

## F16L

### PIPES; JOINTS OR FITTINGS FOR PIPES; SUPPORTS FOR PIPES, CABLES OR PROTECTIVE TUBING; MEANS FOR THERMAL INSULATION IN GENERAL

#### Definition statement

*This place covers:*

- Methods and machines for laying pipes ([F16L 1/00](#));
- Devices to support, fix or hold pipes ([F16L 3/00](#));
- Pipes: conduits of closed cross-section which are specially adapted to convey fluids, material or objects ([F16L 9/00](#) and [F16L 11/00](#));
- Joints between pipes ([F16L 13/00](#) - [F16L 41/00](#), [F16L 47/00](#), [F16L 49/00](#));
- Energy and noise absorbers associated with pipes ([F16L 55/02-F16L 55/055](#));
- Means for stopping flow in pipes ([F16L 55/10-F16L 55/136](#));
- Devices for covering leaks in pipes ([F16L 55/16-F16L 55/179](#));
- Pipe pigs primarily for repairing pipes ([F16L 55/26-F16L 55/48](#));
- Protection of pipes against wear, heat, cracking, buckling and corrosion ([F16L 57/00](#) and [F16L 58/00](#));
- Thermal insulation of pipes, or in general, e.g. when no other special application of the insulation is given ([F16L 59/00](#)).

#### Relationships with other classification places

Pipes or connections adapted for a specific use are classified in the use field (e.g. medical connectors, microconnectors or vacuum cleaners).

Tubular bodies that are not used to carry fluid, material or objects, e.g. pipes for scaffoldings, or furniture are only classified in the associated field, e.g. scaffoldings ([E04G 1/06](#)) or tubular chairs ([A47C 3/023](#), [A47C 5/04](#)).

#### 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:*

Hoses or pipes for suction cleaners	<a href="#">A47L 9/24</a>
Hose or pipe couplings for suction cleaners	<a href="#">A47L 9/242</a>
Tracheal tubes	<a href="#">A61M 16/04</a>
Joints or connectors for connecting tubes of devices for influencing the respiratory system of patients by gas treatment	<a href="#">A61M 16/0816</a>
Connecting tubes of devices for influencing the respiratory system of patients by gas treatment	<a href="#">A61M 16/0875</a>
Catheters	<a href="#">A61M 25/00</a>
Medical tubes	<a href="#">A61M 39/08</a>
Medical tube connectors; Medical tube couplings	<a href="#">A61M 39/10</a>
Medical tube multi-channel connectors or couplings	<a href="#">A61M 39/105</a>
Wall-mounted fire hydrant hoses	<a href="#">A62C 35/20</a>
Permanently-installed fire-fighting pipe-line systems	<a href="#">A62C 35/58</a>

Tubes for labware specially adapted for transferring fluids	<a href="#">B01L 3/561</a>
Tube joints or fittings for labware specially adapted for transferring fluids	<a href="#">B01L 3/563</a>
Tube seals for labware specially adapted for transferring fluids	<a href="#">B01L 3/565</a>
Perforated pipes designed to produce a jet, spray or other discharge of particular shape or nature, e.g. in single drops	<a href="#">B05B 1/20</a>
Hose connections for pneumatic tyres	<a href="#">B60C 29/064</a>
Details of ducts of heating, cooling or ventilating devices specially adapted for passenger or goods spaces of vehicles	<a href="#">B60H 1/00557</a>
Arrangements of fuel conduits	<a href="#">B60K 15/01</a>
Fastening or routing means for wire harnesses of electric circuits specially adapted for vehicles and not otherwise provided for	<a href="#">B60R 16/0215</a>
Arrangement of piping or air hoses for brake systems	<a href="#">B60T 17/04</a>
Adaptations of hose constructions for refuelling aircraft during flight	<a href="#">B64D 39/04</a>
Adaptations of pipes or tubes for conveying materials in bulk, e.g. concrete	<a href="#">B65G 53/52</a>
Flexible pipes or tubes for conveying materials in bulk, e.g. concrete	<a href="#">B65G 53/54</a>
Arrangements of hoses in apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers	<a href="#">B67D 7/38</a>
Arrangements of pipe-lines of apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers	<a href="#">B67D 7/78</a>
Fastening of pipes or cables to bridges	<a href="#">E01D 19/10</a>
Drainage conduits	<a href="#">E02B 11/005</a>
Pipe joints for suction pipes of dredgers	<a href="#">E02F 3/905</a>
Pipe-lines for conveying excavated materials	<a href="#">E02F 7/10</a>
Water main or service pipe systems	<a href="#">E03B 7/00</a>
Domestic plumbing installations for fresh water or waste water	<a href="#">E03C 1/00</a>
Water supply lines, e.g. shower hoses	<a href="#">E03C 1/025</a>
Special adaptations of pipe joints for use with water-closet bowls	<a href="#">E03D 11/13</a>
Means for connecting water-closet bowls to the flushing pipe	<a href="#">E03D 11/17</a>
Pipes or fittings specially adapted to sewers	<a href="#">E03F 3/04</a>
Down pipes for roof drainage; Special clamping means therefor	<a href="#">E04D 13/08</a>
Hoses specially adapted for tools or apparatus for applying mortar	<a href="#">E04G 21/202</a>
Air ducts for ventilation of mines or tunnels; Connections therefor	<a href="#">E21F 1/04</a>
Suspension devices for tubes or the like in mines or tunnels	<a href="#">E21F 17/02</a>
Air intake ducts for internal-combustion engines	<a href="#">F02M 35/10039</a> , <a href="#">F02M 35/10091</a>
Conduits, junctions for lubrication systems	<a href="#">F16N 21/00</a>
Water tubes of steam boilers	<a href="#">F22B 37/10</a>
Ducting arrangements for air-conditioning	<a href="#">F24F 13/02</a>
Spray pipes of trickle coolers	<a href="#">F28F 25/06</a>

Heat-pipes for promoting flow of the coolant within the pressure vessel containing the core in nuclear reactors	<a href="#">G21C 15/257</a>
Protective tubing or conduits for electric cables	<a href="#">H02G 3/04</a>
Installations of cables or lines on walls, floors or ceilings	<a href="#">H02G 3/30</a>
Installations of cables or lines in walls, floors or ceilings	<a href="#">H02G 3/36</a>

### Informative references

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

Watering arrangements making use of perforated pipe-lines located in the soil	<a href="#">A01G 25/06</a>
Fire-fighting hose accessories	<a href="#">A62C 33/00</a>
Fluid circuits specially adapted for vehicles and not otherwise provided for; Arrangement of elements of fluid circuits specially adapted for vehicles and not otherwise provided for	<a href="#">B60R 16/08</a>
Pipe-laying vessels	<a href="#">B63B 35/03</a>
Containers; Connections to containers in general; Straps for supporting articles	<a href="#">B65D</a>
Dispensing fluids, e.g. filling bottles or cans	<a href="#">B67D 1/00</a>
Apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers using articulated pipes	<a href="#">B67D 7/002</a>
Filling nozzles of apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers	<a href="#">B67D 7/42</a>
Apparatus or devices for transferring liquids when loading or unloading ships using articulated pipes	<a href="#">B67D 9/02</a>
Hand irons internally heated by electricity, with means for supplying steam to the article being ironed, the steam being produced from water supplied to the iron from an external source	<a href="#">D06F 75/12</a>
Quick acting type couplings for dredgers	<a href="#">E02F 3/3609</a>
Siphons for water-closets	<a href="#">E03D 11/18</a>
Vertical ducts, channels in buildings, e.g. chimneys	<a href="#">E04F 17/00</a>
Devices for both conveying and distributing fluid concrete with distribution hose	<a href="#">E04G 21/0418</a>
Arrangements or adaptations of exhaust conduits	<a href="#">F01N 13/08</a>
Fixing exhaust pipes or pipe sections to each other, to engine or to vehicle body	<a href="#">F01N 13/1805</a>
Fixing devices, e.g. hollow screws	<a href="#">F16B</a>
Valves	<a href="#">F16K</a>
Arrangement or mounting of valves to gas vessels	<a href="#">F17C 13/04</a>
Pipes of vessels for containing or storing compressed, liquified or solidified gases	<a href="#">F17C 2205/0352</a>
Pipe-line systems	<a href="#">F17D 1/00</a>
Joints, connections for chimneys or flues	<a href="#">F23J 13/04</a>
Central heating systems; Domestic hot-water supply systems	<a href="#">F24D</a>

Arrangements for connecting fluid heaters to circulation pipes	<a href="#">F24H 9/12</a>
Heat-exchange apparatus	<a href="#">F28C</a> , <a href="#">F28D</a>
Details of heat-exchange apparatus or heat transfer apparatus, of general application	<a href="#">F28F</a>
Arrangements for sealing elements into header boxes or end plates of heat-exchangers	<a href="#">F28F 9/04</a>
Structural association of coolant tubes with headers in nuclear reactors	<a href="#">G21C 15/22</a>

### Special rules of classification

Classification is not allocated when the features in the document concerning this subclass are obviously of no technical value, or a mere reference (e.g. if in a document it is mentioned that the connection can be also made by gluing, welding, screwing, etc. without further relevant technical information).

Documents mainly concerning the material of the pipe or hose are classified in main groups [F16L 9/00](#) or [F16L 11/00](#).

There is an orthogonal indexing scheme for further details not related to a specific CPC group:

- Uses or applications of pigs or moles [F16L 2101/00](#);
- Special arrangements for pipe couplings [F16L 2201/00](#).

## F16L 1/00

### Laying or reclaiming pipes; Repairing or joining pipes on or under water

#### 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:*

Laying sewer pipes	<a href="#">E03F 3/06</a>
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#### Informative references

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

Making special pipe joints	<a href="#">F16L 13/00</a> - <a href="#">F16L 39/00</a> , <a href="#">F16L 47/00</a> , <a href="#">F16L 49/00</a>
Lining of pipes, replacement of damaged part of a pipe, replacing an existing pipe with a new pipe, wherein the old pipe is being ruptured	<a href="#">F16L 55/16</a>
Soldering or welding	<a href="#">B23K</a>
Pipe laying ships	<a href="#">B63B</a>
Lifting-gear and load-engaging elements	<a href="#">B66</a>
Hydraulic installations or soil drainage	<a href="#">E02B</a>
Excavations or underwater constructions	<a href="#">E02D</a>
Machines for digging trenches in combination with pipe-assembly	<a href="#">E02F</a>
In earth boreholes or wells	<a href="#">E21B</a>
Tunnelling	<a href="#">E21D</a>

Laying electric, or combined optical and electric, cables	<a href="#">H02G</a>
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## F16L 1/0246

{at a certain height off the ground}

### Definition statement

*This place covers:*

Pipes passing over streets or bodies of water

## F16L 1/038

the pipes being made in situ

### Definition statement

*This place covers:*

Methods of laying pipes wherein the material which forms the pipe later takes the pipe-shape at the building site, e.g. concrete.

### References

#### Informative references

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

Pipe laying methods wherein the pipe is made by connecting together short pipe pieces	<a href="#">F16L 1/036</a>
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## F16L 1/12

Laying or reclaiming pipes on or under water

### References

#### Informative references

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

Buoyant hoses	<a href="#">F16L 11/133</a>
Pipe-laying vessels	<a href="#">B63B 35/03</a>

## F16L 1/123

{Devices for the protection of pipes under water}

### Definition statement

*This place covers:*

protection against fishing, cortex induced vibrations

## References

### Informative references

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

Protection of pipes in general	<a href="#">F16L 57/00</a>
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## F16L 1/15

### vertically

#### Definition statement

*This place covers:*

pipes that stay vertically, for example: riser pipes

## F16L 1/161

{the pipe being composed of sections of short length}

#### Definition statement

*This place covers:*

e.g. pipe laying methods wherein the pipe segments are joined together on the bottom of the body of water.

## F16L 1/20

Accessories therefor, e.g. floats or weights

## References

### Informative references

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

Buoys	<a href="#">B63B 22/00</a>
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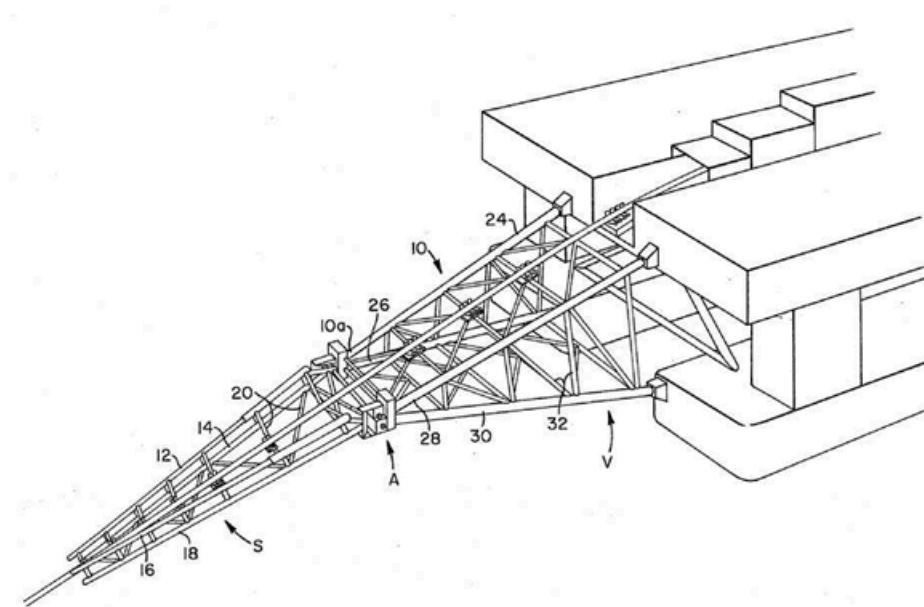
## F16L 1/225

### Stingers

#### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



## F16L 1/23

### Pipe tensioning apparatus

#### Definition statement

*This place covers:*

clamping devices holding the pipe during laying

## F16L 1/235

### Apparatus for controlling the pipe during laying

#### Definition statement

*This place covers:*

e.g. checking welding seams or coatings just before laying of the pipe

**F16L 1/24****Floats; Weights****References****Informative references**

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

Floats per se	<a href="#">B63B 22/00</a>
Salvaging sunken vessels or underwater object	<a href="#">B63C 7/00</a>

**F16L 1/26****Repairing or joining pipes on or under water****References****Informative references**

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

Buoyant hoses	<a href="#">F16L 11/133</a>
Joints per se	<a href="#">F16L 13/00</a> – <a href="#">F16L 49/00</a>
Joining pipes to underwater installations	<a href="#">E21B</a>

**F16L 3/00**

**Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground [F16L 1/06](#); noise absorbers in the form of specially adapted hangers or supports [F16L 55/035](#); arrangements specially adapted for supporting insulated bodies [F16L 59/12](#))**

**References****Limiting references**

*This place does not cover:*

Anchors for holding pipes on or under the ground	<a href="#">F16L 1/06</a>
Noise absorbers in the form of specially adapted hangers or supports	<a href="#">F16L 55/035</a>
Supports for insulated bodies	<a href="#">F16L 59/12</a>

**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:*

Supports for electrical cables	<a href="#">H02G 3/32</a>
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**Informative references**

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

Holders for pipes passing through walls or partitions	<a href="#">F16L 5/00</a>
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**F16L 3/01**

**for supporting or guiding the pipes, cables or protective tubing, between relatively movable points, e.g. movable channels**

**Definition statement**

*This place covers:*

Supports for pipes, for supporting or guiding the pipes between relatively movable points, wherein one part of a pipe is fixed and another part of the pipe moves.

**References****Informative references**

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

Hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like	<a href="#">F16G 13/16</a>
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**F16L 3/012**

**{using reels}**

**References****Informative references**

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

Cores for coiled material, e.g. reels, in general	<a href="#">B65H 75/00</a>
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**F16L 3/015**

**using articulated- or supple-guiding elements**

**References****Informative references**

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

Cranes with means for transmitting pneumatic, hydraulic or electric power to movable parts or devices	<a href="#">B66C 13/12</a>
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**F16L 3/04**

and pressing it against a wall or other support

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

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

Staples	<a href="#">F16B 15/00</a>
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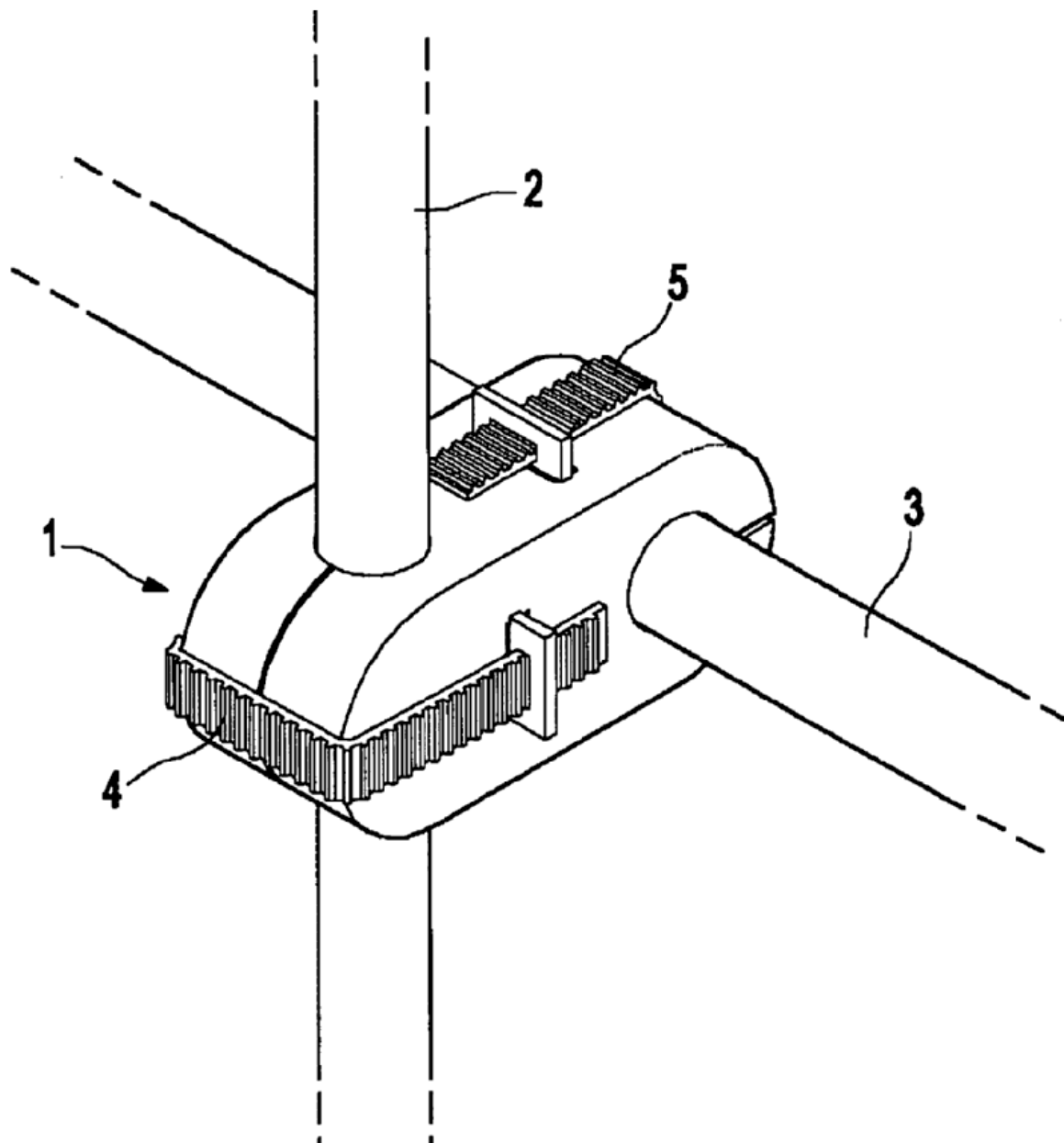
**F16L 3/085**

{for pipes being in an angled relationship to each other}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



F16L 3/10

divided, i.e. with two members engaging the pipe, cable or protective tubing

Definition statement

This place covers:

Supports for pipes, cables or protective tubing, substantially surrounding the pipe, cable or protective tubing, divided, i.e. with two or more members engaging the pipe, cable or protective tubing.

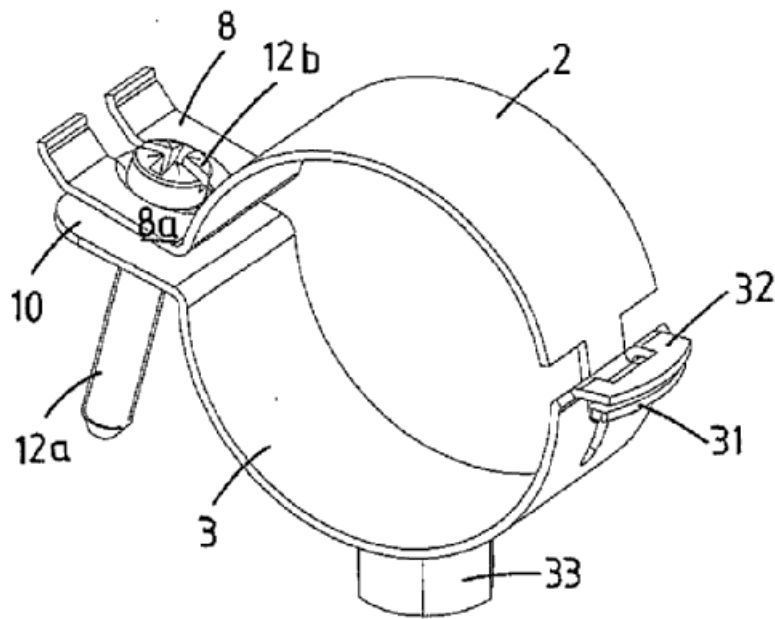
F16L 3/1008

{with two members engaging the pipe, cable or tubing, both being made of thin band material completely surrounding the pipe (F16L 3/1033 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Limiting references

This place does not cover:

Supports for pipes, cables or protective tubing, substantially surrounding the pipe, cable or protective tubing, divided, i.e. with two members engaging the pipe, cable or protective tubing, with two members engaging the pipe, cable or tubing, the two members being joined only on one side of the pipe	<a href="#">F16L 3/1033</a>
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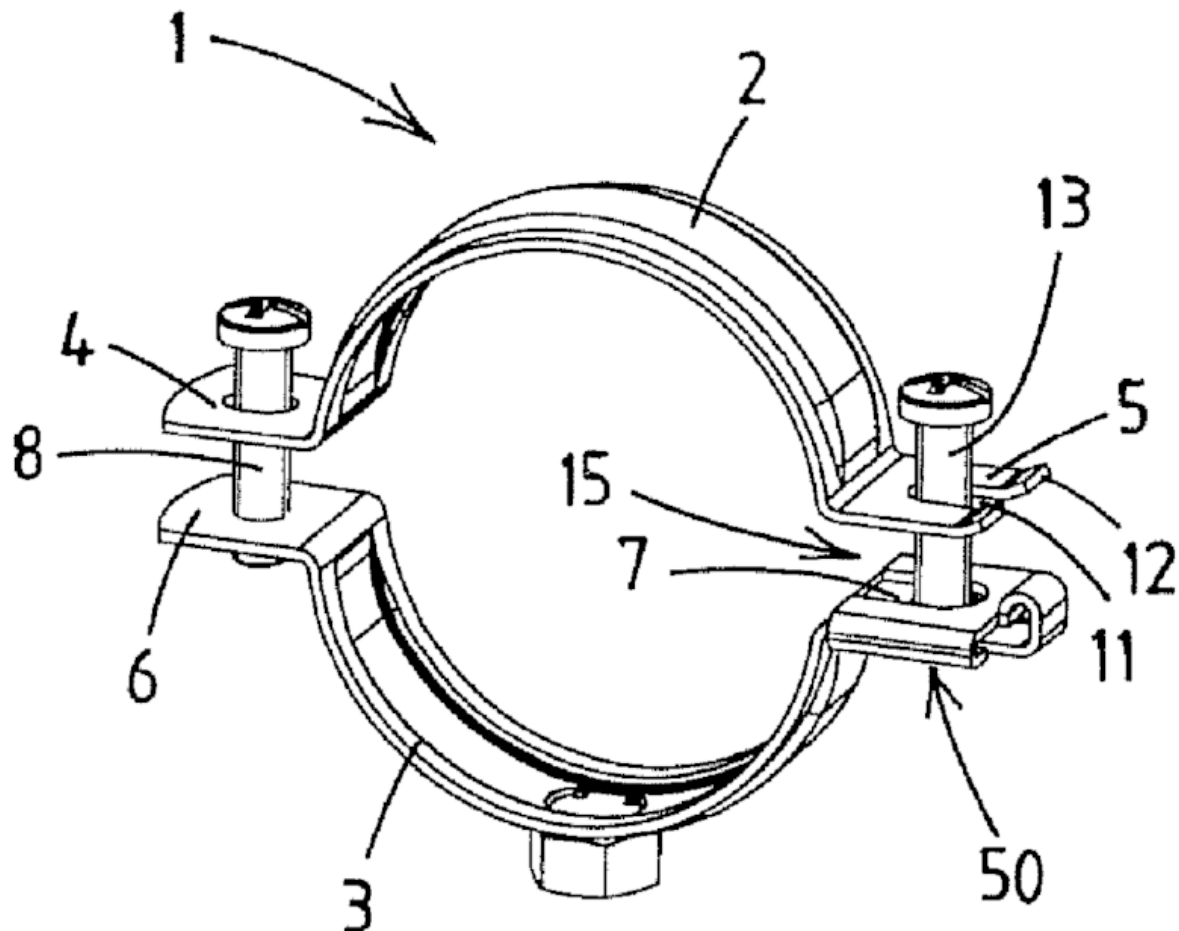
**F16L 3/1016**

{the members being joined by means of two screws}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



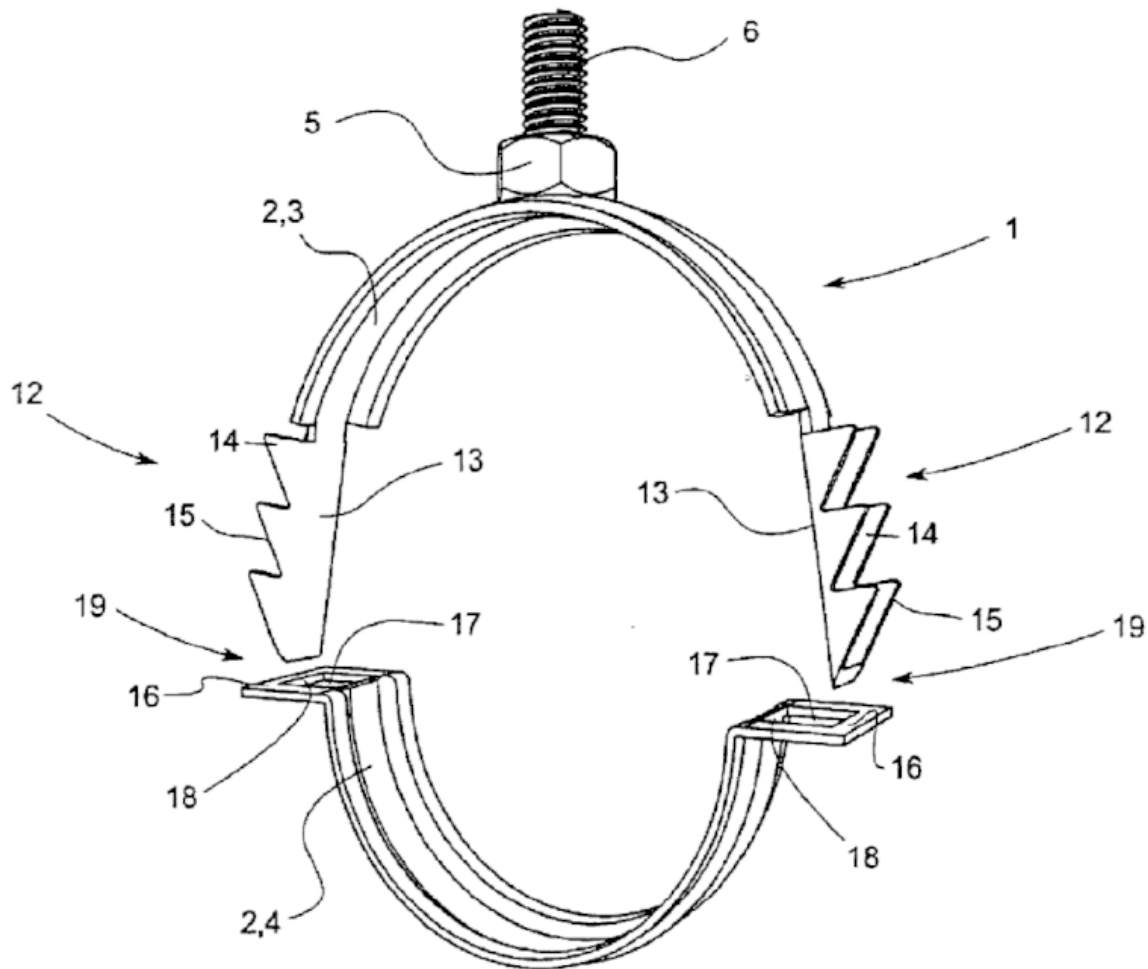
**F16L 3/1025**

**{the members being joined by quick-acting means}**

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 3/1033**

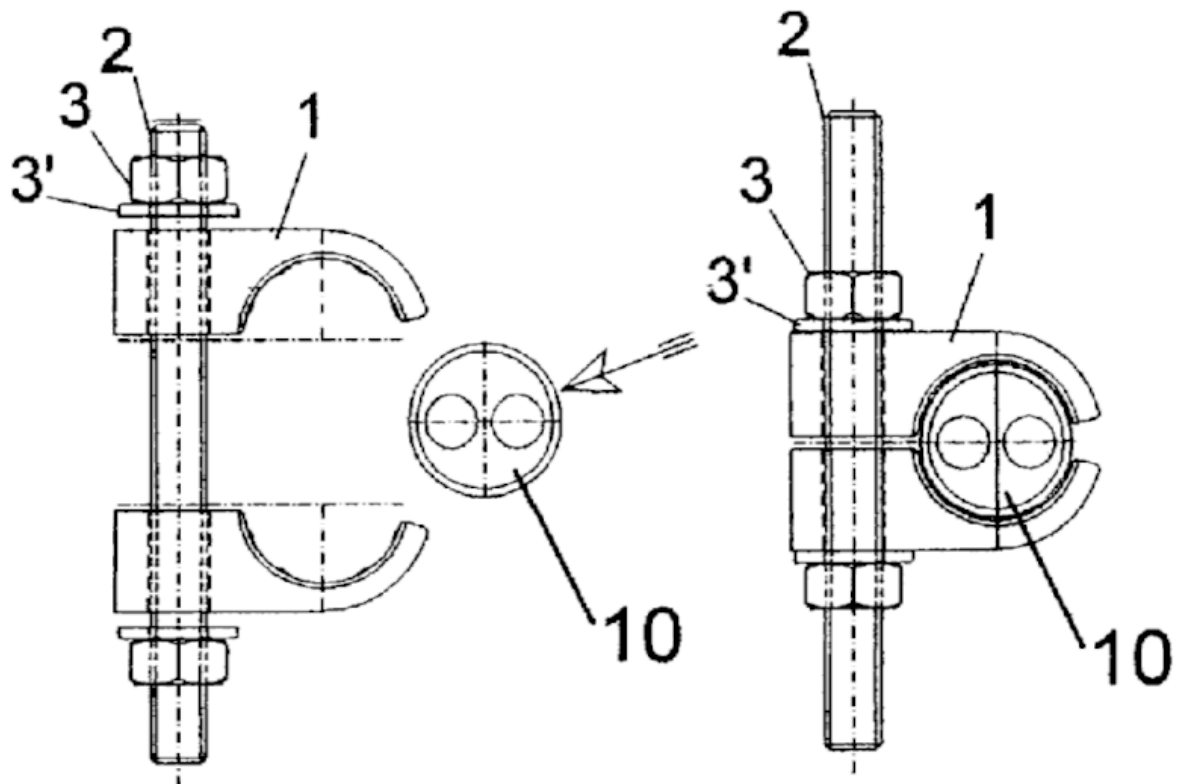
**{with two members engaging the pipe, cable or tubing, the two members being joined only on one side of the pipe}**

**Definition statement**

*This place covers:*

Supports for pipes, cables, or protective tubing substantially surrounding the pipe, cable or protective tubing with two or more members engaging the pipe, cable or tubing, e.g. pipe clamps made of two parts, the parts being connected on one side and the opposite side stays open.

Illustrative example of subject matter classified in this place:



### F16L 3/1041

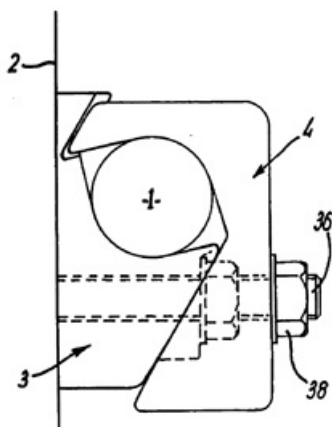
{and being adapted to accommodate pipes of various diameters}

#### Definition statement

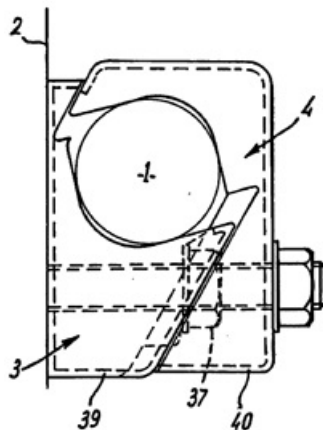
*This place covers:*

Illustrative example of subject matter classified in this place:

1a.



1b.



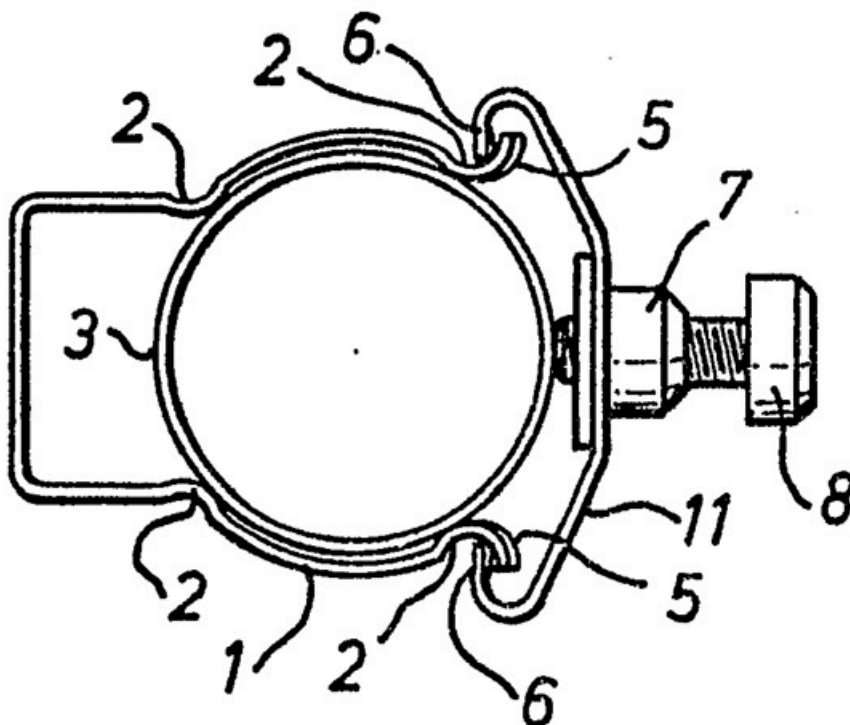
## F16L 3/105

{one member carrying a substantially radial tightening element}

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:





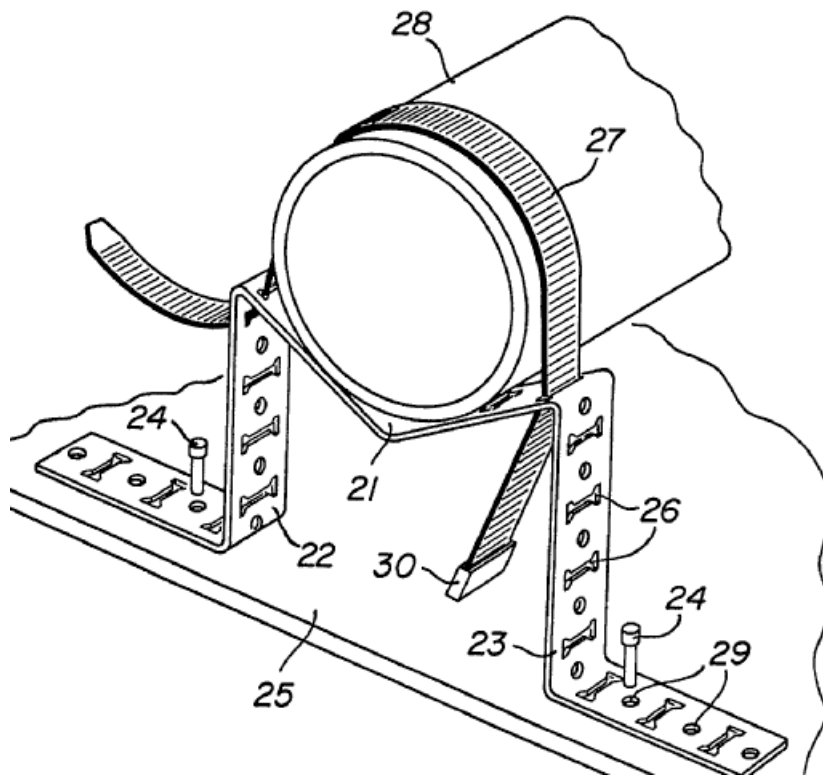
**F16L 3/1058**

{one member being flexible or elastic}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



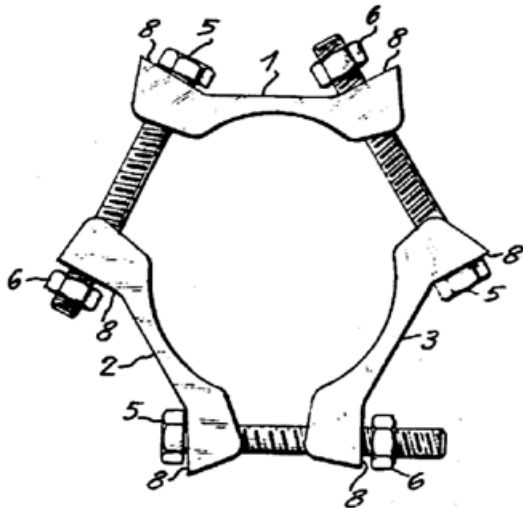
**F16L 3/1066**

{with three or more members surrounding the pipe}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

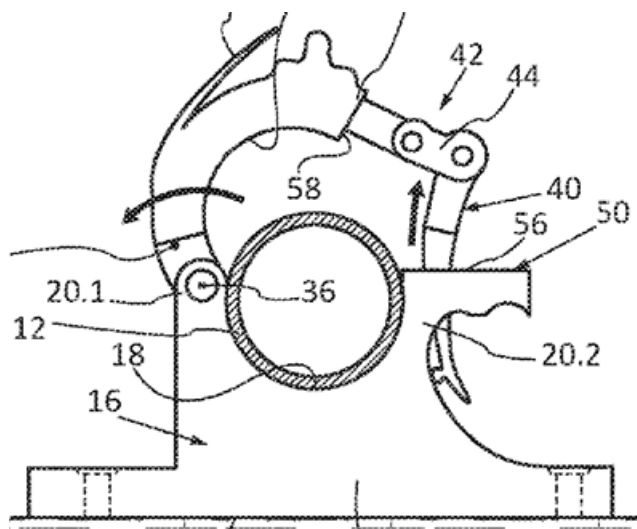
**F16L 3/1075**

{with two members, the two members being joined with a hinge on one side and fastened together on the other side}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



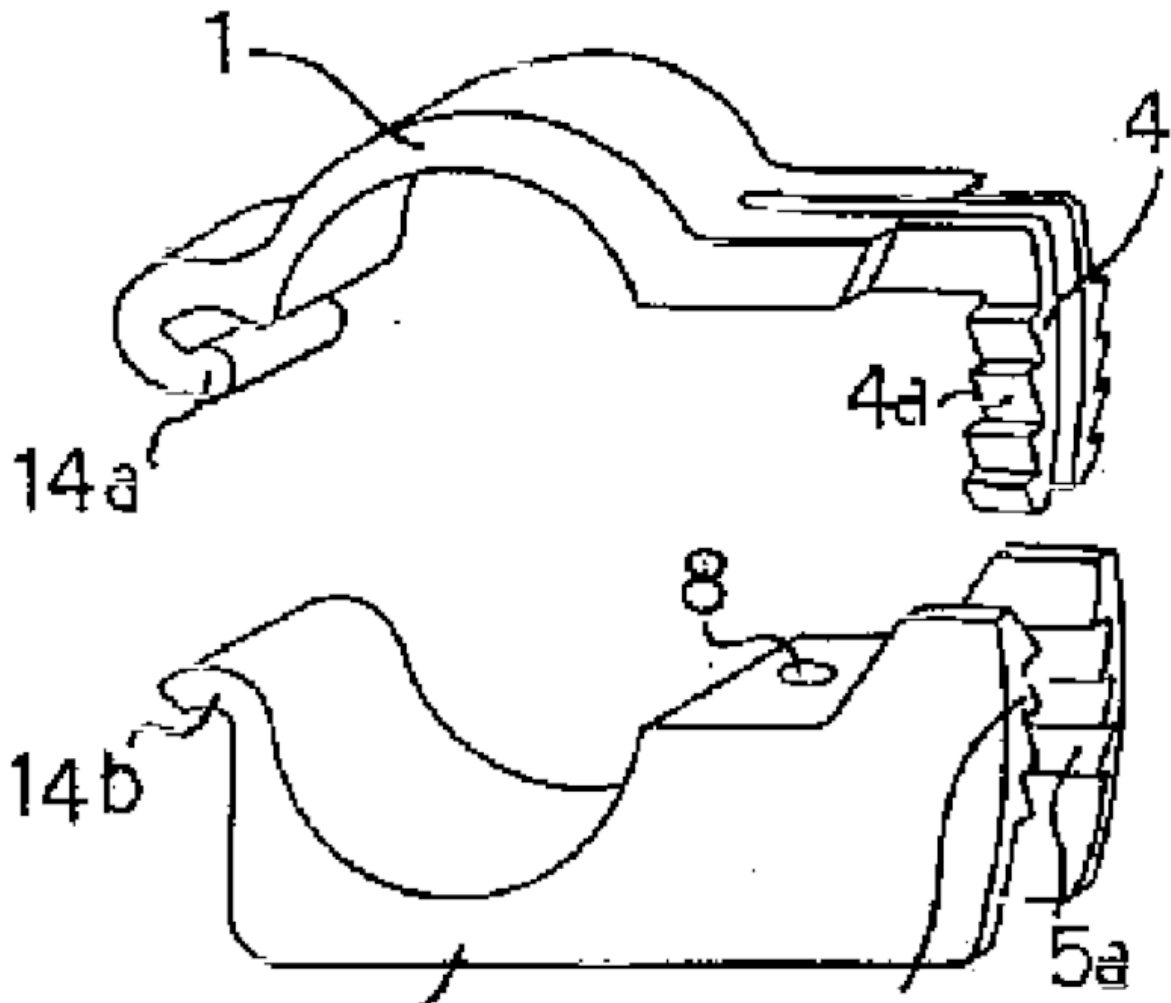
**F16L 3/1083**

{with two members, the two members being hooked in on one side and fastened together on the other side}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



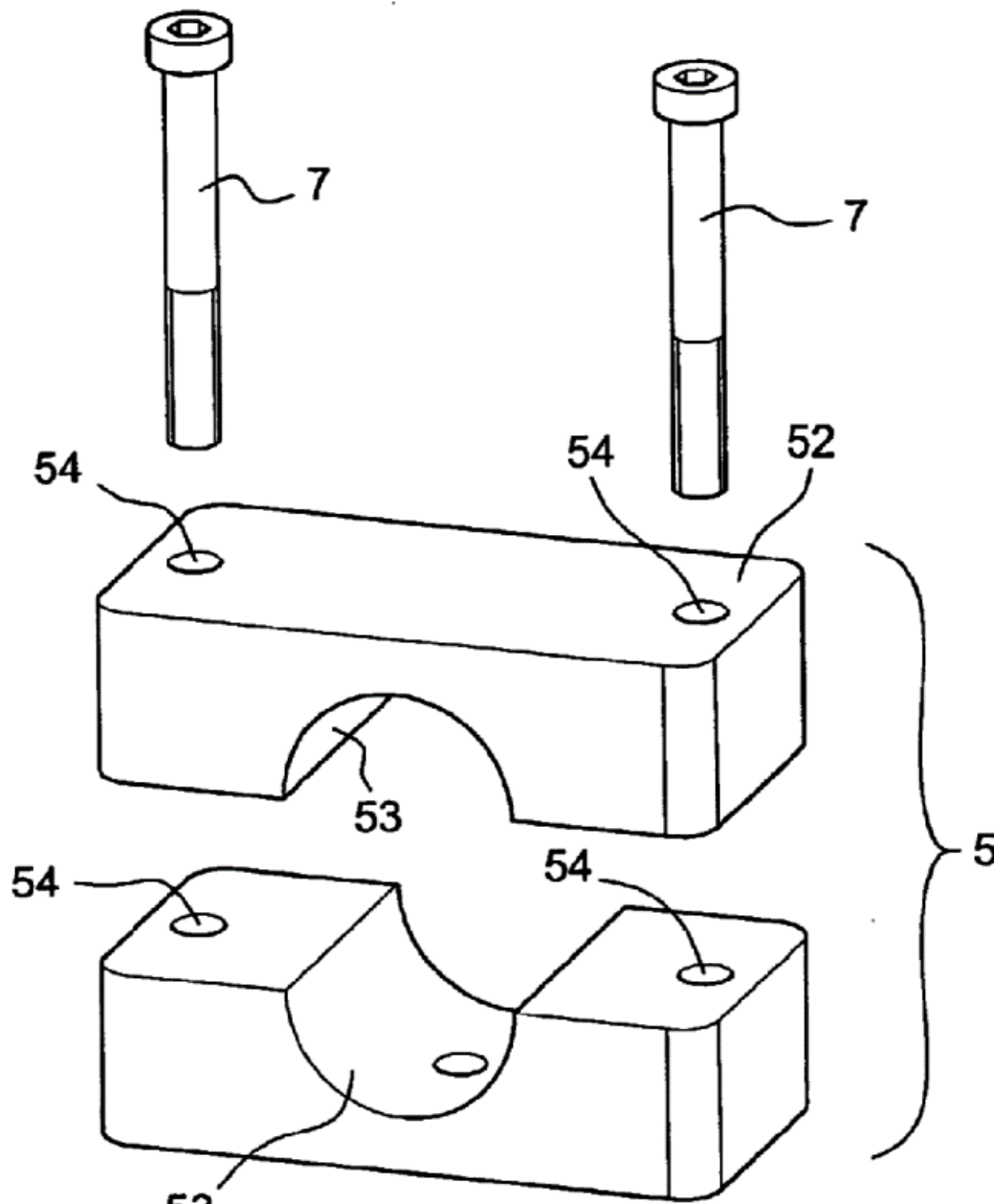
**F16L 3/1091**

{with two members, the two members being fixed to each other with fastening members on each side}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



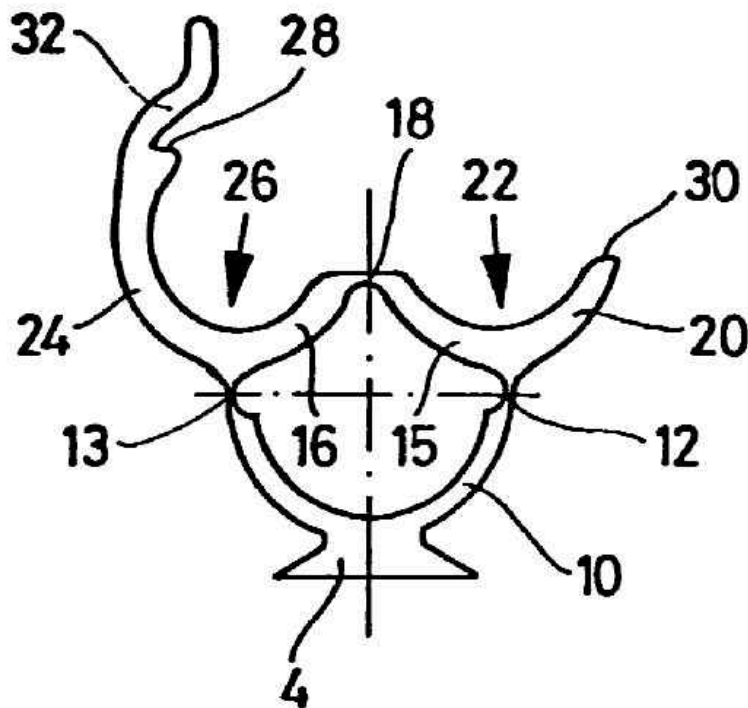
**F16L 3/1203**

{with a pair of arms moved automatically to closed position by overcenter spring}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



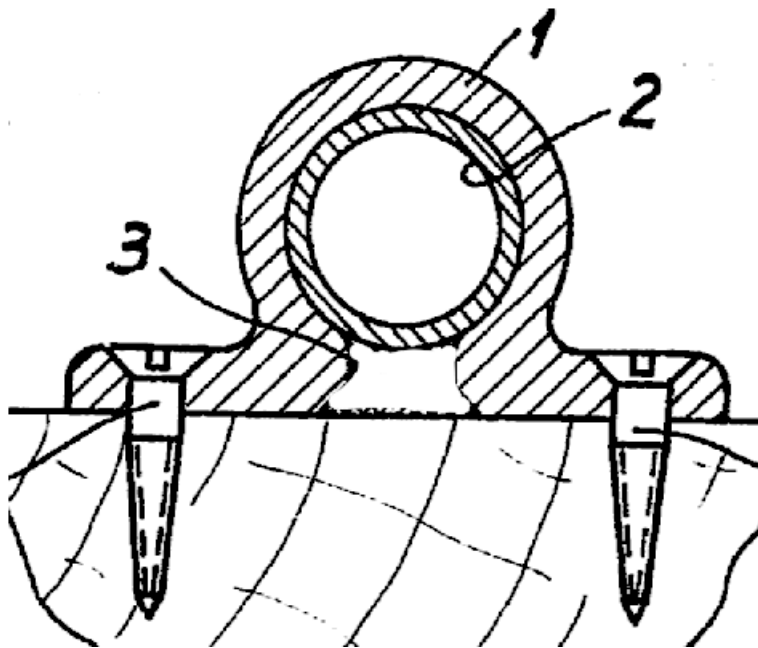
## F16L 3/1207

{the ends of the member and the fixing elements being placed on both sides of the pipe}

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



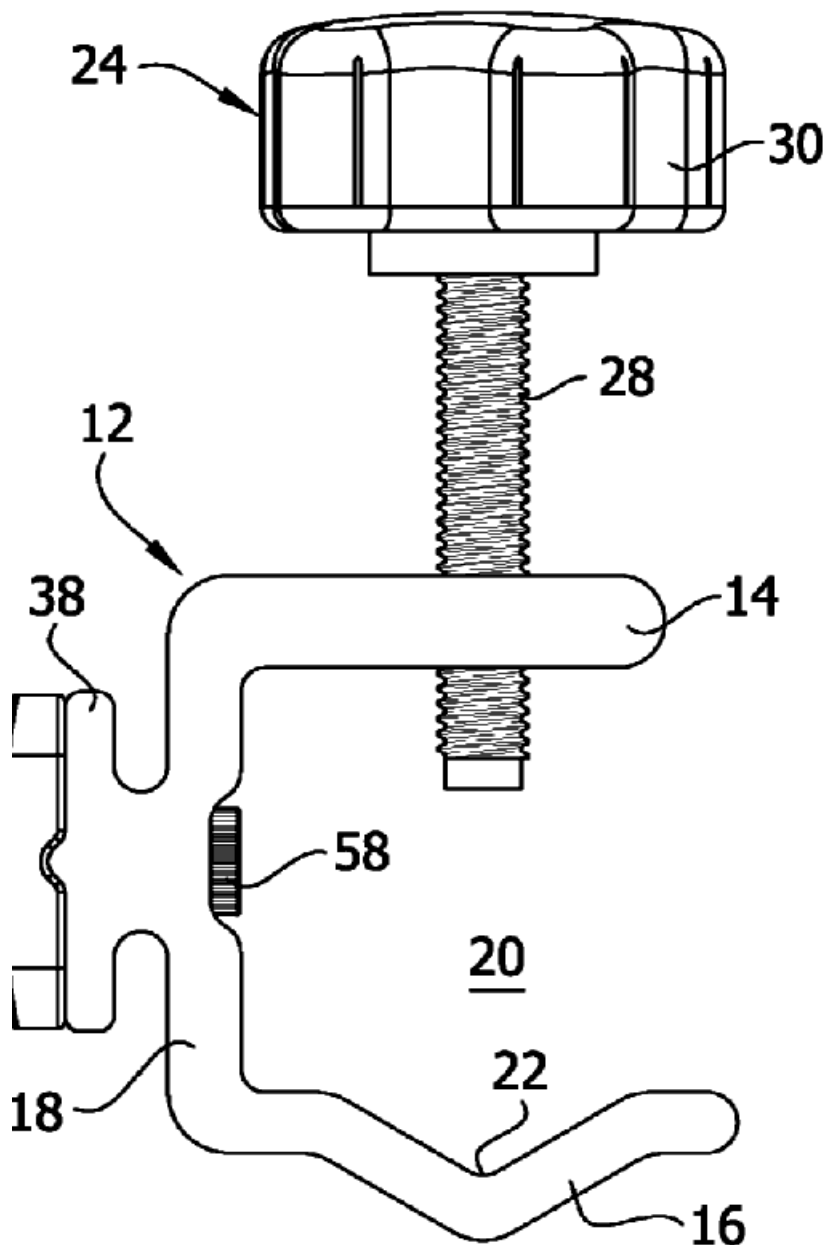
**F16L 3/1211**

{with a substantially radial tightening or securing member}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



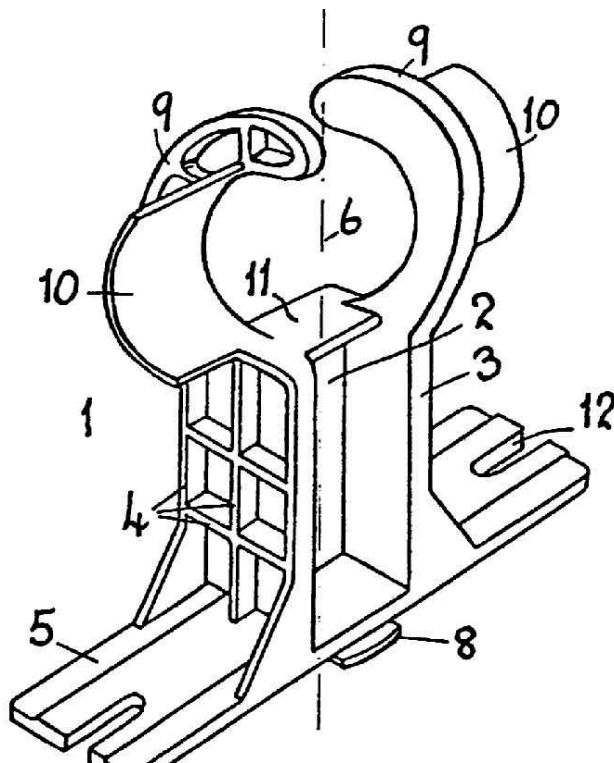
**F16L 3/1215**

{the pipe being fixed by rotation of an element}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:





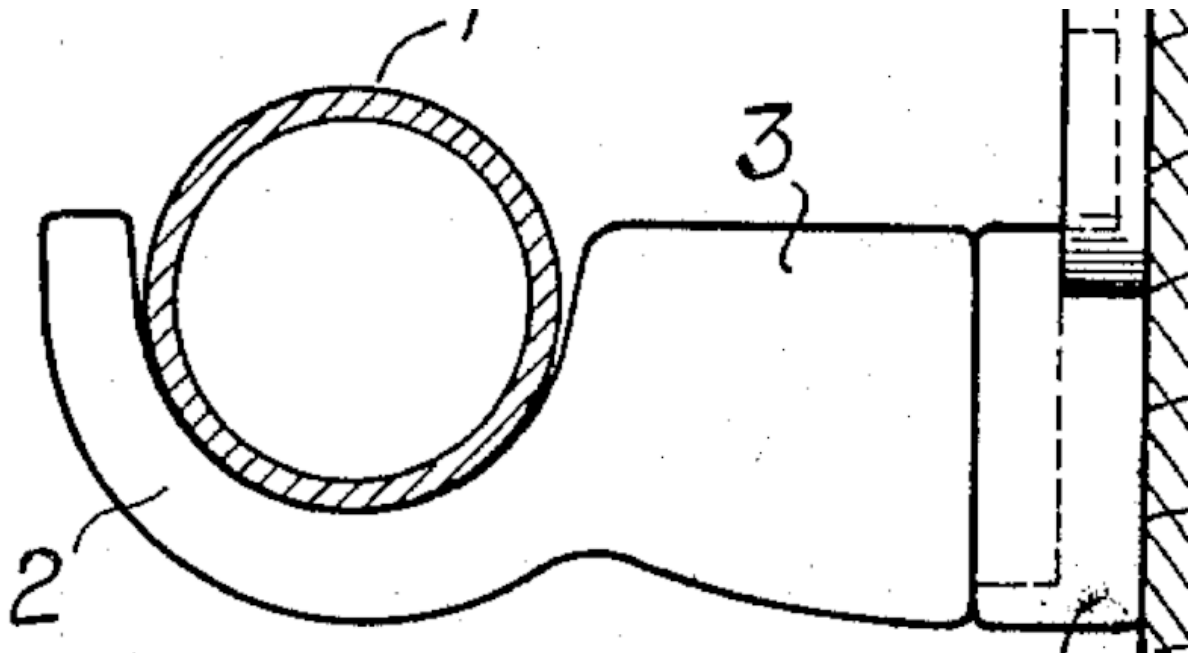
## F16L 3/1218

{the pipe being only supported and not fixed}

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



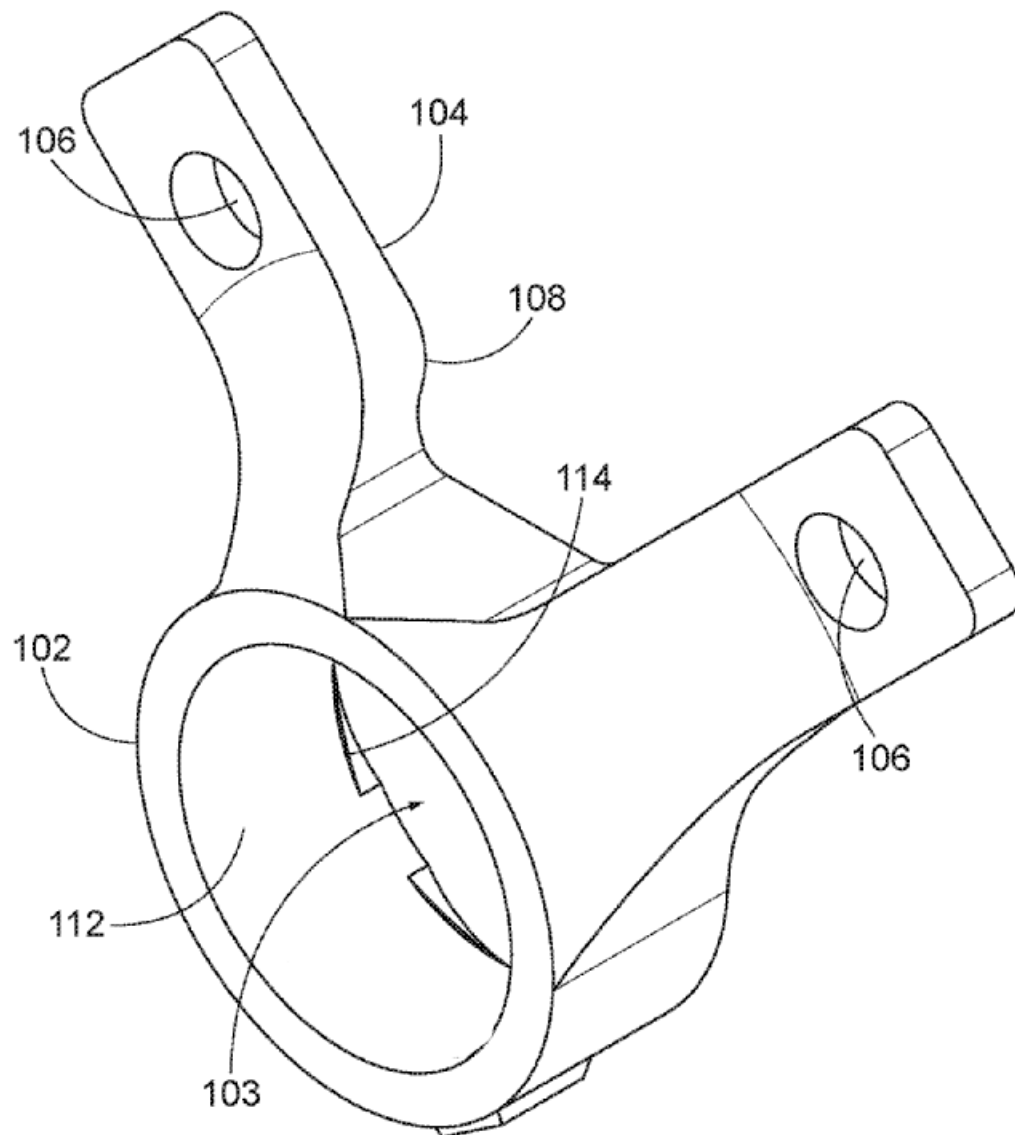
**F16L 3/1222**

{the member having the form of a closed ring, e.g. used for the function of two adjacent pipe sections}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



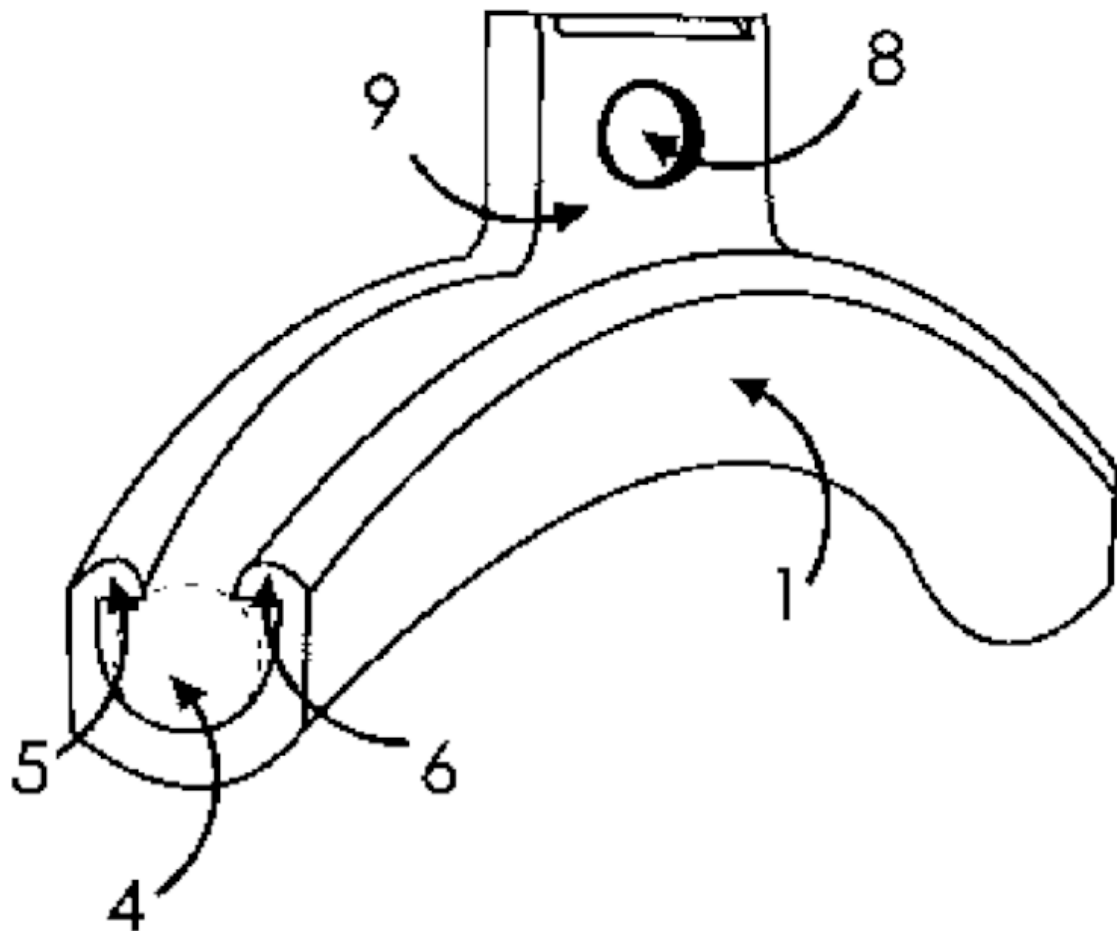
**F16L 3/1226**

{elongated supports, e.g. to support a curved pipe}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

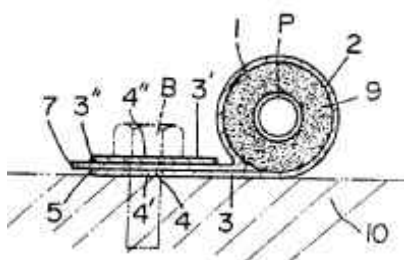
**F16L 3/123**

and extending along the attachment surface

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



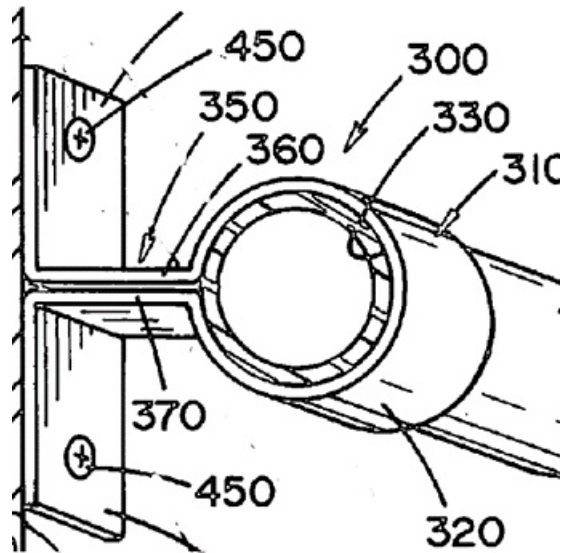
## F16L 3/127

and extending away from the attachment surface

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



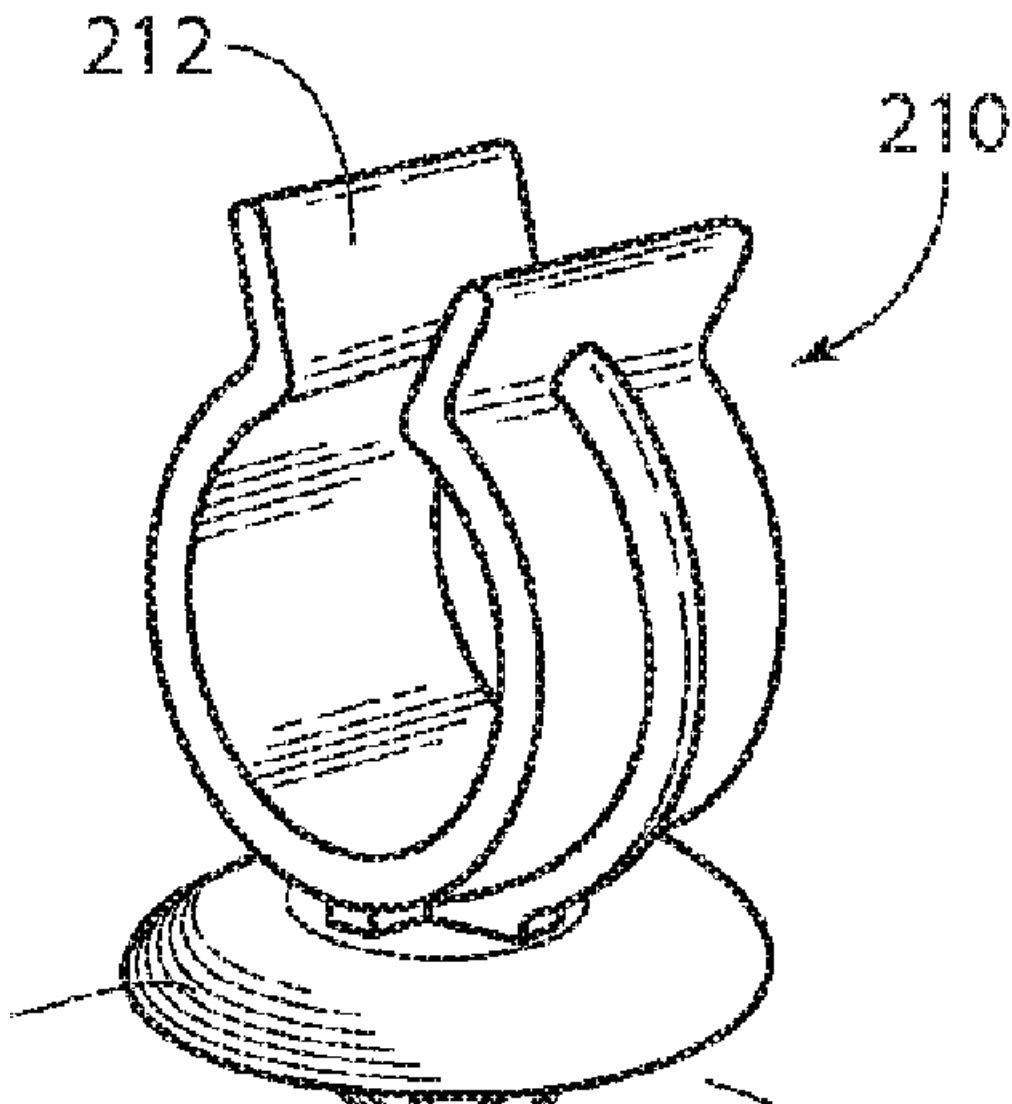
**F16L 3/13**

and engaging it by snap action {(F16L 3/1203 takes precedence)}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**References****Limiting references**

*This place does not cover:*

Supports comprising a member substantially surrounding the pipe, cable or protective tubing, with a pair of arms moved automatically to closed position by overcenter spring	<a href="#">F16L 3/1203</a>
--	-----------------------------

## F16L 3/16

with special provision allowing movement of the pipe ([F16L 3/01](#) takes precedence; supporting pipes or cables inside other pipes or sleeves [F16L 7/00](#))

### Definition statement

*This place covers:*

Supports for pipe, with special provision allowing the pipe to move locally, e.g. within the support.

### References

#### Limiting references

*This place does not cover:*

Supports for supporting or guiding pipes, cables or protective tubing, between relatively movable points	<a href="#">F16L 3/01</a>
Supporting pipes or cables inside other pipes or sleeves	<a href="#">F16L 7/00</a>

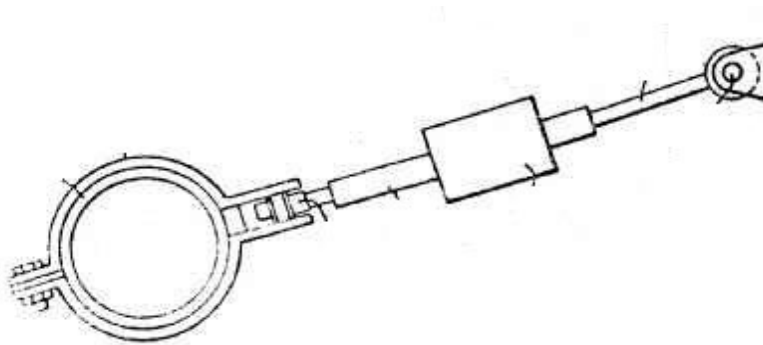
## F16L 3/202

the transverse movement being converted to a rotational movement ([F16L 3/215](#) takes precedence)

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



### References

#### Limiting references

*This place does not cover:*

Movement of the pipes being hydraulically or electrically controlled	<a href="#">F16L 3/215</a>
--	----------------------------

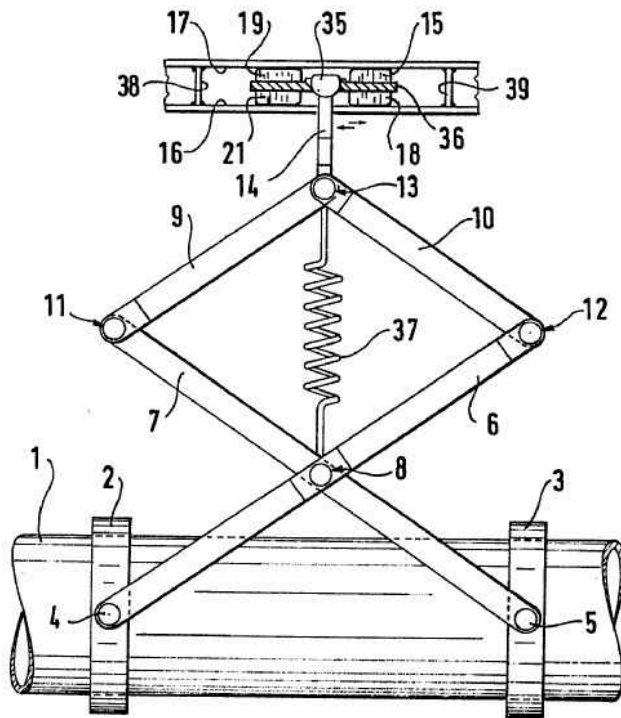
**F16L 3/2053**

{the axis of each spring being parallel with the direction of the movement of the pipe}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 3/221**

{having brackets connected together by means of a common support}

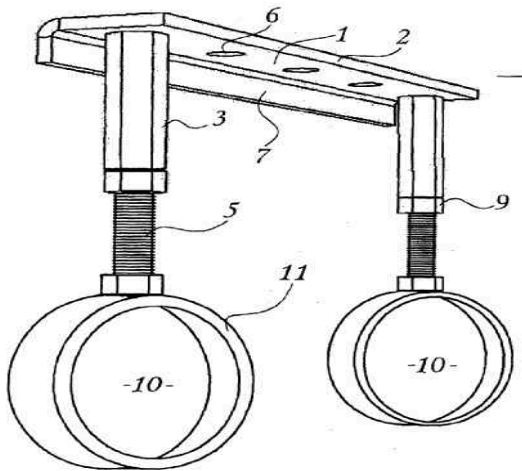
**Definition statement**

*This place covers:*

Support for supporting a number of parallel pipes at intervals, wherein the brackets and support are originally two different parts.

Definition statement

Illustrative example of subject matter classified in this place:



## F16L 3/222

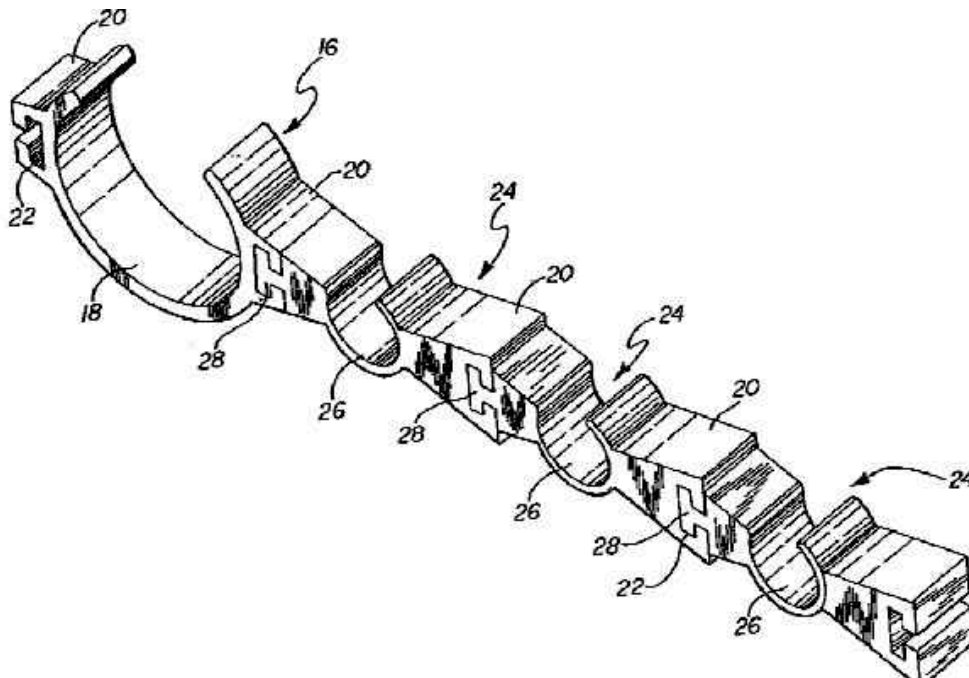
{having single supports directly connected together}

### Definition statement

*This place covers:*

Illustrative examples of subject matter classified in this place:

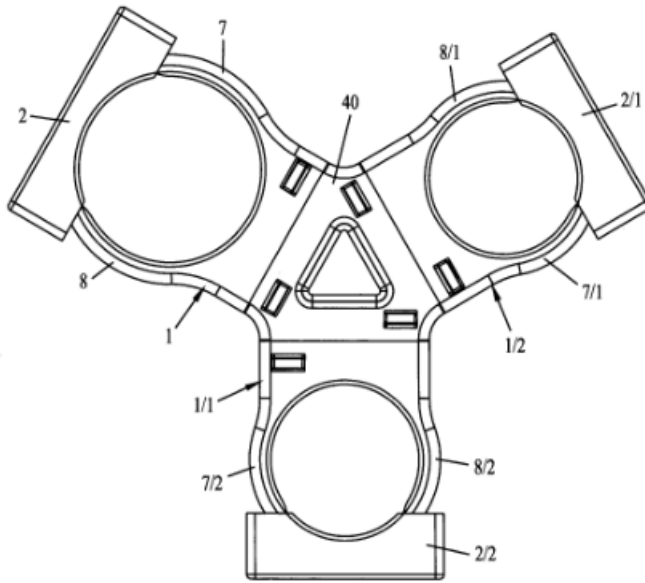
1.





## Definition statement

2.

**F16L 3/223**

each support having one transverse base for supporting the pipes ([F16L 3/23](#), [F16L 3/237](#) take precedence)

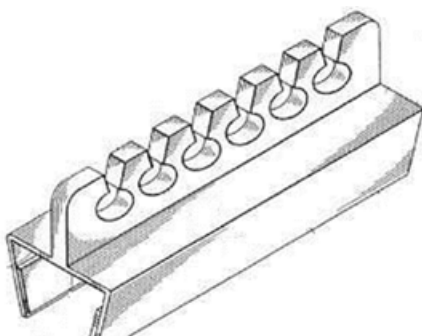
**Definition statement**

*This place covers:*

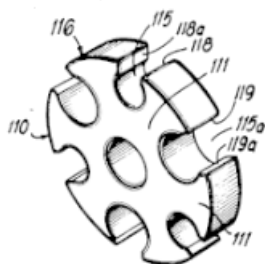
One integral support for all pipes.

Illustrative examples of subject matter classified in this place:

1.



2.



## References

### Limiting references

*This place does not cover:*

Supports for a bundle of pipes or a plurality of pipes placed side by side in contact with each other	<a href="#">F16L 3/23</a>
Supports for two pipes only	<a href="#">F16L 3/237</a>

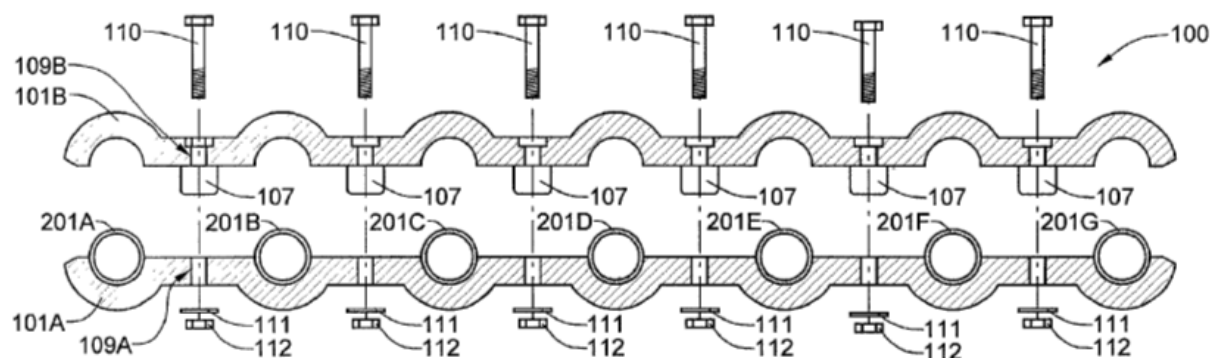
## F16L 3/2235

**{each pipe being supported by a common element fastened to the base}**

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



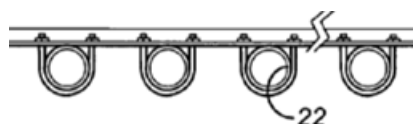
## F16L 3/227

**each pipe being supported by a separate element fastened to the base**

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



## F16L 3/26

specifically adapted for supporting the pipes all along their length, e.g. pipe channels or ducts

### 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:

Channels for electric cables formed by wire	<a href="#">H02G 3/0443</a>
---	-----------------------------

## F16L 5/00

Devices for use where pipes, cables or protective tubing pass through walls or partitions (installations of electric cables or lines through walls, floors or ceilings [H02G 3/22](#))

### Definition statement

This place covers:

Holders for pipes passing through walls or partitions, the pipe passing from one side of the wall to the other side.

### 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:

Passing insulated pipes through walls	<a href="#">F16L 59/121</a>
Penetrations of steam boiler water tubes through a wall and their sealing	<a href="#">F22B 37/105</a>
Arrangements for leading electric cables or lines through walls, floors or ceilings	<a href="#">H02G 3/22</a>

#### Informative references

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

Joining pipes to walls	<a href="#">F16L 41/00</a>
Joining plastic pipes to walls	<a href="#">F16L 47/26</a>
Sealing elements into header boxes or end plates of heat-exchangers	<a href="#">F28F 9/00</a>

### Special rules of classification

Reference [H02G 3/22](#) is non-limiting in the main group [F16L 5/00](#). CPC will be updated once this inconsistency is resolved in IPC.

## F16L 7/00

Supporting pipes or cables inside other pipes or sleeves, e.g. for enabling pipes or cables to be inserted or withdrawn from under roads or railways without interruption of traffic (sleeves for supporting pipes, cables or protective tubing, between relatively movable points [F16L 3/01](#))

### References

#### Limiting references

*This place does not cover:*

Sleeves for supporting pipes, cables or protective tubing, between relatively movable points	<a href="#">F16L 3/01</a>
--	---------------------------

#### 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:*

Fixation devices in ducts for drawing cables	<a href="#">G02B 6/508</a>
Installation of electric cables through tubing or conduit	<a href="#">H02G 1/08</a>

## F16L 9/00

### Rigid pipes

### References

#### Informative references

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

Steam boiler tubes	<a href="#">F22B 37/10</a>
--------------------	----------------------------

## F16L 9/02

of metal ([F16L 9/16](#) - [F16L 9/22](#) take precedence)

### References

#### Limiting references

*This place does not cover:*

Rigid pipes wound from sheets or strips, with or without reinforcement	<a href="#">F16L 9/16</a>
Rigid pipes obtained by bending a sheet longitudinally and connecting the edges	<a href="#">F16L 9/17</a>
Double-walled pipes; Multi-channel pipes or pipe assemblies	<a href="#">F16L 9/18</a>
Rigid pipes made of sound-absorbing materials or with sound-absorbing structure	<a href="#">F16L 9/21</a>
Rigid pipes composed of a plurality of segments	<a href="#">F16L 9/22</a>

**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:

Finned pipes for heat exchangers	<a href="#">F28F 1/00</a>
----------------------------------	---------------------------

**F16L 9/06****Corrugated pipes****References****Informative references**

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

Corrugated flexible pipes	<a href="#">F16L 11/15</a>
---------------------------	----------------------------

**F16L 9/08**

**of concrete, cement, or asbestos cement, with or without reinforcement**  
**([F16L 9/16](#) - [F16L 9/22](#) take precedence)**

**References****Limiting references**

This place does not cover:

Rigid pipes wound from sheets or strips, with or without reinforcement	<a href="#">F16L 9/16</a>
Rigid pipes obtained by bending a sheet longitudinally and connecting the edges	<a href="#">F16L 9/17</a>
Double-walled pipes; Multi-channel pipes or pipe assemblies	<a href="#">F16L 9/18</a>
Rigid pipes made of sound-absorbing materials or with sound-absorbing structure	<a href="#">F16L 9/21</a>
Rigid pipes composed of a plurality of segments	<a href="#">F16L 9/22</a>

**Informative references**

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

Shaping clay or other ceramic compositions, slag or mixtures containing cementitious material	<a href="#">B28B</a>
---	----------------------

**F16L 9/121**

**{with three layers}**

**References****Informative references**

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

Tubular-shaped layered products, e.g. hoses, pipes	<a href="#">B32B 1/08</a> , <a href="#">B32B 2597/00</a>
--	--

Layered products comprising three layers	<a href="#">B32B 2250/03</a>
--	------------------------------

## F16L 9/123

{with four layers}

### References

#### Informative references

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

Tubular-shaped layered products, e.g. hoses, pipes	<a href="#">B32B 1/08</a> , <a href="#">B32B 2597/00</a>
Layered products comprising four layers	<a href="#">B32B 2250/04</a>

## F16L 9/133

the walls consisting of two layers

### References

#### Informative references

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

Tubular-shaped layered products, e.g. hoses, pipes	<a href="#">B32B 1/08</a> , <a href="#">B32B 2597/00</a>
Layered products comprising two layers	<a href="#">B32B 2250/02</a>

## F16L 9/16

wound from sheets or strips, with or without reinforcement

### References

#### Informative references

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

Making wound paper articles	<a href="#">B31C</a>
-----------------------------	----------------------

## F16L 9/18

Double-walled pipes; Multi-channel pipes or pipe assemblies

### References

#### Informative references

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

Joints for double-walled pipes or multi-channel pipes or pipe assemblies	<a href="#">F16L 39/00</a>
--	----------------------------

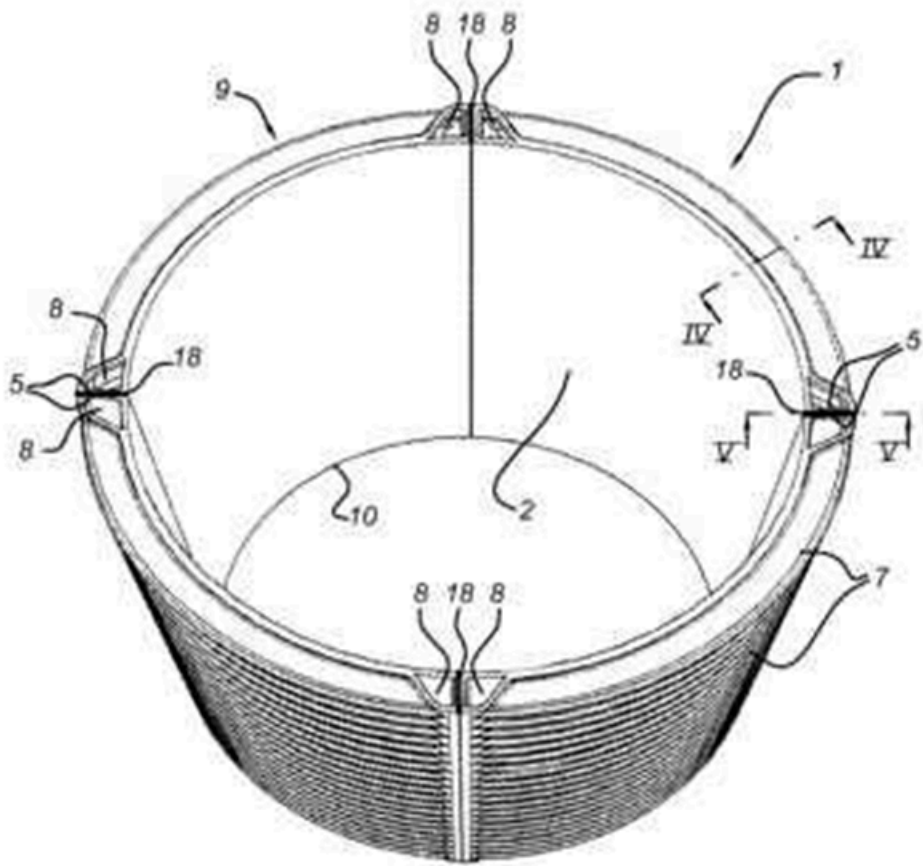
F16L 9/22

Pipes composed of a plurality of segments

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

The term "segments" means radial segments, not axial segments.

F16L 11/00

Hoses, i.e. flexible pipes

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:

Suction-cleaner hoses	<a href="#">A47L 9/24</a>
-----------------------	---------------------------

Arrangements of hoses in apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers	<a href="#">B67D 7/38</a>
---	---------------------------

### **Informative references**

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

Hose-like supports for pipes, cables or protective tubing, between relatively movable points	<a href="#">F16L 3/01</a>
--	---------------------------

## **F16L 11/02**

**made of fibres or threads, e.g. of textile**

### **Definition statement**

*This place covers:*

Hoses, i.e. flexible pipes, made of fibres or threads, e.g. of textile, which may or may not be impregnated, or provided with an impermeable layer, e.g. fire-hoses.

## **F16L 11/042**

**{formed by bending a sheet and connecting the edges}**

### **References**

#### **Informative references**

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

Rigid pipes obtained by bending a sheet longitudinally and connecting the edges	<a href="#">F16L 9/17</a>
Covers for the protection of thermal insulation	<a href="#">F16L 59/10</a>

## **F16L 11/082**

**{two layers}**

### **Definition statement**

*This place covers:*

e.g. hoses with two layers of helically wound cord or wire

## **F16L 11/083**

**{three or more layers}**

### **Definition statement**

*This place covers:*

e.g. hoses with three or more layers of helically wound cord or wire



**F16L 11/086****{two layers}****Definition statement***This place covers:*

e.g. hoses with two braided layers

**F16L 11/087****{three or more layers}****Definition statement***This place covers:*

e.g. hoses with three or more braided layers

**F16L 11/11****with corrugated wall****Definition statement***This place covers:*

Corrugated hoses made from elastic material.

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

Corrugated hoses wound from strips or bands	<a href="#">F16L 11/24</a>
---	----------------------------

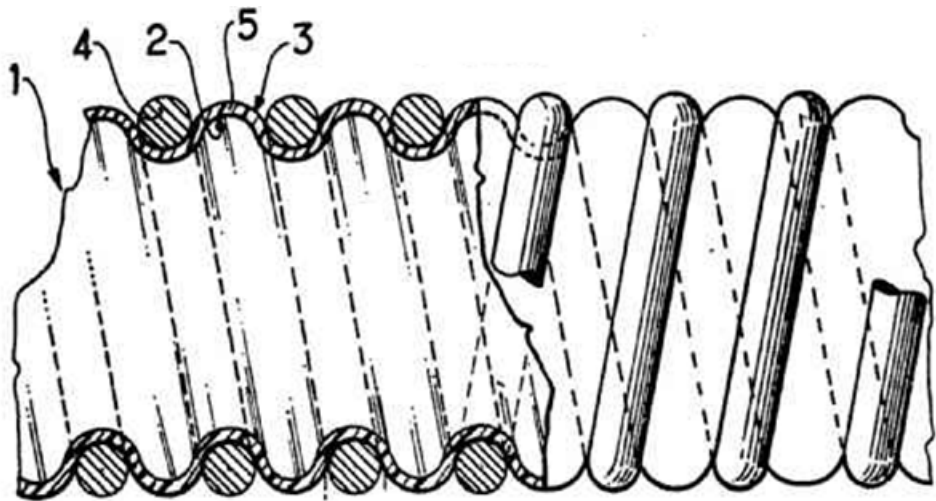
F16L 11/115

having reinforcements not embedded in the wall

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



F16L 11/20

Double-walled hoses

Definition statement

This place covers:

Double-walled hoses, i.e. two concentric hoses.

F16L 13/00

Non-disconnectable pipe joints, e.g. soldered, adhesive, or caulked joints ({non-disconnectable pipe joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe [F16L 41/082](#);} joints for rigid pipes of plastics [F16L 47/00](#))

Definition statement

This place covers:

Non-disconnectable joints between rigid pipes.

References

Limiting references

This place does not cover:

Non-disconnectable pipe joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe	<a href="#">F16L 41/082</a>
Non-disconnectable joints for rigid pipes of plastics	<a href="#">F16L 47/00</a>

**F16L 13/007**

specialy adapted for joining pipes of dissimilar materials {(joints between metal and plastic pipes [F16L 47/24](#))}

**References****Limiting references**

*This place does not cover:*

Joints between metal and plastic pipes	<a href="#">F16L 47/24</a>
--	----------------------------

**Informative references**

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

Joints for pipes of dissimilar materials in general	<a href="#">F16L 25/0072</a>
---	------------------------------

**F16L 13/02****Welded joints****References****Informative references**

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

Arc welding of curved planar seams	<a href="#">B23K 9/028</a>
------------------------------------	----------------------------

**F16L 13/0281****{cold welded}****References****Informative references**

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

Non-electric welding without the application of heat	<a href="#">B23K 20/00</a>
--	----------------------------

**F16L 13/08****Soldered joints****References****Informative references**

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

Arrangements specially adapted for connecting metal hoses to rigid members	<a href="#">F16L 33/26</a>
Soldering metal	<a href="#">B23K 1/00</a>

**F16L 13/103****{Adhesive joints}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Adhesive joints for connecting hoses to rigid members	<a href="#">F16L 33/34</a>
---	----------------------------

**F16L 13/14****made by plastically deforming the material of the pipe, e.g. by flanging, rolling****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Working of metal tubes without essentially removing material	<a href="#">B21D</a>
--	----------------------

**F16L 13/147****{by radially expanding the inner part ([F16L 13/168](#) takes precedence)}****References****Limiting references***This place does not cover:*

Non-disconnectable pipe joints, made by plastically deforming the material of the pipe, the pipe joint consisting of overlapping extremities having mutually co-operating collars, for screw threaded pipes	<a href="#">F16L 13/168</a>
---	-----------------------------

**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:*

Couplings or joints for setting of expandable casings, screens, liners, or the like, in wells	<a href="#">E21B 43/106</a>
---	-----------------------------

**F16L 13/168****{for screw threaded pipes}****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:*

Couplings or joints for setting of expandable casings, screens, liners, or the like, in wells	<a href="#">E21B 43/106</a>
---	-----------------------------

**F16L 15/00****Screw-threaded joints; Forms of screw-threads for such joints****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:*

Screw threaded connections for drilling rods	<a href="#">E21B 17/042</a>
Casing joints used in deep-drilling	<a href="#">E21B 17/08</a>

**Informative references**

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

Hose connections with parts screwed directly on or into the hose	<a href="#">F16L 33/24</a>
Branching pipes; Joining pipes to walls	<a href="#">F16L 41/00</a>
Lubricating compositions	<a href="#">C10M</a>
Joints sealed primarily by means other than engagement of screw-threads	<a href="#">F16J 15/00</a>

**F16L 15/08****with supplementary elements ([F16L 15/04](#) takes precedence)****Definition statement**

*This place covers:*

Screw-threaded connections with supplementary elements not forming a seal, e.g. additional locking elements.

**References****Limiting references**

*This place does not cover:*

Screw-threaded joints with additional sealings	<a href="#">F16L 15/04</a>
--	----------------------------

**Informative references**

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

Bends or siphons adapted to make use of special securing means	<a href="#">F16L 43/02</a>
--	----------------------------

**F16L 17/00****Joints with packing adapted to sealing by fluid pressure****References****Informative references**

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

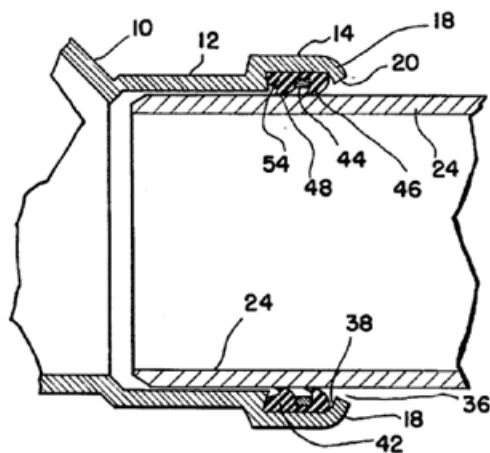
Sealing by fluid pressure for universal joints with partly spherical engaging surfaces	<a href="#">F16L 27/067</a>
Joints allowing adjustment or movement only about the axis of one pipe	<a href="#">F16L 27/08</a>
Joints comprising a flexible connection only	<a href="#">F16L 27/10</a>
Joints allowing substantial longitudinal adjustment or movement	<a href="#">F16L 27/12</a>
Sealing by fluid pressure for hoses	<a href="#">F16L 33/16</a>
Couplings of the quick acting type	<a href="#">F16L 37/00</a>
Expansion-compensation arrangements for pipe-lines	<a href="#">F16L 51/00</a>
Sealings tightened by external pressure, inflatable packings	<a href="#">F16J 15/00</a>

**F16L 17/025****the sealing rings having radially directed ribs****Definition statement**

*This place covers:*

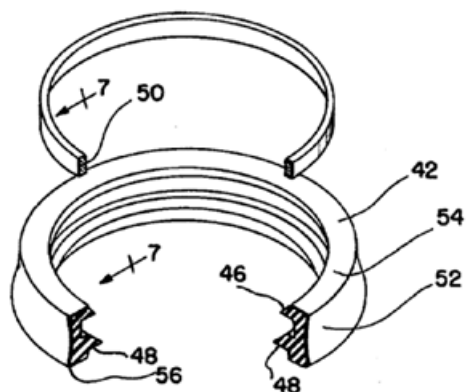
Illustrative example of subject matter classified in this place:

1a.



## Definition statement

1b.



In figures 1a and 1b, note radially directed ribs (46 and 48) of sealing ring (42).

### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

The term "radially directed ribs" also includes ribs which are deformed in an axial direction upon connection.

### F16L 17/035

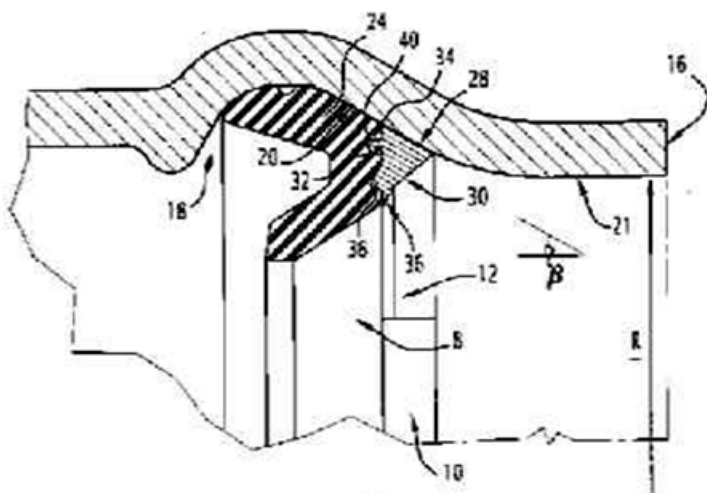
**the sealing rings having two lips parallel to each other**

### Definition statement

*This place covers:*

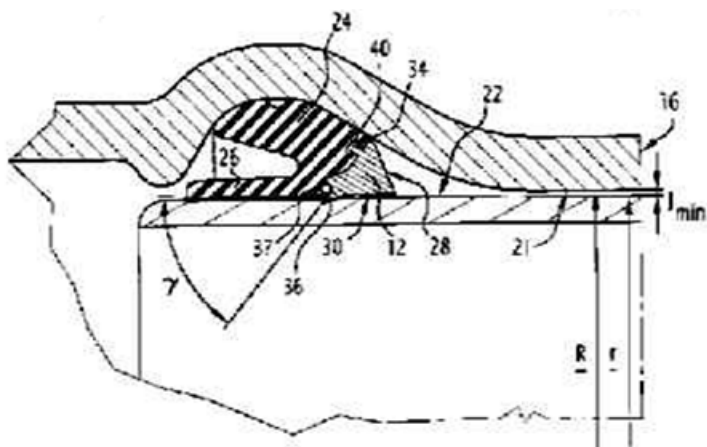
Illustrative example of subject matter classified in this place:

1a.



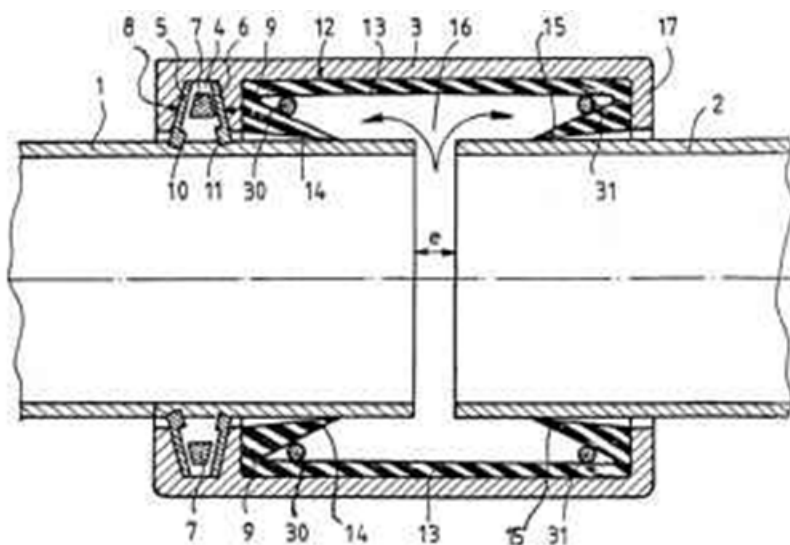
## Definition statement

1b.

**F16L 17/04****with longitudinally split or divided sleeve****Definition statement***This place covers:*

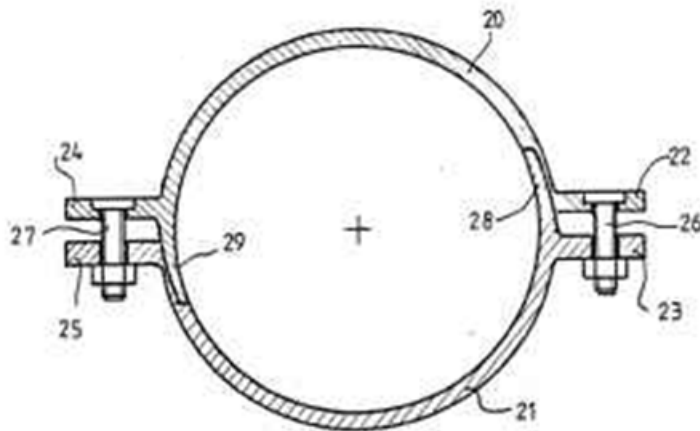
Illustrative example of subject matter classified in this place:

1a.





1b.



**F16L 17/063**

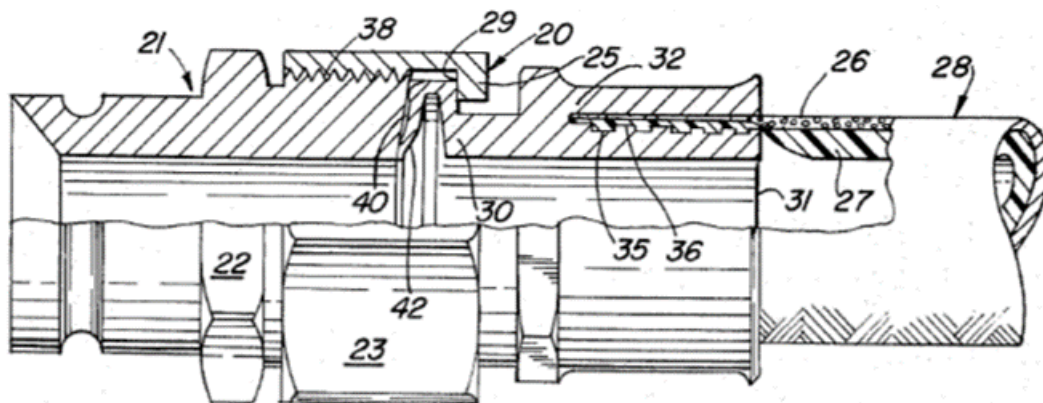
**{forming a whole with the pipe or joint}**

### Definition statement

*This place covers:*

Sealing rings which are an integral part of the pipe, flange or joint, i.e. forming a whole with the pipe, flange or joint.

Illustrative example of subject matter classified in this place:



Sealing member (42) adapted to seal by fluid pressure is integral with joint (30).

## References

### **Informative references**

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

Screw-threaded joints with sealing rings forming a whole with the pipe or joint	<a href="#">F16L 15/06</a>
---	----------------------------

## F16L 17/10

the packing being sealed by the pressure of a fluid other than the fluid in or surrounding the pipe

### References

#### Informative references

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

Expansion-compensation arrangements for pipe-lines	<a href="#">F16L 51/00</a>
--	----------------------------

## F16L 19/00

Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on, or into, one of the joint parts ([F16L 17/00](#) takes precedence; if using bolts or equivalent connecting means [F16L 23/00](#); connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#) {; specially adapted for pipes of brittle material [F16L 49/06](#)})

### References

#### Limiting references

This place does not cover:

Joints with packing adapted to sealing by fluid pressure	<a href="#">F16L 17/00</a>
Flanged joints with sealing surfaces pressed together by bolts or equivalent connecting means	<a href="#">F16L 23/00</a>
Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/00</a>
Joints, specially adapted for pipes of brittle material, in which sealing surfaces are pressed together by means of a member, e.g. swivel nut, screwed on, or into, one of the joint parts	<a href="#">F16L 49/06</a>

#### Informative references

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

Screw threaded joints	<a href="#">F16L 15/00</a>
Pipe joints specially adapted for electrically insulating the two pipe ends of the joint from each other	<a href="#">F16L 25/02</a>
Adjustable joints, joints allowing movement	<a href="#">F16L 27/00</a>

### Special rules of classification

Looping references between [F16L 19/00](#) and [F16L 23/00](#) have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows:

Flanged joints with sealing surfaces pressed together by means other than bolts or equivalent are classified only in [F16L 19/00](#).

Flanged joints with sealing surfaces pressed together by bolts or equivalent are classified only in [F16L 23/00](#).

## F16L 19/005

{comprising locking means for the threaded member}

### References

#### Informative references

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

Locking of screws or nuts per se	<a href="#">F16B 39/00</a>
----------------------------------	----------------------------

## F16L 19/0206

{the collar not being integral with the pipe}

### Definition statement

*This place covers:*

Joints with flanges not forming part of the pipe body. This includes welded or screwed on flanges which are not considered to be integral with the pipe

## F16L 19/0237

{specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like}

### References

#### Informative references

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

Branch units per se	<a href="#">F16L 41/02</a>
Bends per se	<a href="#">F16L 43/00</a>
Pipe units with cleaning aperture per se	<a href="#">F16L 45/00</a>

## F16L 19/048

{specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like}

### References

#### Informative references

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

Branch units per se	<a href="#">F16L 41/02</a>
Bends per se	<a href="#">F16L 43/00</a>
Pipe units with cleaning aperture per se	<a href="#">F16L 45/00</a>

**F16L 19/061**

{a pressure ring being arranged between the clamping ring and the threaded member or the connecting member}

**Definition statement**

*This place covers:*

connections having two rings

**F16L 19/062**

{specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like}

**References****Informative references**

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

Branch units per se	<a href="#">F16L 41/02</a>
Bends per se	<a href="#">F16L 43/00</a>
Pipe units with cleaning aperture per se	<a href="#">F16L 45/00</a>

**F16L 19/065**

the wedging action being effected by means of a ring

**Definition statement**

*This place covers:*

connections having one ring

**F16L 19/0653**

{the ring being rotatably connected to one of the connecting parts}

**Definition statement**

*This place covers:*

connections wherein the ring rotates with the nut during the fastening

**F16L 19/083**

{the longitudinal cross-section of the ring not being modified during clamping}

**Definition statement**

*This place covers:*

connections wherein the ring being a split ring

**F16L 19/10**

the profile of the ring being altered

**Definition statement**

*This place covers:*

connection wherein the ring being no split ring

**F16L 21/00**

Joints with sleeve or socket ([F16L 13/00](#), {[F16L 15/00](#),} [F16L 17/00](#), [F16L 19/00](#) take precedence; {joints for pipes made of reinforced concrete [F16L 25/0027](#);} connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#); specially adapted for pipes of brittle material [F16L 49/00](#))

**References****Limiting references**

*This place does not cover:*

Non-disconnectable pipe-joints	<a href="#">F16L 13/00</a>
Screw-threaded joints	<a href="#">F16L 15/00</a>
Joints adapted to sealing by fluid pressure	<a href="#">F16L 17/00</a>
Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut	<a href="#">F16L 19/00</a>
Joints for pipes made of reinforced concrete	<a href="#">F16L 25/0027</a>
Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/00</a>
Joints specially adapted for pipes of brittle material	<a href="#">F16L 49/00</a>

**Informative references**

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

Devices for covering leaks in pipes or hoses	<a href="#">F16L 55/16</a>
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**F16L 21/002**

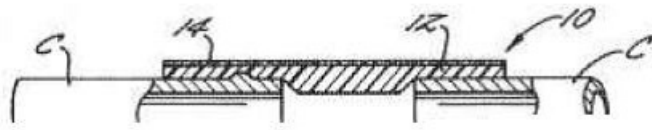
{Sleeves or nipples for pipes of the same diameter; Reduction pieces ([F16L 27/00](#), [F16L 37/00](#) take precedence; with elastic sealing rings [F16L 21/022](#))}

**Definition statement**

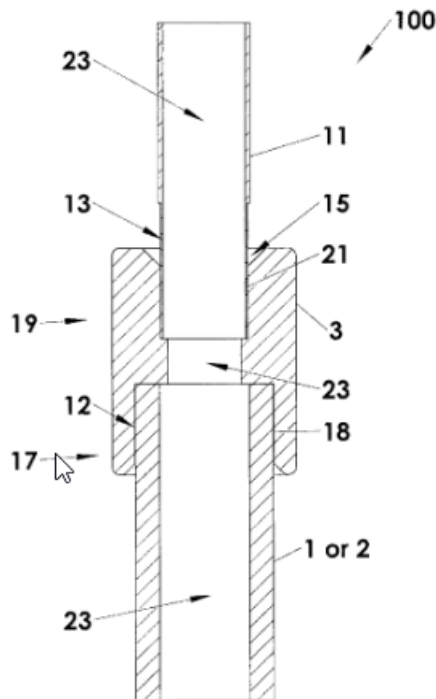
*This place covers:*

Illustrative examples of subject matter classified in this place:

1.



2.



## References

### Limiting references

*This place does not cover:*

Joints with sleeve or socket with elastic sealing rings between pipe and sleeve or between pipe and socket	<a href="#">F16L 21/022</a>
Adjustable joints; Joints allowing movement	<a href="#">F16L 27/00</a>
Couplings of the quick-acting type	<a href="#">F16L 37/00</a>

### Informative references

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

Joints with a divided sleeve or ring clamping around overlapping pipe-ends	<a href="#">F16L 21/06</a>
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## F16L 21/005

{made of elastic material, e.g. partly or completely surrounded by clamping devices (comprising packing adapted to sealing by fluid pressure [F16L 17/04](#))}

### References

#### Limiting references

*This place does not cover:*

<div> Joints with longitudinally split or divided sleeve comprising packing adapted to sealing by fluid pressure </div>	<div> <a href="#">F16L 17/04</a> </div>
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#### Informative references

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

<div> Double-walled hoses </div>	<div> <a href="#">F16L 11/20</a> </div>
<div> Hose-clips </div>	<div> <a href="#">F16L 33/02</a> </div>

## F16L 21/007

{clamped by a wedging action ([F16L 27/00](#), [F16L 37/092](#), [F16L 37/122](#), [F16L 37/123](#), [F16L 37/15](#), [F16L 37/16](#) take precedence)}

### References

#### Limiting references

*This place does not cover:*

<div> Adjustable joints; Joints allowing movement </div>	<div> <a href="#">F16L 27/00</a> </div>
<div> Quick-acting type couplings combined with automatic locking by means of elements wedged between the pipe and the frusto-conical surface of the body of the connector </div>	<div> <a href="#">F16L 37/092</a> </div>
<div> Quick-acting type couplings using hooks tightened by a wedge section </div>	<div> <a href="#">F16L 37/122</a> </div>
<div> Quick-acting type couplings using a retaining member in the form of a wedge </div>	<div> <a href="#">F16L 37/123</a> </div>
<div> Quick-acting type couplings secured by inserting a wedge between mating surfaces </div>	<div> <a href="#">F16L 37/15</a> </div>
<div> Quick-acting type couplings tightened by the action of a wedge-shaped hinged hooks </div>	<div> <a href="#">F16L 37/16</a> </div>

## F16L 21/02

with elastic sealing rings between pipe and sleeve or between pipe and socket, e.g. with rolling or other prefabricated profiled rings ([F16L 21/06](#), [F16L 21/08](#) take precedence; if adjustability is essential [F16L 27/00](#))

### Relationships with other classification places

Sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket, the sealing rings having radially directed ribs, are classified under [F16L 17/025](#).

Sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket, the sealing rings having annular axial lips, are classified under [F16L 17/03](#).

## References

### Limiting references

*This place does not cover:*

Joints with sleeve or socket with a divided sleeve or ring clamping around the pipe-ends	<a href="#">F16L 21/06</a>
Joints with sleeve or socket with additional locking means	<a href="#">F16L 21/08</a>
Adjustable joints	<a href="#">F16L 27/00</a>

## F16L 21/04

**in which sealing rings are compressed by axially-movable members**

### Relationships with other classification places

Joints in which sealing surfaces are pressed together by means of a member screwed on or into one of the joint parts, in which radial clamping is obtained by wedging action on non-deformed pipe ends, adapted for use in socket or sleeve connections are classified under [F16L 19/07](#).

## References

### Informative references

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

Quick acting couplings	<a href="#">F16L 37/00</a>
Devices for covering leaks from inside a pipe	<a href="#">F16L 55/162</a>

## F16L 21/06

**with a divided sleeve or ring clamping around the pipe ends (flanged joints [F16L 23/00](#); couplings of the quick-acting type [F16L 37/00](#))**

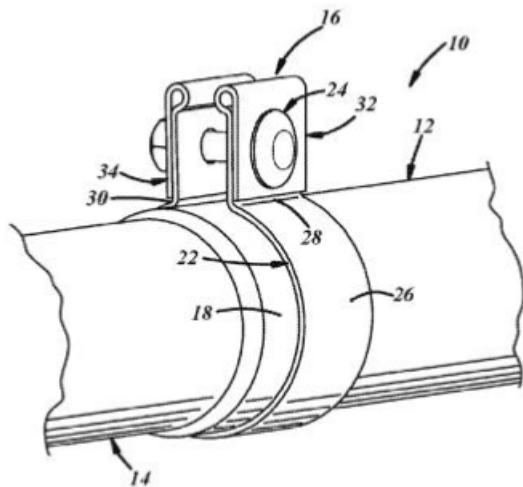
### Definition statement

*This place covers:*

Joints with sleeve or socket with a divided sleeve or ring clamping around the overlapping pipe-ends.



Illustrative example of subject matter classified in this place:



## References

### Limiting references

*This place does not cover:*

Flanged joints	<a href="#">F16L 23/00</a>
Couplings of the quick-acting type	<a href="#">F16L 37/00</a>

### **Informative references**

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

Sleeves or nipples for pipes of the same diameter; Reduction pieces	<a href="#">F16L 21/002</a>
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## Special rules of classification

Looping references between [F16L 21/06](#) and [F16L 37/00](#) have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows: the reference to [F16L 37/00](#) is considered to be limiting.

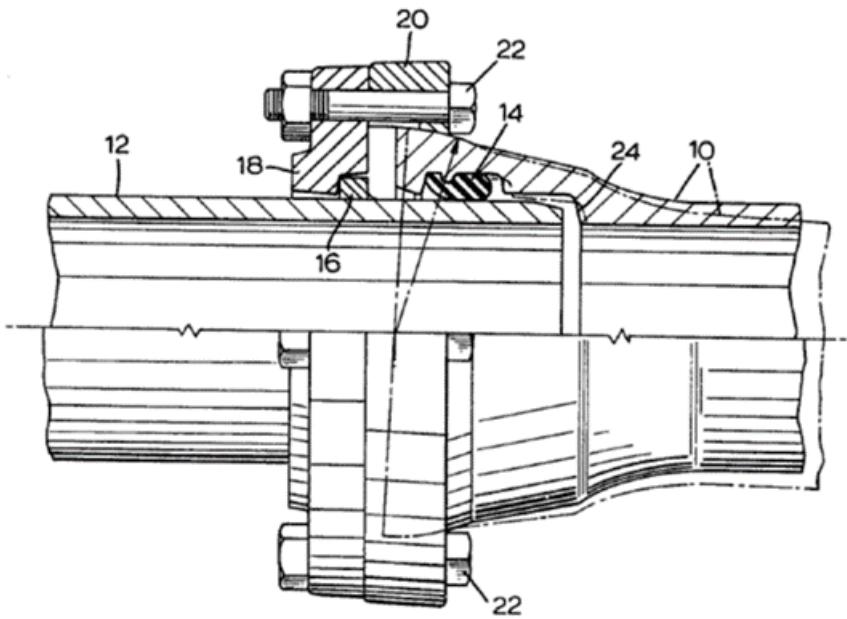
F16L 21/08

with additional locking means ([F16L 21/06](#) takes precedence; couplings of the quick-acting type [F16L 37/00](#))

Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



Relationships with other classification places

Joints with packing adapted to sealing by fluid pressure with sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket having annular axial lip, the sealing rings having two lips parallel to each other, are classified under [F16L 17/035](#).

Joints with packing adapted to sealing by fluid pressure with sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket with longitudinally split or divided sleeve are classified under [F16L 17/04](#).

Joints in which sealing surfaces are pressed together by means of a member screwed on or into one of the joint parts with metal rings which bite into the wall of the pipe are classified under [F16L 19/08](#).

References

Limiting references

*This place does not cover:*

Joins with sleeve or socket with a divided sleeve or ring clamping around the pipe-ends	<a href="#">F16L 21/06</a>
Couplings of the quick-acting type	<a href="#">F16L 37/00</a>

**Informative references**

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

<p>Joints with sleeve or socket with elastic sealing rings between pipe and sleeve or between pipe and socket, in which sealing rings are compressed by axially-movable members</p>	<p><a href="#">F16L 21/04</a></p>
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**F16L 23/00**

Flanged joints ([F16L 13/00](#), [F16L 17/00](#), [F16L 19/00](#) take precedence; adjustable joints [F16L 27/00](#); for hoses [F16L 33/00](#); couplings of the quick-acting type [F16L 37/00](#); for double-walled or multi-channel pipes, or pipe assemblies [F16L 39/00](#); connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#); specially adapted for pipes of brittle material [F16L 49/00](#))

**References****Limiting references**

This place does not cover:

Non-disconnectable pipe joints	<a href="#">F16L 13/00</a>
Joints adapted to sealing by fluid pressure	<a href="#">F16L 17/00</a>
Flanged joints with sealing surfaces pressed together by means other than bolts or equivalent	<a href="#">F16L 19/00</a>
Adjustable joints	<a href="#">F16L 27/00</a>
For hoses	<a href="#">F16L 33/00</a>
Couplings of the quick-acting type	<a href="#">F16L 37/00</a>
For double-walled or multi-channel pipes or assemblies	<a href="#">F16L 39/00</a>
Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/00</a>
Specially adapted for pipes of brittle material	<a href="#">F16L 49/00</a>

**Special rules of classification**

Looping references between [F16L 19/00](#) and [F16L 23/00](#) have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows:

Flanged joints with sealing surfaces pressed together by means other than bolts or equivalent are classified only in [F16L 19/00](#).

Flanged joints with sealing surfaces pressed together by bolts or equivalent are classified only in [F16L 23/00](#).

**F16L 23/003****{Auxiliary devices}****Definition statement**

This place covers:

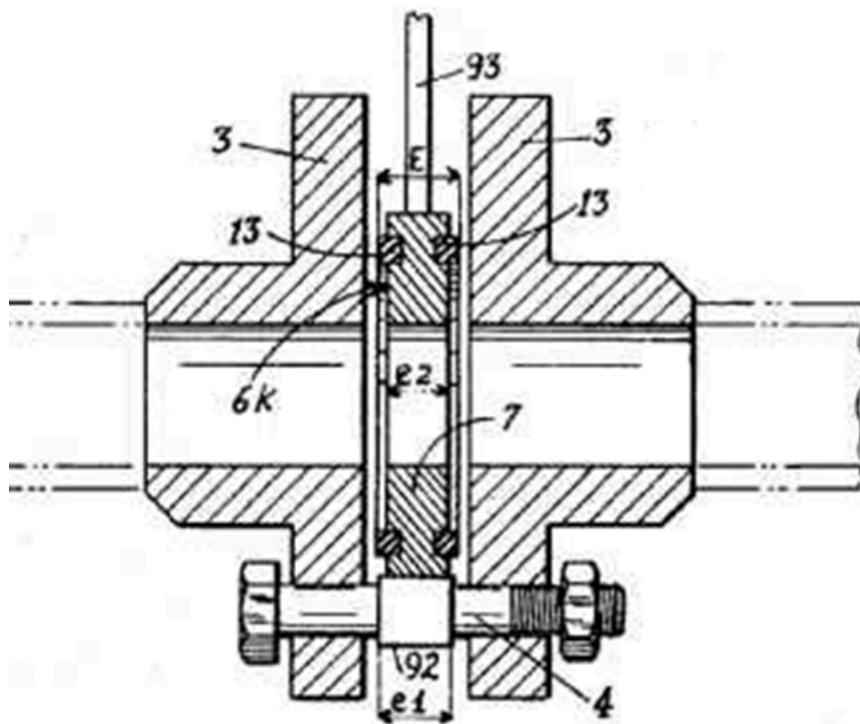
devices for aligning, separating or locking of the flange connection

**F16L 23/006****{Attachments}****Definition statement**

*This place covers:*

Attachments to the joints having no sealing or connection function, e.g. measuring devices or valves that are attached to or integrated in the flange.

Illustrative example of subject matter classified in this place:



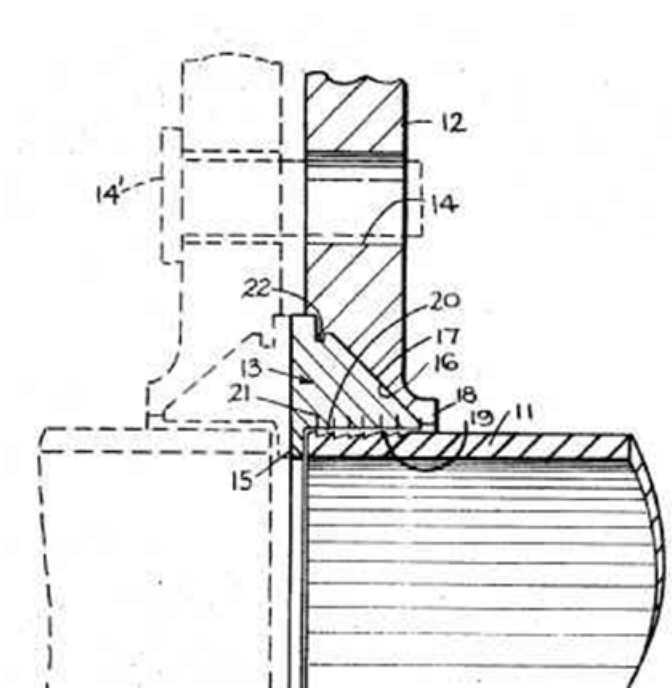
F16L 23/0286

{the shoulder not being formed from the pipe}

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



References

Informative references

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

Joints with sleeve and socket, where the pipe ends are overlapping	<a href="#">F16L 21/08</a>
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F16L 23/14

for rectangular pipes

References

Informative references

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

Non-flanged joints for pipes with a rectangular cross-section	<a href="#">F16L 25/0009</a>
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## F16L 23/162

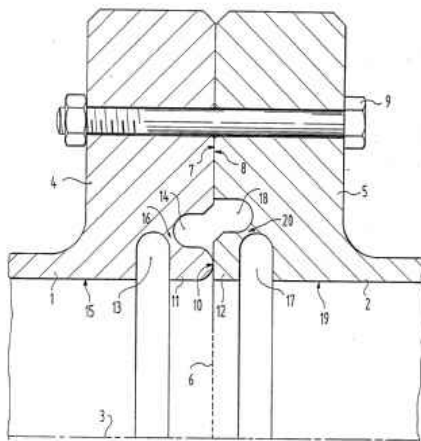
{the pipe ends abutting each other}

### Definition statement

*This place covers:*

Joints where pipe ends are abutting each other with no extra sealing rings present, such that there is surface to surface contact between the flanges.

Illustrative example of subject matter classified in this place:



## F16L 25/00

Construction or details of pipe joints not provided for in, or of interest apart from, groups [F16L 13/00](#) - [F16L 23/00](#) (adjustable or allowing movement [F16L 27/00](#); with fluid cut-off means [F16L 29/00](#); quick-acting [F16L 37/00](#); for double-walled or multi-channel pipes [F16L 39/00](#); connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#); specially adapted for pipes of brittle material [F16L 49/00](#))

### Definition statement

*This place covers:*

Details of pipe joints not provided for in, or of interest apart from, groups [F16L 13/00](#) - [F16L 23/00](#), e.g. electrically conducting or insulating means.

### References

#### Limiting references

*This place does not cover:*

Adjustable joints	<a href="#">F16L 27/00</a>
Joints with fluid cut-off means	<a href="#">F16L 29/00</a>
Couplings of the quick-acting type	<a href="#">F16L 37/00</a>
Joints or fittings for double-walled or multi-channel pipes or pipe assemblies	<a href="#">F16L 39/00</a>

Specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/00</a>
Specially adapted for pipes of brittle material	<a href="#">F16L 49/00</a>

### References out of a residual place

Examples of places in relation to which this place is residual:

Non-disconnectable pipe joints	<a href="#">F16L 13/00</a>
Screw-threaded joints	<a href="#">F16L 15/00</a>
Joints adapted to sealing by fluid pressure	<a href="#">F16L 17/00</a>
Joints in which sealing surfaces are pressed together by means of a member, e.g. swivel nut	<a href="#">F16L 19/00</a>
Joints with sleeve or socket	<a href="#">F16L 21/00</a>
Flanged joints	<a href="#">F16L 23/00</a>

### Special rules of classification

Contrary to the [F16L 37/00](#) limiting reference, joints for corrugated pipes of the quick-acting type are classified in [F16L 25/0045](#).

## F16L 25/0009

{Joints for pipes with a square or rectangular cross-section}

### References

#### References out of a residual place

Examples of places in relation to which this place is residual:

Flanged joints for pipes with a rectangular cross-section	<a href="#">F16L 23/14</a>
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## F16L 25/0072

{Joints for pipes of dissimilar materials (joints between metal and plastic pipes [F16L 47/24](#))}

### References

#### Limiting references

This place does not cover:

Joints between metal and plastic pipes	<a href="#">F16L 47/24</a>
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#### References out of a residual place

Examples of places in relation to which this place is residual:

Non-disconnectable joints for pipes of dissimilar materials	<a href="#">F16L 13/007</a>
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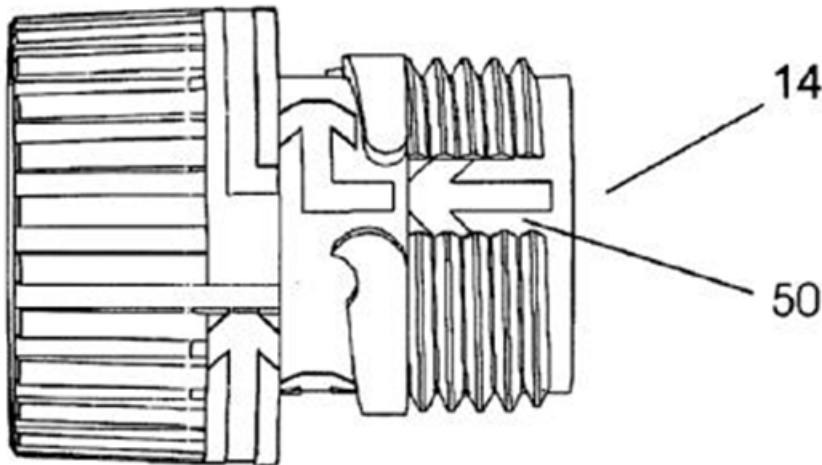
**F16L 25/009**

{Combination of a quick-acting type coupling and a conventional one}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 25/01**

pecially adapted for realising electrical conduction between the two pipe ends of the joint or between parts thereof

**References****Informative references**

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

Electrically-conductive connections between or with tubular conductors	<a href="#">H01R 4/60</a>
--	---------------------------

**F16L 25/02**

pecially adapted for electrically insulating the two pipe ends of the joint from each other

**References****Informative references**

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

Insulating bodies in general	<a href="#">H01B</a>
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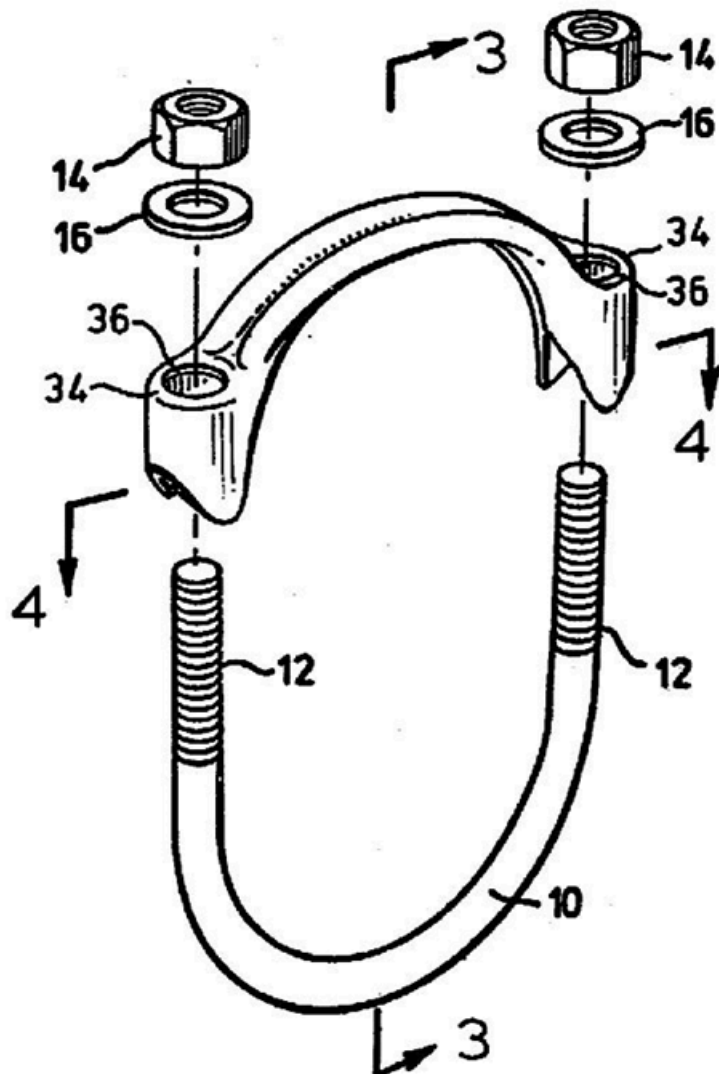
**F16L 25/04**

comprising a collar or ring having a threaded pin rigid with the pipe-encircling member

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



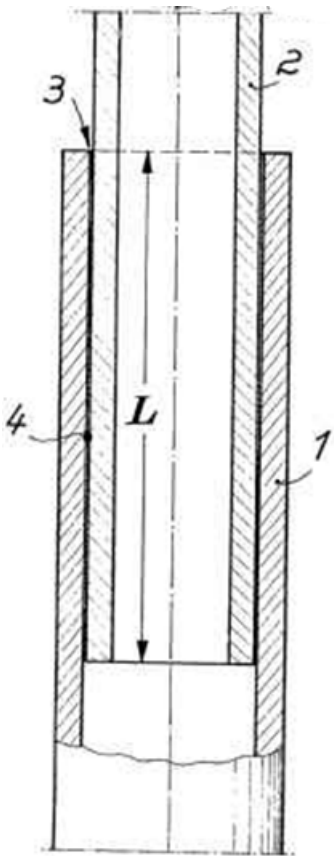
F16L 25/10

Sleeveless joints between two pipes, one being introduced into the other

Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



F16L 27/00

Adjustable joints; Joints allowing movement (of the quick-acting type [F16L 37/50](#); for double-walled or multi-channel pipes or pipe assemblies [F16L 39/04](#) {; specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/18](#); specially adapted for pipes of brittle material [F16L 49/08](#)})

References

Limiting references

*This place does not cover:*

Couplings of the quick-acting type	<a href="#">F16L 37/50</a>
For double-walled or multi-channel pipes or pipe assemblies	<a href="#">F16L 39/04</a>
Adjustable joints specially adapted to be made of plastics or to be used with pipes made of plastics; Joints allowing movement specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/18</a>

Adjustable joints specially adapted to be used with pipes of brittle material; Joints allowing movement specially adapted to be used with pipes of brittle material	<a href="#">F16L 49/08</a>
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### 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:*

Medical tube rotating or swivel joints	<a href="#">A61M 39/1055</a>
Swivel joints in hose lines used for flushing boreholes	<a href="#">E21B 21/02</a>

### Informative references

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

Branching pipes, wherein the branch pipes are moveable	<a href="#">F16L 41/18</a>
Connections between hoses and sprayers	<a href="#">B05B</a>

## F16L 27/02

**Universal joints, i.e. with mechanical connection allowing angular movement or adjustment of the axes of the parts in any direction**

### References

#### Informative references

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

Articulated hoses made of rigid material	<a href="#">F16L 11/18</a>
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## F16L 27/04

**with partly-spherical engaging surfaces**

### References

#### Informative references

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

Joints with, between the surfaces, a flexible element which undergoes shear and flexure	<a href="#">F16L 27/103</a>
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## F16L 27/047

**held in place by a screwed member having an internal spherical surface**

### Definition statement

*This place covers:*

joints held together with a swivel nut

F16L 27/08

allowing adjustment or movement only about the axis of one pipe

References

Informative references

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

Swivel joints in hose lines for flushing boreholes	<a href="#">E21B 21/02</a>
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F16L 27/0828

{having radial bearings}

References

Informative references

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

Connections of quick-acting couplings maintained by balls or rollers under radial pressure	<a href="#">F16L 37/22</a>
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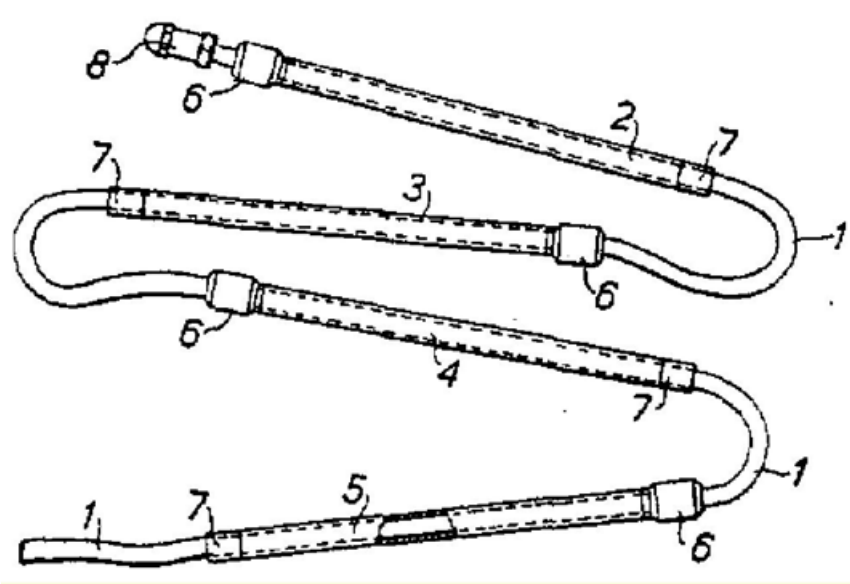
F16L 27/0861

{Arrangements of joints with one another and with pipes or hoses}

Definition statement

This place covers:

Illustrative example of subject matter classified in this place:



**F16L 27/10****comprising a flexible connection only****Definition statement***This place covers:*

- Adjustable joints comprising a flexible connection only, e.g. for damping vibrations.
- Joints allowing movement and comprising a flexible connection only, e.g. for damping vibrations.

**F16L 27/12****allowing substantial longitudinal adjustment or movement (by use of screw-thread [F16L 15/02](#))****References****Limiting references***This place does not cover:*

Joint allowing movement by use of screw-threads	<a href="#">F16L 15/02</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Telescopic bends	<a href="#">F16L 43/006</a>
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**F16L 29/00****Joints with fluid cut-off means (quick-acting joints with cut-off means [F16L 37/28](#))****Definition statement***This place covers:*

The fluid cut off means must be a part of, or functionally associated with the connection, not just a valve in a pipe, otherwise its classified only with the valves [F16K](#)

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

Couplings of the quick-acting type with cut-off means	<a href="#">F16L 37/28</a>
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**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Valves, taps and cocks in general	<a href="#">F16K</a>
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**F16L 29/002****{joints with taps}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Taps in general	<a href="#">F16K 5/00</a>
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**F16L 29/005****{joints with cut-off devices which can be perforated}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Cut-off devices with a breakable closure member in general	<a href="#">F16K 13/04</a>
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**F16L 29/007****{Joints with cut-off devices controlled separately}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Operating means for cut-off devices in general	<a href="#">F16K 31/00</a>
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**F16L 29/02****with a cut-off device in one of the two pipe ends, the cut-off device being automatically opened when the coupling is applied****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Screw joints without cut-off devices	<a href="#">F16L 19/00</a>
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**F16L 29/04**

with a cut-off device in each of the two pipe ends, the cut-off devices being automatically opened when the coupling is applied

**References****Informative references**

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

Screw joints without cut-off devices	<a href="#">F16L 19/00</a>
--------------------------------------	----------------------------

**F16L 31/00**

Arrangements for connecting hoses to one another or to flexible sleeves ([F16L 33/00](#) takes precedence)

**Definition statement**

*This place covers:*

hoses directly connected to each other

**References****Limiting references**

*This place does not cover:*

Arrangements for connecting hose to rigid members	<a href="#">F16L 33/00</a>
Rigid hose connectors, i.e. single members engaging both hoses	<a href="#">F16L 33/00</a>

**F16L 33/00**

Arrangements for connecting hoses to rigid members; Rigid hose-connectors, i.e. single members engaging both hoses (connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#))

**References****Limiting references**

*This place does not cover:*

Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics	<a href="#">F16L 47/00</a>
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**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:*

Hose couplings specially adapted for suction cleaners	<a href="#">A47L 9/24</a>
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**Informative references**

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

Hand tools for inserting fittings into hoses	<a href="#">B25B 27/10</a>
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**F16L 33/02****Hose-clips****References****Informative references**

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

Covering leaks in pipes or hoses	<a href="#">F16L 55/16</a>
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**F16L 33/025**

**tightened by deforming radially extending loops or folds**

**Definition statement**

*This place covers:*

e.g. Oetiker ears

**F16L 33/14**

**with a taping-bolt, i.e. winding up the end of the hose-encircling member**

**Definition statement**

*This place covers:*

e.g. fastening means working like a sardine-can opener

**F16L 33/26**

**specially adapted for hoses made of metal**

**Definition statement**

*This place covers:*

corrugated hoses

**F16L 35/00**

**Special arrangements used in connection with end fittings of hoses, e.g. safety or protecting devices**

**Definition statement**

*This place covers:*

safety housings; devices against unauthorized use, anti-kink devices for pipe ends; pressure relief devices



## F16L 37/00

**Couplings of the quick-acting type** ({devices for use where pipes pass through walls by means of a joint of the quick acting type [F16L 5/027](#);} radially-binding sleeves [F16L 17/04](#), [F16L 21/06](#); connecting hoses to rigid members [F16L 33/00](#))

### Definition statement

*This place covers:*

Joints wherein the connection is established by one or two simple quick movements.

### References

#### Limiting references

*This place does not cover:*

Devices for use where pipes pass through walls by means of a joint of the quick acting type	<a href="#">F16L 5/027</a>
Radially binding sleeves	<a href="#">F16L 17/04</a>
Connecting hoses to rigid members	<a href="#">F16L 33/00</a>

#### 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:*

Couplings of the quick-acting type specially adapted for lubricating devices	<a href="#">F16N 21/00</a>
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#### Informative references

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

Welded connections or screwed connections	<a href="#">F16L 13/00</a> , <a href="#">F16L 15/00</a>
Joints with a divided sleeve or ring clamping around the pipe-ends	<a href="#">F16L 21/06</a>
Thermally insulated quick acting joints	<a href="#">F16L 59/188</a>
Connections between hoses and sprayers	<a href="#">B05B</a>
Connections made automatically when vehicles are brought together	<a href="#">B60D</a> , <a href="#">B61G</a>

### Special rules of classification

Looping references between [F16L 37/00](#) and [F16L 21/06](#) have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows: the reference to [F16L 21/06](#) is considered to be informative.

**F16L 37/008****{for branching pipes; for joining pipes to walls}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Branching pipes in general; Joining pipes to walls in general	<a href="#">F16L 41/00</a>
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**F16L 37/02****in which the connection is maintained only by friction of the parts being joined  
([F16L 37/22](#) takes precedence)****Definition statement***This place covers:*

Couplings that can be separated by force, e.g. pulling strongly

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

Connections maintained by means of balls, rollers or helical springs under radial pressure between the parts	<a href="#">F16L 37/22</a>
--	----------------------------

**F16L 37/084****combined with automatic locking****Definition statement***This place covers:*

Joints wherein the connection is established by one simple quick movement: simply push the two pipe ends together: "click"

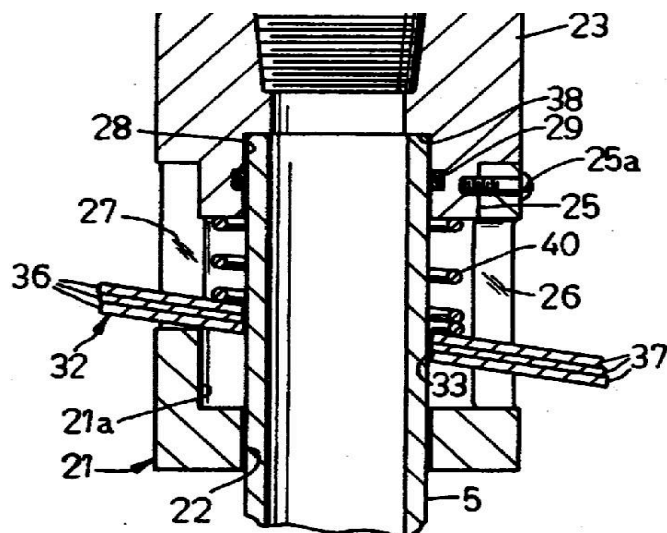
**F16L 37/0844**

{by means of a ring pivoting so as to lie against the tube}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 37/0848**

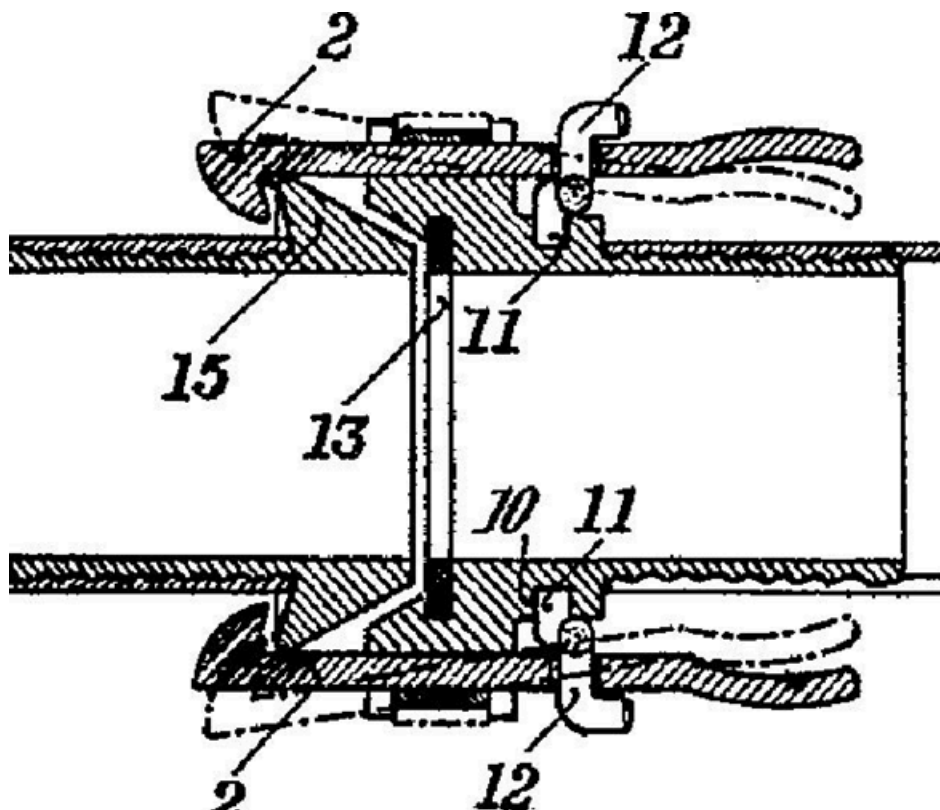
{rocking freely}

**Definition statement**

*This place covers:*

Couplings with rigid hook members which can pivot.

Illustrative example of subject matter classified in this place:



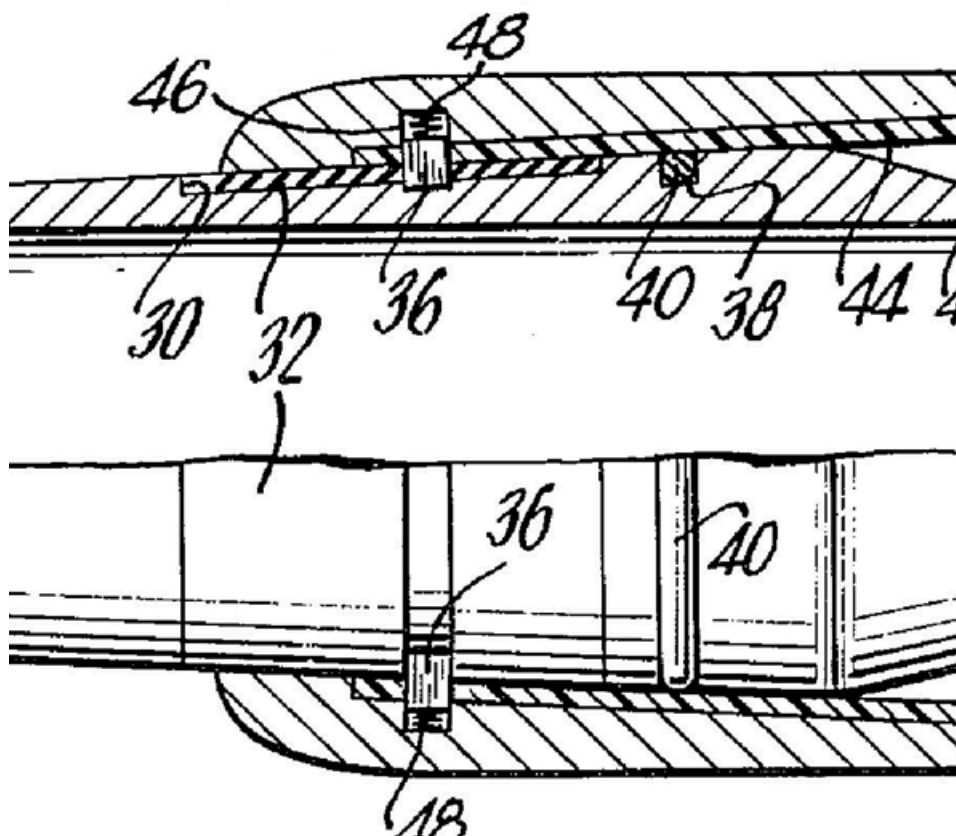
**F16L 37/086**

by means of latching members pushed radially by spring-like elements  
 {(radially moved latching members forming a ring [F16L 37/0841](#))}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**References****Limiting references**

*This place does not cover:*

Radially moved latching members forming a ring	<a href="#">F16L 37/0841</a>
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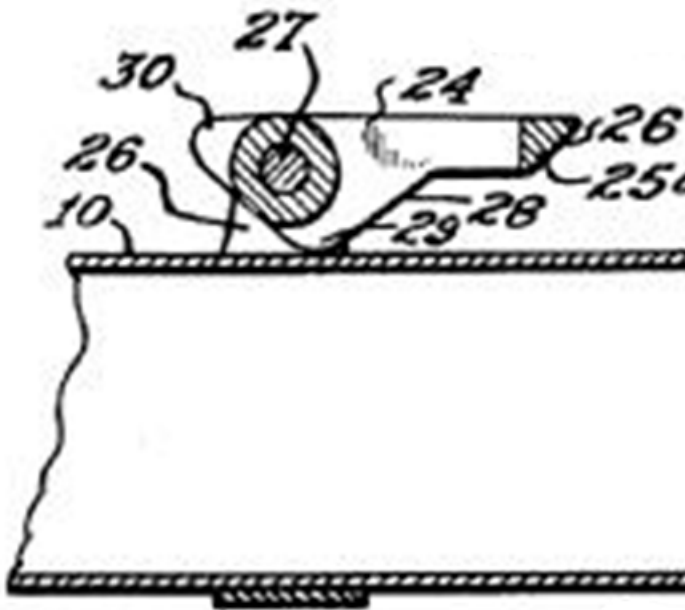
**F16L 37/096**

by means of hooks hinged about an axis

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 37/10**

using a rotary external sleeve or ring on one part

**Definition statement**

*This place covers:*

Joints wherein the connection is established by two simple quick movements: Pushing the two pipe ends together plus an additional second action; an action to achieve the locking

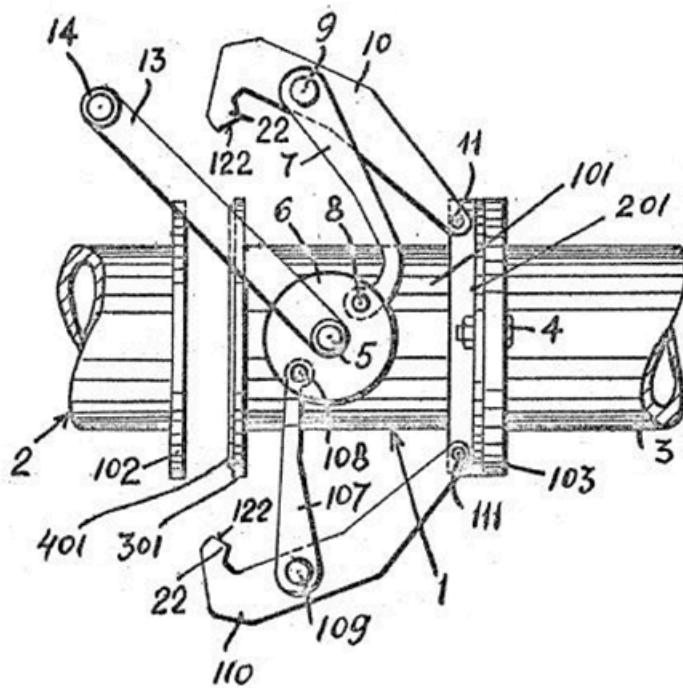
## F16L 37/1205

{using hooks hinged about an axis placed behind a flange and which act behind the other flange}

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



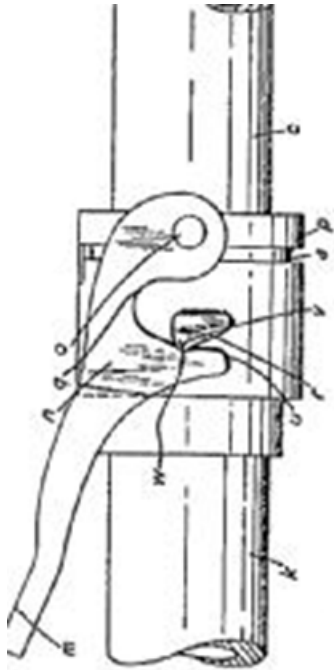
## F16L 37/16

**Joints tightened by the action of wedge-shaped hinged hooks**

### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:





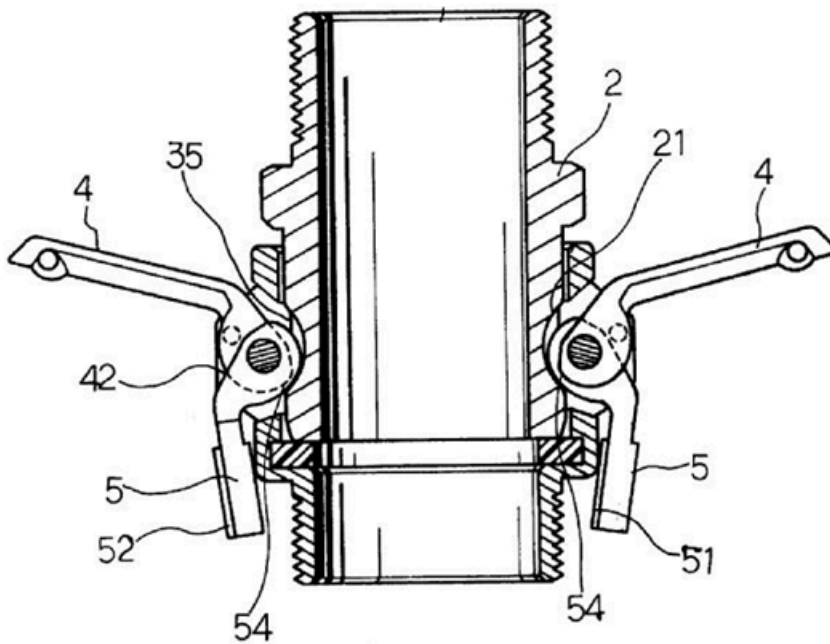
## F16L 37/18

### Joints tightened by eccentrics or rotatable cams

#### Definition statement

*This place covers:*

Illustrative example of subject matter classified in this place:



## F16L 37/248

### Bayonet-type couplings

#### Definition statement

*This place covers:*

Joints wherein the locking pins are visible in closed position

## F16L 37/252

**the male part having lugs on its periphery penetrating into the corresponding slots provided in the female part**

#### Definition statement

*This place covers:*

Bayonet type couplings with male part having external lugs, wherein the locking pins are not visible in closed position

**F16L 37/28****with fluid cut-off means****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joints with fluid cut-off means in general	<a href="#">F16L 29/00</a>
--	----------------------------

**F16L 37/50****adjustable; allowing movement of the parts joined****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Adjustable joints in general	<a href="#">F16L 27/00</a>
Joints for double-walled or multi-channel pipes or pipe assemblies	<a href="#">F16L 37/56</a>

**F16L 37/505****{allowing substantial longitudinal adjustment or movement}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Screw-threaded part allowing substantial longitudinal adjustment of screw-threaded joints	<a href="#">F16L 15/02</a>
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**F16L 37/56****for double-walled or multi-channel pipes {or pipe assemblies}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joints for double-walled or multi-channel pipes or pipe assemblies in general	<a href="#">F16L 39/00</a>
---	----------------------------

F16L 39/00

Joints or fittings for double-walled or multi-channel pipes or pipe assemblies  
{(quick-acting joints for double-walled or multi-channel pipes or pipe  
assemblies [F16L 37/56](#))}

References

Limiting references

This place does not cover:

Quick-acting joints for double-walled or multi-channel pipes or pipe assemblies	<a href="#">F16L 37/56</a>
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F16L 39/04

allowing adjustment or movement

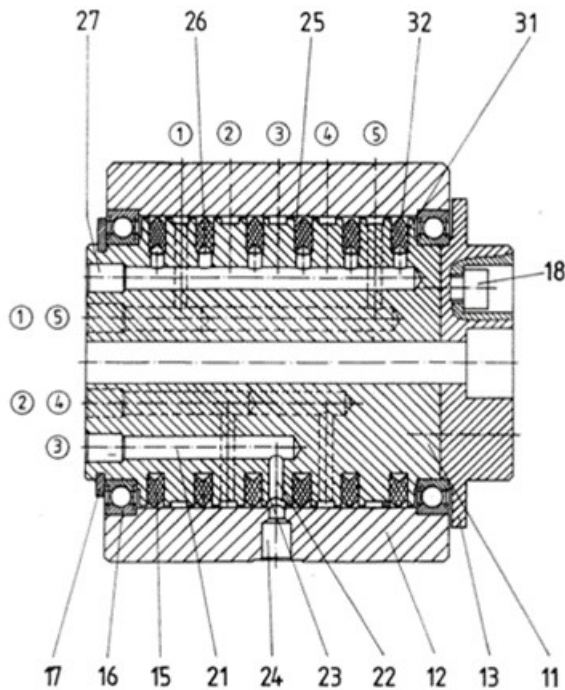
Definition statement

This place covers:

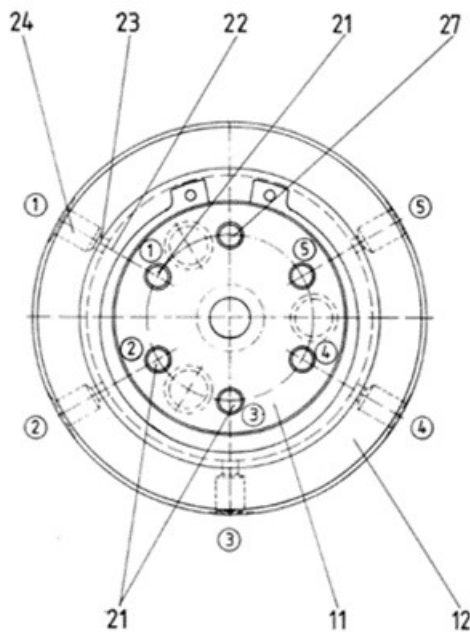
Connections wherein the different lines turn together.

Illustrative example of subject matter classified in this place:

1a.



1b.



## References

### Informative references

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

Joints allowing adjustment or movement in general	<a href="#">F16L 27/00</a>
Joints of the multiple swivel type	<a href="#">F16L 39/06</a>

## F16L 39/06

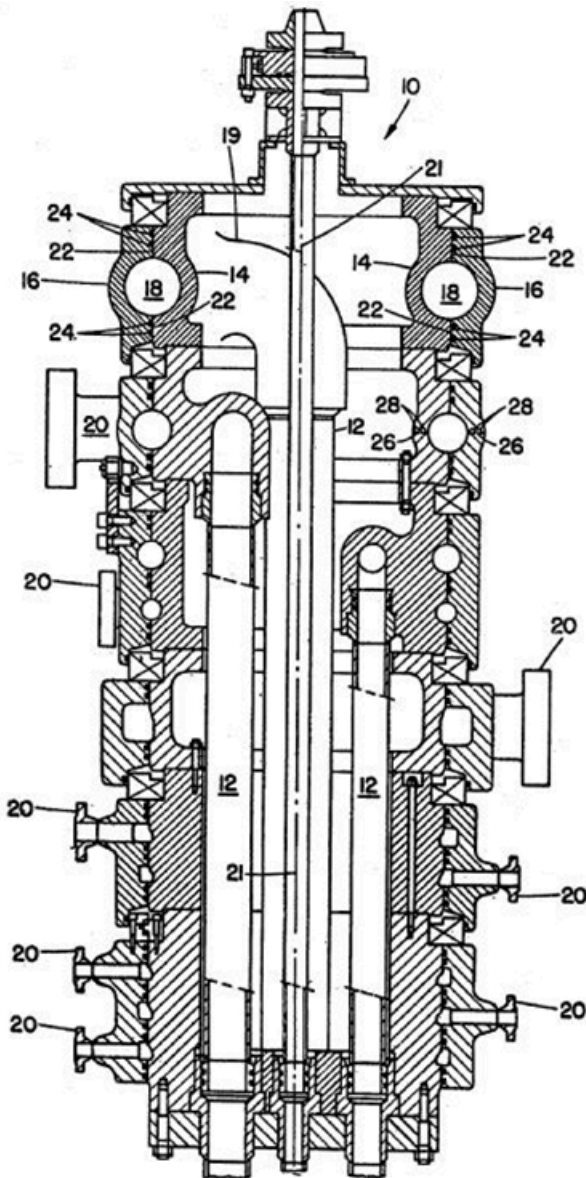
of the multiline swivel type, e.g. comprising a plurality of axially mounted modules

### Definition statement

*This place covers:*

Connections wherein the different lines are independently turnable.

Illustrative example of subject matter classified in this place:



## F16L 41/00

Branching pipes; Joining pipes to walls ([F16L 39/00](#) takes precedence {; characterised by couplings of the quick-acting type [F16L 37/008](#); specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/26](#) })

### Definition statement

*This place covers:*

Joining pipes to walls of other pipes.

## References

### Limiting references

*This place does not cover:*

Couplings of the quick-acting type for branching pipes or for joining pipes to walls	<a href="#">F16L 37/008</a>
Joints or fittings for double-walled or multi-channel pipes or pipe assemblies	<a href="#">F16L 39/00</a>
Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics for branching pipes or for joining pipes to walls	<a href="#">F16L 47/26</a>

### Informative references

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

Pipes passing through walls	<a href="#">F16L 5/00</a>
Joints suitable for connecting together pipe-ends	<a href="#">F16L 13/00</a> - <a href="#">F16L 37/00</a> , <a href="#">F16L 47/00</a> , <a href="#">F16L 49/00</a>
Connectors not designed for conveying fluid	<a href="#">F16B 9/00</a>

## F16L 41/001

{the wall being a pipe plate}

## References

### Informative references

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

Details of component parts of steam superheaters	<a href="#">F22G 3/00</a>
Heat exchangers	<a href="#">F28</a>

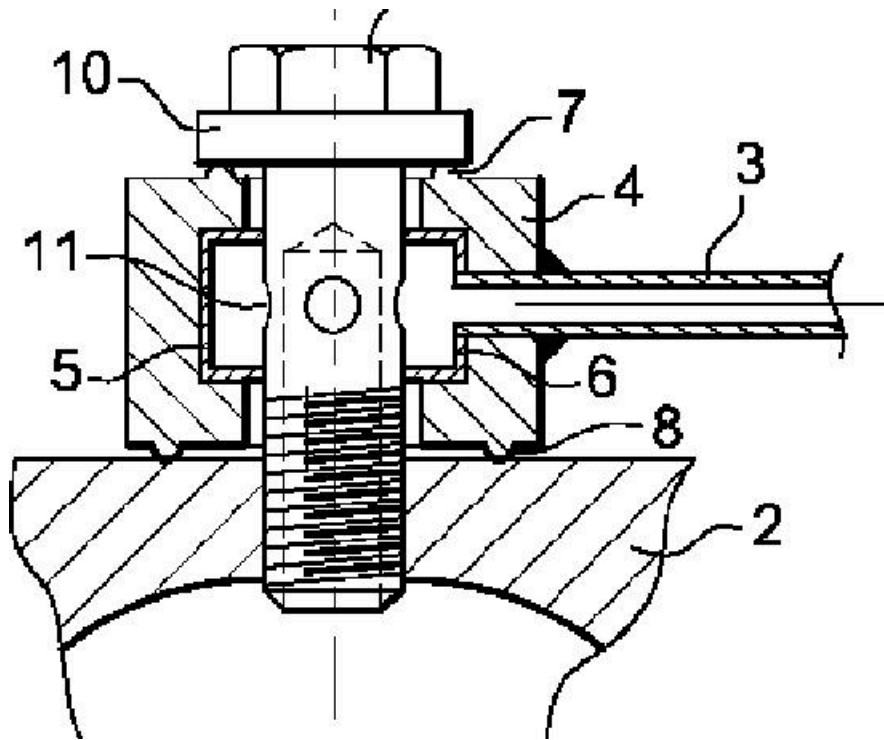
**F16L 41/005**

{adjustable and comprising a hollow threaded part in an opening}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:

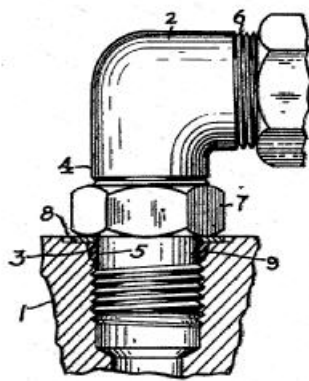
**F16L 41/007**

{adjustable and comprising a bend}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



**F16L 41/008****{for connecting a measuring instrument}****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:*

Fluidic connecting means for pressure measuring apparatus	<a href="#">G01L 19/0007</a>
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**F16L 41/03****comprising junction pieces for four or more pipe members****Definition statement**

*This place covers:*

e.g. manifolds

**References****Informative references**

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

Manifolds for hydraulics and pneumatics	<a href="#">F15B 13/0807</a>
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**F16L 41/04****Tapping pipe walls, i.e. making connections through the walls of pipes while they are carrying fluids; Fittings therefor****References****Informative references**

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

Apparatus or operations relating to metal-working steps	<a href="#">B21</a> , <a href="#">B23</a>
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**F16L 41/045****{without removal of material ([F16L 41/065](#) takes precedence)}****Definition statement**

*This place covers:*

Tapping pipe walls without removal of material, e.g. the tapping means piercing the wall.



## References

### Limiting references

*This place does not cover:*

Tapping pipe walls making use of attaching means embracing the pipe without removal of material	<a href="#">F16L 41/065</a>
---	-----------------------------

## F16L 41/065

{without removal of material}

### Definition statement

*This place covers:*

e.g. the tapping means piercing the wall by using guidance on attaching means embracing the pipe

## F16L 41/082

{Non-disconnectable joints, e.g. soldered, adhesive or caulked joints}

## References

### Informative references

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

Non-disconnectable pipe joints in general	<a href="#">F16L 13/00</a>
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## F16L 43/00

Bends; Siphons (with cleaning apertures [F16L 45/00](#))

## References

### Limiting references

*This place does not cover:*

Bends with cleaning apertures	<a href="#">F16L 45/00</a>
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### 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:*

Expansion-compensation arrangements making use of bends	<a href="#">F16L 51/04</a>
Odour seals for basins	<a href="#">E03C 1/18</a>
Siphons for water-closets	<a href="#">E03D 11/18</a>
Siphons in general	<a href="#">F04F 10/00</a>

**F16L 43/005****{Return bends}****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:*

Coiled tube furnaces for thermal non-catalytic cracking of hydrocarbon oils	<a href="#">C10G 9/20</a>
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**F16L 43/02****adapted to make use of special securing means****Definition statement**

*This place covers:*

- Bends adapted to make use of special securing means, e.g. stress relief devices holding the pipe on both sides of the bend.
- Siphons adapted to make use of special securing means.

### Pipe units with cleaning aperture and closure therefor

### **Informative references**

Means for stopping flow in pipes or hoses	<a href="#">F16L 55/10</a>
Launching or retrieval of pigs or moles	<a href="#">F16L 55/46</a>

**F16L 47/00**

**Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics**

**References****Informative references**

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

Rigid pipes of plastics	<a href="#">F16L 9/12</a>
Packing, for joints, adapted to sealing by fluid pressure	<a href="#">F16L 17/00</a>
Connections for hoses of plastics	<a href="#">F16L 33/006</a>
Bends or siphons	<a href="#">F16L 43/008</a>

**Special rules of classification**

Fittings made of plastic or which are used with plastic pipes, but not specially adapted therefor, e.g. if they could be made of any other material without any adaptations, are not classified in [F16L 47/00](#). These fittings are classified in the general groups of subclass [F16L](#) for the respective connections.

**F16L 47/02**

**Welded joints; Adhesive joints**

**References****Informative references**

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

Non-disconnectible pipe-joints in general	<a href="#">F16L 13/00</a>
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**F16L 47/04**

**with a swivel nut or collar engaging the pipe**

**References****Informative references**

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

Joints in which sealing surfaces are pressed together by means of a member screwed on or into one of the joint parts, in general	<a href="#">F16L 19/00</a>
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**F16L 47/06****with sleeve or socket formed by or in the pipe end****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joints with sleeves or socket, in general	<a href="#">F16L 21/00</a>
---	----------------------------

**F16L 47/22****using shrink-down material****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

In other than plastics	<a href="#">F16L 13/004</a>
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**F16L 49/00****Connecting arrangements, e.g. joints, specially adapted for pipes of brittle material, e.g. glass, earthenware****Relationships with other classification places**

Not covered are joints of pipes of brittle material when the connection is not specially adapted therefor, e.g. if they could be made of any other material without any adaptations. These fittings are classified in the general groups for the respective connections.

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

Sleeves, nipples or reduction pieces made of elastic material	<a href="#">F16L 21/005</a>
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**F16L 49/06****Joints in which sealing surfaces are pressed together by means of a member, e.g. swivel nut, screwed on, or into, one of the joint parts****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Joints in which sealing surfaces are pressed together by means of a member screwed on or into one of the joint parts, in general	<a href="#">F16L 19/00</a>
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**F16L 49/08****Adjustable joints; Joints allowing movement****References****Informative references**

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

Adjustable joints, in general	<a href="#">F16L 27/00</a>
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**F16L 51/00****Expansion-compensation arrangements for pipe-lines (telescopic pipes [F16L 27/12](#))****References****Limiting references**

This place does not cover:

Telescopic pipes	<a href="#">F16L 27/12</a>
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**Informative references**

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

Hangers or supports for pipes with special provision allowing movement of the pipes	<a href="#">F16L 3/16</a>
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**F16L 51/02****making use of a bellows or an expansible folded or corrugated tube****References****Informative references**

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

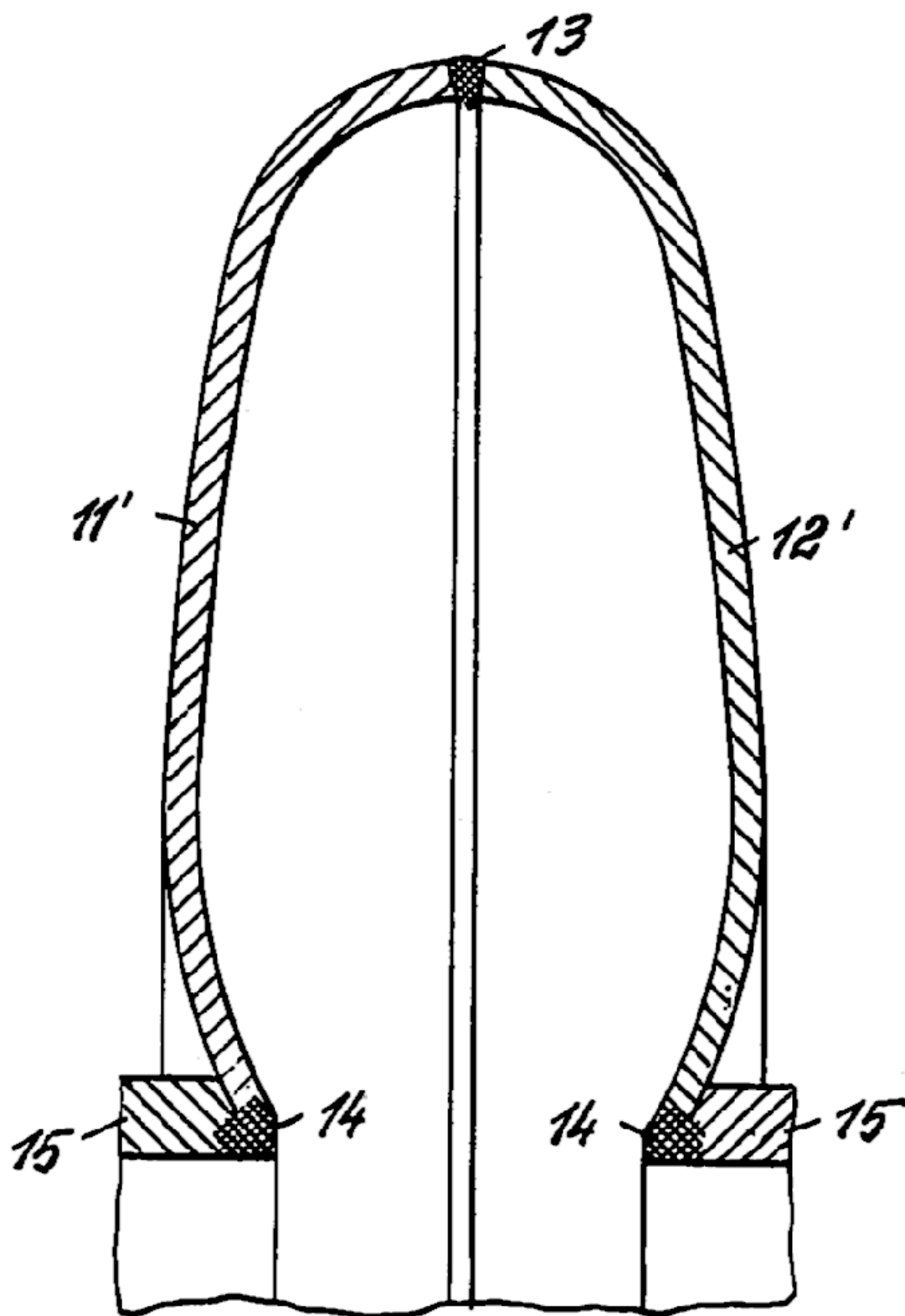
Rigid corrugated pipes	<a href="#">F16L 9/06</a>
Corrugated hoses made of rigid material	<a href="#">F16L 11/15</a>
Bellows that are intended to provide adjustment or movement to the coupling	<a href="#">F16L 27/107</a>

**F16L 51/023****{consisting of flexible rings}****Definition statement**

This place covers:

Bellows consisting of separate flexible rings which are joined together.

Illustrative example of subject matter classified in this place:



**F16L 51/024**

**{non-metallic}**

**References**

***Informative references***

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

Flexible pipe connections	<a href="#">F16L 27/10</a>
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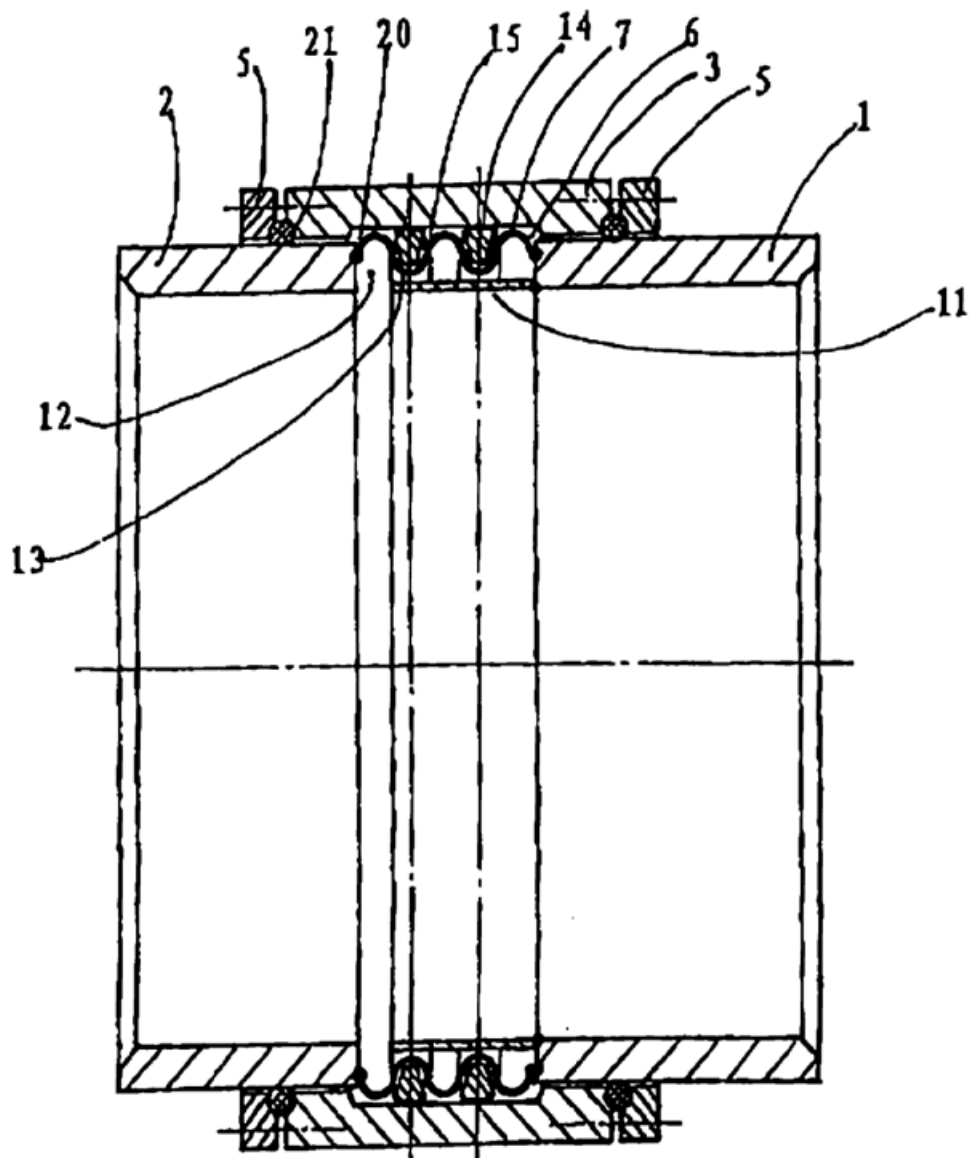
**F16L 51/028**

{with the expansion or contraction of each corrugation being limited}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



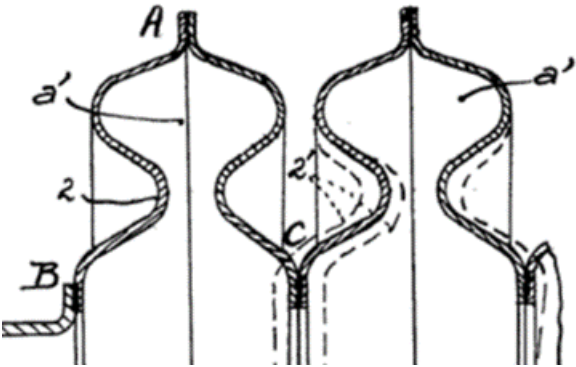
**F16L 51/029**

**{consisting of flexible rings}**

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



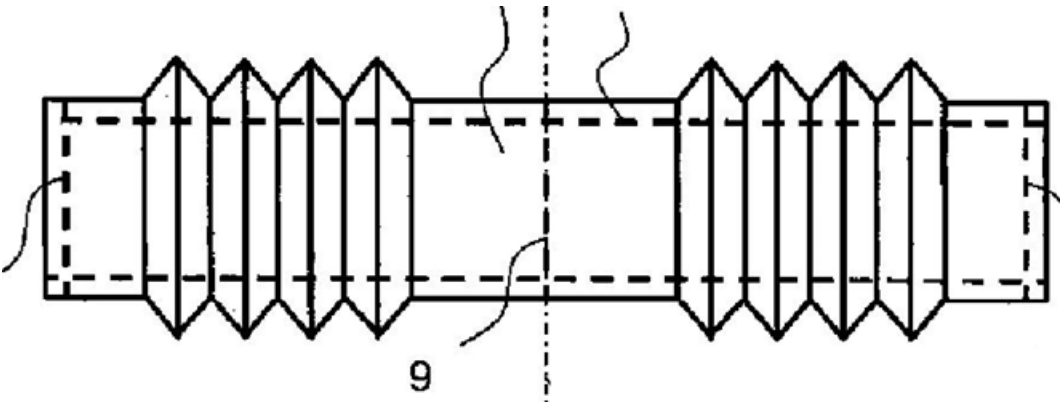
**F16L 51/03**

**comprising two or more bellows**

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



**F16L 53/00**

**Heating of pipes or pipe systems; Cooling of pipes or pipe systems**

**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:*

Heating or cooling of hoses	<a href="#">F16L 11/12</a>
Devices for preventing freezing of pipes in water main or service pipe systems	<a href="#">E03B 7/12</a>

Devices for thawing frozen pipes in water main or service pipe systems	<a href="#">E03B 7/14</a>
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### **Informative references**

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

Heating or cooling of valves	<a href="#">F16K 31/002</a>
Pipe-line systems; Pipe-lines	<a href="#">F17D</a>
Heat exchangers	<a href="#">F28D</a>

## **F16L 55/00**

**Devices or appurtenances for use in, or in connection with, pipes or pipe systems ([F16L 1/00](#) - [F16L 53/00](#), [F16L 57/00](#), [F16L 59/00](#) take precedence; repairing or joining pipes on or under water [F16L 1/26](#); cleaning of pipes [B08B 9/02](#), e.g. removal of blockages [B08B 9/027](#); devices for preventing bursting of water pipes by freezing [E03B 7/10](#))**

### **Definition statement**

*This place covers:*

Devices for use in, or in connection with, pipes or pipe systems that are not covered by groups [F16L 1/00](#) – [F16L 53/00](#), [F16L 57/00](#) or [F16L 59/00](#), e.g. damping devices, means for stopping flow, devices for covering leaks, pigs or moles, or preventing accumulation of dirt.

### **References**

#### **Limiting references**

*This place does not cover:*

Laying or reclaiming pipes; Repairing or joining pipes on or under water	<a href="#">F16L 1/00</a>
Repairing or joining pipes on or under water	<a href="#">F16L 1/26</a>
Supports for pipes, cables or protective tubing	<a href="#">F16L 3/00</a>
Devices for use where pipes, cables or protective tubing pass through walls or partitions	<a href="#">F16L 5/00</a>
Supporting pipes or cables inside other pipes or sleeves	<a href="#">F16L 7/00</a>
Pipes	<a href="#">F16L 9/00</a> - <a href="#">F16L 11/00</a>
Pipe joints; Hose nipples	<a href="#">F16L 13/00</a> - <a href="#">F16L 49/00</a>
Expansion-compensation arrangements for pipe-lines	<a href="#">F16L 51/00</a>
Heating of pipes or pipe systems; Cooling of pipes or pipe systems	<a href="#">F16L 53/00</a>
Protection of pipes or objects of similar shape against external or internal damage or wear	<a href="#">F16L 57/00</a>
Thermal insulation in general	<a href="#">F16L 59/00</a>
Cleaning of pipes	<a href="#">B08B 9/02</a>
Removal of blockages in pipes	<a href="#">B08B 9/027</a>

**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:

Arrangements of draining devices for water main or service pipe systems	<a href="#">E03B 7/08</a>
Devices for preventing bursting of water pipes by freezing	<a href="#">E03B 7/10</a>
Draining devices for hydrants	<a href="#">E03B 9/14</a>
For domestic plumbing installations	<a href="#">E03C 1/00</a>
Arrangements for sealing leaky tubes or conduits of heat-exchangers	<a href="#">F28F 11/00</a>

**Informative references**

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

Nozzles	<a href="#">B05B</a>
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**Special rules of classification**

Looping references between [F16L 55/00](#) and [E03B 7/10](#) have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows: the reference to [E03B 7/10](#) is considered to be application-oriented.

**F16L 55/02****Energy absorbers; Noise absorbers****References****Informative references**

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

Baffle plates for influencing the flow of fluids	<a href="#">F15D 1/0005</a>
Influencing the flow of fluids in pipes or conduits	<a href="#">F15D 1/02</a>
Springs, shock absorbers, means for damping vibration in general	<a href="#">F16F</a>
Means in valves for absorbing fluid energy	<a href="#">F16K 47/00</a>

**Special rules of classification**

In CPC, the subject matter of [F16L 55/02](#) and [F16L 55/04](#) are considered to be substantially overlapping.

With respect to the CPC-only [F16L 55/02](#) precedence reference over [F16L 55/04](#):

- [F16L 55/02](#) subgroups are allocated whenever appropriate.
- [F16L 55/04](#) and subgroups are only allocated if there are no appropriate [F16L 55/02](#) subgroups.

F16L 55/027

Throttle passages

References

Informative references

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

Influencing fluid flow	<a href="#">F15D 1/00</a>
Control of fluid flow	<a href="#">G05D 7/00</a>

F16L 55/02736

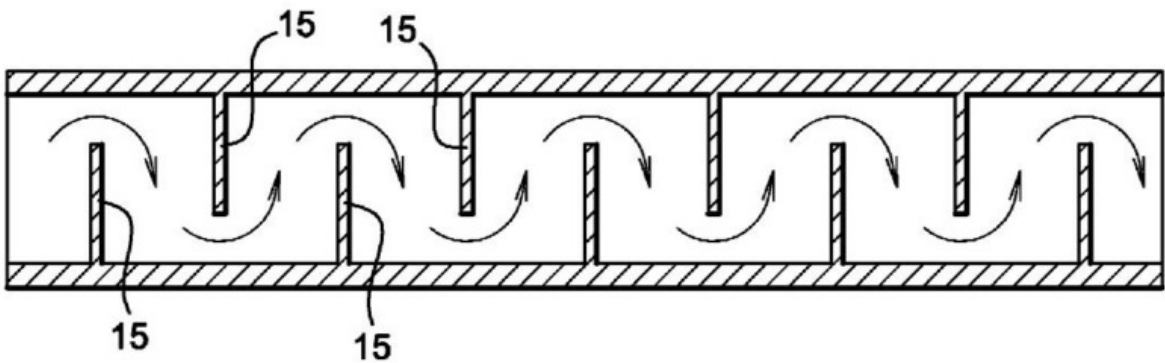
{using transversal baffles defining a tortuous path}

Definition statement

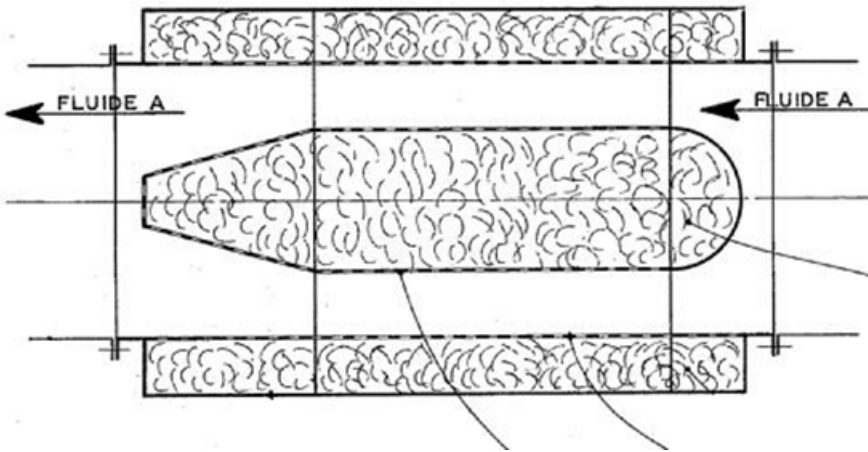
This place covers:

Illustrative examples of subject matter classified in this place:

1.



2.



## F16L 55/04

Devices damping pulsations or vibrations in fluids {([F16L 55/02](#) takes precedence)}

### References

#### Limiting references

*This place does not cover:*

Energy absorbers; Noise absorbers	<a href="#">F16L 55/02</a>
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#### Informative references

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

Counter-acting cavitation in pumps	<a href="#">F04B 39/00</a>
Springs, shock absorbers, means for damping vibration in general	<a href="#">F16F</a>
Means in valves for absorbing fluid energy	<a href="#">F16K 47/00</a>

### Special rules of classification

In CPC, the subject-matter of [F16L 55/02](#) and [F16L 55/04](#) are considered to be substantially overlapping.

With respect to the CPC-only [F16L 55/02](#) precedence reference over [F16L 55/04](#):

- [F16L 55/02](#) subgroups are allocated whenever appropriate.
- [F16L 55/04](#) and subgroups are only allocated if there are no appropriate [F16L 55/02](#) subgroups.

## F16L 55/05

Buffers therefor

### References

#### Informative references

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

Accumulators	<a href="#">F15B 1/04</a>
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## F16L 55/053

the gas in the reservoir being separated from the fluid in the pipe

### Definition statement

*This place covers:*

pneumatic reservoirs having a membrane

**F16L 55/07**

Arrangement or mounting of devices, e.g. valves, for venting or aerating or draining (apparatus for draining [F16T](#))

**References****Limiting references**

*This place does not cover:*

Apparatus for draining	<a href="#">F16T</a>
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**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:*

Arrangement of draining devices in water-supply systems	<a href="#">E03B 7/08</a>
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**Informative references**

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

Venting or aerating devices per se	<a href="#">F16K 24/00</a>
------------------------------------	----------------------------

**F16L 55/09**

Air-conditioning, e.g. de-watering, in pneumatic systems

**References****Informative references**

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

Air-conditioning in general	<a href="#">F24F</a>
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**F16L 55/10**

Means for stopping flow in pipes or hoses ([F16L 29/00](#), [F16L 37/28](#) take precedence; valves [F16K](#))

**Definition statement**

*This place covers:*

Means for stopping flow from or in pipes or hoses.

**References****Limiting references**

*This place does not cover:*

Joints with fluid cut-off means	<a href="#">F16L 29/00</a>
Quick-acting joints with cut-off means	<a href="#">F16L 37/28</a>
Valves	<a href="#">F16K</a>

**Informative references**

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

Devices for covering leaks in pipes or hoses, e.g. hose-menders	<a href="#">F16L 55/16</a>
---	----------------------------

**F16L 55/1026**

{Fire protection devices}

**References****Informative references**

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

Fire protection devices in general	<a href="#">A62C</a>
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**F16L 55/11**

Plugs {([F16L 55/128](#) takes precedence)}

**Definition statement**

*This place covers:*

Closing means which can be fixed inside the pipe end.

**References****Limiting references**

*This place does not cover:*

In situ expandable members introduced axially into pipes or hoses	<a href="#">F16L 55/128</a>
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**F16L 55/115**

Caps {([F16L 55/1286](#) takes precedence)}

**Definition statement**

*This place covers:*

Closing means which can be fixed on the outside of the pipe end.

**References****Limiting references**

*This place does not cover:*

In situ expandable caps introduced axially into pipes or hoses	<a href="#">F16L 55/1286</a>
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**F16L 55/162**

from inside the pipe ({[F16L 55/1612](#) takes precedence;} specially adapted for bends, branch units, branching pipes, or the like [F16L 55/179](#))

**References****Limiting references**

*This place does not cover:*

Devices for covering leaks in pipes or hoses, e.g. hose-menders, by means of a plug	<a href="#">F16L 55/1612</a>
Devices for covering leaks in pipes or hoses, e.g. hose-menders, specially adapted for bends, branch units, branching pipes or the like	<a href="#">F16L 55/179</a>

**F16L 55/165**

a pipe {or flexible liner} being inserted in the damaged section

**References****Informative references**

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

Protection against corrosion	<a href="#">F16L 58/10</a>
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**F16L 55/1656**

{materials for flexible liners}

**References****Informative references**

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

Hoses, i.e. flexible pipes, in general	<a href="#">F16L 11/00</a>
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**F16L 55/168**

from outside the pipe (specially adapted for bends, branch units, branching pipes, or the like [F16L 55/179](#))

**References****Limiting references**

*This place does not cover:*

Devices for covering leaks in pipes or hoses, e.g. hose menders, specially adapted for bends, branch units, branching pipes or the like	<a href="#">F16L 55/179</a>
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**F16L 55/17**

by means of rings, bands or sleeves pressed against the outside surface of the pipe or hose

**Definition statement**

*This place covers:*

Rings, bands or sleeves, including two half sleeves, for covering leaks in pipes from outside the pipe.

**References****Informative references**

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

Hose-clips for connecting hoses to rigid members	<a href="#">F16L 33/02</a>
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**F16L 55/1715**

{the ring or the sleeve being tightened by hooks, pawls, or other movable members}

**References****Informative references**

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

Coupling of the quick-acting type using hooks, pawls or other movable or insertable locking members	<a href="#">F16L 37/12</a>
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**F16L 55/179**

specially adapted for bends, branch units, branching pipes or the like

**References****Informative references**

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

Pigs or moles specially adapted to work at or near a junction between a main and a lateral pipe	<a href="#">F16L 55/265</a>
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**F16L 55/18**

Appliances for use in repairing pipes ([F16L 55/10](#) takes precedence)

**References****Limiting references**

*This place does not cover:*

Means for stopping flow in pipes or hoses	<a href="#">F16L 55/10</a>
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**Informative references**

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

Pigs or moles for pipes, in general	<a href="#">F16L 55/26</a>
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**F16L 55/24**

**Preventing accumulation of dirt or other matter in pipes, e.g. by traps, by strainers**

**References****Informative references**

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

Cleaning of pipes	<a href="#">B08B</a>
Preventing accumulation in pneumatic conveyors	<a href="#">B65G 53/521</a>

**F16L 55/26**

**Pigs or moles, i.e. devices movable in a pipe or conduit with or without self-contained propulsion means**

**Definition statement**

*This place covers:*

General features of pigs or moles for use in pipes or pipe systems.

**Relationships with other classification places**

Special adaptations of pigs or moles for the use in pipes or pipe systems as defined in Note 1 are classified in the corresponding place of the Note.

General features of pigs or moles, e.g. propulsion means, not specially adapted to the use in pipes or pipe systems as defined in Note 1 are classified in [F16L 55/26](#) and subgroups.

**References****Informative references**

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

Tunnel railway systems	<a href="#">B61B 13/10</a>
Conveying articles through pipes or tubes, e.g. tube mail systems	<a href="#">B65G 51/00</a>

## F16L 57/00

Protection of pipes or objects of similar shape against external or internal damage or wear ({protection under water [F16L 1/123](#);} supporting of pipes inside other pipes or sleeves [F16L 7/00](#); used in connection with end fittings of hoses [F16L 35/00](#); protection of pipes or pipe fittings against corrosion or incrustation [F16L 58/00](#); protection thereof during transport [B65D 59/00](#))

### References

#### Limiting references

*This place does not cover:*

Protection under water	<a href="#">F16L 1/123</a>
Supporting of pipes inside other pipes or sleeves	<a href="#">F16L 7/00</a>
Used in connection with end fittings of hoses	<a href="#">F16L 35/00</a>
Protection of pipes or pipe fittings against corrosion or incrustation	<a href="#">F16L 58/00</a>
Protecting of pipes during transport	<a href="#">B65D 59/00</a>

#### 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:*

Wear protection for pipes or tubes for conveying materials in bulk, e.g. concrete	<a href="#">B65G 53/523</a>
Protection of steam boiler water tubes	<a href="#">F22B 37/107</a>

## F16L 57/06

against wear ([F16L 57/04](#) takes precedence)

### References

#### Limiting references

*This place does not cover:*

Protection against fire or sources of extreme heat	<a href="#">F16L 57/04</a>
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#### Informative references

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

Wear protection of pipes conveying material in bulk, e.g. concrete	<a href="#">B65G 53/523</a>
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**F16L 58/00**

**Protection of pipes or pipe fittings against corrosion or incrustation  
(compound tubes [F16L 9/14](#))**

**References****Limiting references**

*This place does not cover:*

Compound tubes	<a href="#">F16L 9/14</a>
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**Informative references**

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

Supporting of pipes inside other pipes or sleeves	<a href="#">F16L 7/00</a>
Cleaning pipes or tubes	<a href="#">B08B 9/02</a>
Cathodic corrosion protection	<a href="#">C25F</a>

**F16L 58/02**

**by means of internal or external coatings**

**References****Informative references**

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

Coatings for thermal insulation	<a href="#">F16L 59/00</a>
Methods or machines for applying coatings	<a href="#">B28B 11/04</a> , <a href="#">B28B 21/94</a>

**F16L 58/04**

**Coatings characterised by the materials used ([F16L 58/16](#) takes precedence)**

**References****Limiting references**

*This place does not cover:*

Coatings in the form of a bandage	<a href="#">F16L 58/16</a>
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**Informative references**

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

Compositions of coatings, see the relevant subclasses, e.g.	<a href="#">C04B</a>
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**F16L 58/16**

the coating being in the form of a bandage

**References****Informative references**

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

Apparatus for covering cores by winding	<a href="#">B65H 81/00</a>
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**F16L 58/18**

specially adapted for pipe fittings

**References****Informative references**

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

Non-disconnectible joints of coated pipes	<a href="#">F16L 13/0254</a>
Screw joints for coated pipes comprising pipes with collars or flanges	<a href="#">F16L 19/0243</a>

**F16L 58/181**

{for non-disconnectable pipe joints}

**References****Informative references**

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

Non-disconnectable pipe joints in general	<a href="#">F16L 13/00</a>
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**F16L 58/182**

{for screw-threaded joints}

**References****Informative references**

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

Screw-threaded joints in general	<a href="#">F16L 15/00</a>
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**F16L 58/184**

{for joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts}

**References****Informative references**

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

Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts in general	<a href="#">F16L 19/00</a>
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**F16L 58/185**

{for joints with sleeve or socket}

**References****Informative references**

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

Joints with sleeve or socket in general	<a href="#">F16L 21/00</a>
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**F16L 58/187**

{for flanged joints}

**References****Informative references**

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

Flanged joints in general	<a href="#">F16L 23/00</a>
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**F16L 58/188**

{for branching pipes; for joining pipes to walls}

**References****Informative references**

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

Branching pipes in general; Joining pipes to walls in general	<a href="#">F16L 41/00</a>
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## F16L 59/00

### Thermal insulation in general

#### Definition statement

*This place covers:*

Thermal insulation for pipes or hoses or pipe cover elements, or in general, e.g. when no other special application of the insulation is given.

#### Relationships with other classification places

Specific materials or specific uses for thermal insulation are classified in the specific fields for the material or use (e.g. fridges, building panels or motor compartments).

#### References

##### Application-oriented references

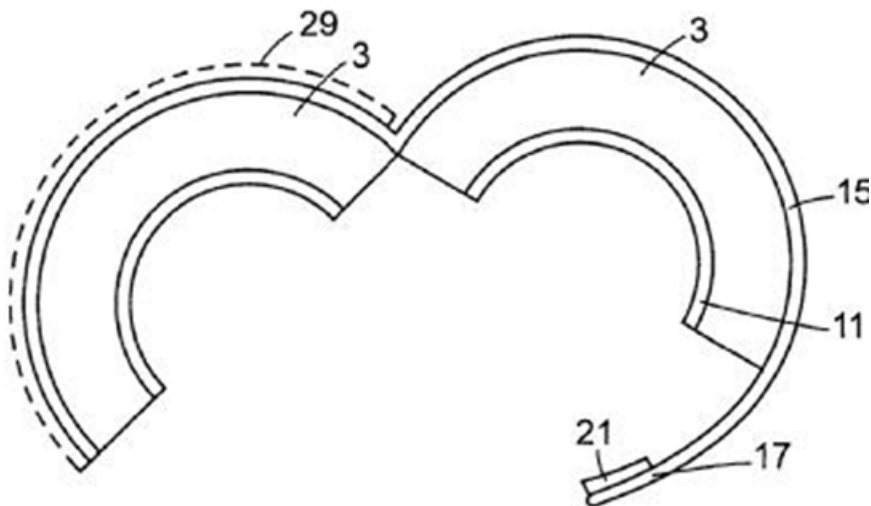
*Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Heat, sound insulation in buildings	<a href="#">E04B</a>
Heat insulation of steam engines	<a href="#">F01B 31/08</a>
Heat insulation in rotary piston machines or engines	<a href="#">F01C 21/06</a>
Thermal or acoustic insulation for combustion engines	<a href="#">F02B 77/11</a>
Heat insulation of pumps	<a href="#">F04C 29/04</a>
Thermal insulation of pressure vessels	<a href="#">F17C 1/12</a>
Vessels not under pressure, with provision for insulation	<a href="#">F17C 3/02</a>
For refrigerators	<a href="#">F25D</a>



**F16L 59/023****{with a hinge opposite the slit}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this place:

**F16L 59/029****{layered}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Tubular-shaped layered products, e.g. hoses, pipes	<a href="#">B32B 1/08</a> , <a href="#">B32B 2597/00</a>
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**F16L 59/04****Arrangements using dry fillers, e.g. using slag wool****Definition statement***This place covers:*

Arrangements using dry fillers, e.g. slag wool, which is added to the object to be insulated by pouring, spreading, spraying or the like.

**F16L 59/06****Arrangements using an air layer or vacuum****Definition statement***This place covers:*

Arrangements using an air layer or vacuum, air meaning any type of gas

**F16L 59/12**

Arrangements for supporting insulation from the wall or body insulated, e.g. by means of spacers between pipe and heat-insulating material; Arrangements specially adapted for supporting insulated bodies

**References****Informative references**

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

Pipe supports allowing movement in axial direction	<a href="#">F16L 3/18</a>
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**F16L 59/121**

{for pipes passing through walls or partitions}

**References****Informative references**

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

Devices for use where pipes, cables or protective tubing pass through walls or partition in general	<a href="#">F16L 5/00</a>
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**F16L 59/141**

{in which the temperature of the medium is below that of the ambient temperature}

**Definition statement**

This place covers:

Insulation for pipes conveying fluids below ambient temperature, e.g. cryogenic fluids.

**References****Informative references**

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

Rigid pipes of wood	<a href="#">F16L 9/01</a>
Vacuum insulation	<a href="#">F16L 59/065</a>

**F16L 59/145**

{providing fire-resistance}

**References****Informative references**

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

Protection of pipes or objects of similar shape against fire or other external sources of extreme heat in general	<a href="#">F16L 57/04</a>
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**F16L 59/16**

Arrangements specially adapted to local requirements at flanges, junctions, valves or the like

**References****Informative references**

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

Means in or on valves for heating or cooling	<a href="#">F16K 49/00</a>
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**F16L 59/163**

{Branch units; Insulation forming a whole with branches}

**References****Informative references**

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

Branch units in general	<a href="#">F16L 41/02</a>
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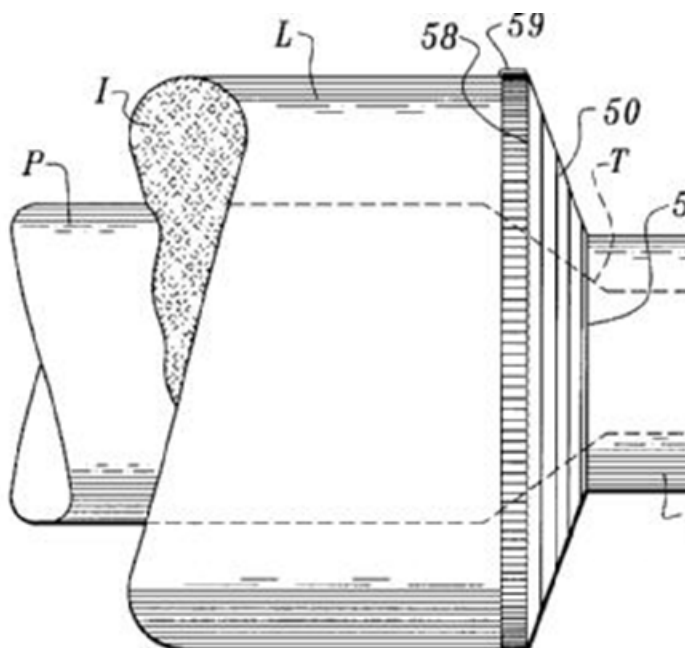
**F16L 59/166**

{covering the end of an insulated section}

**Definition statement**

*This place covers:*

Illustrative example of subject matter classified in this place:



**F16L 59/181**

{Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts}

**References****Informative references**

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

Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts in general	<a href="#">F16L 19/00</a>
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**F16L 59/182**

{Joints with sleeve or socket}

**References****Informative references**

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

Joints with sleeve or socket in general	<a href="#">F16L 21/00</a>
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**F16L 59/184**

{Flanged joints}

**References****Informative references**

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

Flanged joints in general	<a href="#">F16L 23/00</a>
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**F16L 59/185**

{Adjustable joints; Joints allowing movement}

**References****Informative references**

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

Adjustable joints in general; Joints allowing movement in general	<a href="#">F16L 27/00</a>
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**F16L 59/187**

{Arrangements for connecting hoses to one another, to flexible sleeves or to rigid members}

**References****Informative references**

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

Arrangements for connecting hoses to one another or to flexible sleeves in general	<a href="#">F16L 31/00</a>
Arrangements for connecting hoses to rigid members in general	<a href="#">F16L 33/00</a>

**F16L 59/188**

{Couplings of the quick-acting type}

**References****Informative references**

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

Couplings of the quick-acting type in general	<a href="#">F16L 37/00</a>
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**F16L 59/20**

for non-disconnectable joints

**References****Informative references**

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

Non-disconnectable joints in general	<a href="#">F16L 13/00</a>
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**F16L 59/21**

adapted for expansion-compensation devices

**References****Informative references**

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

Expansion-compensation arrangements for pipe-lines	<a href="#">F16L 51/00</a>
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**F16L 59/22**

**adapted for bends**

**References**

***Informative references***

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

Bends in general	<a href="#">F16L 43/00</a>
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