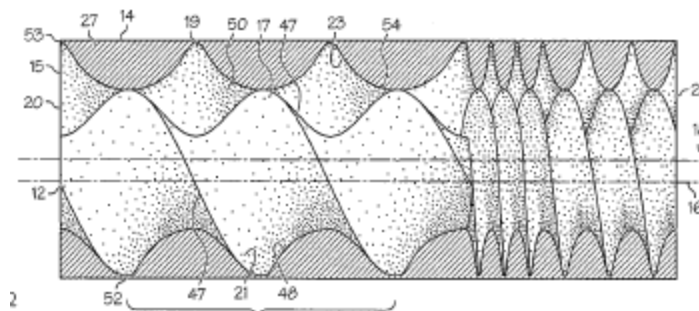
F02K 5/00

Plants including an engine, other than a gas turbine, driving a compressor or a ducted fan

Definition statement

This subclass/group covers:

Plants including an engine, other than a gas turbine, driving a compressor or a ducted fan.



taken from EP1798371

F02K 7/00

Plants in which the working fluid is used in a jet only, i.e. the plants not having a turbine or other engine driving a compressor or a ducted fan; Control thereof (rocket-engine plants F02K9/00)

Definition statement

This subclass/group covers:

Plants in which the working fluid is used in a jet only, i.e. the plants not having a turbine or other engine driving a compressor or a ducted fan; Control thereof

Synonyms and Keywords

In patent documents the following abbreviations are often used:

Ram jet	Compression of the working fluid caused by the engine's forward motion without a rotary compressor
Scram jet	Supersonic combustion ram jet

F02K 9/00

Rocket- engine plants, i.e. plants carrying both fuel and oxidant therefor; Control thereof (chemical composition of propellants C06B, C06D) [N: launching apparatus for rockets F41F3/04 ; explosive charges, ammunition F42B]

Definition statement

This subclass/group covers:

Rocket-engine plant related aspects such as solid and liquid propellant rocket plants; Constructional details of the charges; Supply and feeding of propellant; Starting and restarting.

Informative reference

Cosmonautic vehicles	B64G 1/00
Chemical composition of propellants	C06B , C06D
Launching apparatus for rockets	F41F 3/04
Explosive charges, ammunition	F42B

F02K 99/00

Subject matter not provided for in other groups of this

subclass