

**F02F**

**CYLINDERS, PISTONS OR CASINGS, FOR COMBUSTION ENGINES;  
ARRANGEMENTS OF SEALINGS IN COMBUSTION ENGINES (specially adapted  
for rotary-piston or oscillating-piston internal-combustion engines [F02B](#);  
specially adapted for gas-turbine plants [F02C](#); specially adapted for jet-  
propulsion plants [F02K](#))**

**F02F 1/00**

**Cylinders; Cylinder heads (in general [F16J](#))**

**Definition statement**

*This place covers:*

Cylinders and cylinder heads for combustion engines

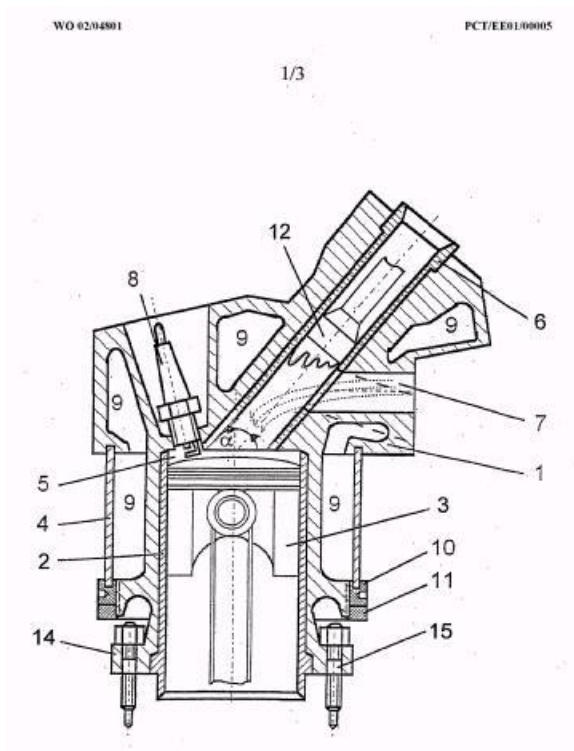
**References****Limiting references**

*This place does not cover:*

Cylinders and cylinder heads in general	<a href="#">F16J</a>
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**F02F 1/002****{Integrally formed cylinders and cylinder heads}****Definition statement***This place covers:*

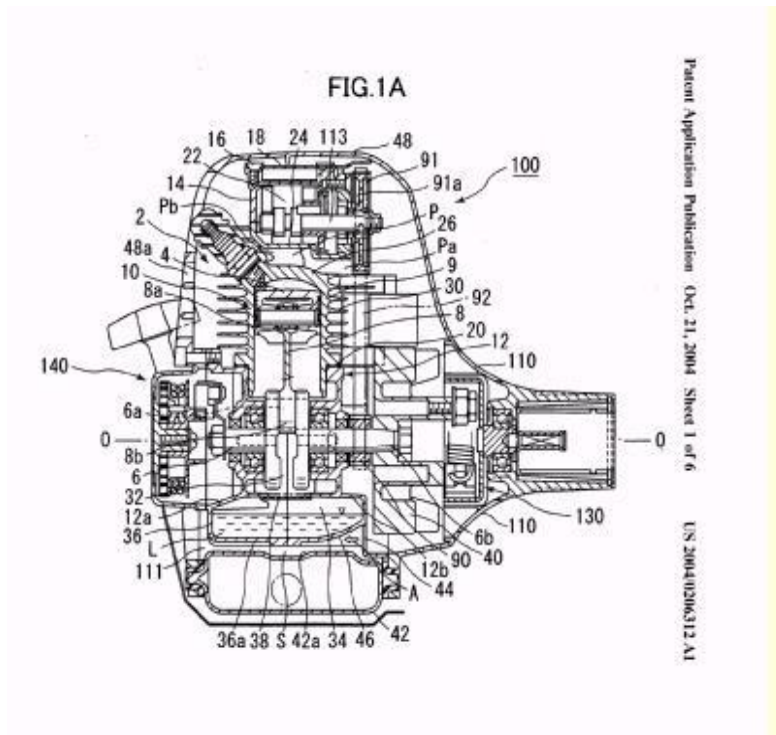
All applications of a single piece forming the cylinder and the cylinder head.

**F02F 1/02**having cooling means (cylinder heads [F02F 1/26](#))**References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cooling of cylinders or cylinder heads in general	<a href="#">F01P 1/02</a> and <a href="#">F01P 3/02</a>
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**F02F 1/04****for air cooling****Definition statement***This place covers:*

Means for air cooling of cylinder heads

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

Air cooling of cylinders and cylinder heads

[F01P 1/02](#)

**F02F 1/08**

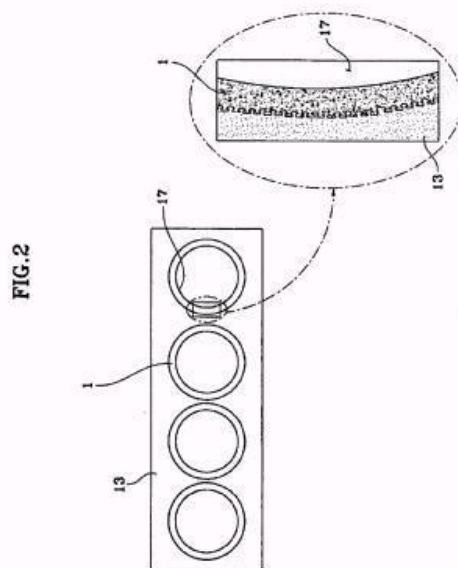
**running-liner and cooling-part of cylinder being different parts or of different material**

**Definition statement**

*This place covers:*

Running-liner and cooling-part of cylinder being different parts or of different material:

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Only for air cooled engines, e.g. different materials used for the liners and the cooling fins.

**F02F 1/10**

**for liquid cooling**

**References****Informative references**

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

Liquid cooling of cylinders and cylinder heads	<a href="#">F01P 3/02</a>
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## F02F 1/102

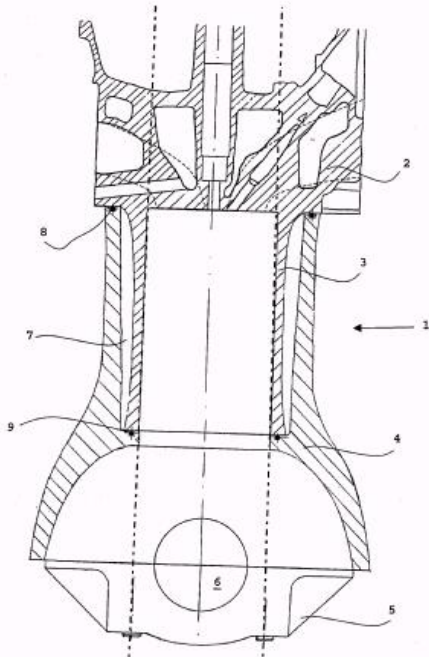
{Attachment of cylinders to crankcase}

### Definition statement

This place covers:

ZEICHNUNGEN SEITE 1

Nummer: DE 102 03 299 A1  
 Int. Cl. 7: F 02 F 100  
 Offenlegungstag: 4. September 2003



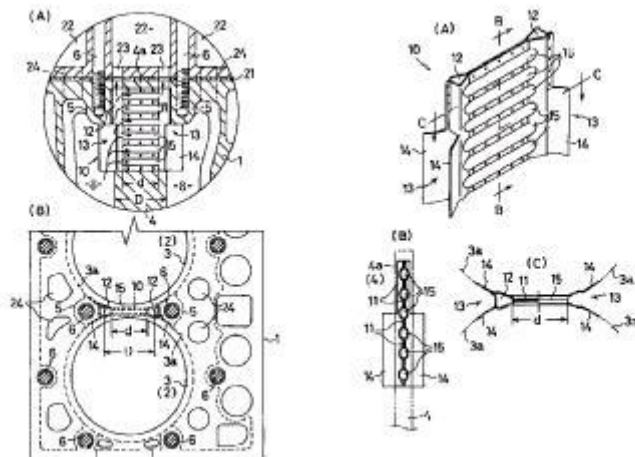
## F02F 1/108

{Siamese-type cylinders, i.e. cylinders cast together}

### Definition statement

This place covers:

Siamese-type cylinders, i.e. cylinders cast together:



**References**

**Informative references**

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

Arrangement for cooling cylinders or cylinder heads	<a href="#">F01P 3/02</a>
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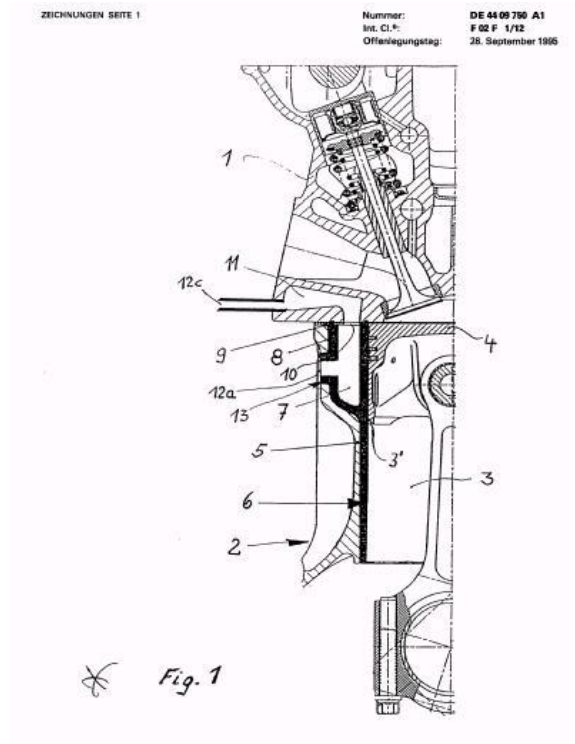
**F02F 1/12**

**Preventing corrosion of liquid-swept surfaces**

**Definition statement**

This place covers:

All measures taken for combating corrosion in water cooled engines.



**References**

**Informative references**

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

Engines with means for preventing corrosions of gas swept spaces	<a href="#">F02B 75/08</a>
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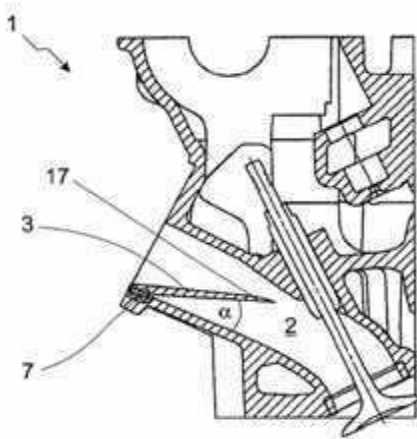
**F02F 1/425**

{with a separate deviation element inside the channel}

**Definition statement**

*This place covers:*

Separate deviation element inside the intake channel. E.g. a butterfly valve or an insert placed just before the valve seat.

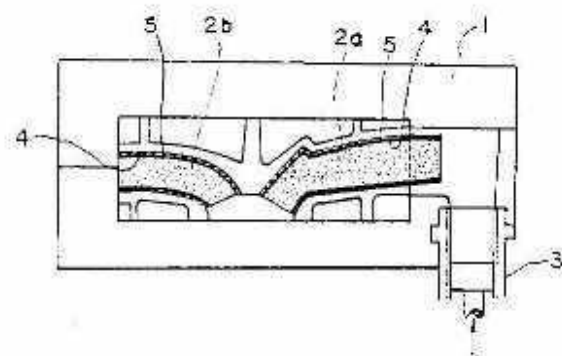
**F02F 1/4292**

{with liners ([F02F 1/4257](#), [F02F 1/4271](#) take precedence)}

**Definition statement**

*This place covers:*

Liners in both intake and exhaust channel.

**References****Limiting references**

*This place does not cover:*

Liners in intake channels only	<a href="#">F02F 1/4257</a>
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Liners in exhaust channels only	<a href="#">F02F 1/4271</a>
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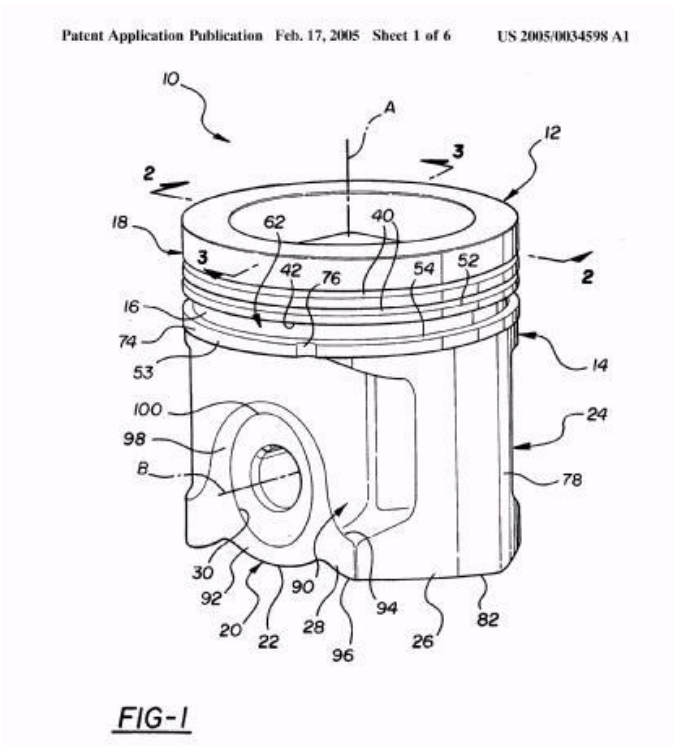
**F02F 3/00**

**Pistons (in general [F16J](#))**

**Definition statement**

*This place covers:*

Pistons for combustion engines:



**References**

**Informative references**

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

Pistons in general	<a href="#">F16J</a>
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**F02F 3/16**

**having cooling means**

**Definition statement**

*This place covers:*

Structural features, e.g. fins, apertures and arrangements for dissipating heat



## References

### Informative references

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

Air cooling arrangements for pistons	<a href="#">F01P 1/04</a>
Liquid cooling arrangements for pistons	<a href="#">F01P 3/06</a>

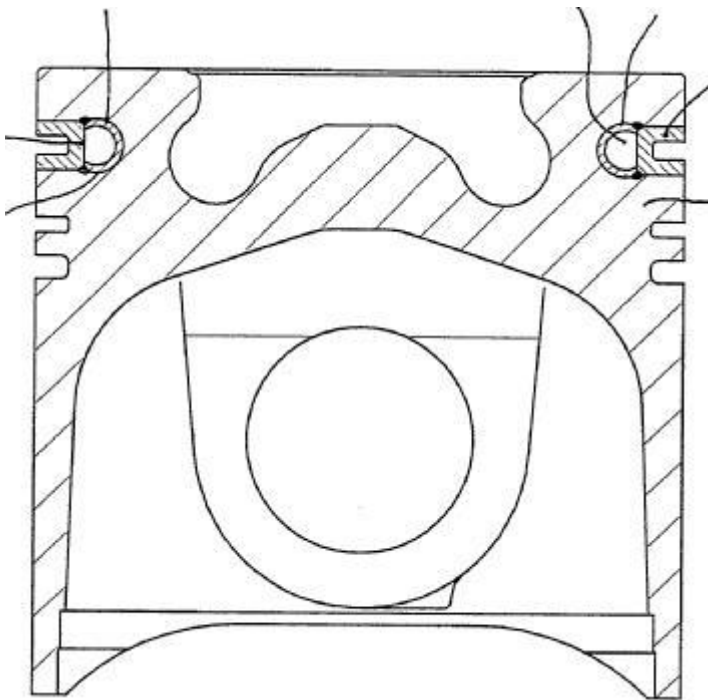
## F02F 3/22

the fluid being liquid

### Definition statement

*This place covers:*

Liquid cooling means:



### Synonyms and Keywords

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

- "cooling channel cover" and "ring carrier"

## F02F 5/00

Piston rings, e.g. associated with piston crown {(not used see [F16J 9/00](#))}

## References

### Limiting references

*This place does not cover:*

Piston rings	<a href="#">F16J 9/00</a>
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**Special rules of classification**

Not used

**F02F 7/00****Casings, e.g. crankcases (engine casings in general [F16M](#) )}{or frames}****Definition statement***This place covers:*

Combustion engine casings, e.g. crankcases or frames, e.g. rigid supports for cylinders or crankcases.

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

Engine casings in general	<a href="#">F16M</a>
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**F02F 11/00****Arrangements of sealings in combustion engines (piston rings [F02F 5/00](#) {not used, see [F16J 9/00](#)} ; sealings per se [F16J](#))****Definition statement***This place covers:*

Arrangement of sealings in combustion engines

**References****Limiting references***This place does not cover:*

Sealings per se	<a href="#">F16J</a>
Piston rings for combustion engines	<a href="#">F16J 9/00</a>