

F16L

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

Definition statement

This subclass/group 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 from or 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](#))
- Tubular bodies that are not used to carry fluid, material or objects, e.g. pipes for scaffoldings, or furniture
- If the pipe or connection is adapted for a specific use, it is only classified in the use field (e.g. medical connectors, micro connectors or vacuum cleaners)
- Documents that concern the specific material or a specific use for thermal insulation are classified in the specific fields for the material or use (e.g. fridges, building panels or motor compartments)

The class is divided in the following main groups

[F16L 1/00](#) Laying of pipes

[F16L 3/00](#) Fixation of pipes

[F16L 5/00](#) Pipes passing through walls

[F16L 7/00](#) Pipe support inside other pipes

[F16L 9/00](#) Rigid pipes

[F16L 11/00](#) Hoses (the product)

[F16L 13/00](#) Non-disconnectable pipe-joints (not made of plastic material)

[F16L 15/00](#) Screw-threaded joints

[F16L 17/00](#) Sealing by fluid pressure

[F16L 19/00](#) Connection of pipes with swivel nuts

[F16L 21/00](#) Male-female couplings

[F16L 23/00](#) Flanged joints

[F16L 25/00](#) Special types of connections for pipes (not in [F16L 13/00-F16L 23/00](#))

[F16L 27/00](#) Adjustable joints (e.g. for allowing movements)

[F16L 29/00](#) Joints with cut-off means

[F16L 31/00](#) Connection of two hoses or two flexible sleeves

[F16L 33/00](#) Connection of hoses to rigid members

[F16L 35/00](#) Safety connections of hoses

[F16L 37/00](#) Quick-acting couplings

[F16L 39/00](#) Multiple/double-walled joints of fittings for pipes or hoses

[F16L 41/00](#) Branching pipes or joining pipes to walls or pipes

[F16L 43/00](#) Bends

[F16L 45/00](#) Pipe units with apertures

[F16L 47/00](#) Connection of plastic pipes; Connectors made of plastic

[F16L 49/00](#) Connection of pipes or to pipes of brittle material

[F16L 51/00](#) Expansion compensation devices (e.g. thermal expansion)

[F16L 53/00](#) Heating/cooling pipes or pipe-systems

[F16L 55/00](#) Energy absorbers, noise absorbers, means for plugging pipes, pigs, repairing pipes etc.

[F16L 57/00](#) Protection of pipes, e.g. against external/internal damage or wear

[F16L 58/00](#) Protection of pipes against corrosion or incrustation (e.g. by coatings)

References relevant to classification in this subclass

This subclass/group does not cover:

Watering gardens, fields, sports grounds, or the like, e.g. perforated pipe-lines	A01G 25/00
Vacuum cleaners, e.g. corrugated hoses; leaning machines, e.g. hose connections combined with electrical contacts, steam hoses with cables for steam ironing	A47L
Connectors in the medical field, e.g. catheters	A61M
Fire fighting/fire fighting hoses/sprinkler systems/	A62C
Micro/macro connectors, e.g. for lab on chip	B01L
Air conditioning ducts in vehicles	B60H
Fuel conduits in vehicles, connections to LPG tank	B60K 15/00
Fixing of hoses or cables in motors vehicles	B60R
Arrangement of piping or air hoses for brake systems	B60T 17/04
Containers/bags/vessels/tanks Connections to containers in general Closing straps	B65D
Bends for conveying concrete	B65G
Wear protection for bends for conveying concrete	B65G 53/52
LPG couplings/filling nozzles/ Transferring fluids, e.g. fuel from bulk to vehicles or portable containers	B67D

Dispensing fluids, e.g. filling bottles or cans	B67D 1/00
Fastening of pipes or cables to bridges	E01D 19/00
Couplings for dredgers	E02F 3/3609
Domestic plumbing: shower hoses; toilet installations; drainage; Sewage	E03C E03D E02B E03F
Downpipes for roof drainage, fixing means therefore	E04D
Vertical ducts, channels in buildings, e.g. chimneys	E04F
Air ducts for ventilation of mines or tunnels, connections therefore	E21F 1/04
Suspension devices for tubes or the like in mines or tunnels	E21F 17/00
Exhaust pipes	F01N
Air intake in motor engines, e.g. ducts between motor and filter	F02M
Conduits, junctions for lubrication systems	F16N 21/00
Connections to gas tanks	F17C
Pipelines/pipe systems	F17D
Water tubes of steam boilers	F22B 37/00
Joints, connection for chimneys or flues	F23J 13/00
Hot water systems, central heating, e.g. distributors for heating built up from modules	F24D
Ducting arrangements for air-conditioning	F24F 13/02

Sealing elements into header boxes or end plates of heat-exchangers	F28F 9/00
Pipes in nuclear reactors	G21C 15/00

Informative references

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

Sprayers	B05B
Cleaning of pipes	B08B
Pipe laying ships	B63B
Fluid concrete transport	E04G
Fixing devices, e.g. hollow screws	F16B
Valves	F16K
Heat exchangers	F28D
Installation of electric cables, e.g. cable or pipe binders, cable or pipe channels	H02G

Special rules of classification within this subclass

- Don't give classification 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... without a 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 a horizontal indexing scheme for further details not related to a specific ECLA 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 (soldering or welding [B23K](#); lifting-gear and load-engaging elements B66; hydraulic installations, soil drainage [E02B](#); excavations or underwater constructions [E02D](#); [N: conduits made of concrete in situ [E02D 29/10](#)]; machines for digging trenches in combination with pipe-assembly [E02F](#); laying sewer pipes [E03F 3/06](#); in earth boreholes or wells [E21B](#); tunnelling [E21D](#); laying electric, or combined optical and electric, cables [H02G](#); making special pipes joint, see the relevant groups for the joints)

References relevant to classification in this group

This subclass/group does not cover:

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	F16L 55/16
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Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Laying sewer pipes	E03F 3/06
Laying sewer pipes in earth boreholes or wells	E21B

Informative references

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

Soldering or welding	B23K
Pipe laying ships	B63B
Lifting-gear and load-engaging elements	B66
Hydraulic installations, soil drainage	E02B

Excavations or underwater constructions	E02D
Machines for digging trenches in combination with pipe-assembly	E02F
Tunnelling	E21D
Laying electric, or combined optical and electric, cables	H02G

F16L 1/0246

[N: at a certain height off the ground]

Definition statement

This subclass/group covers:

Pipes passing over streets or bodies of water

F16L 1/038

the pipes being made in situ

Definition statement

This subclass/group 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 relevant to classification in this group

This subclass/group does not cover:

Pipe laying methods wherein the pipe is made by connecting together short pipe pieces	F16L 1/036
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F16L 1/123

Devices for the protection of pipes under water (in general [F16L 57/00](#))

Definition statement

This subclass/group covers:

This group covers e.g.:

protection against fishing, cortex induced vibrations

F16L 1/15

vertically

Definition statement

This subclass/group covers:

This group covers e.g.:

pipes that stay vertically, for example: riser pipes

F16L 1/161

[N: the pipe being composed of sections of short length]

Definition statement

This subclass/group covers:

This group covers

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

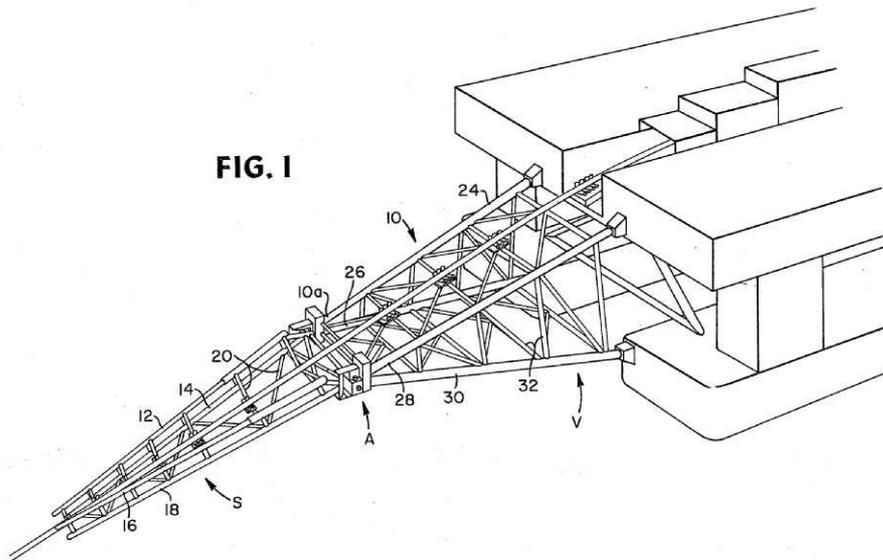
F16L 1/225

Stingers

Definition statement

This subclass/group covers:

This group covers e.g.



F16L 1/23

Pipe tensioning apparatus

Definition statement

This subclass/group covers:
clamping devices holding the pipe during laying

F16L 1/235

Apparatus for controlling the pipe during laying

Definition statement

This subclass/group covers:
e.g. checking welding seams or coatings just before laying of the pipe

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](#); [N: sound-damping supports [F16L55/033S](#); supports for insulated pipes [F16L 59/135](#)])

References relevant to classification in this group

This subclass/group does not cover:

Holders for pipes passing through walls or partitions	F16L 5/00
Sound-damping supports	F16L55/033S

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

Supports for insulated pipes	F16L 59/135
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Informative references

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

Anchors for holding pipes on or under the ground	F16L 1/06
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F16L 3/1033

[N: with two members engaging the pipe, cable or tubing, the two members being joined only on one side of the pipe]

Definition statement

This subclass/group covers:

This group covers

e.g. pipe clamps made of two parts, the parts being connected on one side and the opposite side stays open

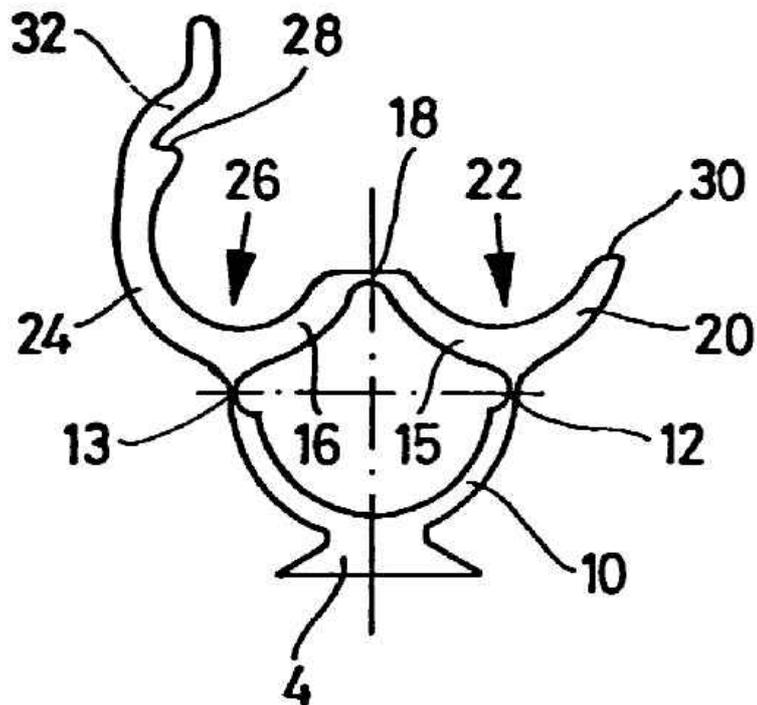
F16L 3/1203

[N: with a pair of arms moved automatically to closed position by over centred spring]

Definition statement

This subclass/group covers:

This group covers e.g.



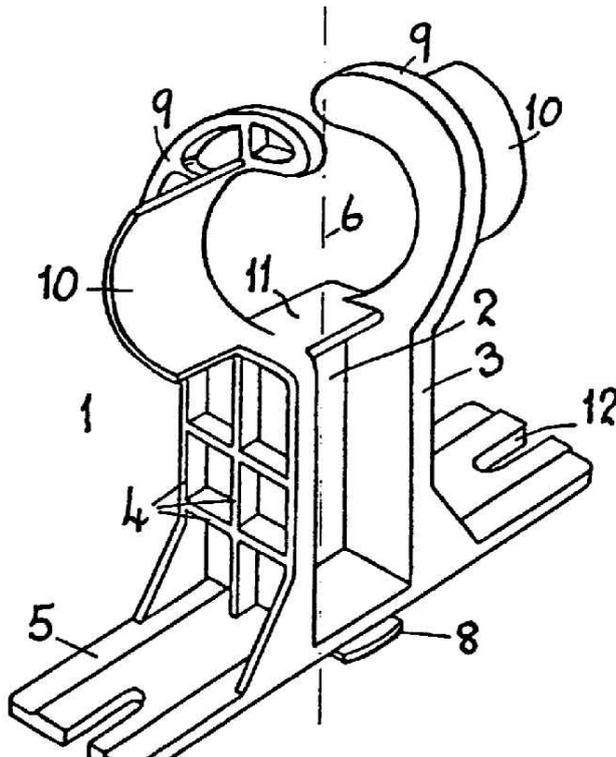
F16L 3/1215

[N: the pipe being fixed by rotation of an element]

Definition statement

This subclass/group covers:

This group covers e.g.



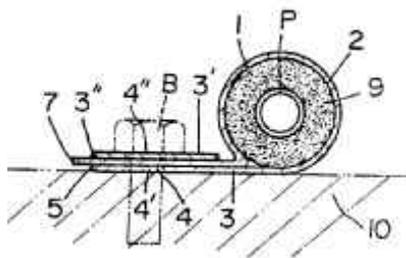
F16L 3/123

and extending along the attachment surface

Definition statement

This subclass/group covers:

This group covers e.g.



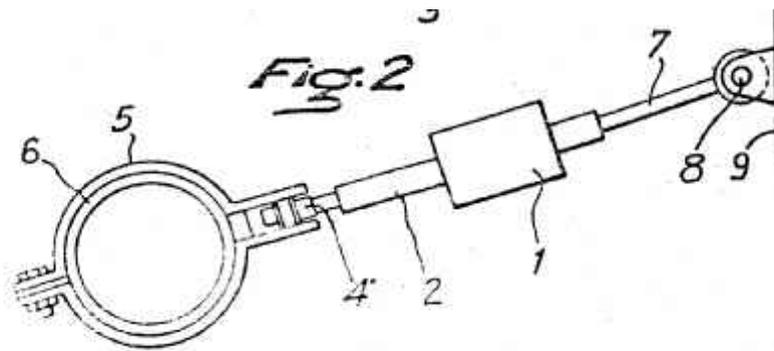
F16L 3/202

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

Definition statement

This subclass/group covers:

This group covers e.g.



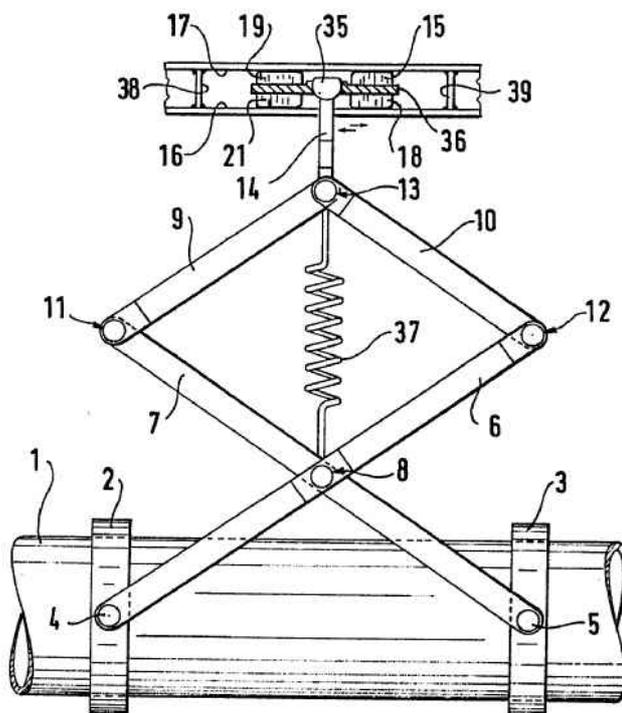
F16L 3/2053

[N: the axis of each spring being parallel with the direction of the movement of the pipe] [N9601]

Definition statement

This subclass/group covers:

This group covers e.g.



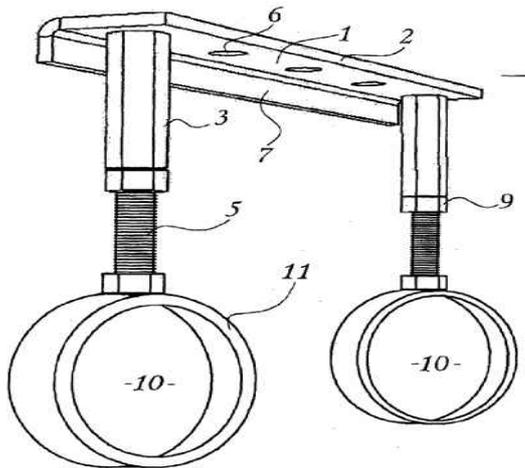
F16L 3/221

[N: having brackets connected together by means of a common support]

Definition statement

This subclass/group covers:

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



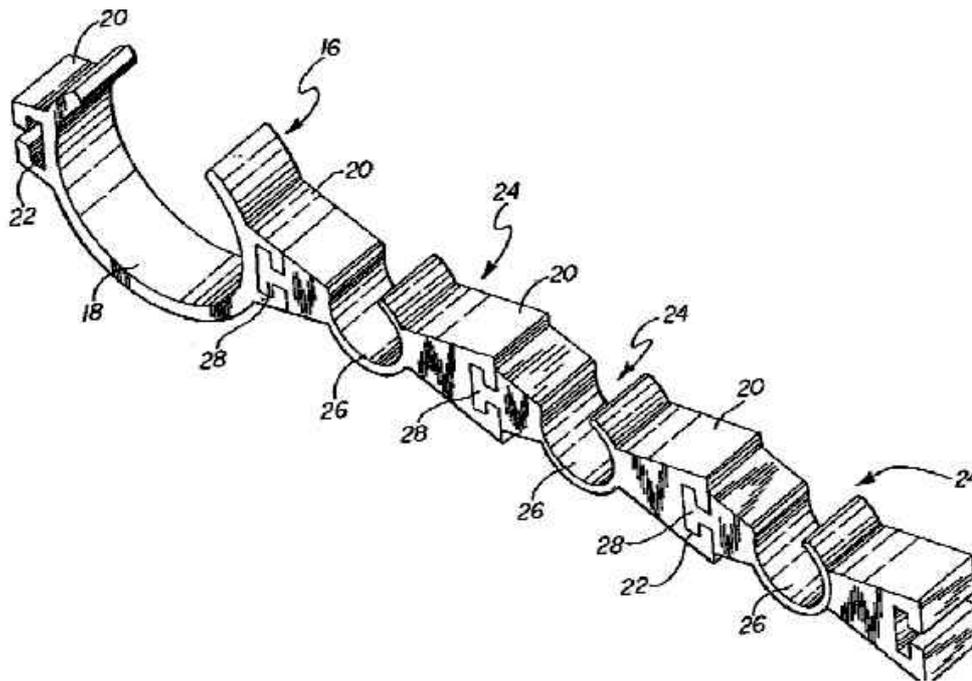
F16L 3/222

[N: having single supports directly connected together]

Definition statement

This subclass/group covers:

This group covers e.g.

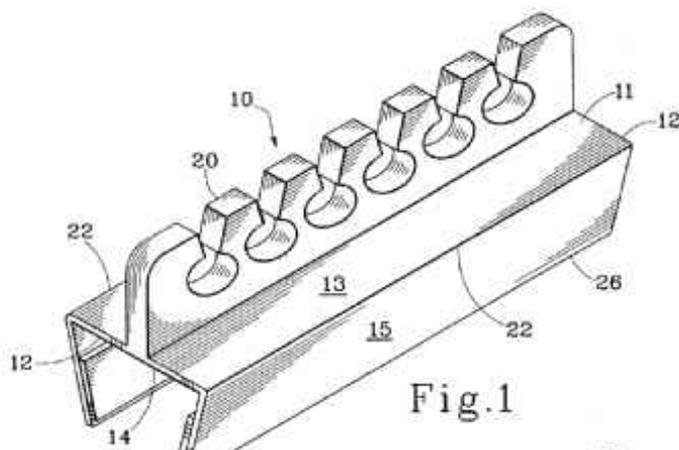


F16L 3/223

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

Definition statement

This subclass/group covers:
one integral support for all pipes



F16L 5/00

Devices for use where pipes, cables or protective tubing pass through walls or partitions ([N: joining pipes to walls [F16L](#)

[41/00](#); joining plastic pipes to walls [F16L47/00J](#); passing insulated pipes through walls [F16L 59/121](#); for steam boilers [F22B 37/105](#); arrangements for leading electric cables or lines through walls, floors or ceilings [H02G 3/22](#)]

References relevant to classification in this group

This subclass/group does not cover:

Joining pipes to walls	F16L 41/00
Joining plastic pipes to walls	F16L47/00J
Passing insulated pipes through walls	F16L 59/121
Arrangements for leading electric cables or lines through walls, floors or ceilings	H02G 3/22

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

For steam boilers	F22B 37/105
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Informative references

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

Sealing elements into header boxes or end plates of heat-exchangers	F28F 9/00
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Holders for pipes passing through walls or partitions

[F16L 7/00](#)

Supporting of pipes or cables inside other pipes or sleeves, e.g. for enabling pipes or cables to be inserted or withdrawn from under road or railways without interruption of traffic (sleeves for supporting pipes, cables or protective tubing, between relatively movable points [F16L 3/01](#), [N: fixation devices of optical cables in ducts [G02B 6/508](#), installation of electric cables [H02G 1/08](#)]) [C0207]

References relevant to classification in this group

This subclass/group does not cover:

Sleeves for supporting pipes, cables or protective tubing, between relatively movable points	F16L 3/01
Fixation devices of optical cables in ducts	G02B 6/508
Installation of electric cables	H02G 1/08

F16L 9/00

Rigid pipes [N: (steam boiler tubes [F22B 37/10](#))]

Informative references

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

Steam boiler tubes	F22B 37/10
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F16L 9/22

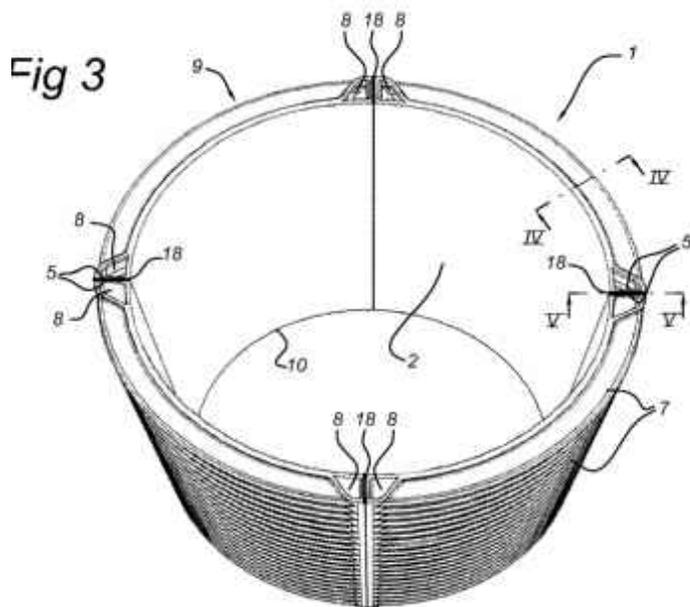
Pipes composed of a plurality of segments

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

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

This group covers e.g.



F16L 11/00

Hoses, i.e. flexible pipes (hose-like supports for pipes, cables or protective tubing, between relatively movable points [F16L 3/01](#); suction-cleaner hoses [A47L 9/24](#))

References relevant to classification in this group

This subclass/group does not cover:

Hose-like supports for pipes, cables or protective tubing, between relatively movable points	F16L 3/01
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Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Suction-cleaner hoses	A47L 9/24
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F16L 11/082

[N: two layers]

Definition statement

This subclass/group covers:

This group covers

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

F16L 11/083

[N: three or more layers]

Definition statement

This subclass/group covers:

This group covers

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

F16L 11/086

[N: two layers]

Definition statement

This subclass/group covers:

This group covers

e.g. hoses with two braided layers

F16L 11/087

[N: three or more layers]

Definition statement

This subclass/group covers:

This group covers

e.g. hoses with three or more braided layers

F16L 11/11

with corrugated wall [N: ([F16L 11/24](#) takes precedence)]

Definition statement

This subclass/group covers:

corrugated hoses made from elastic material

F16L 11/115

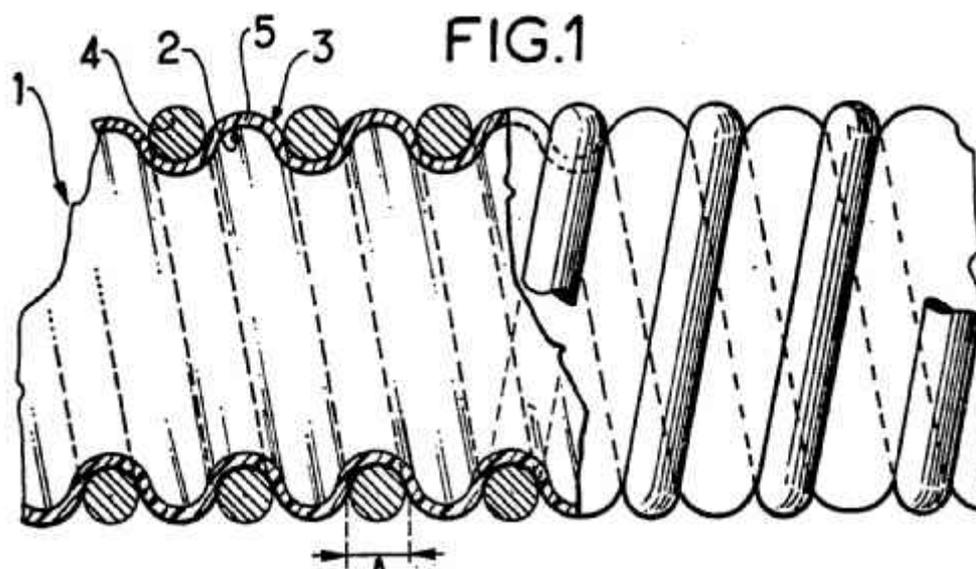
having reinforcements not embedded in the wall

Definition statement

This subclass/group covers:

This group covers

e.g.



F16L 13/00

Non-disconnectible pipe-joints, e.g. soldered, adhesive or caulked joints (joints for rigid pipes of plastics [F16L 47/00](#); [N: non-disconnectible 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](#)])

References relevant to classification in this group

This subclass/group does not cover:

Non-disconnectible 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
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Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger

system:

Joints for rigid pipes of plastics	F16L 47/00
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F16L 15/00

Screw-threaded joints ([N: hose connections with parts screwed directly on or into the hose [F16L 33/24](#); joining pipes to wall [F16L 41/00](#)]; casing joints used in deep-drilling [E21B 17/08](#); joints sealed primarily by means other than engagement of screw-threads, see the relevant groups characterised by the sealing arrangements); Forms of screw-threads for such joints

References relevant to classification in this group

This subclass/group does not cover:

Screw-threaded connections for drilling rods (drill hammer)	E21B 17/042
Hose connections with parts screwed directly on or into the hose	F16L 33/24
Joining pipes to walls	F16L 41/00

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

Casing joints used in deep-drilling	E21B 17/08
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Informative references

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

For lubricating aspects	C10M
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F16L 15/08

with supplementary elements ([F16L 15/04](#), [N: [F16L 41/00](#) and

[F16L 43/02](#)] take precedence)

Definition statement

This subclass/group covers:

This group covers

screw threaded connections with supplementary elements, e.g. additional locking elements. Not covered are screw threaded connections with supplementary elements which form a sealing.

F16L 17/00

Joints with packing adapted to sealing by fluid pressure ([N: for universal joints with partly spherical engaging surfaces [F16L 27/067](#); joints allowing adjustment or movement only about the axis of one pipe [F16L 27/08](#); joints comprising a flexible connection only [F16L 27/10](#); joints allowing substantial longitudinal adjustment or movement [F16L 27/12](#); for hoses [F16L 33/16](#); couplings of the quick acting type [F16L 37/00](#)]; compensating devices [F16L 51/00](#); sealings tightened by external pressure, inflatable packings [F16J 15/00](#))

Informative references

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

For universal joints with partly spherical engaging surfaces	F16L 27/067
Joints allowing adjustment or movement only about the axis of one pipe	F16L 27/08
Joints comprising a flexible connection only	F16L 27/10
Joints allowing substantial longitudinal adjustment or movement	F16L 27/12
For hoses	F16L 33/16
Couplings of the quick acting type	F16L 37/00
Compensating devices	F16L 51/00
Sealings tightened by external pressure, inflatable packings	F16J 15/00

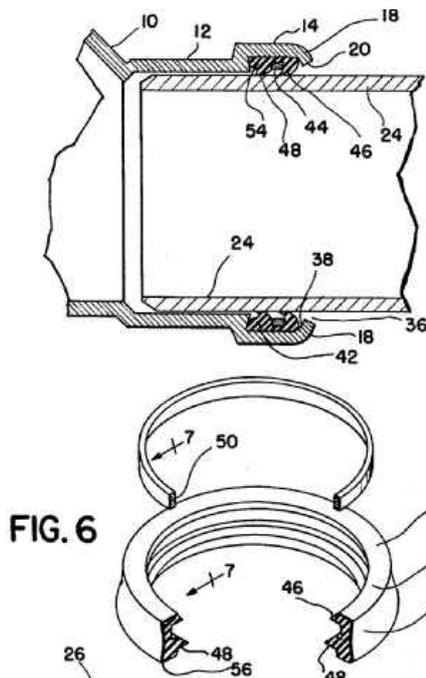
F16L 17/025

the sealing rings having radially directed ribs

Definition statement

This subclass/group covers:

This group covers



Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

the term "radially directed ribs" also includes the ribs which are deformed in axial direction upon connection

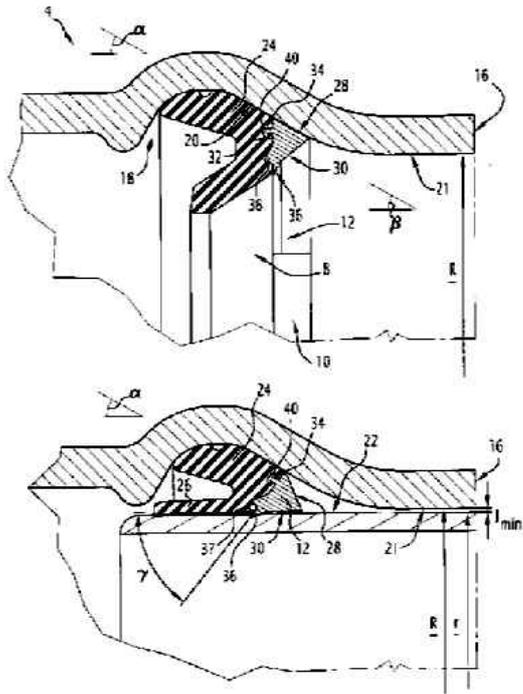
F16L 17/035

the sealing rings having two lips parallel to each other

Definition statement

This subclass/group covers:

This group covers



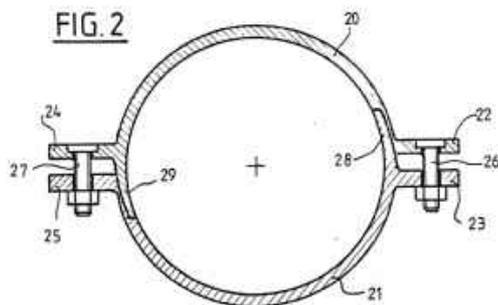
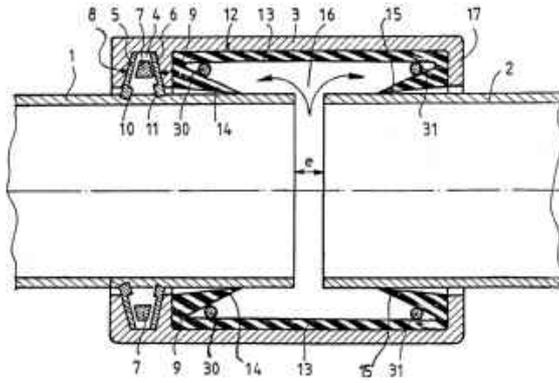
F16L 17/04

with longitudinally split or divided sleeve

Definition statement

This subclass/group covers:

This group covers



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 ([N: screw-threaded joints [F16L 15/00](#)]; [F16L 17/00](#) takes precedence; if using bolts or equivalent connecting means [F16L 23/00](#); [N: electrically insulating [F16L 25/02](#); adjustable joints, joints allowing movement [F16L 27/00](#); specially adapted for pipes of brittle material [F16L 49/06](#)])

References relevant to classification in this group

This subclass/group does not cover:

Screw-threaded joints	F16L 15/00
If using bolts or equivalent connecting means	F16L 23/00
Adjustable joints, joints allowing movement	F16L 27/00

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

Specially adapted for pipes of brittle material	F16L 49/06
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Informative references

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

Electrically insulating	F16L 25/02
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F16L 19/0206

[N: the collar not being integral with the pipe]

Definition statement

This subclass/group 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 19/0653

[N: the ring being rotatably connected to one of the connecting parts]

Definition statement

This subclass/group covers:

This group covers

connections wherein the ring rotates with the nut during the fastening

F16L 19/061

[N: a pressure ring being arranged between the clamping ring and the threaded member or the connecting member]

Definition statement

This subclass/group covers:

This group covers

connections having two rings

F16L 19/065

the wedging action being effected by means of a ring

Definition statement

This subclass/group covers:

This group covers

connections having one ring

F16L 19/083

[N: the longitudinal cross-section of the ring not being modified during clamping]

Definition statement

This subclass/group covers:

This group covers

connections wherein the ring being a split ring

F16L 19/10

the profile of the ring being altered

Definition statement

This subclass/group covers:

This group covers

connection wherein the ring being no split ring

F16L 21/00

Joints with sleeve or socket ([F16L 13/00](#), [N: [F16L 15/00](#)], [F16L 17/00](#), [F16L 19/00](#), [N: [F16L 25/0027](#), [F16L 27/00](#), [F16L 37/00](#)]) take precedence; [N: specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/06](#); specially adapted for pipes of brittle material [F16L 49/08](#); devices for covering leaks in pipes or hoses [F16L 55/16](#)])

References relevant to classification in this group

This subclass/group does not cover:

Non-disconnectable pipe-joints	F16L 13/00
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Screw-threaded joints	F16L 15/00
Joints adapted to sealing by fluid pressure	F16L 17/00
Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut	F16L 19/00
Joints for pipes made of reinforced concrete	F16L 25/0027
Adjustable joints	F16L 27/00
Couplings of the quick-acting type	F16L 37/00

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

Specially adapted to be used with pipes of plastic	F16L 47/06
Specially adapted to be used with pipes of brittle material	F16L 49/08

Informative references

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

Devices for covering leaks in pipes or hoses	F16L 55/16
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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 assemblies [F16L 39/00](#); specially adapted for pipes of brittle material pipe [F16L 49/00](#))

References relevant to classification in this group

This subclass/group does not cover:

Non-disconnectable pipe-joints	F16L 13/00
Joints adapted to sealing by fluid pressure	F16L 17/00
Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut	F16L 19/00
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 assemblies	F16L 39/00

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

Specially adapted to be used with pipes of brittle material	F16L 49/08
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F16L 23/003

[N: Auxiliary devices]

Definition statement

This subclass/group covers:

This group covers

devices for aligning, separating or locking of the flange connection

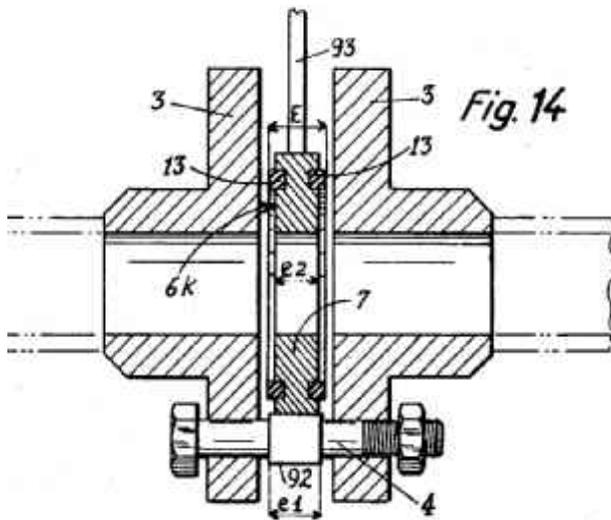
F16L 23/006

[N: Attachments]

Definition statement

This subclass/group 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



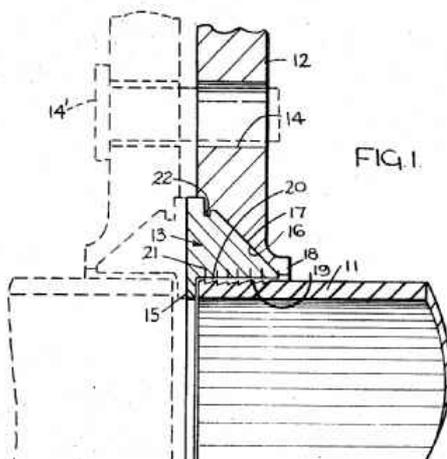
F16L 23/0286

[N: the shoulder not being formed from the pipe]

Definition statement

This subclass/group covers:

This group covers



References relevant to classification in this group

This subclass/group does not cover:

Joints with sleeve and socket, where [F16L 21/08](#)

the pipe ends are overlapping:	
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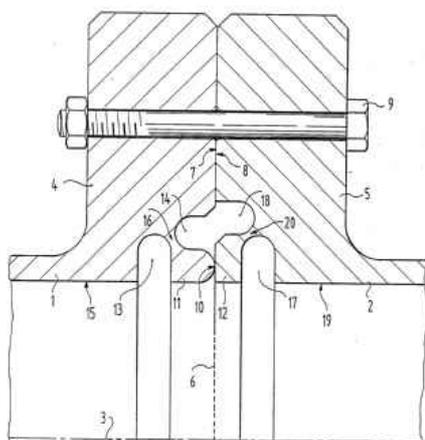
F16L 23/162

[N: the pipe ends abutting each other]

Definition statement

This subclass/group covers:

Joints where "pipe ends are abutting each other", which should be interpreted in the way that no extra sealing rings are present and there is surface to surface contact between the flanges



F16L 25/00

Constructive types of pipe joints not provided for in groups [F16L 13/00](#) to [F16L 23/00](#) (adjustable joints [F16L 27/00](#); couplings of the quick-acting type [F16L 37/00](#); specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#)) [N: Details of pipe joints not otherwise provided for, e.g. electrically conducting or insulating means]

References relevant to classification in this group

This subclass/group does not cover:

Non-disconnectable pipe-joints	F16L 13/00
Screw-threaded joints	F16L 15/00
Joints adapted to sealing by fluid	F16L 17/00

pressure	
Joints in which sealing surfaces are pressed together by means of a member, e.g. swivel nut	F16L 19/00
Joints with sleeve or socket	F16L 21/00
Flanged joints	F16L 23/00
Adjustable joints	F16L 27/00
Couplings of the quick-acting type	F16L 37/00

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

Specially adapted to be made of plastics or to be used with pipes made of plastics	F16L 47/00
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F16L 25/009

combination of quick-acting type coupling with conventional one

Definition statement

This subclass/group covers:

This group covers

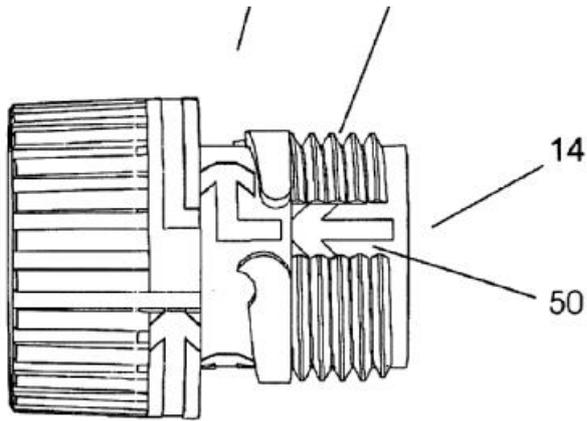


Figure 3

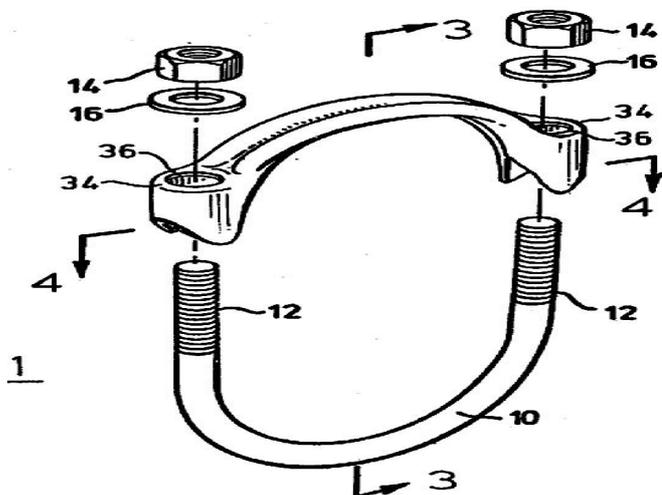
F16L 25/04

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

Definition statement

This subclass/group covers:

This group covers



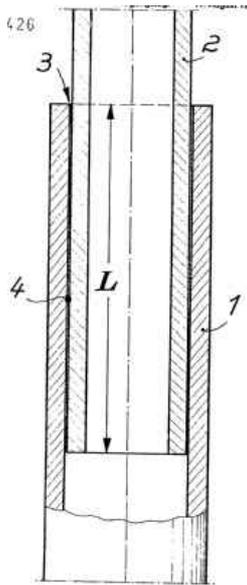
F16L 25/10

Sleeveless joints between two pipes, one being introduced into the other [N0309]

Definition statement

This subclass/group covers:

This group covers



F16L 27/00

Adjustable joints, Joints allowing movement (of the quick-acting type [F61L37/50](#); for double-walled or multi-channel pipe assemblies [F16L 39/04](#); [N: connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [F16L 47/00](#); connecting arrangements specially adapted for pipes of brittle material [F16L 49/00](#)]

References relevant to classification in this group

This subclass/group does not cover:

Couplings of the quick-acting type	F16L 37/50
For double-walled or multi-channel pipes or assemblies	F16L 39/04
Branching pipes, wherein the branch pipes are moveable	F16L 41/18

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

Connecting arrangements or other	F16L 47/00
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fittings specially adapted to be made of plastics or to be used with pipes made of plastics	
Specially adapted to be used with pipes of brittle material	F16L 49/00
Connections between hoses and sprayers	B05B

F16L 27/047

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

Definition statement

This subclass/group covers:

This group covers

joints held together with a swivel nut

F16L 27/0861

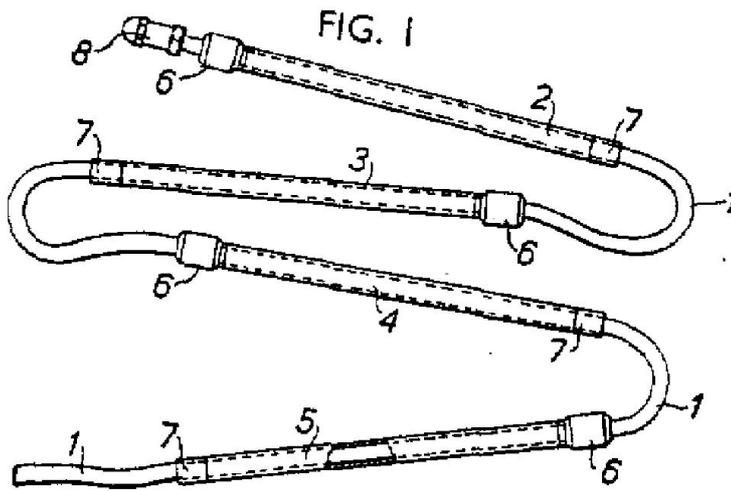
Arrangements of joints with one another and with pipes or hoses

Definition statement

This subclass/group covers:

This group covers

e.g.



F16L 27/12

allowing substantially longitudinal adjustment or movement

References relevant to classification in this group

This subclass/group does not cover:

Telescopic bends:	F16L 43/006
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F16L 29/00

Joints with fluid cut-off means (quick-acting joints with cut-off means [F16L 37/28](#); [N: valves, taps or cocks in general [F16K](#)])

Definition statement

This subclass/group covers:

This group 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 relevant to classification in this group

This subclass/group does not cover:

Couplings of the quick-acting type with cut-off means	F16L 37/28
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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	F16K
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F16L 31/00

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

Definition statement

This subclass/group covers:

This group covers

hoses directly connected to each other

References relevant to classification in this group

This subclass/group does not cover:

Arrangements for connecting hose to rigid members	F16L 33/00
Rigid hose connectors, i.e. single members engaging both hoses	F16L 33/00

F16L 33/00

Arrangements for connecting hoses to rigid members (hand tools for inserting fittings into hoses [B25B 27/10](#)); Rigid hose connectors, i.e. single members engaging both hoses [N: (hoses or hose couplings specially adapted for suction cleaners [A47L 9/24](#))]

References relevant to classification in this group

This subclass/group does not cover:

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

Hose couplings specially adapted for suction cleaners	A47L 9/24
---	---------------------------

Informative references

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

Hand tools per se for inserting fittings into hoses	B25B 27/10
---	----------------------------

F16L 33/025

tightened by deforming radially extending loops or folds

Definition statement

This subclass/group 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 subclass/group covers:

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

F16L 33/26

especially adapted for hoses of metal

Definition statement

This subclass/group covers:

This group covers e.g.

corrugated hoses

F16L 35/00

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

Definition statement

This subclass/group covers:

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

F16L 37/00

Coupling of the quick acting type (radially binding sleeves [F16L 17/04](#), [F16L 21/06](#); connecting hoses to rigid members [F16L 33/00](#); connections made automatically when vehicles are brought together [B60D](#), [B61G](#); specially adapted for

Definition statement

This subclass/group covers:

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

References relevant to classification in this group

This subclass/group does not cover:

Radially binding sleeves	F16L 17/04 F16L 21/06
Connecting hoses to rigid members	F16L 33/00
Welded connections or screwed connections	F16L 13/00 , F16L 15/00

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

Connections between hoses and sprayers	B05B
Connections made automatically when vehicles are brought together	B60D , B61G
Specially adapted for lubricating devices	F16N 21/00

F16L 37/02

in which the connection is maintained only by friction of the

parts being joined

Definition statement

This subclass/group covers:

This group covers

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

F16L 37/084

combined with automatic locking

Definition statement

This subclass/group covers:

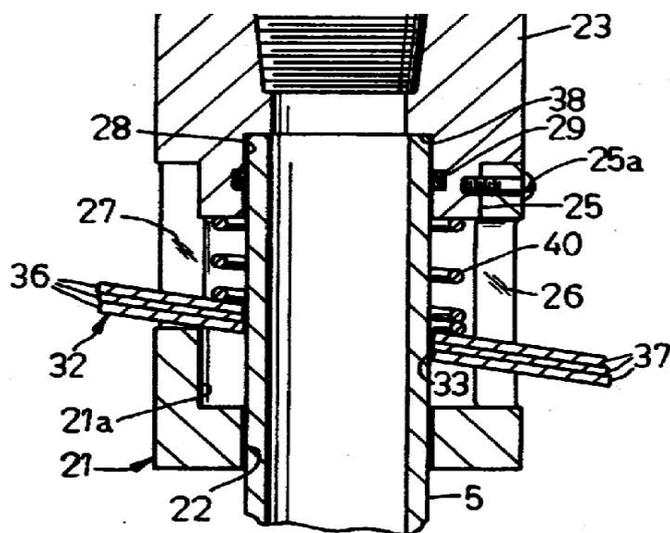
Joints wherein the connection is established by one simple quick movement: simply push the two pipe ends together: "click"

F16L 37/0844

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

Definition statement

This subclass/group covers:



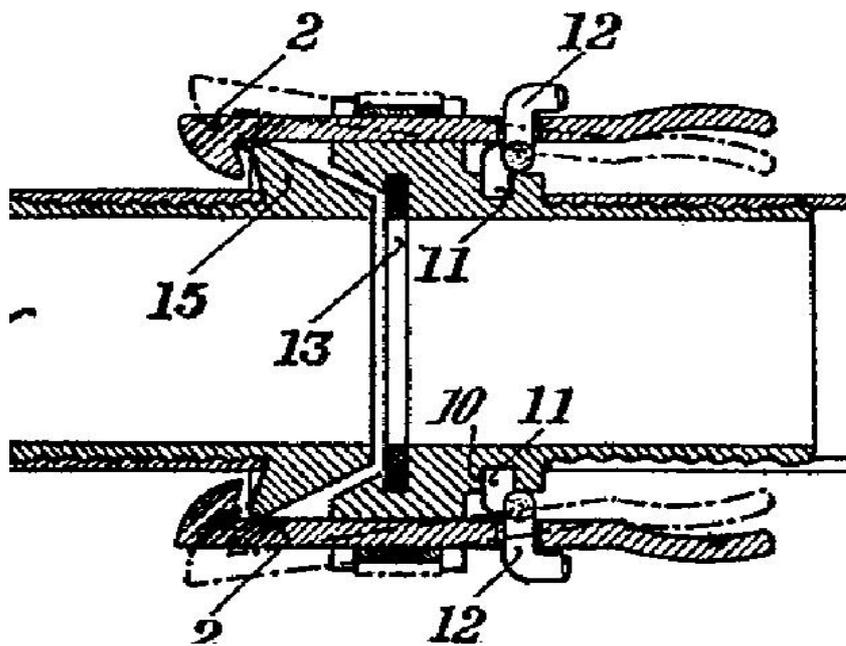
F16L 37/0848

with hooks, rocking freely

Definition statement

This subclass/group covers:

Couplings with rigid hook members which can pivot

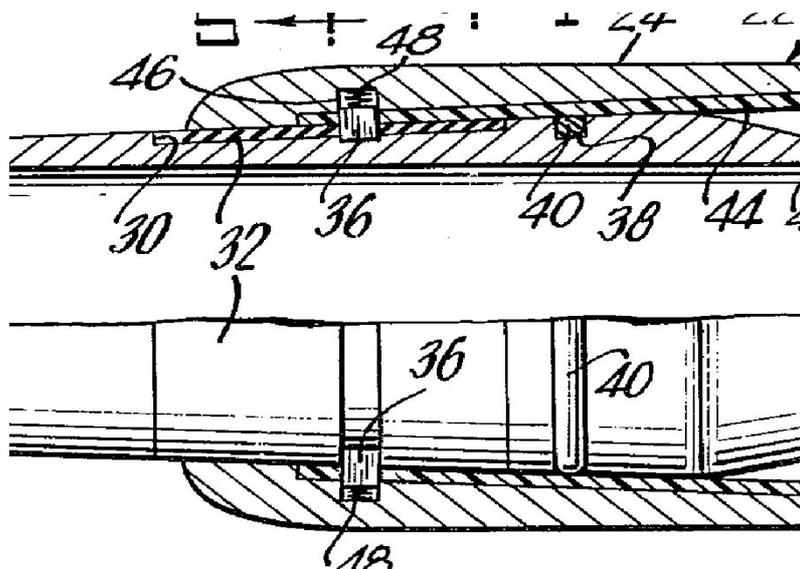


F16L 37/086

by means of latching members pushed radially by spring-like elements

Definition statement

This subclass/group covers:



References relevant to classification in this group

This subclass/group does not cover:

Radially moved latching members	F16L 37/0841
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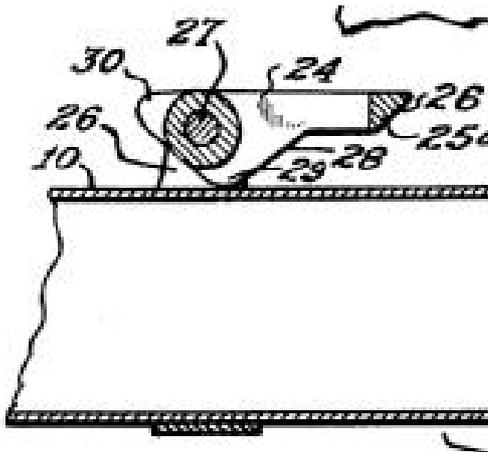
forming a ring	
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F16L 37/096

by means of hooks hinged about an axis

Definition statement

This subclass/group covers:



F16L 37/10

using an external sleeve or ring on one part

Definition statement

This subclass/group covers:

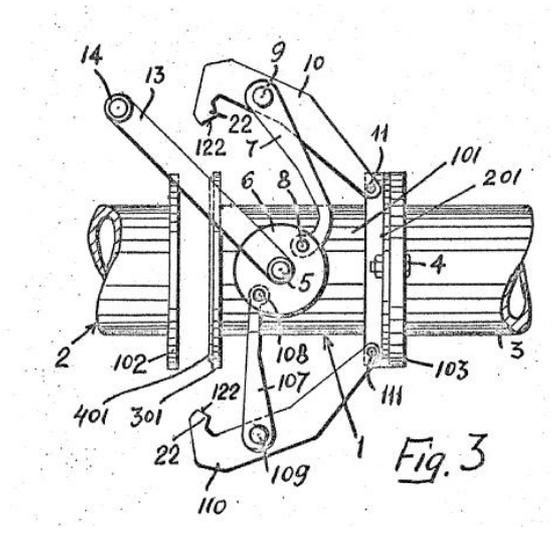
Joints wherein the connection is established by two simple quick movements: Pushing the two pipe ends together plus an additional second action; an action to achieve the locking

F16L 37/1205

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

Definition statement

This subclass/group covers:

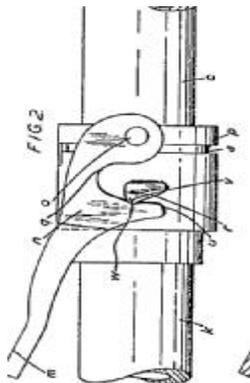


F16L 37/16

wedge shaped hinged hook

Definition statement

This subclass/group covers:



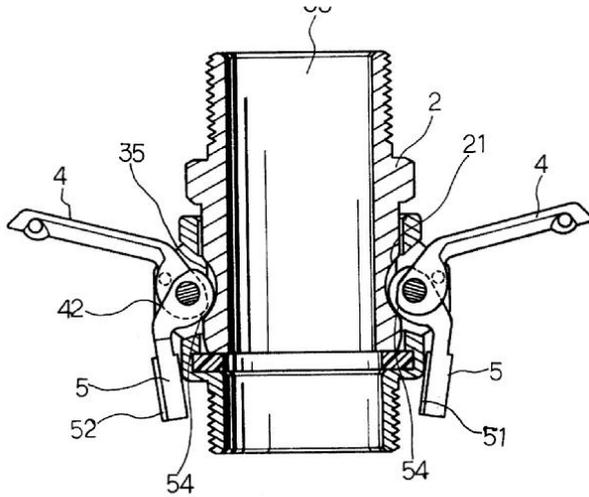
GB607402

F16L 37/18

eccentric or rotatable cams

Definition statement

This subclass/group covers:



US5904380

F16L 37/248

Bayonet type coupling

Definition statement

This subclass/group covers:

Joints wherein the locking pins are visible in closed position

F16L 37/252

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

Definition statement

This subclass/group covers:

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

F16L 39/00

Joints or fittings for double-walled or multi-channel pipes or pipe assemblies

References relevant to classification in this group

This subclass/group does not cover:

Joints of the quick acting type	F16L 37/56
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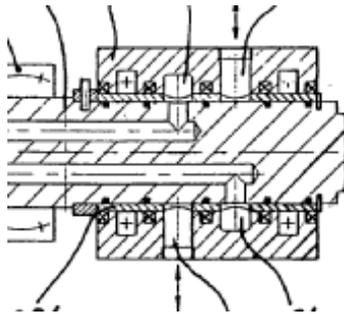
F16L 39/04

allowing adjustment or movement

Definition statement

This subclass/group covers:

Connections wherein the different lines turn together



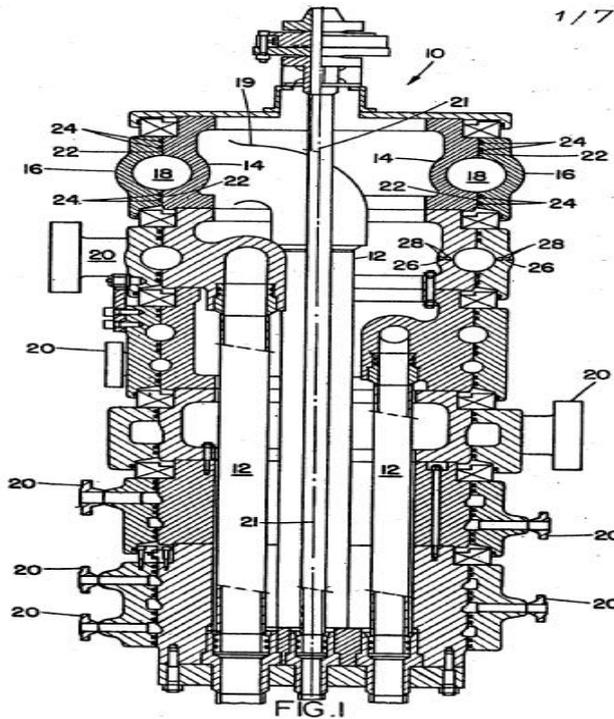
F16L 39/06

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

Definition statement

This subclass/group covers:

Connections wherein the different lines are independently turnable



FR2538875

F16L 41/00

Branching pipes; joining pipes to walls ([F16L 39/00](#) takes precedence; joints suitable for connecting together pipe-ends see the relevant groups [N: specially adapted to be made of plastics or to be used with pipes made of plastics [F16L47/00J](#); characterised by couplings of the quick-acting type [F16L 37/008](#);) connections not designed for conveying fluid ([F16B 9/00](#))

Definition statement

This subclass/group covers:

joining pipes to walls of other pipes

References relevant to classification in this group

This subclass/group does not cover:

Joints or fittings for double-walled or multi-channel pipes or pipe assemblies	F16L 39/00
The branch pipe being joint to the main pipe or the wall by a coupling of the quick acting type	F16L 37/008

Joining pipes to walls of vehicle tanks	B60K 15/00
The pipes passing through the walls	F16L 5/00

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

Specially adapted to be made of plastics or to be used with pipes made of plastics	F16L47/00J
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Informative references

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

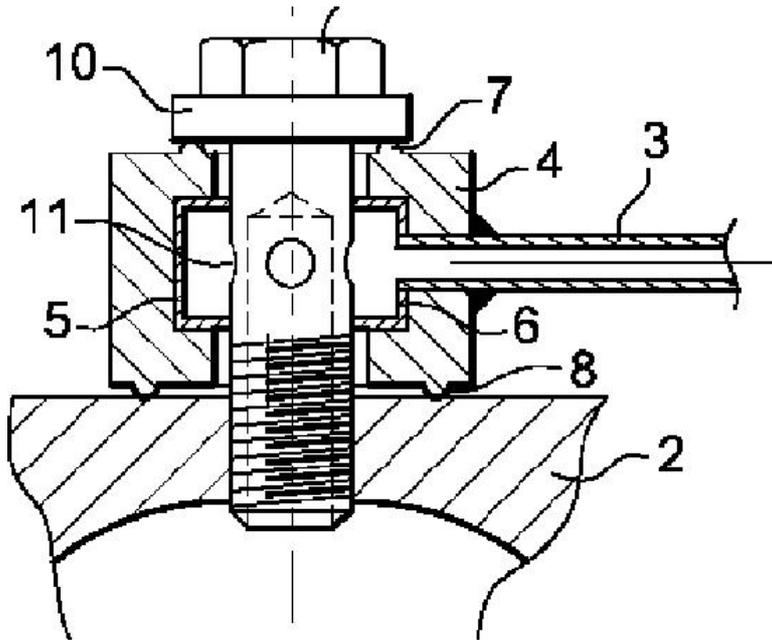
Connectors not designed for conveying fluid	F16B 9/00
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F16L 41/005

[N: adjustable and comprising a hollow threaded part in an opening]

Definition statement

This subclass/group covers:



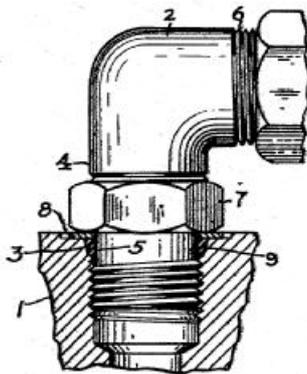
FR2538875

F16L 41/007

[N: adjustable and comprising a bend]

Definition statement

This subclass/group covers:



DE1475792

F16L 41/03

comprising junction pieces for four or more pipe members

Definition statement

This subclass/group covers:

e.g. manifolds

Informative references

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

Manifolds for hydraulics and pneumatics	F15B 13/0807
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F16L 41/04

Tapping pipe walls

References relevant to classification in this group

This subclass/group does not cover:

Tapping means specially adapted for plastic pipes	F16L 47/34
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F16L 41/045

[N: without removal of material]

Definition statement

This subclass/group covers:

e.g. the tapping means piercing the wall

F16L 41/065

[N: without removal of material]

Definition statement

This subclass/group covers:

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

F16L 43/00

Bends; Siphons (with cleaning apertures [F16L 45/00](#); [N: expansion-compensation arrangements making use of bends [F16L 51/04](#); odour seals for basins [E03C 1/18](#)]; siphons for water-closets [E03D 11/18](#); siphons in general [F04F 10/00](#))

References relevant to classification in this group

This subclass/group does not cover:

Bends with cleaning apertures	F16L 45/00
Expansion-compensation arrangements making use of bends	F16L 51/04

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

Odour seals for basins	E03C 1/18
Siphons for water-closets	E03D 11/18
Siphons in general	F04F 10/00

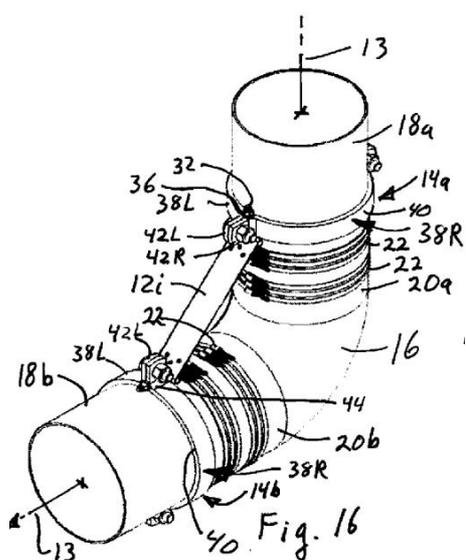
F16L 43/02

Bends; Siphons; adapted to make use of special securing means

Definition statement

This subclass/group covers:

e.g. stress relief devices holding the pipe on both sides of the bend



F16L 45/00

[Pipe units with cleaning aperture and closure therefore

References relevant to classification in this group

This subclass/group does not cover:

Means for stopping flow from or in pipes or hoses	F16L 55/10
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Informative references

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

Launching or retrieval of pigs or moles	F16L 55/46
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F16L 47/00

Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics [N: (connections for hoses of plastics [F16L 33/006](#))]

Relationship between large subject matter areas

Not covered are fittings made of plastic or which are used with plastic pipes, but are not specially adapted therefore, 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 relevant to classification in this group

This subclass/group does not cover:

Connections for hoses of plastics	F16L 33/006
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Informative references

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

Rigid pipes of plastics	F16L 9/12
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F16L 49/00

Connection arrangements, e.g. joints, specially adapted for pipes of brittle material, e.g. glass, earthenware [N: (sleeves, nipples or reduction pieces made of elastic material [F16L 21/005](#))]

Relationship between large subject matter areas

Not covered are joints of pipes of brittle material when the connection is not specially adapted therefore, 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 relevant to classification in this group

This subclass/group does not cover:

Sleeves, nipples or reduction pieces made of elastic material	F16L 21/005
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F16L 51/00

Expansion-compensation arrangements for pipe-lines ([N: hangers or supports for pipes with special provision allowing movement of the pipes [F16L 3/16](#);] telescopic pipes [F16L 27/12](#))

References relevant to classification in this group

This subclass/group does not cover:

Telescopic pipes	F16L 27/12
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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	F16L 3/16
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F16L 51/02

Expansion-compensation arrangements for pipe-lines, making use of bellows

References relevant to classification in this group

This subclass/group does not cover:

Bellows that are intended to provide adjustment or movement to the coupling:	F16L 27/107
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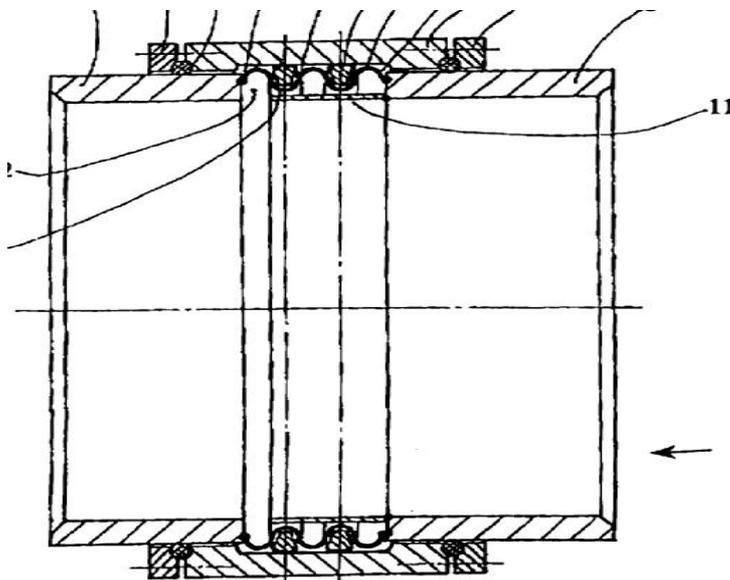
F16L 51/028

with the expansion or contraction of each corrugation being limited

Definition statement

This subclass/group covers:

This group covers



US6422611

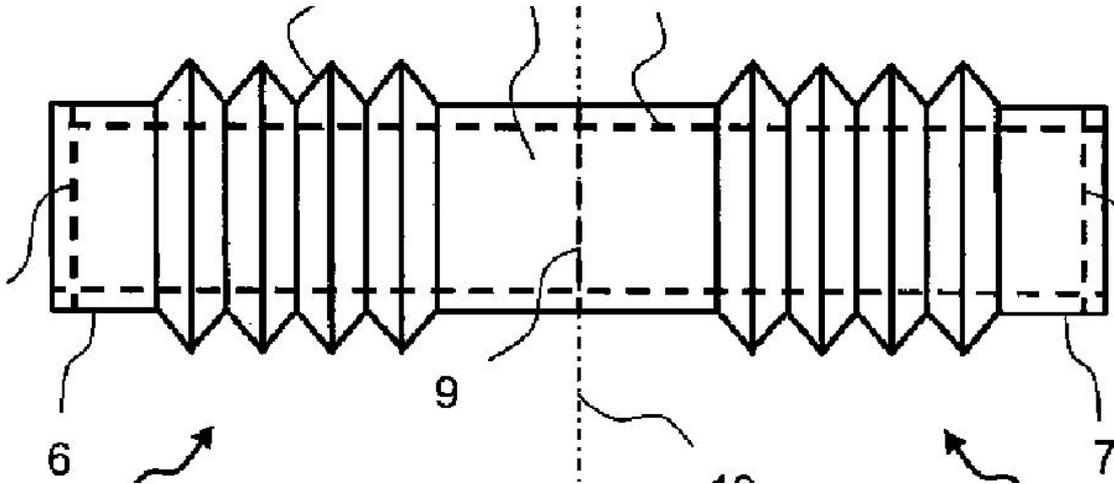
F16L 51/03

comprising two or more bellows

Definition statement

This subclass/group covers:

This group covers



DE102007052243

F16L 53/00

Heating or cooling pipes or pipe systems (preventing freezing of pipes, thawing frozen pipes [E03B 7/12](#), [E03B 7/14](#); pipe-line systems, pipe-lines [F17D](#))

References relevant to classification in this group

This subclass/group does not cover:

Heating or cooling of hoses	F16L 11/12
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Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Preventing freezing of pipes, thawing frozen pipes	E03B 7/12 ; E03B 7/14
Pipe-line systems, pipe-lines	F17D
Heat exchangers	F28D

Informative references

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

Heating or cooling of valves	F16K 31/002
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F16L 55/00

Devices or appurtenances for use in, or in connection with pipes or pipe systems (the preceding groups and groups [F16L 57/00](#), [F16L 59/00](#) take precedence; repairing or joining pipes on or under water [F16L 1/26](#); nozzles [B05B](#); cleaning of pipes [B08B 9/02](#); [N: arrangements of draining devices for water main or service pipe systems [E03B 7/08](#)]; devices for preventing bursting of water pipes by freezing [E03B 7/10](#); [N: draining devices for hydrants [E03B 9/14](#)]; for domestic plumbing installations [E03C 1/00](#); [N: steam traps for draining of liquids from enclosures containing gases or vapours [F16T](#)]; arrangements for sealing leaky tubes or conduits of heat-exchangers [F28F 11/00](#))

Definition statement

This subclass/group covers:

e.g. damping devices, means for stopping flow, devices for covering leaks, pigs or moles, preventing accumulation of dirt,

References relevant to classification in this group

This subclass/group does not cover:

Repairing or joining pipes on or under water	F16L 1/26
Cleaning of pipes	B08B 9/02
Devices for preventing bursting of water pipes by freezing	E03B 7/10
Steam traps for draining of liquids from enclosure containing gases or vapours	F16T

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

For domestic plumbing installations	E03C 1/00
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Arrangements for sealing leaky tubes or conduits of heat-exchangers	F28F 11/00
Arrangements of draining devices for water main or service pipe systems	E03B 7/08
Draining devices for hydrants	E03B 9/14

Informative references

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

Nozzles	B05B
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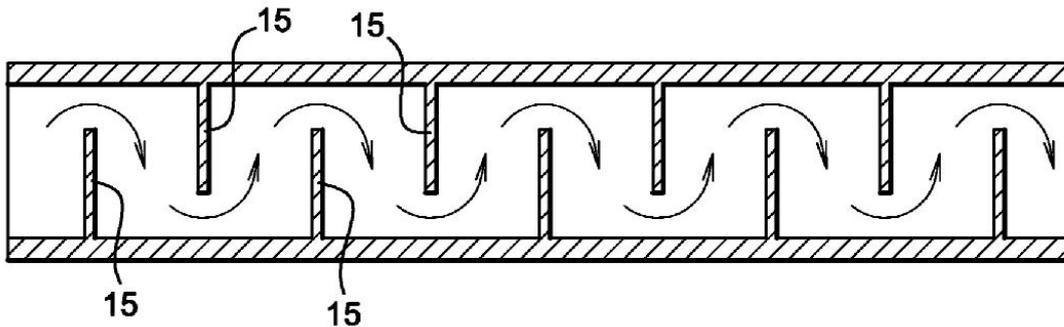
F16L 55/02736

transversal baffles defining a tortuous path

Definition statement

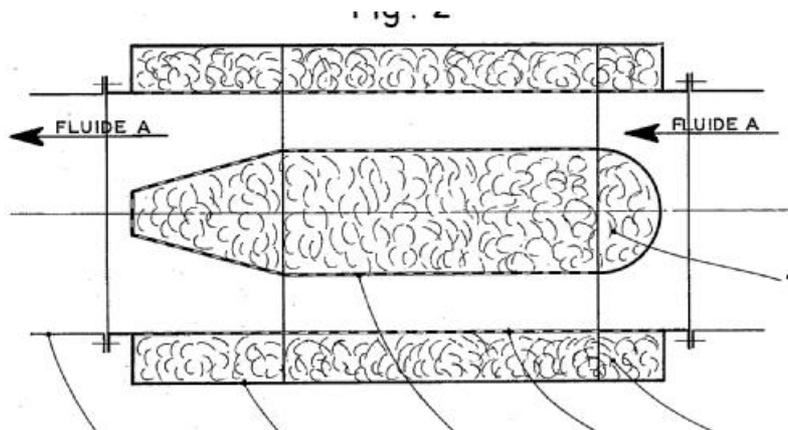
This subclass/group covers:

This group covers



FR2942018

This group covers



FR2447069

F16L 55/02754

central core throttling the passage

F16L 55/053

pneumatic reservoirs wherein the gas in the reservoir is separated from the fluid in the pipe

Definition statement

This subclass/group covers:
pneumatic reservoirs having a membrane

F16L 55/11

plugs

Definition statement

This subclass/group covers:
closing means which can be fixed inside the pipe end

F16L 55/115

caps

Definition statement

This subclass/group covers:
closing means which can be fixed on the outside of the pipe end

F16L 55/17

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

Definition statement

This subclass/group covers:

This group covers

also two half sleeves

F16L 55/24

preventing accumulation of dirt

References relevant to classification in this group

This subclass/group does not cover:

Cleaning of pipes:	B08B
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F16L 55/26

Pigs or moles, i.e. devices movable in a pipe or conduit with or without self-contained propulsion means (tunnel railway systems [B61B 13/10](#); conveying articles through pipes or tubes, e.g. tube mail systems, [B65G 51/00](#))

Definition statement

This subclass/group covers:

pigs which are used to repair pipes

References relevant to classification in this group

This subclass/group does not cover:

Pigs which are used to stop flow in pipes	F16L 55/1283
Pigs which are used to apply liquids to the inside of the pipes	B05C 7/00
Pigs for cleaning pipes	B08B 9/02
Pigs for welding or cutting	B23K 37/02
Pigs for measuring or testing	G01M , G01N

Pigs for inspecting or maintenance of pipes in nuclear reactors	G21C 17/00
Pigs for the installation of cables	H02G

F16L 57/00

protection of pipes or objects of similar shape against external or internal damage or wear ([N: 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 thereof during transport [B65D](#), e.g. [B65D 59/00](#); [N: for steam boilers [F22B 37/107](#)])

References relevant to classification in this group

This subclass/group does not cover:

Protection under water	F16L 1/123
Supporting of pipes inside other pipes or sleeves	F16L 7/00
Used in connection with end fittings or hoses	F16L 35/00
Protecting of pipes during transport	B65D 59/00

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

For steam boilers	F22B 37/107
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Informative references

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

For tubular articles not conveying fluid	B65D 59/02
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F16L 57/06

protection of pipes against wear

Informative references

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

Informative reference:

For pipes conveying concrete	B65G 53/523
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F16L 58/00

protection of pipes or fittings against corrosion or incrustation (supporting of pipes inside other pipes or sleeves [F16L 7/00](#); compound tubes [F16L 9/14](#); cleaning pipes or tubes [B08B 9/02](#))

References relevant to classification in this group

This subclass/group does not cover:

Cathodic corrosion protection	C25F
Compound tubes	F16L 9/14

Informative references

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

Cleaning pipes or tubes	B08B 9/02
Supporting of pipes inside other pipes or sleeves	F16L 7/00

F16L 59/00

Thermal insulation in general (heat, sound insulation in buildings [E04B](#); heat insulation of steam engines [F01B 31/08](#); [N: thermal or acoustic isolation for combustion engines [F02B 77/11](#)]; heat insulation in rotary piston machines [F01C 21/06](#); heat insulation of pumps [F04C 29/04](#); thermal insulation of

pressure vessels [F17C 1/12](#); vessels not under pressure, with provision for insulation [F17C 3/02](#))

Definition statement

This subclass/group covers:

insulation for pipes or hoses or pipe cover elements wherein no other specific use is given. This group does not cover materials for thermal insulation, which are classified in the specific groups for the materials.

References relevant to classification in this group

This subclass/group does not cover:

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

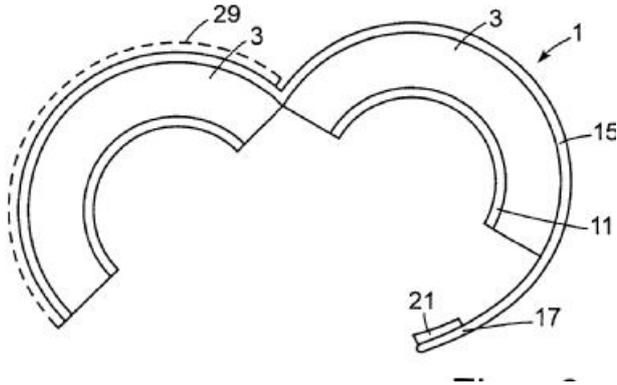
Heat, sound insulation in buildings	E04B
Heat insulation of steam engines	F01B 31/08
Thermal or acoustic insulation for combustion engines	F02B 77/11
Heat insulation in rotary piston machines	F01C 21/06
Heat insulation of pumps	F04C 29/04
Thermal insulation of pressure vessels	F17C 1/12
Vessels not under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

F16L 59/023

with a hinge opposite the slit

Definition statement

This subclass/group covers:



DE202005004339U

F16L 59/141

in which the temperature of the medium is below the ambient temperature

Definition statement

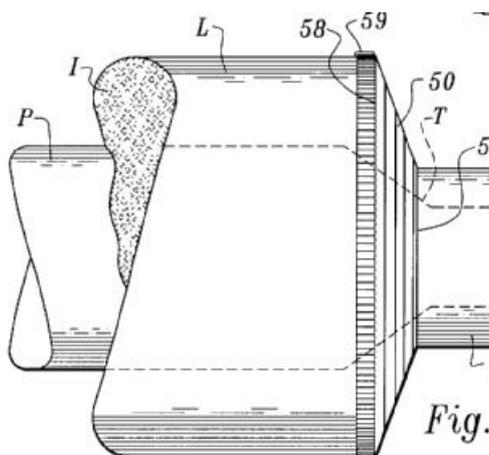
This subclass/group covers:
insulation for pipes conveying cryogenic fluids

F16L 59/166

covering the end of an insulated section

Definition statement

This subclass/group covers:



US6752176