

**F02F****CYLINDERS, PISTONS OR CASINGS, FOR COMBUSTION ENGINES;  
ARRANGEMENTS OF SEALINGS IN COMBUSTION ENGINES****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:*

Specially adapted for rotary-piston or oscillating-piston internal-combustion engines	<a href="#">F02B</a>
Specially adapted for gas-turbine plants	<a href="#">F02C</a>
Specially adapted for jet-propulsion plants	<a href="#">F02K</a>

**F02F 1/00****Cylinders; Cylinder heads****Definition statement**

*This place covers:*

Cylinders and cylinder heads for combustion engines

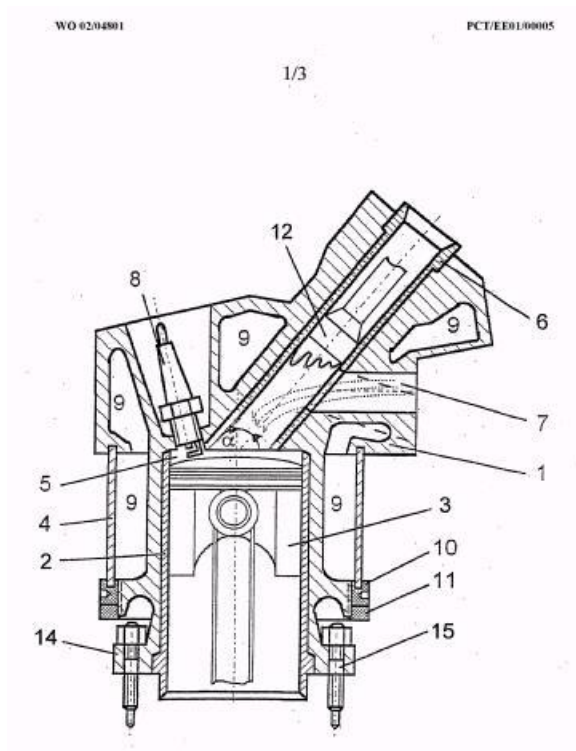
**References*****Informative references***

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

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

Cylinder heads	<a href="#">F02F 1/26</a>
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**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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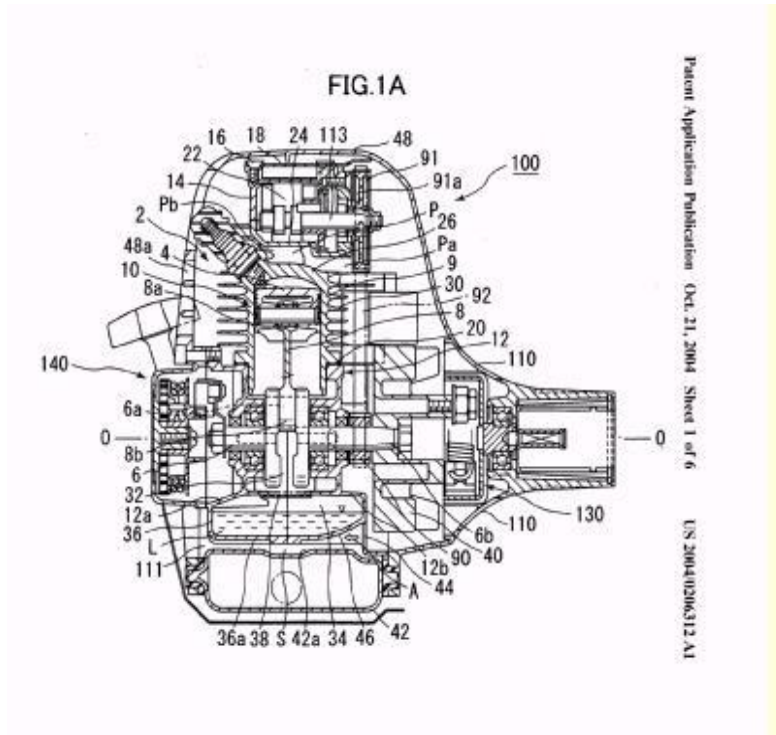
## F02F 1/04

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	<a href="#">F01P 1/02</a>
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**F02F 1/08**

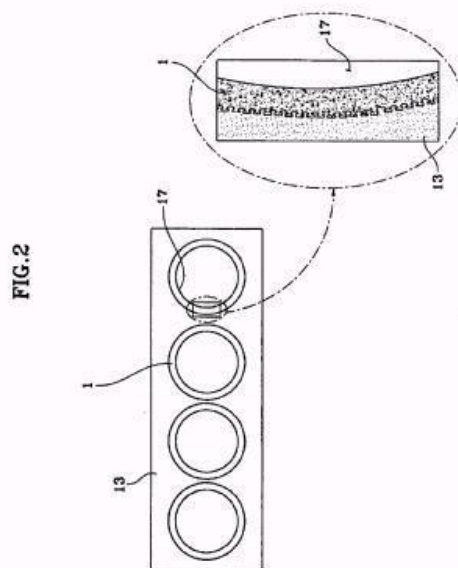
**running-liner and cooling-part of cylinder being different parts or of different material**

**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

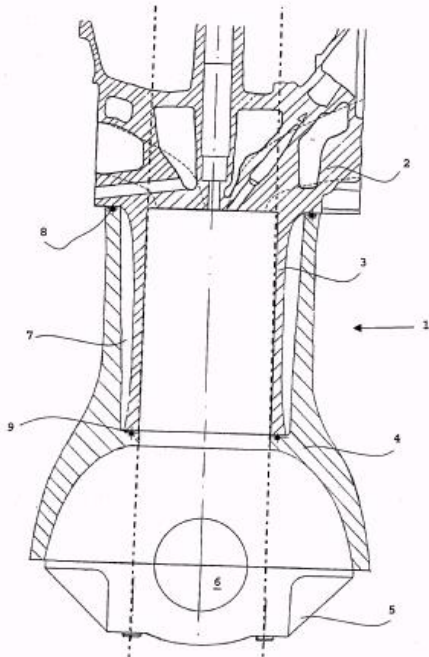
{Attachment of cylinders to crankcase}

### 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



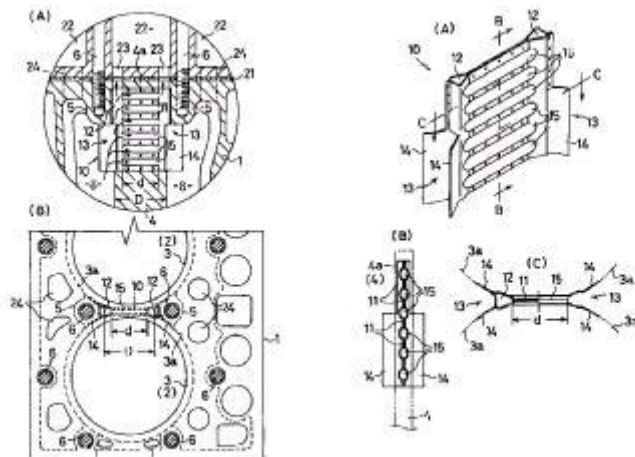
## F02F 1/108

{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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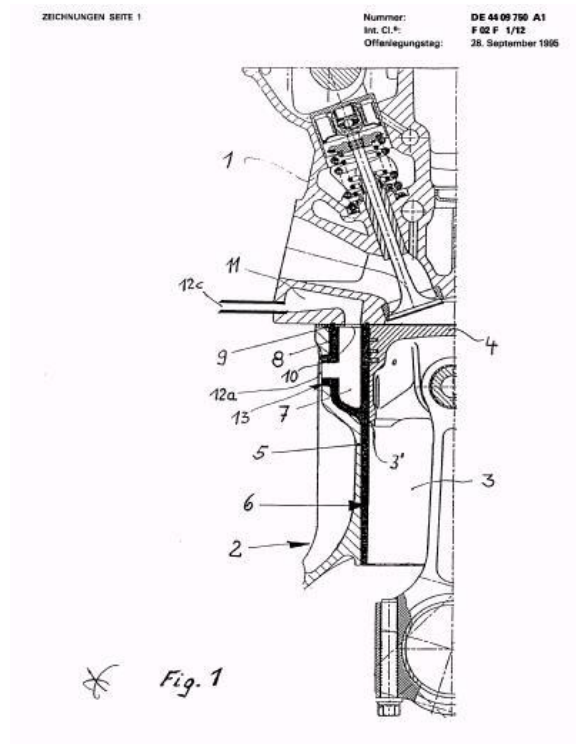
## F02F 1/12

### 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 corrossions of gas swept spaces	<a href="#">F02B 75/08</a>
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**F02F 1/186**

{for use in engines with two or more pistons reciprocating within same cylinder}

**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:*

Internal-combustion piston engines or combustion engines in general with two or more pistons reciprocating within same cylinder or within essentially coaxial cylinders	<a href="#">F02B 75/28</a>
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**F02F 1/4221**

{particularly for three or more inlet valves}

**References****Informative references**

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

Mechanisms for driving three or more intake valves per cylinder	<a href="#">F01L 1/265</a>
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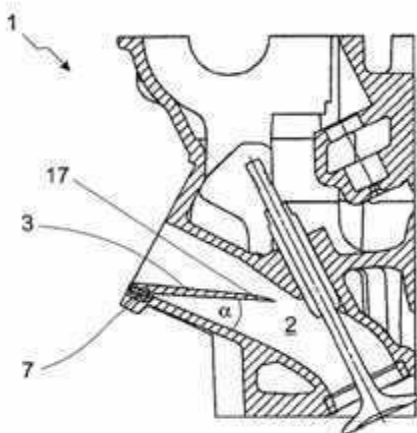
**F02F 1/425**

{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.



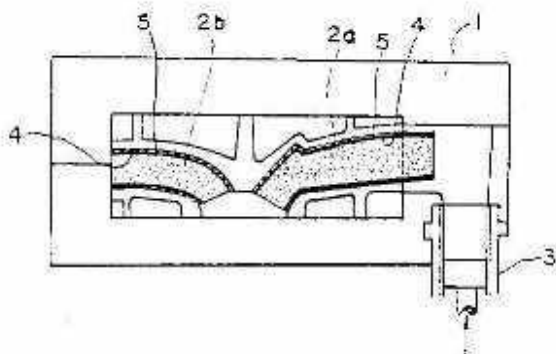
**F02F 1/4292**

{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>
Liners in exhaust channels only	<a href="#">F02F 1/4271</a>



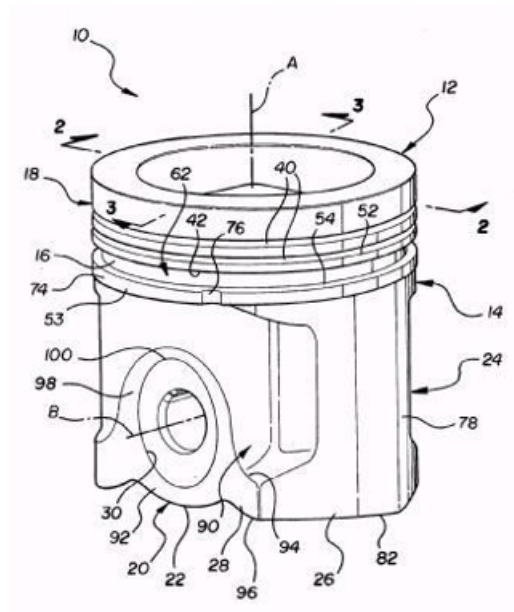
## F02F 3/00

### Pistons

#### 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

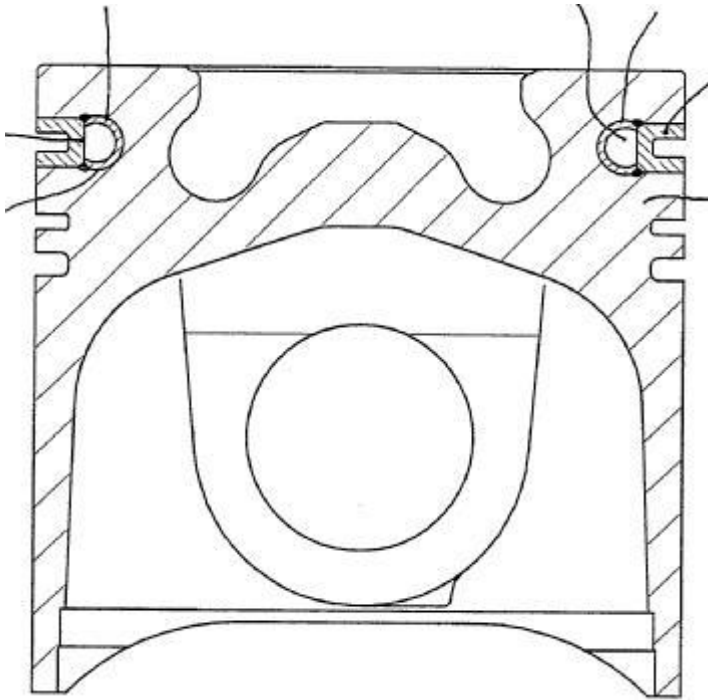
##### Informative references

*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 {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 7/006****{Camshaft or pushrod housings}****References****Informative references**

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

Oil sump details	<a href="#">F01M 11/0004</a>
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**F02F 7/008****{Sound insulation}****References****Informative references**

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

Acoustic insulation for internal-combustion piston engines or combustion engines in general	<a href="#">F02B 77/13</a>
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**F02F 11/00****Arrangements of sealings in combustion engines (piston rings {[F16J 9/00](#)})****Definition statement**

*This place covers:*

Arrangement of sealings in combustion engines

**References****Limiting references**

*This place does not cover:*

Piston rings for combustion engines	<a href="#">F16J 9/00</a>
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**Informative references**

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

Sealings per se	<a href="#">F16J</a>
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