

F15D

FLUID DYNAMICS, i.e. METHODS OR MEANS FOR INFLUENCING THE FLOW OF GASES OR LIQUIDS

Definition statement

This place covers:

Means and methods not provided for in other classes, for influencing the flow of fluids relative to constraining surfaces and after leaving these surfaces, e.g. producing or removing turbulence, deflecting jets, guiding flow through bends in conduits, affecting distribution of fluid in a conduit, reducing fluid friction.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Methods and means for influencing the flow of liquids, applicable to ships or other waterborne vessels	B63B , B63B 1/00 , B63B 3/00 , B63B 21/66
Influencing air flow over aircraft surfaces by affecting boundary layer flow	B64C 21/00
Influencing air flow over aircraft surfaces not otherwise provided for	B64C 23/00
Fluid-circuit elements	F15C

Informative references

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

Nozzles, spray heads	B05B
Hydraulic engineering	E02B

F15D 1/00

Influencing flow of fluids

Definition statement

This place covers:

Means and methods not provided for in other classes, for influencing the flow of fluids, i.e. the flow of liquids or gases relative to constraining surfaces and after leaving these surfaces, e.g. producing or removing turbulence, deflecting jets, guiding flow through bends in conduits, affecting distribution of fluid in a conduit, reducing fluid friction.

F15D 1/0005

{Baffle plates}

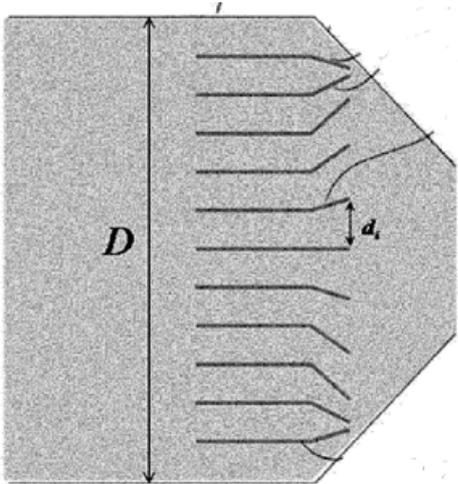
Definition statement

This place covers:

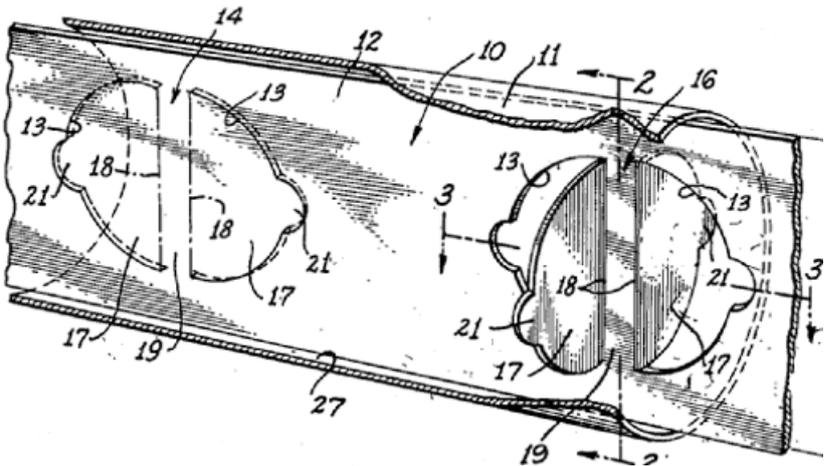
Flow directing or obstructing plates, vanes or panels used to direct or modify a flow of fluid.

Illustrative examples of subject matter classified in this place:

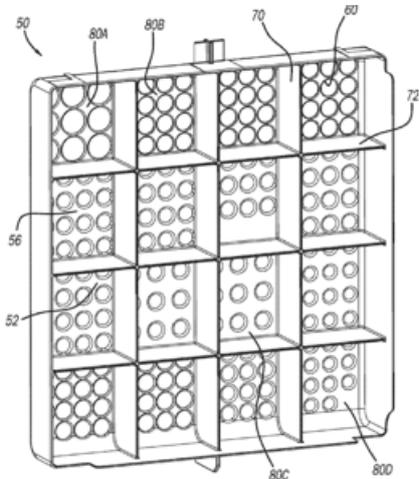
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F15D 1/001

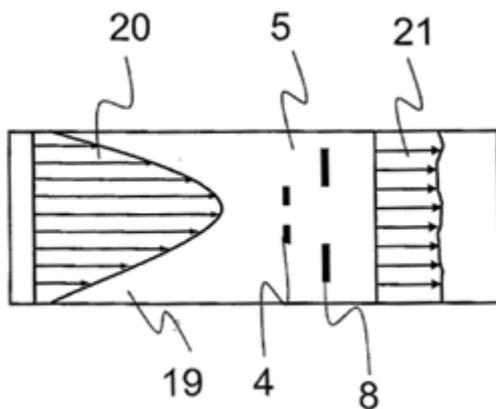
{Flow of fluid from conduits such as pipes, sleeves, tubes, with equal distribution of fluid flow over the evacuation surface}

Definition statement

This place covers:

Means for equalising the velocity distribution across the cross section of a fluid conduit.

Illustrative example of subject matter classified in this place:



F15D 1/0015

{Whirl chambers, e.g. vortex valves}

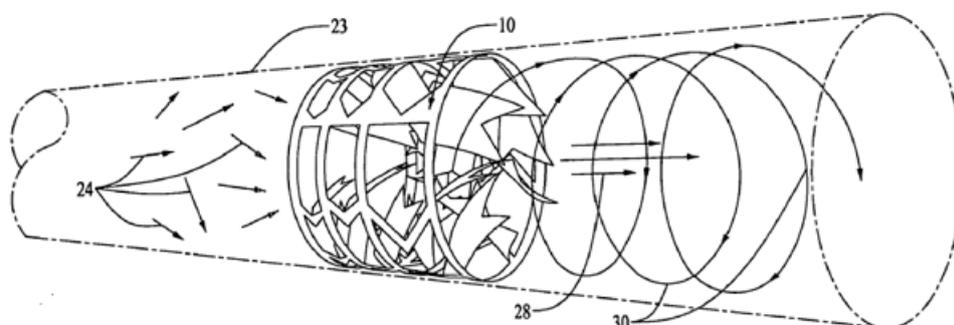
Definition statement

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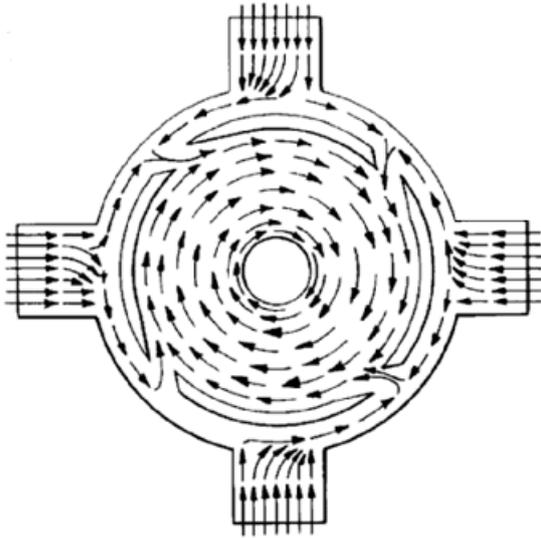
A fluid flow influencing device situated between an inlet and an outlet, the device causing the fluid to form a swirl or vortex, without the need for moving parts to create the swirl or vortex.

Illustrative examples of subject matter classified in this place:

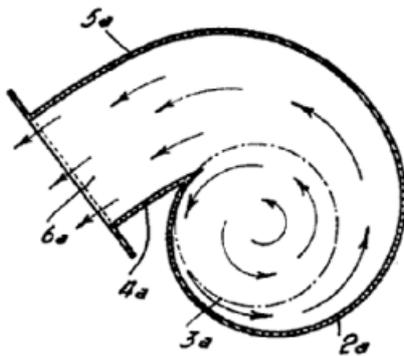
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Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- whirl
- swirl
- vortex, vortices, vorticity
- eddy, eddies

F15D 1/002

{by influencing the boundary layer}

Special rules of classification

Influencing boundary layer in pipes is classified in [F15D 1/06](#), whereas details of the boundary influencing means may be further classified in [F15D 1/002](#) when appropriate.

Influencing the boundary layer around bodies of solid material is classified in [F15D 1/12](#), whereas details of the boundary influencing means may be further classified in [F15D 1/002](#) when appropriate.

F15D 1/04

Arrangements of guide vanes in pipe elbows or duct bends; Construction of pipe conduit elements for elbows with respect to flow, e.g. for reducing losses of flow

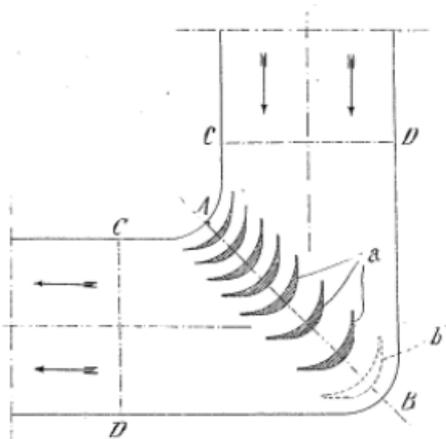
Definition statement

This place covers:

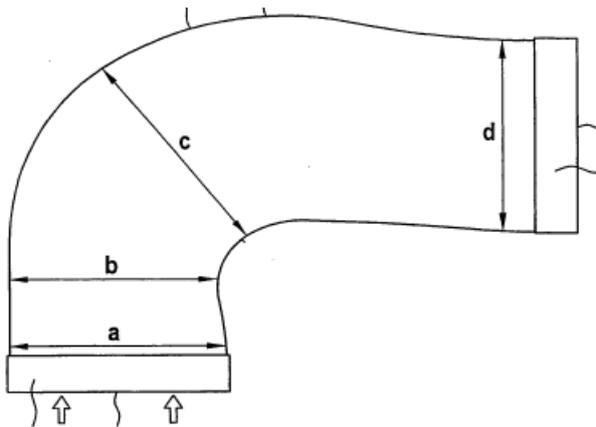
Guiding elements arranged within pipe elbows or duct bends; the construction of a pipe conduit element for elbows (e.g. tee, wye), which typically reduces the flow losses.

Illustrative examples of subject matter classified in this place:

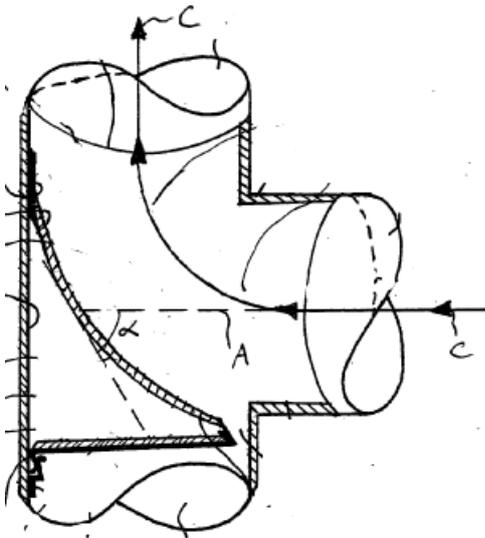
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F15D 1/06

by influencing the boundary layer

Special rules of classification

Complete classification will include [F15D 1/002](#) for further details of the boundary layer influencing means and [F15D 1/0085](#) when appropriate for the method of making the surface for influencing the boundary layer.

F15D 1/08

of jets leaving an orifice

References

Informative references

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

Nozzles or outlets with means for mechanically breaking-up or deflecting the jet	B05B , e.g. B05B 1/26
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F15D 1/10

around bodies of solid material

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Rudders	B63H 25/38
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F15D 1/12

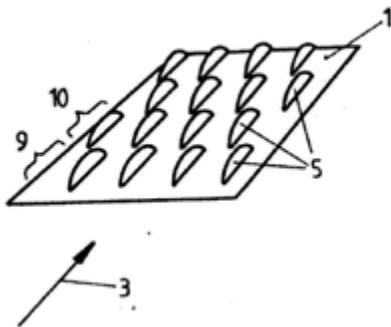
by influencing the boundary layer

Definition statement

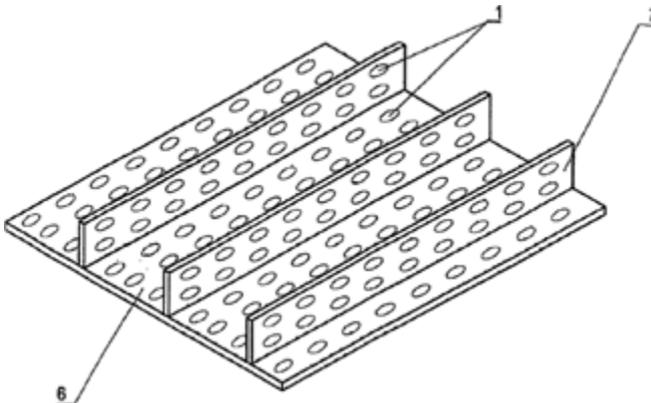
This place covers:

Illustrative examples of subject matter classified in this place.

1.



2.



References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Golf balls having dimples	A63B 37/0004
Influencing air-flow over aircraft surfaces by affecting boundary-layer flow using, e.g. riblets	B64C 21/10

Special rules of classification

Complete classification will include [F15D 1/002](#) for further details of the boundary layer influencing means and [F15D 1/0085](#) when appropriate for the method of making the surface for influencing the boundary layer.

F15D 1/14

Diverting flow into alternative channels

References

Informative references

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

Hydraulic engineering	E02B
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