

F16B

DEVICES FOR FASTENING OR SECURING CONSTRUCTIONAL ELEMENTS OR MACHINE PARTS TOGETHER, e.g. NAILS, BOLTS, CIRCLIPS, CLAMPS, CLIPS OR WEDGES; JOINTS OR JOINTING (couplings for transmitting rotation [F16D](#))

Definition statement

This place covers:

Fastening elements for constructional parts per se, such as: clamps, clips, dowels, nails, staples, bolts without screw thread, pins, rivets, circlips, self-cutting screws, screws and bolts with thread, nuts, lock-nuts, threaded inserts, washers, hooks, suction cups

The connection of constructional elements such as key-type connections, shrinkage connections, joining of sheets and plates, connections of rods or tubes mutually or to flat surfaces at an angle, connections of constructional elements by sticking or pressing them together, joining of furniture, connections of constructional elements by a part of one element entering a hole in the other

The fastening elements or connection of elements in this group can be employed in multiple technical application fields. However, the focus is on the fastening element or the connection of elements itself.

Relationships with other classification places

Fastening elements in this subclass are characterised by their constructional or functional aspects. Fastening elements which are specially adapted or designed for a specific technical application are generally rather classified in the specific technical application field.

References

Limiting references

This place does not cover:

Couplings transmitting rotation	F16D
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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:

Horsehoe nails	A01L 7/10
Nails for footwear	A43B 23/20
Buckles, slide fasteners	A44B
Ornamental heads for nails, screws, or the like	A47G 3/00
Means, not using staples for attaching sheets temporarily together	B42F 3/00
Thumb-tacks	B43M 15/00
Fastening devices, e.g. clips for leather-stretching used in apparatus or machines for manufacturing or treating skins, hides, leathers or furs	C14B 17/08
Screws or bolts for railway sleepers	E01B 9/10
Rail joints	E01B 11/00
Connections for buildings	E04
For building constructions	E04B 1/38
Clamping means for down pipes for roof drainage	E04D 13/08

Application-oriented references

For hand railings	E04F 11/18
Fastening scaffolds against buildings	E04G 5/04
Scaffold couplings	E04G 7/00
For fencing	E04H 17/00
Bolts or fasteners for wings, specially for doors or windows	E05C
Locking bearings for parts moving only linearly	F16C 29/10
Hooks as integral parts of chains	F16G 17/00
Pipe joints	F16L
Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets	F16L 3/00
Clips for connecting hoses to rigid members	F16L 33/02
Magnetic holding devices	H01F 7/00
Electrostatic holding devices	H02N 13/00

Informative references

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

Manufacture of threaded fastening means	B21H , B21K , B23G
Welding	B23K
Screw mechanisms	F16H

Special rules of classification

As a general rule, multiple classifications can be attributed to one document. Symbols for inventive information and additional information are attributed to the corresponding fields.

If there are interesting functional features of an invention specially adapted for an application, at least a symbol for additional information in [F16B](#) should be given to this document.

Many documents describe a fastening element itself and a connection comprising the fastening element. If the focus of such a document lies e.g. on the fastening element itself, a symbol for inventive information should be given for the fastening element and a further symbol for additional information should be given for the connection and vice versa according to the focus.

In this main group, it is desirable to add the indexing codes of [F16B 2200/00](#).

Glossary of terms

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

Connections using screw-thread elements	the connection is established by the screw-thread element
A screw acts on another element in order to establish a clamped connection	a connection using clamps

F16B 1/00

Devices for securing together, or preventing relative movement between, constructional elements or machine parts

Definition statement

This place covers:

Securing devices making use of shape memory alloys, hydraulic or pneumatic action or securing devices with marking colours or the like.

Special rules of classification

Groups [F16B 2/00](#) - [F16B 47/00](#) take precedence over group [F16B 1/00](#).

Group [F16B 1/00](#) is residual.

F16B 1/02

Means for securing elements of mechanisms after operation (means for bringing members to rest [F16D](#))

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:

Means for bringing members to rest	F16D
Pipe couplings	F16L

Special rules of classification

Group [F16B 1/02](#) is residual. Groups [F16B 2/00](#) - [F16B 47/00](#) take precedence.

F16B 1/04

disengaged by movement of the actuating member of the element (locking of actuators [G05G](#), e.g. [G05G 5/00](#))

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:

Locking of actuators	G05G
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Special rules of classification

Group [F16B 1/04](#) is residual. Groups [F16B 2/00](#) - [F16B 47/00](#) take precedence.

F16B 2/00

**Friction-grip releasable fastenings (for cables or ropes, e.g. cleats [F16G 11/00](#))
{(connections of rods or tubes, e.g. of non-circular section, mutually, including resilient connections [F16B 7/00](#))}**

Definition statement

This place covers:

Clamps, i.e. gripping elements where the gripping action is effected by positive means other than the inherent resistance to deformation of the material of the clamp

Clips, i.e. gripping elements where the gripping action is effected solely by inherent resistance to deformation of the material of the clip

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:

Friction-grip releasable connections of rods or tubes	F16B 7/00
Friction-grip releasable fastenings for cables or ropes	F16G 11/00

Informative references

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

Means for preventing relative axial movement of a pin, spigot or the like, e.g. by snap in or locking by rotation features	F16B 21/00
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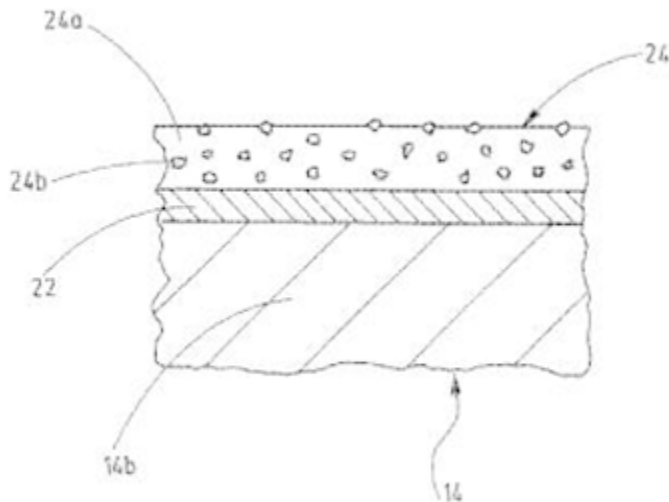
F16B 2/005

{Means to increase the friction-coefficient}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 2/02

Clamps, i.e. with gripping action effected by positive means other than the inherent resistance to deformation of the material of the fastening

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:

Paper clips	B42F 1/02
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Informative references

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

Joining of furniture using clamps	F16B 12/20
Tools in form of clamps	B25B 5/00

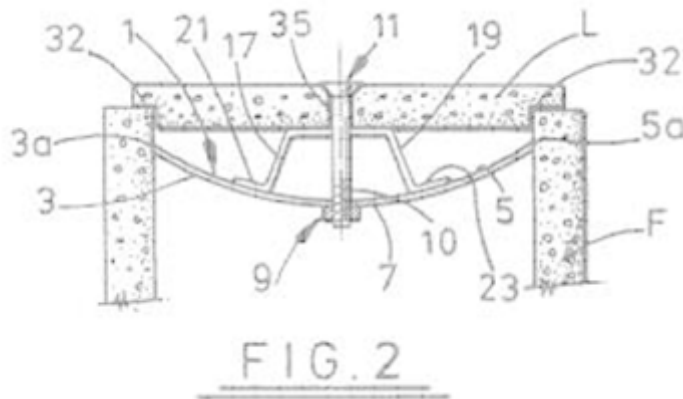
F16B 2/04

internal, i.e. with spreading action ([F16B 2/14](#) - [F16B 2/18](#) take precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

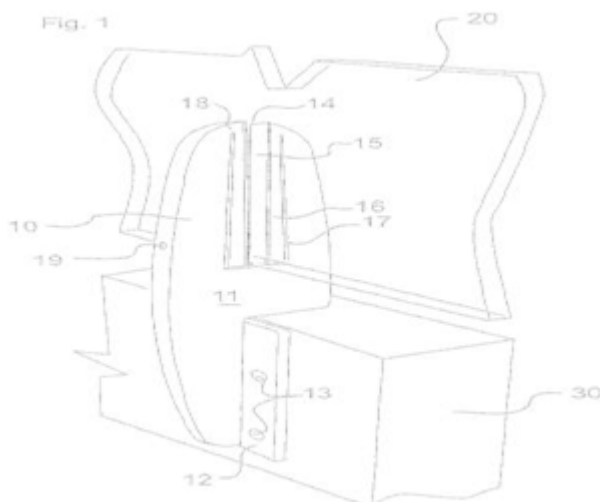
**F16B 2/06**

external, i.e. with contracting action ([F16B 2/14](#) - [F16B 2/18](#) take precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



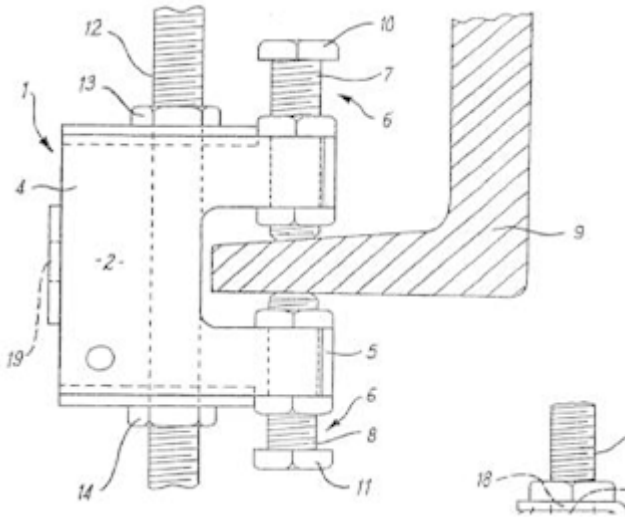
F16B 2/065

{using screw-thread elements ([F16B 2/08](#) - [F16B 2/12](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



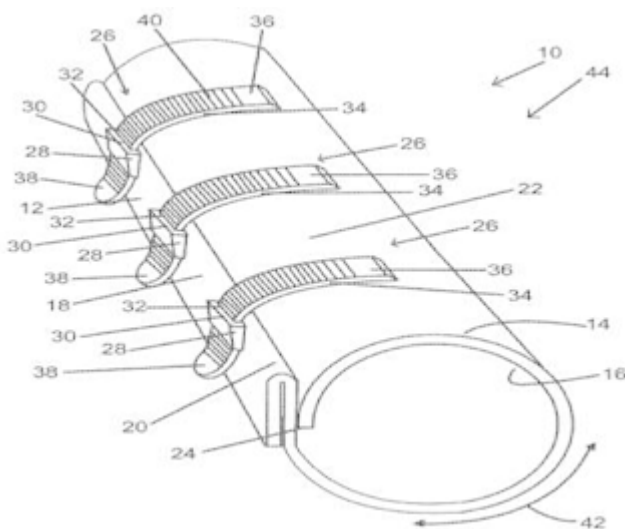
F16B 2/08

using bands

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Clamps for containers	B65D
Clamps using bands for pipes	F16L

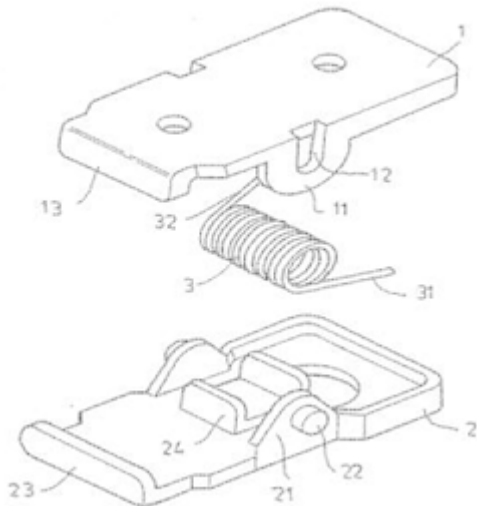
F16B 2/10

using pivoting jaws

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



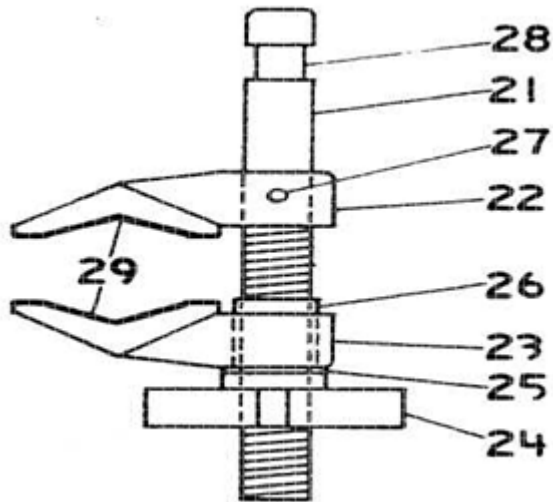
F16B 2/12

using sliding jaws

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



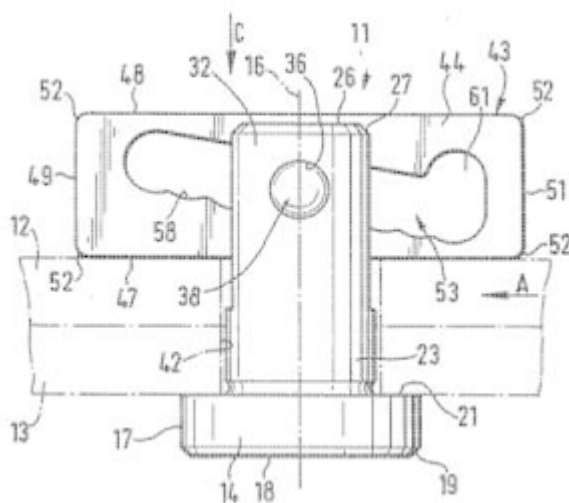
F16B 2/14

using wedges

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



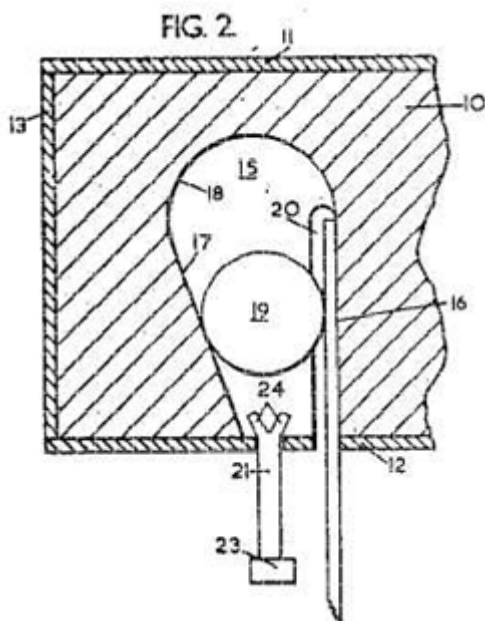
F16B 2/16

using rollers or balls {(clamps for rods or tubes telescopically engaged [F16B 7/1409](#); used in anti-theft monitors, e.g. as used for articles of clothing in shops [E05B 73/0017](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Clamps for rods or tubes telescopically engaged	F16B 7/1409
Clamps used in anti-theft monitors	E05B 73/0017

F16B 2/18

using cams, levers, eccentrics, or toggles {(for connections of rods or tubes engaged telescopically [F16B 7/1418](#), [F16B 7/1427](#), [F16B 7/1454](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

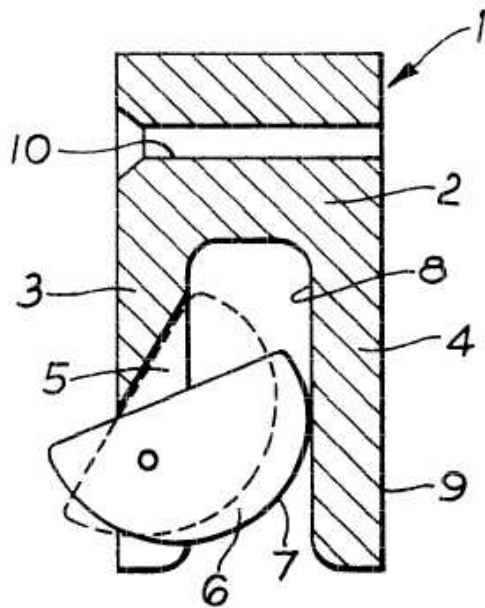


Fig. 1

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:

Clamps for connections of rods or tubes engaged telescopically	F16B 7/1418 , F16B 7/1427 , F16B 7/1454
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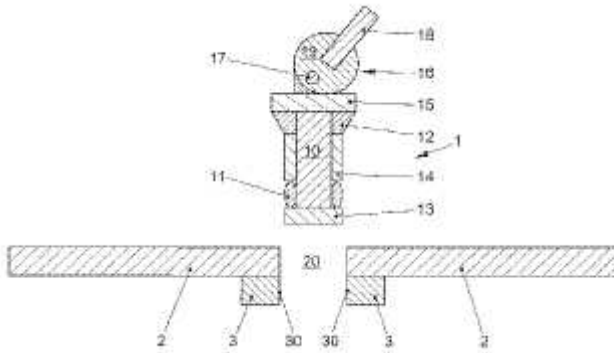
F16B 2/185

{using levers}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



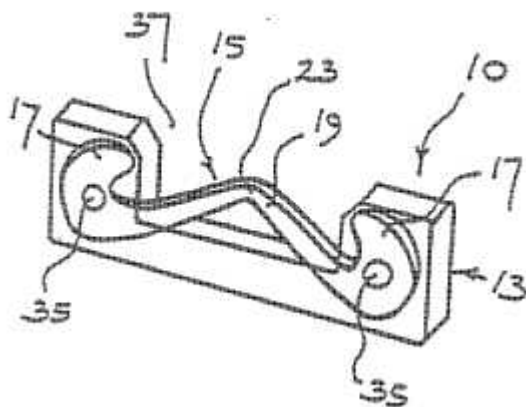
F16B 2/205

{with two stable positions}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



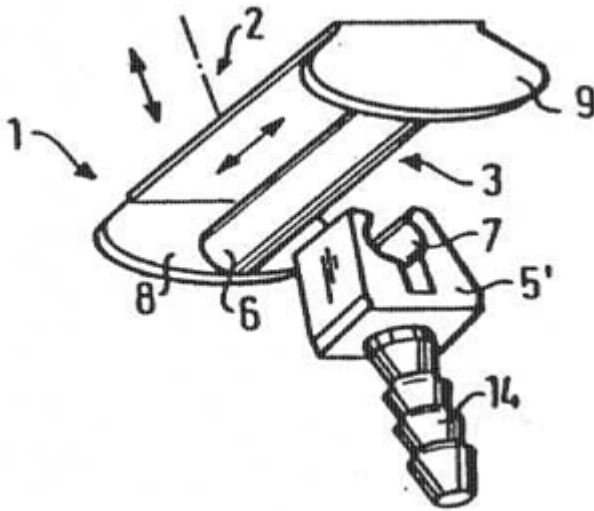
F16B 2/22

of resilient material, e.g. rubbery material {(F16B 2/205 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

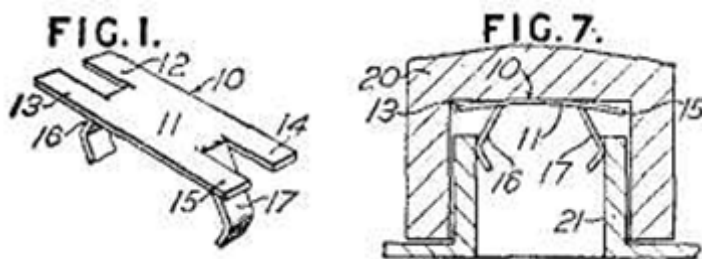
**F16B 2/243**

{internal, i.e. with spreading action}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



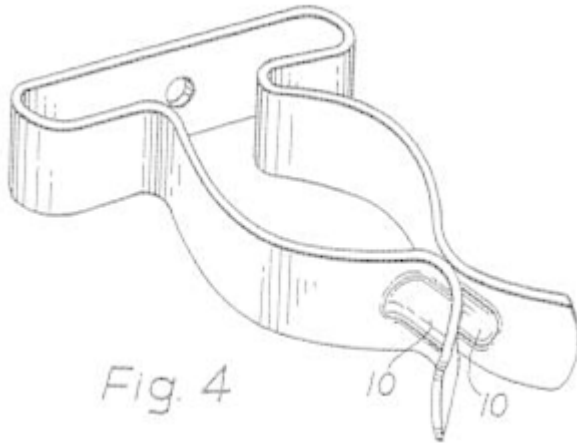
F16B 2/245

{external, i.e. with contracting action}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

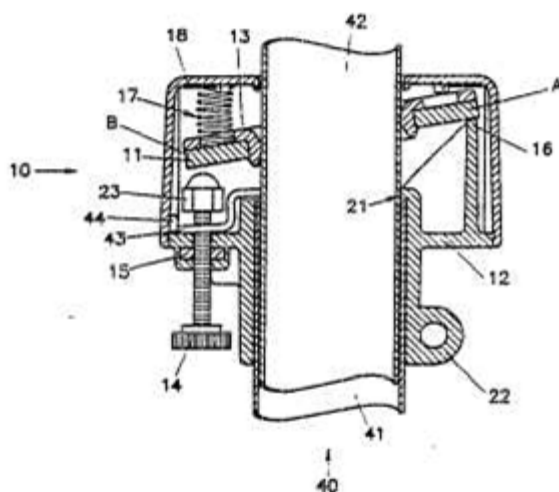
**F16B 2/246**

{the clip being released by tilting the clip or a part thereof to a position in which the axis of the openings surrounding the gripped elements is parallel to, or coincides with, the axis of the gripped elements}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



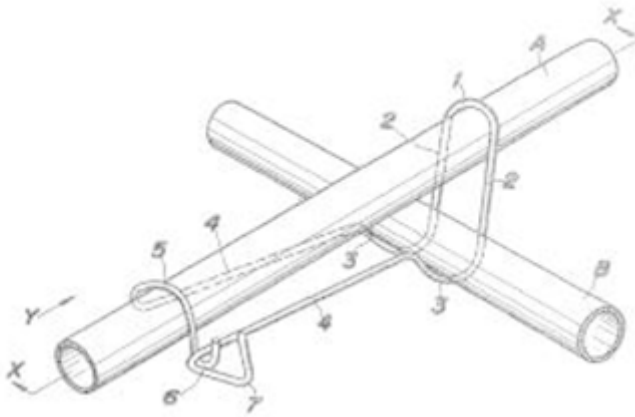
F16B 2/248

{of wire}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Clips for electric cable	H02G 3/0443
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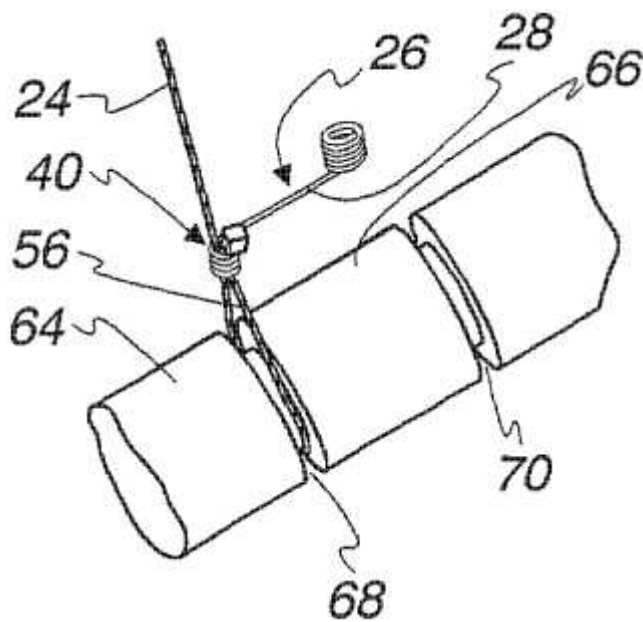
F16B 2/26

of pliable, non-resilient material, e.g. plant tie

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

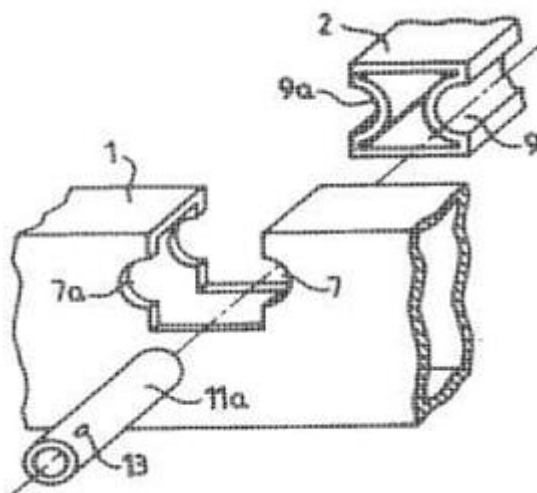
**F16B 3/00**

Key-type connections; Keys ([F16B 2/00](#) takes precedence; for rods or tubes mutually [F16B 7/00](#))

Definition statement

This place covers:

Connections by keys type elements. The key having a geometric shape that engaged to corresponding geometric shapes in the elements to be connected.



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 of a member on a shaft by a longitudinal key	F16D 1/08
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Informative references

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

Key-type connections for rods or tubes mutually	F16B 7/00
Releasable fastening devices locking by rotation	F16B 21/02 , F16B 21/04

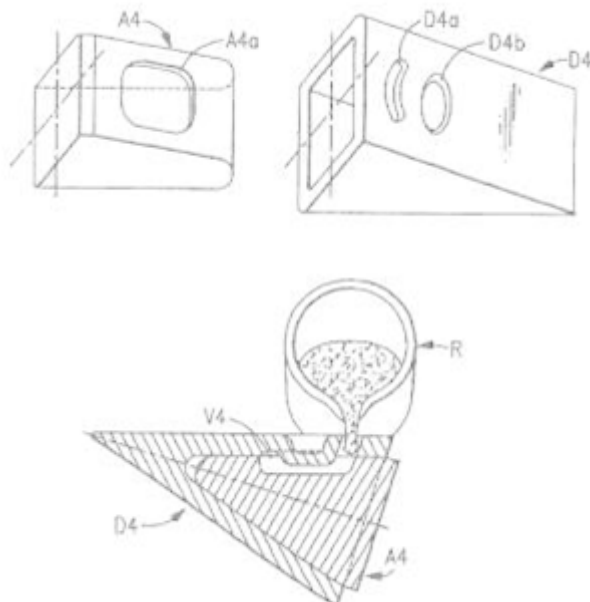
F16B 3/005

{the key being formed by solidification of injected material (joining of preformed parts by applying molten plastics [B29C 65/40](#); non-disconnectible pipe joints obtained using a hardenable filler [F16L 13/11](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Non-disconnectible pipe joints obtained using a hardenable filler	F16L 13/11
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Informative references

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

Joining of preformed part by applying molten plastics	B29C 65/40
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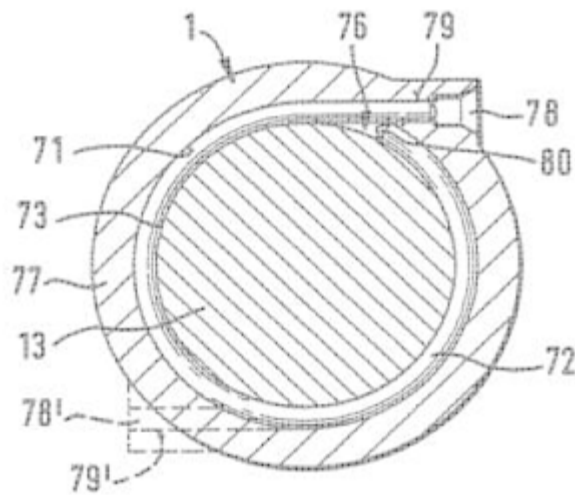
F16B 3/04

using keys formed of wire or other flexible material, to be inserted through an opening giving access to grooves in the adjacent surfaces of the parts to be connected

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



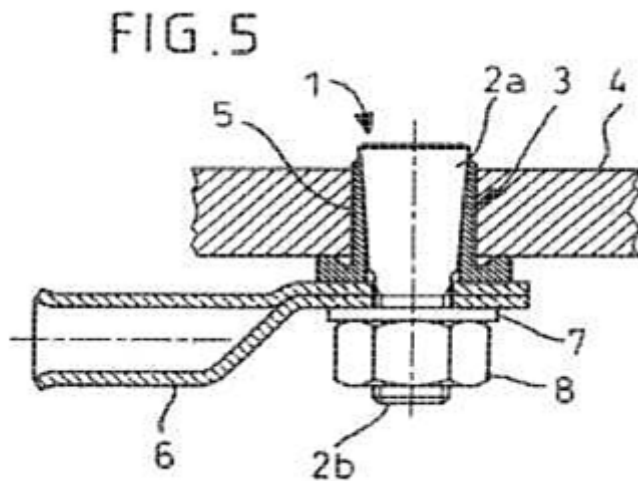
F16B 3/06

using taper sleeves

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Tapered sleeves in couplings (with transmission of torque)	F16D 1/09
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F16B 4/00

Shrinkage connections, e.g. assembled with the parts at different temperature; Force fits (restricted to metal parts or objects [B23P 11/02](#)); Non-releasable friction-grip fastenings ([F16B 2/00](#) takes precedence)

Definition statement

This place covers:

Shrinkage connections and force fits, i.e. a fastening between two parts which is achieved by friction after the parts are pushed together rather than by any other means of fastening.

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:

Shrinkage connections using members with a shape memory material	F16B 2200/77
Connections of a hub on a shaft by the elasticity of the hub	F16D 1/0858

Informative references

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

Shrinkage connections of metal parts or objects (process)	B23P 11/02
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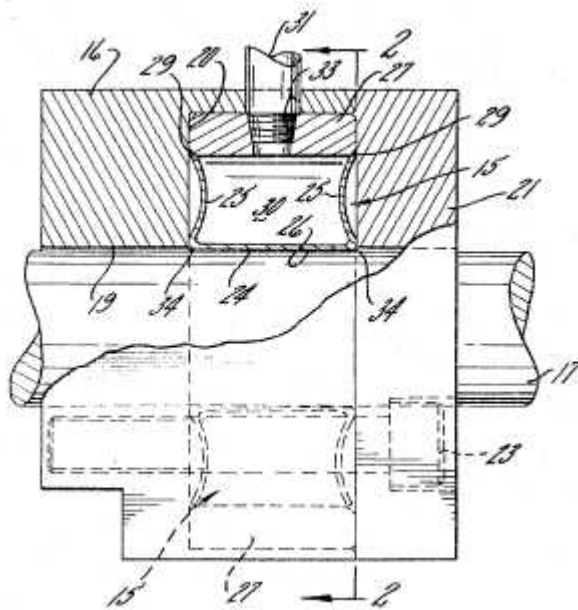
F16B 4/002

{engaging or disengaging by means of fluid pressure}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Couplings for attaching a member on a shaft with a clamping hub with radial clamping due to deformation of a resilient body or a body of fluid	F16D 1/0805
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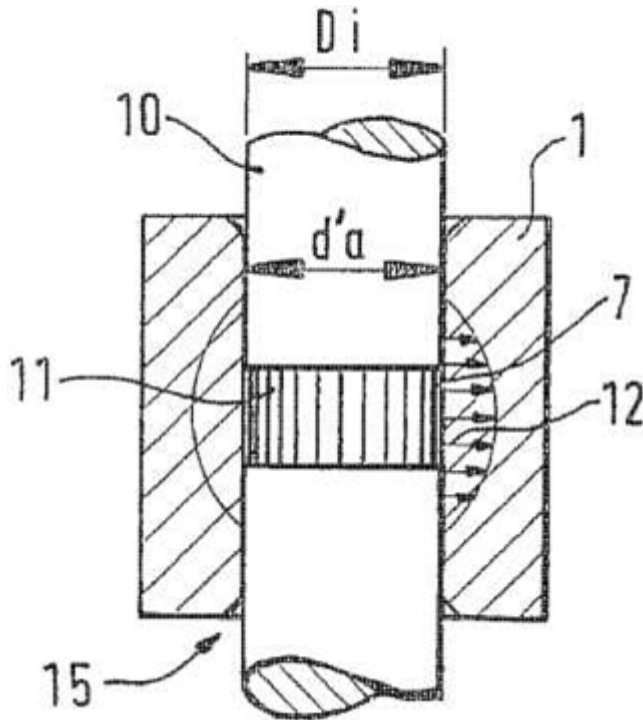
F16B 4/004

{Press fits, force fits, interference fits, i.e. fits without heat or chemical treatment ([F16B 4/002](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



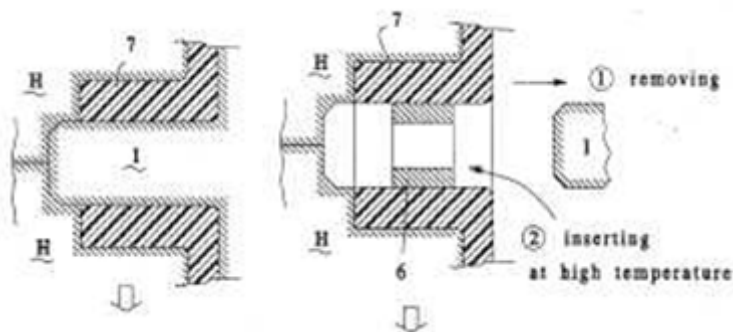
F16B 4/006

{Shrinkage connections, e.g. assembled with the parts being at different temperature}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



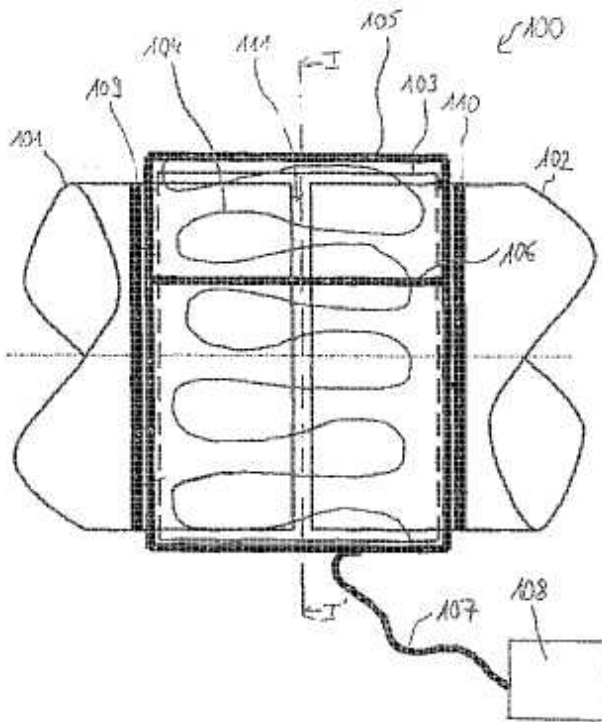
F16B 4/008

{using heat-recoverable, i.e. shrinkable, sleeves}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 5/00

Joining sheets or plates {, e.g. panels,} to one another or to strips or bars parallel to them ({[F16B 17/00](#) takes precedence;}) by sticking together [F16B 11/00](#); dowel connections [F16B 13/00](#); pins, including deformable elements [F16B 19/00](#); covering of walls [E04F 13/00](#); fastening signs, plates, panels or boards to a supporting structure, fastening readily-detachable elements, e.g. letters to signs, plates, panels, or boards, [G09F 7/00](#))

Definition statement

This place covers:

Joining of sheets and plates to one another or to strips and bars.

The focus lies on how the sheets or plates are connected and not on the fastening element itself.

References

Limiting references

This place does not cover:

Joining sheets by sticking together	F16B 11/00
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Pin and hole connections involving plastic deformation	F16B 17/00
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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:

Covering of walls	E04F 13/00
Covering of floors	E04F 15/00
Joining fastening signs, panels or boards to a supporting structure	G09F 7/18

Informative references

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

Joining sheets by dowel connections	F16B 13/00
Joining sheets by pins, including deformable elements	F16B 19/00
Metall working	B21D
Turning, boring	B23B
Joining of plastic sheets	B29C 66/40
Joining of automotive trim parts	B60R 13/0206

Special rules of classification

The groups

Fastening of honeycomb panels [F16B 5/01](#),

Fastening of abutting sheets or plates [F16B 5/0004](#)

take precedence over the remaining subgroups in [F16B 5/00](#)

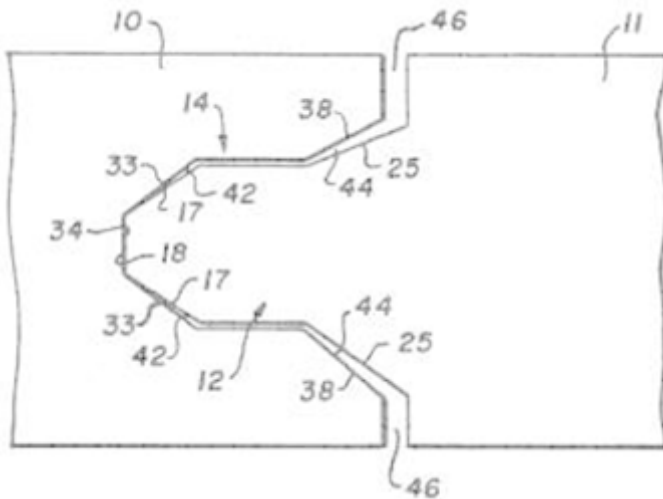
F16B 5/0012

{a tongue on the edge of one sheet, plate or panel co-operating with a groove in the edge of another sheet, plate or panel}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



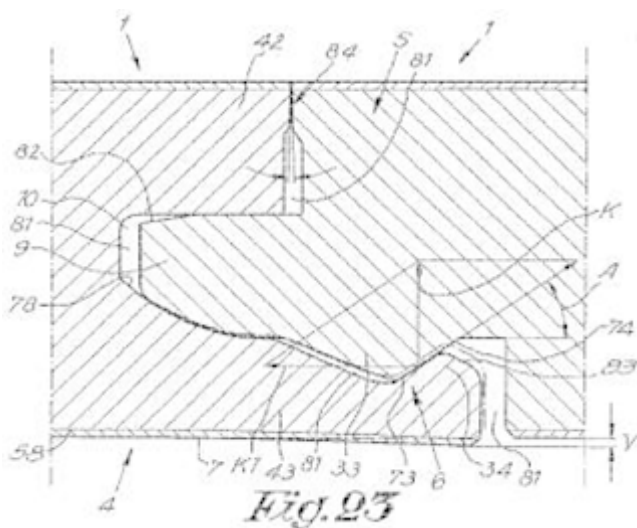
F16B 5/0016

{with snap action}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



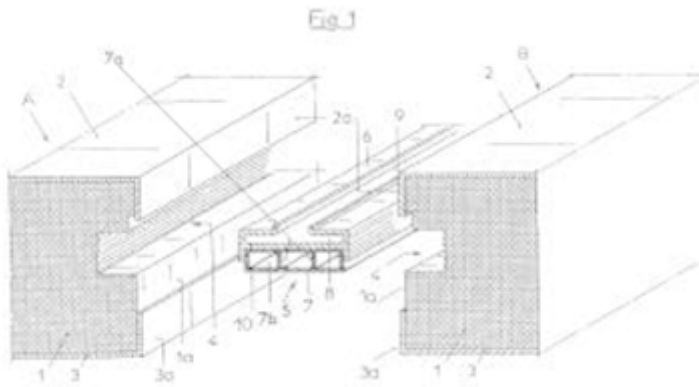
F16B 5/002

{both sheets, plates or panels having a groove, e.g. with strip-type connector}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

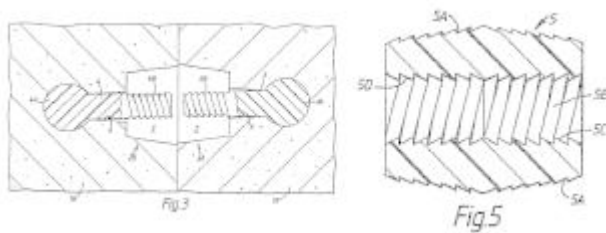
**F16B 5/0024**

{the sheets, plates or panels having holes, e.g. for dowel-type connections}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



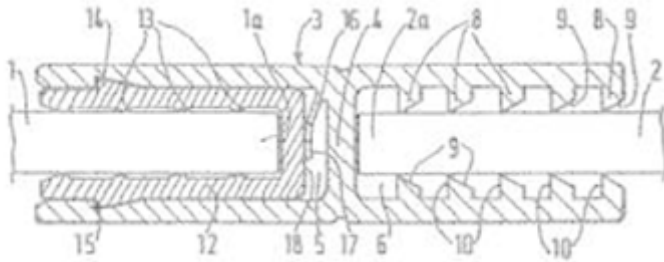
F16B 5/0028

{using I-shaped connectors (with flanges moving towards each other
[F16B 5/0068](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Using I-shaped connectors with flanges moving towards each other	F16B 5/0068
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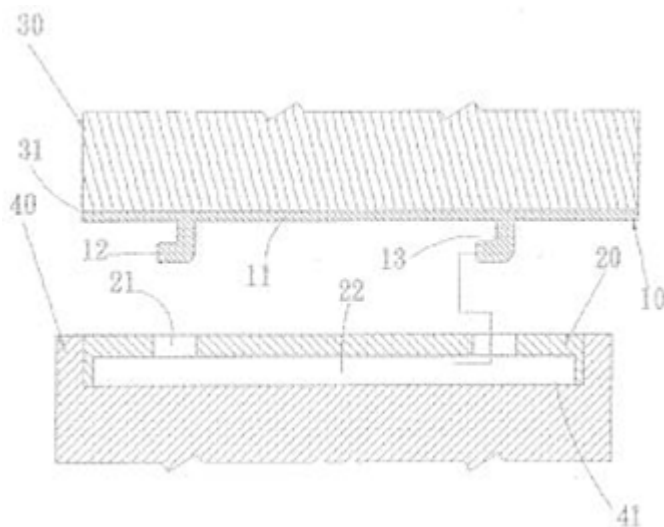
F16B 5/0036

{and using hook and slot or keyhole-type connections}

Definition statement

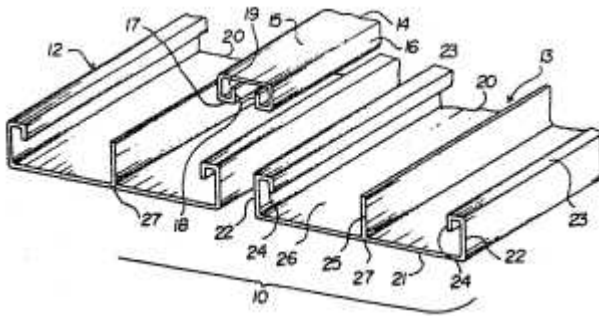
This place covers:

Illustrative example of subject matter classified in this group.

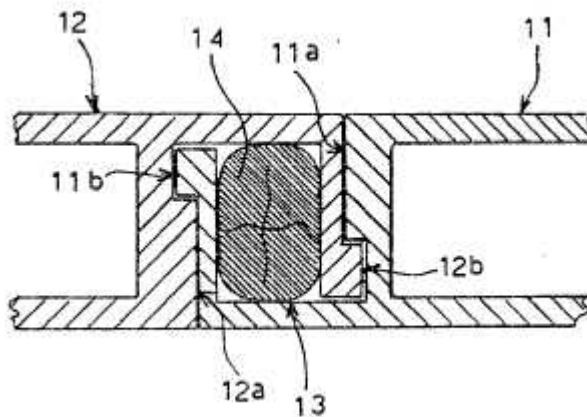


F16B 5/004**{and using C-shaped clamps}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

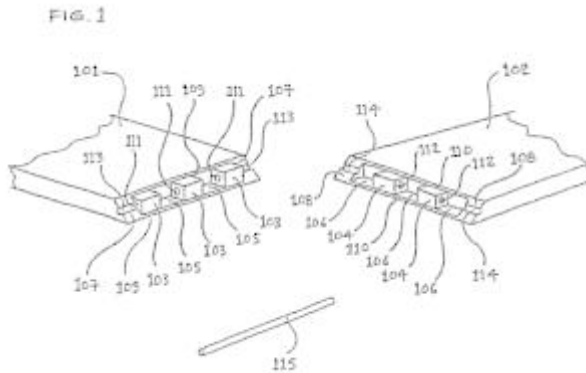
**F16B 5/0044****{and using interlocking keys of circular, square, rectangular or like shape}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

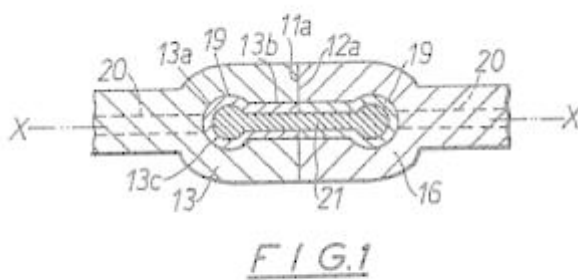


F16B 5/0048**{hinge-like}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 5/0052****{the interlocking key acting as a dovetail-type key}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



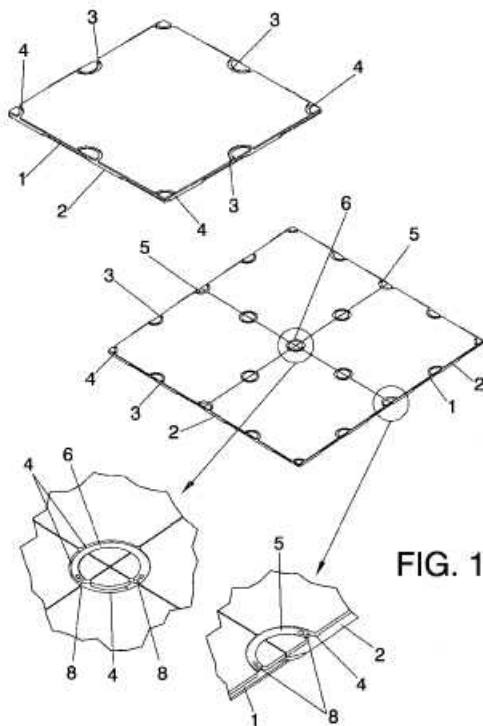
F16B 5/006

{and using ring-shaped clamps}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



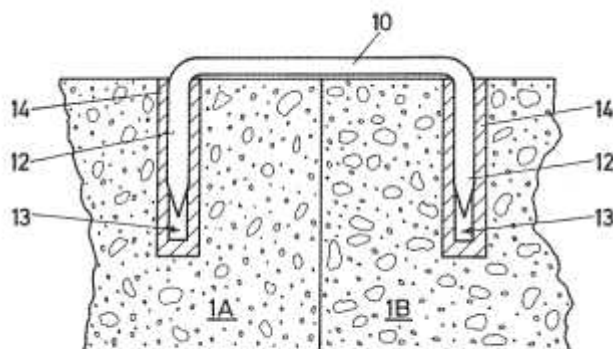
F16B 5/0064

{and using C-shaped clamps}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



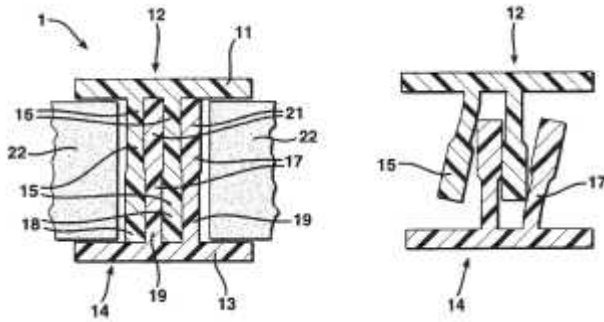
F16B 5/0068

{and using I-shaped clamps with flanges moving towards each other}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



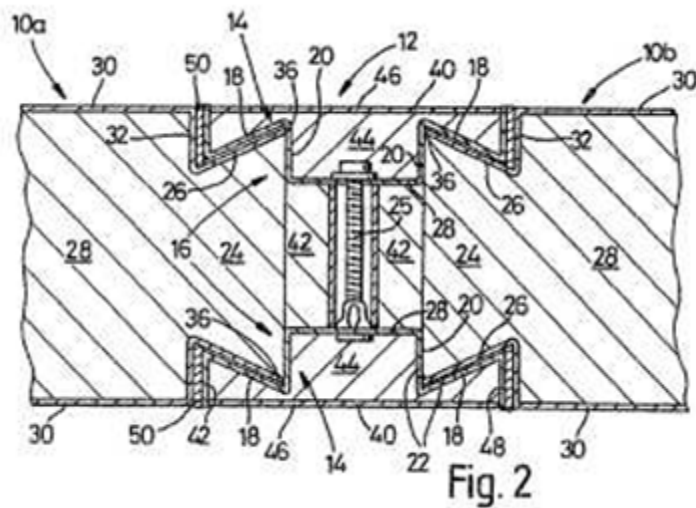
F16B 5/0072

{and using screw-thread}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



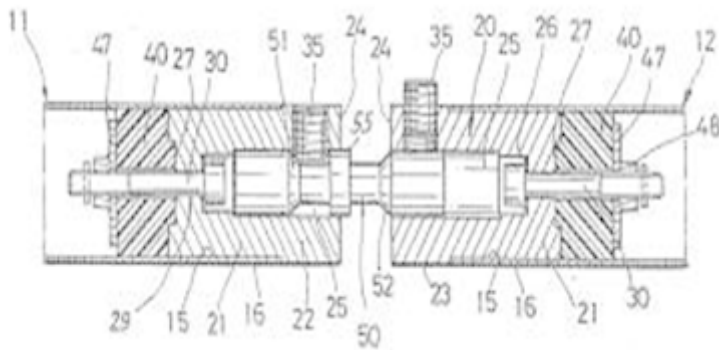
F16B 5/0088

{with locking means moving substantially perpendicular to the main plane, e.g. pins, screws}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 5/0092**

{with locking means rotating about an axis parallel to the main plane and perpendicular to the abutting edge, e.g. screw, bayonet}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

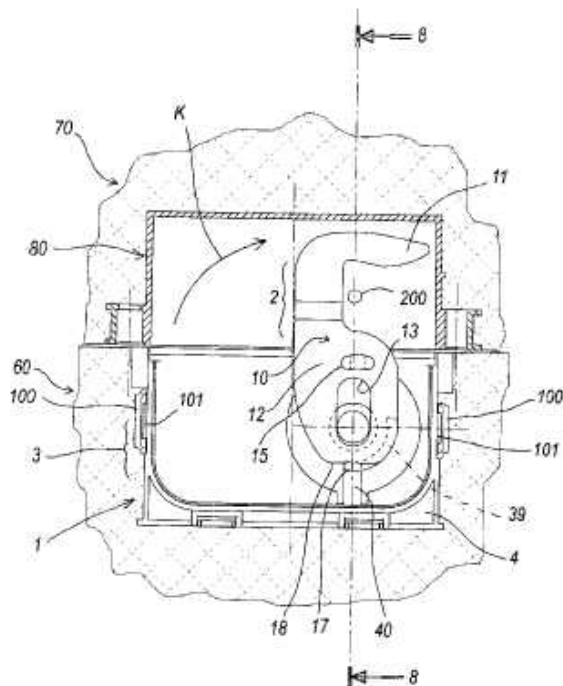
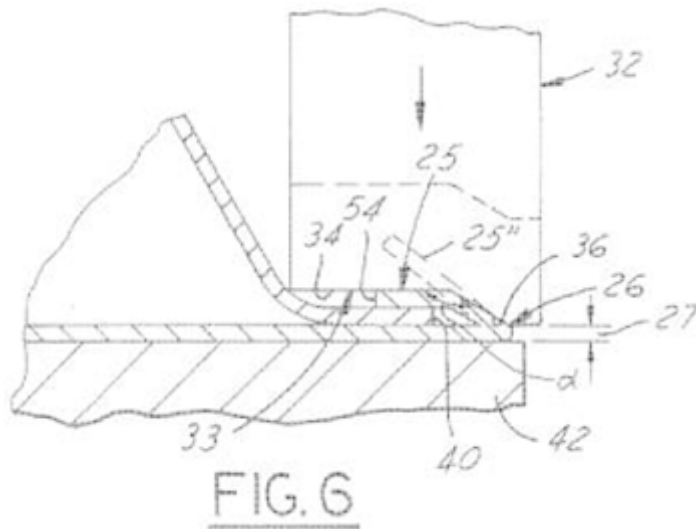


FIG. 7

F16B 5/0096**{by using permanent deformation}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

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

Hemming of sheet metal	B21D 39/02
------------------------	----------------------------

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:*

Hemming connections in vehicle doors	B60J 5/0469
Hemming connections in car bodies	B62D 27/026

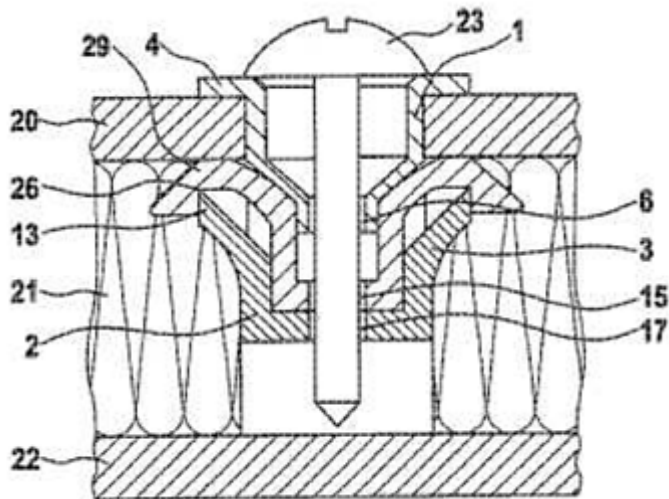
F16B 5/01

by means of fastening elements specially adapted for honeycomb panels

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



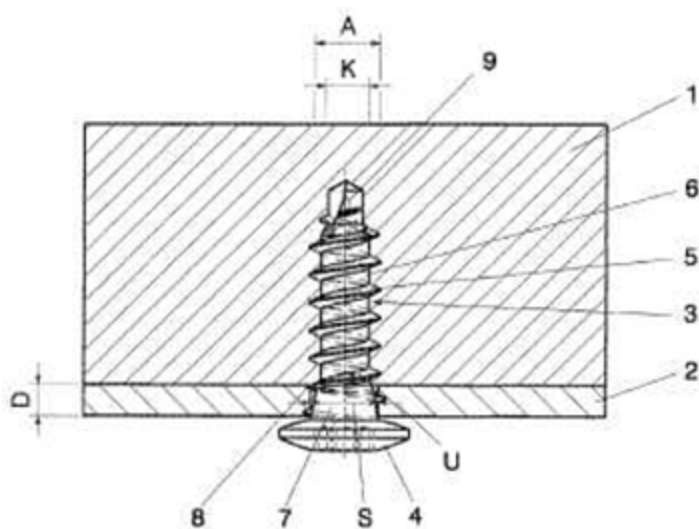
F16B 5/02

by means of fastening members using screw-thread ([F16B 5/0004](#) takes precedence); construction of screw-threaded connections [F16B 25/00](#) - [F16B 39/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Construction of screw-threaded connections
--

F16B 25/00 - F16B 39/00

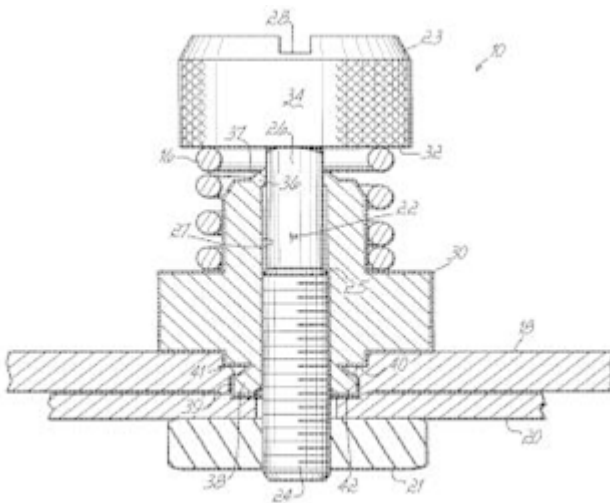
F16B 5/0208

{using panel fasteners, i.e. permanent attachments allowing for quick assembly}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



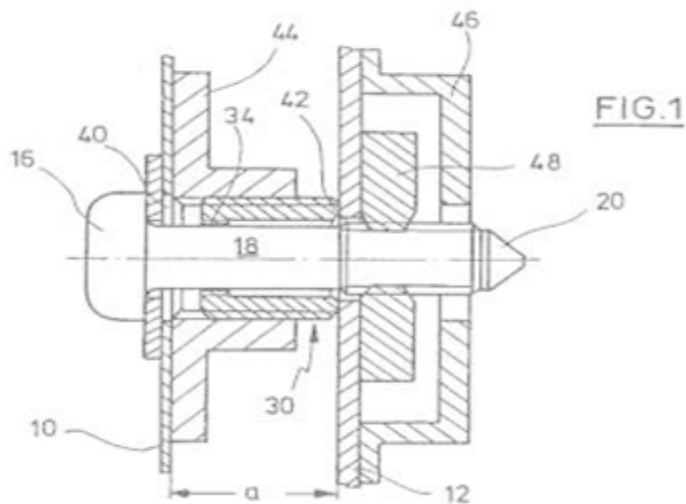
F16B 5/0233

{allowing for adjustment perpendicular to the plane of the plates}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

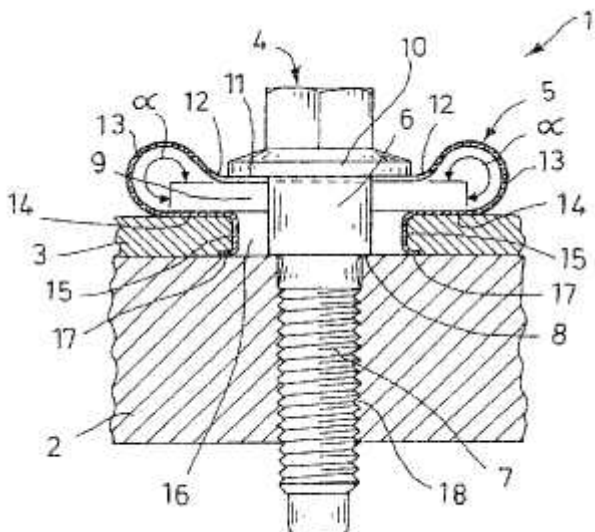
**F16B 5/0241**

{with the possibility for the connection to absorb deformation, e.g. thermal or vibrational}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



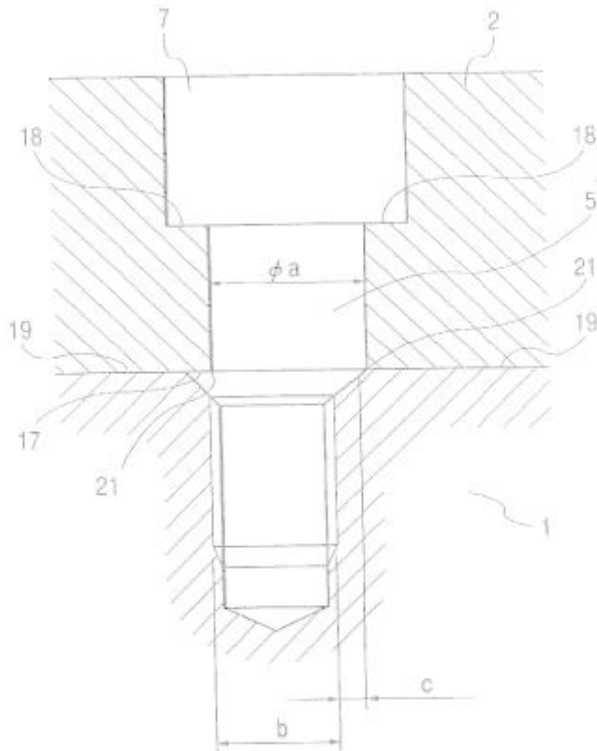
F16B 5/025

{specially designed to compensate for misalignment or to eliminate unwanted play}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Bolts or sleeves for positioning machine parts	F16B 19/02
--	----------------------------

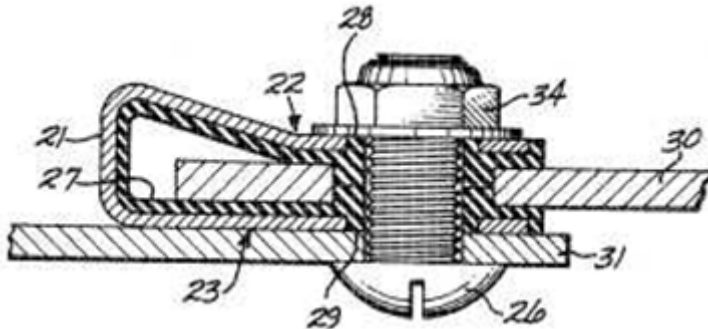
F16B 5/0258

{using resiliently deformable sleeves, grommets or inserts ([F16B 43/001](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

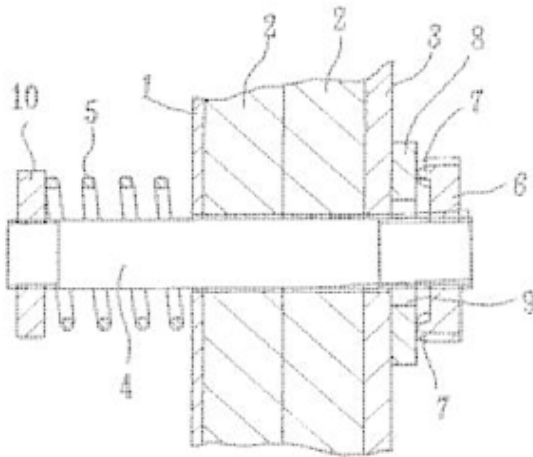
Informative references

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

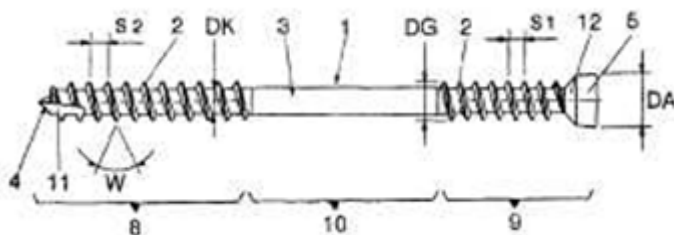
Grommet type mountings	F16F 1/3732
------------------------	-----------------------------

F16B 5/0266**{using springs}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 5/0275****{the screw-threaded element having at least two axially separated threaded portions ([F16B 5/0283](#) takes precedence)}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



References

Informative references

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

Fasteners for adjustable coverings in ceilings	E04F 13/0805
--	------------------------------

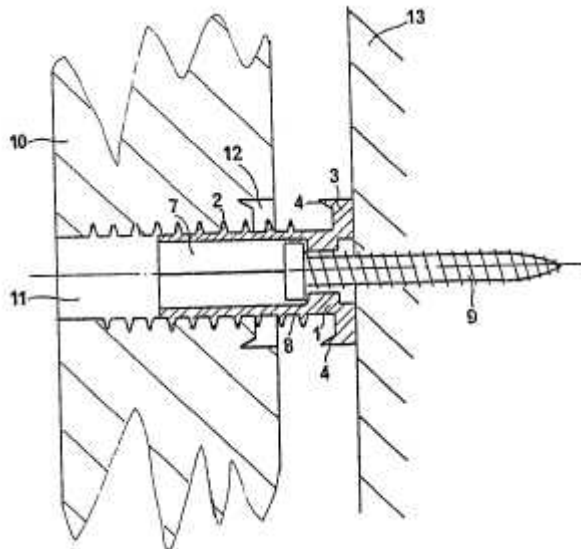
F16B 5/0283

{with an externally threaded sleeve around the neck or the head of the screw-threaded element for adjustably fastening a plate or frame or the like to a fixed element}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Threaded inserts	F16B 37/122
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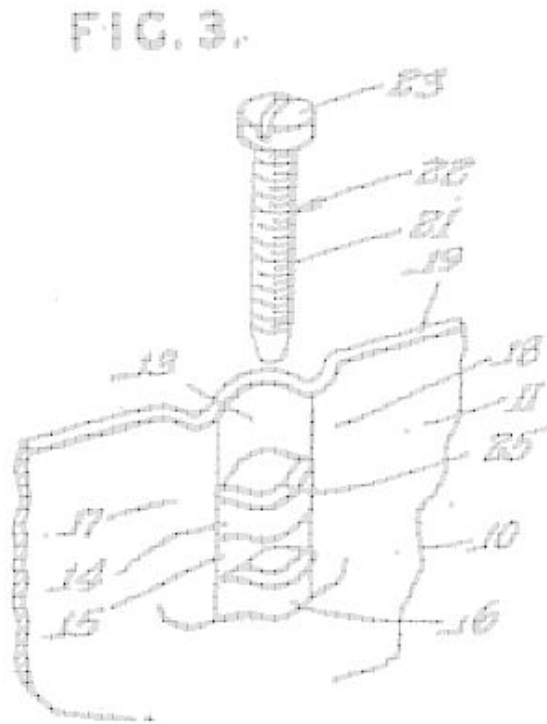
F16B 5/0291

{the threaded element being driven through the edge of a sheet plate with its axis in the plane of the plate}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 5/04

by means of riveting (rivets [F16B 19/04](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

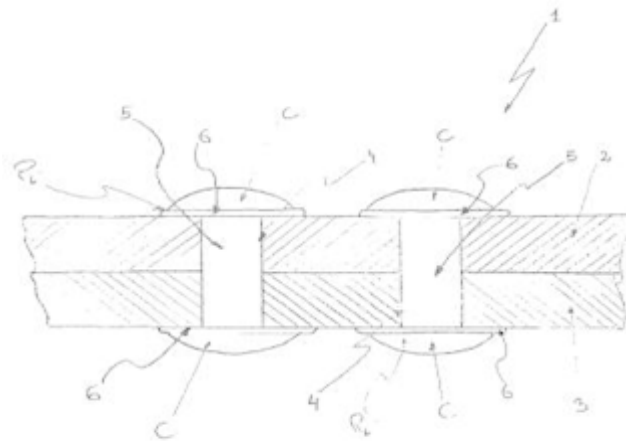


Fig. 1

References**Informative references**

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

Rivets	F16B 19/04
Riveting process	B21J
Riveting of plastic parts with separate rivets	B29C 65/606

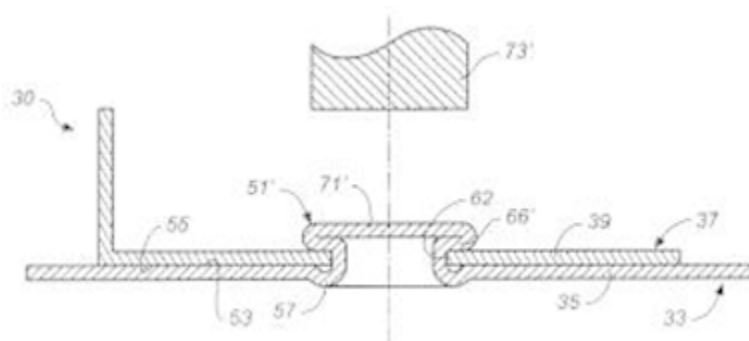
F16B 5/045

{without the use of separate rivets}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Connection of multiple plates by means of plastic deformation	F16B 17/006
Riveting of plastic parts without the use of separate rivets	B29C 65/606

F16B 5/06

by means of clamps or clips ([F16B 5/0004](#) takes precedence); friction-grip releasable fastenings in general [F16B 2/00](#))

References

Informative references

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

Friction-grip releasable fastenings in general	F16B 2/00
Clips in automotive industry	B60R 13/04 , B60R 13/043

Special rules of classification

Generally at least two groups are attributed, one for the clamping or clipping connection and one for the fastening element itself.

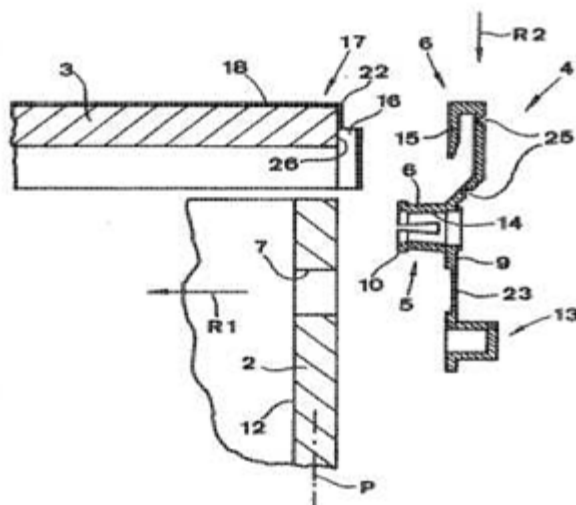
F16B 5/0614

{in angled relationship}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



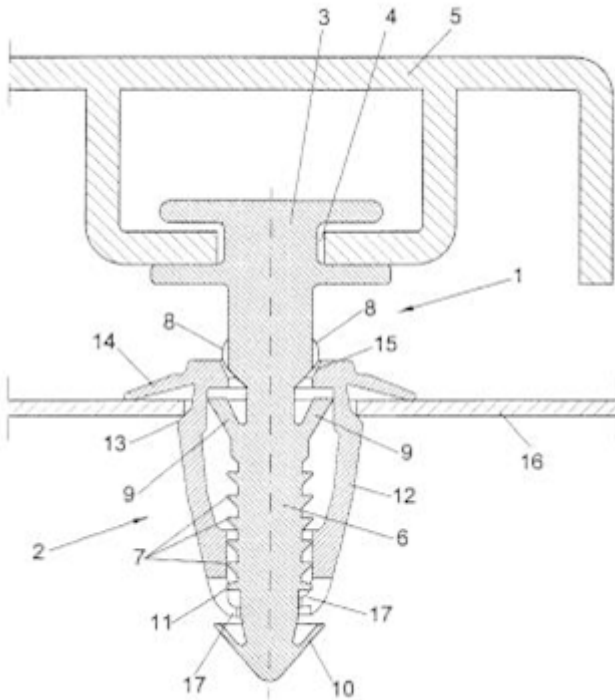
F16B 5/0628

{allowing for adjustment parallel or perpendicular to the plane of the sheets or plates}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



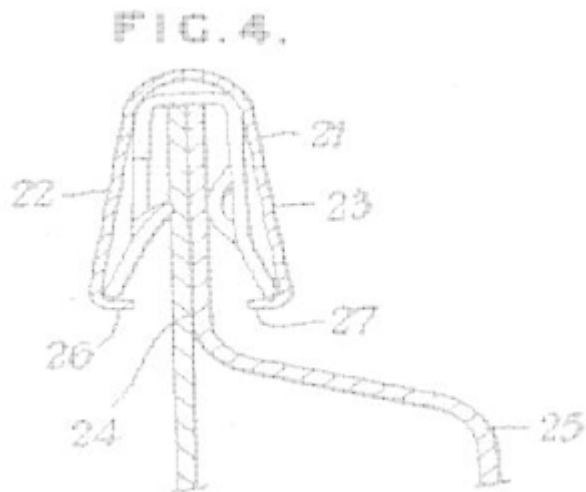
F16B 5/0635

{fastened over the edges of the sheets or plates}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Informative references**

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

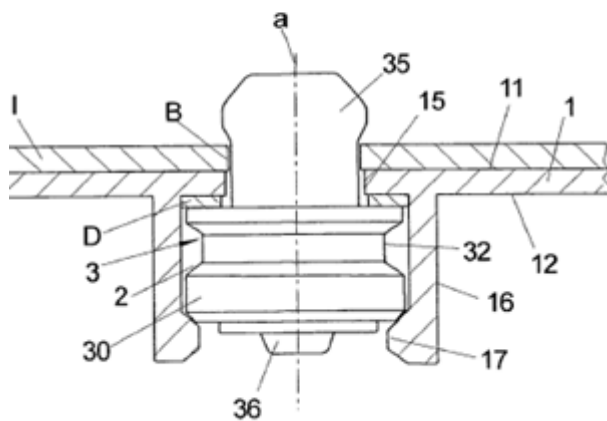
Releasable nuts	F16B 37/041
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F16B 5/0642

{the plates being arranged one on top of the other and in full close contact with each other}

Definition statement

This place covers:

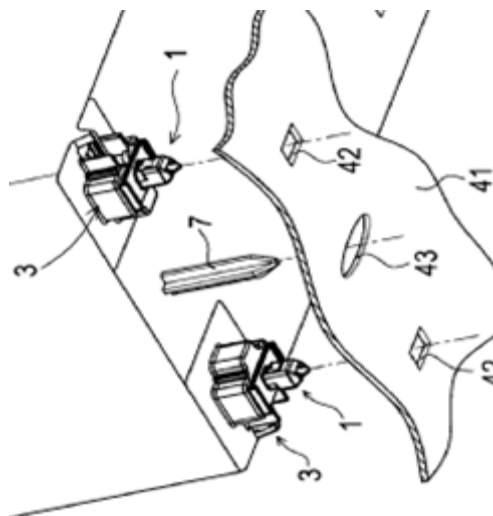
FIG 2**F16B 5/065**

{the plates being one on top of the other and distanced from each other, e.g. by using protrusions to keep contact and distance}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 5/0657

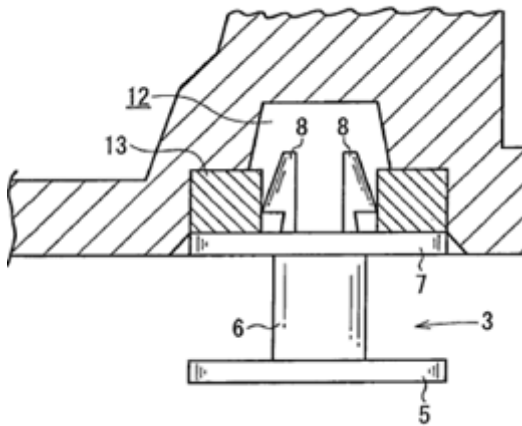
{at least one of the plates providing a raised structure, e.g. of the doghouse type, for connection with the clamps or clips of the other plate}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

Fig. 13b

**F16B 5/0664**

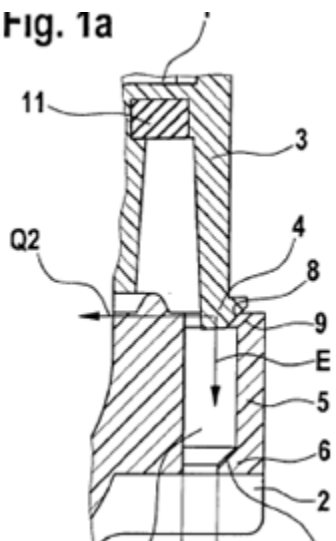
{at least one of the sheets or plates having integrally formed or integrally connected snap-in-features}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

Fig. 1a



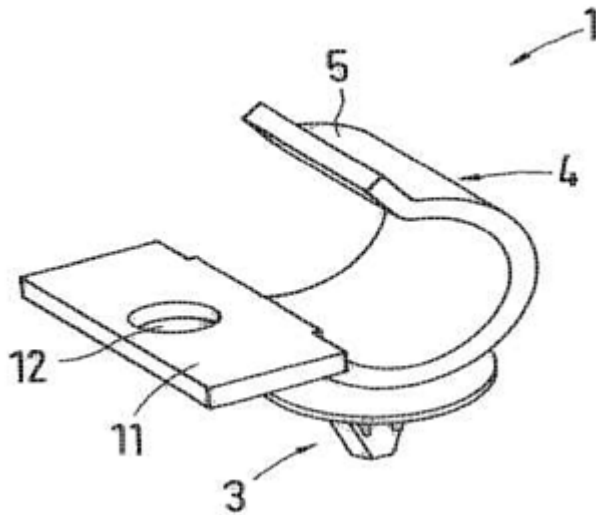
F16B 5/0685

{Joining sheets or plates to strips or bars ([F16B 5/0692](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

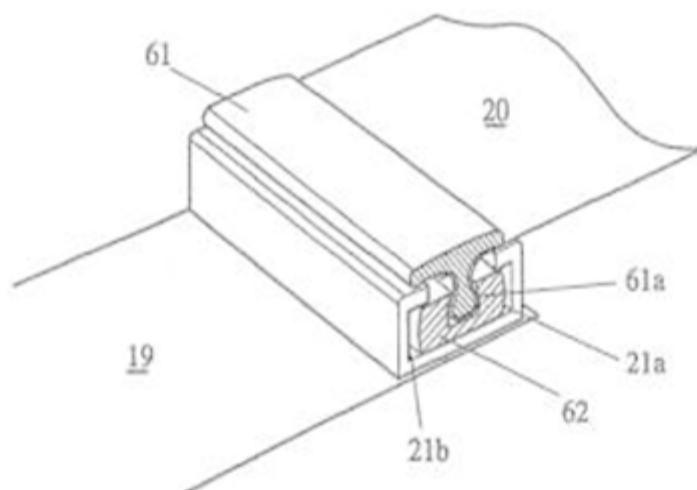
**F16B 5/0692**

{joining flexible sheets to other sheets or plates or to strips or bars (tent fastenings [E04H 15/64](#); coping elements for swimming pools with fixing means for sealing foil [E04H 4/142](#); greenhouses of flexible synthetic material [A01G 9/1407](#); end or aperture-closing arrangements or devices for sacks or bags [B65D 33/16](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Greenhouses of flexible synthetic material	A01G 9/1407
Fastening means for tarpaulins on vehicles	B60J 7/104
End or aperture-closing arrangements or devices for sacks or bags	B65D 33/16
Coping elements for swimming pools with fixing means for sealing foil	E04H 4/142
Tent fastenings	E04H 15/64

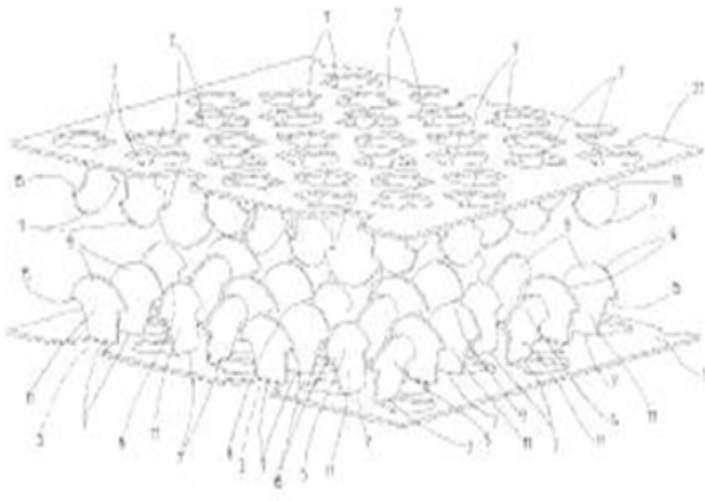
F16B 5/07

by means of multiple interengaging protrusions on the surfaces, e.g. hooks, coils,

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Fasteners of the touch and close type made integrally of plastics	A44B 18/0046
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F16B 5/08

by means of welds or the like (welding [B23K](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

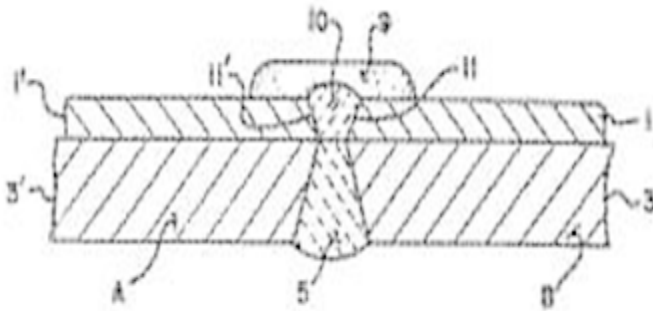


FIG. 2.

References**Limiting references**

This place does not cover:

Welding	B23K
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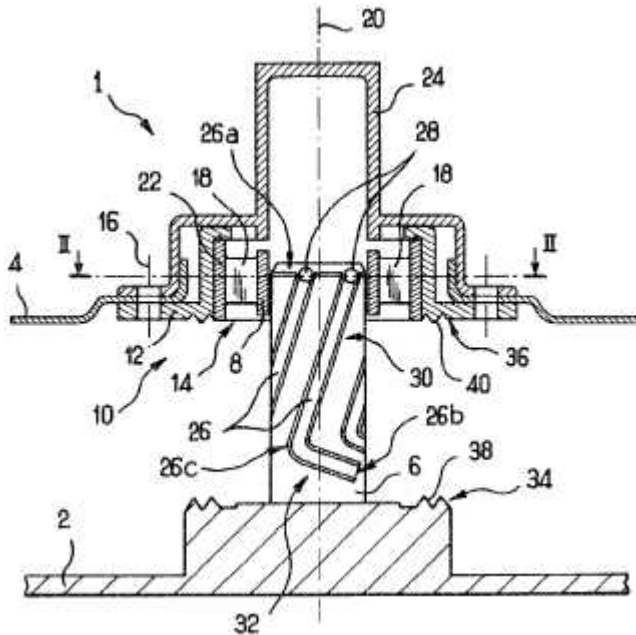
F16B 5/10

by means of bayonet connections ([F16B 5/0092](#) takes precedence); fastening devices locking by rotation [F16B 21/02](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Fastening devices locking by rotation	F16B 21/02
Fastening devices with bayonet catch	F16B 21/04

F16B 5/12

Fastening strips or bars to sheets or plates, e.g. rubber strips, decorative strips for motor vehicles, by means of clips (friction- grip releasable fastenings in general [F16B 2/00](#); fastening rods or tubular parts to flat surfaces at an angle [F16B 9/00](#))

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:

Fastening rods or tubular parts to flat surfaces at an angle	F16B 9/00
--	---------------------------

Informative references

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

Friction-grip releasable fastenings	F16B 2/00
-------------------------------------	---------------------------

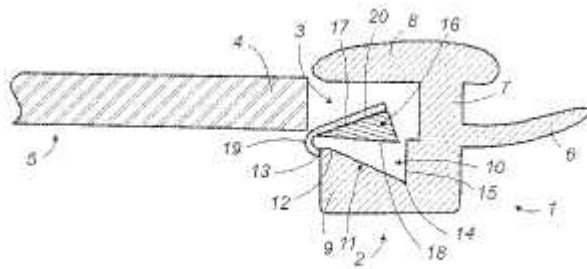
F16B 5/121

{fastened over the edge(s) of the sheet(s) or plate(s)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

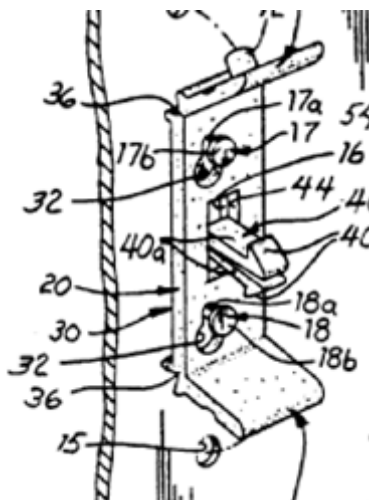
**F16B 5/123**

{Auxiliary fasteners specially designed for this purpose}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



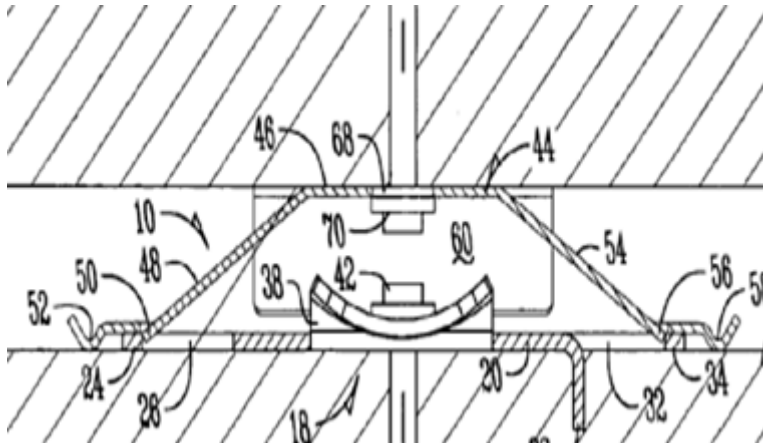
F16B 5/125

{one of the auxiliary fasteners is comprising wire or sheet material or is made thereof}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



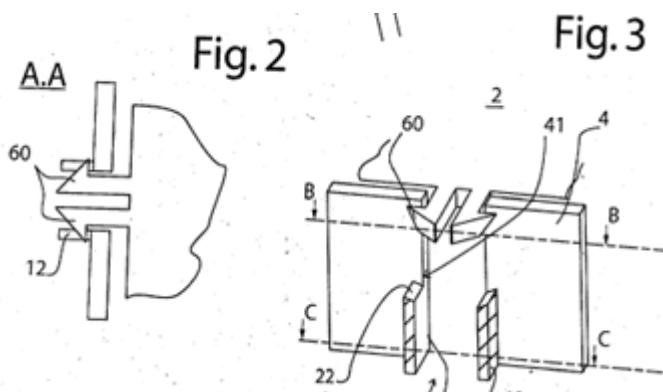
F16B 5/126

{at least one of the sheets, plates, bars or strips having integrally formed or integrally connected snap-in-features}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



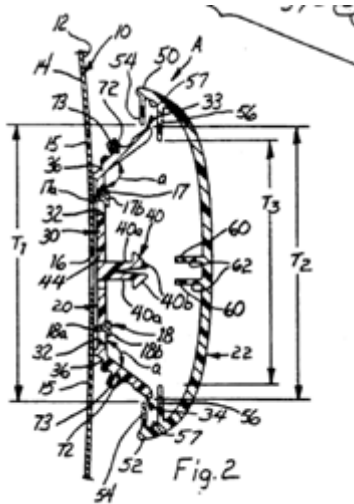
F16B 5/128

{a strip with a C- or U-shaped cross section being fastened to a plate such that the fastening means remain invisible, e.g. the fastening being completely enclosed by the strip}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 7/00

Connections of rods or tubes, e.g. of non-circular section, mutually, including resilient connections ({[F16B 11/008](#), [F16B 17/00](#) take precedence;}) umbrella frames [A45B 25/02](#); welding or soldering of connections [B23K](#); vehicle connections in general [B60D](#); railway couplings [B61G](#); bicycle frames [B62K](#); couplings for transmitting rotation [F16D](#); couplings for tubes conveying fluids [F16L](#))

Definition statement

This place covers:

Connections of rods and tubes or profiles mutually by clamping, clipping or screwed connections.

References

Limiting references

This place does not cover:

By sticking together tubular elements or rods in coaxial engagement	F16B 11/008
Pin and hole connections involving plastic deformation	F16B 17/00
Welding or soldering of connections	B23K

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:

Umbrella frames	A45B 25/02
Railway couplings	B61G
Bicycle frames	B62K
Couplings for transmitting rotation	F16D
Couplings for tubes conveying fluids	F16L
Mounting of solar heat systems	F24S 25/00

If connections relate to a specific application field, they should be generally classified in the application field.

Informative references

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

Vehicle connections in general	B60F
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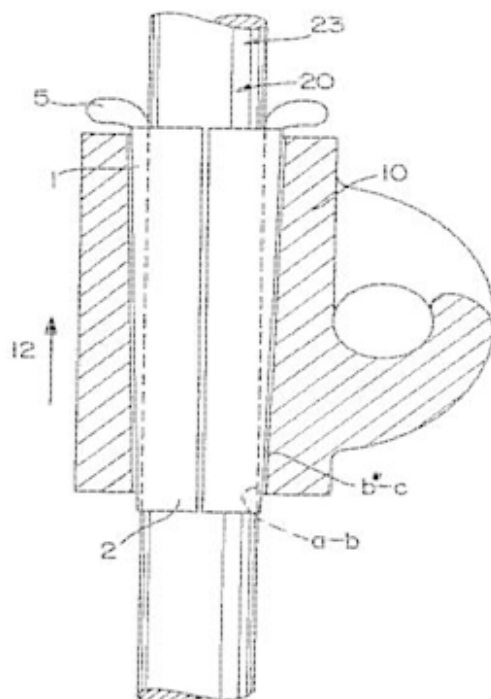
F16B 7/02

with conical parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



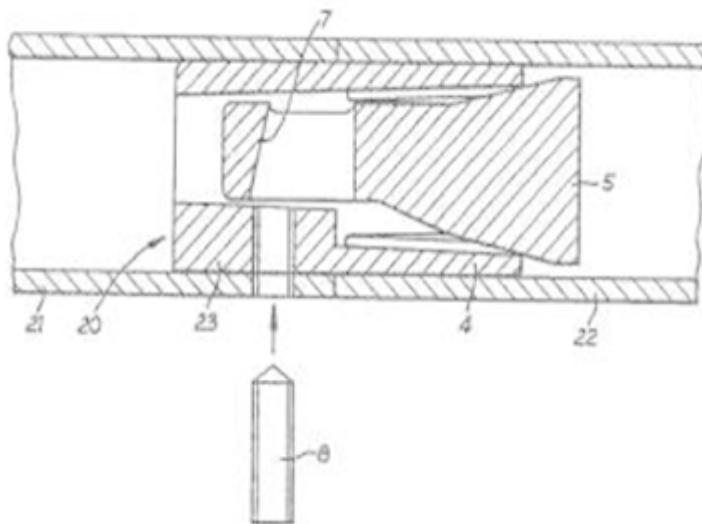
F16B 7/025

{with the expansion of an element inside the tubes due to axial movement towards a wedge or conical element (for rods or tubes telescopically engaged [F16B 7/1463](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Connections using a wedge or conical element for telescopically engaged rods or tubes	F16B 7/1463
---	-----------------------------

F16B 7/04

Clamping or clipping connections (friction-grip releasable fastenings in general [F16B 2/00](#))

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:

Locking of pivots	F16C 11/10
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Informative references

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

Friction-grip releasable fastenings in general	F16B 2/00
--	---------------------------

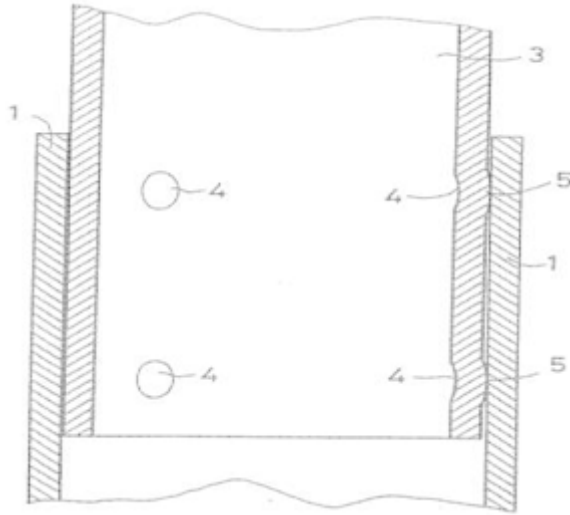
F16B 7/0413

{for tubes using the innerside thereof ([F16B 7/025](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



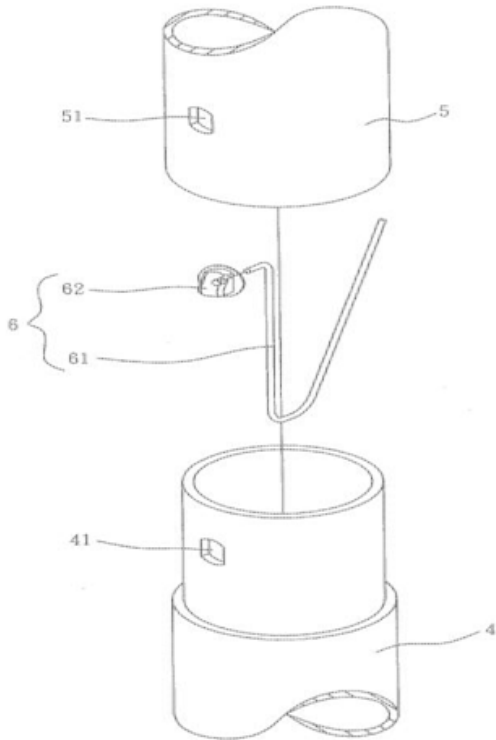
F16B 7/042

{with a locking element, e.g. pin, ball or pushbutton, engaging in a hole in the wall of at least one tube}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



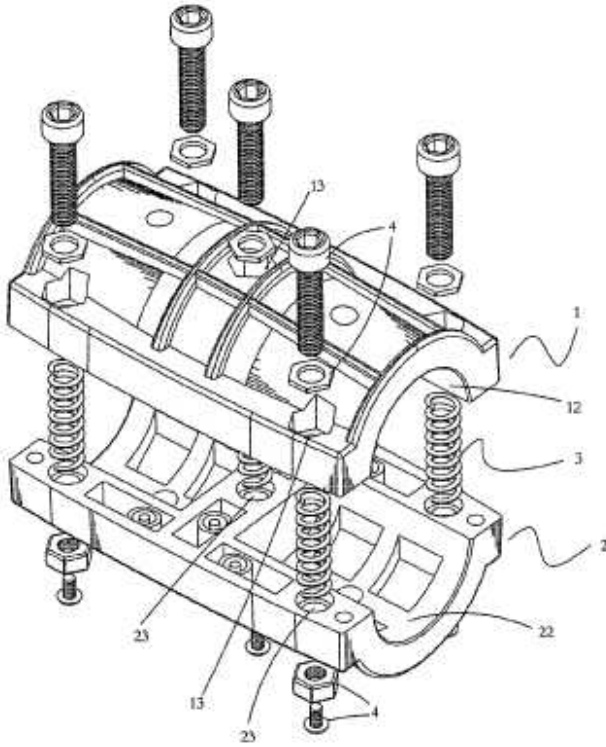
F16B 7/0426

{for rods or for tubes without using the innerside thereof}

Definition statement

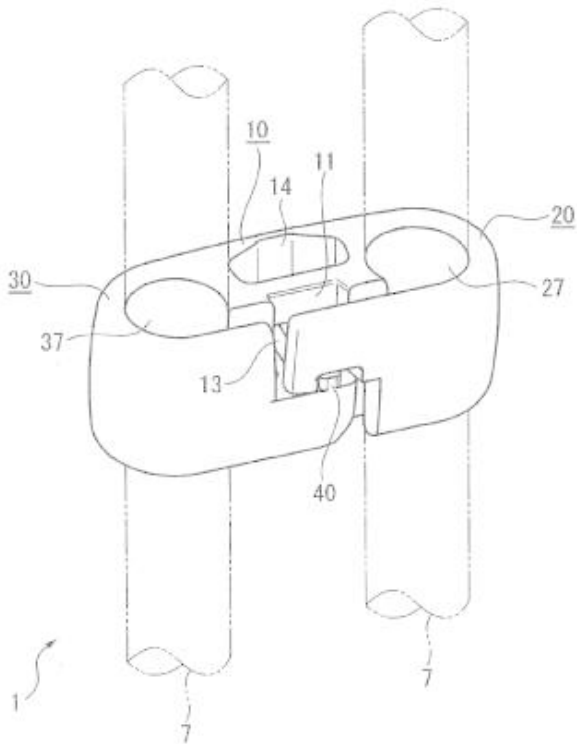
This place covers:

Illustrative example of subject matter classified in this group.



F16B 7/0433**{for rods or tubes being in parallel relationship}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

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

Cables	F16G 11/00
--------	----------------------------

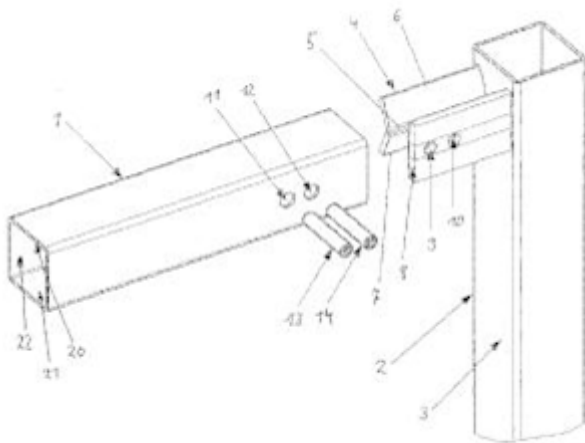
F16B 7/0446

{for tubes using the innerside thereof ([F16B 7/025](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



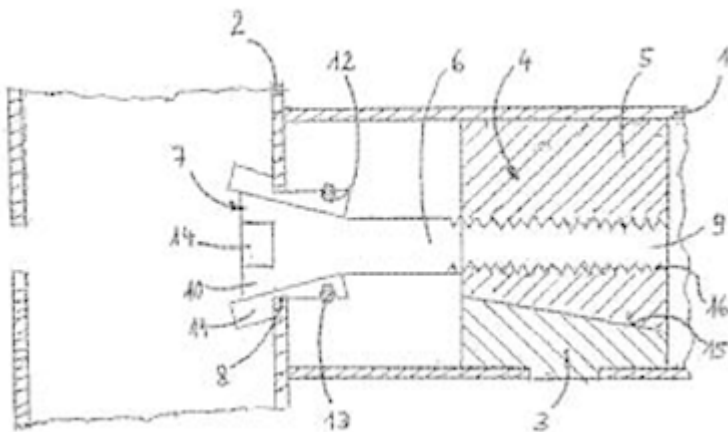
F16B 7/0453

{the tubes being drawn towards each other ([F16B 7/0473](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



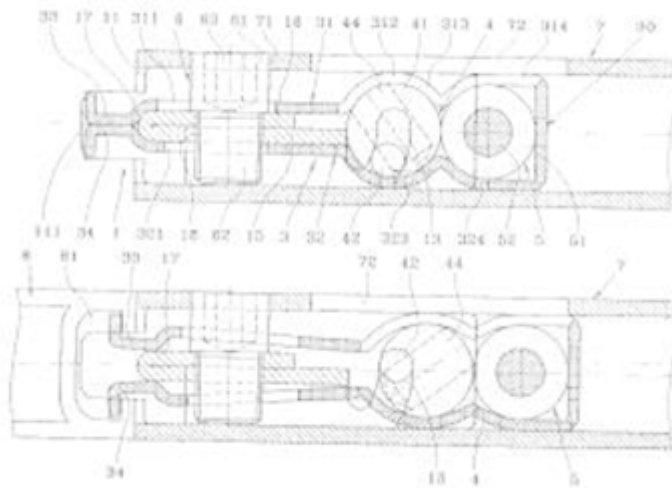
F16B 7/046

{by rotating an eccentric-mechanism}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



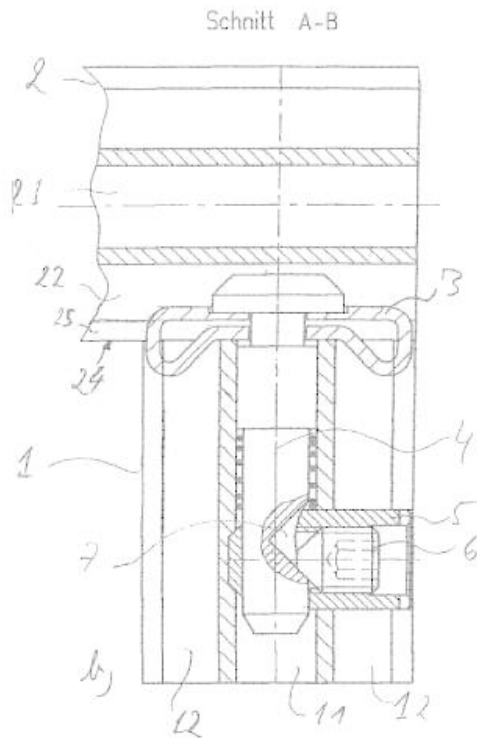
F16B 7/0466

{by a screw-threaded stud with a conical tip acting on an inclined surface}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



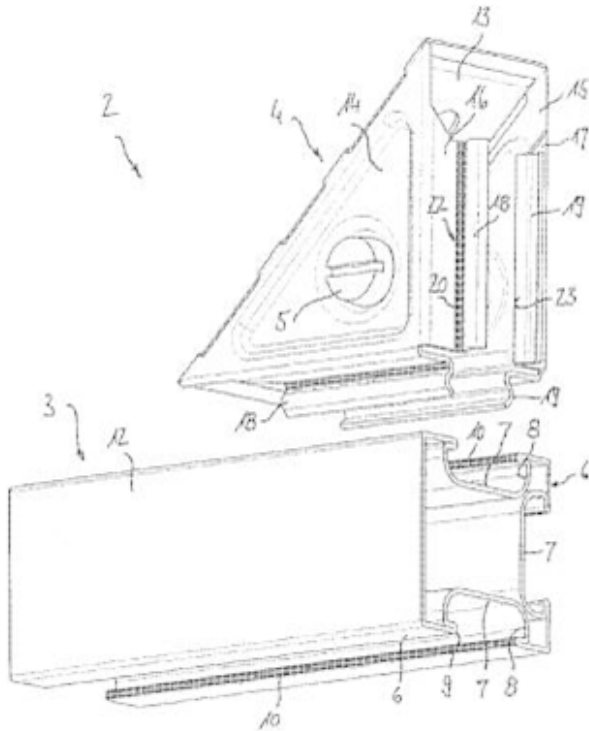
F16B 7/0473

{with hook-like parts gripping, e.g. by expanding, behind the flanges of a profile}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

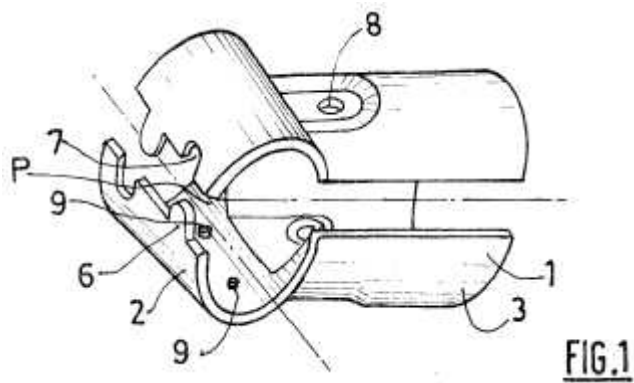
**References****Informative references**

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

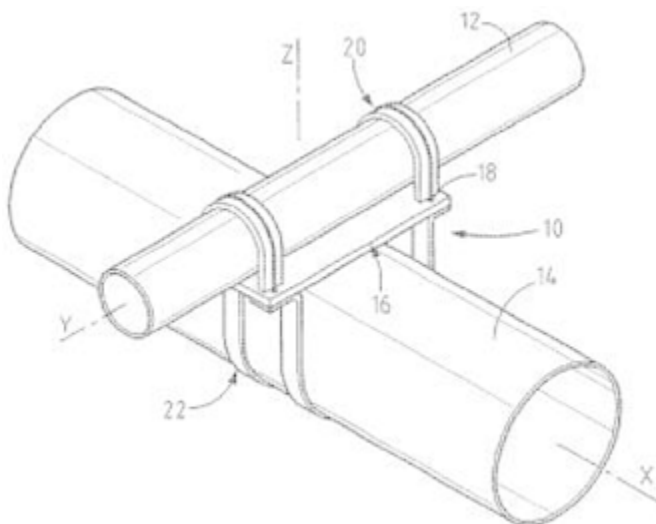
with sliding nuts see	F16B 7/187
-----------------------	----------------------------

F16B 7/0486**{forming an abutting connection of at least one tube}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 7/0493****{forming a crossed-over connection}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



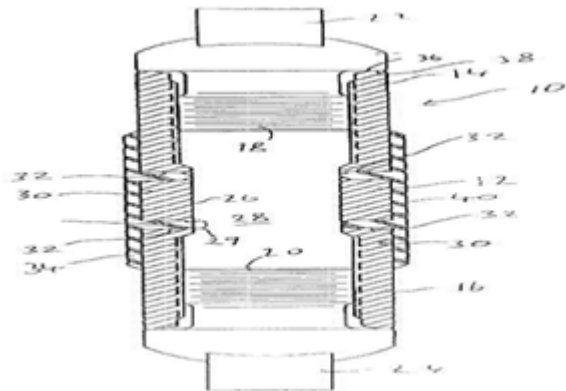
F16B 7/06

Turnbuckles (for cables, ropes, or wire [F16G 11/12](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Turnbuckles for cables, ropes or wire	F16G 11/12
---------------------------------------	----------------------------

Special rules of classification

The class is directed towards connections of rods or tubes by turnbuckles.

However, if it is unclear, whether the turnbuckle is for rods or tubes or not, the document should also be classified in this group.

F16B 7/10

Telescoping systems (for vertically adjustable chairs [A47C 3/20](#); telescopic steering columns [B62D 1/18](#)); for scaffolding [E04G 25/04](#); {telescopic masts, poles or the like [E04H 12/182](#); telescopic door or window holders [E05C 17/30](#)}; telescope props for mining [E21D 15/14](#) - [E21D 15/46](#); stands or trestles as supports for apparatus or articles placed thereon {[F16M 11/26](#)})

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:

Vertically adjustable chairs	A47C 3/20
Vacuum cleaner	A47L 9/244
Telescopic steering columns	B62D 1/18
Telescopic scaffolding elements	E04G 25/04

Telescopic masts, poles or the like	E04H 12/182
Telescopic door or window holders	E05C 17/30
Telescope props for mining	E21D 15/14
Stands or trestles as support for apparatus or articles placed thereon	F16M 11/26

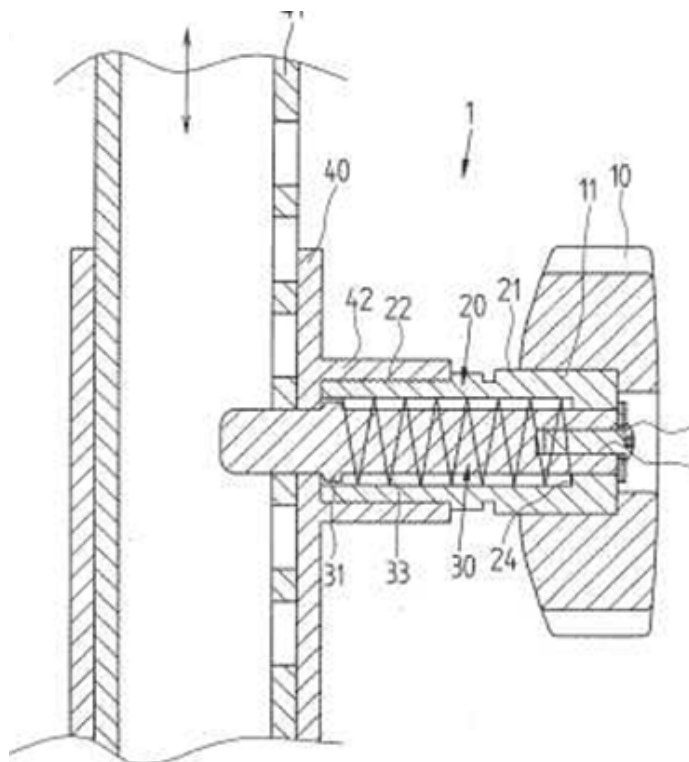
F16B 7/105

{locking in discrete positions, e.g. in extreme extended position}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 7/14

locking in intermediate {non-discrete} positions {(the rod or tube being locked by a tilting clip [F16B 2/246](#))}

References

Informative references

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

Locking by a tilting clip	F16B 2/246
---------------------------	----------------------------

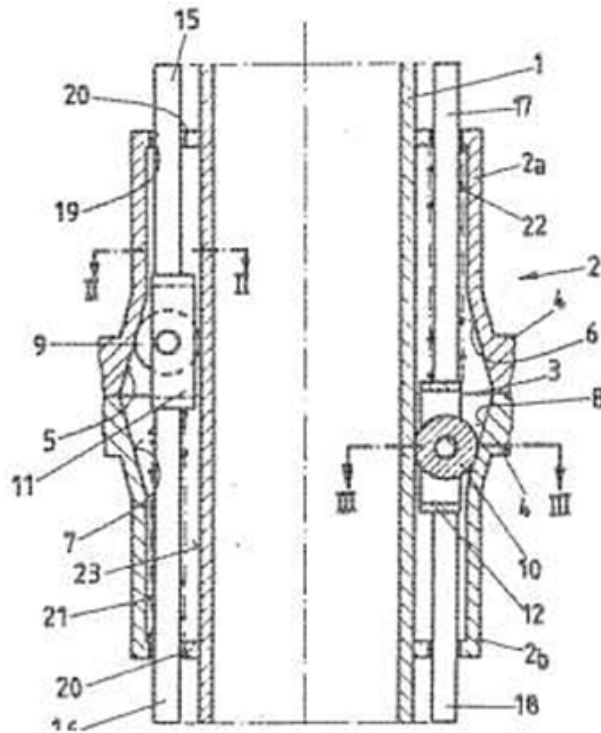
F16B 7/1409

{with balls or rollers urged by an axial displacement of a wedge or a conical member}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



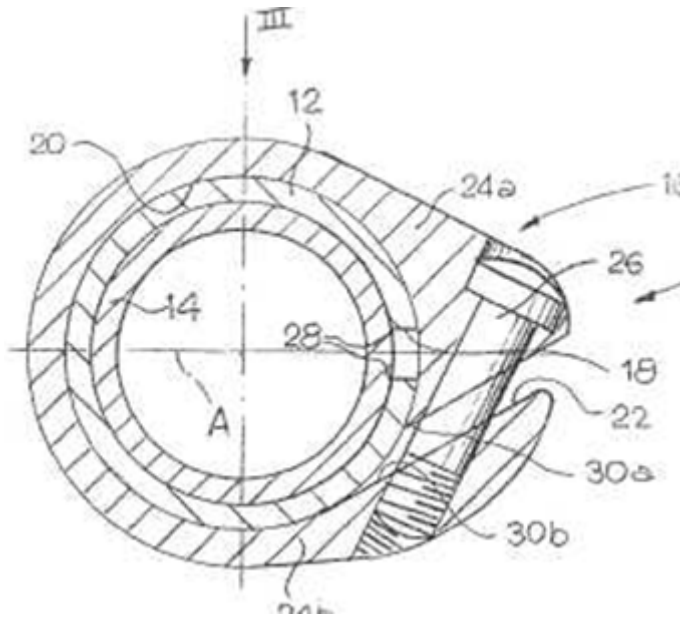
F16B 7/1418

{with a clamping collar or two split clamping rings tightened by a screw or a cammed latch member}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



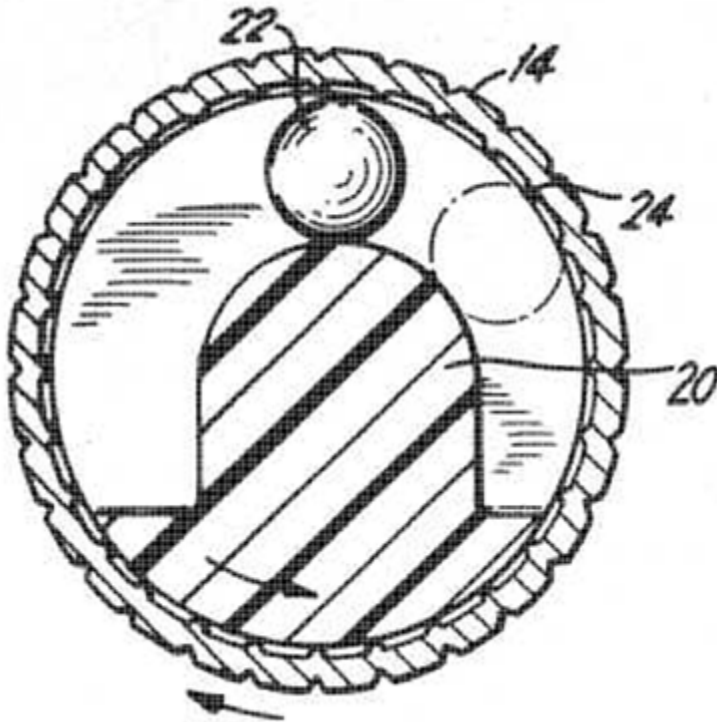
F16B 7/1436

{with rollers or balls}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 7/1445

{with a rubber bushing gripping inside the outer telescoping member by a radial expansion due to its axial compression (F16B 7/1463 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

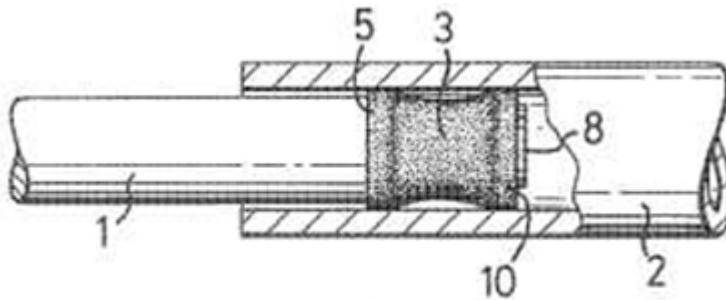


FIG. 1

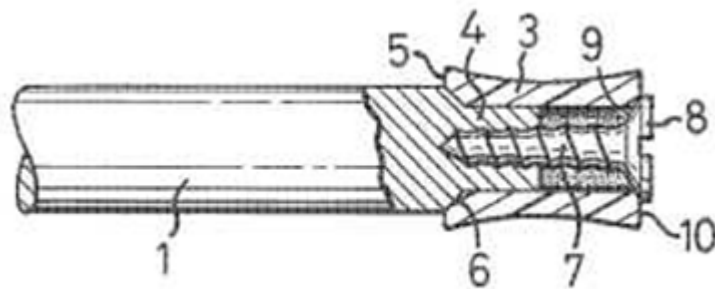


FIG. 2

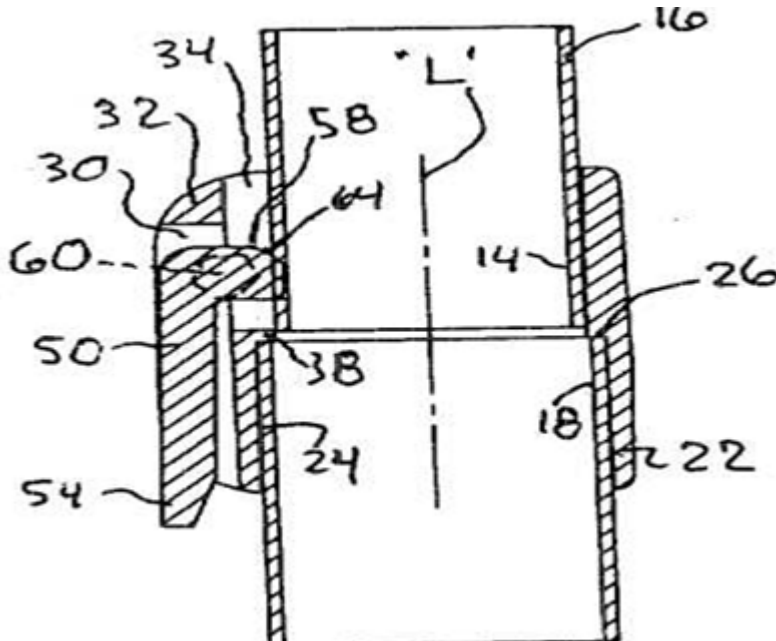
F16B 7/1454

{with a clamp locking the telescoping members by swinging a handle provided with a locking cam (F16B 7/1418 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

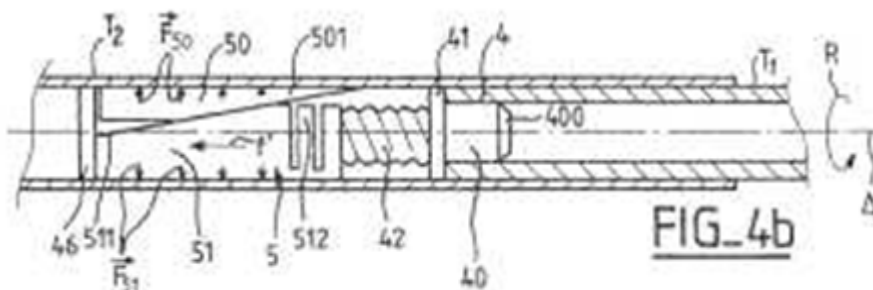
**F16B 7/1463**

{with the expansion of an element inside the outer telescoping member due to the axial movement towards a wedge or a conical member}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



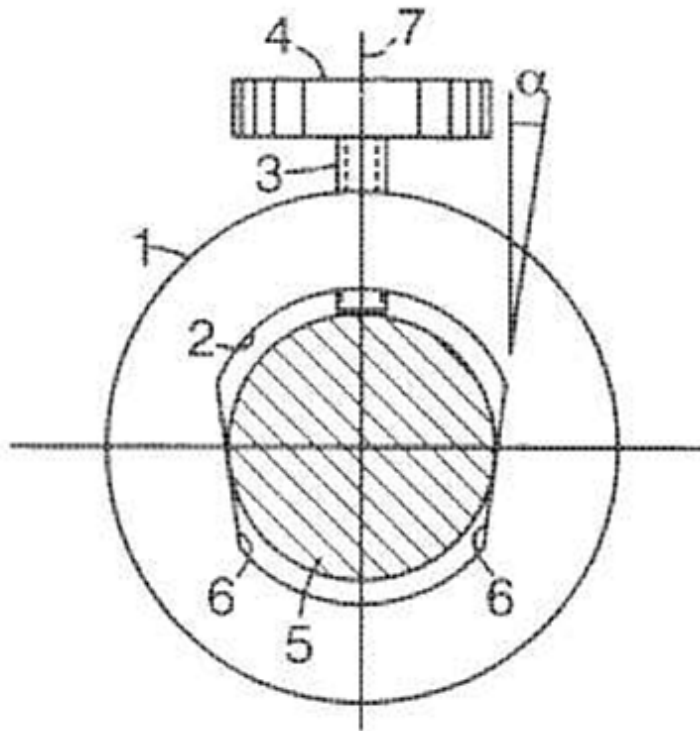
F16B 7/1472

{with a clamping screw perpendicular to the axis of the telescoping members}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

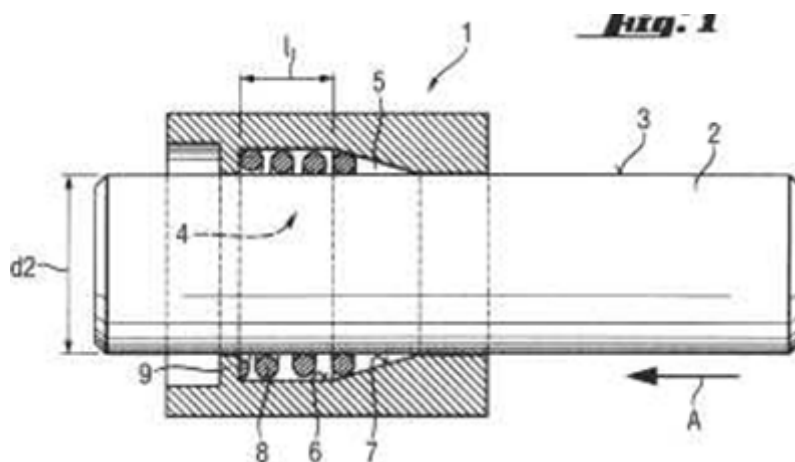
**F16B 7/1481**

{with a gripping helical spring}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



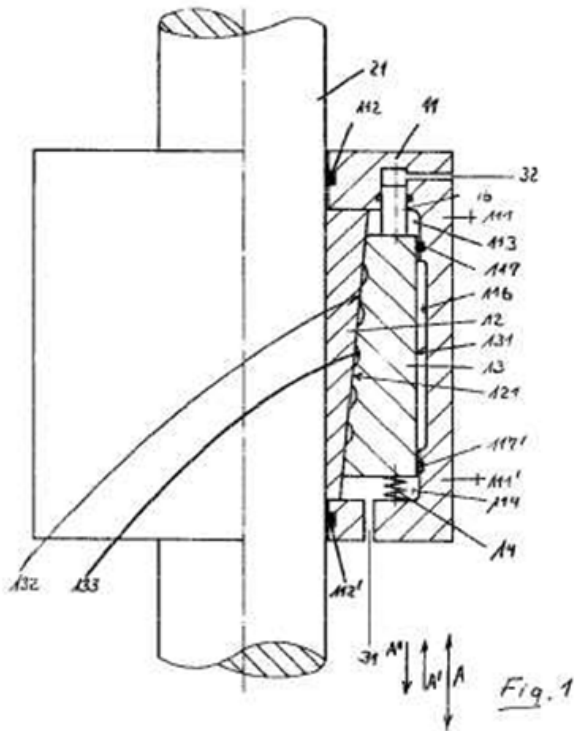
F16B 7/149

{with a sleeve or ring having a tapered or conical surface (F16B 7/1463 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



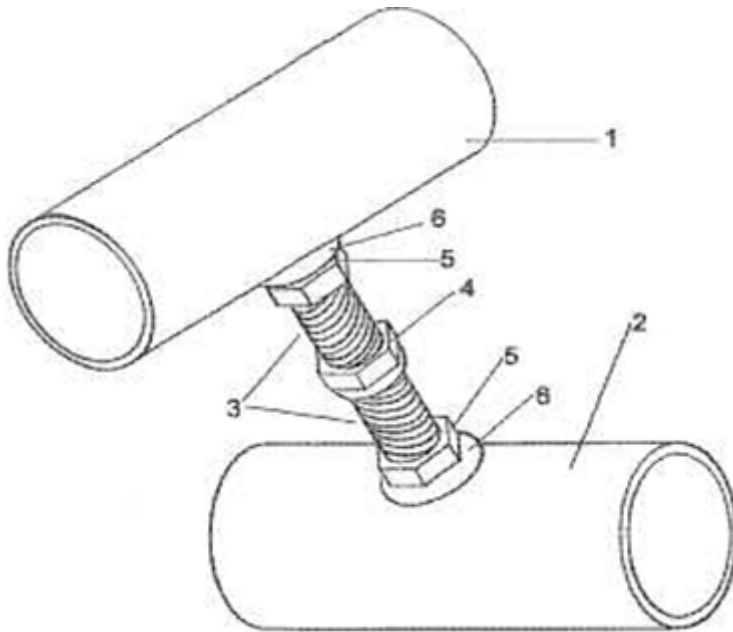
F16B 7/18

using screw-thread elements {([F16B 7/025](#) takes precedence; for turnbuckles [F16B 7/06](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Connections by turnbuckles	F16B 7/06
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Special rules of classification

If screws actuate a clamping connection, group [F16B 7/04](#) takes precedence

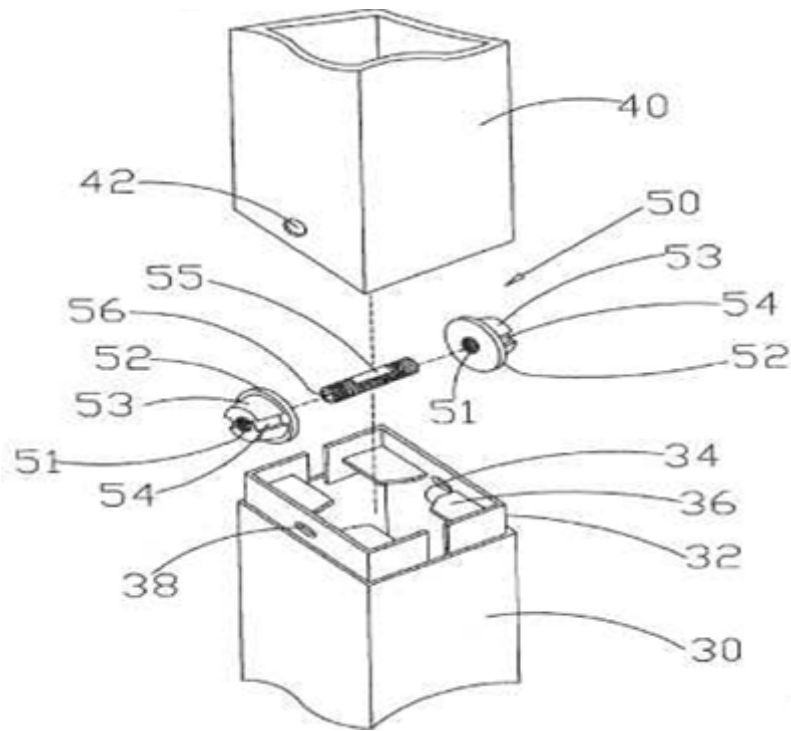
F16B 7/182

{for coaxial connections of two rods or tubes}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



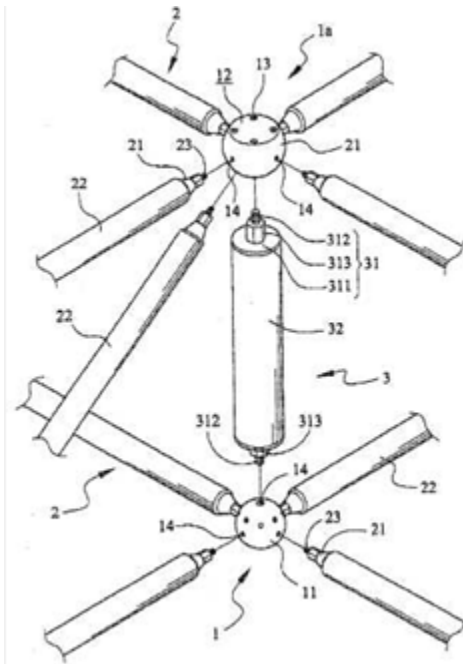
F16B 7/185

{with a node element}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



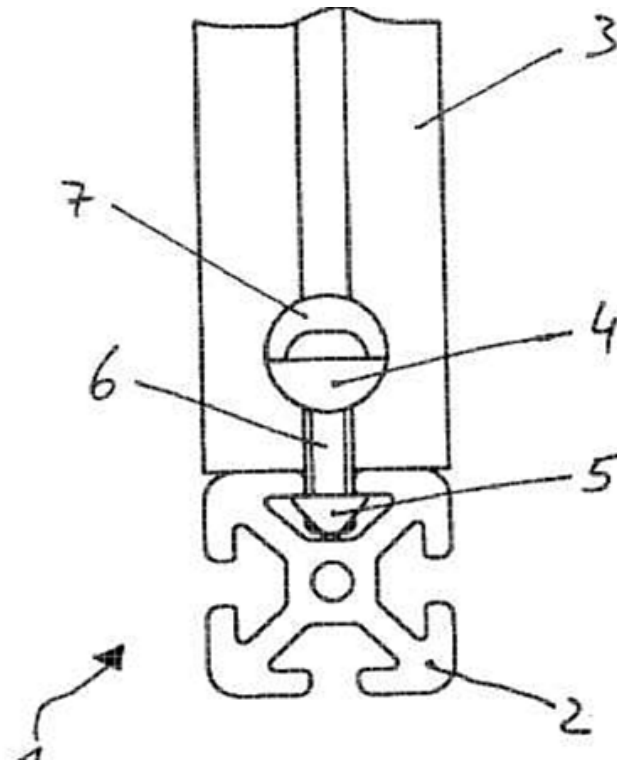
F16B 7/187

{with sliding nuts or other additional connecting members for joining profiles provided with grooves or channels (channel nuts per se [F16B 37/045](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

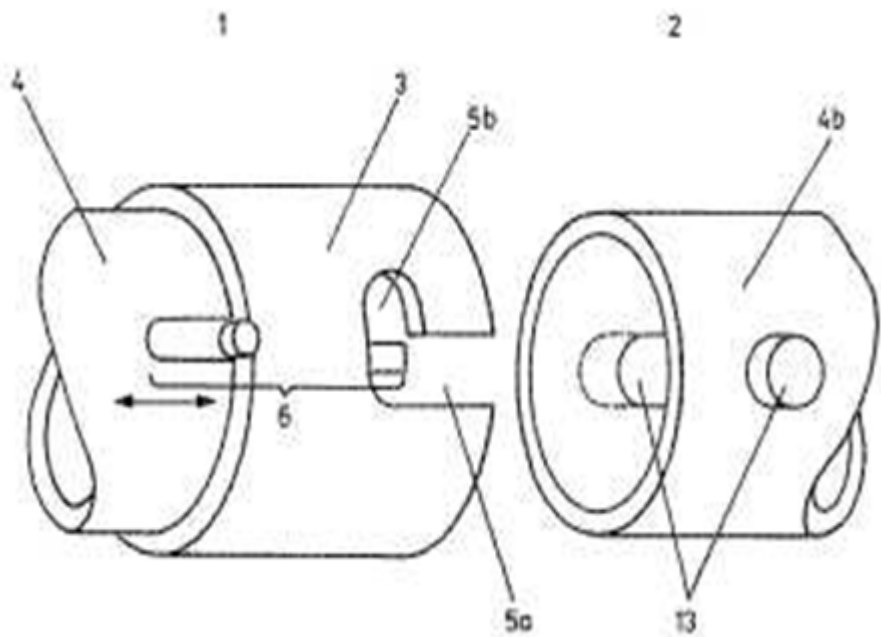
Attention is drawn to the following places, which may be of interest for search:

Channel nuts	F16B 37/045
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F16B 7/20**using bayonet connections****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group.

**References****Informative references**

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

Releasable fastening devices with bayonet catch	F16B 21/04
---	----------------------------

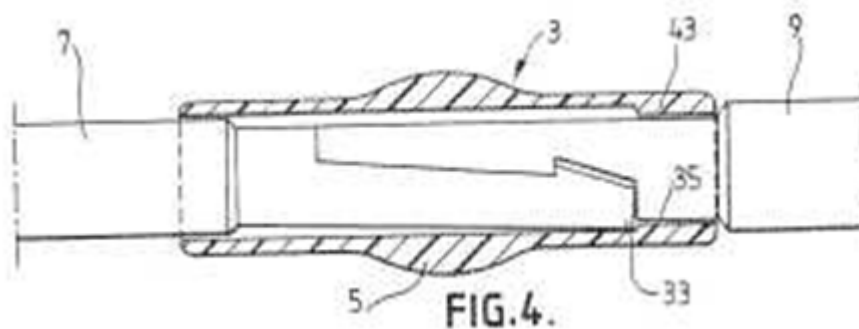
F16B 7/22

using hooks or like elements

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Angled connections of rods or tubes with hook-like parts gripping behind the flanges of a profile	F16B 7/0473
---	-----------------------------

F16B 9/00

Connections of rods or tubular parts to flat surfaces at an angle (with a part of or on one member entering a hole in the other and involving plastic deformation [F16B 17/006](#);) friction-grip releasable fastenings in general [F16B 2/00](#); making press-fit connections [B23P 11/00](#), [B23P 19/00](#); fluid-tight connecting of pipes to reservoirs, sheets, or the like [F16L](#), e.g. joining pipes {or rods conveying fluids} to walls [F16L 41/00](#))

Definition statement

This place covers:

Non-torque transmitting connections of rods or tubular parts to flat surfaces at an angle, i.e. the rods or tubular parts are non-parallel with respect to the flat surfaces. The rods or tubular parts can be connected perpendicularly to the flat surfaces. The connections can involve an intermediate member.

The rods or tubular parts and the flat surfaces are constructional elements or machine parts.

The rods or tubular parts are elongated elements, of any cross-section, that do not convey fluids. Rods or tubular elements may be flexible, but not flaccid, e.g. a cord is not a rod or tubular element in the sense of [F16B 9/00](#).

Flat surfaces are surfaces that are planar at least locally around the connection location.

Relationships with other classification places

Connections of rods to rods are classified in [F16B 7/00](#) and subgroups.

Connections of rods parallel to flat surfaces are classified in [F16B 5/00](#) and subgroups.

Connections of cables or cords to other objects are classified in [F16G 11/00](#) and subgroups.

References

Limiting references

This place does not cover:

Connections of rods to flat surfaces whereby a part of or on one member enters a hole in the other member and involving plastic deformation	F16B 17/006
---	-----------------------------

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:

Fluid-tight connections of pipes to reservoirs, sheets, or the like	F16L
Connections of pipes to walls	F16L 41/00

Informative references

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

Friction-grip releasable fastenings in general	F16B 2/00
Making press-fit connections	B23P 11/00 , B23P 19/00

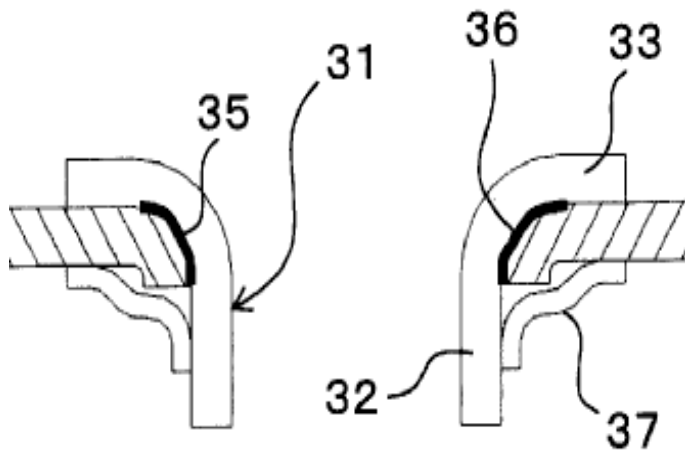
Special rules of classification

In this main group, it is desirable to add the indexing codes of [F16B 2200/00](#).

References [F16B 2/00](#), [B23P 11/00](#), [B23P 19/00](#), [F16L](#), [F16L 41/00](#) are non-limiting in the main group [F16B 9/00](#). CPC will be updated/corrected once this inconsistency is resolved.

F16B 9/01**{Welded or bonded connections}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 9/02****Detachable connections {(F16B 9/05 – F16B 9/09 take precedence)}****Definition statement***This place covers:*

Connections that can be detached without breaking any part.

Detachable and releasable are synonyms.

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

Connections by way of an intermediate member	F16B 9/05
Connections involving plastic or elastic deformation	F16B 9/07
Connections where rods and flat surfaces interengage by projections and mating sockets	F16B 9/09

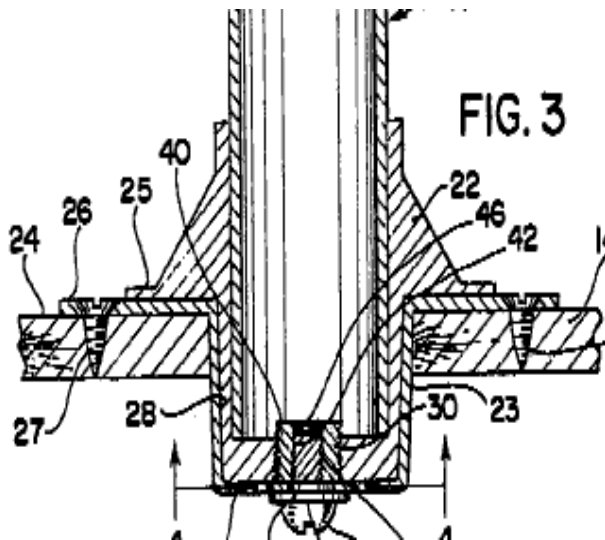
F16B 9/052

{the intermediate member having a radial flange secured to the flat surface}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



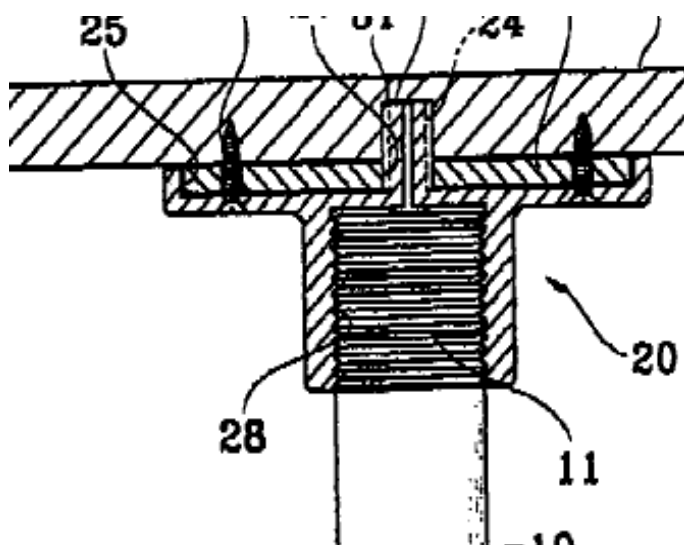
F16B 9/054

{the intermediate member being threaded}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



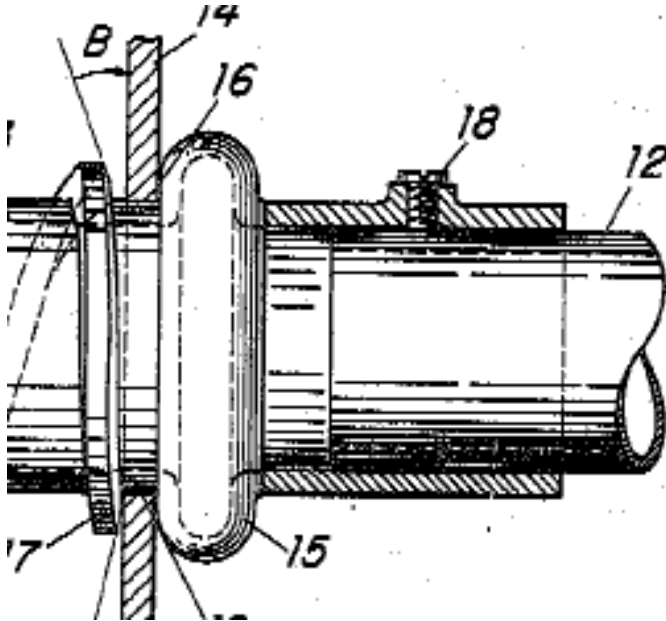
F16B 9/056

{the intermediate member extending through the flat surface; the rod or tubular part extending through the flat surface}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



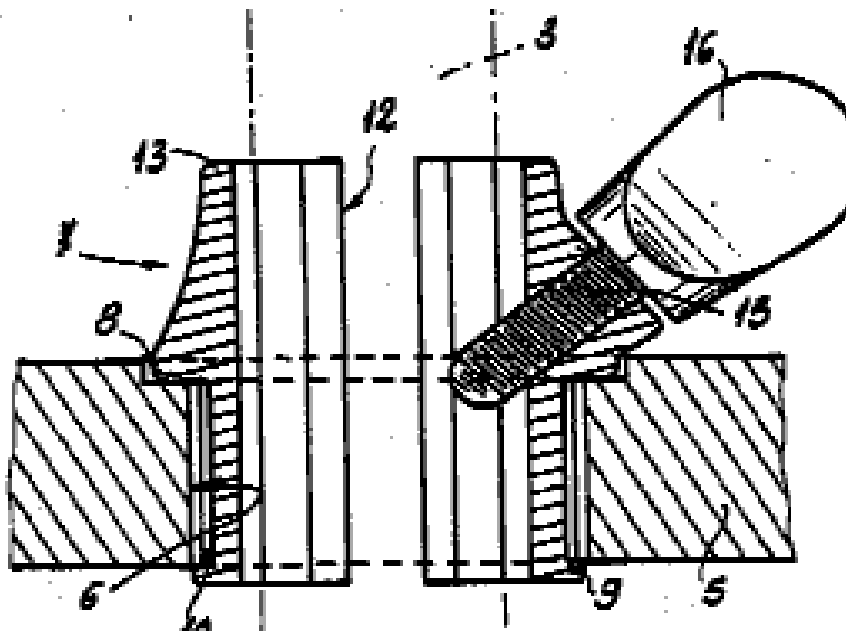
F16B 9/058

{the intermediate member being secured to the rod by transverse fasteners}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

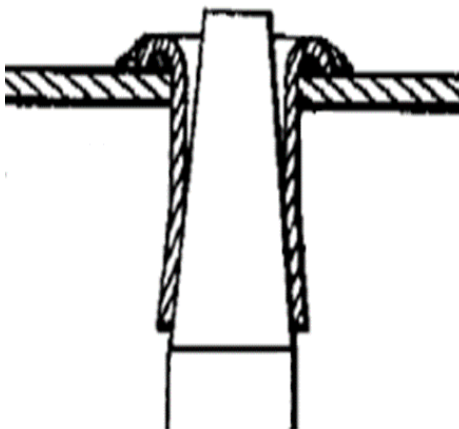
**F16B 9/07**

{involving plastic or elastic deformation when assembling (involving plastic deformation with a part of or on one member entering a hole in the other [F16B 17/006](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Connections with a part of or on one member entering a hole in the other and involving plastic deformation	F16B 17/006
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Glossary of terms

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

Elastic deformation	The parts recover their initial shape after deformation
Plastic deformation	The parts do not recover their initial shape after deformation

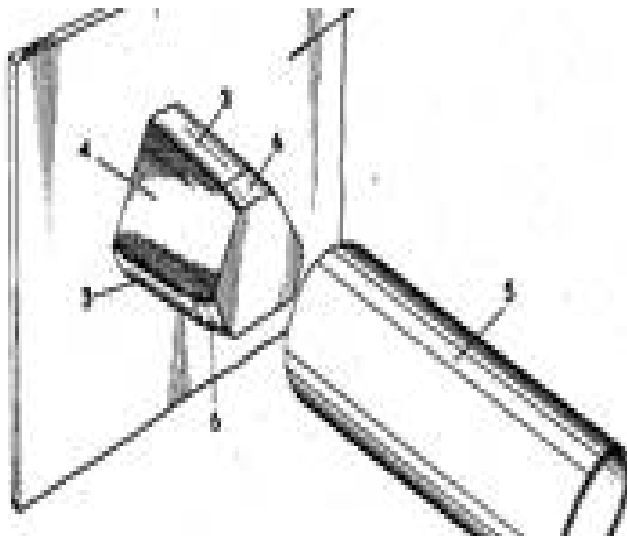
F16B 9/09

{rods and flat surfaces interengaging by projections and mating sockets}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 11/00

Connecting constructional elements or machine parts by sticking or pressing them together, e.g. cold pressure welding (non-electric welding in general [B23K](#); methods of using adhesives independently of the form of the surfaces joined [C09J 5/00](#))

Definition statement

This place covers:

Connections of constructional elements by glueing, cold pressure welding and by plastically deforming the elements.

References

Limiting references

This place does not cover:

Friction welding	B23K 20/00
Methods using adhesives independently of the form of the surfaces joined	C09J 5/00

Informative references

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

Welding in general	B23K
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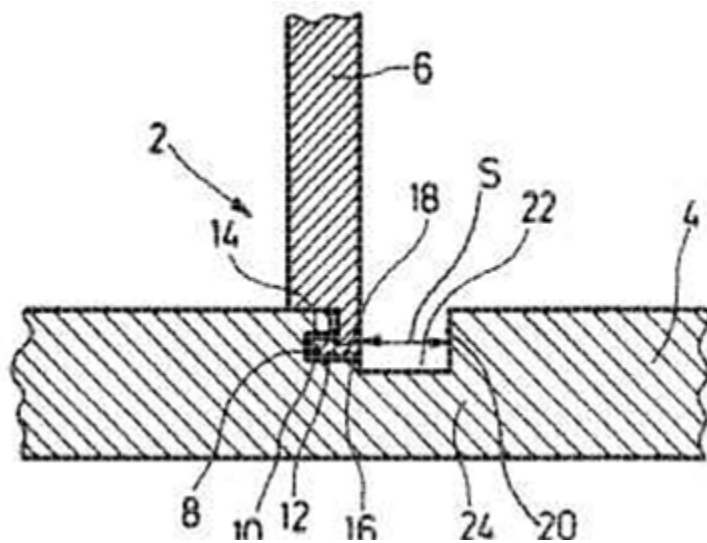
F16B 11/002

{by pressing the elements together so as to obtain plastic deformation (shrinkage connections, force fits [F16B 4/00](#); pin-and-hole connections involving plastic deformation [F16B 17/00](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

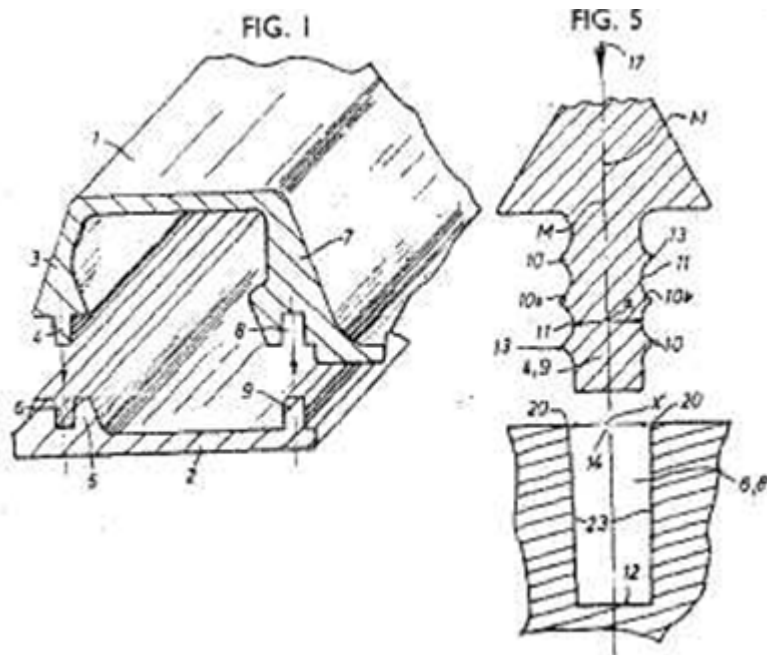
Limiting references

This place does not cover:

Force fits	F16B 4/00
Pin and hole connections involving plastic deformation	F16B 17/00

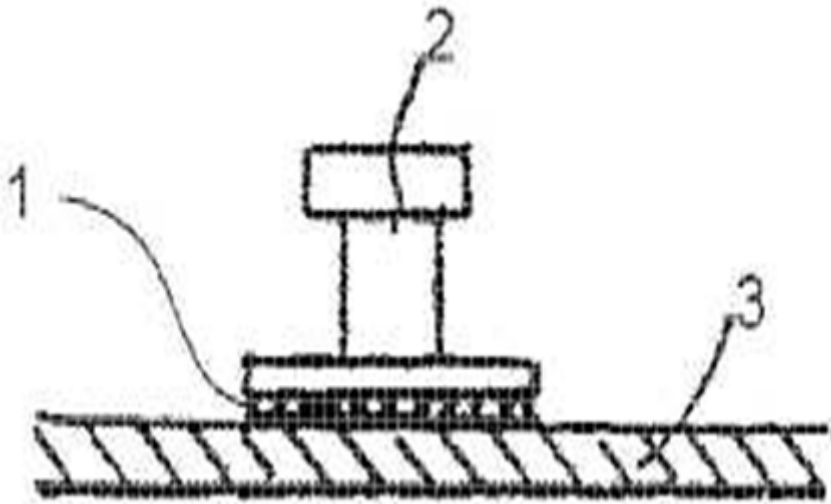
F16B 11/004**{by cold pressure welding}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



F16B 11/006**{by gluing (gluing of plastics material [B29C 65/48](#))}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

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

Gluing of plastics material	B29C 65/48
Glueing composition	C09J , C08F

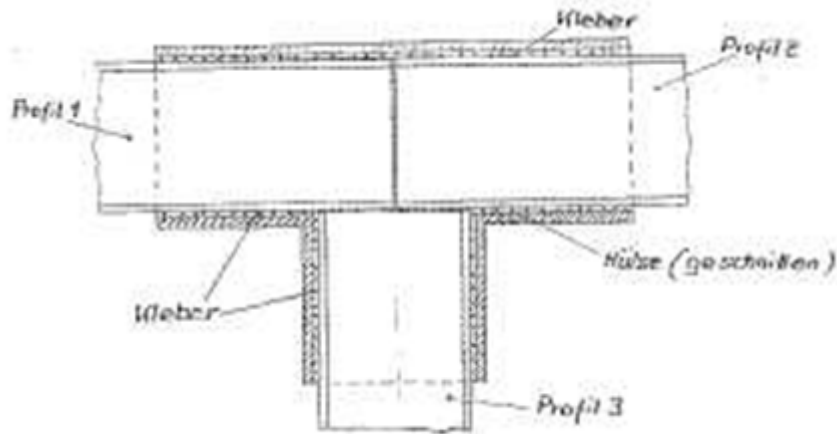
F16B 11/008

{of tubular elements or rods in coaxial engagement}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Connections by bonding in automotive superstructures	B62D 27/026
Glueing of couplings to shafts	F16D 1/068

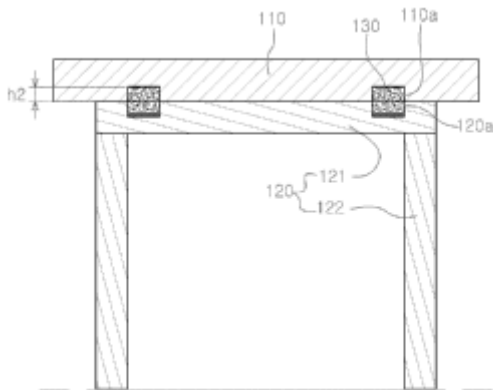
F16B 12/00

Jointing of furniture or the like, e.g. hidden from exterior
([F16B 2/00](#) - [F16B 11/00](#) take precedence; fastening means per se [F16B 13/00](#) - [F16B 47/00](#); wood-working [B27](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (WO2011065736)



References

Limiting references

This place does not cover:

Groups in this subclass	F16B 2/00 - F16B 11/00
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Informative references

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

Fastening means per se	F16B 13/00 - F16B 47/00
Wood-working	B27

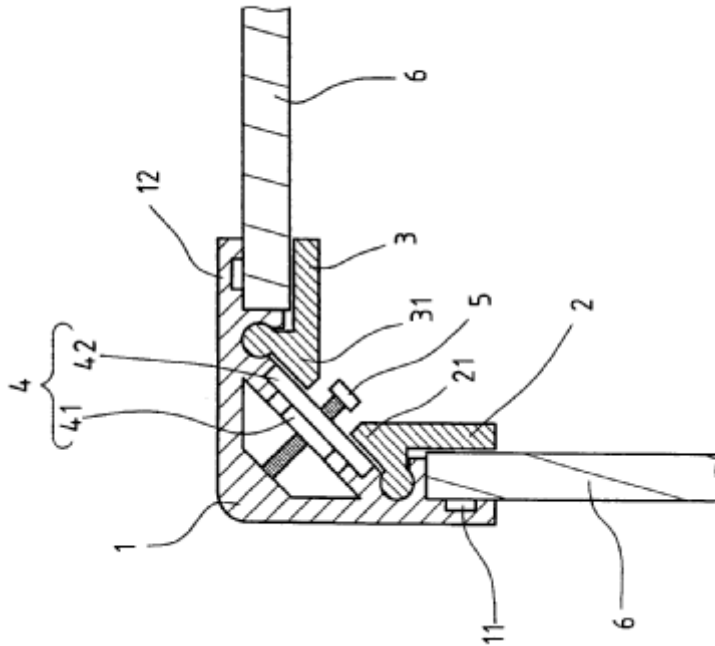
F16B 12/02

Joints between panels and corner posts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE20307683U).



References

Informative references

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

Joining of strips or plates to one another or to strips or bars parallel to them	F16B 5/00
Horizontal connecting members adapted to receive and retain the edges of several panel elements	A47B 47/0025

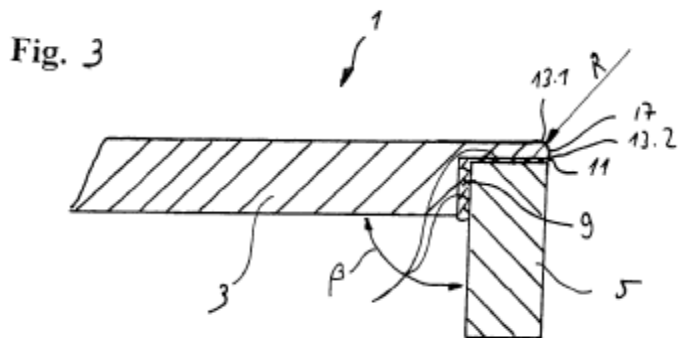
F16B 12/04

Non-loosenable joints for non-metal furniture parts, e.g. glued

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE102004016551).



References

Informative references

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

Connecting constructional elements by gluing	F16B 11/006
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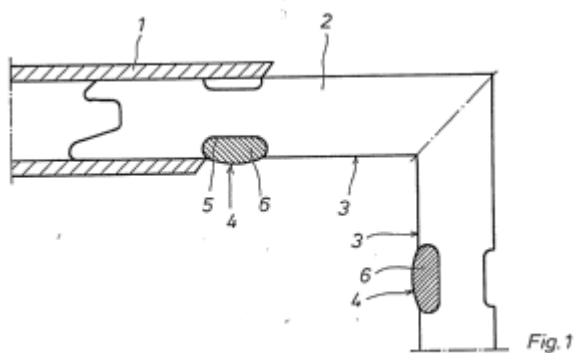
F16B 12/06

Non-loosenable joints for metal furniture parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (EP0639718):



F16B 12/10

using pegs, bolts, tenons, clamps, clips, or the like (glued [F16B 12/04](#); fastening means per se [F16B 15/00](#) - [F16B 47/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE202010016369U)

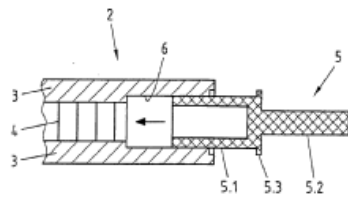


Fig. 2a

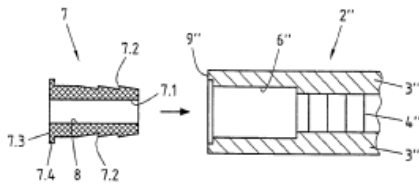
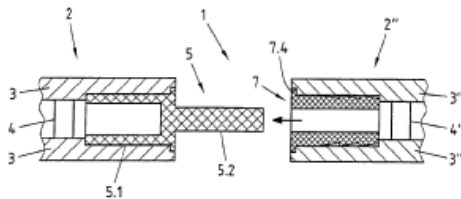


Fig. 2b



References

Informative references

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

Glued	F16B 12/04
Fastening means per se	F16B 15/00 - F16B 47/00

F16B 12/14

using threaded bolts or screws

References

Informative references

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

Bolt and nut or screw connectors	F16B 19/00 - F16B 39/00
----------------------------------	---

F16B 12/16

using self-tapping screws

References

Informative references

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

Screws that cut thread in the body into which they are screwed
--

F16B 25/00

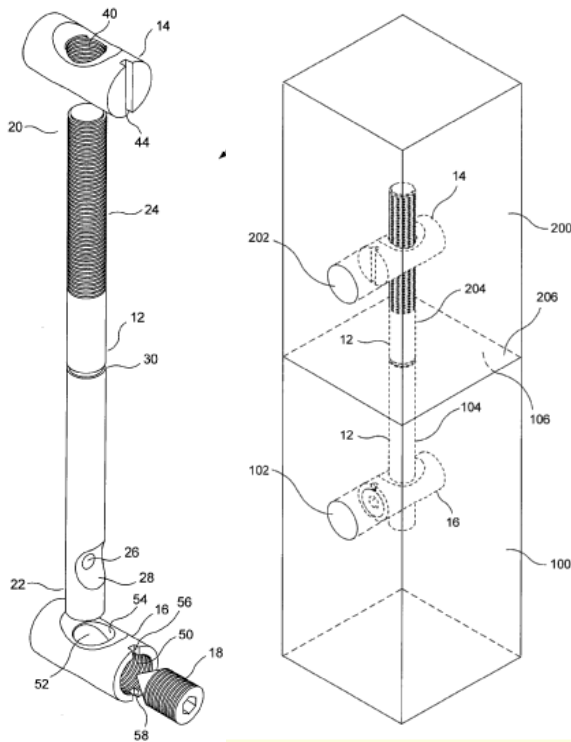
F16B 12/18

using drawing bars

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2010322740).



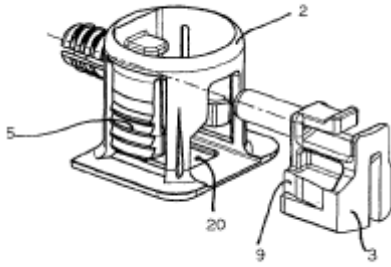
F16B 12/20

using clamps, clips, wedges, sliding bolts, or the like

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (EP1530926).



References

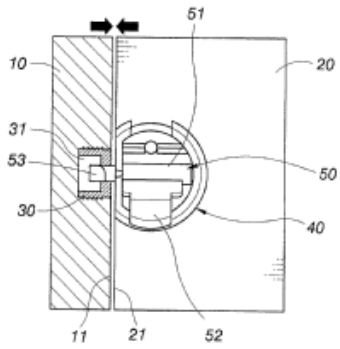
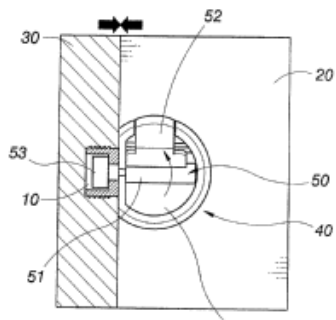
Informative references

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

Height adjustable shelving	A47B 57/26 , A47B 57/54 , A47B 57/56
----------------------------	---

F16B 12/2009**{actuated by rotary motion}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group (FR2927677).

**FIG.8**

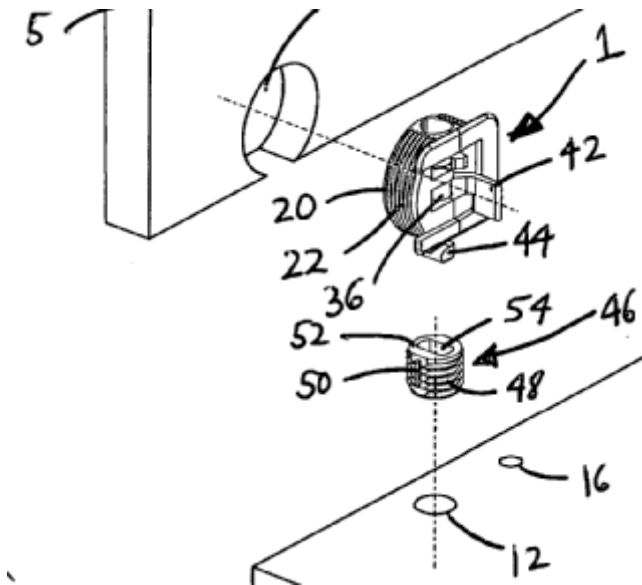
F16B 12/2027

{with rotating excenters or wedges}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2010202852).



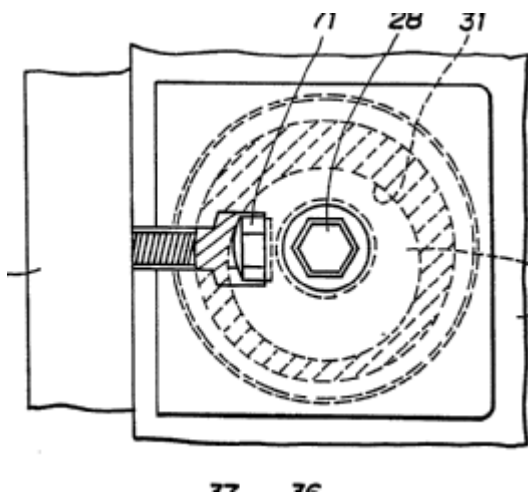
F16B 12/2036

{with rotating excenters or wedges acting on a head of a pin or screw}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US4990020).



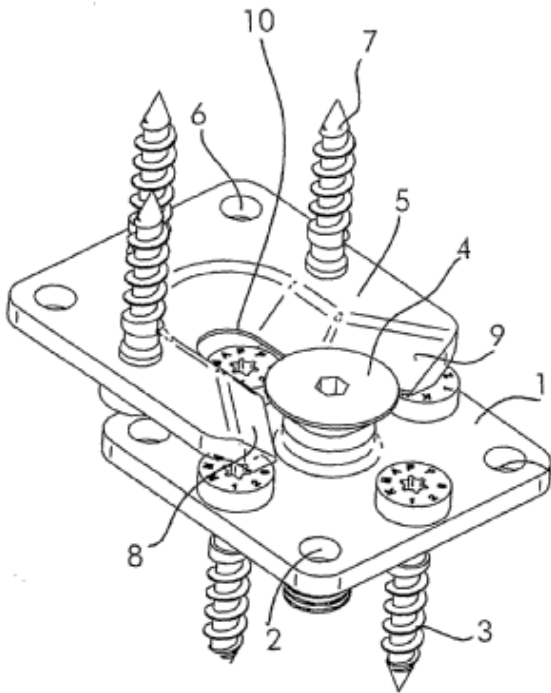
F16B 12/2054

{with engaging screw threads as securing means for limiting movement}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (EP1856417)



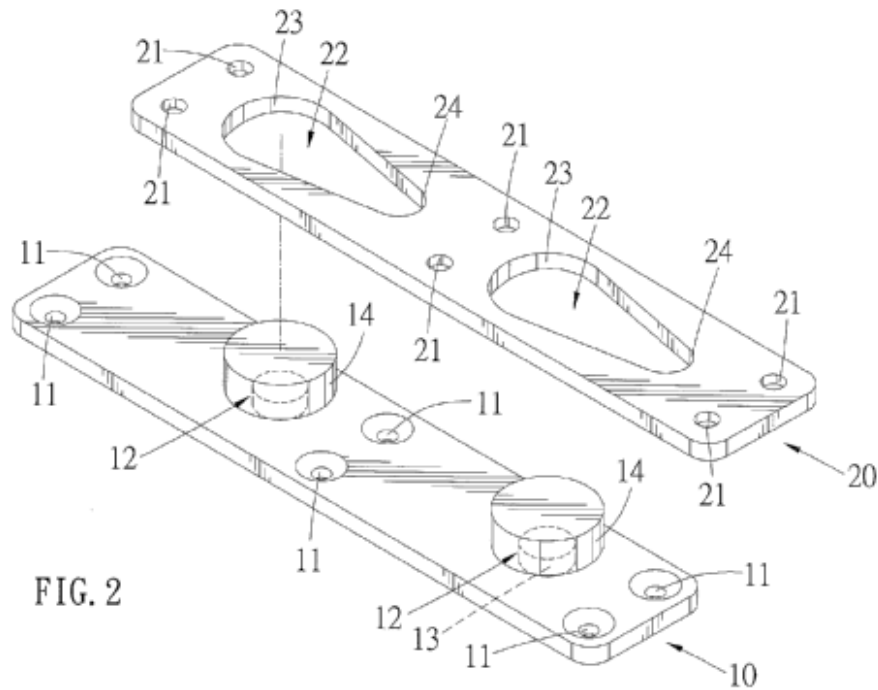
F16B 12/22

using keyhole-shaped slots and pins

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2010258039).



References

Informative references

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

Height adjustable shelving	A47B 57/22 , A47B 57/50 , A47B 57/52
----------------------------	---

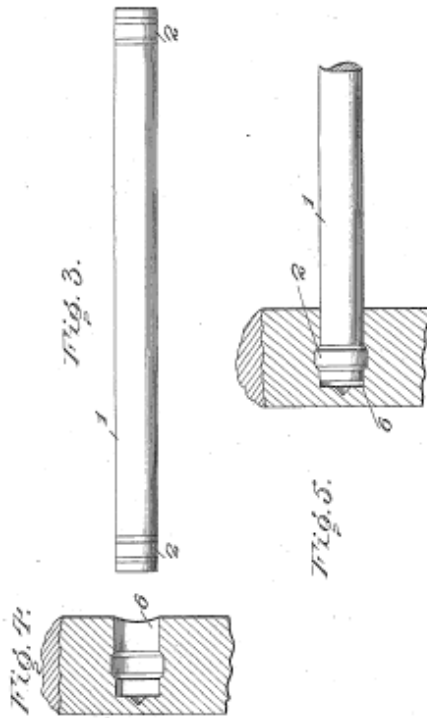
F16B 12/24

using separate pins, dowels, or the like

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US917433).



References

Informative references

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

Dowels in general	F16B 13/00 - F16B 13/146
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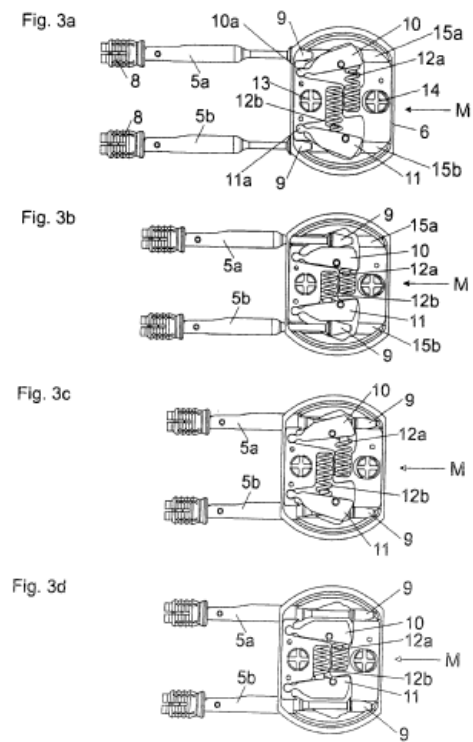
F16B 12/26

using snap-action elements

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE202009014811U).



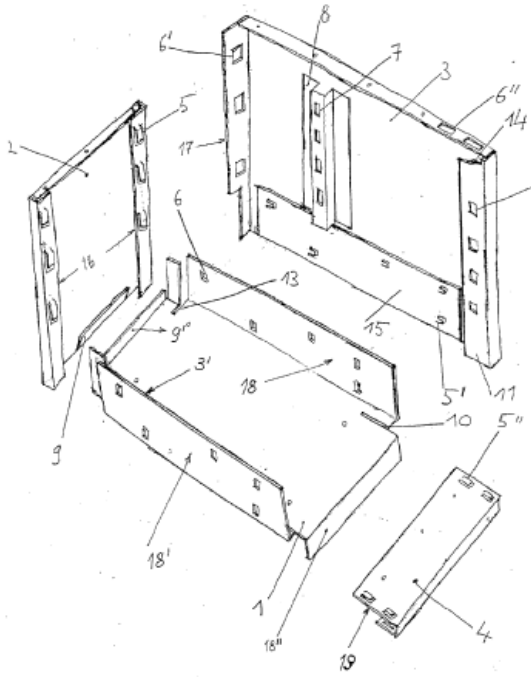
F16B 12/28

for metal furniture parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE10336968).



F16B 12/30

using threaded bolts

References

Informative references

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

Bolt and nut or screw connectors	F16B 19/00 - F16B 39/00
----------------------------------	---

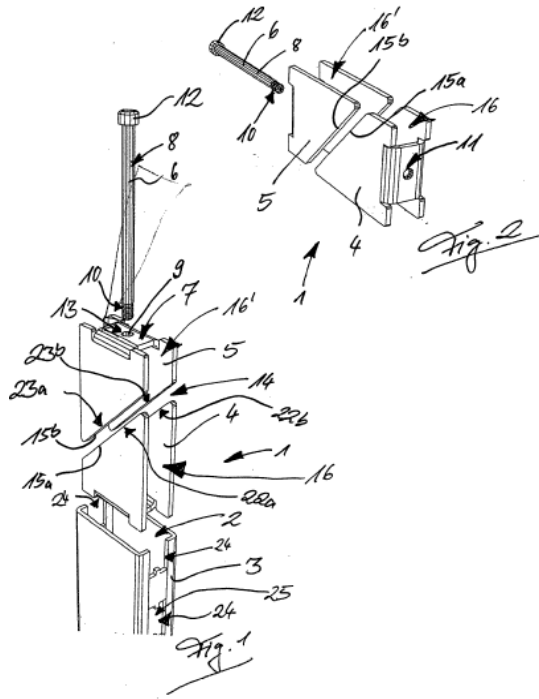
F16B 12/32

using clamps, clips, wedges, sliding bolts, or the like

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE202009012657U).



References

Informative references

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

Height adjustable shelving	A47B 57/26 , A47B 57/54 , A47B 57/56
----------------------------	---

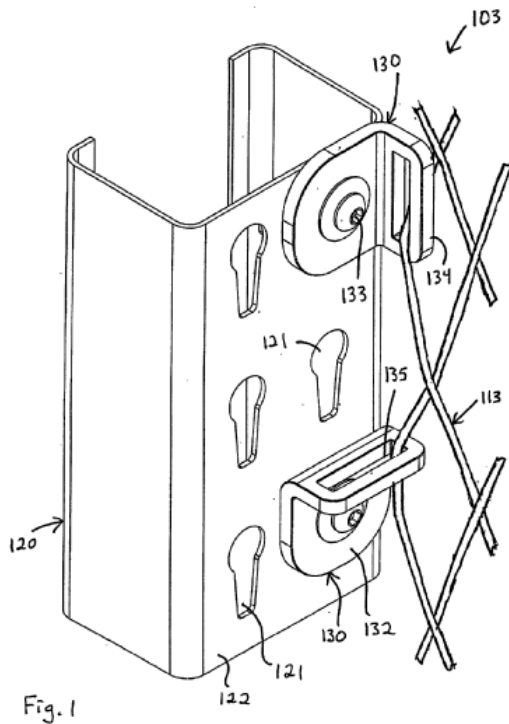
F16B 12/34

using keyhole-shaped slots and pins

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2002153340).



References

Informative references

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

Height adjustable shelving	A47B 57/22 , A47B 57/50 , A47B 57/52
----------------------------	---

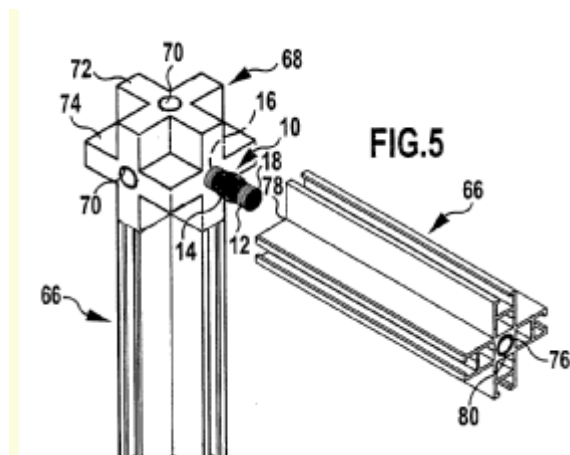
F16B 12/36

using separate pins, dowels or the like

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (EP1508705).

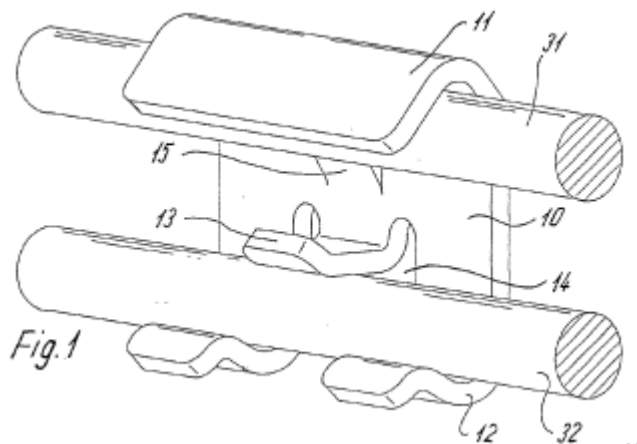
**F16B 12/38**

using snap-action elements

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2001044992).



F16B 12/40

Joints for furniture tubing

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (FR1520757).

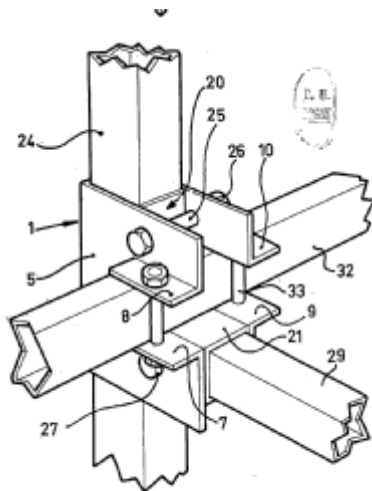


Fig. 2

References

Informative references

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

Connections of rods or tubes	F16B 7/00 - F16B 7/22
------------------------------	---------------------------------------

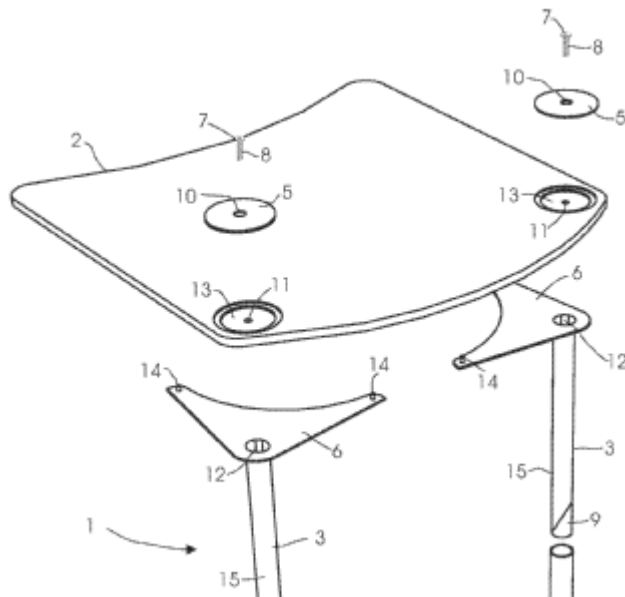
F16B 12/42

connecting furniture tubing to non-tubular parts {(connecting table tops to underframes [A47B 13/003](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2011225802).



References

Informative references

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

Connecting table tops to underframes	A47B 13/003
--------------------------------------	-----------------------------

F16B 12/44

Leg joints; Corner joints

Definition statement

This place covers:

EP1464251, EP2243969.

Illustrative examples of subject matter classified in this group:

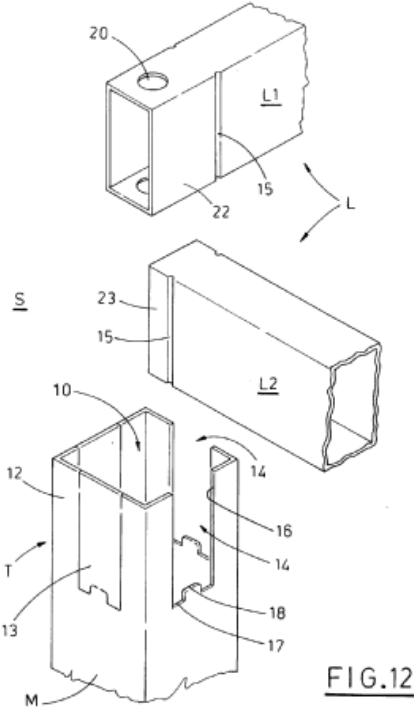
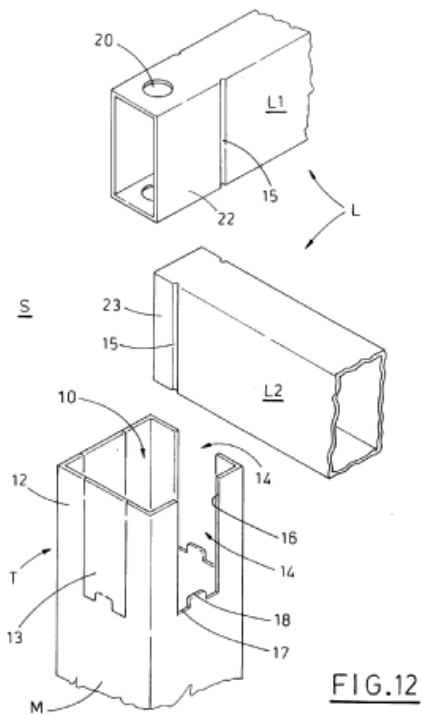
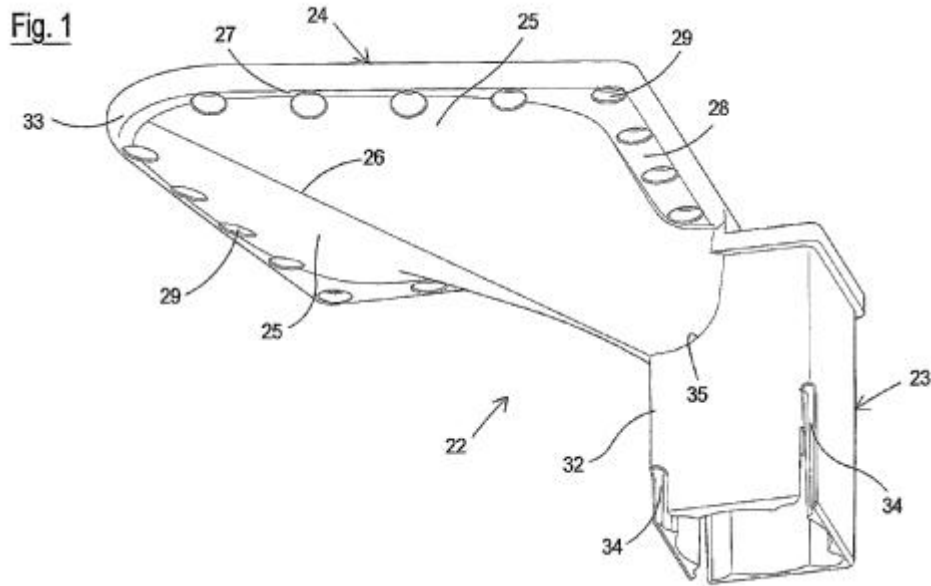


FIG.12



References

Informative references

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

Connections of tubes or rods	F16B 7/00
------------------------------	---------------------------

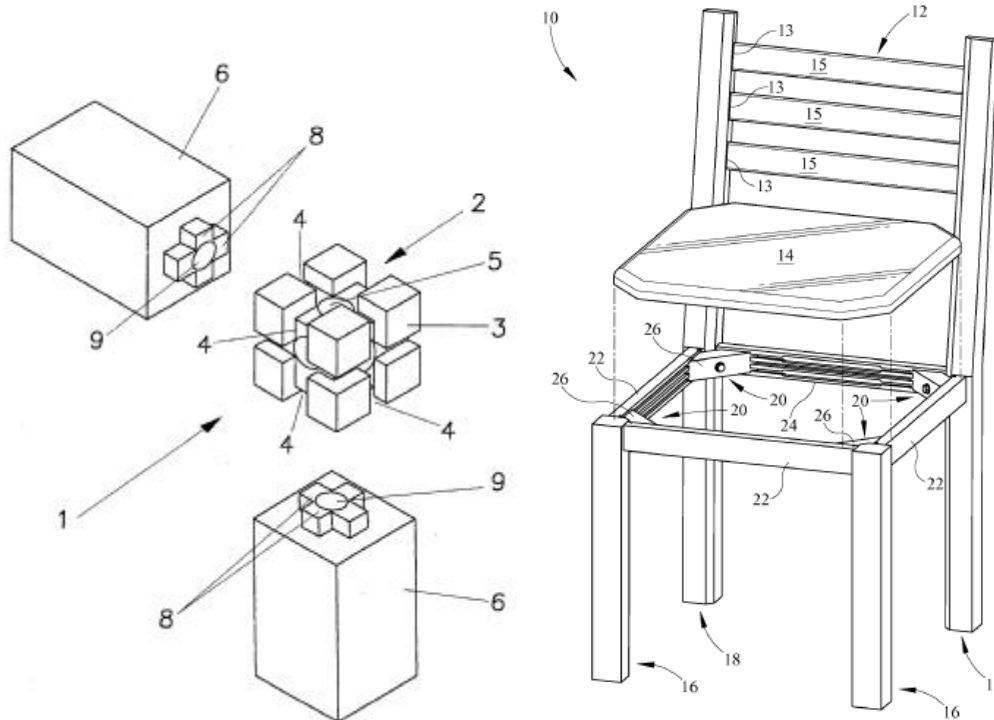
F16B 12/46

Non-metal corner connections

Definition statement

This place covers:

Illustrative examples of subject matter classified in this group (DE202006014679U, US7677830).



References

Informative references

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

Connections of tubes or rods	F16B 7/00
------------------------------	---------------------------

Special rules of classification

This sub-group concerns joints between two or more NON-METAL connecting elements whose connector or liaison part is non-metal or metallic.

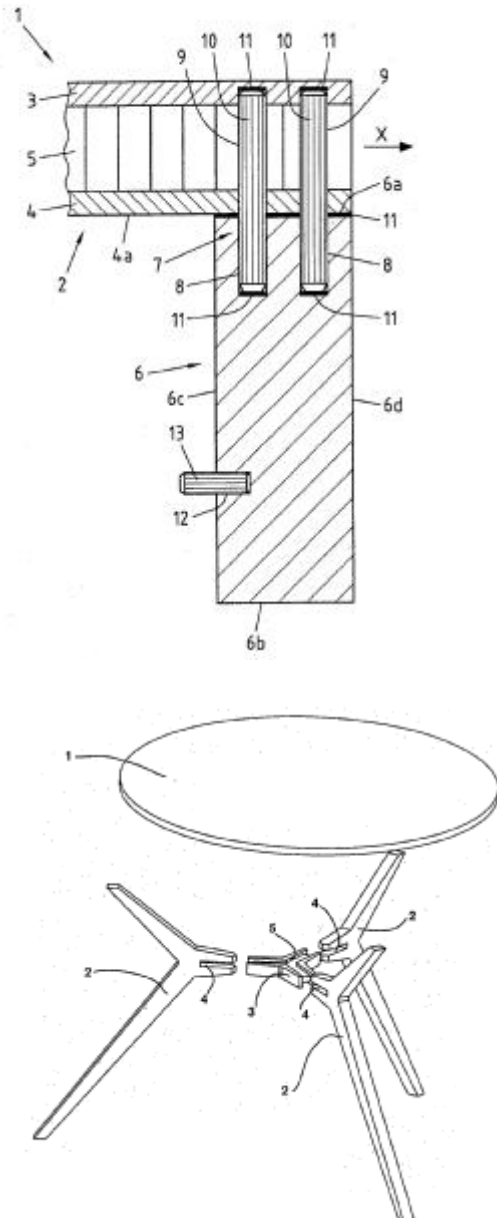
F16B 12/48

Non-metal leg connections ([F16B 12/46](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (DE202009017363U, DE202010017070).



References

Limiting references

This place does not cover:

Non-metal corner connections	F16B 12/46
------------------------------	----------------------------

Informative references

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

Connections of tubes or rods	F16B 7/00
------------------------------	---------------------------

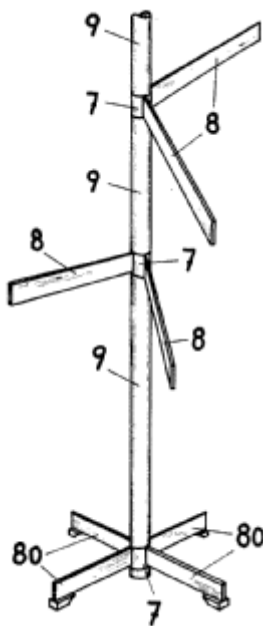
Special rules of classification

This sub-group concerns joints between two or more NON-METAL leg connecting elements whose connector or liaison part is non-metal or metal and includes the connection between table top or similar and leg(s).

F16B 12/50**Metal corner connections****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group.

**References****Informative references**

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

Connections of tubes or rods	F16B 7/00
------------------------------	---------------------------

Special rules of classification

This sub-group concerns joints between two or more METAL connecting elements whose connector or liaison part is non-metal or metal.

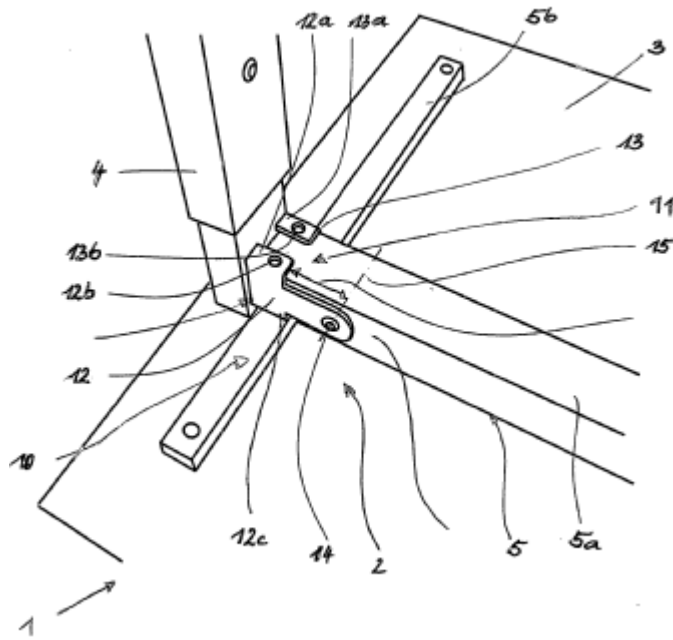
F16B 12/52

Metal leg connections ([F16B 12/50](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Metal corner connections	F16B 12/50
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Informative references

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

Connections of tubes or rods	F16B 7/00
------------------------------	---------------------------

Special rules of classification

This sub-group concerns joints between two or more METAL leg connecting elements whose connector or liaison part is non-metal or metal and includes connections between table top or similar and leg(s).

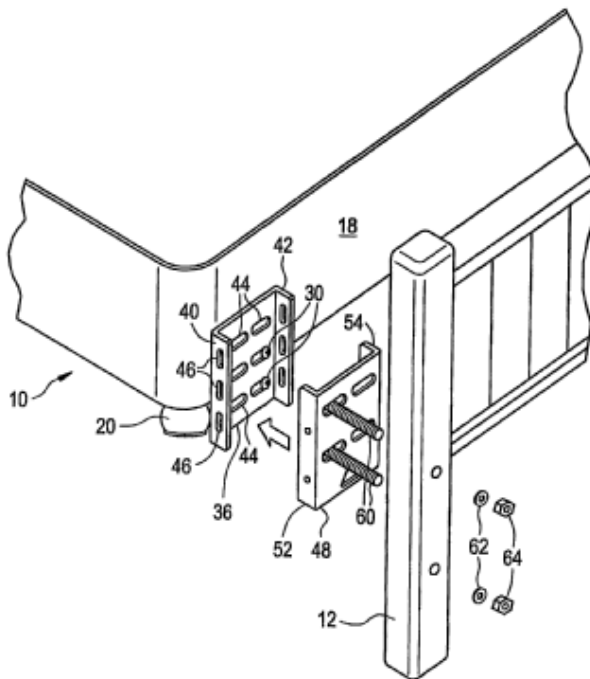
F16B 12/56

Brackets for bedsteads; Coupling joints consisting of bolts or the like; Latches therefor

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (US2006195983).

FIG. 5

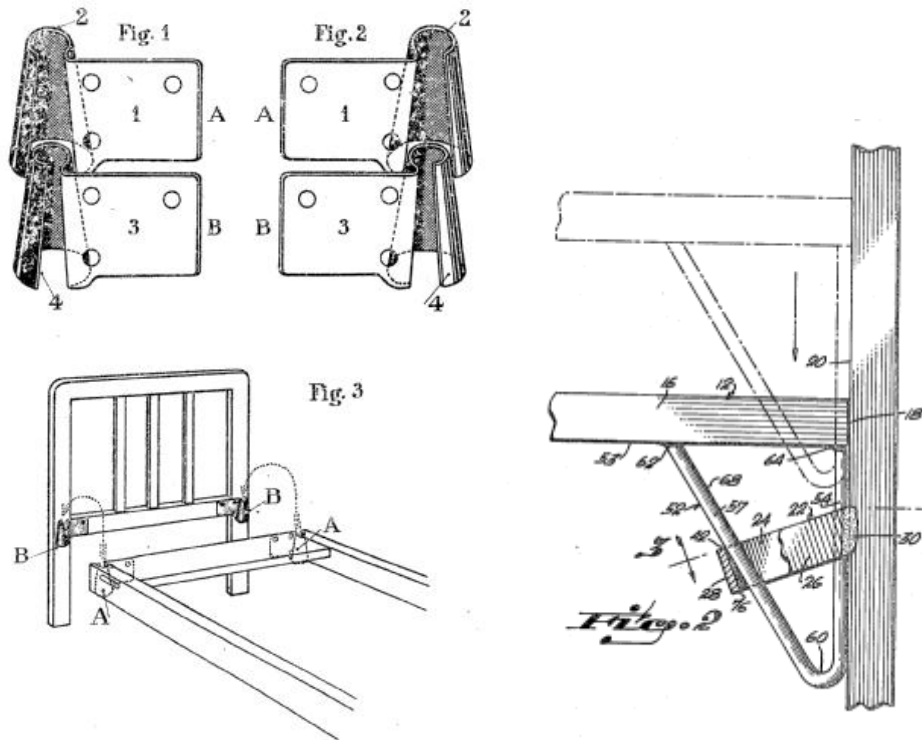
F16B 12/58

Tapered connectors for bed rails

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (FR875988, US3539211).



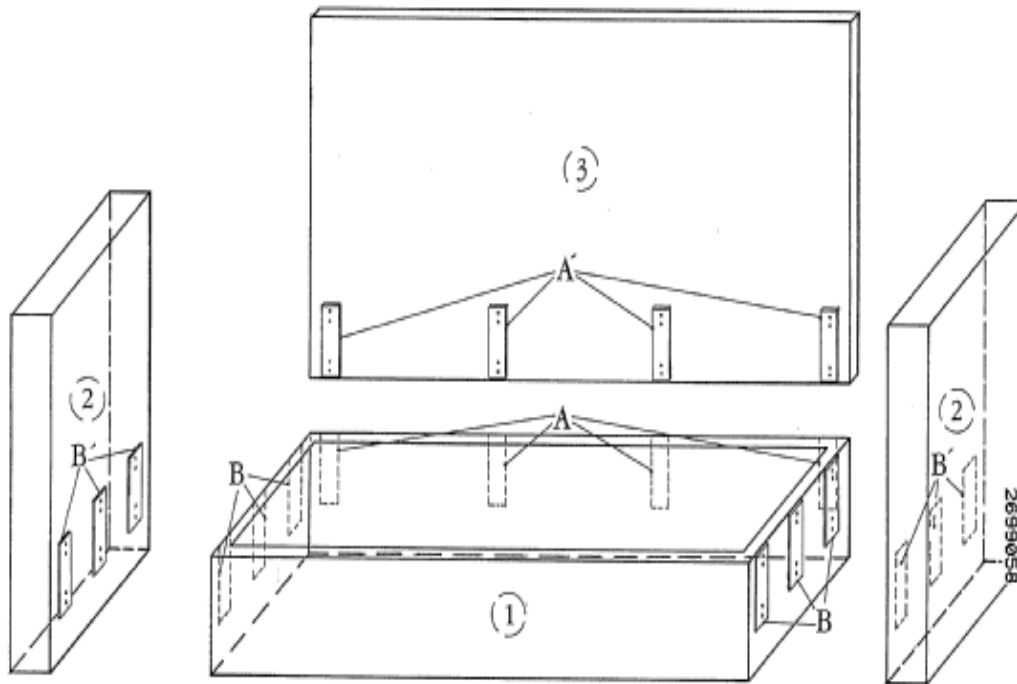
F16B 12/60

Fittings for detachable side panels

Definition statement

This place covers:

Illustrative example of subject matter classified in this group (FR2699058).



F16B 13/00

Dowels or other devices fastened in walls or the like by inserting them in holes made therein for that purpose (nails [F16B 15/00](#); self-locking pins or bolts in general, stud-and-socket releasable fastenings [F16B 21/00](#); dowels or bolts for railroad sleepers [E01B 9/00](#); and means for anchoring structural elements or bulkheads specially adapted to foundation engineering [E02D 5/74](#); bolts or dowels used while laying bricks or casting concrete sleepers [E04B 1/38](#); setting anchoring bolts in shafts, tunnels or galleries [E21D 20/00](#); anchoring bolts for shafts, tunnels or galleries [E21D 21/00](#))

Definition statement

This place covers:

Dowels made e.g. of wood, metal or plastic.

Dowels in form of a solid rod.

Dowels having parts gripping it the hole, e.g. expanding sleeves or toggle mechanisms.

Dowels fastened by inserted an additional element.

Definition statement

Dowels fixed by a settable material.

References

Application-oriented references

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

Connections in furniture using dowels	F16B 12/00
Self-locking pins or bolts in general, stud-and-socket releasable fastenings	F16B 21/00
Dowels or bolts for railroad sleepers	E01B 9/00
Means for anchoring structural elements or bulkheads specially adapted to foundation engineering	E02D 5/74
Bolts or dowels used while laying bricks or casting concrete sleepers	E04B 1/38
Dowels fixed by grouting	E21D 20/02
Anchoring bolts for shafts, tunnels or galleries	E21D 21/00

Informative references

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

Nails	F16B 15/00
Bolts without screw-thread and rivets	F16B 19/00
Dowels for insulation of walls and ceilings	E04F 13/0835

Glossary of terms

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

Dowel	Solid cylindrical rod, usually made of wood, plastic or metal that is usually inserted into a blind hole.
-------	---

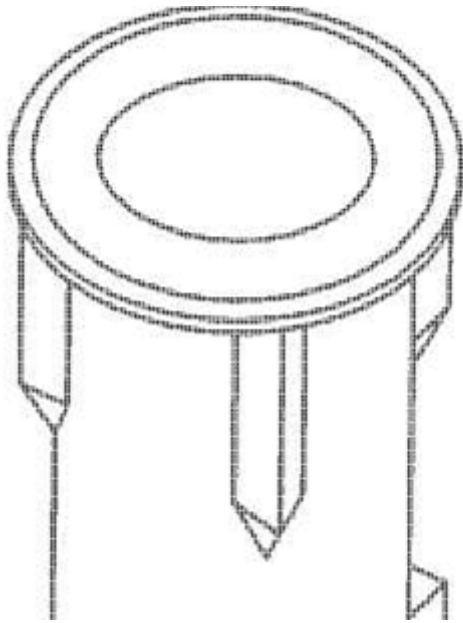
F16B 13/001

{with means for preventing rotation of the dowel}

Definition statement

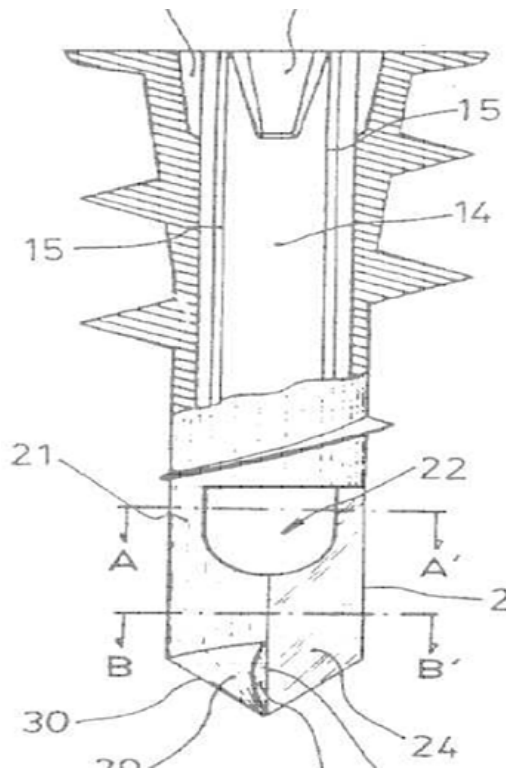
This place covers:

Illustrative example of subject matter classified in this group.



F16B 13/002**{self-cutting}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

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

Self-cutting screws	F16B 25/00
---------------------	----------------------------

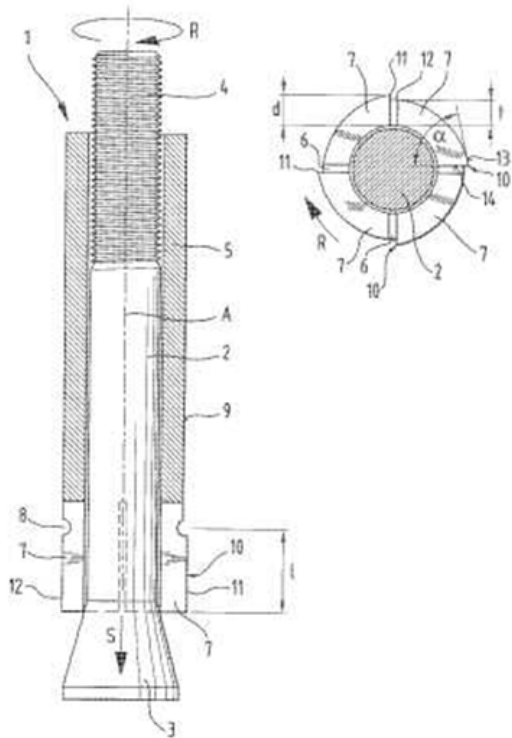
F16B 13/004

{with a drilling sleeve driven against a tapered or spherical plug}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



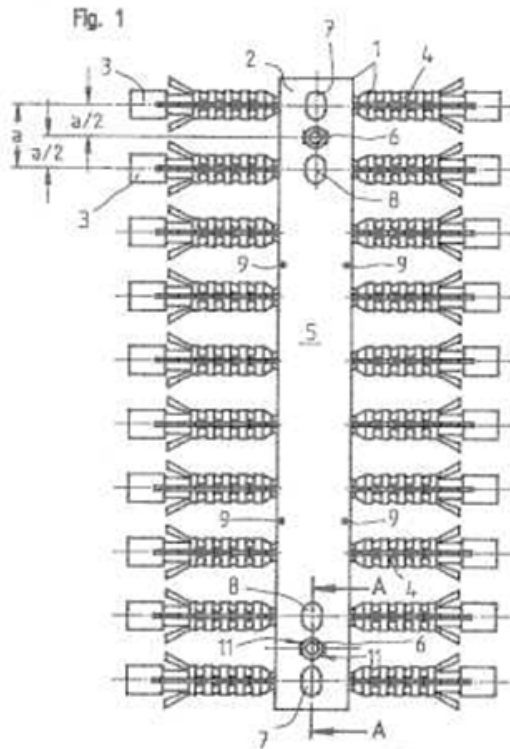
F16B 13/005

{formed in integral series but easily separable}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



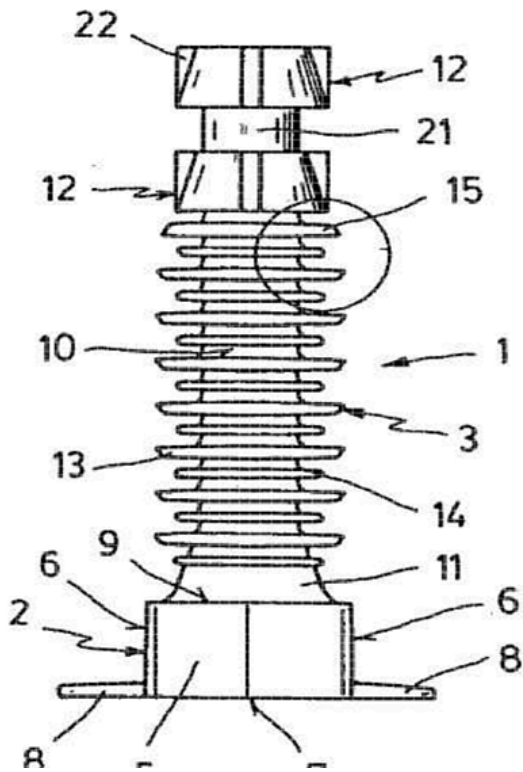
F16B 13/02

in one piece with protrusions or ridges on the shaft

Definition statement

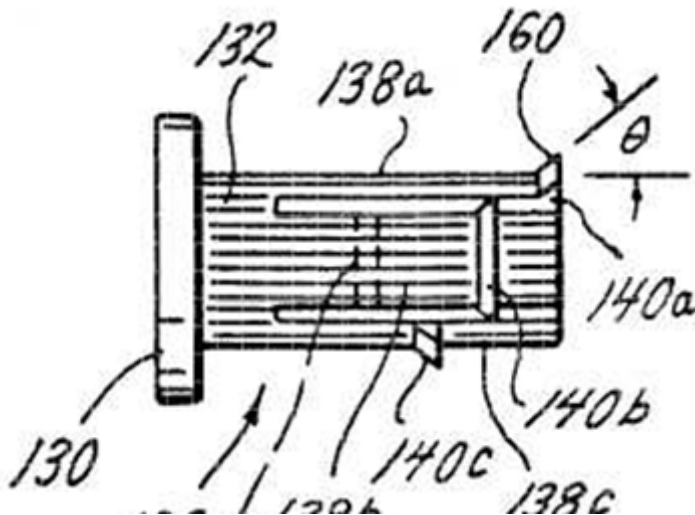
This place covers:

Illustrative example of subject matter classified in this group.



F16B 13/025**{of rolled sheet material}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 13/04**

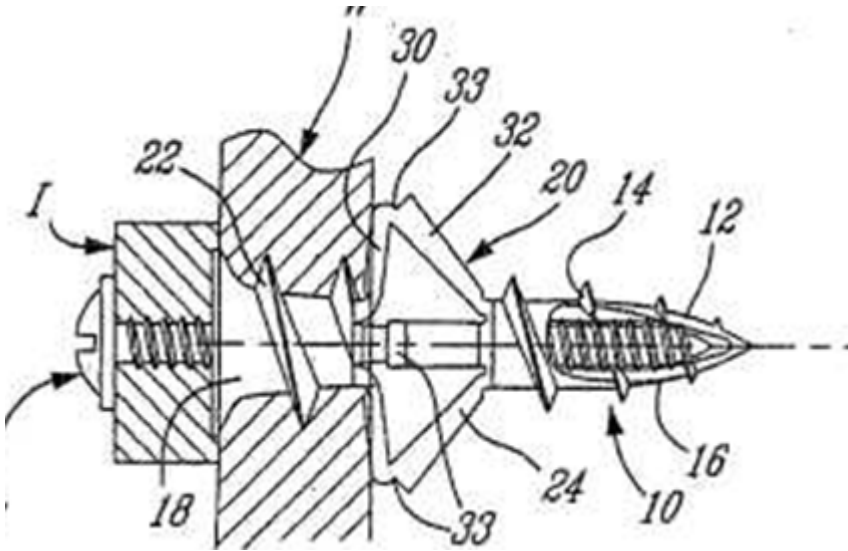
with parts gripping in the hole or behind the reverse side of the wall after inserting from the front ({[F16B 13/002](#) and [F16B 13/12](#) take precedence;} friction-grip releasable fastenings in general [F16B 2/00](#))

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

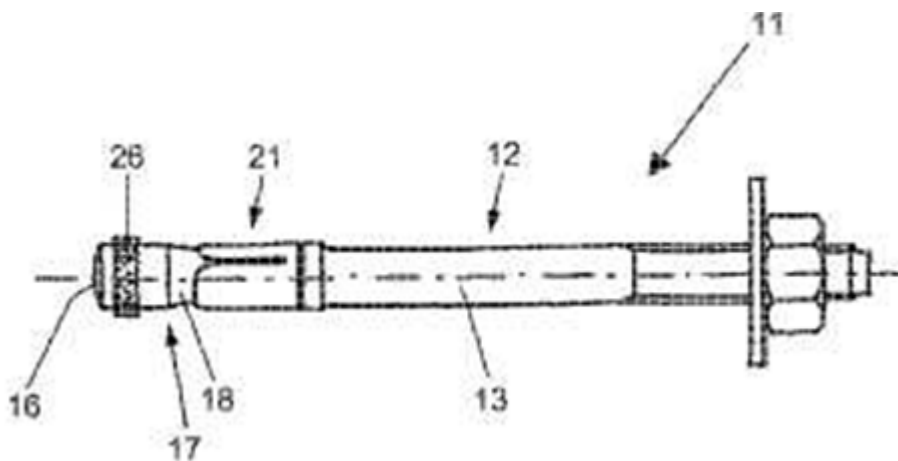
Friction-grip releasable fastenings in general	F16B 2/00
--	---------------------------

F16B 13/061**{of the buckling type}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 13/065****{fastened by extracting the screw, nail or the like}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



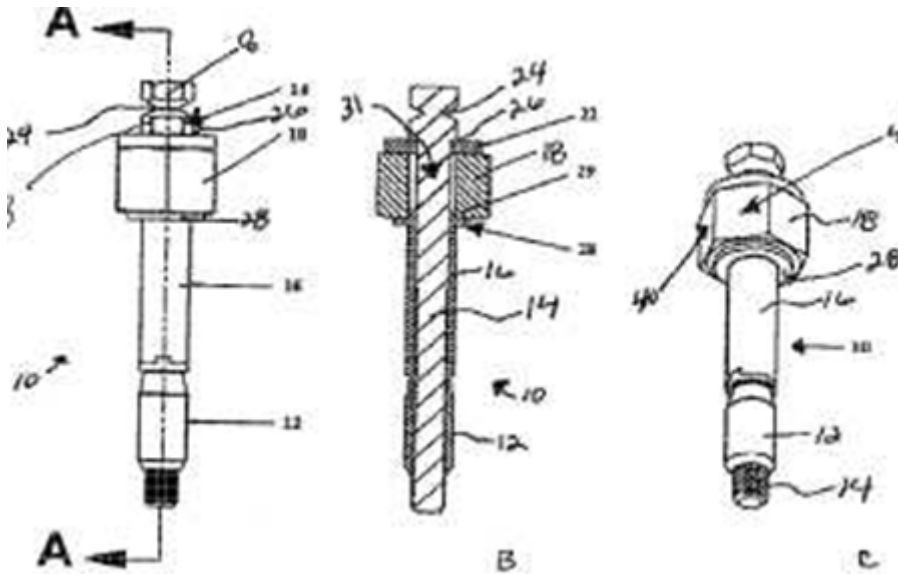
F16B 13/066

{fastened by extracting a separate expander-part, actuated by the screw, nail or the like}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



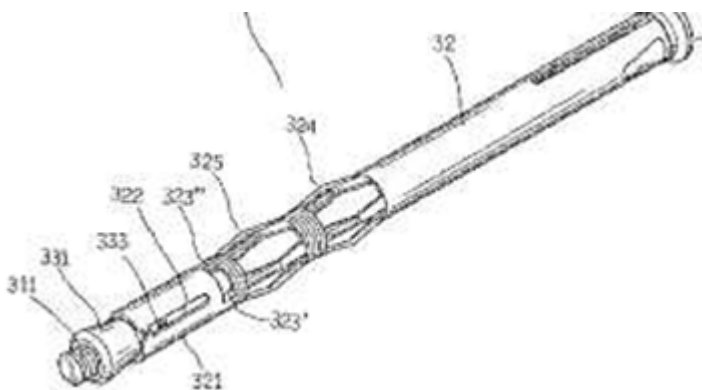
F16B 13/068

{expanded in two or more places}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



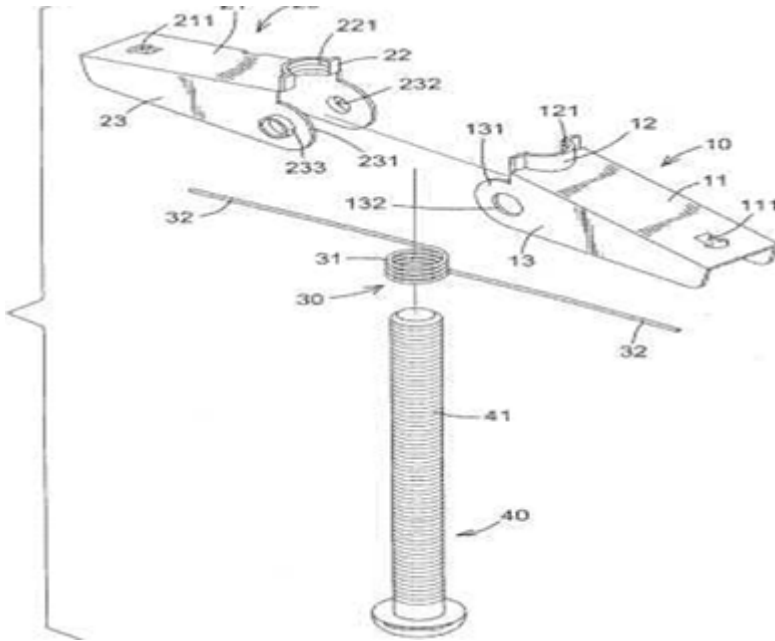
F16B 13/0808

{by a toggle-mechanism}

Definition statement

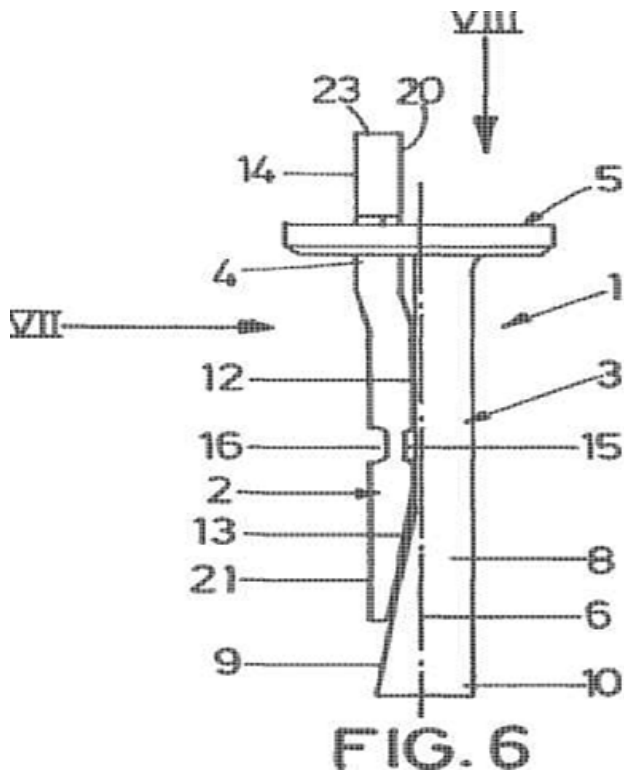
This place covers:

Illustrative example of subject matter classified in this group.



F16B 13/0816**{with a wedging drive-pin}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



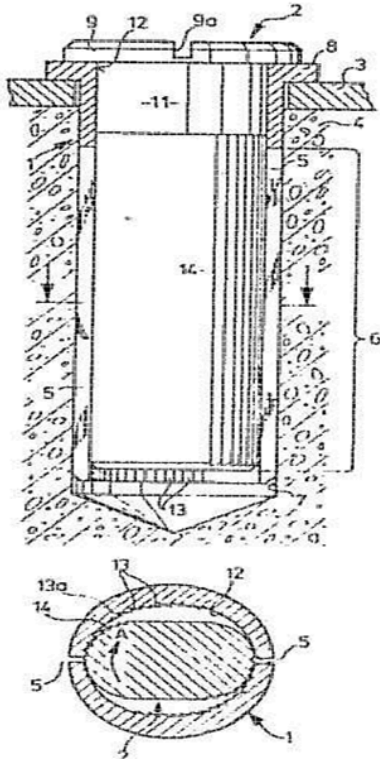
F16B 13/0825

{with a locking element, e.g. sleeve, ring or key co-operating with a cammed or eccentric surface of the dowel body}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



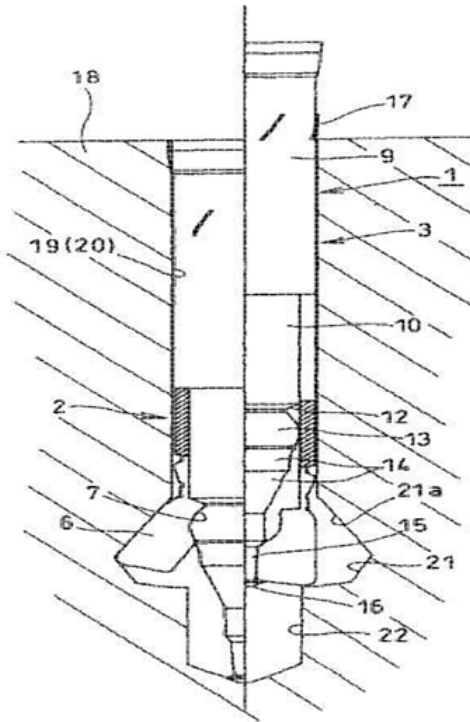
F16B 13/0833

{with segments or fingers expanding or tilting into an undercut hole
([F16B 13/0858](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



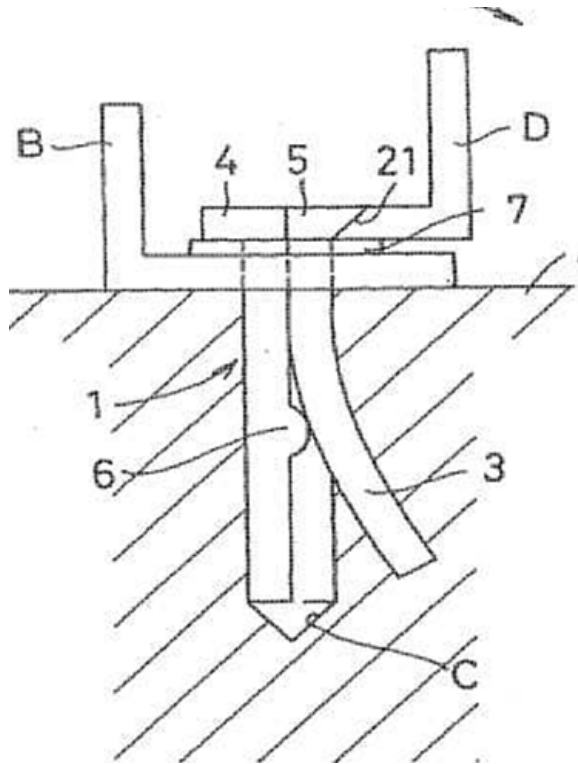
F16B 13/085

{with a drive-nail deflected by an inclined surface in the dowel body (nails with spreading shaft [F16B 15/04](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Nails with a spreading shaft	F16B 15/04
------------------------------	----------------------------

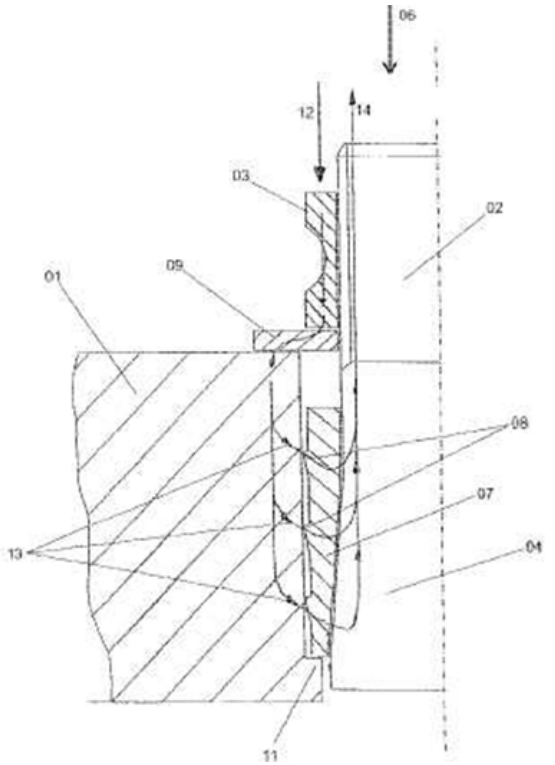
F16B 13/0858

{with an expansible sleeve or dowel body driven against a tapered or spherical expander plug (F16B 13/004 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



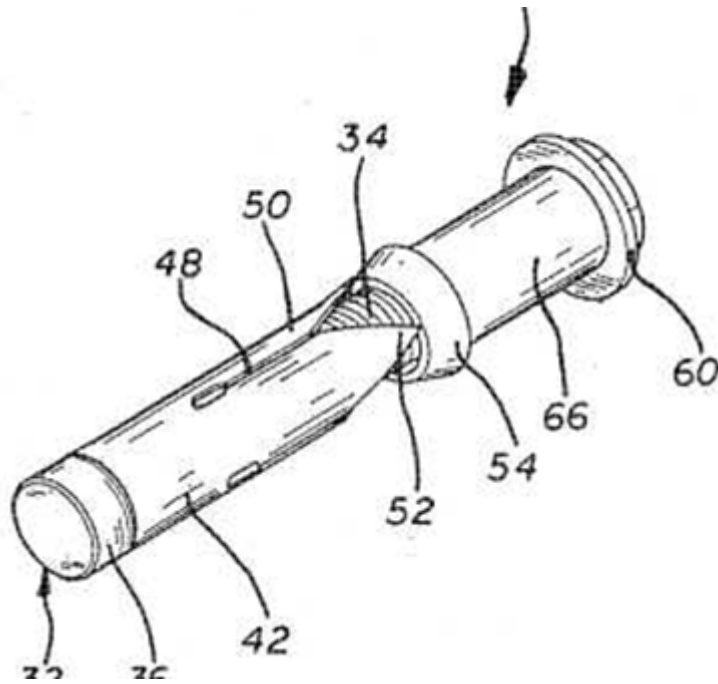
F16B 13/0866

{with prongs penetrating into the wall of the hole by a retractile movement of a threaded member}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



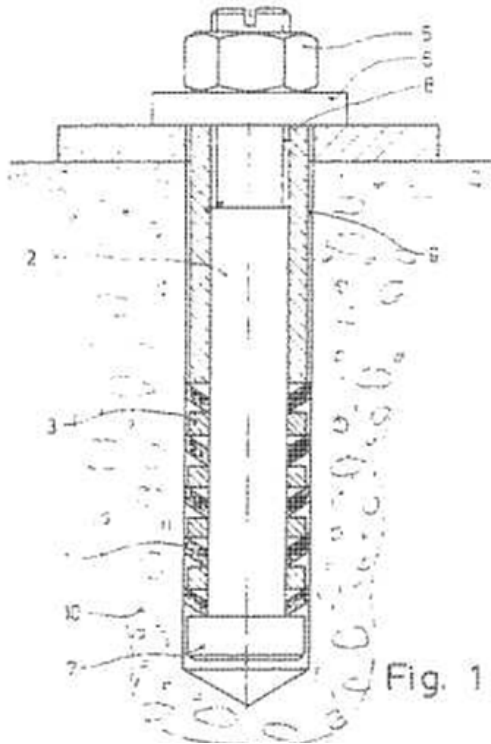
F16B 13/0875

{with elastic discs or spring washers anchoring in the hole}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



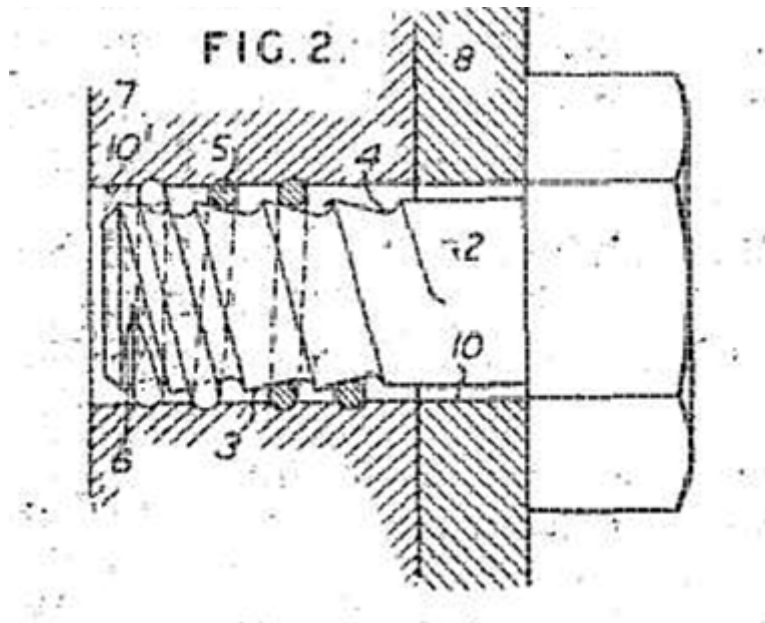
F16B 13/0883

{with split rings or wire between the threads of the dowel body or in grooves near a conical surface ([F16B 13/0825](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



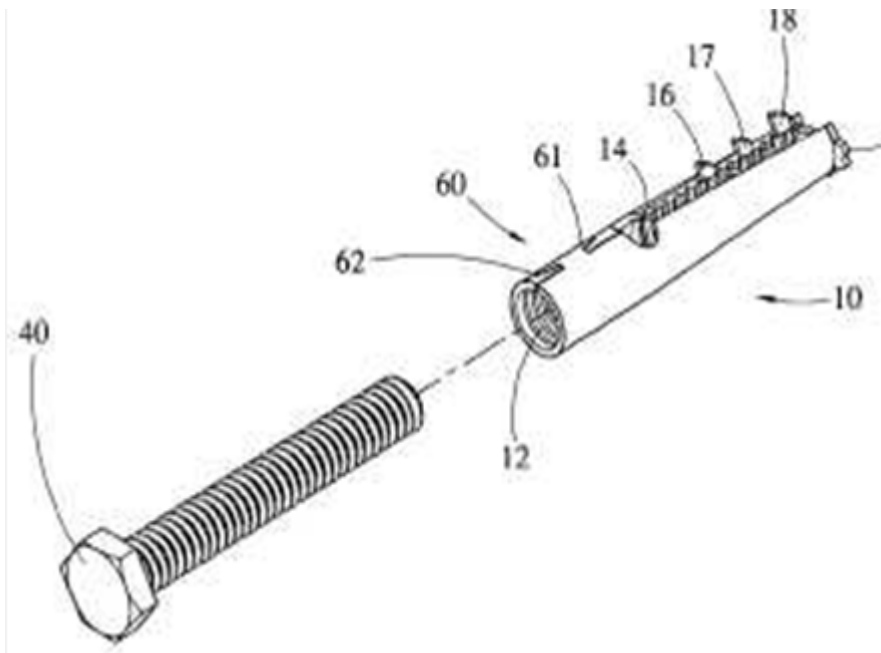
F16B 13/122

{made from a sheet-metal blank}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



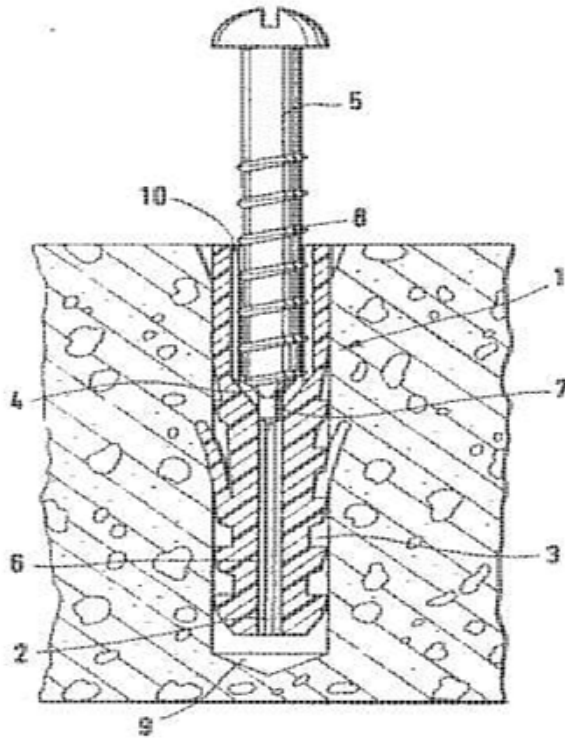
F16B 13/124

{fastened by inserting a threaded element, e.g. screw or bolt ([F16B 13/122](#), [F16B 13/128](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



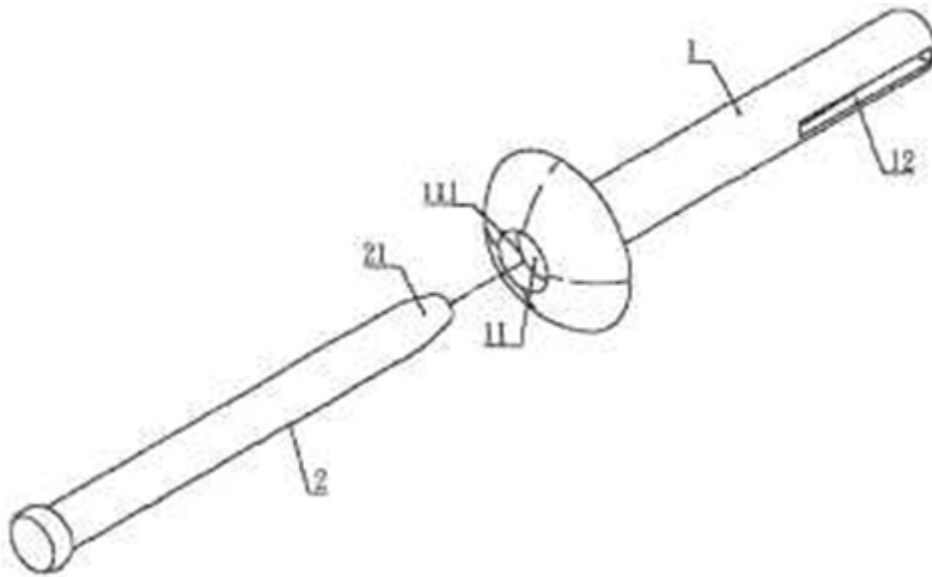
F16B 13/126

{fastened by inserting an unthreaded element, e.g. pin or nail ([F16B 13/122](#), [F16B 13/128](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



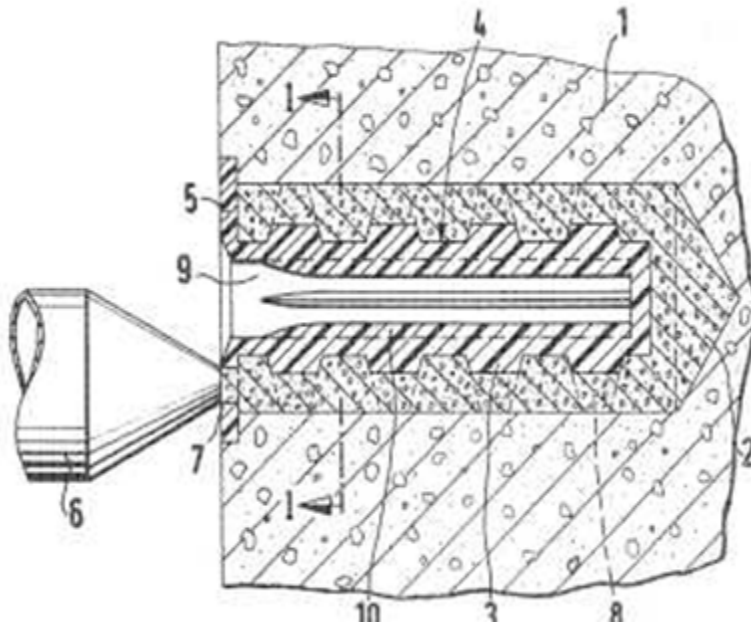
F16B 13/141

{Fixing plugs in holes by the use of settable material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Anchoring bolts by grouting	E21D 20/02
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Informative references

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

Adhesives	C08F , C09J 1/00
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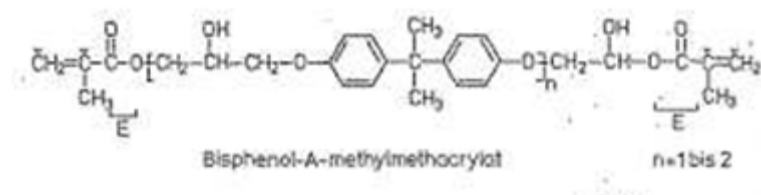
F16B 13/142

{characterised by the composition of the setting material or mixture
(F16B 13/143 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



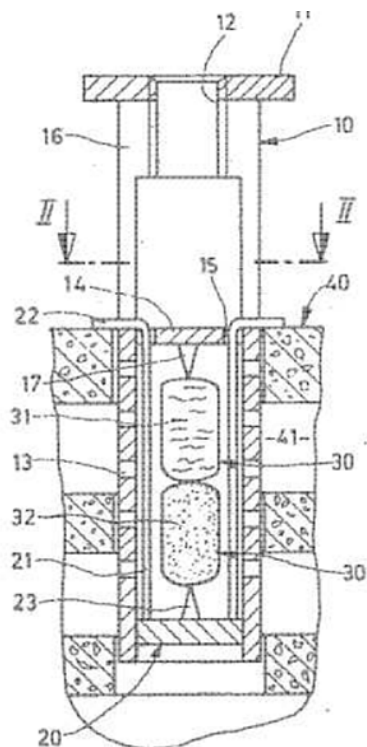
F16B 13/143

{using frangible cartridges or capsules containing the setting components}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



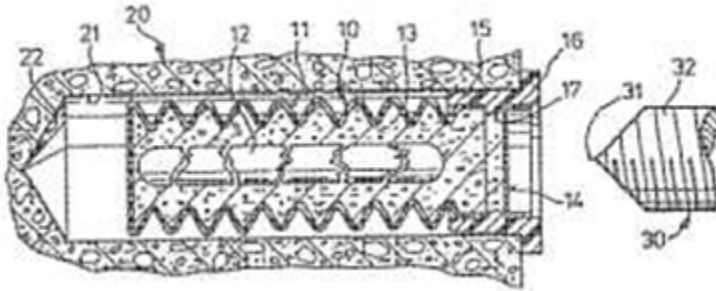
F16B 13/144

{characterised by the shape or configuration or material of the frangible cartridges or capsules}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

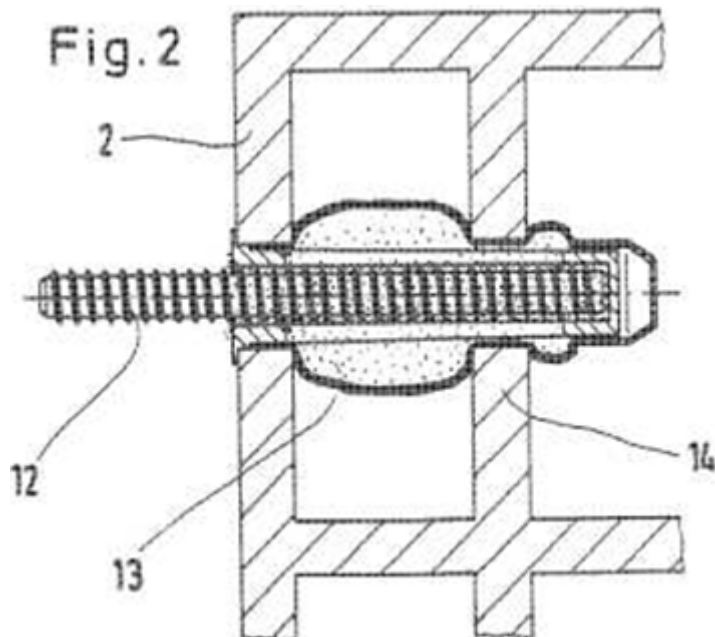
**F16B 13/146**

{with a bag-shaped envelope or a tubular sleeve closed at one end, e.g. with a sieve-like sleeve, or with an expandable sheath}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 15/00

Nails; Staples (surgical staples [A61B 17/064](#); manufacture of nails or staples [B21G](#) {; drawing-pins, thumb-tacks [B43M 15/00](#)}; railway spikes [E01B 9/06](#))

Definition statement

This place covers:

Nails, i.e. pin shaped sharp objects made mainly of hard metal alloy and being used as a fastener

Staples, i.e. two pronged fasteners made of metal.

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:

Surgical staples	A61B 17/064
Thumb tacks	B43M 15/00
Railway spikes	E01B 9/06

Informative references

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

Manufacture of nails or staples	B21G
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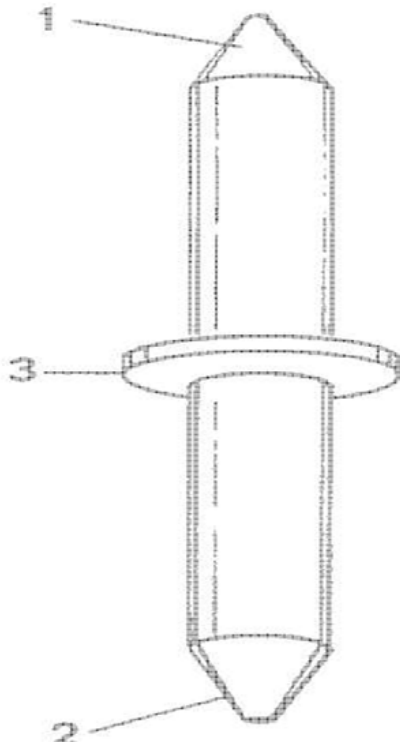
F16B 15/0007

{with two nail points extending in opposite directions, in order to fix two workpieces together}

Definition statement

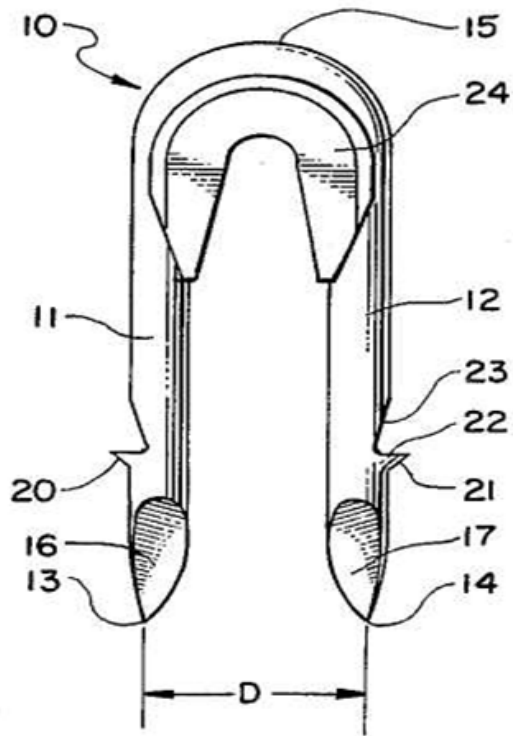
This place covers:

Illustrative example of subject matter classified in this group.



F16B 15/0015**{Staples}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 15/0023****{Nail plates}****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:

Machines for driving in nail plates	B27F 7/15
Claw dowels for building structures	E04B 1/49

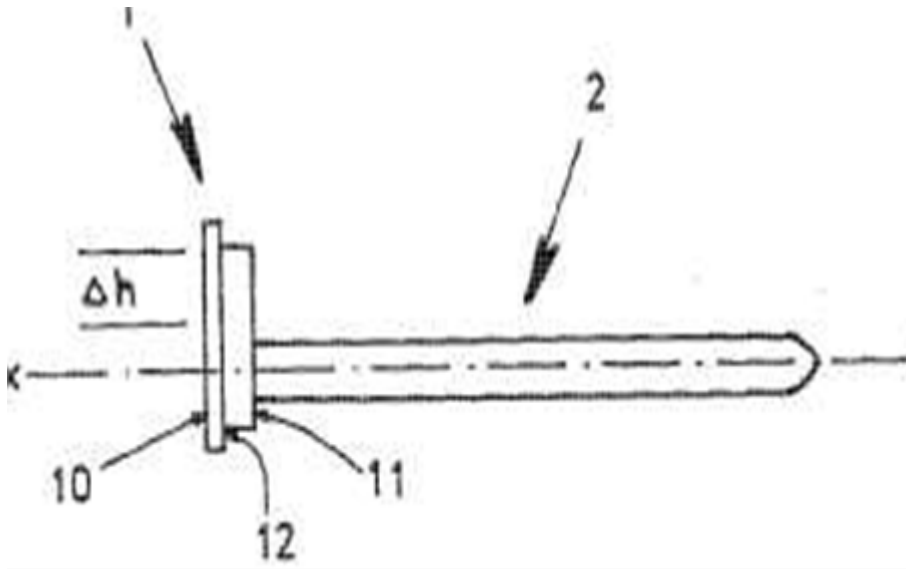
F16B 15/02

with specially-shaped heads, e.g. with enlarged surfaces (ornaments for furniture [A47B 95/04](#); removable ornamental heads for nails [A47G 3/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Ornaments for furniture	A47B 95/04
Removable ornament heads for nails	A47G 3/00

Informative references

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

Fastening devices with markings, colours, indicators or the like	F16B 2200/95
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Special rules of classification

References [A47B 95/04](#) and [A47G 3/00](#) are non-limiting in group [F16B 15/02](#). CPC will be updated/ corrected once this inconsistency is resolved in IPC.

F16B 15/04

with spreading shaft {(dowels with a drive-nail deflected by an inclined surface in the dowel body [F16B 13/085](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

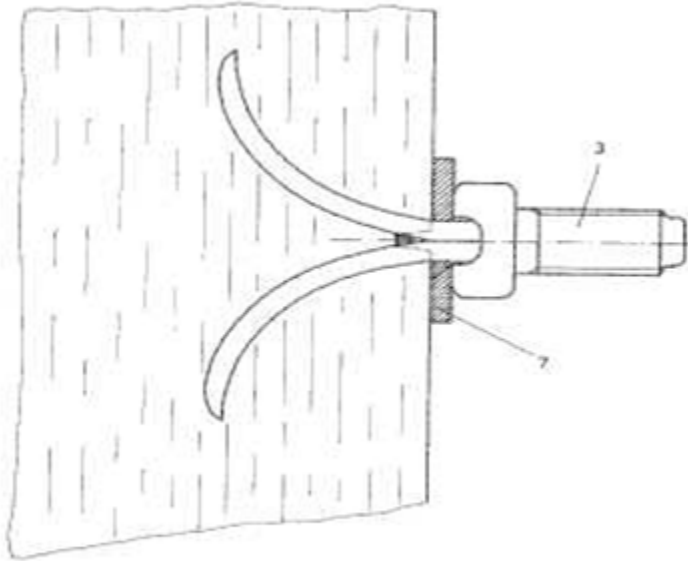


Fig. 1

References**Limiting references**

This place does not cover:

Dowels with a drive-nail deflected by an inclined surface in the dowel body	F16B 13/085
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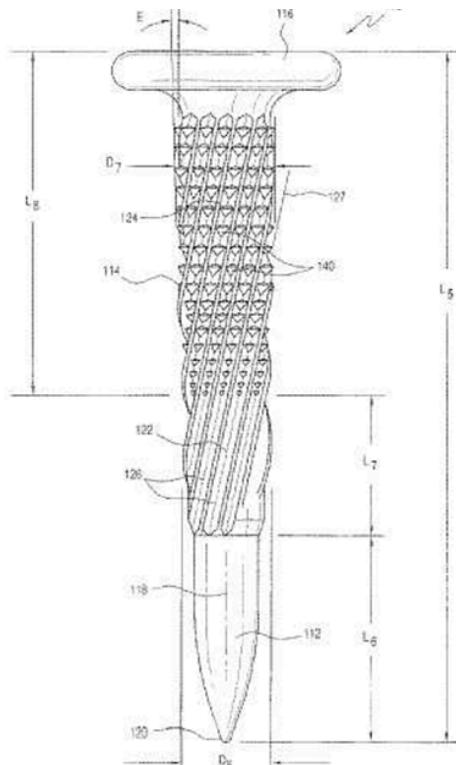
F16B 15/06

with barbs, e.g. for metal parts; Drive screws

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

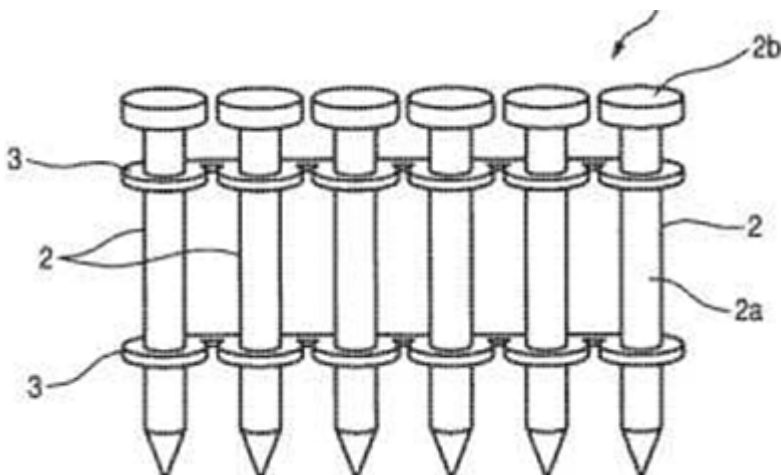
**F16B 15/08**

formed in integral series but easily separable

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Bolts, screws or nuts formed in integral series	F16B 27/00
Arrangements for feeding screws or nuts	B25B 23/04

F16B 17/00

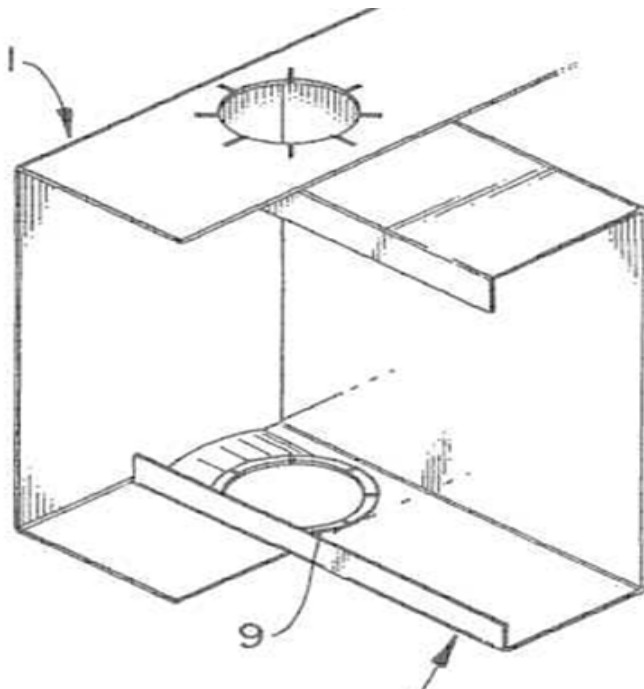
Connecting constructional elements or machine parts by a part of or on one member entering a hole in the other {and involving plastic deformation} (riveting [F16B 19/04](#))

Definition statement

This place covers:

Non-releasable connections of one element by entering a hole in a second element and subsequent plastic deformation.

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Rivets; Spigots or the like fastened by riveting	F16B 19/04
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Informative references

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

Construction of pins, bolts or rivets	F16B 19/00
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Means for preventing withdrawal of a pin, spigot or the like from its operative position, stud-and-socket releasable fastenings

[F16B 21/00](#)

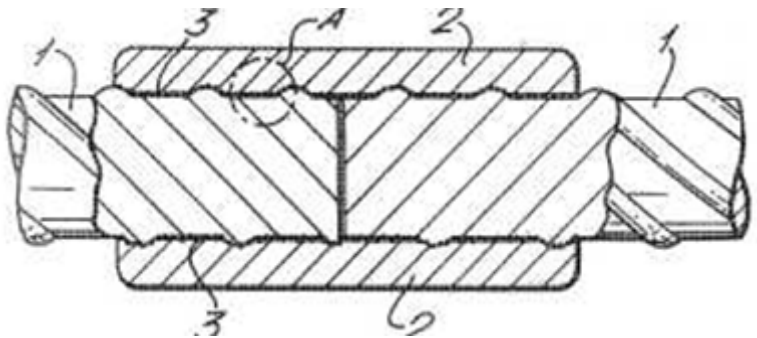
F16B 17/004

{of rods or tubes mutually}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



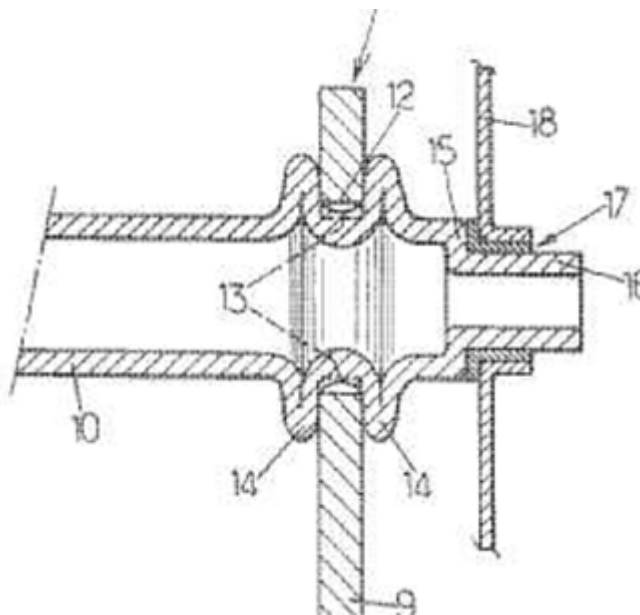
F16B 17/006

{of rods or tubes to sheets or plates}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



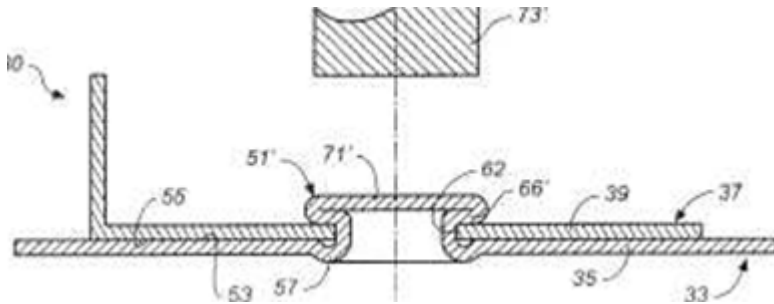
F16B 17/008

{of sheets or plates mutually (joining sheets by riveting without the use of separate rivets [F16B 5/045](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Joining sheets by riveting without the use of separate rivets	F16B 5/045
---	----------------------------

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:

Joining of superposed plates by local deformation	B21D 39/031 , B21D 39/038
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F16B 19/00

Bolts without screw-thread; Pins, including deformable elements (in screwed connections [F16B 29/00](#)); Rivets (means for preventing withdrawal [F16B 21/00](#))

Definition statement

This place covers:

Bolts without screw-thread, pins and rivets, such as solid rivets or blind rivets.

References

Limiting references

This place does not cover:

Means for preventing relative axial movement of a pin, spigot, shaft and the like	F16B 21/00
Screwed connection with deformation of nut or auxiliary member	F16B 29/00

Informative references

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

Riveting (process)	B21J 15/00
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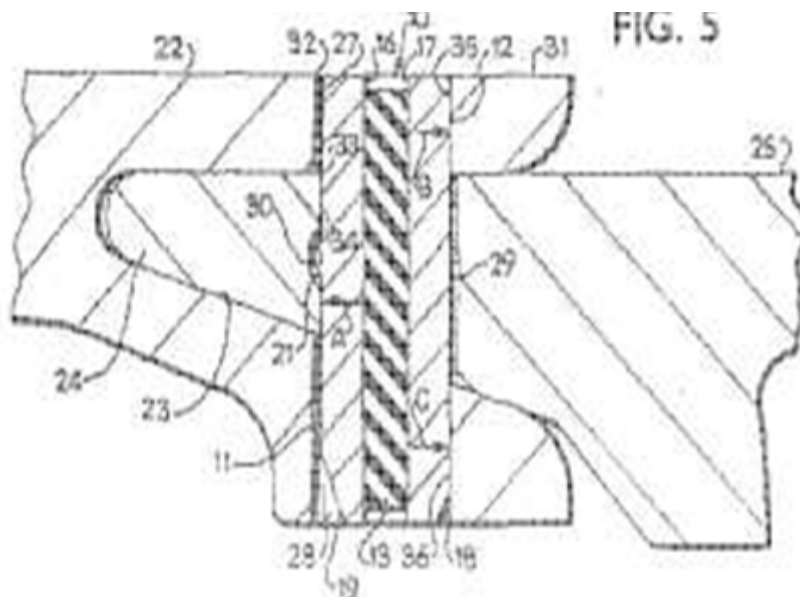
F16B 19/002

{Resiliently deformable pins ([F16B 21/06](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Dowels with elastic discs or spring washers	F16B 13/0875
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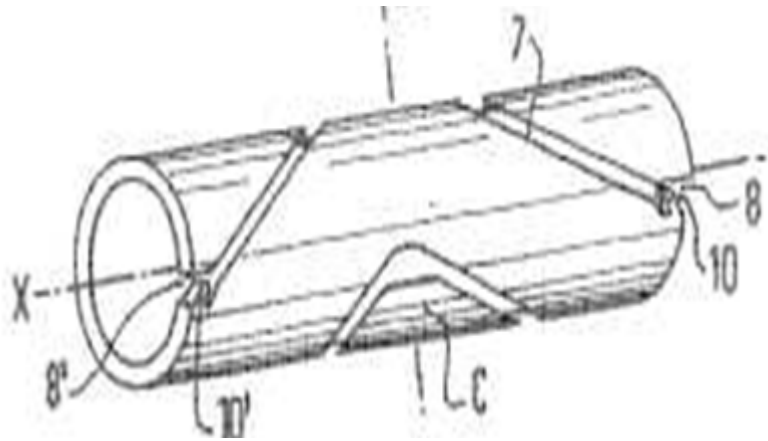
F16B 19/004

{made in one piece ([F16B 21/084](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

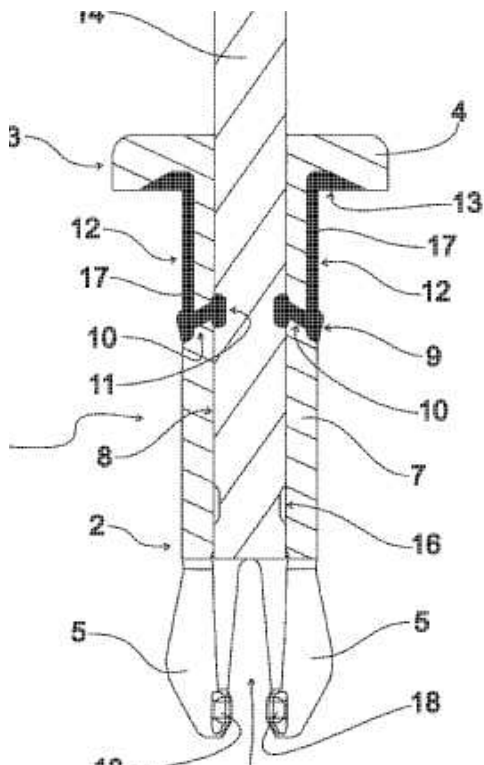
**F16B 19/008**

{with sealing means}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Sealing of bolts and nuts	F16B 33/004
Sealing washers	F16B 43/001

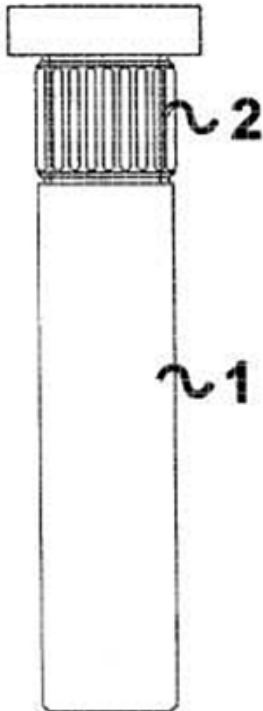
F16B 19/02

Bolts or sleeves for positioning of machine parts, e.g. notched taper pins, fitting pins, sleeves, eccentric positioning rings

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 19/04

Rivets; Spigots or the like fastened by riveting (lead seals [G09F 3/00](#))

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:

Lead seals	G09F 3/00
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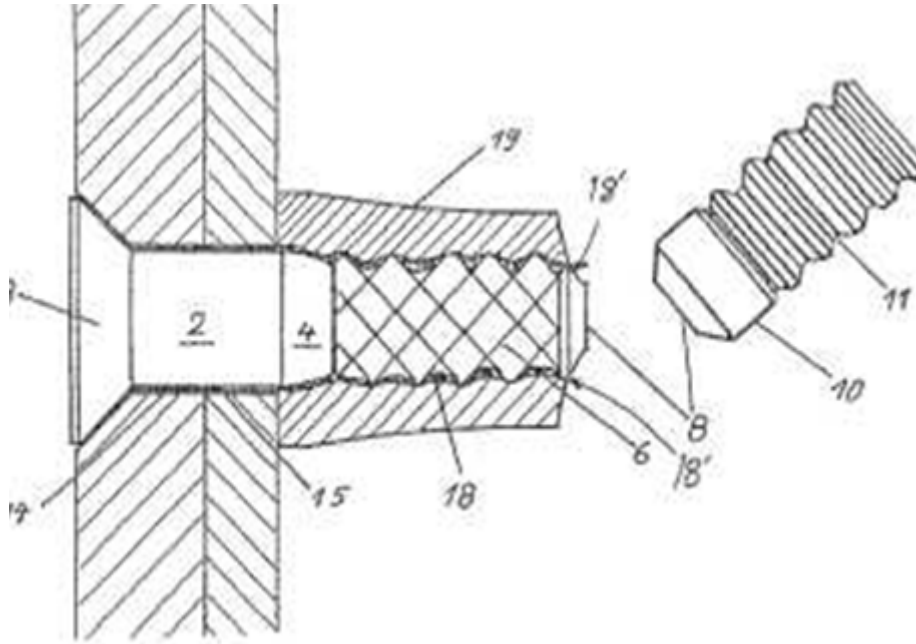
F16B 19/05

Bolts fastening by swaged-on collars ([F16B 19/08](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



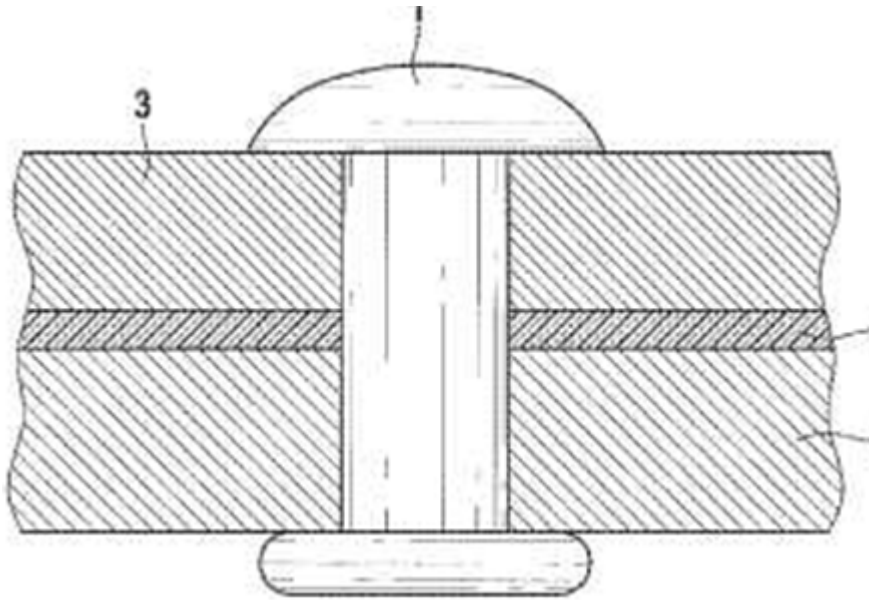
F16B 19/06

Solid rivets made in one piece

Definition statement

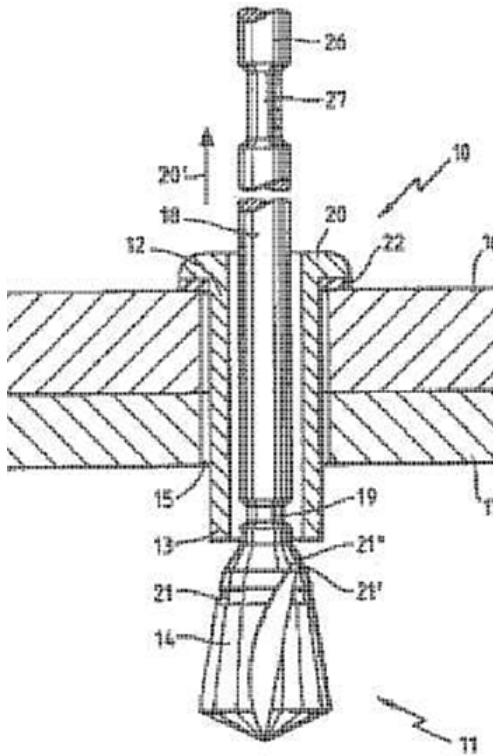
This place covers:

Illustrative example of subject matter classified in this group.



F16B 19/083**{Self-drilling rivets}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



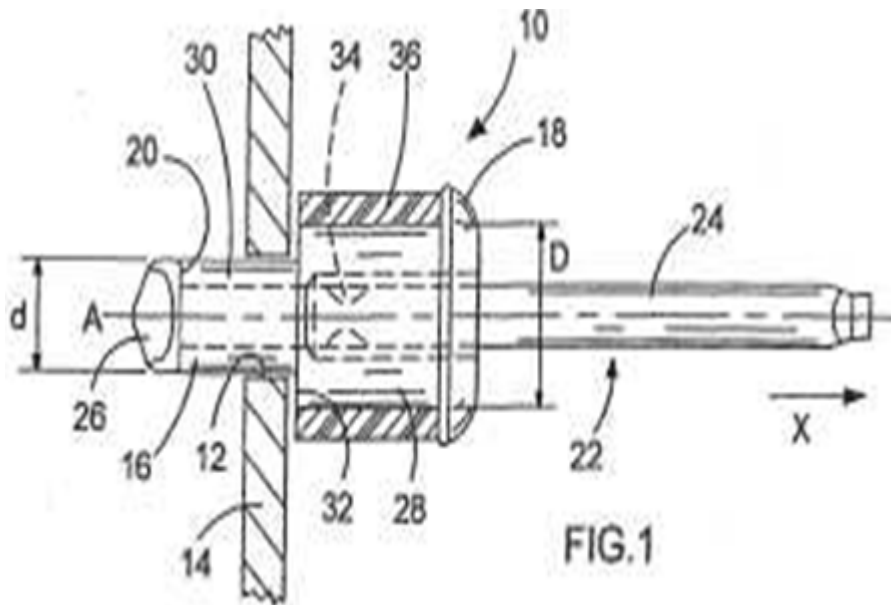
F16B 19/1045

{fastened by a pull - mandrel or the like ([F16B 19/109](#) takes precedence)}

Definition statement

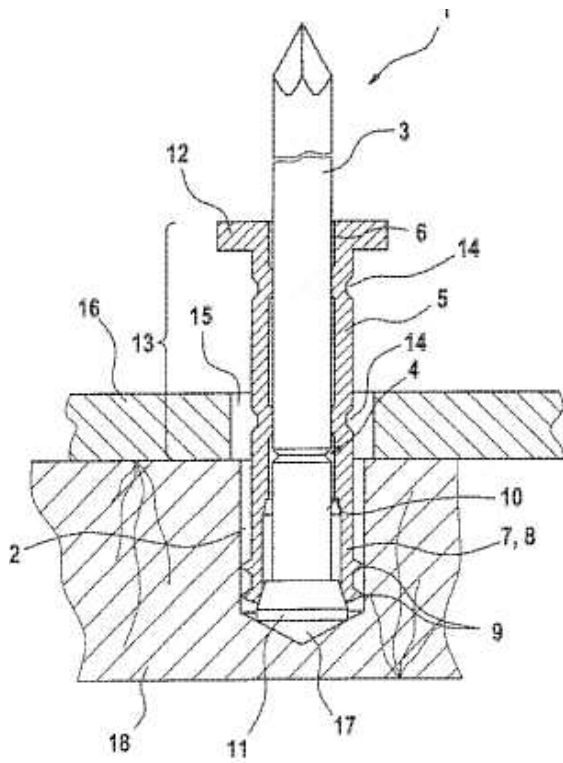
This place covers:

Illustrative example of subject matter classified in this group.



F16B 19/1054**{the pull-mandrel or the like being frangible}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



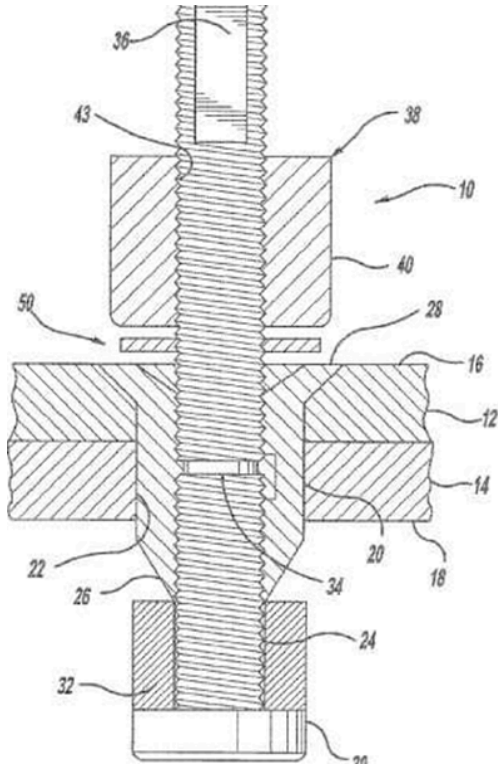
F16B 19/1063

{with a sleeve or collar sliding over the hollow rivet body during the pulling operation}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



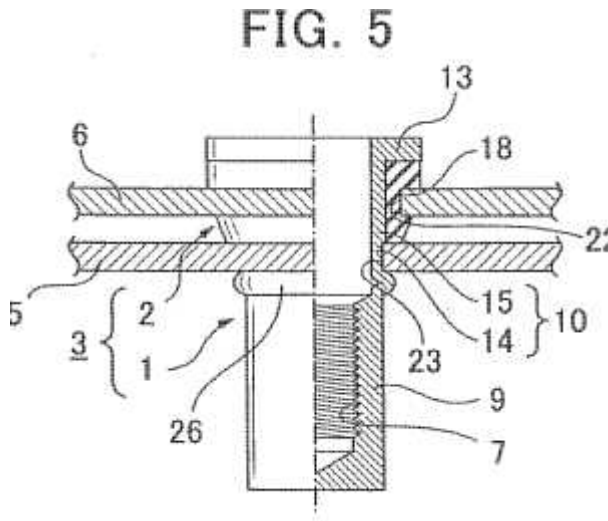
F16B 19/1072

{the pull-mandrel or the like comprising a thread and being rotated with respect to the rivet, thereby mechanically expanding and fastening the rivet (nuts fastened by riveting [F16B 37/067](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Nuts fastened by riveting	F16B 37/067
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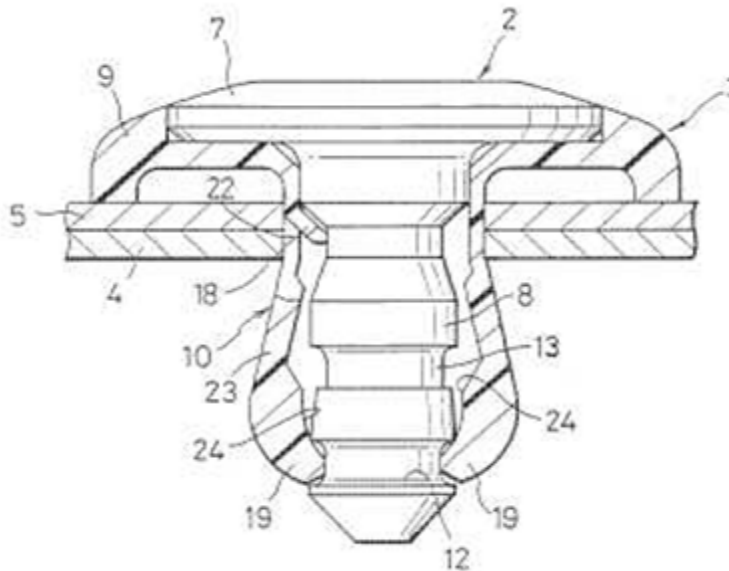
F16B 19/1081

{fastened by a drive-pin ([F16B 19/109](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Dowels fastened by inserting a screw, nail or the like	F16B 13/12
Releasable fastening devices with snap action with an additional locking element	F16B 21/065

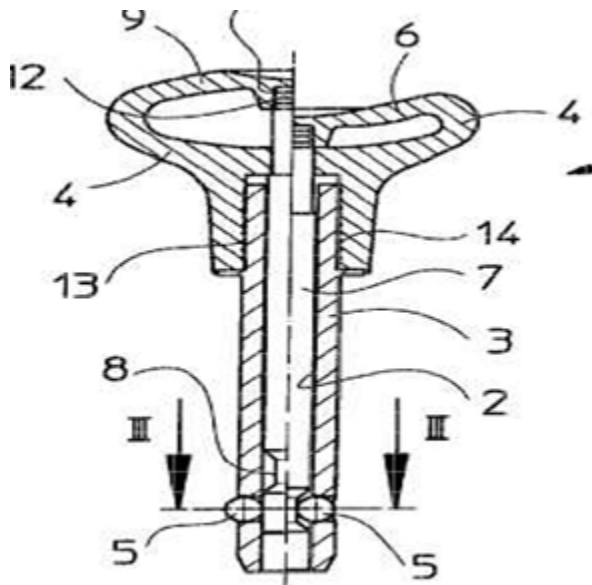
F16B 19/109

{Temporary rivets, e.g. with a spring-loaded pin (special clamping devices for workpieces to be riveted together, e.g. operating through the rivet holes [B21J 15/42](#); hand tools for temporarily connecting sheets before or during assembly operations [B25B 31/005](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Means for preventing axial movement of a pin by separate parts with radially resilient locking members	F16B 21/125
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Informative references

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

Special clamping devices for workpieces to be riveted together, e.g. operating through the rivet holes	B21J 15/42
Hand tools for temporarily connecting sheets before or during assembly operations	B25B 31/005

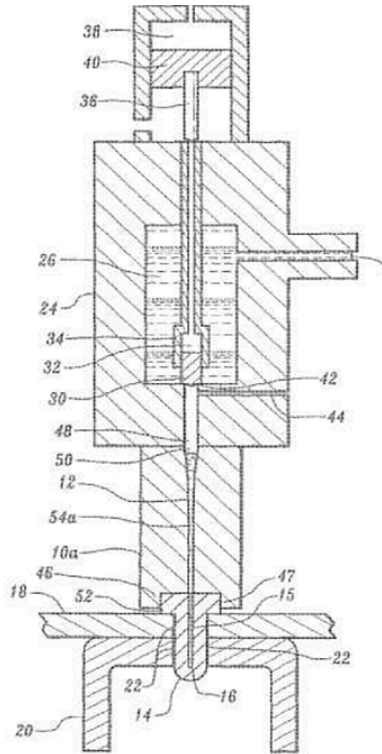
F16B 19/12

fastened by fluid pressure, including by explosion (bolts shot by means of detonation-operated nailing tools into concrete constructions, metal walls or the like [F16B 19/14](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Bolts shot by means of detonation-operated nailing tools into concrete constructions, metal walls or the like	F16B 19/14
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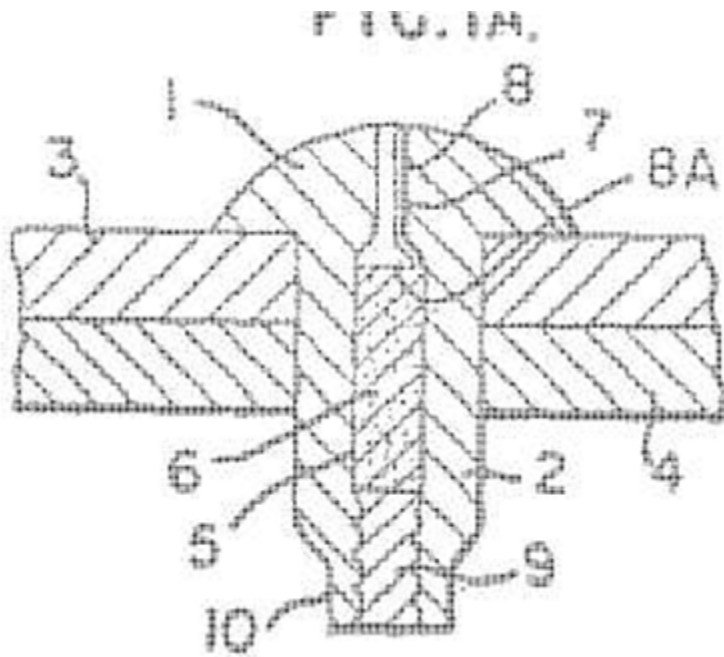
F16B 19/125

{fastened by explosion}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



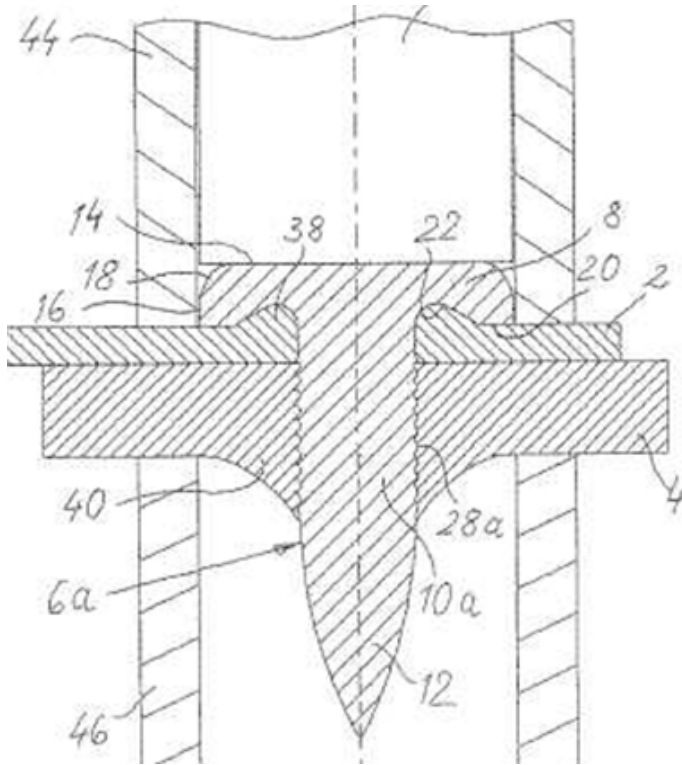
F16B 19/14

Bolts or the like for shooting into concrete constructions, metal walls or the like by means of detonation-operated nailing tools (tools therefor [B25C](#), [B27F](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Tools for shooting bolts	B25C , B27F
--------------------------	---

F16B 21/00

Means for preventing relative axial movement of a pin, spigot, shaft or the like and a member surrounding it (riveted or deformable spigots [F16B 19/04](#); for gudgeon pins [F16J 1/18](#)); Stud-and-socket releasable fastenings

Definition statement

This place covers:

- Means for preventing axial movement of a pin or the like by rotation, snap in features, engagement in a keyhole slot, separate parts, such as circlips and other locking members.
- Releasable stud-and-socket connections where the stud or the socket or both parts being resilient.

References

Limiting references

This place does not cover:

Rivets or deformable spigots	F16B 19/04
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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:

Limiting axial movement on shafts transmitting torque	F16D
Securing of gudgeon-pins	F16J 1/18

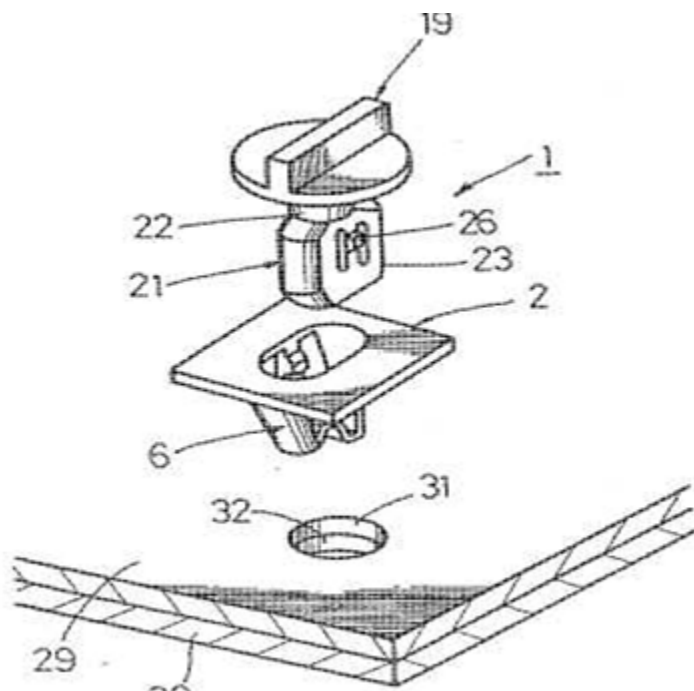
F16B 21/02

Releasable fastening devices locking by rotation (with snap-action [F16B 21/06](#); studs or coupling pins with resilient protrusions [F16B 21/08](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Electrical connectors locked by rotation	H01R 13/625
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Informative references

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

Releasable devices with snap-action	F16B 21/06
Studs or coupling pins with resilient protrusions	F16B 21/08

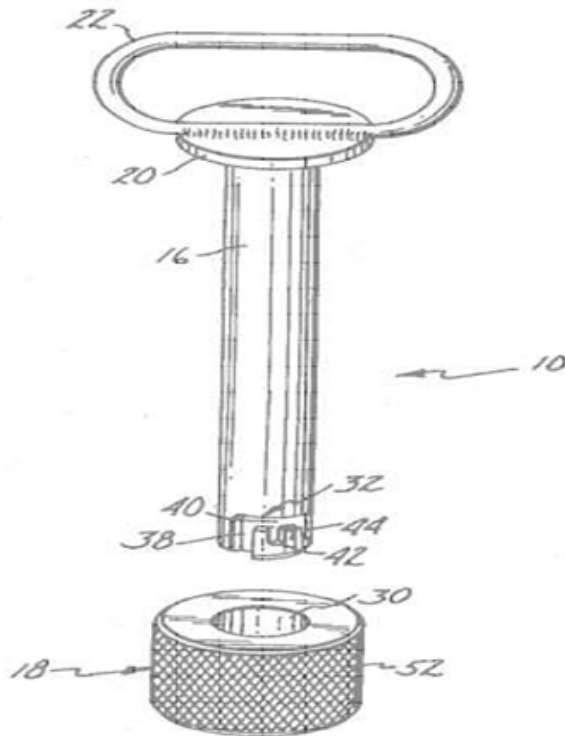
F16B 21/04

with bayonet catch

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 21/06**

Releasable fastening devices with snap-action {(quickly-detachable or mountable nuts to threaded bolts [F16B 37/0842](#))}

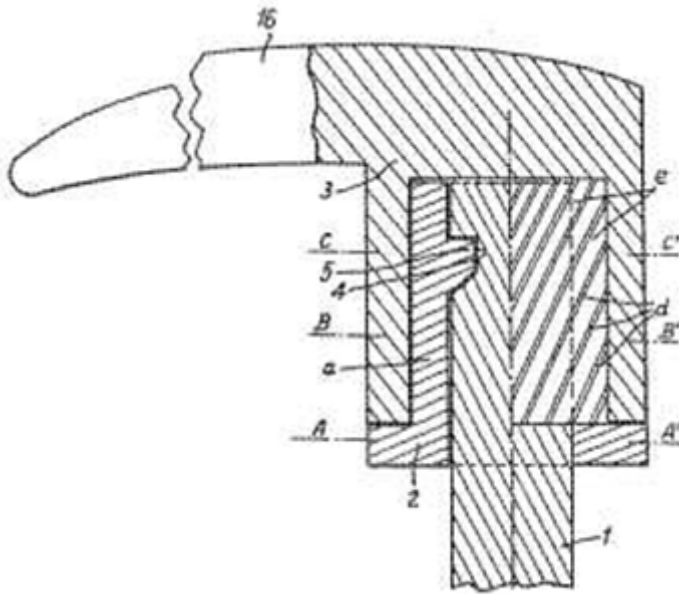
References**Limiting references**

This place does not cover:

Quickly-detachable or mountable nuts to threaded bolts	F16B 37/0842
--	------------------------------

F16B 21/065**{with an additional locking element}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

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

Rivets fastened by a drive pin	F16B 19/1081
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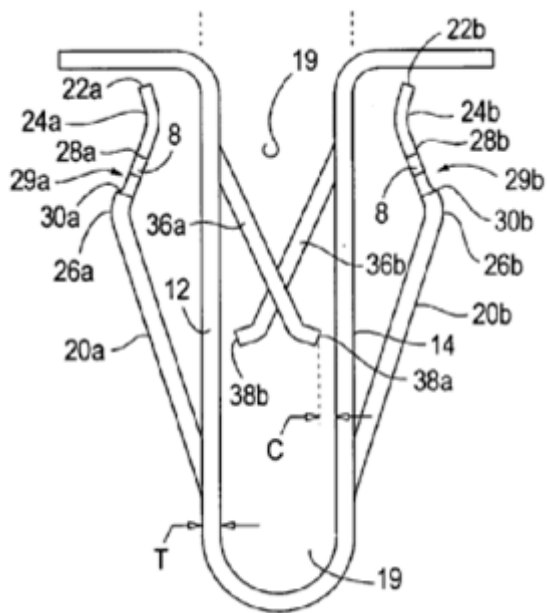
F16B 21/075

{the socket having resilient parts on its inside and outside}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

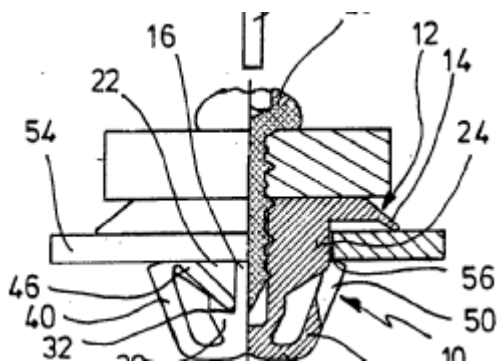
**F16B 21/076**

{the socket having a resilient part on its outside ([F16B 21/075](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



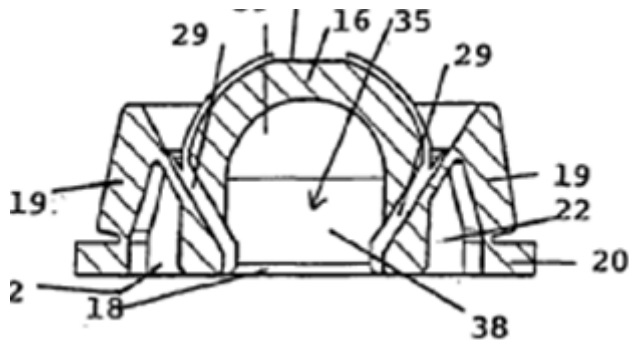
F16B 21/078

{the socket having a further molded-in or embedded component, e.g. a ring with snap-in teeth molded into it ([F16B 21/065](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



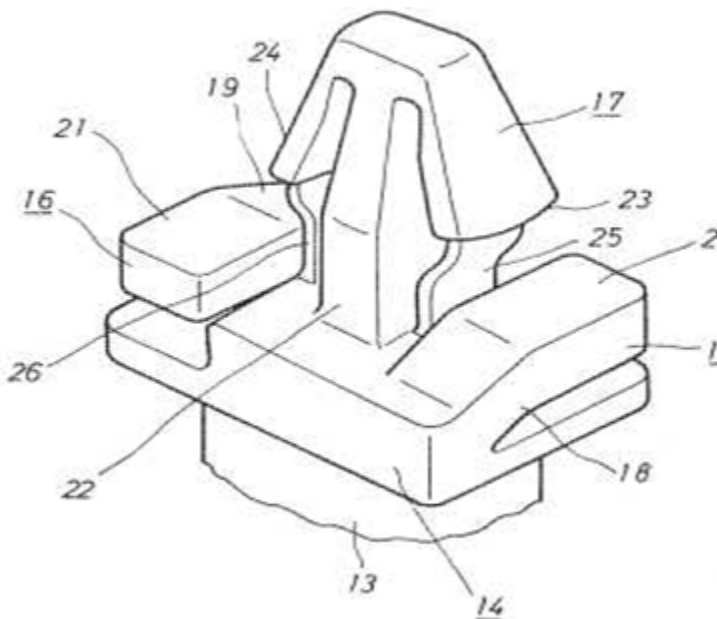
F16B 21/08

in which the stud, pin, or spigot has a resilient part ({[F16B 21/065](#), [F16B 21/125](#), [F16B 21/165](#), [F16B 37/043](#) take precedence); wall-dowels [F16B 13/00](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Dowels	F16B 13/00
Snap in sockets	F16B 21/075

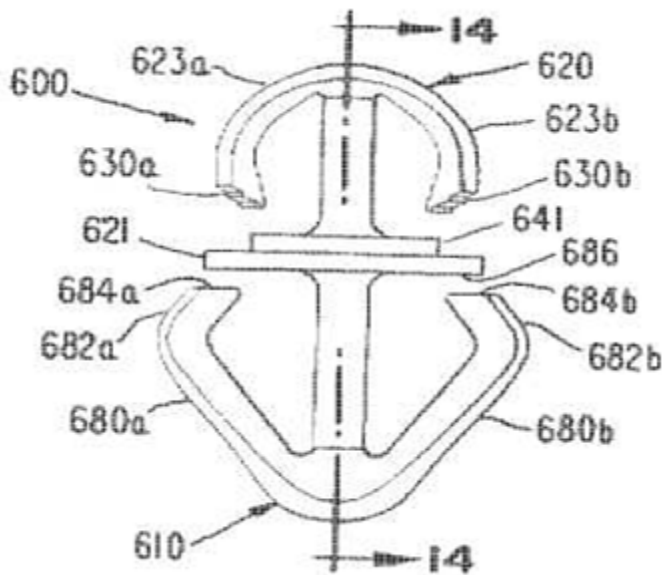
F16B 21/082

{the stud, pin or spigot having two resilient parts on its opposite ends in order to connect two elements}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



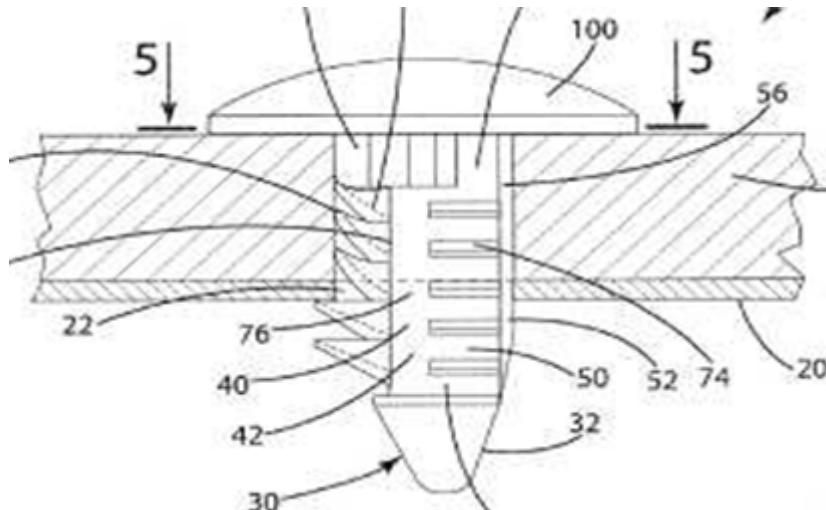
F16B 21/084

{with a series of flexible ribs or fins extending laterally from the shank of the stud, pin or spigot, said ribs or fins deforming predominantly in a direction parallel to the direction of insertion of the shank}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Resiliently deformable pins made in one piece	F16B 19/004
---	-----------------------------

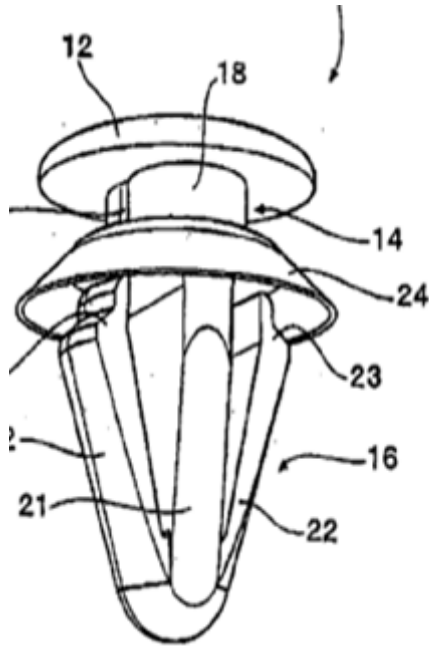
F16B 21/086

{the shank of the stud, pin or spigot having elevations, ribs, fins or prongs intended for deformation or tilting predominantly in a direction perpendicular to the direction of insertion}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Limiting references**

This place does not cover:

Snap in sockets	F16B 21/075
-----------------	-----------------------------

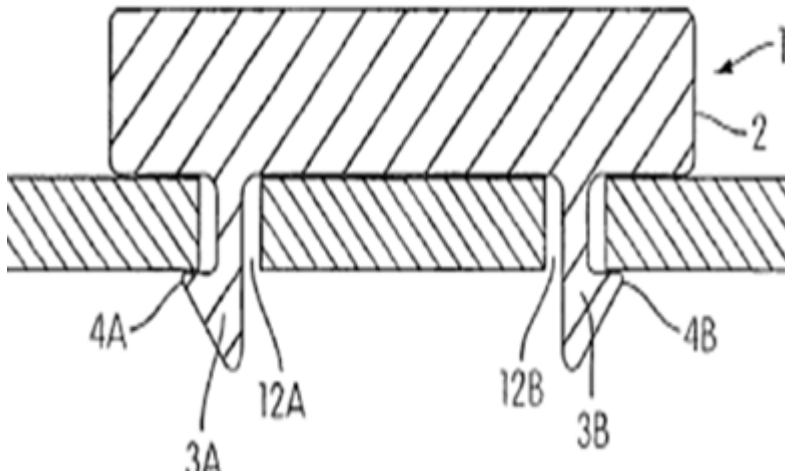
F16B 21/088

{the stud, pin or spigot being integrally formed with the component to be fastened, e.g. forming part of the sheet, plate or strip}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



Special rules of classification

In exceptional cases, namely if details of the snap in portion of the fastener are of interest, pipe or cable fasteners may be classified here

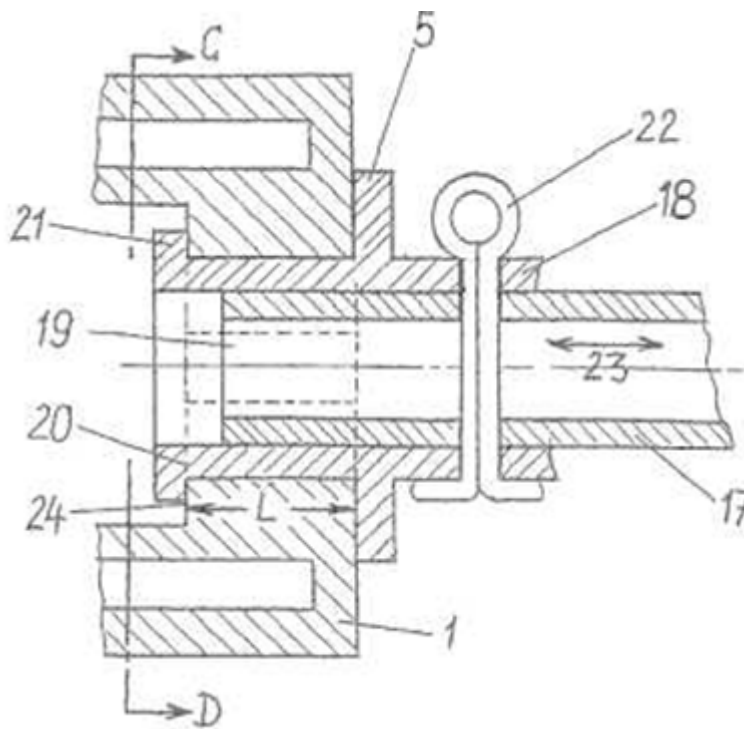
F16B 21/12

with locking-pins or split-pins thrust into holes

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



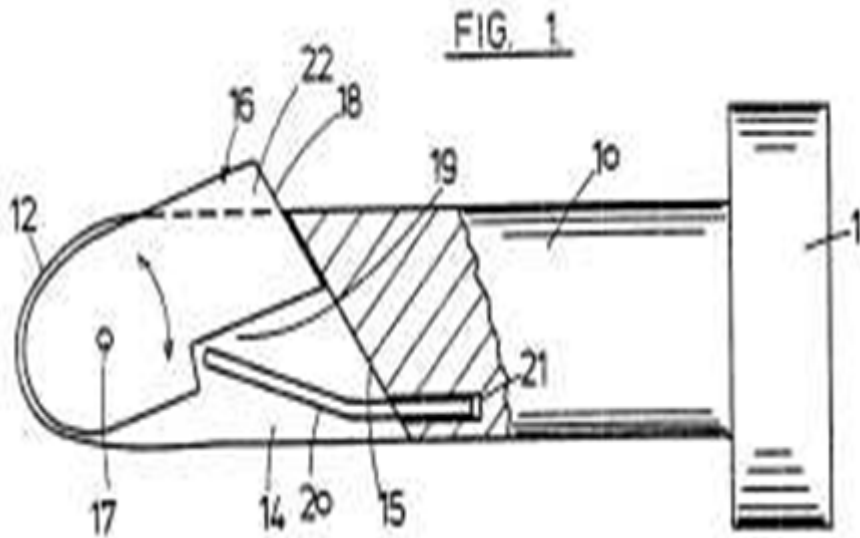
F16B 21/125

{radially resilient or with a snap-action member, e.g. elastic tooth, pawl with spring, resilient coil or wire}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**References****Informative references**

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

Temporary rivets	F16B 19/109
------------------	-----------------------------

F16B 21/16

with grooves or notches in the pin or shaft

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:

Connections of non-slidable parts in machine tools	B23Q 1/0063
--	-----------------------------

Informative references

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

Component parts of injection moulding machines	B29C 45/17
--	----------------------------

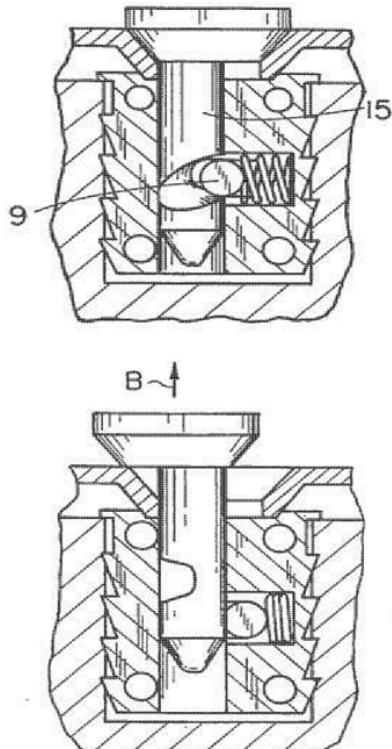
F16B 21/165

{with balls or rollers (for connections of rods or tubes engaged telescopically [F16B 7/1409](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Telescopic connections of tubes locked with balls or rollers	F16B 7/1409
--	-----------------------------

Informative references

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

Clamps with rollers and balls	F16B 2/16
-------------------------------	---------------------------

F16B 21/18

with circlips or like resilient retaining devices, {i.e. resilient in the plane of the ring or the like}; Details (spring-washers for locking nuts [F16B 39/24](#); adjusting rings [F16B 43/00](#))

References

Limiting references

This place does not cover:

Spring-washers for locking nuts	F16B 39/24
Adjusting rings	F16B 43/00

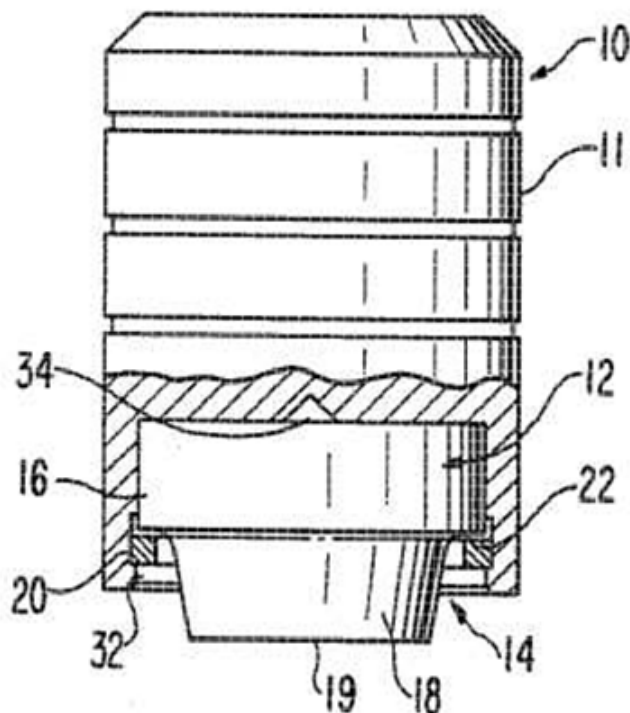
F16B 21/183

{internal, i.e. with spreading action}

Definition statement

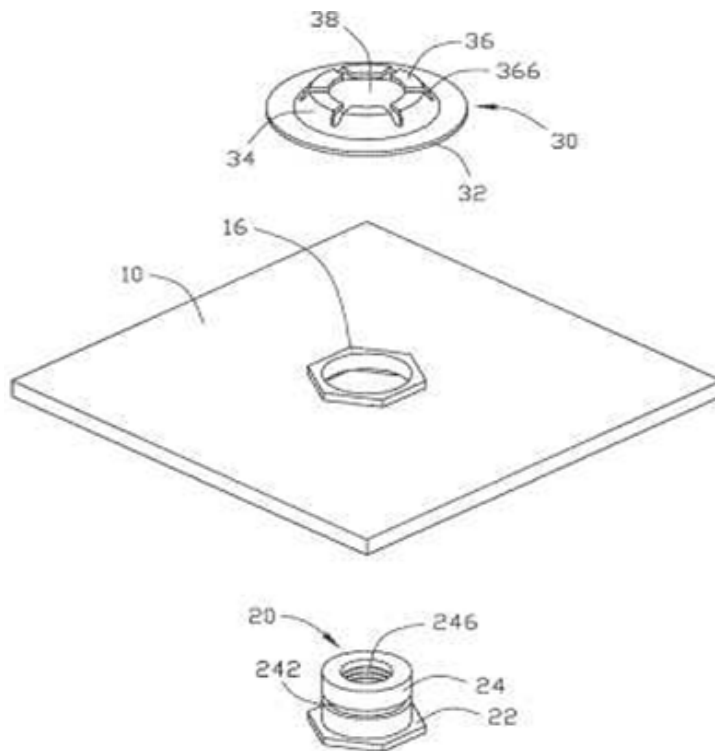
This place covers:

Illustrative example of subject matter classified in this group.



F16B 21/186**{external, i.e. with contracting action}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



F16B 21/20

for bolts or shafts without holes, grooves, or notches for locking members {(by rings resilient in their plane [F16B 21/18](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

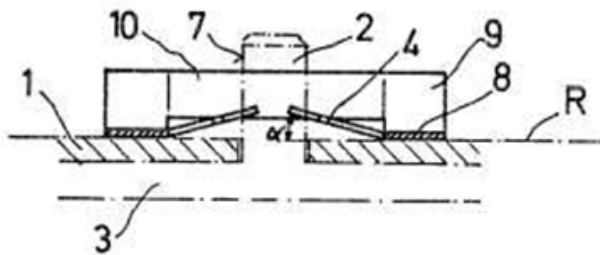
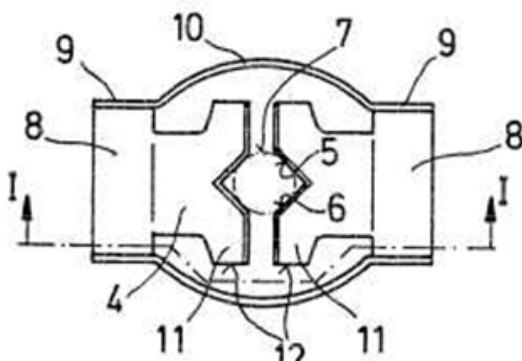


FIG. 2



References

Informative references

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

Releasable fastenings by rings resilient in their plane	F16B 21/18
---	----------------------------

F16B 23/00

Specially shaped {nuts or} heads of bolts or screws for rotations by a tool {(detachable ornamental heads for screws [A47G 3/00](#); screwdrivers, wrenches [B25B](#))}

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:

Detachables ornamental heads for screws	A47G 3/00
---	---------------------------

Informative references

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

Screwdrivers, wrenches	B25B
------------------------	----------------------

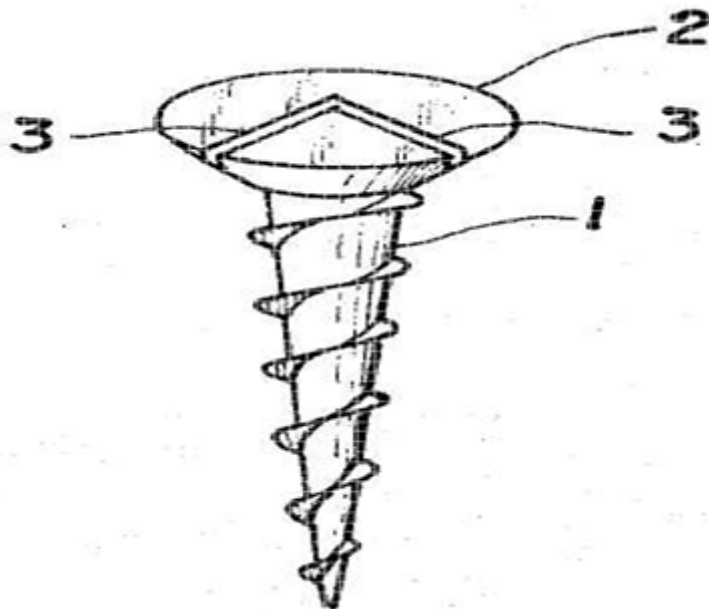
F16B 23/0007

{characterised by the shape of the recess or the protrusion engaging the tool
([F16B 23/0069](#) and [F16B 23/0076](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



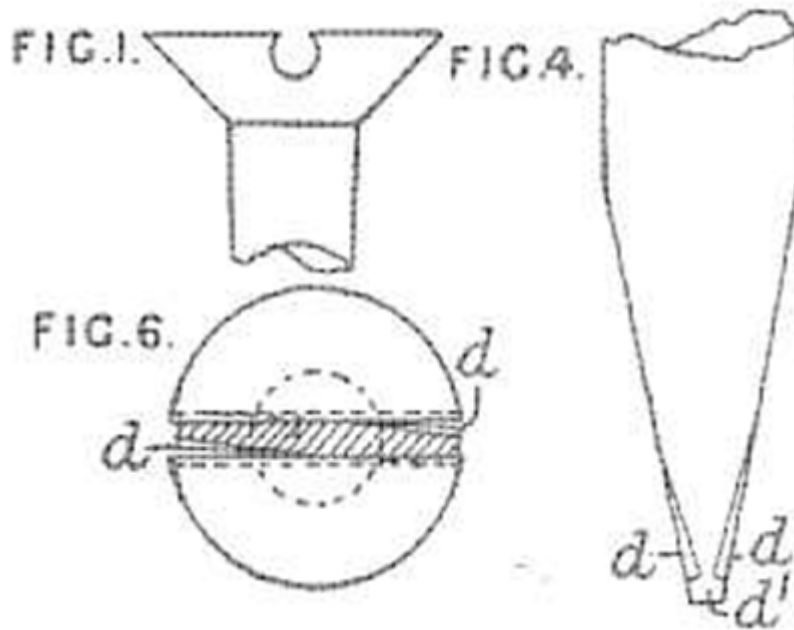
F16B 23/0015

{substantially rectangular, e.g. one-slot head}

Definition statement

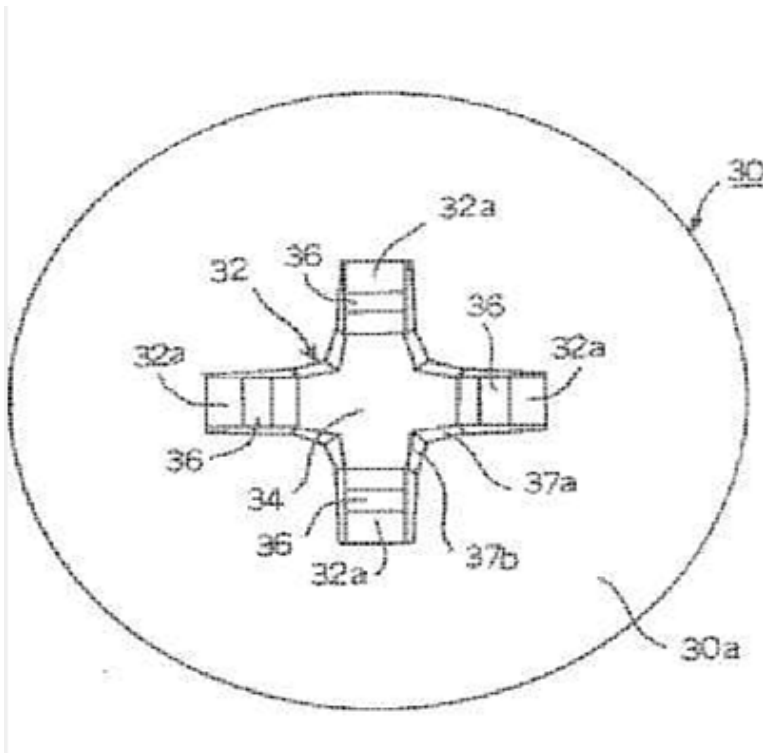
This place covers:

Illustrative example of subject matter classified in this group.



F16B 23/0023**{substantially cross-shaped}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



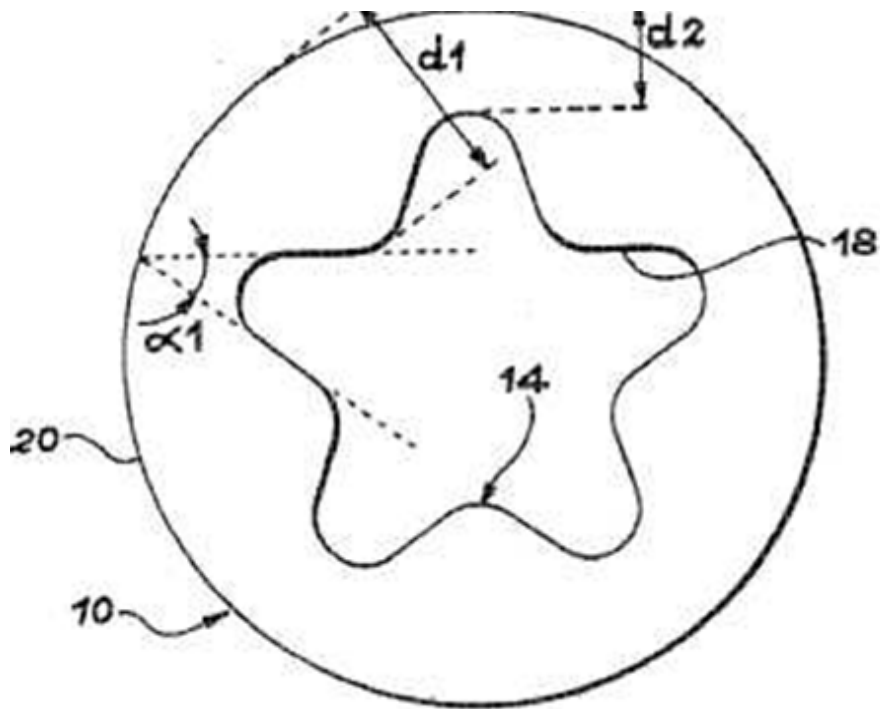
F16B 23/003

{star-shaped or multi-lobular, e.g. Torx-type, twelve-point star}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



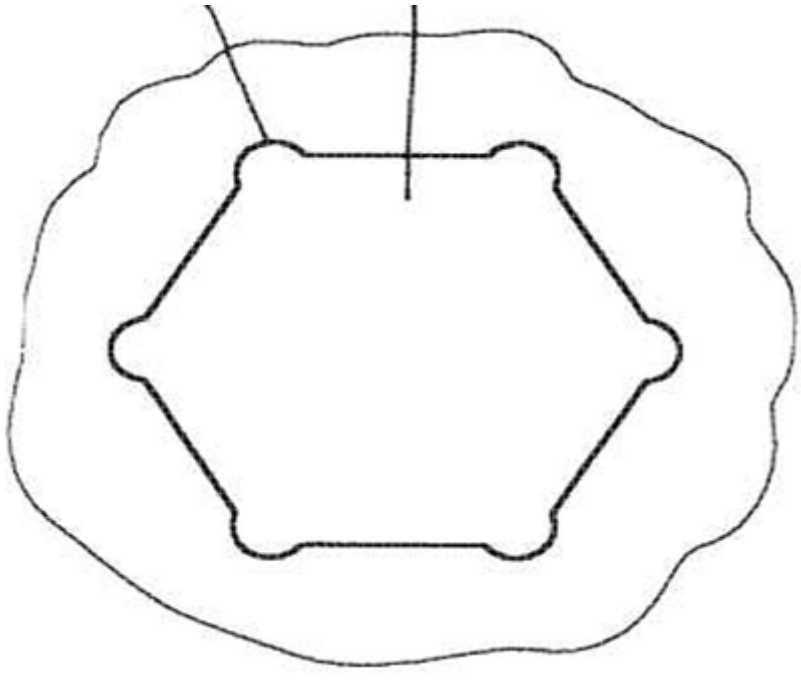
F16B 23/0038

{substantially prismatic with up to six edges, e.g. triangular, square, pentagonal, Allen-type cross-sections}

Definition statement

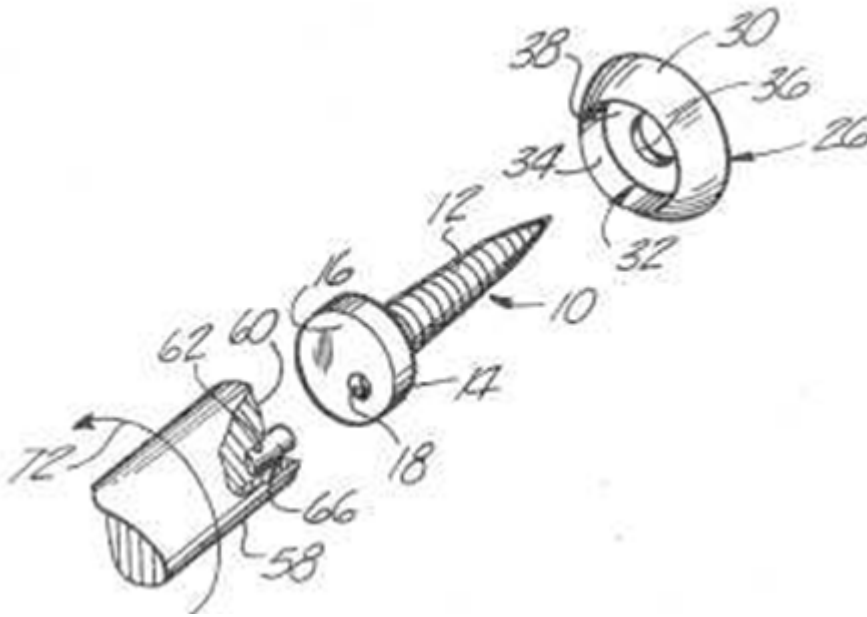
This place covers:

Illustrative example of subject matter classified in this group.



F16B 23/0046**{having one eccentric circular or polygonal recess or protrusion}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



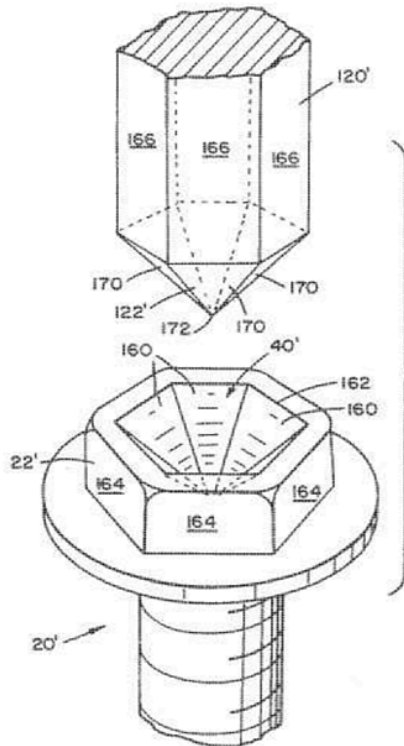
F16B 23/0053

{with a conical or prismatic recess for receiving a centering pin of the tool apparatus}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



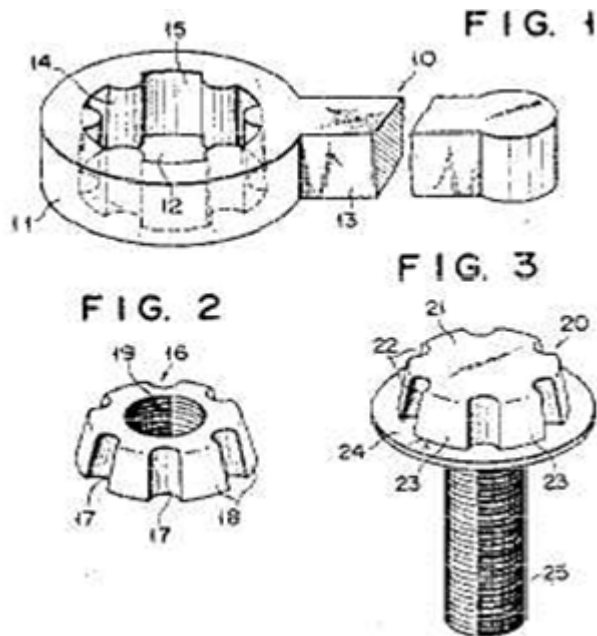
F16B 23/0061

{with grooves, notches or splines on the external peripheral surface designed for tools engaging in radial direction ([F16B 23/003](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



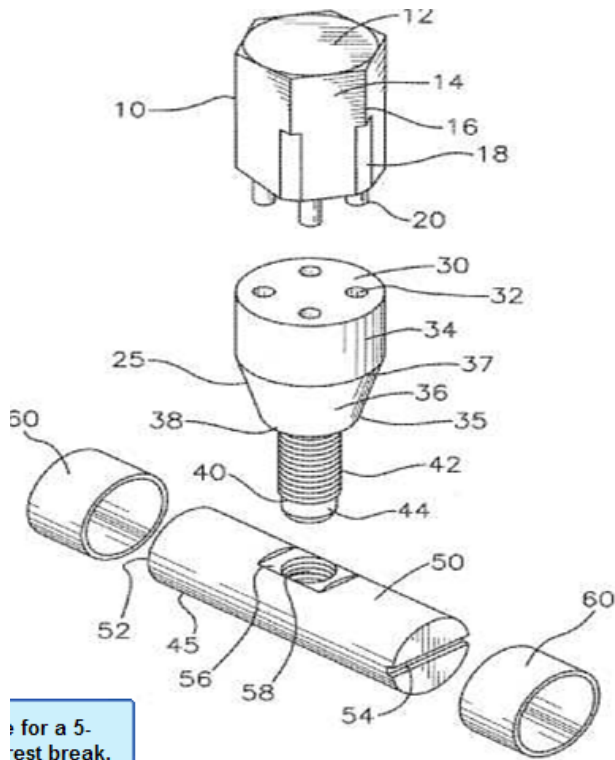
F16B 23/0069

{with holes to be engaged with corresponding pins on the tool or protruding pins to be engaged with corresponding holes on the tool}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



for a 5-
test break.

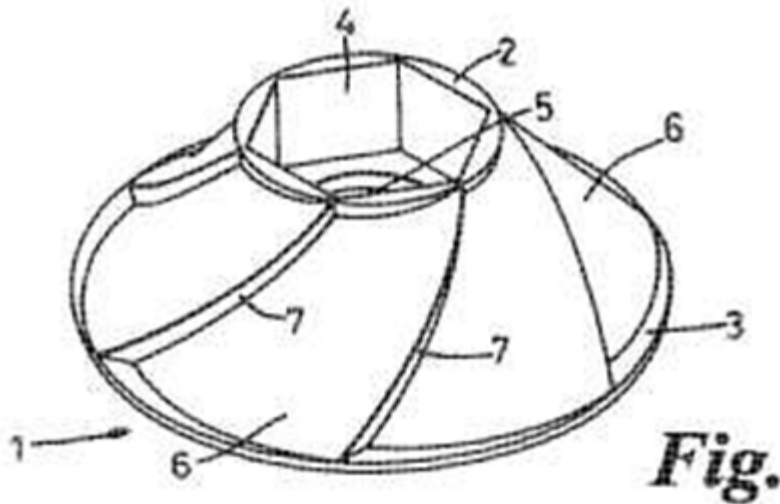
F16B 23/0076

{causing slipping of the tool in loosening rotation, i.e. disabling unscrewing unless another tool is used ([F16B 31/027](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



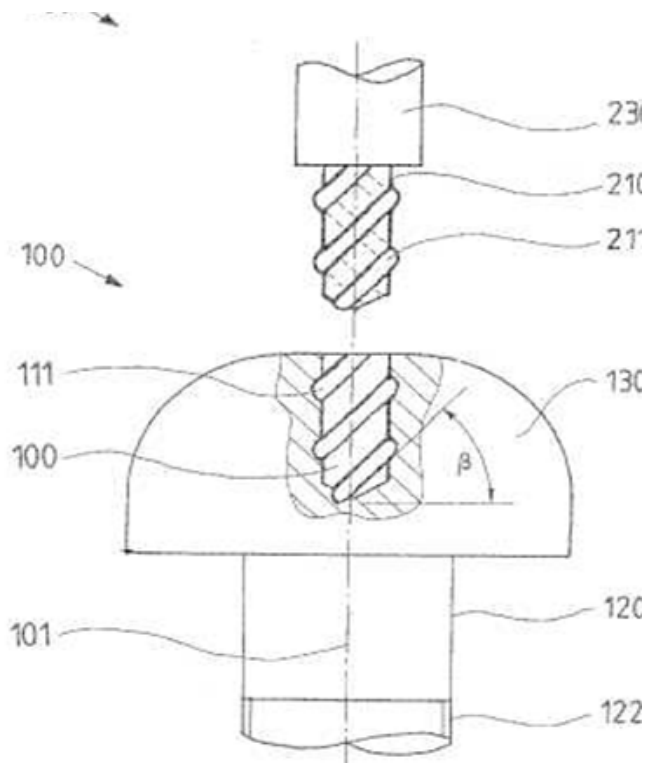
F16B 23/0084

{with a threaded engagement between the head of the bolt or screw and the tool}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



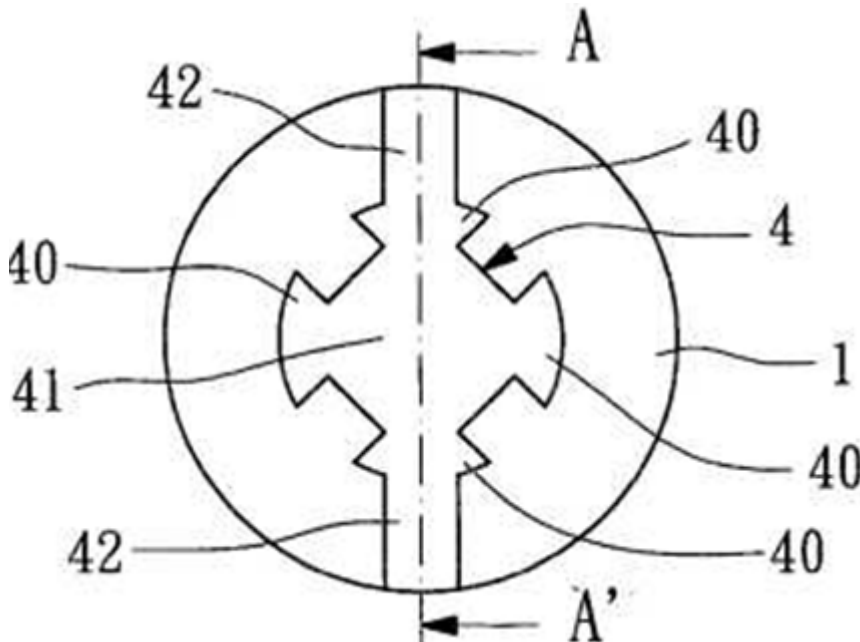
F16B 23/0092

{with a head engageable by two or more different tools ([F16B 23/0076](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 25/00**

Screws that cut thread in the body into which they are screwed, e.g. wood screws {([F16B 35/065](#) takes precedence; joining sheets or plates using screws with two separate threads [F16B 5/0275](#), using screws with adjustment sleeves [F16B 5/0283](#))}

Definition statement

This place covers:

Self tapping or self-cutting screws used for securing constructional elements or machine parts together.

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:

Self cutting screws used for medical purposes	A61B 17/00
---	----------------------------

Informative references

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

Joining sheets or plates using screws with two separate threads	F16B 5/0275
---	-----------------------------

Using screws with adjustment sleeves	F16B 5/0283
Self-cutting dowels	F16B 13/002
Geometry of the head	F16B 35/06 , F16B 35/065

Special rules of classification

For self cutting screws at least one classification in [F16B 25/00](#) should be attributed. Several classes in [F16B 25/00](#) in the inventive information field are generally to be attributed.

No additional classification should be attributed in [F16B 35/00](#), except for [F16B 35/06](#) and [F16B 35/065](#).

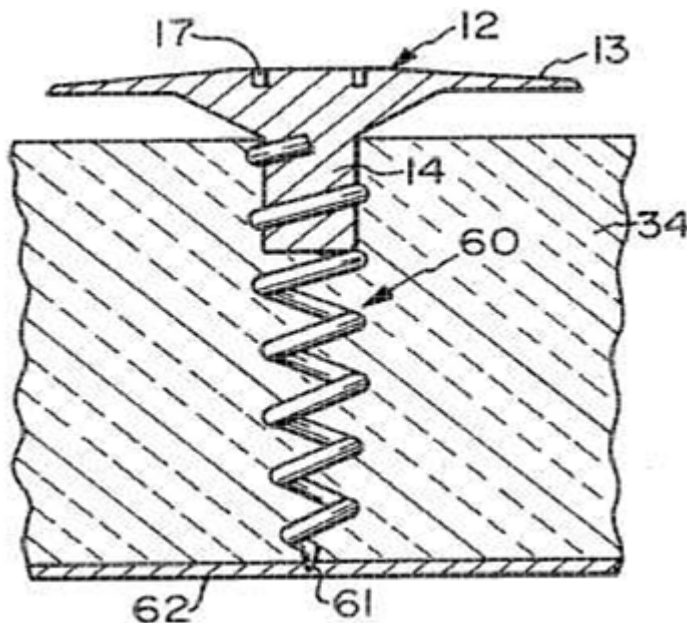
F16B 25/0005

{of the helical wire type (threaded wire-inserts [F16B 37/12](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Threaded wire inserts	F16B 37/12
-----------------------	----------------------------

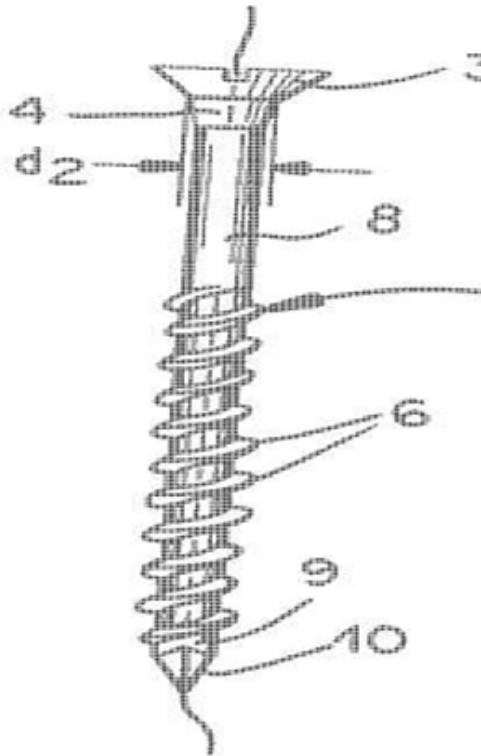
F16B 25/0015

{the material being a soft organic material, e.g. wood or plastic ([F16B 25/0031](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



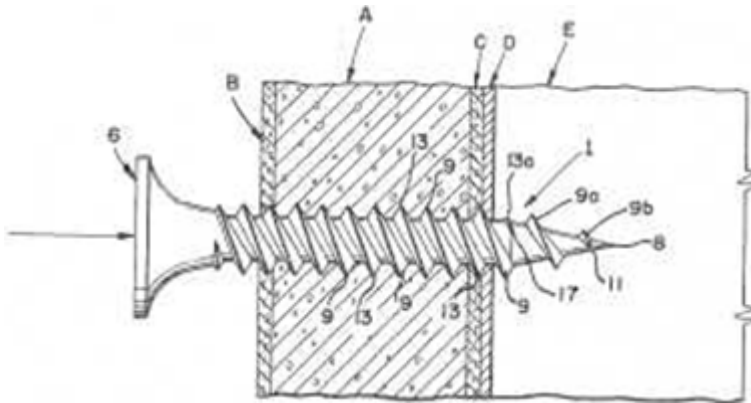
F16B 25/0031

{the screw being designed to be screwed into different materials, e.g. a layered structure or through metallic and wooden parts}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



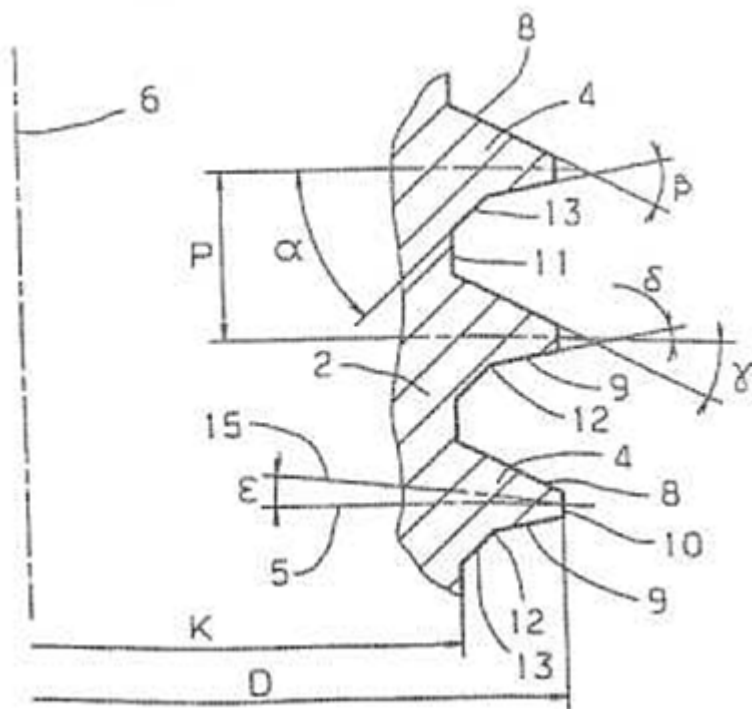
F16B 25/0047

{the ridge being characterised by its cross-section in the plane of the shaft axis}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



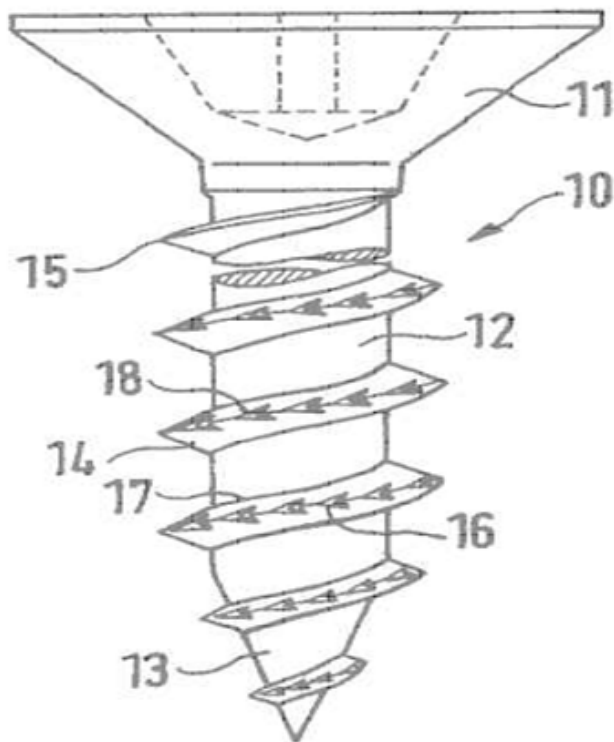
F16B 25/0052

{the ridge having indentations, notches or the like in order to improve the cutting behaviour}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

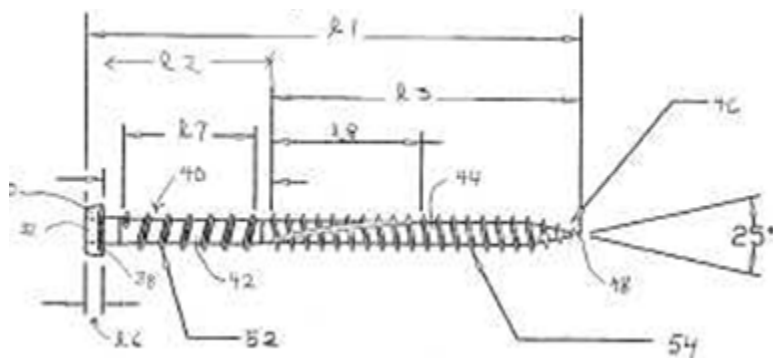
**F16B 25/0057**

{the screw having distinct axial zones, e.g. multiple axial thread sections with different pitch or thread cross-sections}

Definition statement

This place covers:

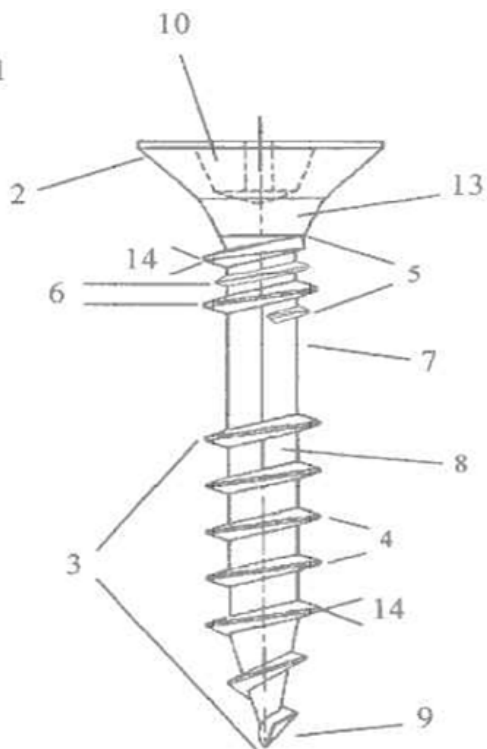
Illustrative example of subject matter classified in this group.



F16B 25/0063**{with a non-threaded portion on the shaft of the screw}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

Fig 1



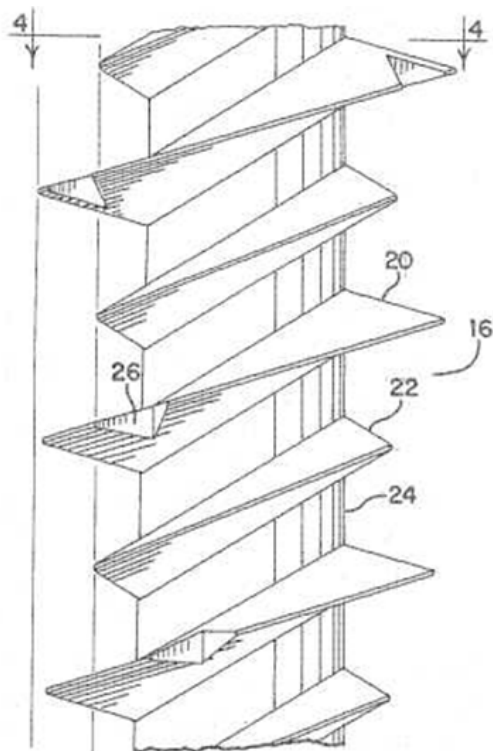
F16B 25/0068

{with multiple-threads, e.g. a double thread screws}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



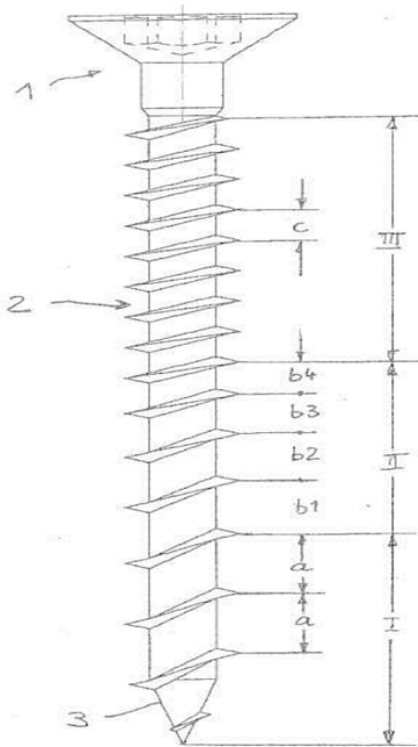
F16B 25/0073

{characterised by its pitch, e.g. a varying pitch}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



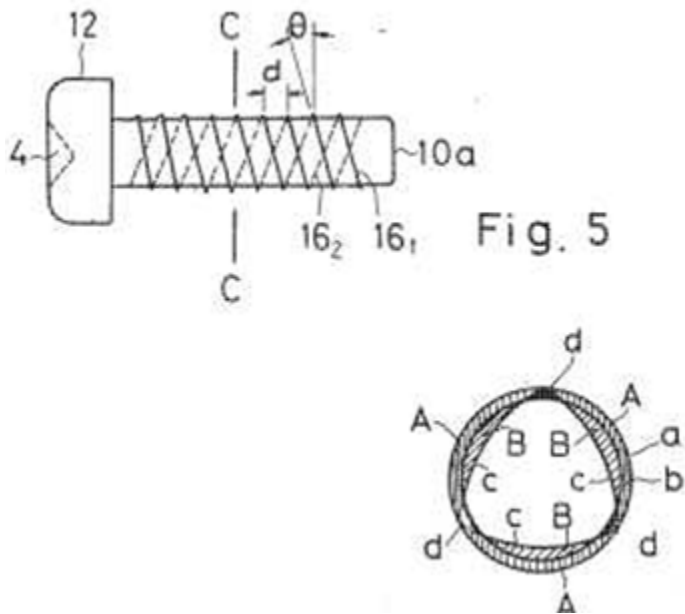
F16B 25/0078

{with a shaft of non-circular cross-section or other special geometric features of the shaft}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



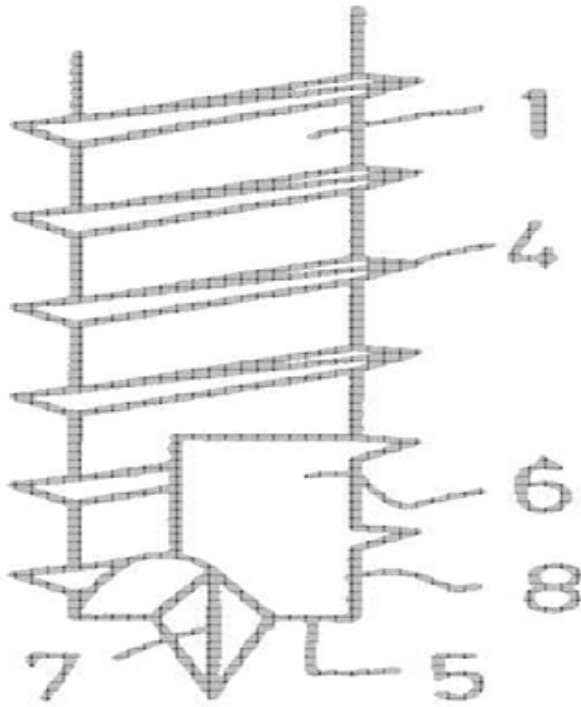
F16B 25/0084

{characterised by geometric details of the tip}

Definition statement

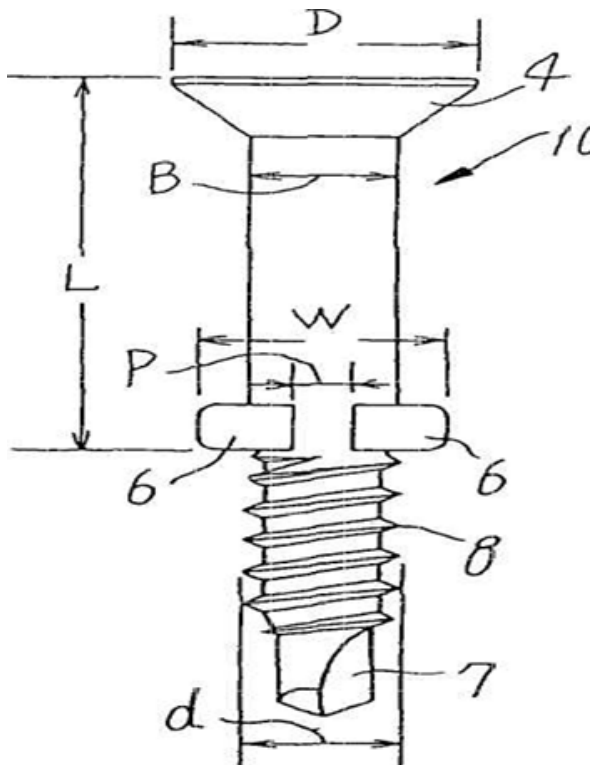
This place covers:

Illustrative example of subject matter classified in this group.



F16B 25/0089**{the screw having wings}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



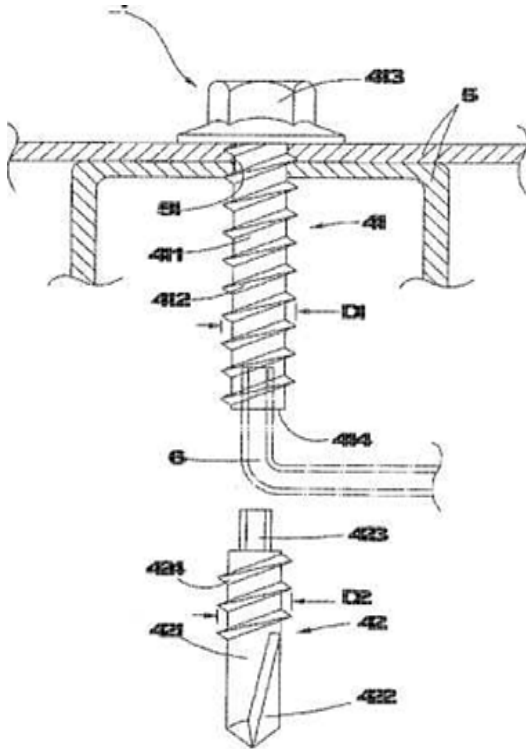
F16B 25/0094

{the screw being assembled or manufactured from several components, e.g. a tip out of a first material welded to shaft of a second material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



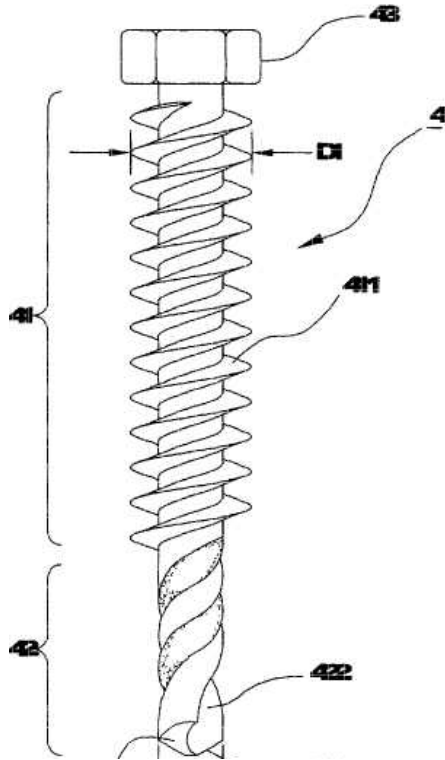
F16B 25/103

{by means of a drilling screw-point, i.e. with a cutting and material removing action}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Tools for drilling machines	B23B 51/00
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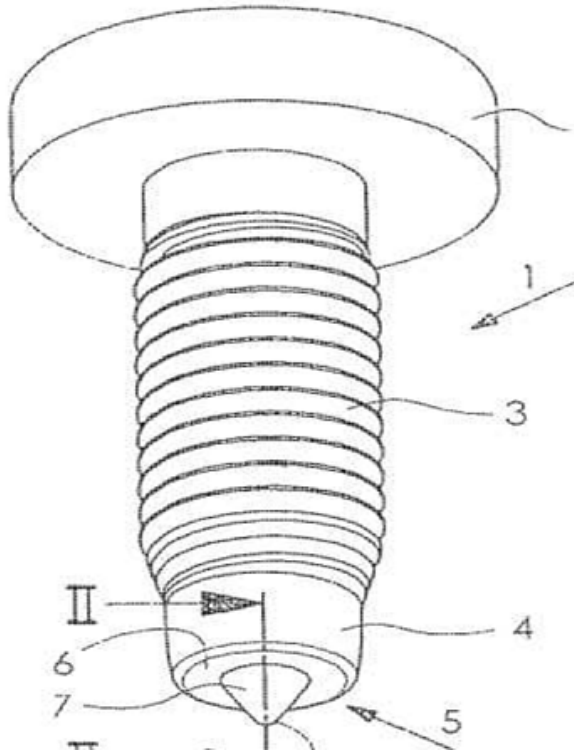
F16B 25/106

{by means of a self-piercing screw-point, i.e. without removing material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



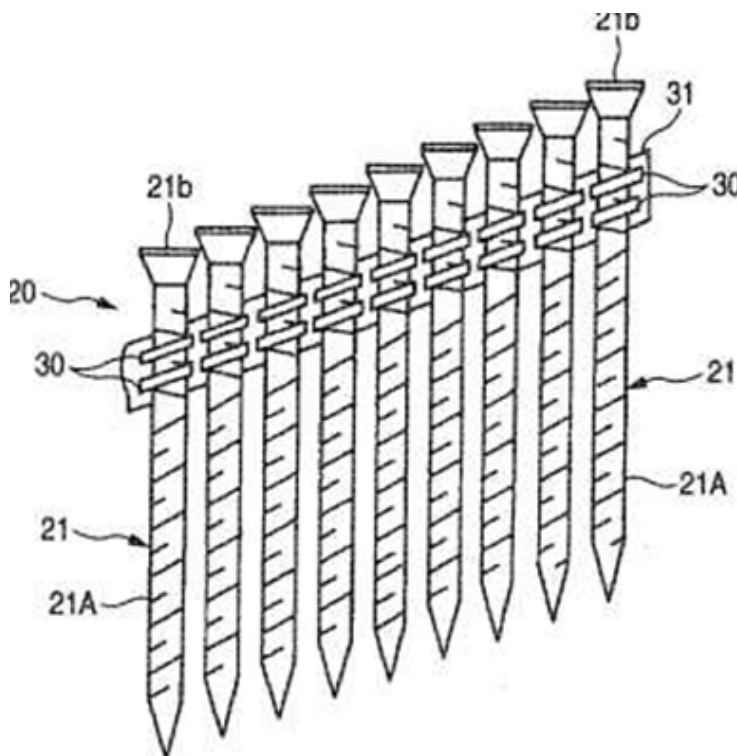
F16B 27/00

Bolts, screws, or nuts formed in integral series but easily separable, particularly for use in automatic machines {(arrangements for feeding screws or nuts in spanners, wrenches or screw-drivers with built-in magazines [B25B 23/06](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Nail formed in integral series but easily separable	F16B 15/08
Arrangements for feeding screws or nuts	B25B 23/04

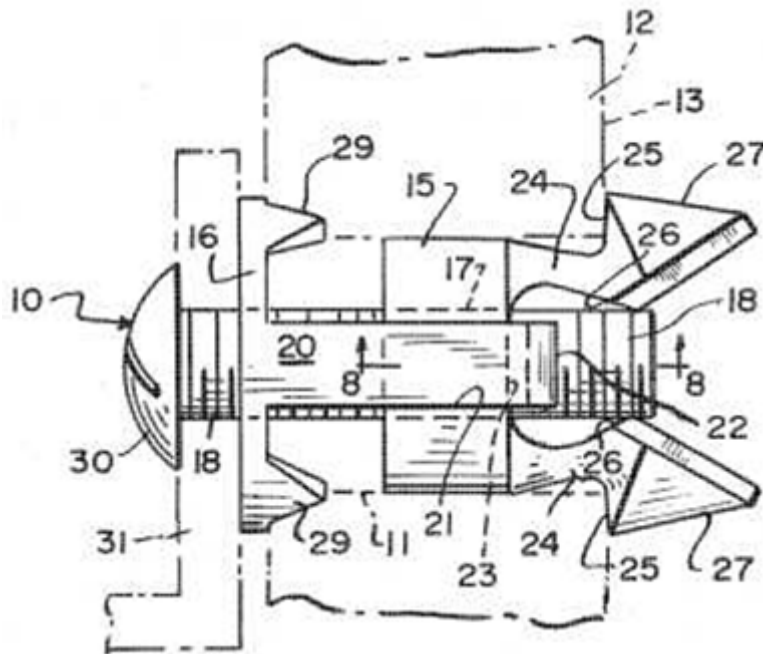
F16B 29/00

Screwed connection with deformation of nut or auxiliary member while fastening ({Nuts fastened to surfaces by riveting [F16B 37/065](#)}; members deformed for locking screws, bolts or nuts [F16B 39/22](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Nuts fastened to surfaces by riveting	F16B 37/065
Members deformed for locking screws, bolts or nuts	F16B 39/22

F16B 31/00

Screwed connections specially modified in view of tensile load; Break-bolts (shape of thread {[F16B 33/02](#); in couplings [F16D 9/00](#)})

Definition statement

This place covers:

Breakbolts

Screwed connections with indication of the load

Screwed connections maintaining a specific load

Screwed connections modified in view of a possible fatigue rupture

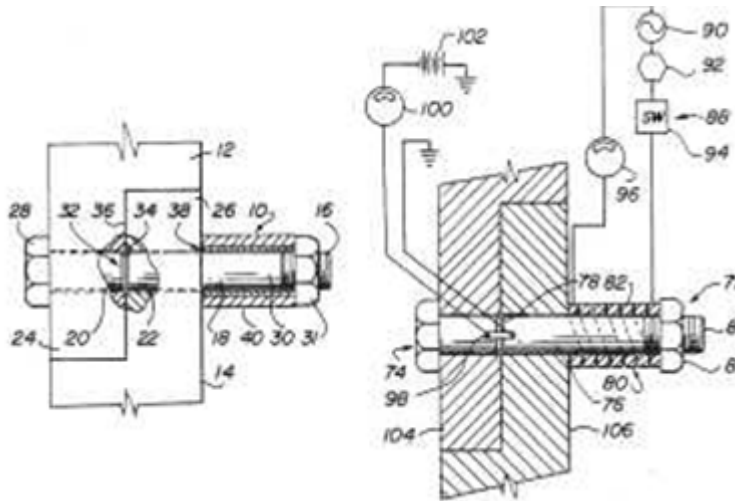
F16B 31/007

{Break-bolts loosening at high temperature}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



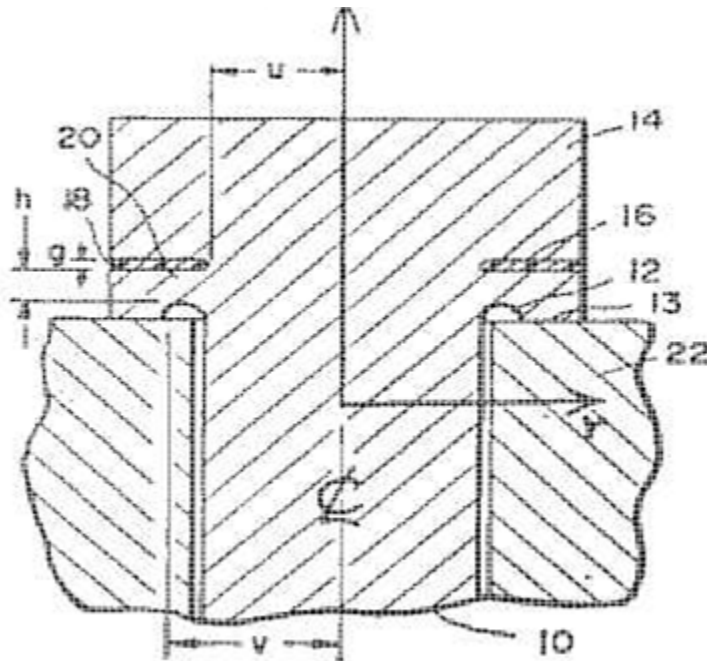
F16B 31/02

for indicating {the attainment of a particular tensile load} or limiting tensile load {(apparatus for, or method of, determining value of torque or twisting moment for tightening a nut or other member similarly stressed [G01L 5/24](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Apparatus for, or method of, determining value of torque or twisting moment for tightening a nut or other member similarly stressed	G01L 5/24
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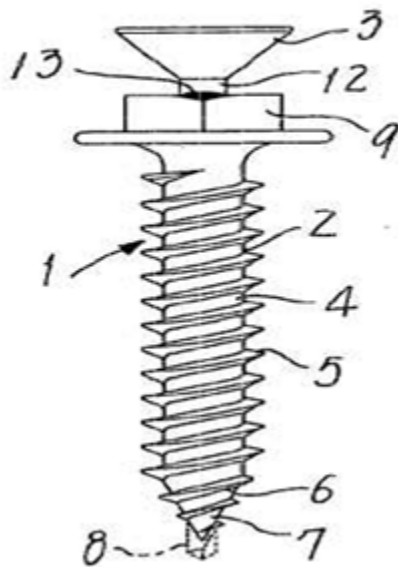
F16B 31/021

{by means of a frangible part ([F16B 31/025](#), [F16B 31/028](#) take precedence; break members in torque limiters or torque indicators in wrenches or screwdrivers [B25B 23/1415](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Break members in torque limiters or torque indicators in wrenches of screwdrivers	B25B 23/1415
---	------------------------------

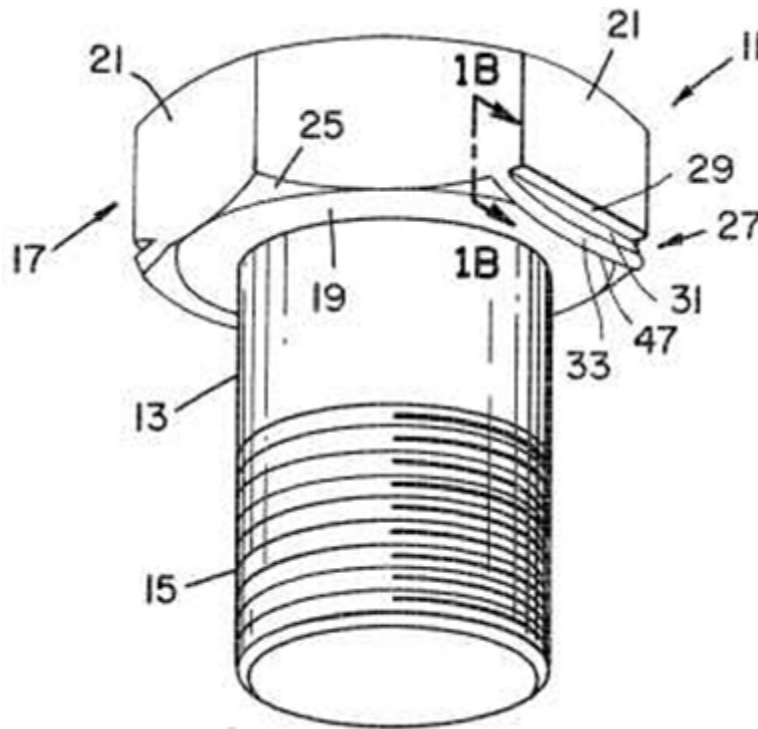
F16B 31/024

{with the bottom of the nut or of the head of the bolt having gaps which close as the bolt tension increases, e.g. with lips or with a load-indicating flange}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



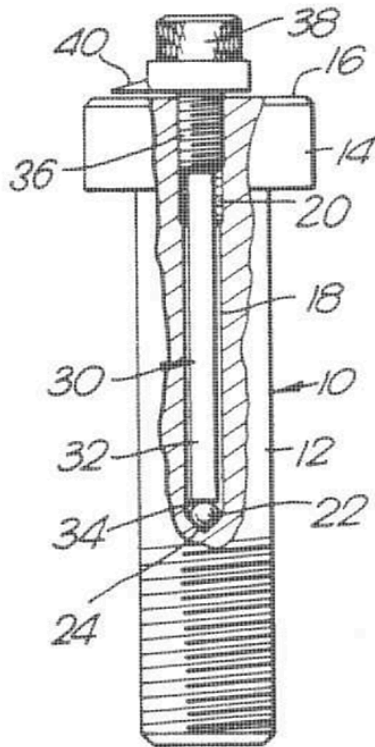
F16B 31/025

{with a gauge pin in a longitudinal bore in the body of the bolt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



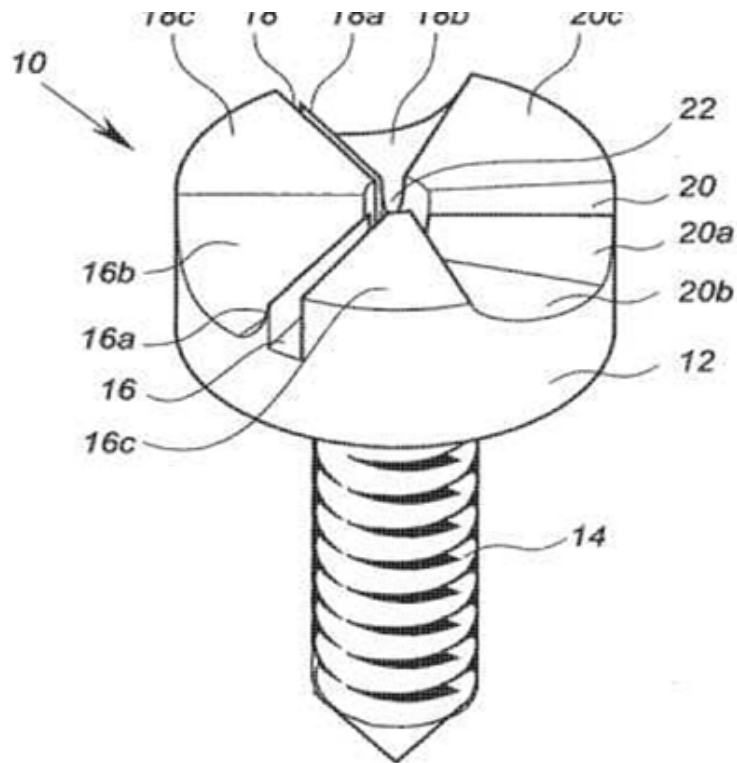
F16B 31/027

{with a bolt head causing the fastening or the unfastening tool to lose the grip when a specified torque is exceeded}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



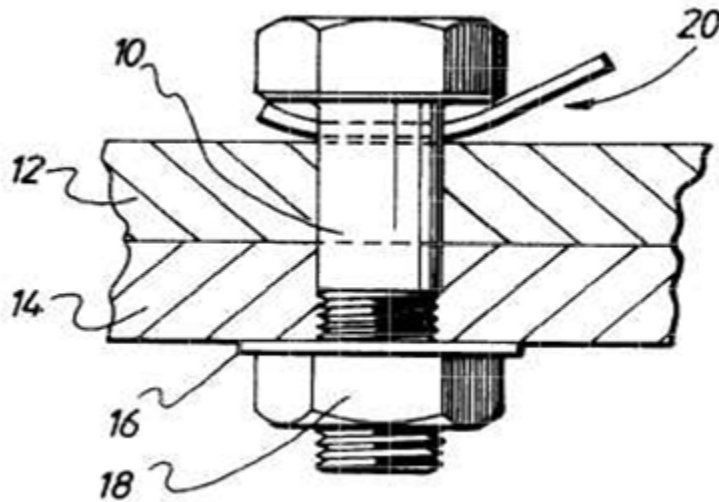
F16B 31/028

{with a load-indicating washer or washer assembly}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

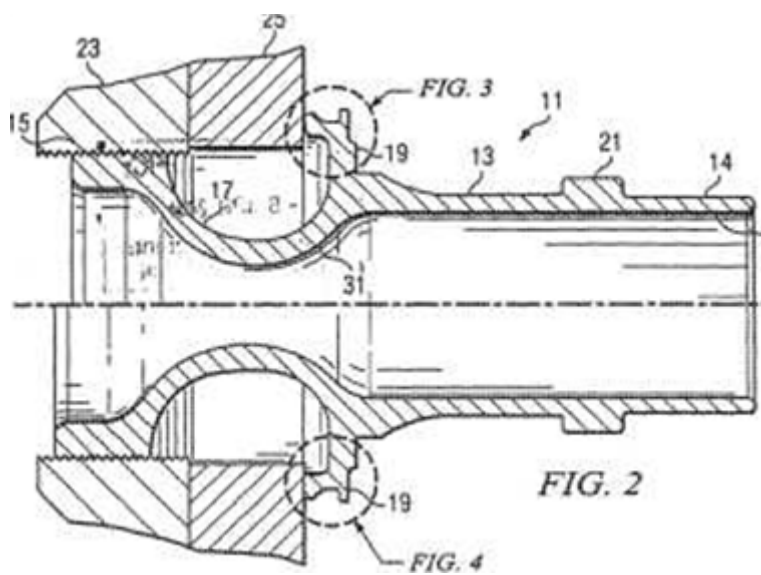
**F16B 31/04**

for maintaining {a} tensile load

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



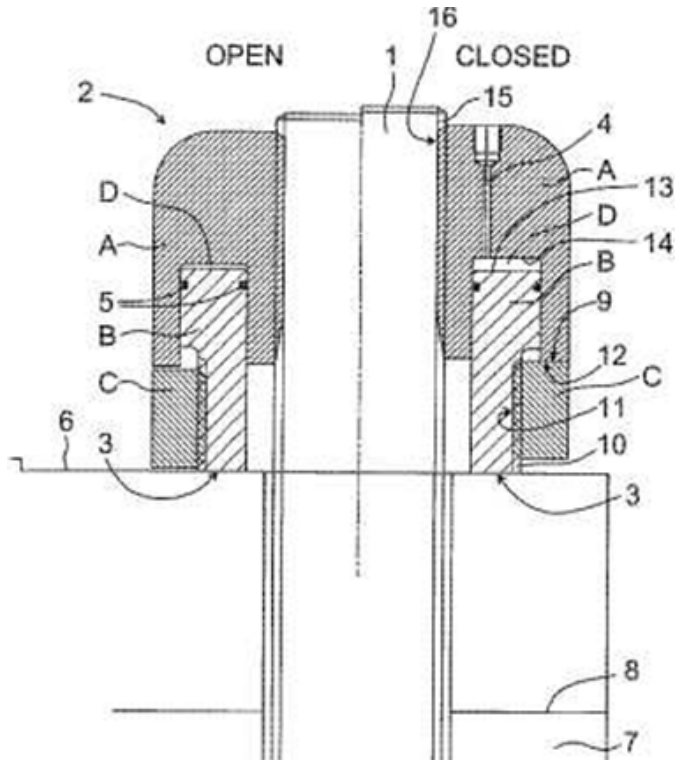
F16B 31/043

{Prestressed connections tensioned by means of liquid, grease, rubber, explosive charge, or the like (hydraulic bolt tensioners [B25B 29/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Hydraulic bolt tensioners	B25B 29/02
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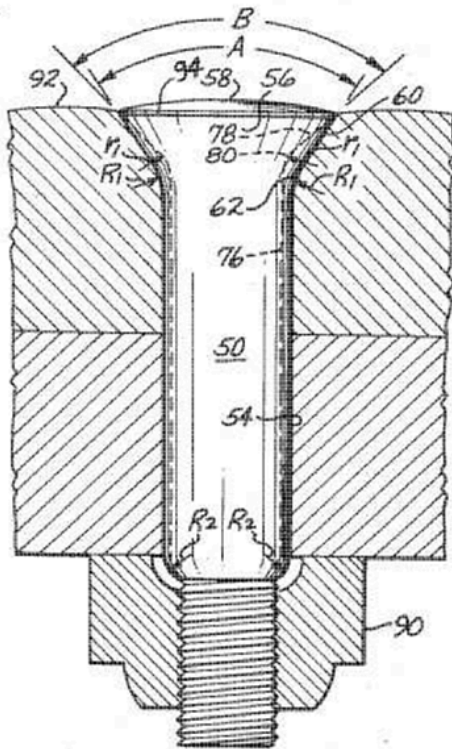
F16B 31/06

having regard to possibility of fatigue rupture

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 33/00

Features common to bolt and nut

Definition statement

This place covers:

Features of fastening members with thread that are common to bolt and nut.

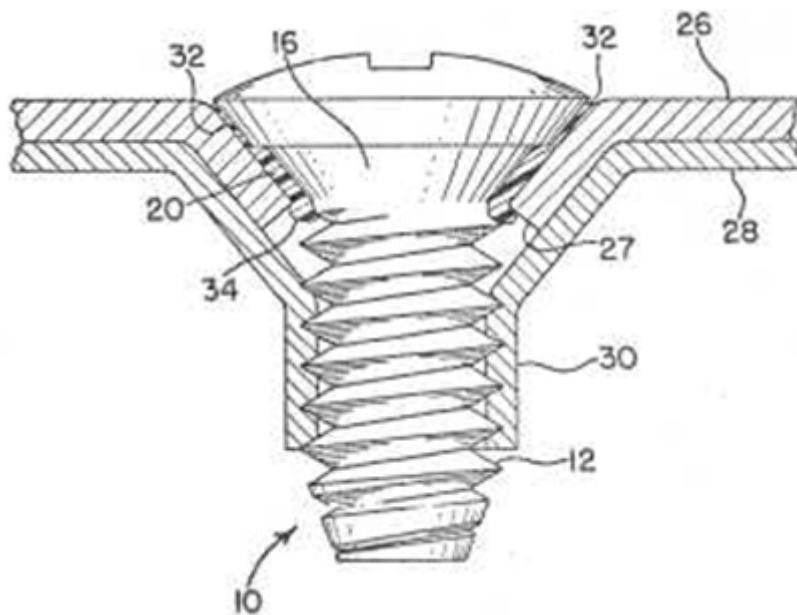
F16B 33/004

{Sealing; Insulation (by means of washers [F16B 43/001](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Sealing of rivets	F16B 19/008
Sealing by means of washers	F16B 43/001

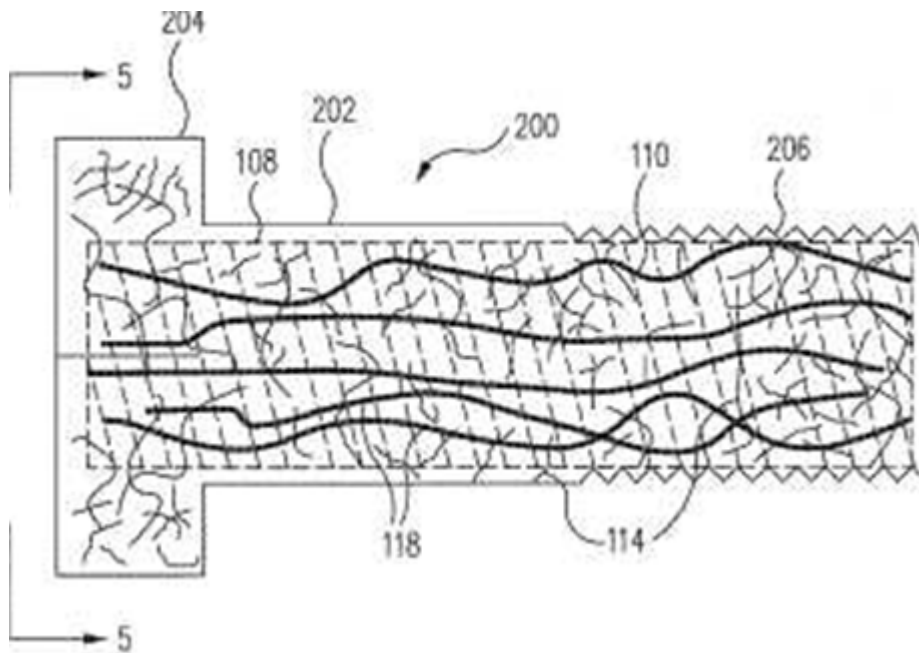
Glossary of terms

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

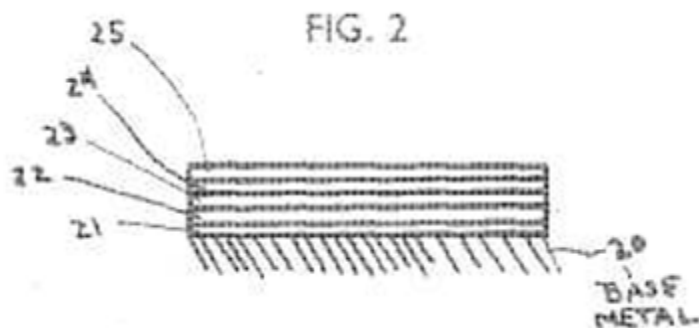
Insulation	includes electric insulation
------------	------------------------------

F16B 33/006**{Non-metallic fasteners using screw-thread}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 33/008****{Corrosion preventing means}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



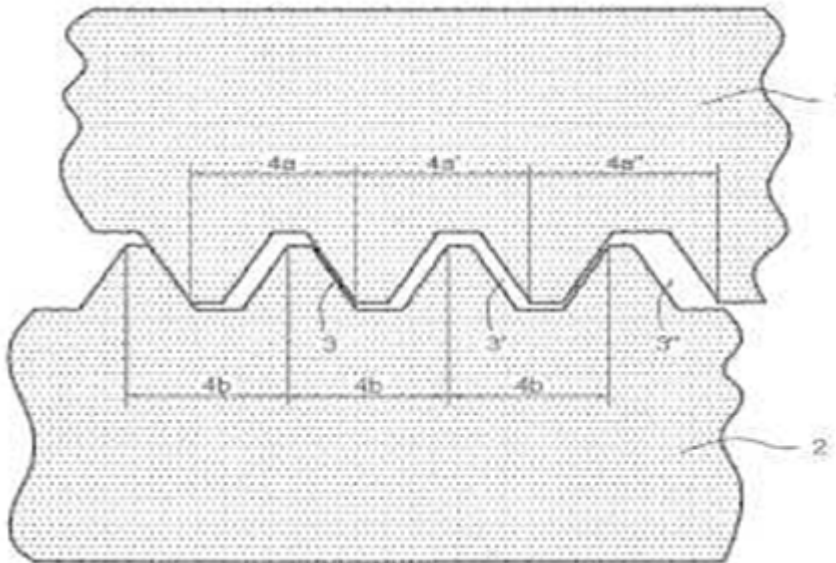
F16B 33/02

Shape of thread; Special thread-forms ({[F16B 25/00](#) takes precedence; used to remove paint or dirt layers [F16B 35/007](#), [F16B 37/002](#)}; used as screw-locking device [F16B 39/30](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Used to remove paint or dirt layers	F16B 35/007 , F16B 37/002
Used as screw-locking device	F16B 39/30

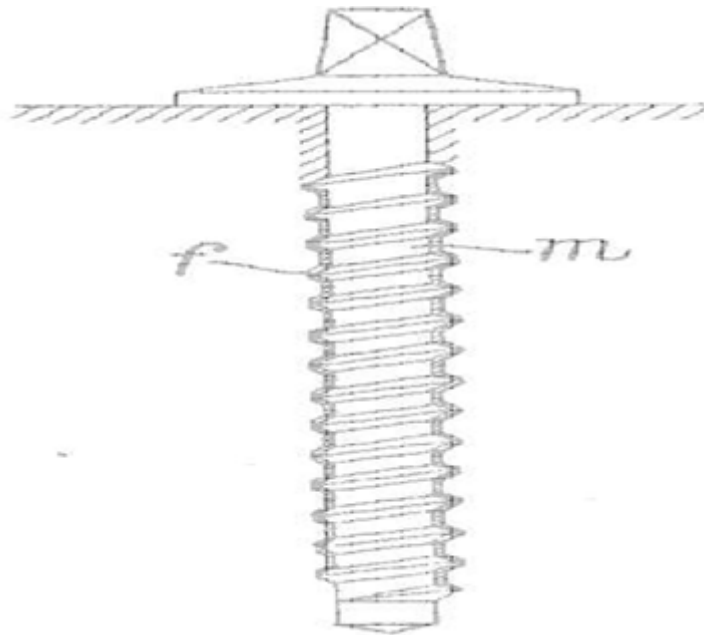
F16B 33/06

Surface treatment of parts furnished with screw-thread, e.g. for preventing seizure {or fretting (corrosion preventing means [F16B 33/008](#); settable coatings for locking threaded members [F16B 39/225](#); deformable coatings for locking threaded members [F16B 39/34](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Corrosion preventing means	F16B 33/008
Settable coatings for locking threaded members	F16B 39/225
Deformable coatings for locking threaded members	F16B 39/34

Informative references

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

Heat treatment for screws, bolts	C21D 9/0093
----------------------------------	-----------------------------

F16B 35/00

Screw-bolts; Stay-bolts; Screw-threaded studs; Screws; Set screws
 ({[F16B 33/008](#) takes precedence; joining sheets or plates using screws with two separate threads [F16B 5/0275](#); using screws with adjustment sleeves [F16B 5/0283](#)}; thread cutting screws [F16B 25/00](#))

Definition statement

This place covers:

Screws or bolts, i.e. fastening elements having an external thread, i.e. a helical ridge wrapped around its shaft

References

Informative references

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

Joining sheets or plates using screws with two separate threads	F16B 5/0275
using screws with adjustment sleeves	F16B 5/0283
Thread cutting screws	F16B 25/00

Special rules of classification

Thread cutting screws are classified in [F16B 25/00](#). An additional entry can be attributed in [F16B 35/06](#).

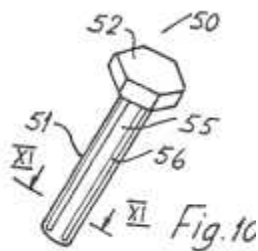
F16B 35/002

{onto which threads are cut during screwing ([F16B 37/002](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



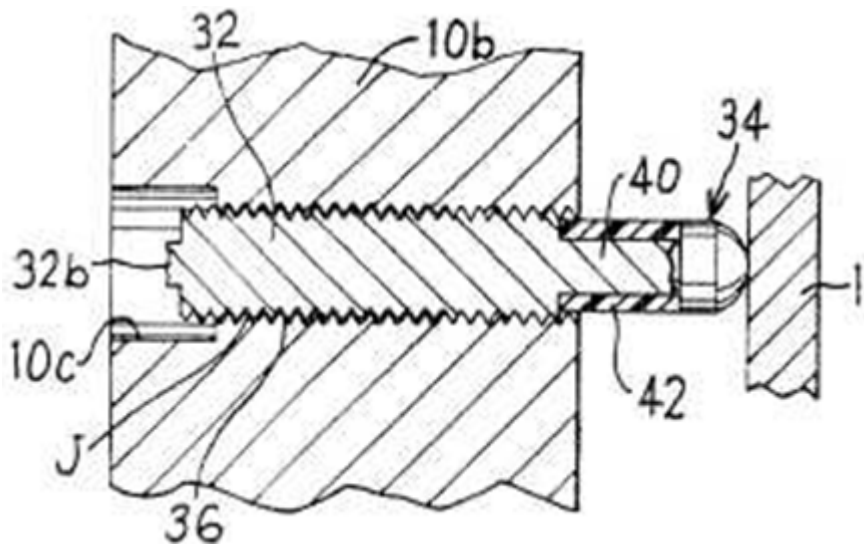
F16B 35/005

{Set screws; Locking means therefor}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 35/007

{Removing paint or dirt layers covering the threaded part of nut-like members}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

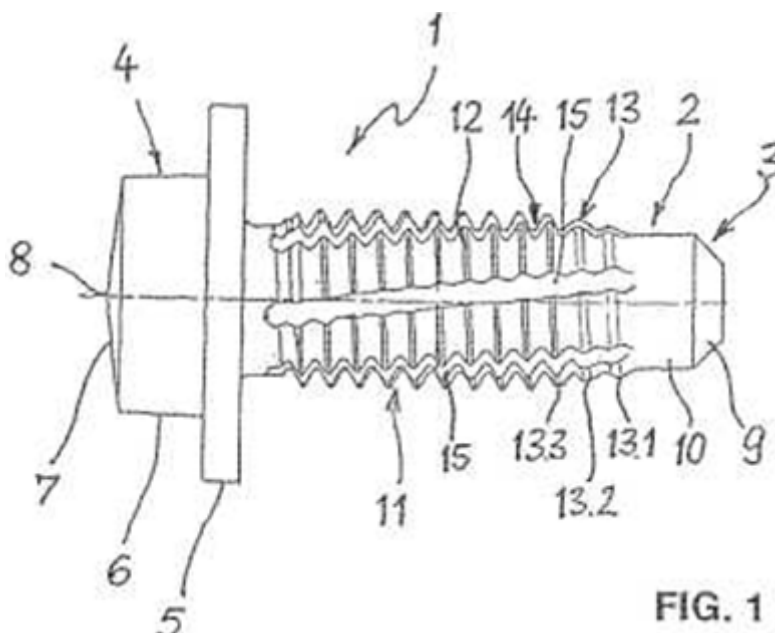


FIG. 1

F16B 35/02**divided longitudinally****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

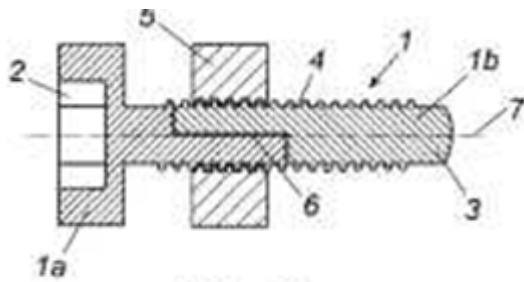


Fig. 1

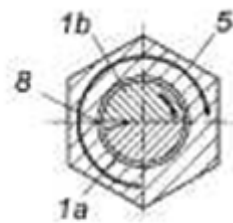


Fig. 4

F16B 35/04**with specially-shaped head or shaft in order to fix the bolt on or in an object****(locking the bolt against turning in the object by the use of accessory parts****[F16B 39/00](#))****References****Limiting references***This place does not cover:*

Locking the bolt against turning in the object by the use of accessory parts	F16B 39/00
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F16B 35/041

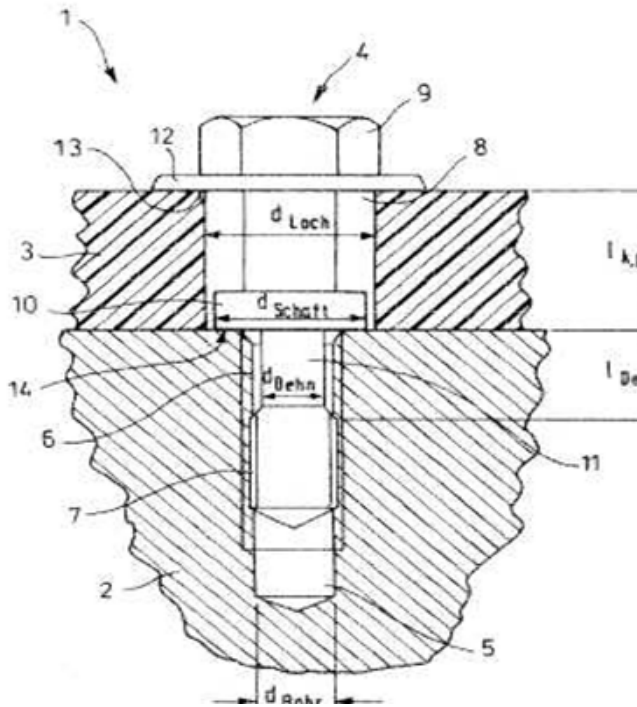
{Specially-shaped shafts (shape of thread [F16B 33/02](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

Fig.1



References

Informative references

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

Shape of thread	F16B 33/02
-----------------	----------------------------

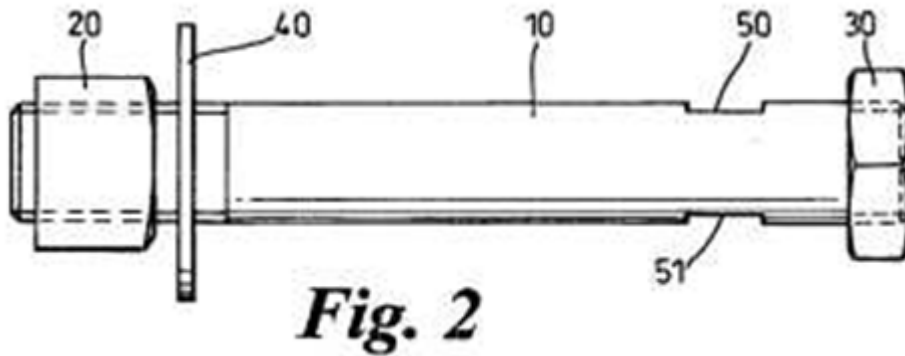
F16B 35/042

{for retention or rotation by a tool, e.g. of polygonal cross-section}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

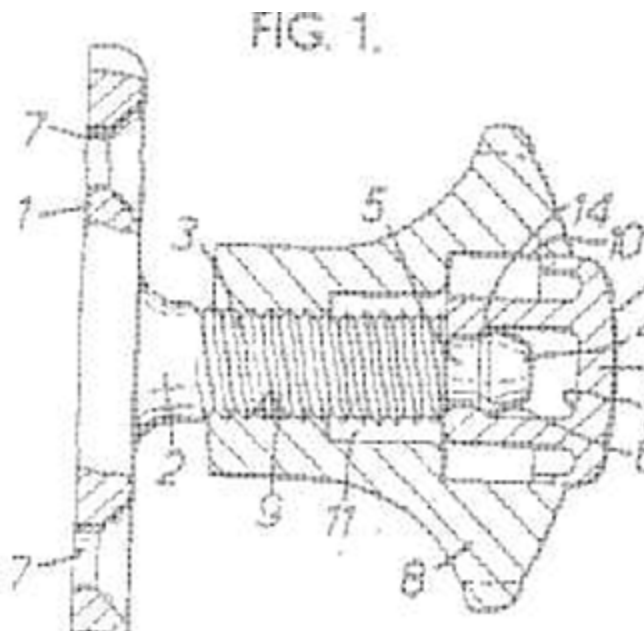
**F16B 35/044**

{Specially-shaped ends}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



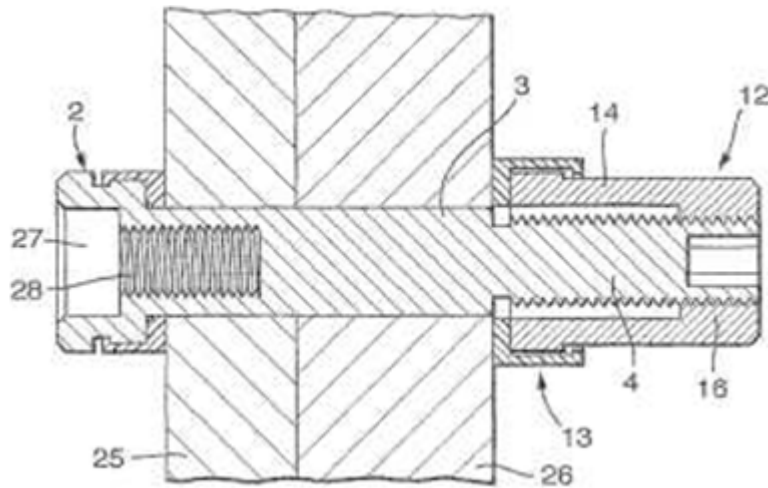
F16B 35/045

{for retention or rotation by a tool (specially shaped heads of bolts or screws for rotation by a tool [F16B 23/00](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



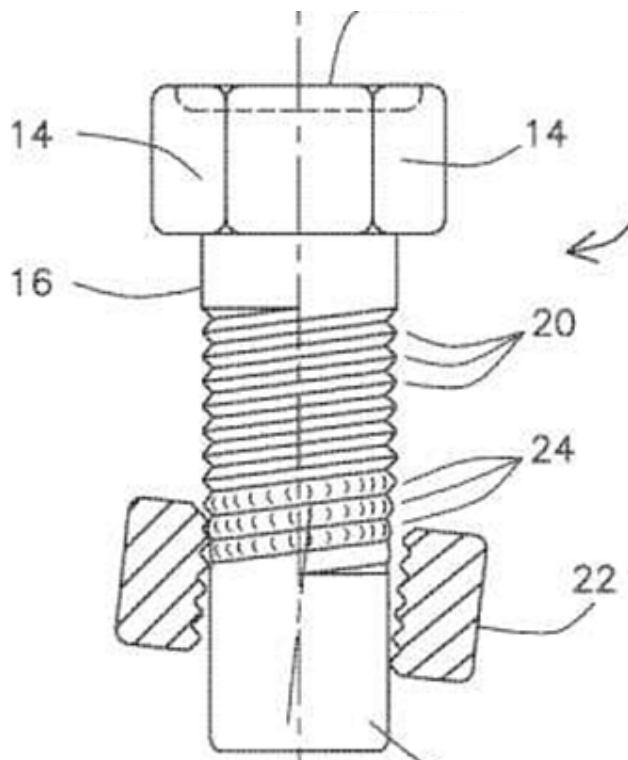
F16B 35/047

{for preventing cross-threading, i.e. preventing skewing of bolt and nut}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



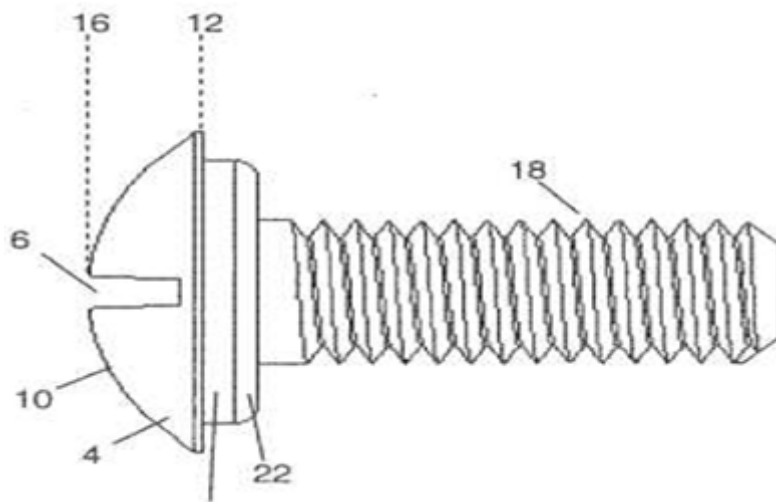
F16B 35/048

{Specially-shaped necks (F16B 35/06 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



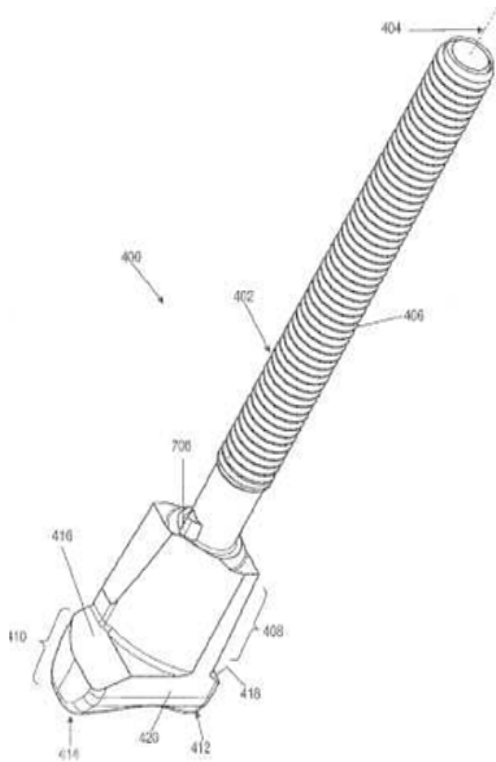
F16B 35/06

Specially-shaped heads (special shape in order to rotate the bolt [F16B 23/00](#) {; separate hook adaptors for bolts [F16B 43/025](#)})

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

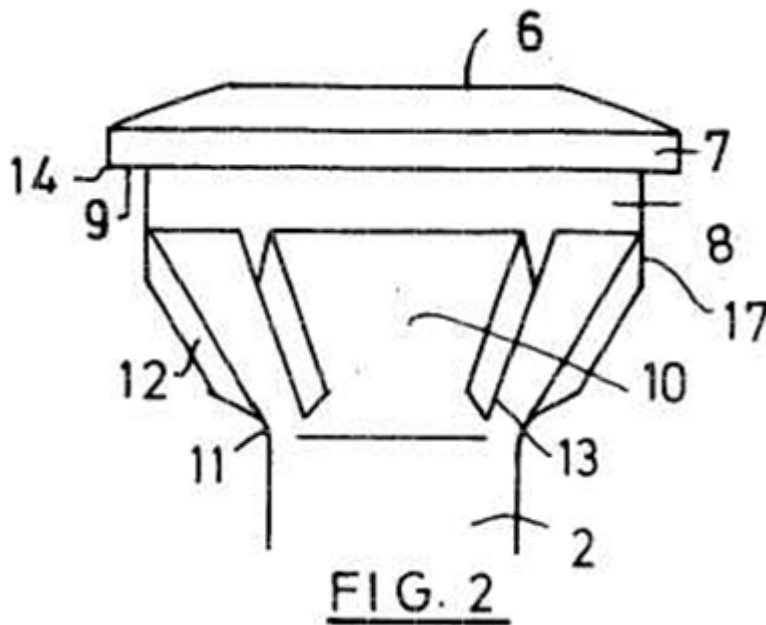
Separate hook adaptors for bolts	F16B 43/025
----------------------------------	-----------------------------

Special rules of classification

Self threaded screws with specially shaped heads are also classified in this group.

F16B 35/065**{with self-countersink-cutting means}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 37/00****Nuts or like thread-engaging members {(specially shaped for rotations by a tool [F16B 23/00](#))}****Definition statement***This place covers:*

Nuts, i.e. fasteners with a threaded hole.

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

Specially adapted for rotation by a tool	F16B 23/00
Making of nuts	B21D 53/24 , B21K 1/56 , B21K 1/64 , B21H 3/027

Special rules of classificationGroups [F16B 37/04](#) comprise also threaded studs that are fastened to a surface.

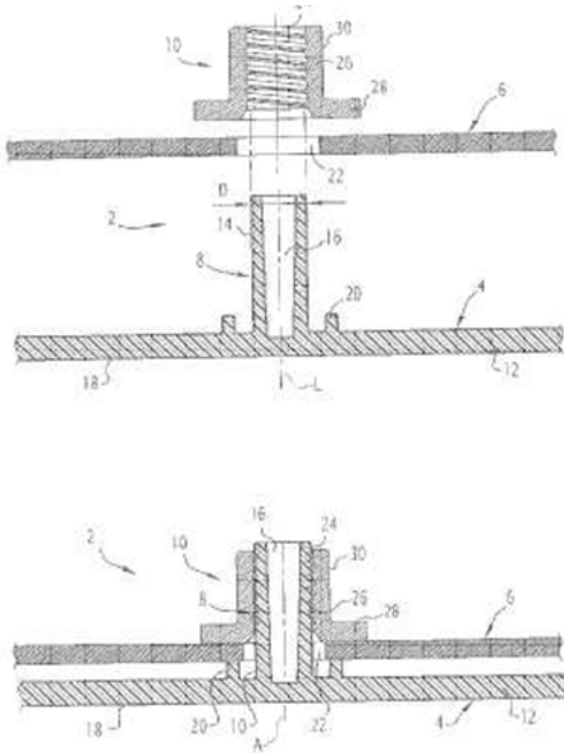
F16B 37/002

{cutting threads during screwing; removing paint or dirt layers covering threaded shanks}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



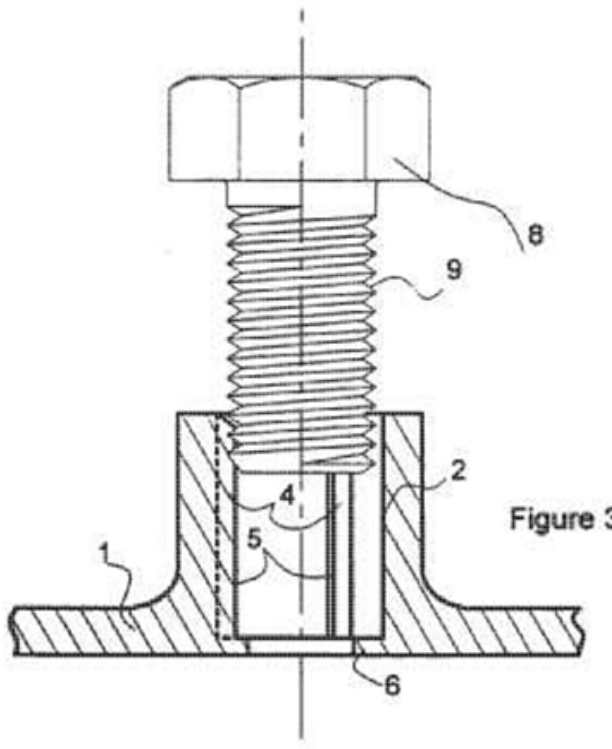
F16B 37/005

{into which threads are cut during screwing}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



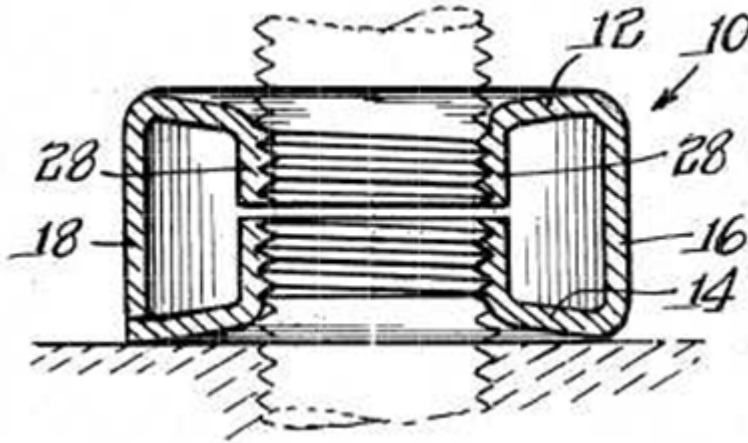
F16B 37/02

made of thin sheet material (fastening to surfaces [F16B 37/04](#) {; used as lock-nuts [F16B 39/14](#)})

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Nuts made of thin sheet material used as lock-nuts	F16B 39/14
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Informative references

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

Fastening nuts to surfaces	F16B 37/04
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F16B 37/04

Devices for fastening nuts to surfaces, e.g. sheets, plates {(nuts fastened behind a wall by a toggle-mechanism [F16B 13/0808](#); threaded inserts [F16B 37/122](#); measures against loss of bolts, nuts or pins [F16B 41/002](#))}

References

Limiting references

This place does not cover:

Nuts fastened behind a wall by a toggle mechanism	F16B 13/0808
Threaded inserts	F16B 37/122
Measures against loss of bolts, nuts or pins	F16B 41/002

F16B 37/041

{Releasable devices ([F16B 37/044](#), [F16B 37/045](#) take precedence)}

References**Informative references**

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

Joining sheets by clamps or clips fastened over the edges of the sheets or plates	F16B 5/0635
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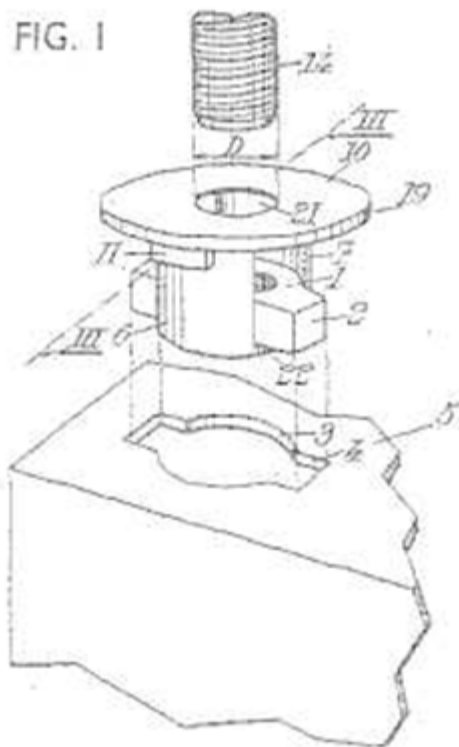
F16B 37/042

{locking by rotation}

Definition statement

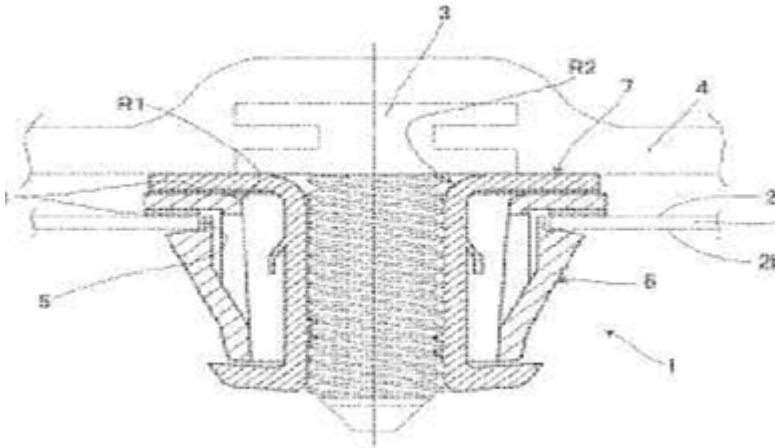
This place covers:

Illustrative example of subject matter classified in this group.

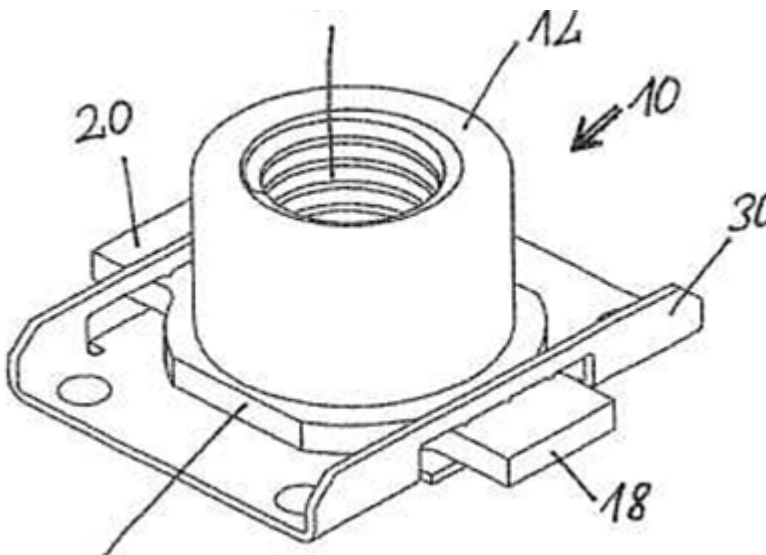


F16B 37/043**{with snap action}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

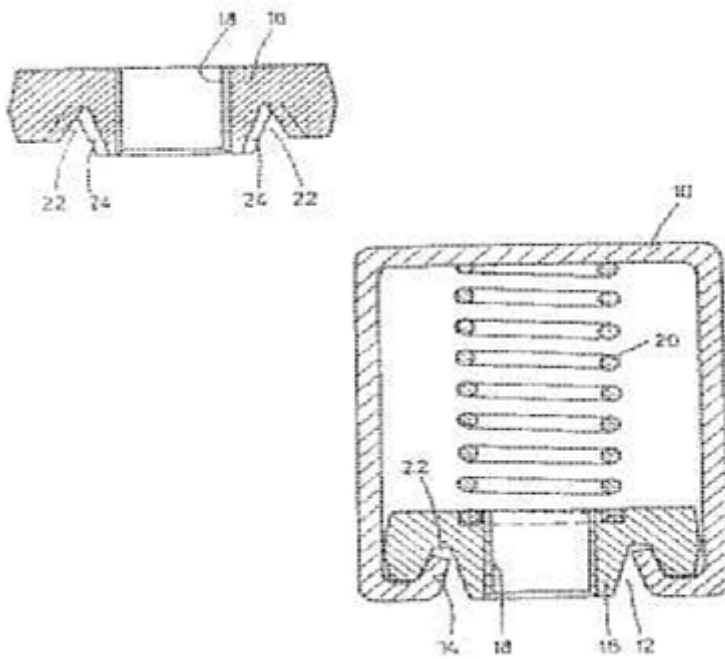
**F16B 37/044****{Nut cages}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



F16B 37/046**{with resilient means for urging the nut inside the channel}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



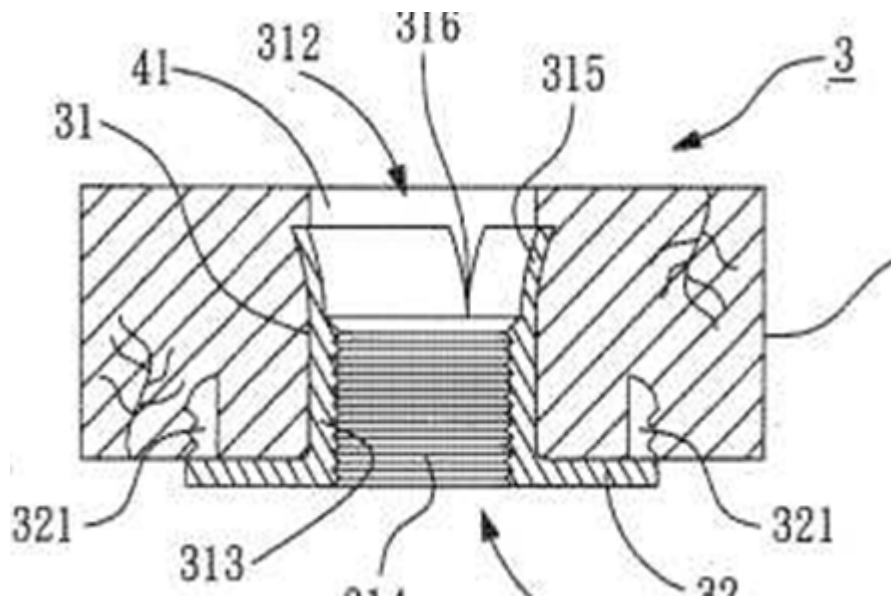
F16B 37/048

{Non-releasable devices ([F16B 37/044](#), [F16B 37/045](#) and [F16B 37/06](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

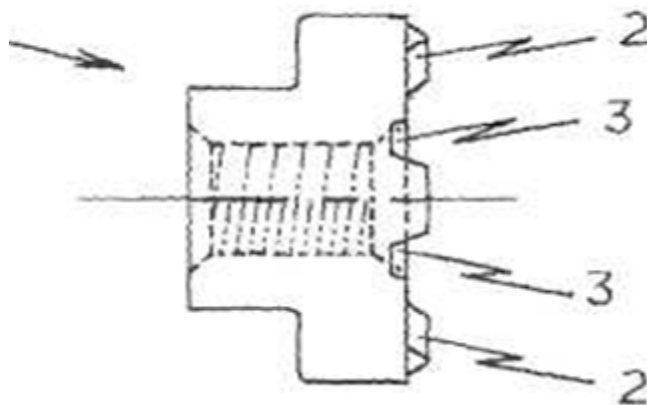
**F16B 37/061**

{by means of welding}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Stud welding	B23K 9/20
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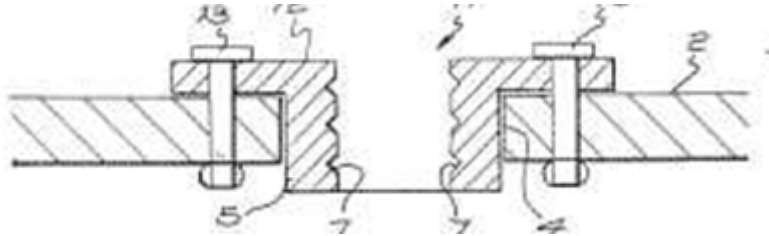
F16B 37/064

{with the use of separate rivets}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



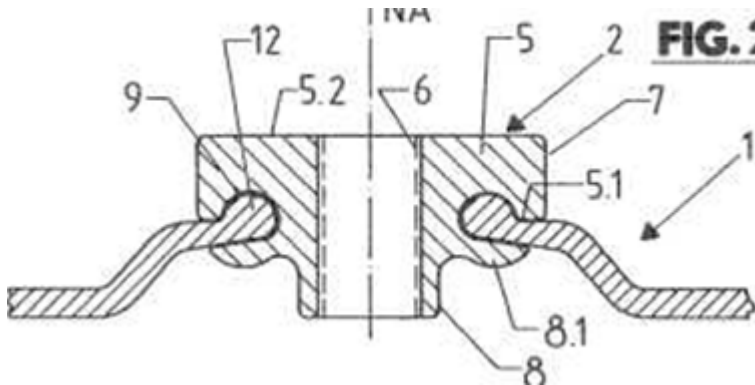
F16B 37/065

{by deforming the material of the nut}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Machines for feeding nuts	B23P 19/00
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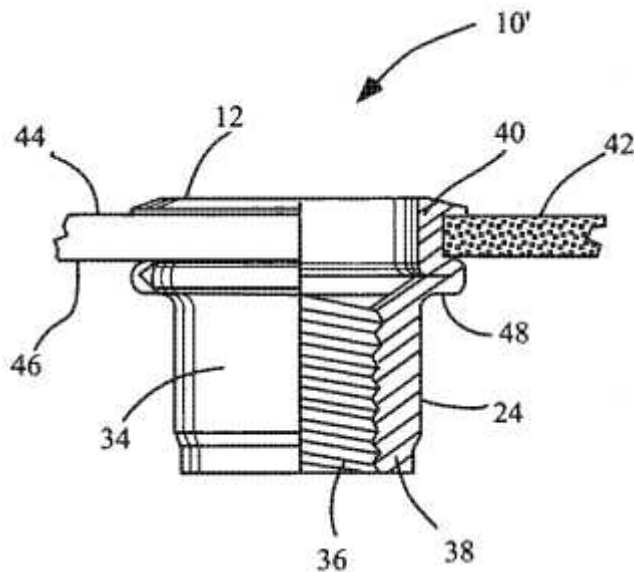
F16B 37/067

{the material of the nut being deformed by a threaded member generating axial movement of the threaded part of the nut, e.g. blind rivet type}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

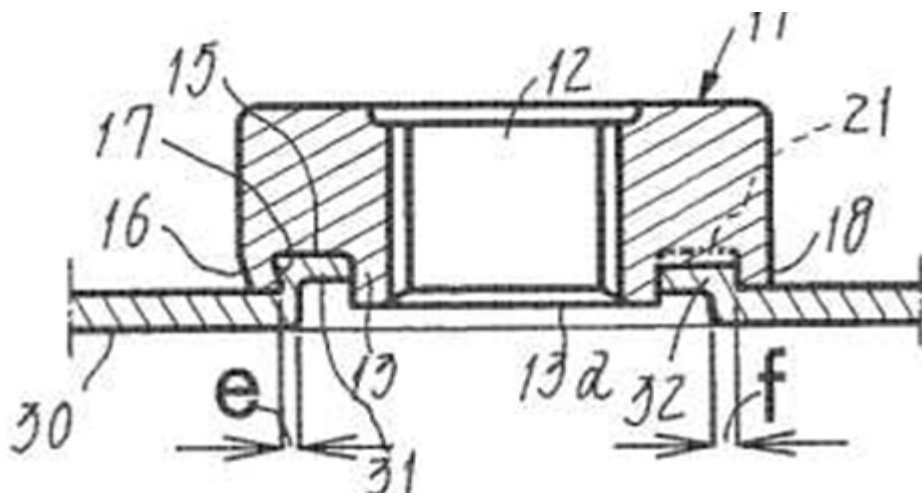
**F16B 37/068**

{by deforming the material of the support, e.g. the sheet or plate}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



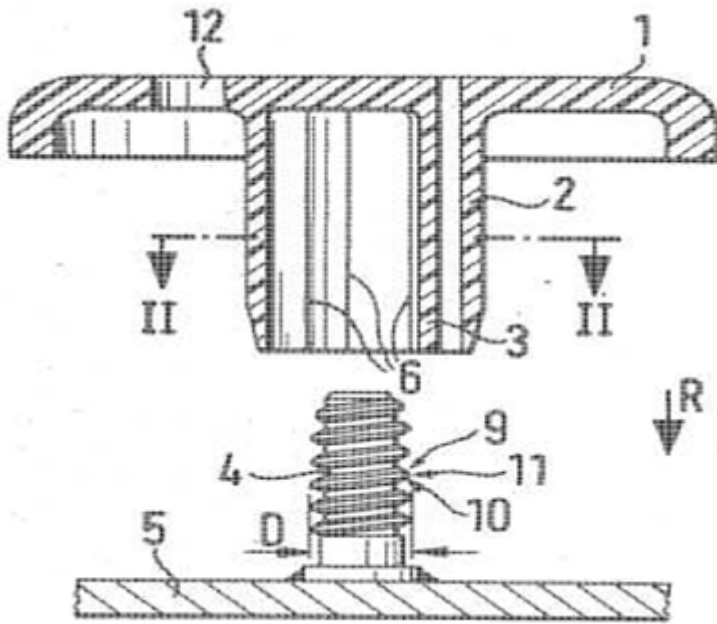
F16B 37/0807

{Nuts engaged from the end of the bolt, e.g. axially slidable nuts}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

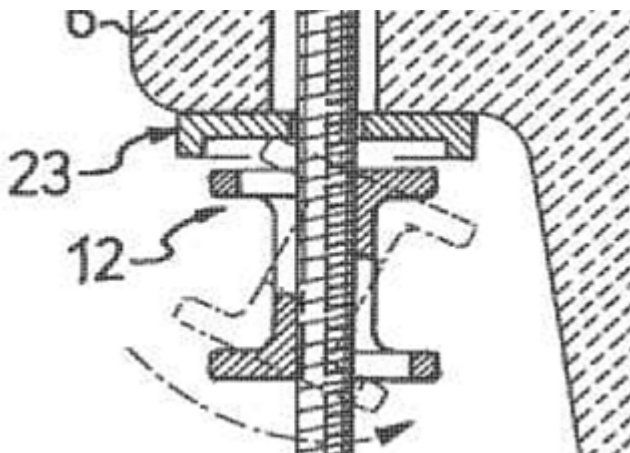
**F16B 37/0814**

{movable along the bolt after tilting the nut}

Definition statement

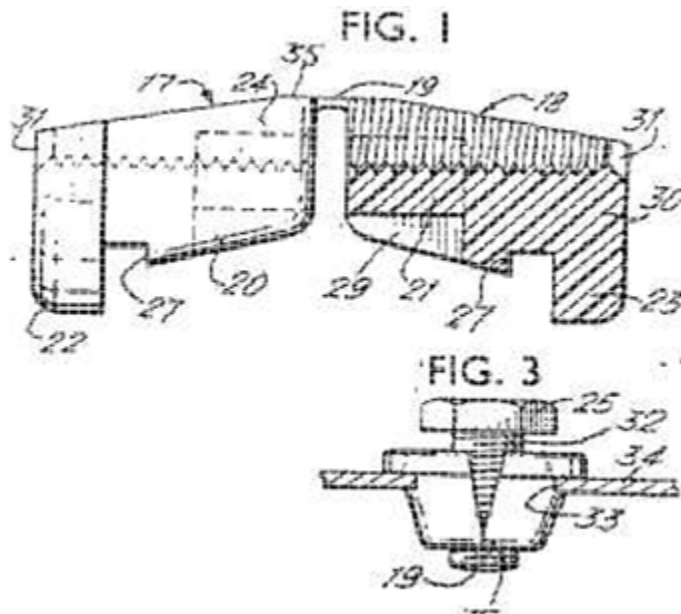
This place covers:

Illustrative example of subject matter classified in this group.



F16B 37/0821**{in two halves pivotally connected}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



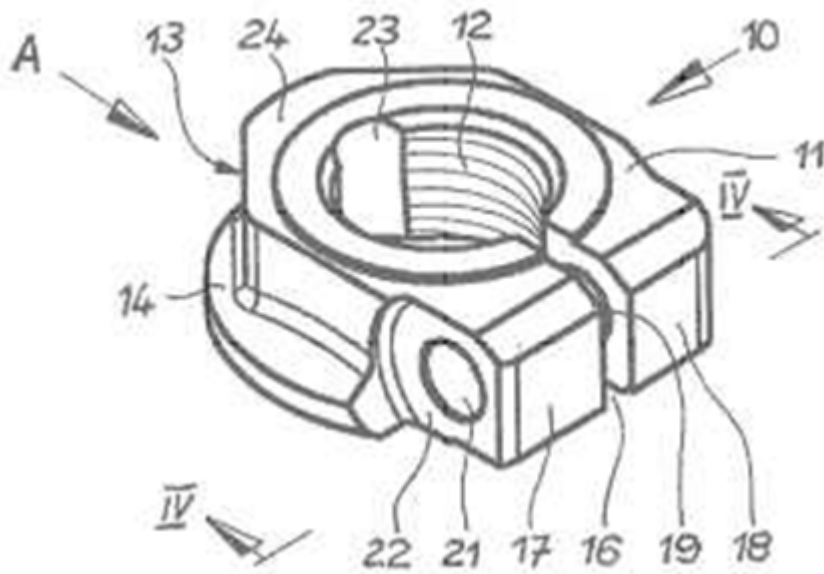
F16B 37/0828

{with a longitudinal slit through the annular wall of the nut for enabling expansion of the nut, e.g. for easy removal}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



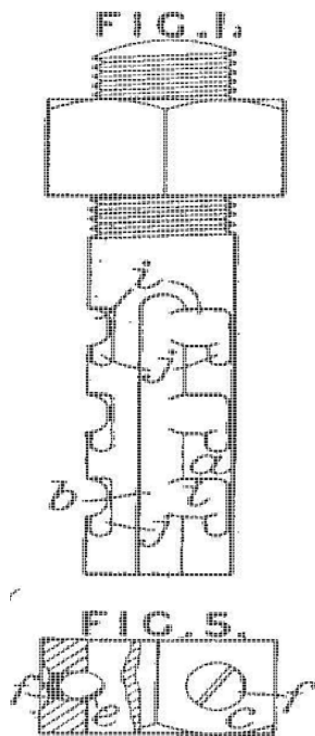
F16B 37/0835

{with balls engaging threads or grooves on the shaft of the bolt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

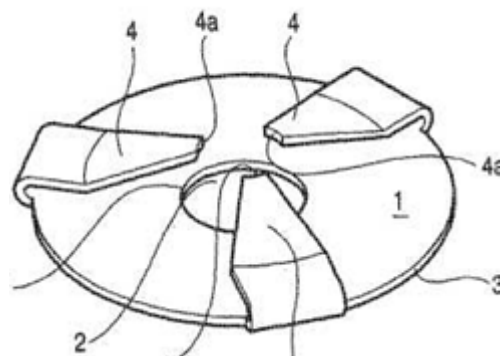
**F16B 37/0842**

{fastened to the threaded bolt with snap-on-action, e.g. push-on nuts for stud bolts ([F16B 37/0857](#) takes precedence; snap-on-action of a pin, spigot, shaft or the like and a member surrounding it [F16B 21/06](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



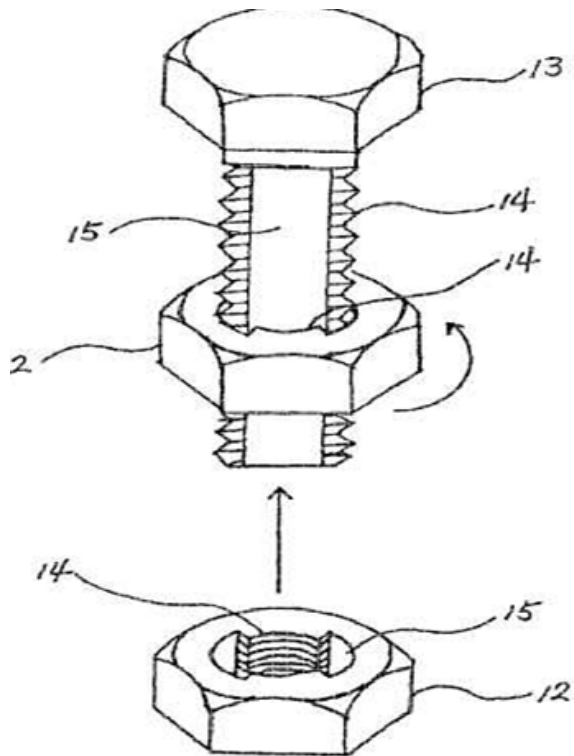
F16B 37/085

{with at least one unthreaded portion in both the nut and the bolt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



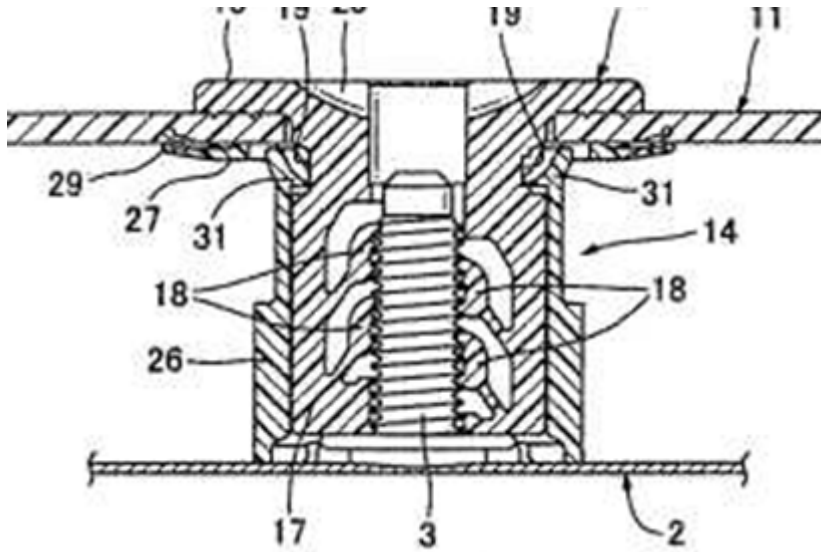
F16B 37/0857

{with the threaded portions of the nut engaging the thread of the bolt by the action of one or more springs or resilient retaining members ([F16B 37/0821](#) and [F16B 37/0835](#) take precedence)}

Definition statement

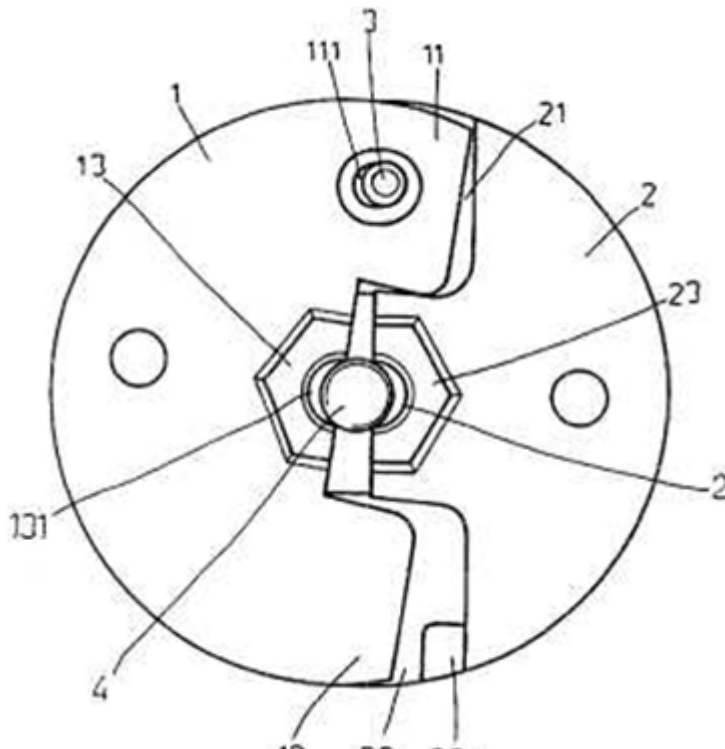
This place covers:

Illustrative example of subject matter classified in this group.



F16B 37/0885**{in two halves hingedly connected}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



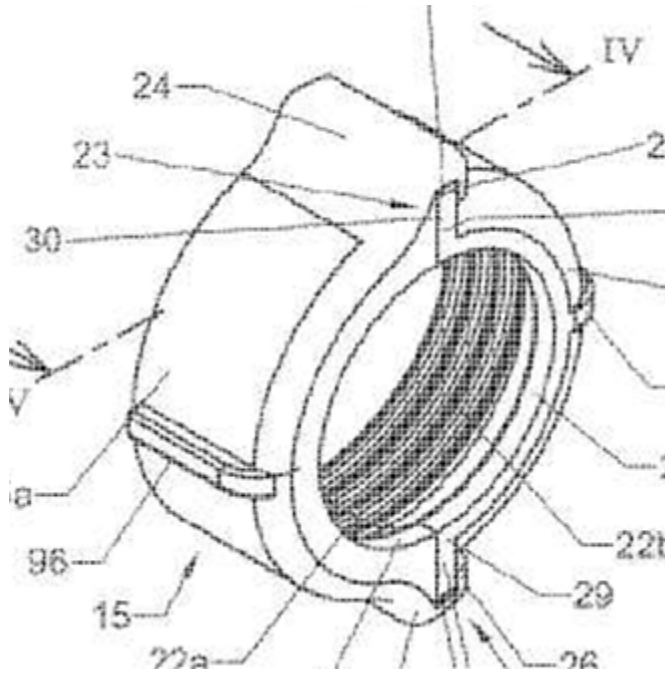
F16B 37/0892

{in two or more pieces, e.g. assemblies made by two C-shaped nuts mutually interlocked, or retained by an additional member (F16B 37/0885 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



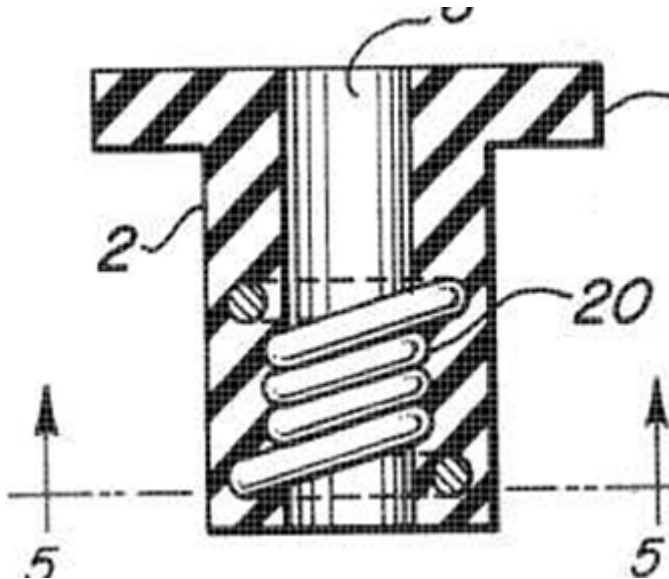
F16B 37/12

with thread-engaging surfaces formed by inserted coil-springs, discs, or the like; Independent pieces of wound wire used as nuts; Threaded inserts for holes {(mounting devices [B25B 27/143](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Mounting devices	B25B 27/143
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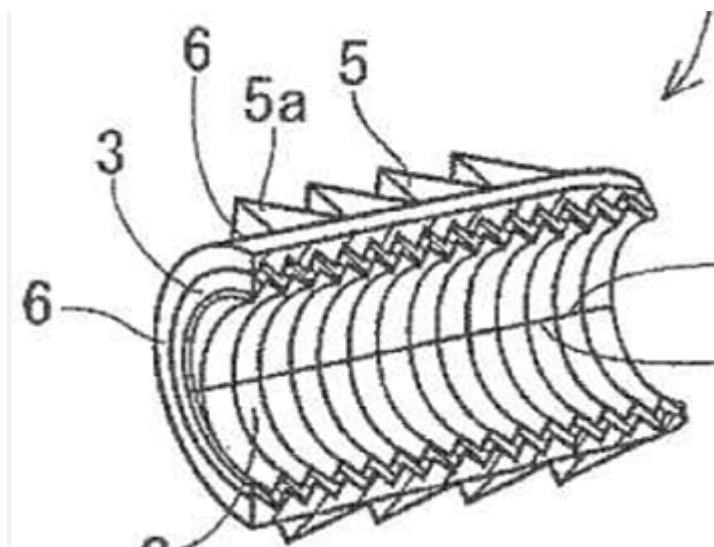
F16B 37/122

{Threaded inserts, e.g. "rampa bolts"}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



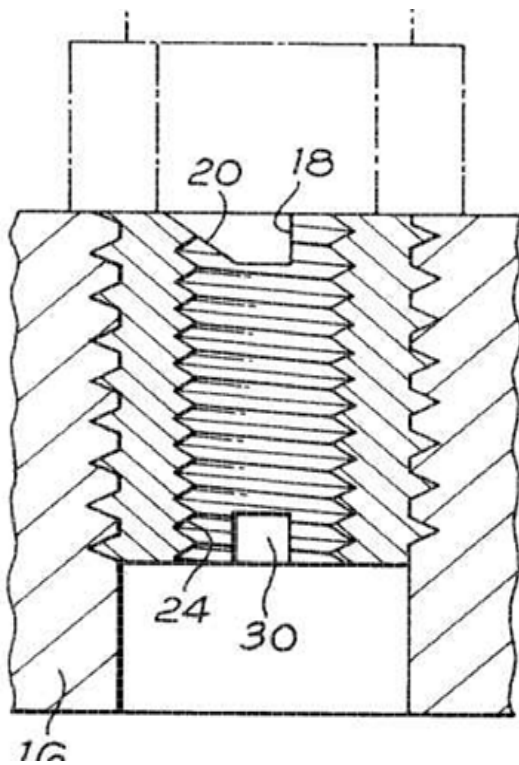
F16B 37/125

{the external surface of the insert being threaded}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

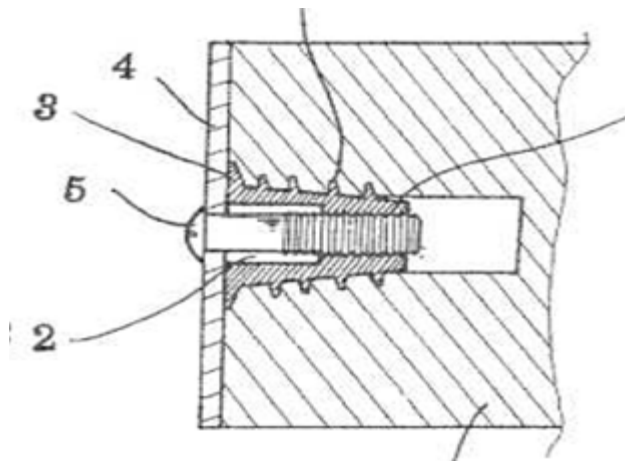
**F16B 37/127**

{and self-tapping}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



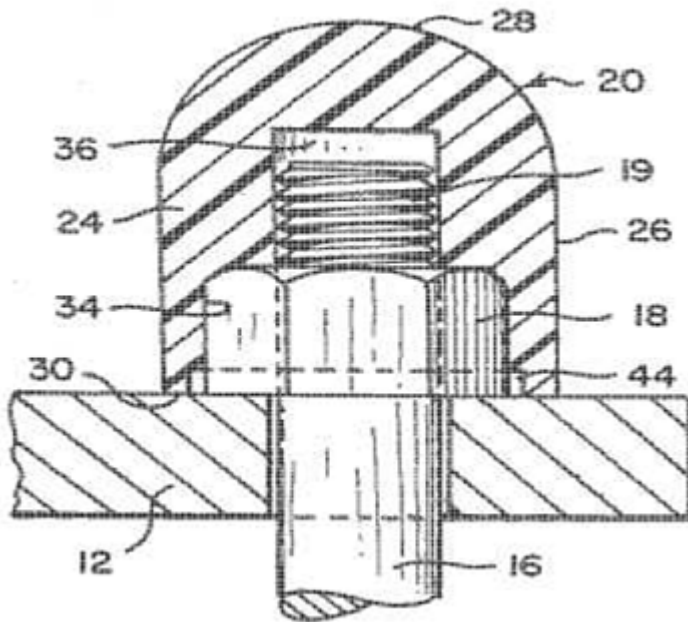
F16B 37/14

Cap nuts; Nut caps or bolt caps

Definition statement

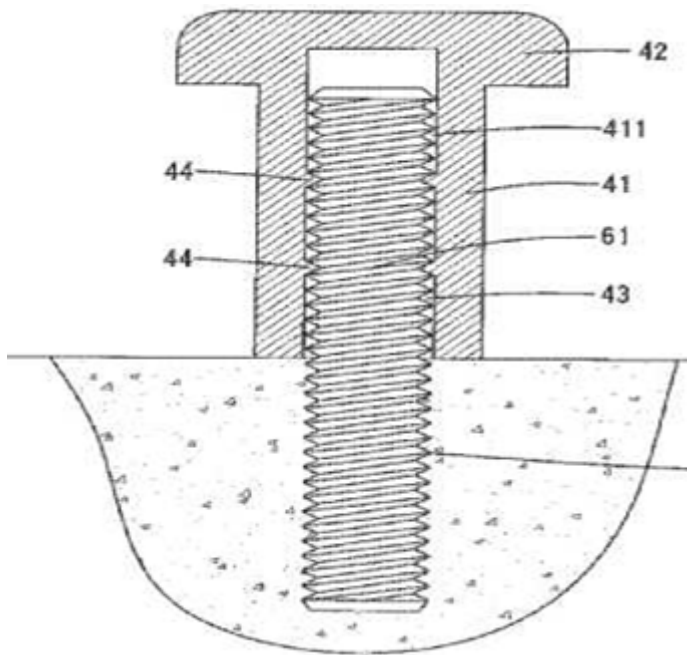
This place covers:

Illustrative example of subject matter classified in this group.

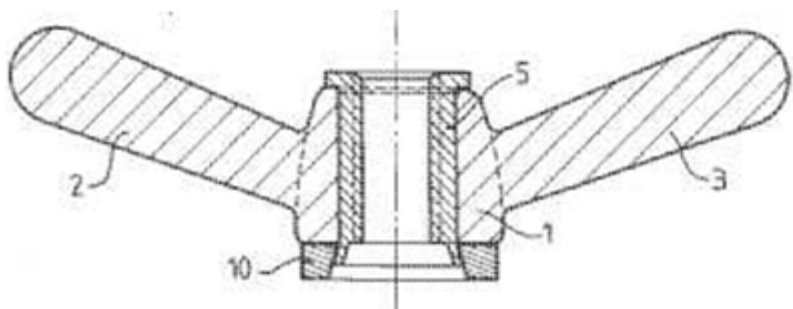


F16B 37/145**{Sleeve nuts, e.g. combined with bolts}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.

**F16B 37/16****Wing-nuts ([F16B 37/14](#) takes precedence)****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



F16B 39/00

Locking of screws, bolts or nuts ({[F16B 35/005](#) takes precedence}; locking of bottle closures [B65D](#); locking of rail-fastening bolts for permanent ways [E01B 9/12](#); locking of fastening means for railway fishplates [E01B 11/38](#); locking devices for valves or cocks [F16K](#))

Definition statement

This place covers:

Locking of screws by means of a settable material, plastic deformation, geometric engagement or friction.

References

Limiting references

This place does not cover:

Measures against loss of bolts and nuts (preassembling)	F16B 41/002
Measures against unauthorised operation of bolts, nuts or pins	F16B 41/005

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:

Locking of bottle closures	B65D
Locking of rail-fastening bolts for permanent ways	E01B 9/12
Locking of fastening means for railway fishplates	E01B 11/38
Locking devices for valves or cocks	F16K

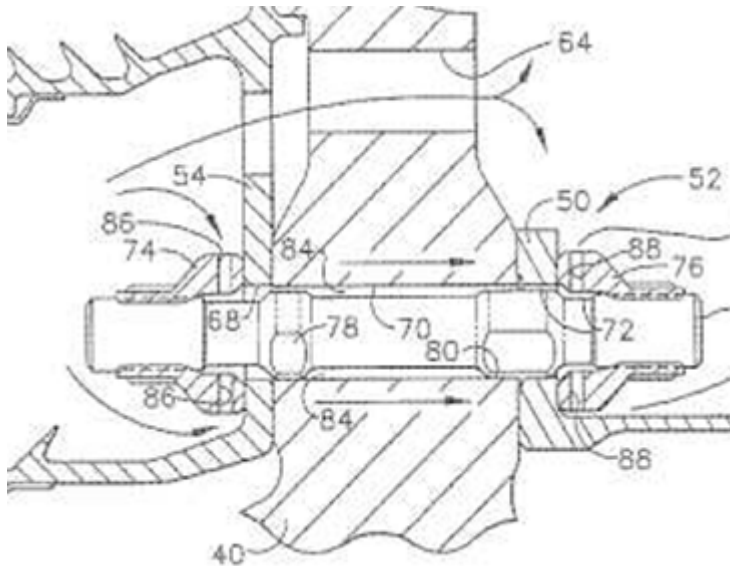
F16B 39/01

specially adapted to prevent loosening at extreme temperatures

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 39/02**

in which the locking takes place after screwing down ([F16B 39/01](#) takes precedence; split-pins, circlips, or the like for preventing relative axial movement only [F16B 21/10](#); fastening nuts by welding or riveting [F16B 37/06](#))

References**Limiting references**

This place does not cover:

Split-pins, circlips, or the like for preventing relative axial movement only	F16B 21/10
Fastening nuts by welding or riveting	F16B 37/06

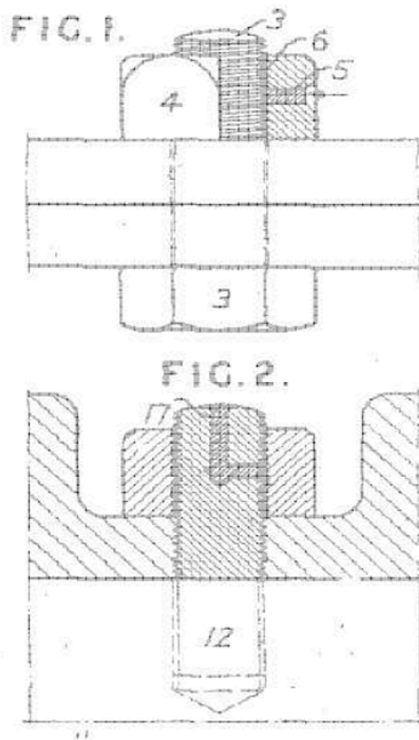
F16B 39/021

{by injecting a settable material after the screwing down}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



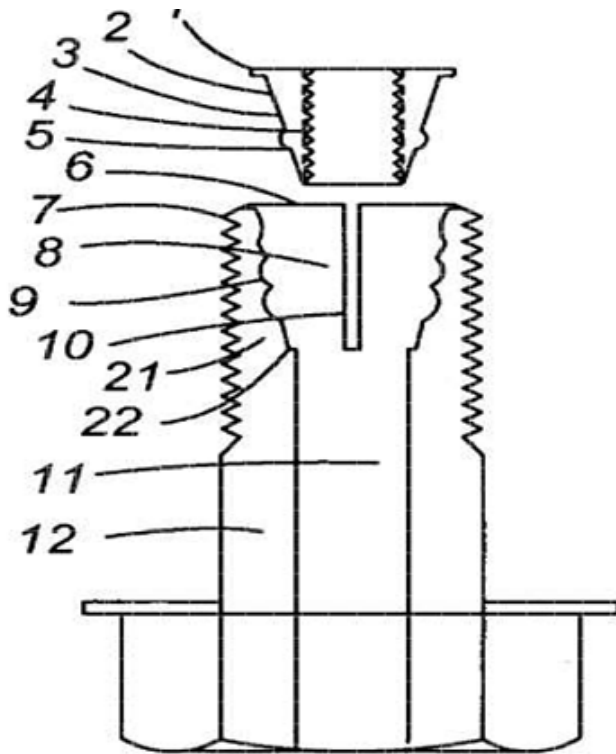
F16B 39/023

{by driving a conic or wedge-shaped expander through the threaded element}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



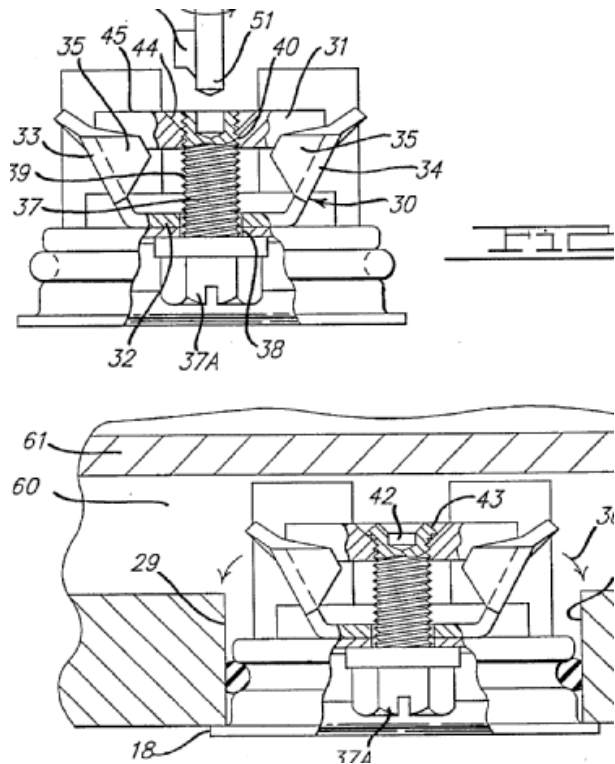
F16B 39/025

{by plastic deformation of a part of one of the threaded elements into a notch or cavity of the other threaded element ([F16B 39/103](#) and [F16B 39/106](#) take precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



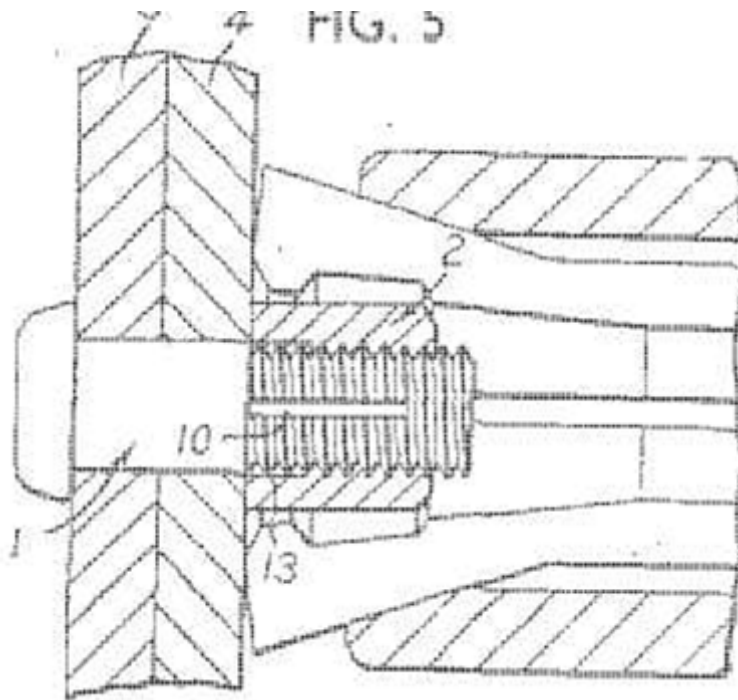
F16B 39/026

{by swaging the nut on the bolt, i.e. by plastically deforming the nut}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



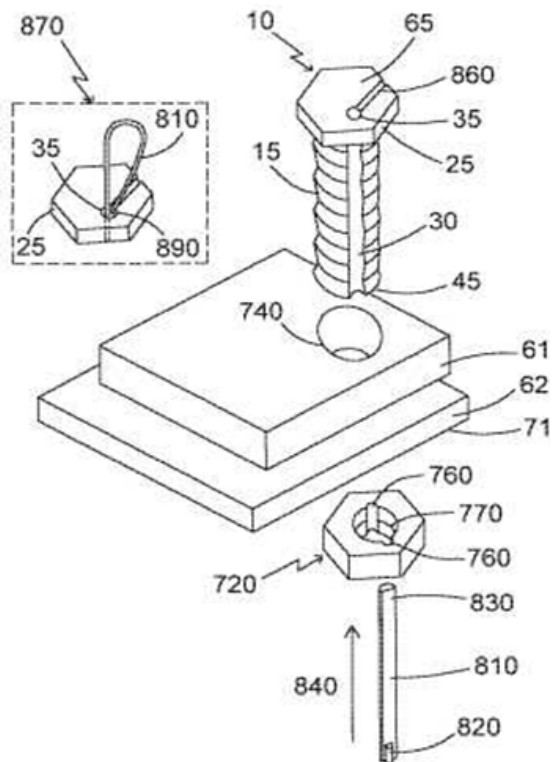
F16B 39/06

with a pin or staple parallel to the bolt axis

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

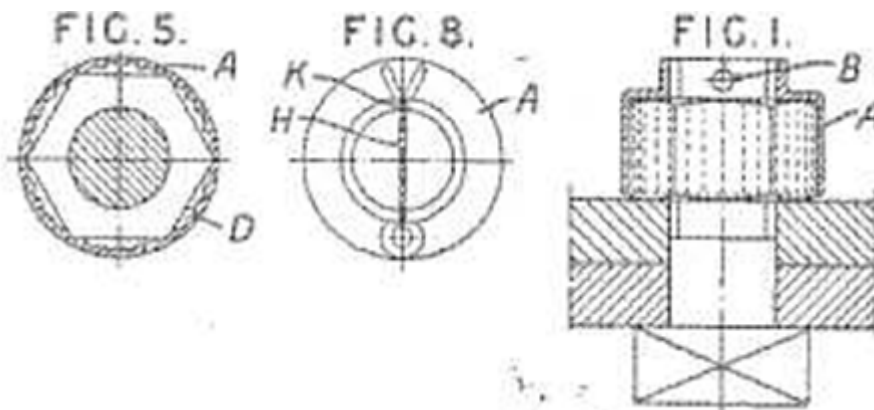
**F16B 39/08**

with a cap interacting with the nut, connected to the bolt by a pin or cotter pin

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



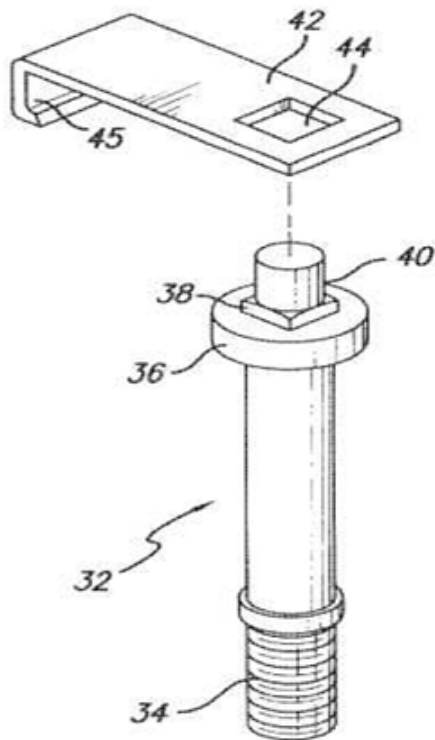
F16B 39/10

by a plate, {spring, wire} or ring immovable with regard to the bolt or object {and mainly perpendicular to the axis of the bolt} ([F16B 39/08](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



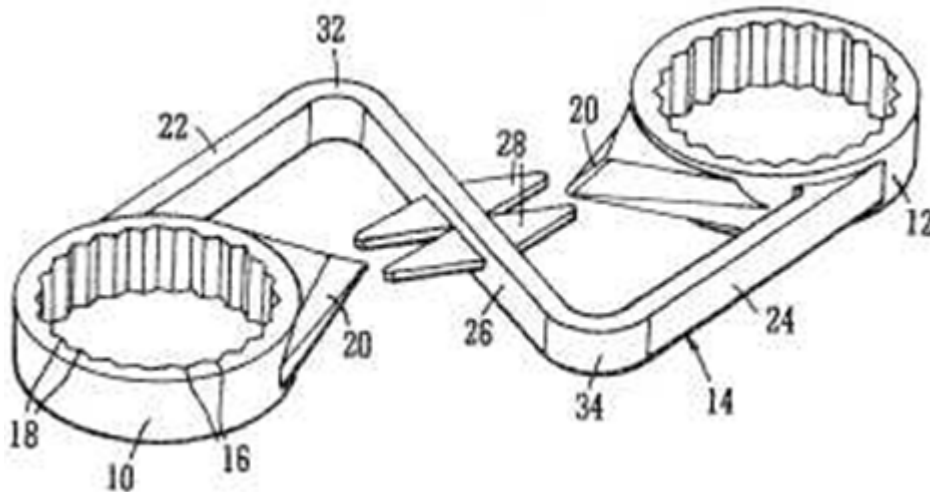
F16B 39/101

{with a plate, spring, wire or ring holding two or more nuts or bolt heads which are mainly in the same plane}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



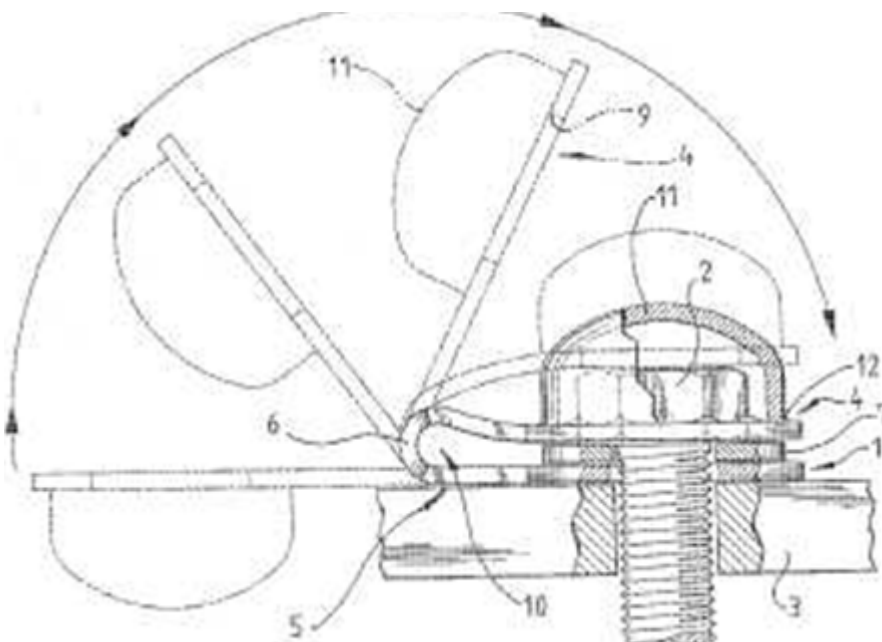
F16B 39/103

{with a locking cup washer, ring or sleeve surrounding the nut or bolt head and being partially deformed on the nut or bolt head, or on the object itself}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



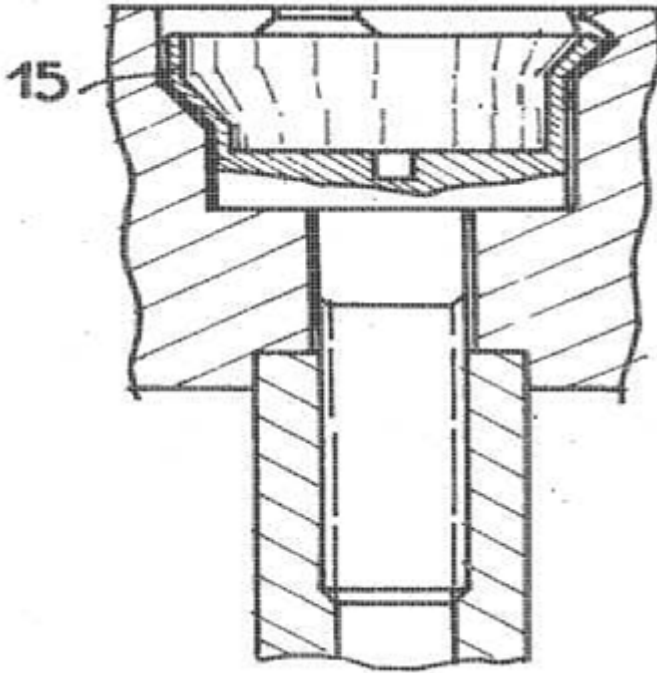
F16B 39/105

{locking the bold head or nut into a hole or cavity, e.g. with the cup washer, ring or sleeve deformed into a dimple in the cavity}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



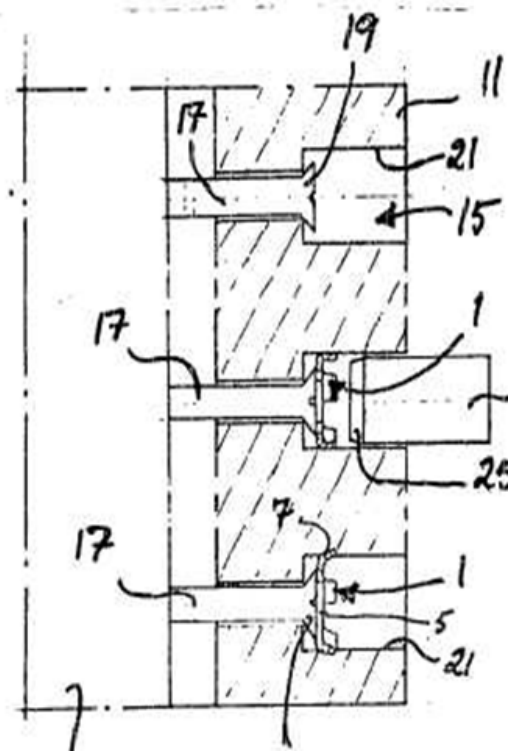
F16B 39/106

{with a deformable locking element, e.g. disk or pin above the bolt head or nut, flattened into a hole or cavity within which the bolt head or nut is positioned}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 39/108

{with a locking washer under the nut or bolt head having at least one tongue or lug folded against the nut or bolt head, or against the object itself ([F16B 39/103](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

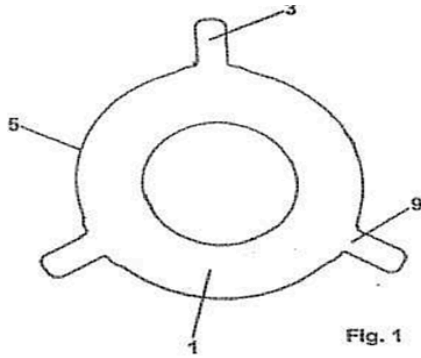
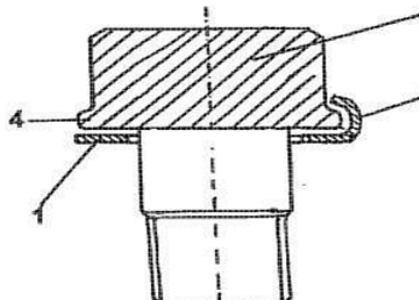


Fig. 2



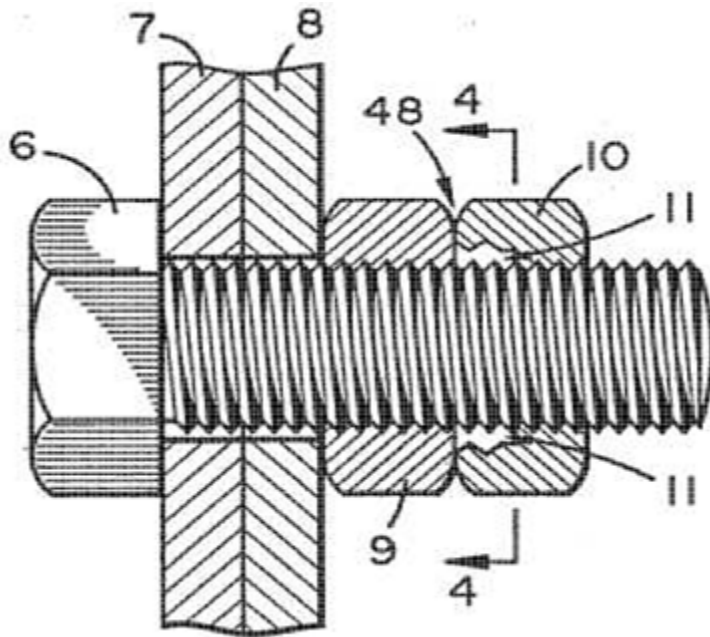
F16B 39/12

by means of locknuts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

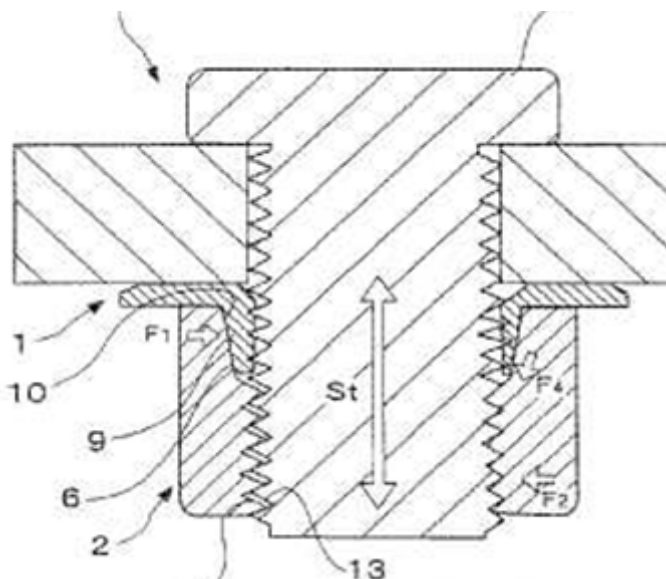
**F16B 39/122**

{foreseen with mating surfaces inclined, i.e. not normal, to the bolt axis}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



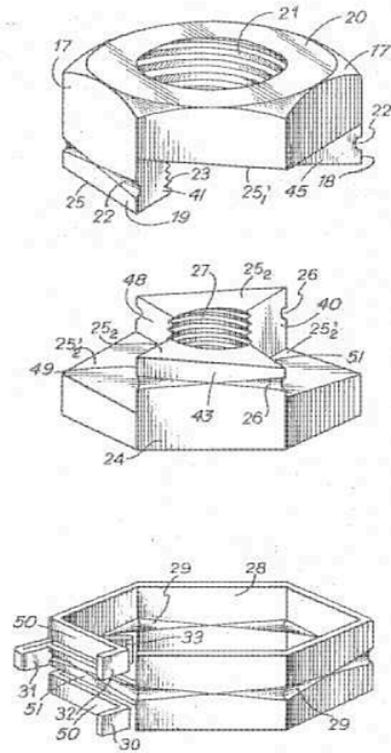
F16B 39/124

{with helically inclined mating surfaces}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



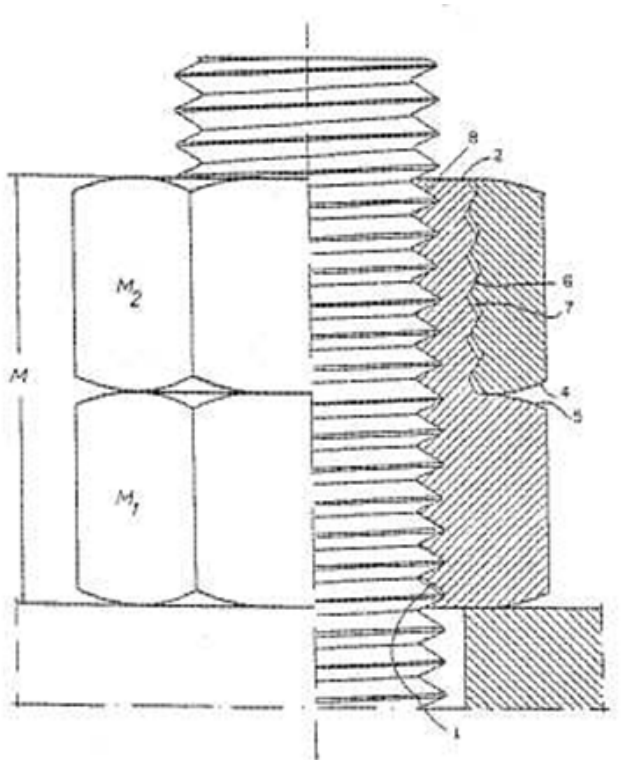
F16B 39/126

{causing radial forces on the bolt-shaft ([F16B 39/36](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Informative references

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

Locknuts per se made of thin sheet metal	F16B 37/02
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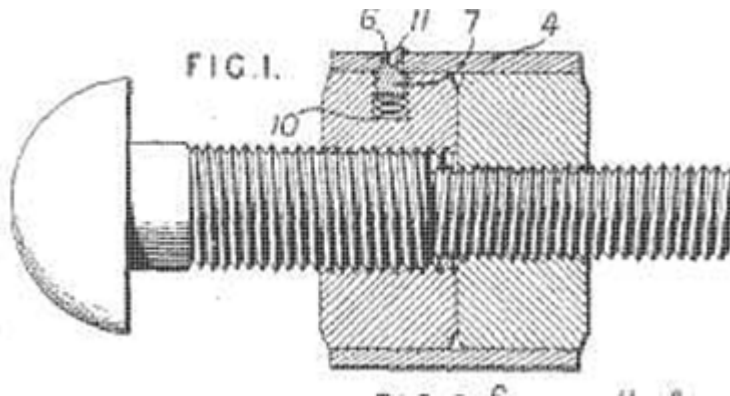
F16B 39/16

in which the screw-thread of the locknut differs from that of the nut

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



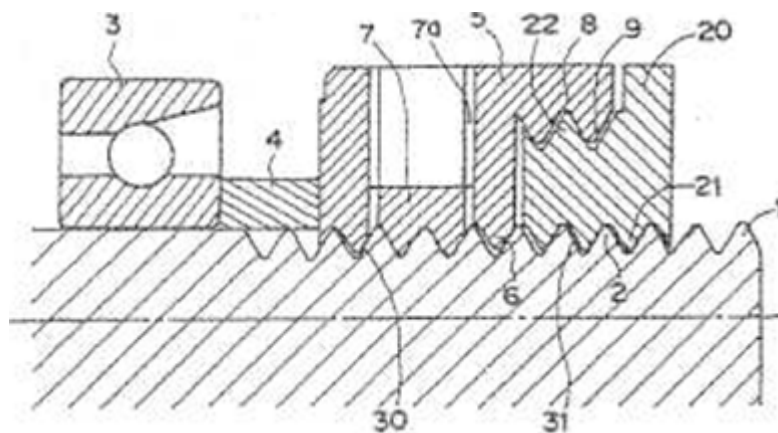
F16B 39/18

in which the locknut grips with screw-thread in the nuts as well as on the bolt

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



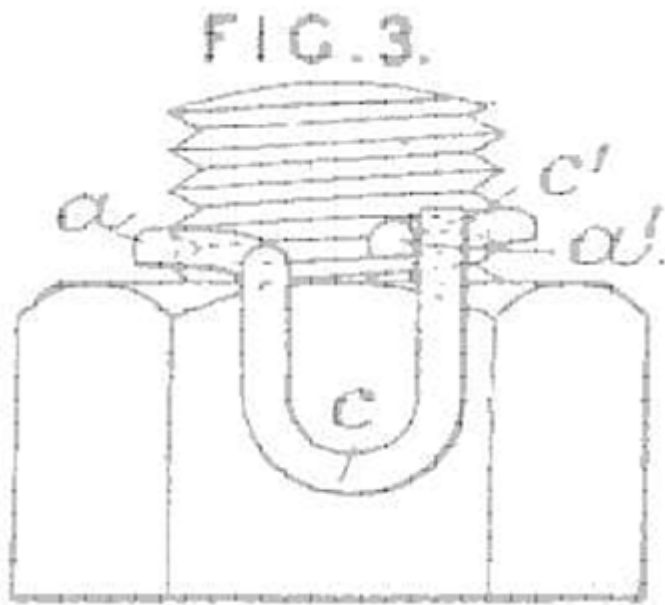
F16B 39/20

by means of steel wire or the like ([F16B 39/10](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



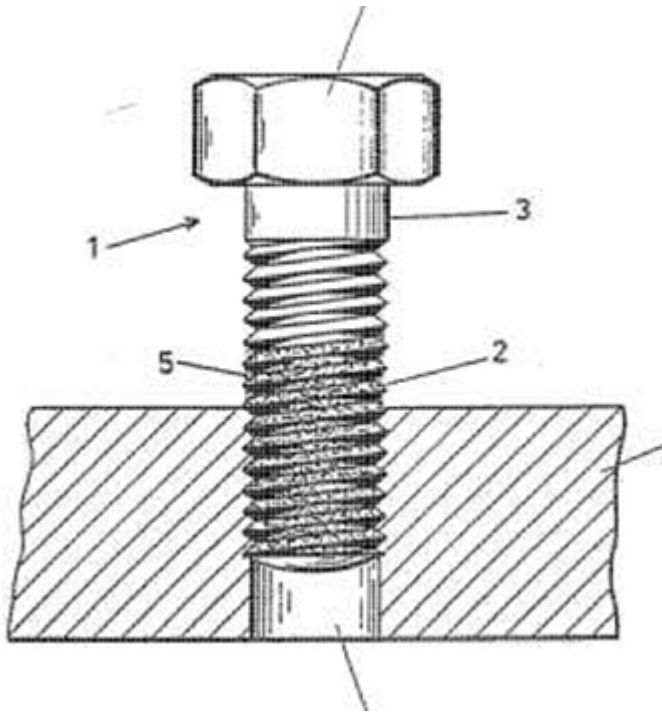
F16B 39/225

{by means of a settable material}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



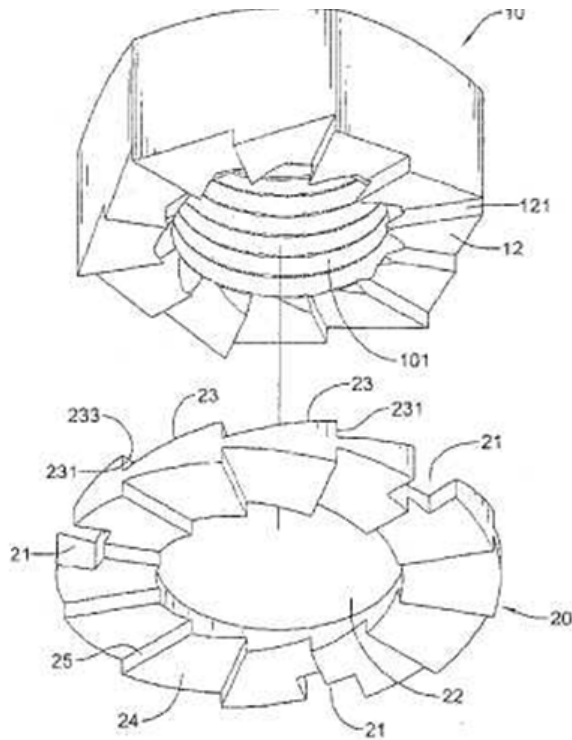
F16B 39/24

by means of washers, spring washers, or resilient plates that lock against the object (locking to the screw-thread [F16B 39/14](#) {, [F16B 39/34](#)}, [F16B 39/36](#))

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Locking to the screw-thread	F16B 39/14
Locking by deformable inserts or the like parts	F16B 39/34
Locking with conical parts	F16B 39/36

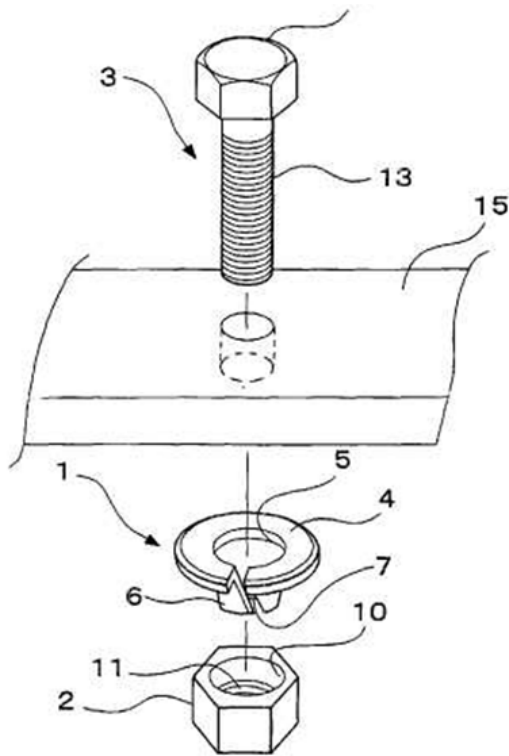
F16B 39/26

with spring washers fastened to the nut or bolt-head

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 39/28**

by special members on, or shape of, the nut or bolt ([F16B 39/26](#) takes precedence; locknuts [F16B 39/12](#))

References**Limiting references**

This place does not cover:

Locknuts	F16B 39/12
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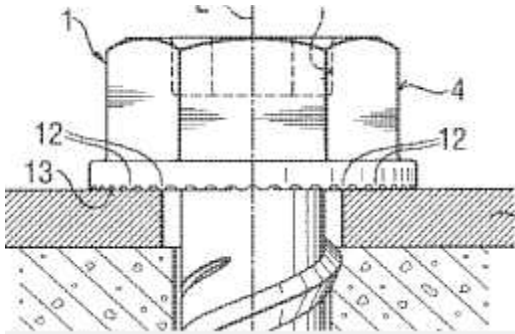
F16B 39/282

Locking by means of special shape of work-engaging surfaces, e.g. notched or toothed nuts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



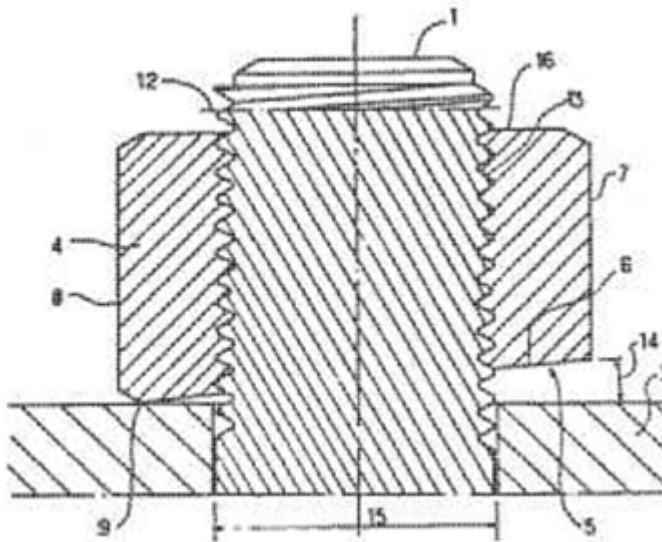
F16B 39/2825

{causing the bolt to tilt}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



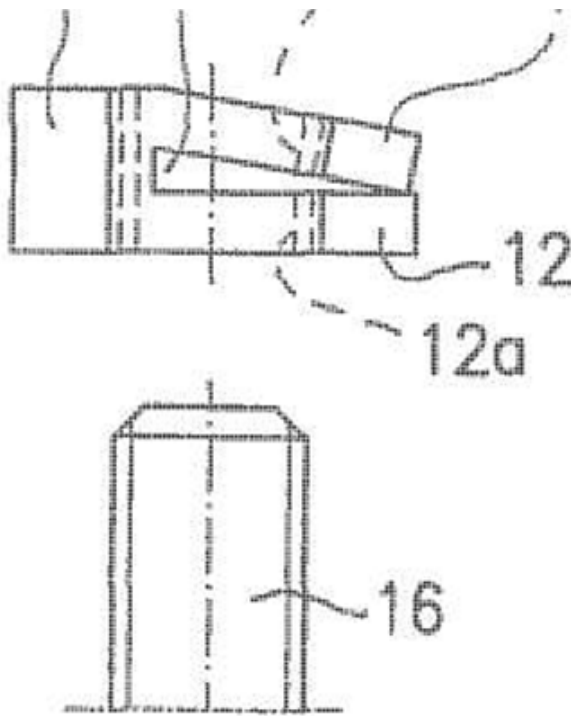
F16B 39/286

caused by saw cuts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



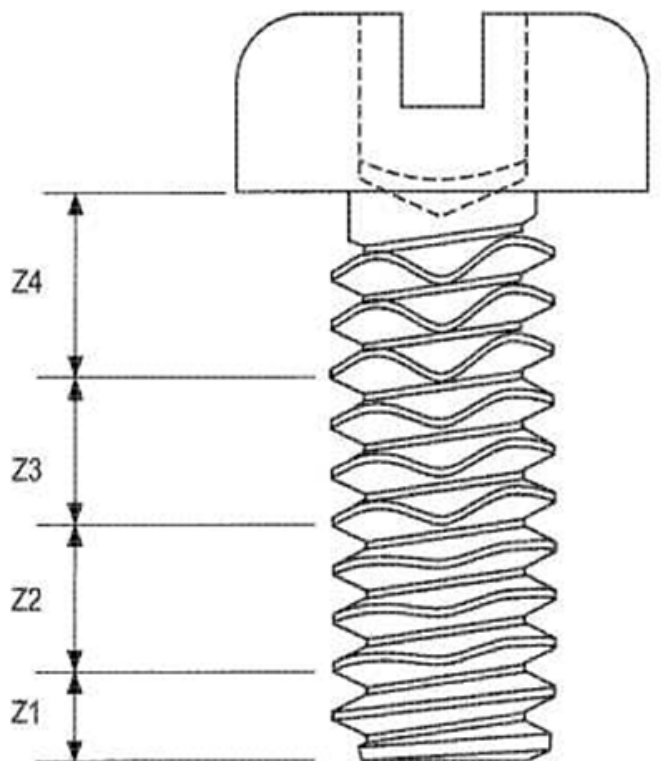
F16B 39/30

Locking exclusively by special shape of the screw-thread

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

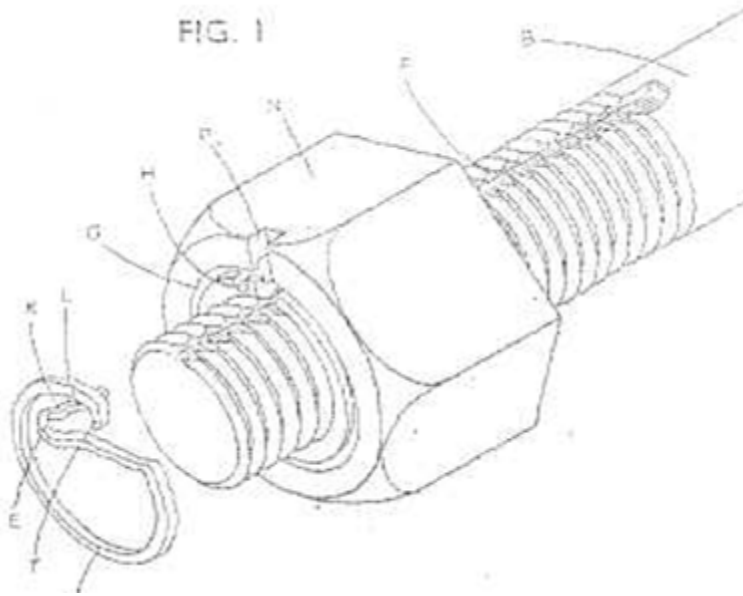
This place does not cover:

Shape of thread	F16B 33/02
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F16B 39/32**Locking by means of a pawl or pawl-like tongue****Definition statement**

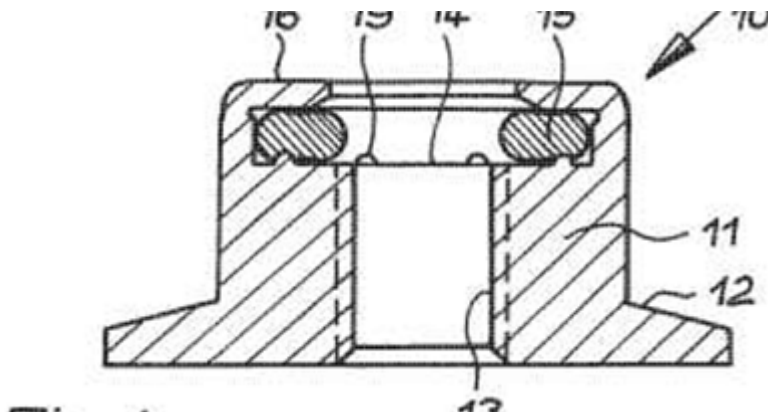
This place covers:

Illustrative example of subject matter classified in this group.

**F16B 39/34****Locking by deformable inserts or like parts****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group.



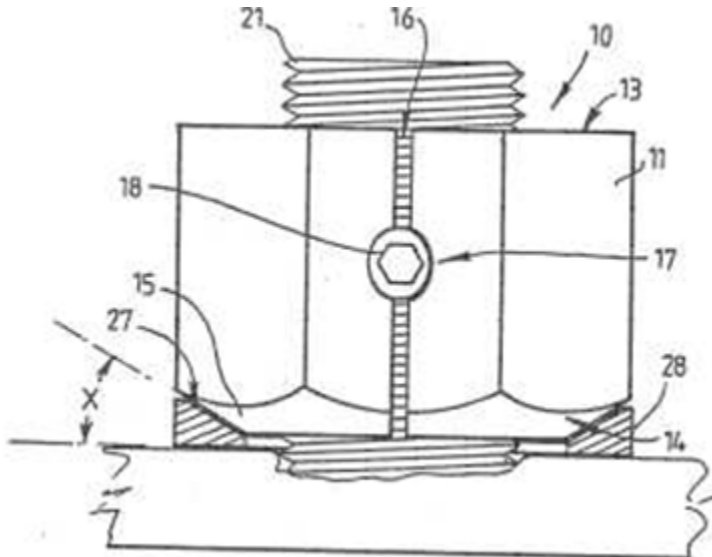
F16B 39/36

with conical locking parts, which may be split, including use of separate rings co-operating therewith

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



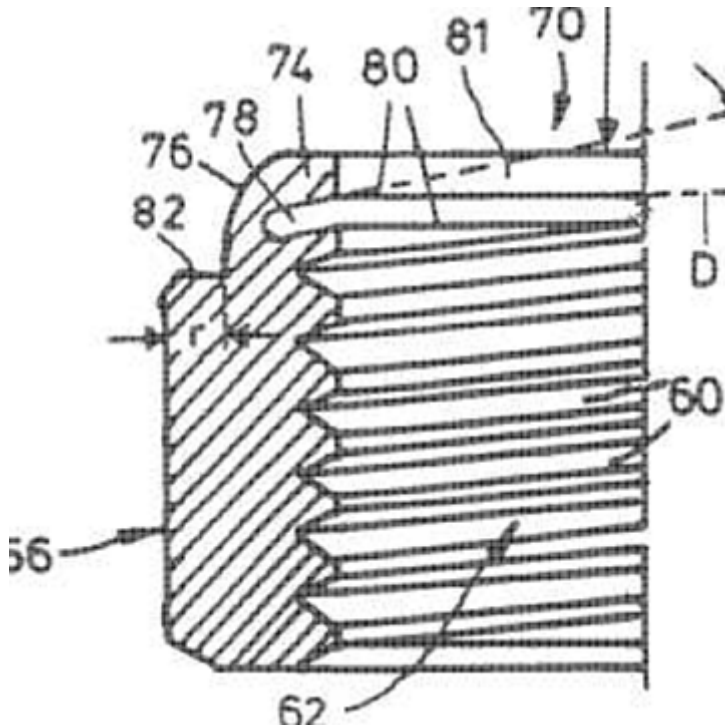
F16B 39/38

with a second part of the screw-thread which may be resiliently mounted
([F16B 39/30](#) takes precedence)

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 41/00

Measures against loss of bolts, nuts, or pins; Measures against unauthorised operation of bolts, nuts or pins ({locking of screws, bolts or nuts [F16B 39/00](#);} seals [G09F 3/00](#))

Definition statement

This place covers:

Measures against loss of bolts, nuts or pins in preassembling and against unauthorised operation

References

Limiting references

This place does not cover:

Locking of bolts, nuts or pins	F16B 39/00
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Informative references

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

Seals	G09F 3/00
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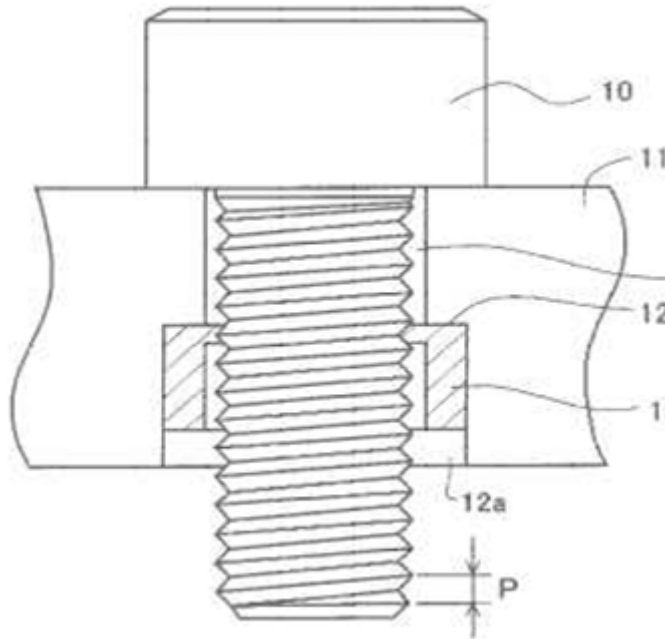
F16B 41/002

{Measures against loss of bolts, nuts or pins (devices for fastening nuts to surfaces [F16B 37/04](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



References

Limiting references

This place does not cover:

Devices for fastening nuts to surfaces	F16B 37/04
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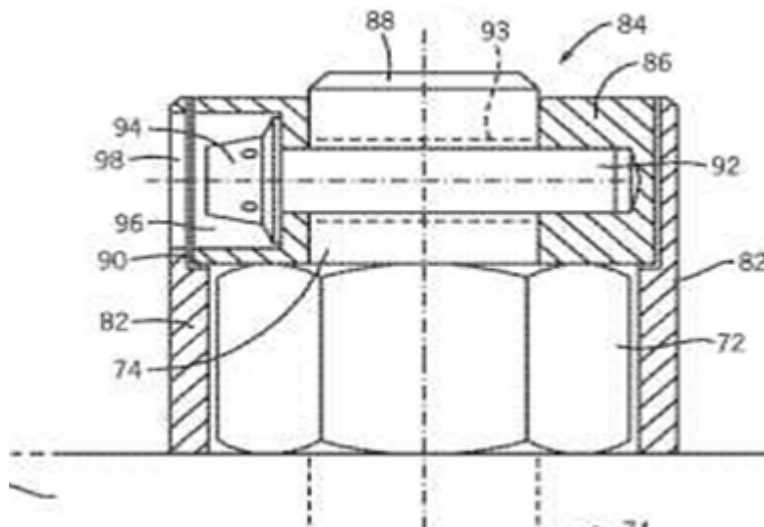
F16B 41/005

{Measures against unauthorised operation of bolts, nuts or pins ([F16B 23/0007](#), [F16B 23/0061](#), [F16B 23/0069](#), [F16B 23/0076](#) and [F16B 31/02](#) take precedence; locks, keys [E05B](#); for valves, taps or cocks [F16K 35/00](#); for pipe-joints with swivel-nuts [F16L 19/005](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



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:

Locks, keys	E05B
For valves, taps or cocks	F16K 35/00
For pipe-joints with swivel-nuts	F16L 19/005

Informative references

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

Anti-theft devices for car wheels	B60B 7/16
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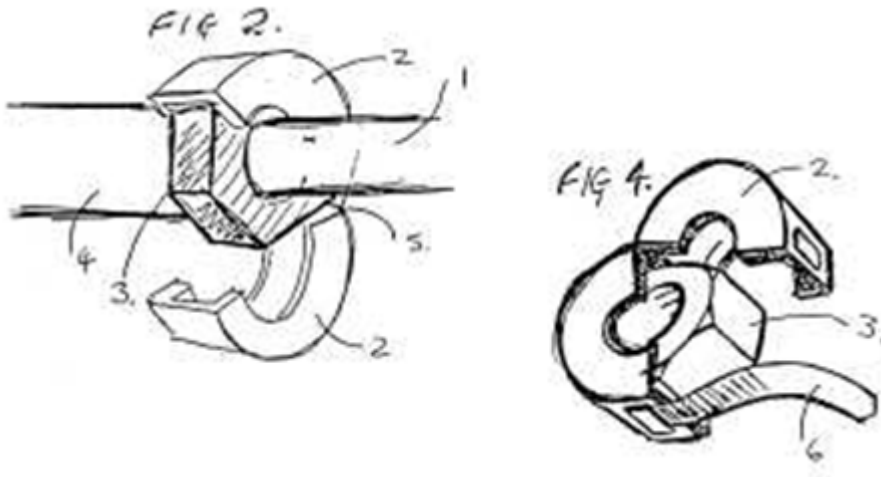
F16B 41/007

{by means of two housings hingedly connected which enclose the bolt head}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



F16B 43/00

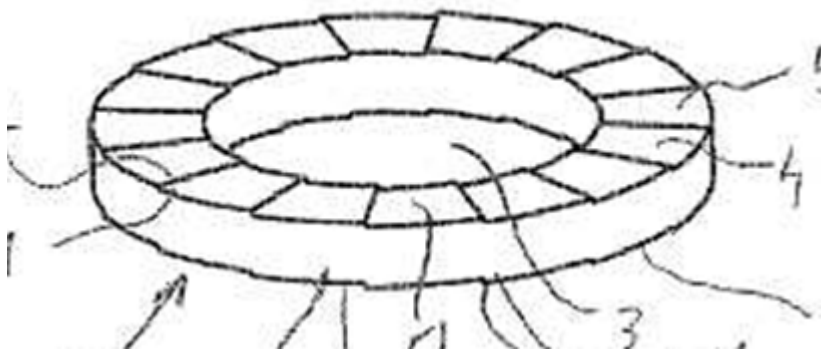
Washers or equivalent devices; Other devices for supporting bolt-heads or nuts (circlips [F16B 21/18](#); {for indicating tensile load [F16B 31/02](#); forming a whole with the bolt or nut [F16B 33/00](#); locking bolts or nuts by means of a fixed plate or ring, or washer-like resilient plates [F16B 39/10](#), [F16B 39/24](#)})

Definition statement

This place covers:

Washers or equivalent devices, i.e. is a thin, typically disk shaped, plates with a hole that is used to distribute the load of a threaded fastener, such as a screw or a nut.

Example:



References

Limiting references

This place does not cover:

Circlips	F16B 21/18
Washers for indicating tensile load	F16B 31/02
Locking bolts or nuts by means of a fixed plate or ring, or washer-like resilient plates	F16B 39/10 , F16B 39/24

Informative references

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

Washers forming a whole with the bolt or nut	F16B 33/00
Method of making washers	B21F 37/04
Belleville type springs	F16F 1/32

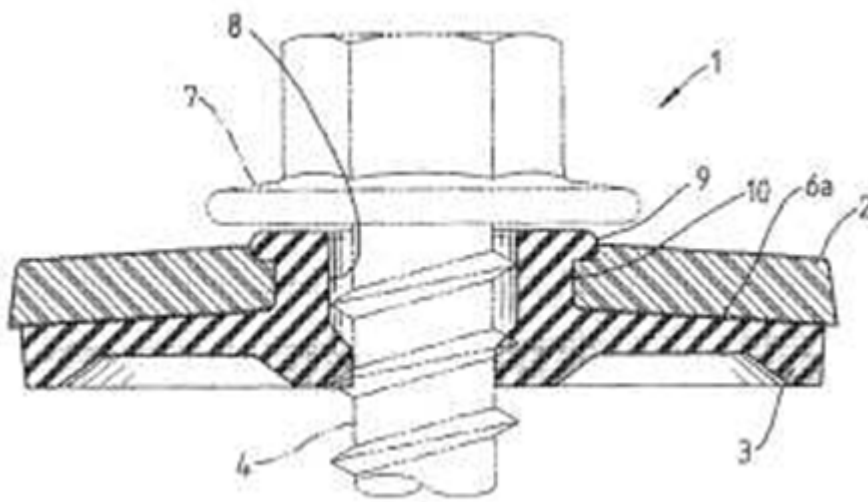
F16B 43/001

{for sealing or insulation}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



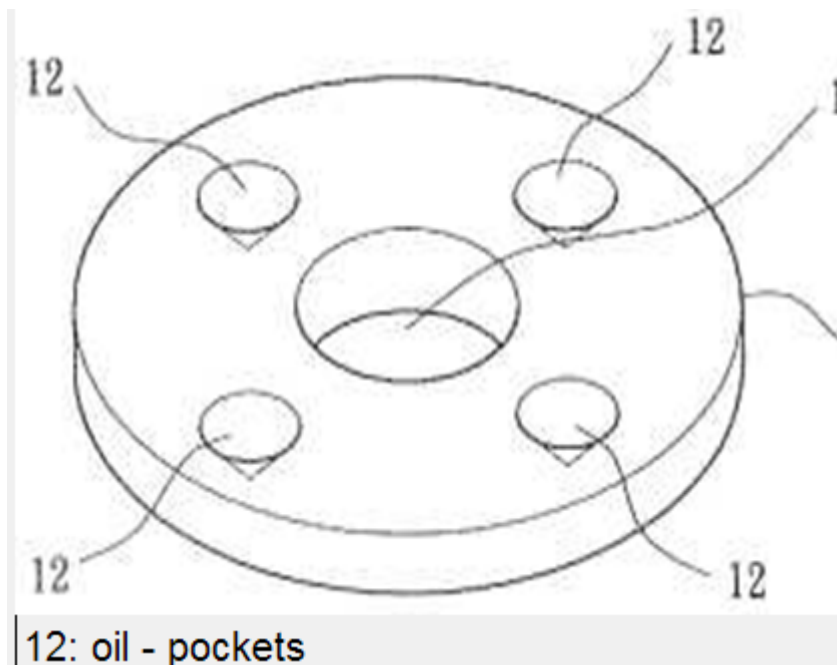
F16B 43/002

{with special provisions for reducing friction}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



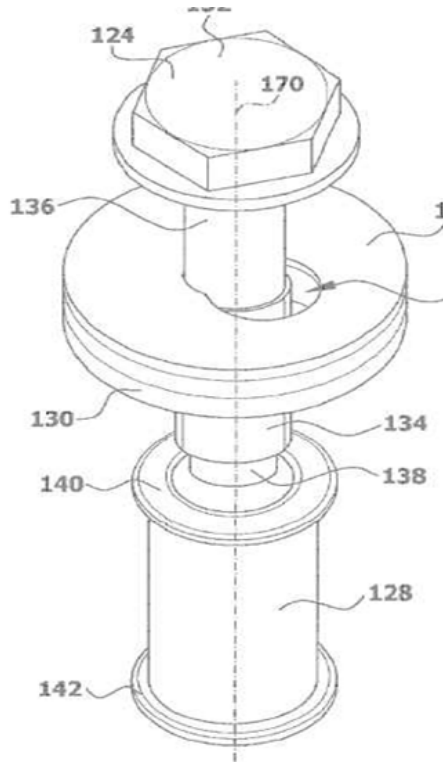
F16B 43/003

{with a special hole shape in order to allow a quick mounting or dismounting of the washer, e.g. with a keyhole slot ([F16B 43/005](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



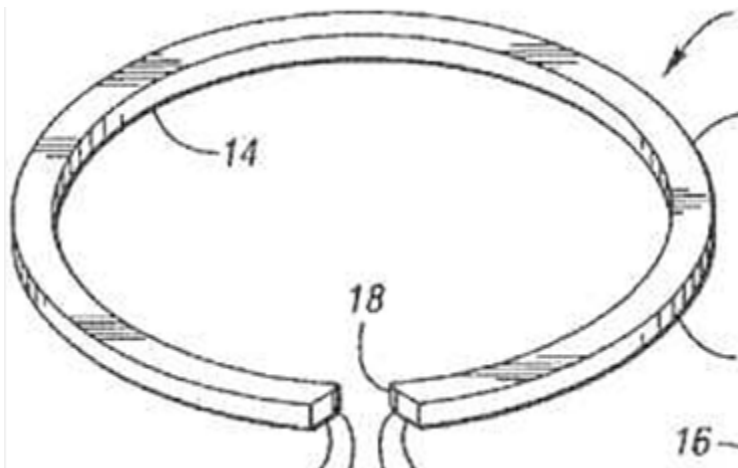
F16B 43/004

{with a radial cut in order to improve elasticity of the washer (F16B 43/005 takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



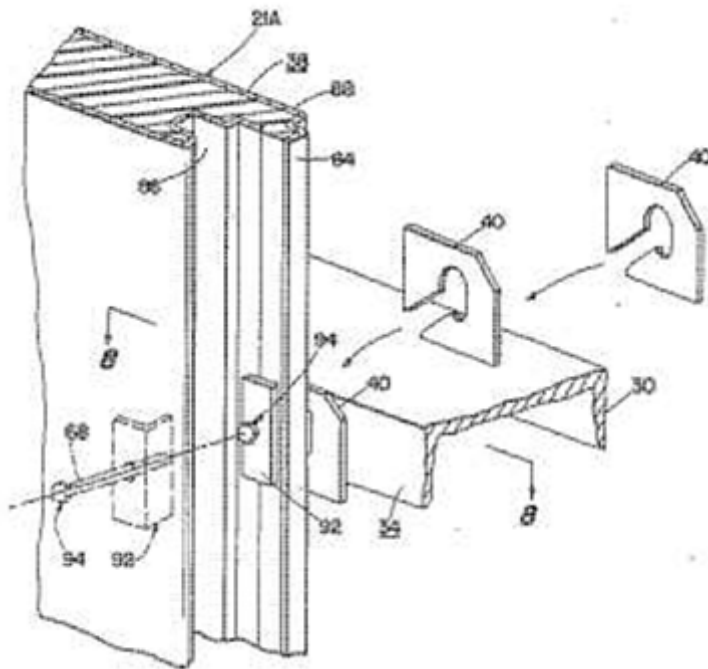
F16B 43/005

{engaging the bolt laterally to allow a quick mounting or dismounting of the washer, i.e. without the need to engage over the end of the bolt ([F16B 43/009](#) takes precedence)}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



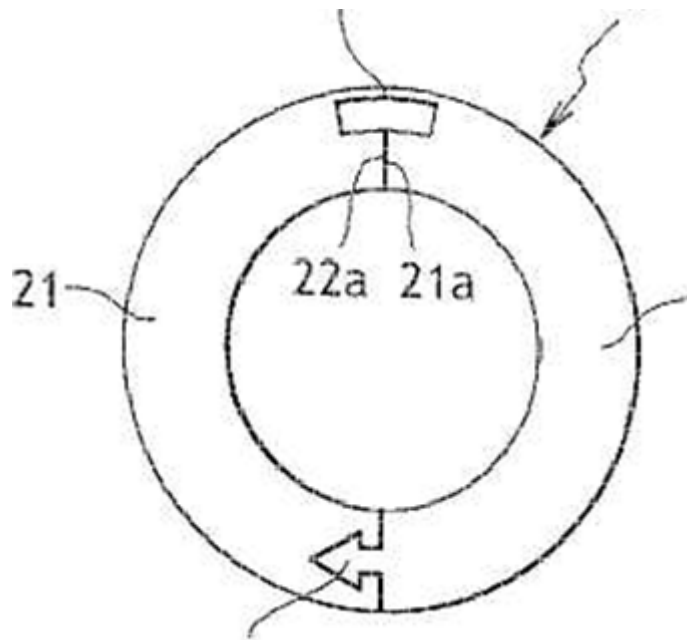
F16B 43/006

{in two or more parts hingedly connected}

Definition statement

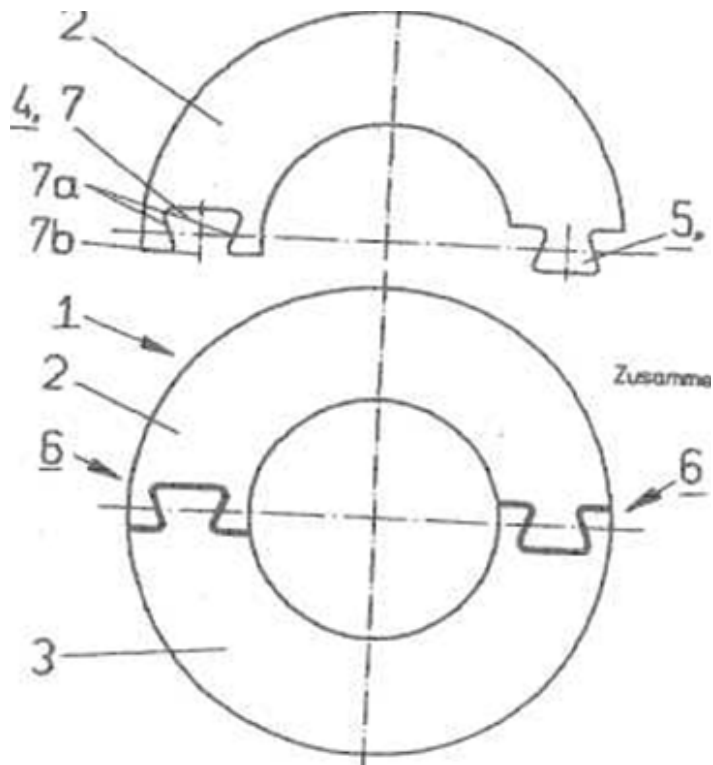
This place covers:

Illustrative example of subject matter classified in this group.



F16B 43/007**{in two or more parts}****Definition statement***This place covers:*

Illustrative example of subject matter classified in this group.



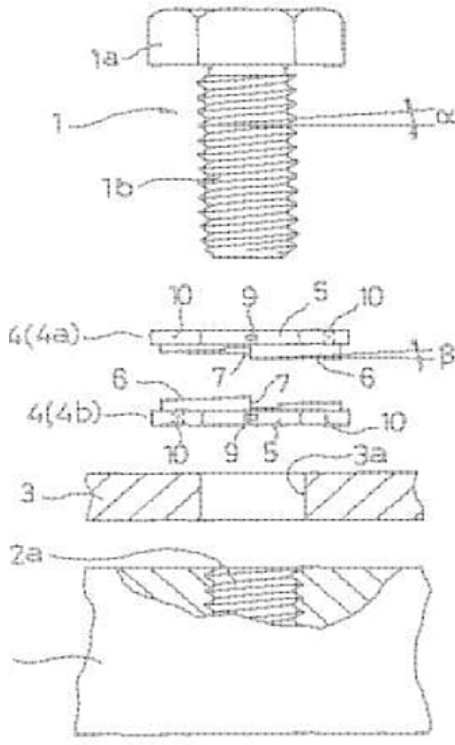
F16B 43/009

{with a wedging effect in order to adjust the height of the washer}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



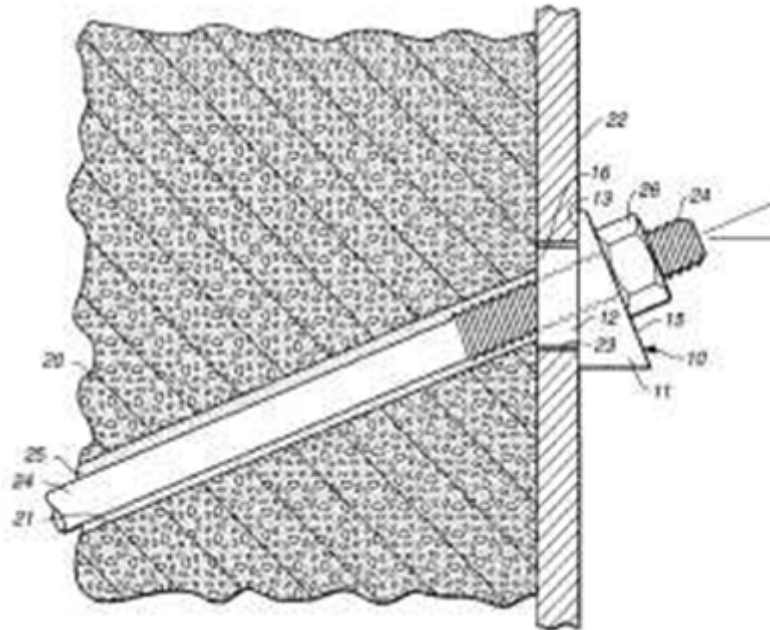
F16B 43/02

with special provisions for engaging surfaces which are not perpendicular to a bolt axis or do not surround the bolt

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



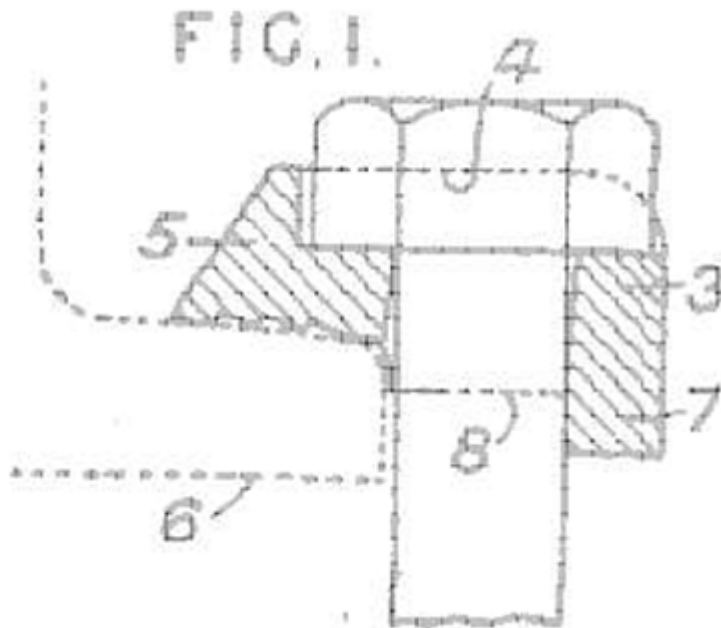
F16B 43/025

{for surfaces not surrounding the bolt, e.g. hook adaptors for bolts}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.

**F16B 45/00**

Hooks; Eyes (if the attaching parts or means are concerned, groups [F16B 13/00](#), [F16B 15/00](#), [F16B 19/00](#), [F16B 25/00](#), [F16B 35/00](#), [F16B 47/00](#) take precedence; for hanging pictures or the like [A47G 1/16](#); towing hooks for ships [B63B 21/58](#); for hoisting or hauling purposes [B66C](#); hooks or eyes with integral parts designed to facilitate quick attachment to cables or ropes at any point [F16G 11/14](#))

Definition statement

This place covers:

Curved fastening member used for fastening or securing constructional elements or machine parts together. This group also covers snap-hooks for mountaineering.

References**Limiting references**

This place does not cover:

Dowels or other devices fastened in walls or the like by inserting them in holes made therein for that purpose	F16B 13/00
Nails; Staples	F16B 15/00
Bolts without screw-thread; Pins, including deformable elements; Rivets	F16B 19/00

Screws that cut thread in the body into which they are screwed, e.g. wood screws	F16B 25/00
Screw-bolts; Stay-bolts; Screw-threaded studs; Screws; Set screws	F16B 35/00
Suction cups for attaching purposes; Equivalent means using adhesives	F16B 47/00

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:

Hooks for hanging pictures or the like	A47G 1/16
Clothes hangers	A47G 25/06
Towing hooks for ships	B63B 21/58
Hooks for hoisting or hauling purposes	B66C
Hooks or eyes with integral parts designed to facilitate quick attachment to cables or ropes at any point	F16G 11/14

Informative references

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

Mountaineering	A63B 29/02
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Special rules of classification

References [A47G 1/16](#), [B63B 21/58](#), [B66C](#), [F16G 11/14](#) are non-limiting in the main group [F16B 45/00](#). CPC will be updated/corrected once this inconsistency is resolved in IPC.

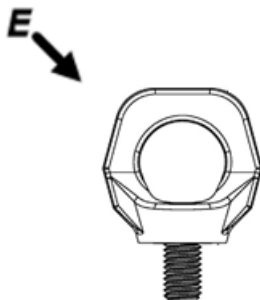
F16B 45/002

{Eyes}

Definition statement

This place covers:

The figures below are illustrative examples which fall within the scope of this subgroup. In the figures are shown examples of eyes E.





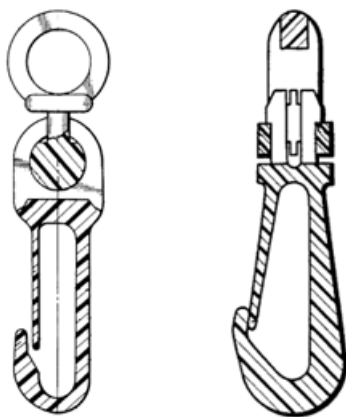
F16B 45/008

{plastics}

Definition statement

This place covers:

The figures below are illustrative examples which fall within the scope of this subgroup. In the figures are shown examples of a plastic hook.



F16B 45/012

{wire}

Definition statement

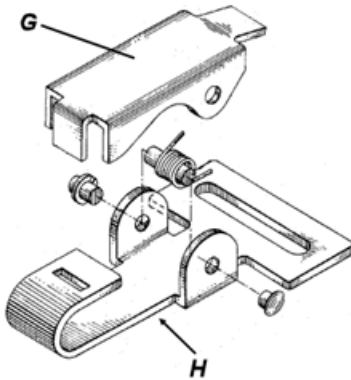
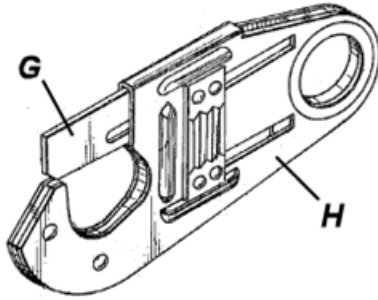
This place covers:

The figures below are illustrative examples which fall within the scope of this subgroup. In the figures are shown examples of a hook formed from a wire material.

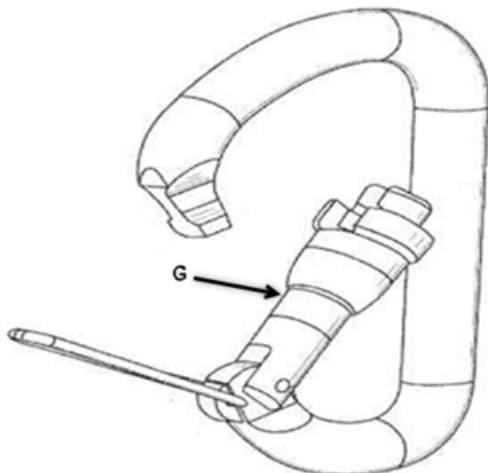


F16B 45/015**{sheet metal}****Definition statement***This place covers:*

The figures below are illustrative examples which falls within the scope of this subgroup. In the figures, each of the closing members G and hook bodies H are formed from sheet metal.

**F16B 45/02****Hooks with pivoting {or elastically bending} closing member****Definition statement***This place covers:*

Illustrative example of a hook with pivoting closing member (G).



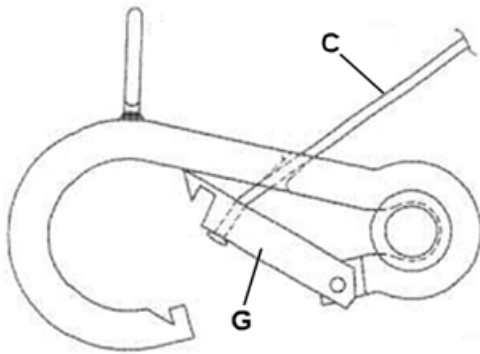
F16B 45/021

{the closing member being operable remotely, e.g. by cables, chains or rods}

Definition statement

This place covers:

Illustrative example of the closing member G being maneuverable remotely with cable C.

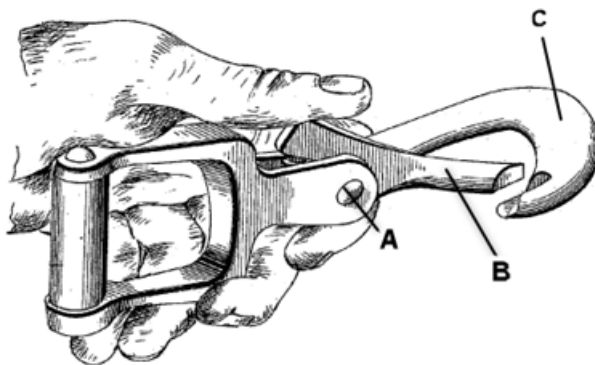
**F16B 45/022**

{the closing member pivoting about an axis lying in the plane of the hook}

Definition statement

This place covers:

Illustrative example shows closing member B pivoting about axis A which lies in the plane of hook C.



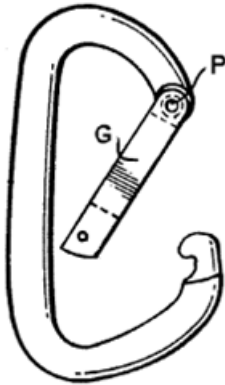
F16B 45/023

{the closing member pivoting about an axis perpendicular to the plane of the hook}

Definition statement

This place covers:

The following figure shows an example of a hook with closing member G which pivots about perpendicular axis P.

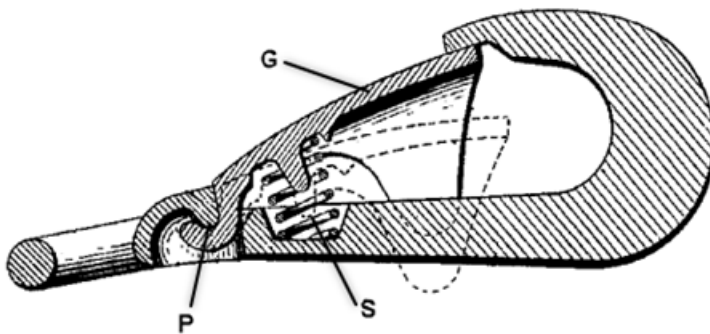
**F16B 45/024**

{and having means biasing the closing member about the pivot}

Definition statement

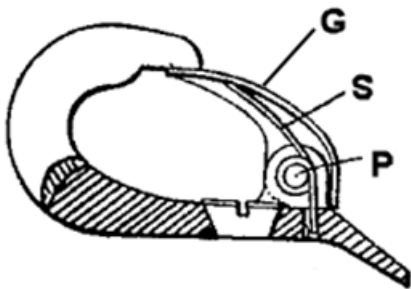
This place covers:

Illustrative example of a hook with spring S which biases closing member G about pivot P.

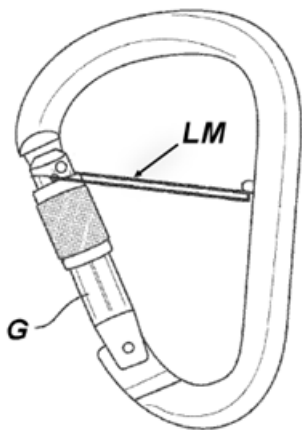


F16B 45/026**{and including a coil type spring}****Definition statement***This place covers:*

Illustrative example of a hook with coil spring S which biases closing member G about pivot P.

**F16B 45/027****{and having position-locking means for the closing member}****Definition statement***This place covers:*

The exemplary figure below shows a hook where the position of closing member G is prevented from moving by locking means LM.



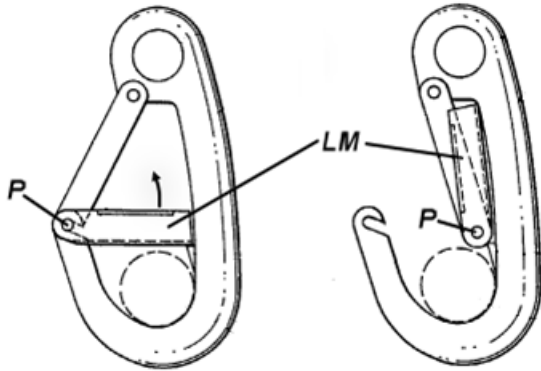
F16B 45/028

{the position-locking means being pivotally connected}

Definition statement

This place covers:

The exemplary figure below shows locking means LM being pivotally connect at pin P.

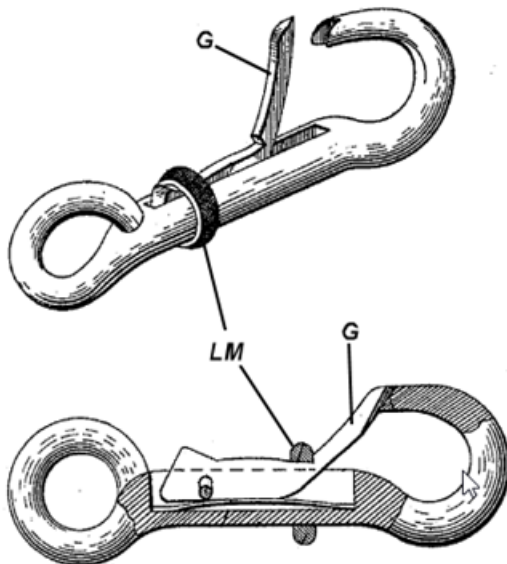
**F16B 45/029**

{the position-locking means being slidably mounted}

Definition statement

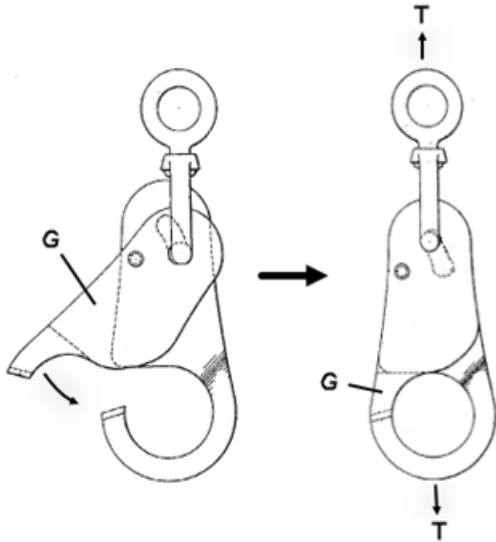
This place covers:

Illustrative example of a hook where locking means LM is slidably mounted to lock pivoting member G.



F16B 45/031**{the closing member closing when a structure to be secured is tensioned}****Definition statement***This place covers:*

Illustrative example of a hook where closing member G closes when tension T is applied to the hook as shown.



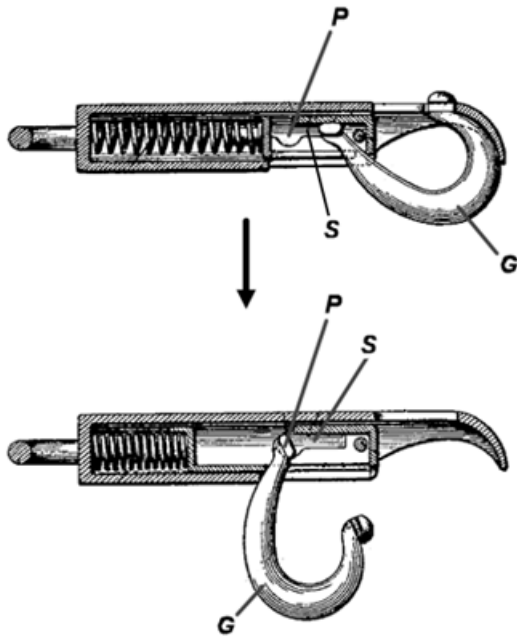
F16B 45/032

{whereby the closing member is slidable relative to the pivot}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the closing member G is slidable along slot S which is relative to pivot point P.



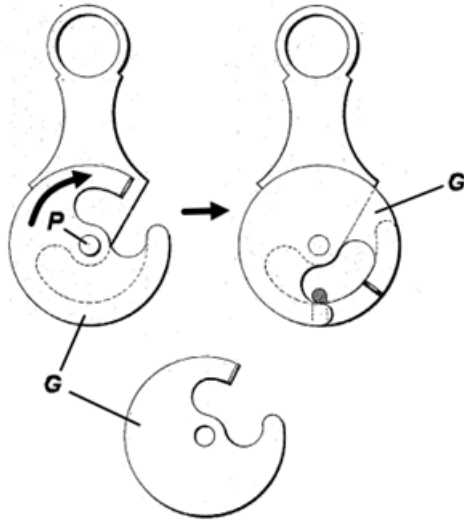
F16B 45/033

{the closing member being revolvably mounted and having a disc shape}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the closing member G is revolvably mounted to rotate about pin P, and is substantially in the shape of a disc.

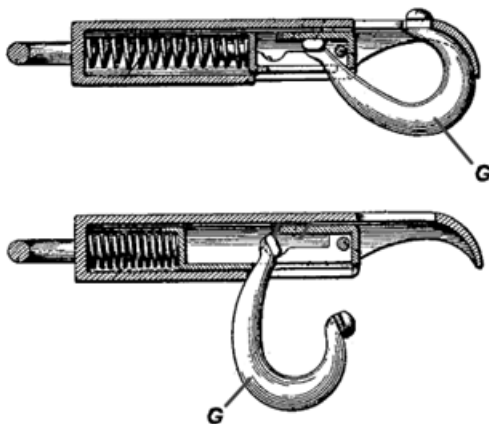
**F16B 45/034**

{the closing member constituting the hook shaped portion of the hook}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the closing member G is hook shaped.



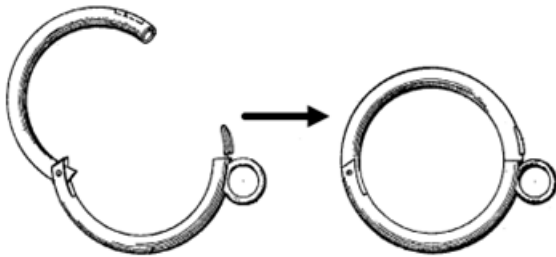
F16B 45/035

{the hook forming a loop or ring when interlocked with the closing member, i.e. the entire structure of the hook being loop shaped}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the hook forms as a loop or ring when interlocked.

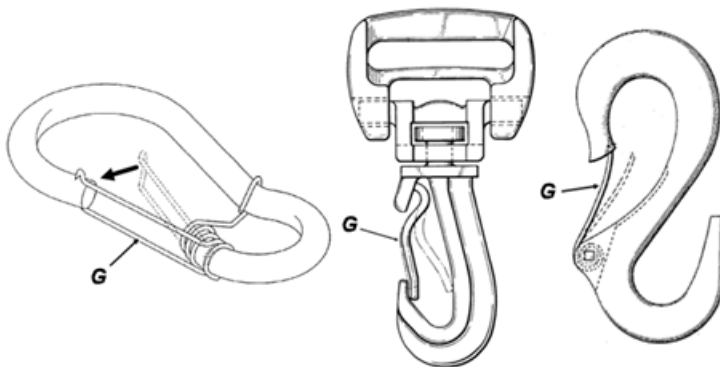
**F16B 45/036**

{with an elastically bending closing member}

Definition statement

This place covers:

The figures below are illustrative examples which falls within the scope of this subgroup. In the figures, an closing member G elastically bends to an open position, and is self-biased to a closed position. The closing member G may be, e.g. of a wire, sheet, plastic, or integrally formed material.



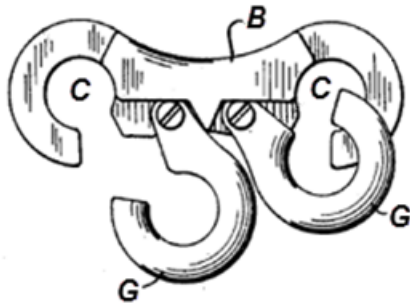
F16B 45/037

{Multiple locking cavities, each having a pivoting closing member}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, a main body B of the hook includes multiple locking cavities C, each cavity having a pivoting closing member G that enters its corresponding cavity C.

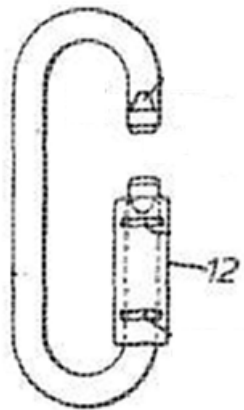
**F16B 45/04**

Hooks with sliding closing member

Definition statement

This place covers:

Illustrative example of a hook with sliding closing member 12.



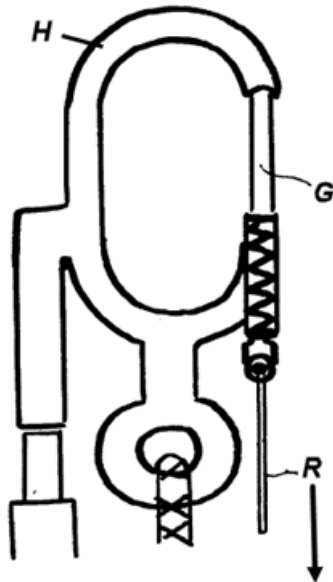
F16B 45/043

{the closing member being operable remotely, e.g. by cables, chains or rods}

Definition statement

This place covers:

The figures below are illustrative examples which falls within the scope of this subgroup. In the figure, sliding closing member G is operable by pulling rod R in the direction of the arrow.

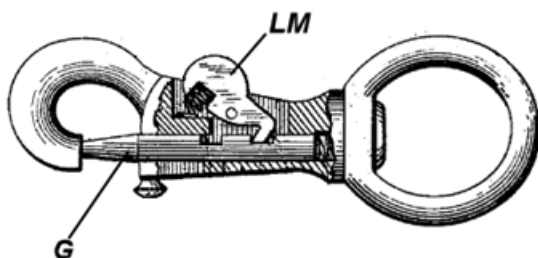
**F16B 45/045**

{provided with position-locking means for the closing member}

Definition statement

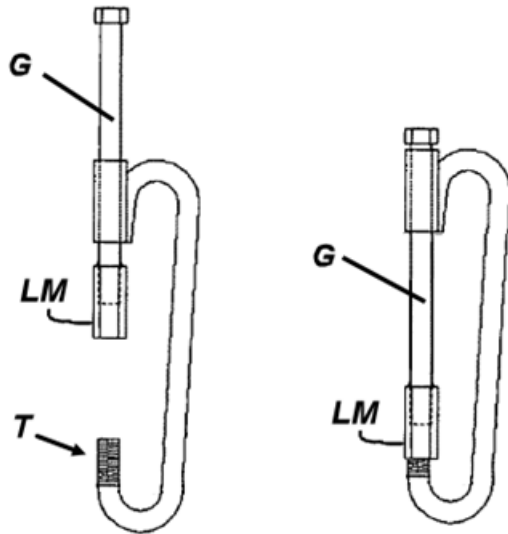
This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, sliding closing member G is shown locked in a closed position by locking element LM.

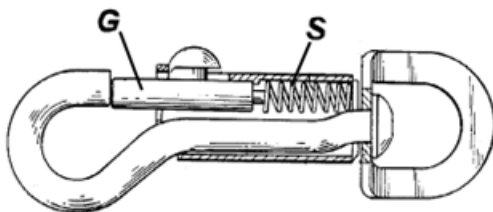


F16B 45/047**{in the form of a threaded closing member}****Definition statement***This place covers:*

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, sliding closing member G is shown to lock in a closed position by a threaded locking element LM onto threaded end T.

**F16B 45/049****{provided with means biasing the closing member}****Definition statement***This place covers:*

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, spring S biases the sliding closing member G in a closed position.



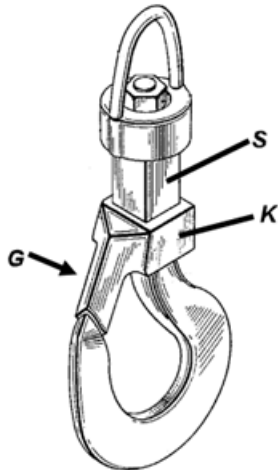
F16B 45/051

{provided with a guide of the closing member encircling a shank of the hook}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the sliding closing member G includes a guide K encircling the shank S.

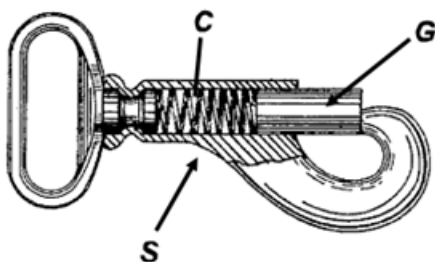
**F16B 45/053**

{provided with a cavity in a shank of the hook forming a track or way for the closing member}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the shank S of the hook includes a cavity C forming a track or way for the closing member G.



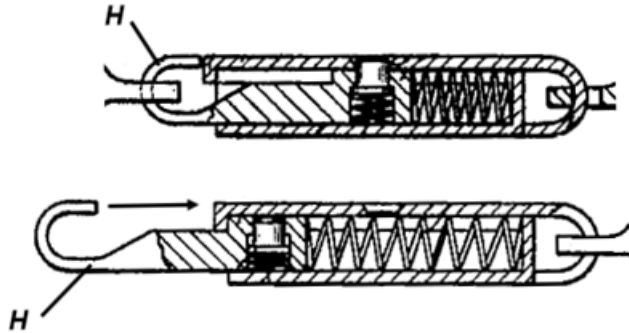
F16B 45/055

{the closing member constituting the hook-shaped portion of the hook}

Definition statement

This place covers:

The figure below is an illustrative example which falls within the scope of this subgroup. In the figure, the hook shaped portion H of the hook functions as the closing member.

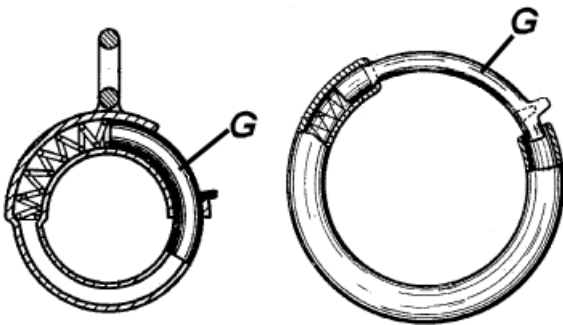
**F16B 45/057**

{the hook forming a loop or ring when interlocked with the closing member, i.e. the entire structure of the hook being loop shaped}

Definition statement

This place covers:

The figures below are an illustrative example which falls within the scope of this subgroup. In the figures, the hook forms a loop or ring shape when the sliding closing member G is interlocked.

**F16B 45/059**

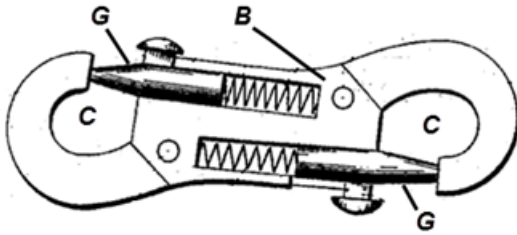
{Multiple locking cavities, each having a sliding closing member}

Definition statement

This place covers:

The figure below illustrates an example which falls within the scope of this subgroup. Hooks comprising multiple locking cavities C within a main body portion B of the hook

in which a corresponding sliding closing member G enters each locking cavity C.



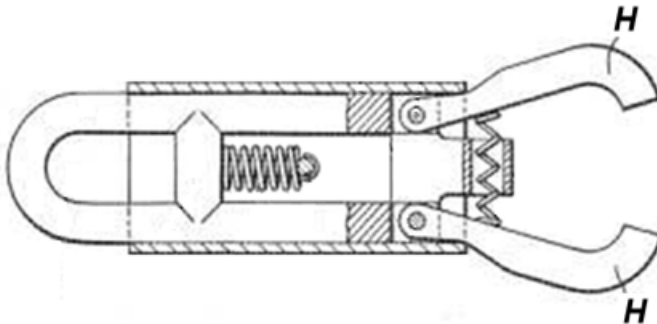
F16B 45/06

Hooks with two symmetrically-pivoting hook parts {within the same locking cavity (F16B 45/035 takes precedence)}

Definition statement

This place covers:

Illustrative example of a hook including two symmetrically pivoting hook parts (H).



References

Limiting references

This place does not cover:

Hooks with a pivoting or elastically bending closing member the hook forming a loop or ring when interlocked with the closing member, i.e. the entire structure of the hook being loop shaped	F16B 45/035
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F16B 47/00

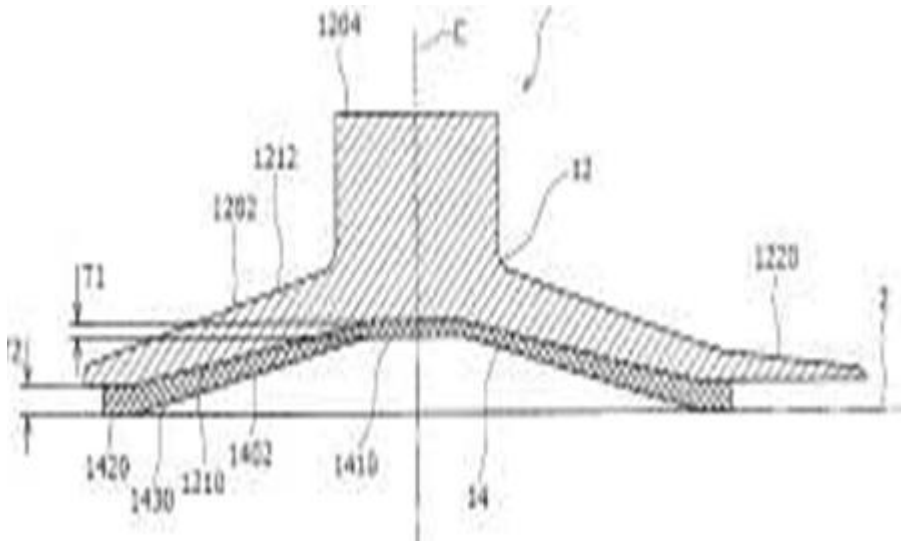
Suction cups for attaching purposes; Equivalent means using adhesives {(devices using adhesives, suction or magnetism for hanging or supporting pictures or the like [A47G 1/17](#); vacuum work holders [B25B 11/005](#); anchoring of ships using suction [B63B 21/27](#); suction cups for handling glass [B65G 49/061](#); load-engaging elements for cranes using suction means [B66C 1/02](#))}

Definition statement

This place covers:

Suction cups, i.e. fasteners that uses negative fluid pressure of air or water to adhere to surfaces.

Example:



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:

Devices using adhesives, suction or magnetism for hanging or supporting pictures or the like	A47G 1/17
Vacuum work holders	B25B 11/00
Anchoring of ships using suction	B63B 21/27
For conveying articles	B65G 47/91 , H01L 21/6838
Suction cups for handling glass	B65G 49/061
Load-engaging elements for cranes using suction means	B66C 1/02

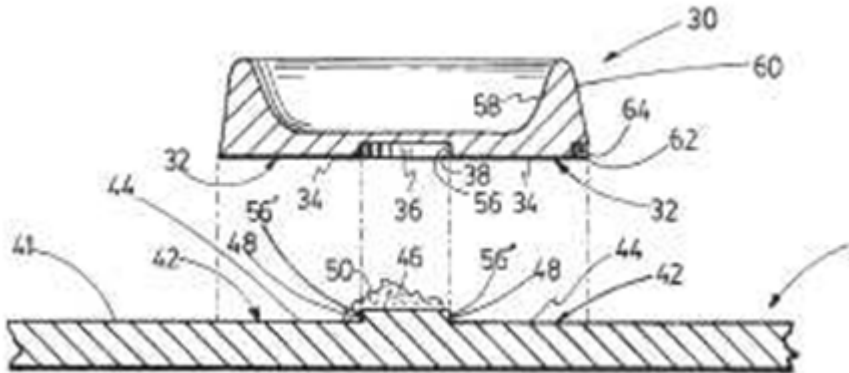
F16B 47/003

{using adhesives for attaching purposes (using adhesives for connecting constructional elements [F16B 11/006](#))}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



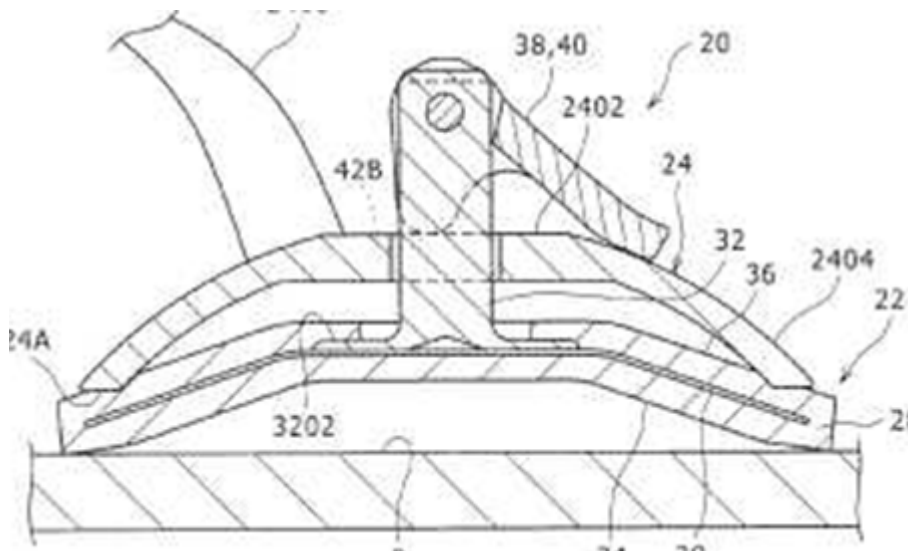
F16B 47/006

{the suction cups being activated by the rotation of a cranked lever arm}

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



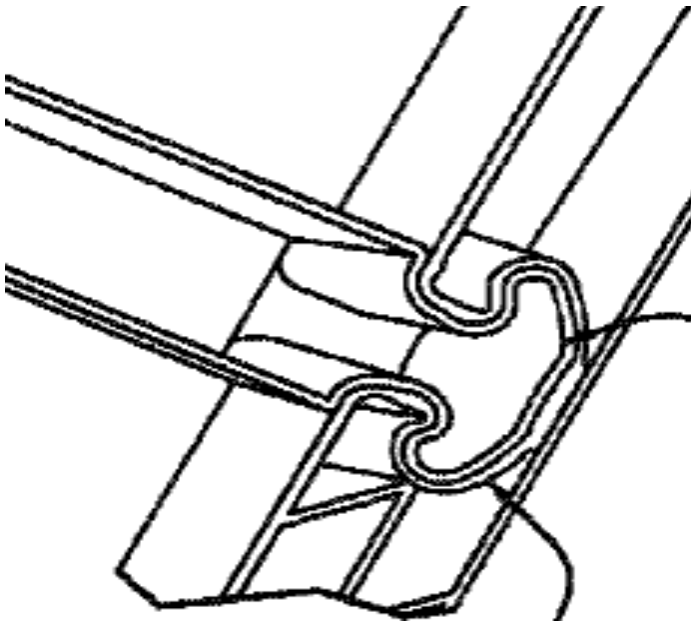
F16B 2200/10

Details of socket shapes

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



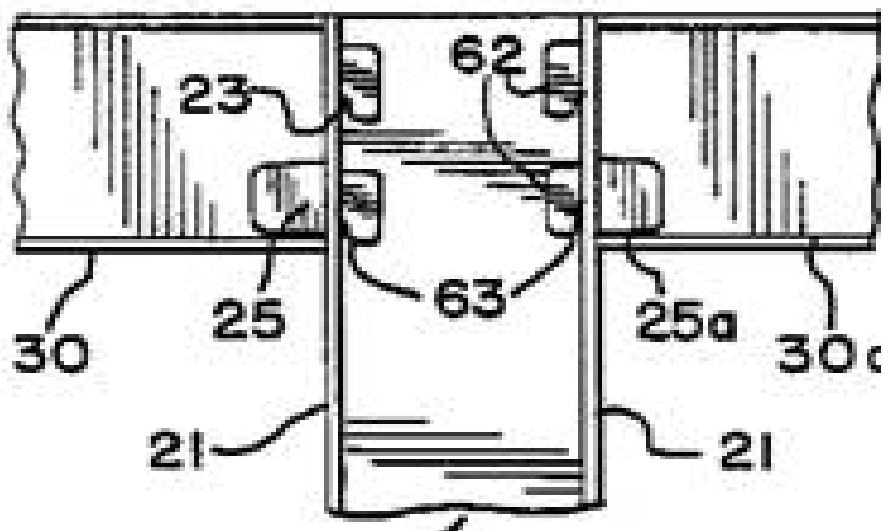
F16B 2200/20

Connections with hook-like parts gripping behind a blind side of an element to be connected

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



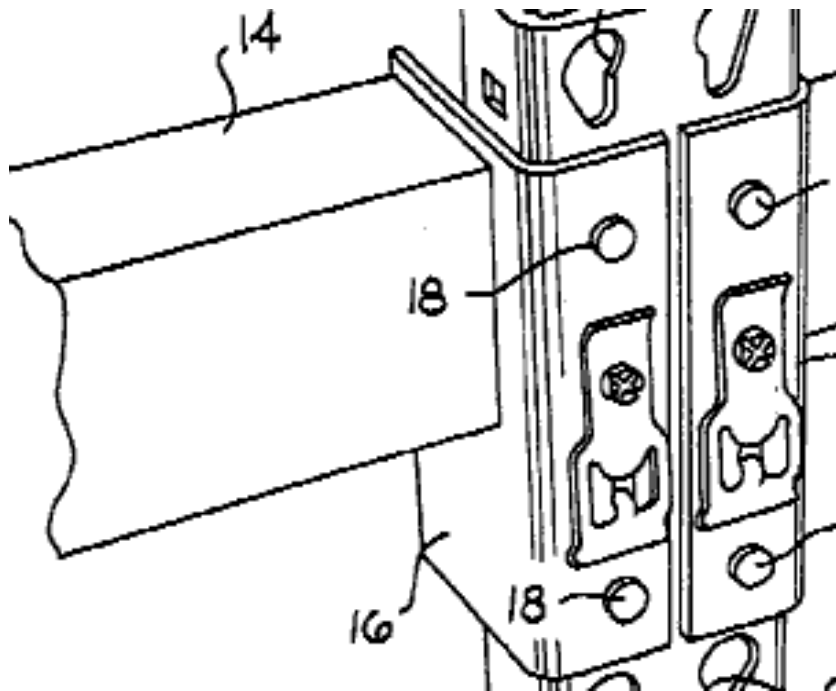
F16B 2200/205

the hook being a separate retainer

Definition statement

This place covers:

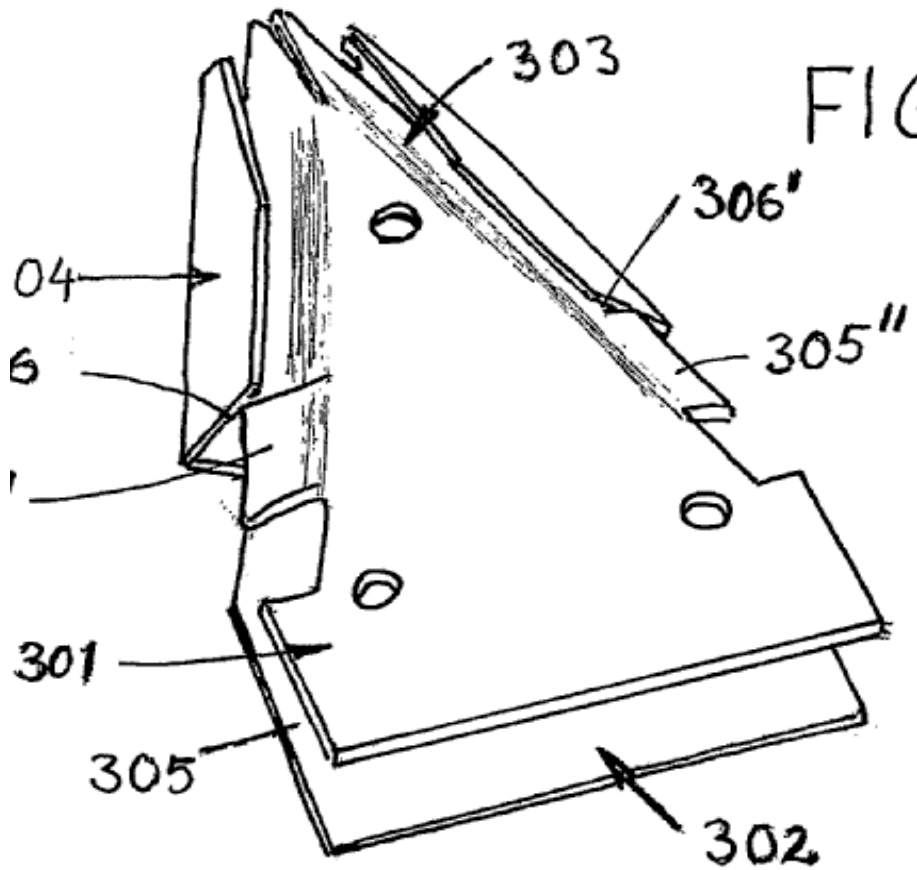
Illustrative example of subject matter classified in this group.



F16B 2200/30**Dovetail-like connections****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group.



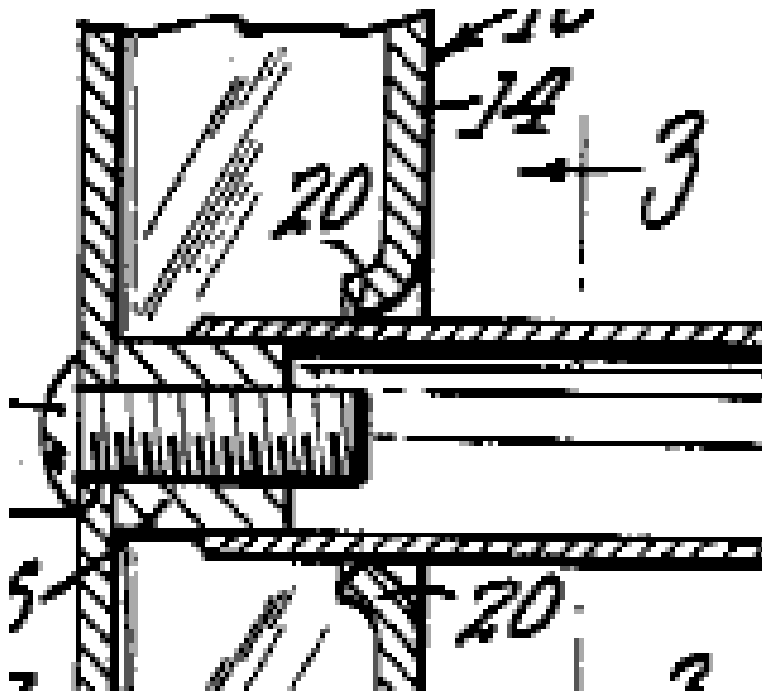
F16B 2200/403

Threaded clamping parts

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



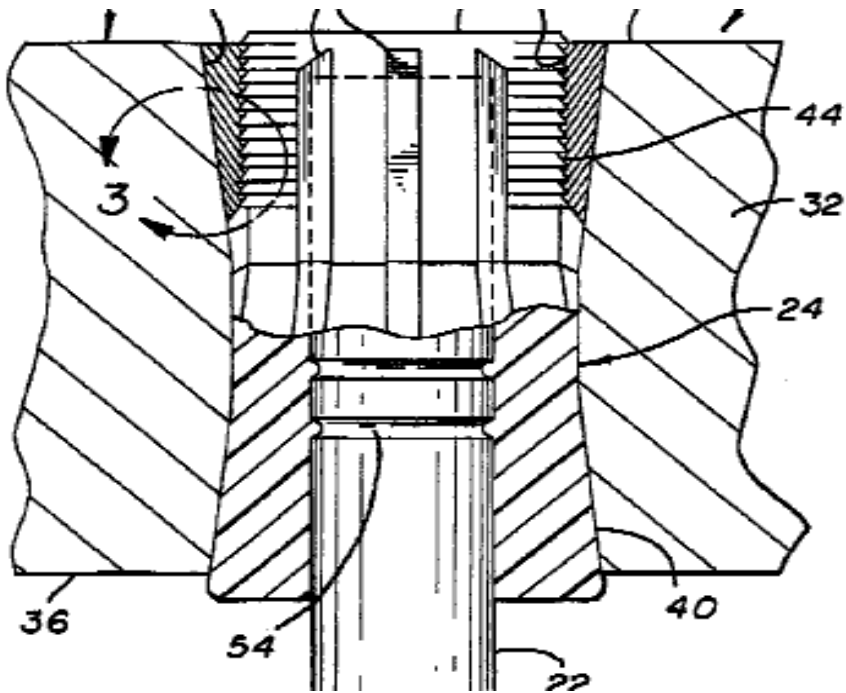
F16B 2200/406

Clamping parts being collars, bushings or wedges

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



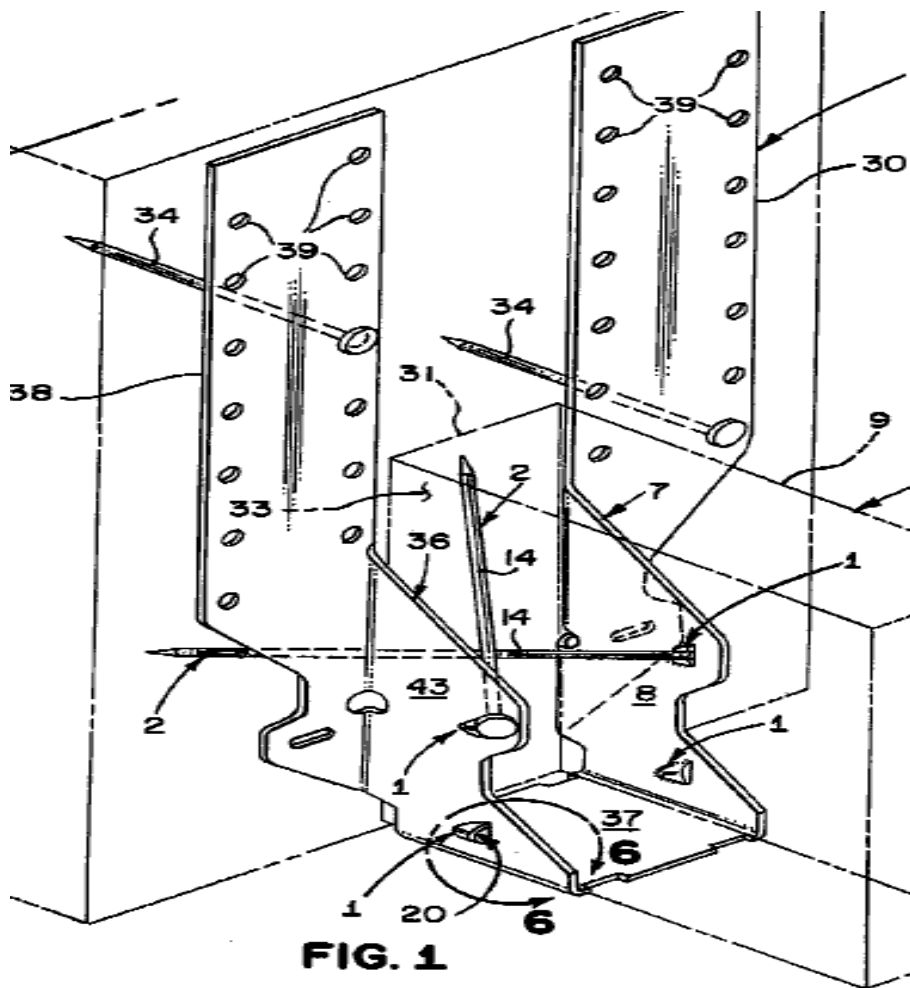
F16B 2200/503

the flange being separate from the elements to be connected

Definition statement

This place covers:

Illustrative example of subject matter classified in this group.



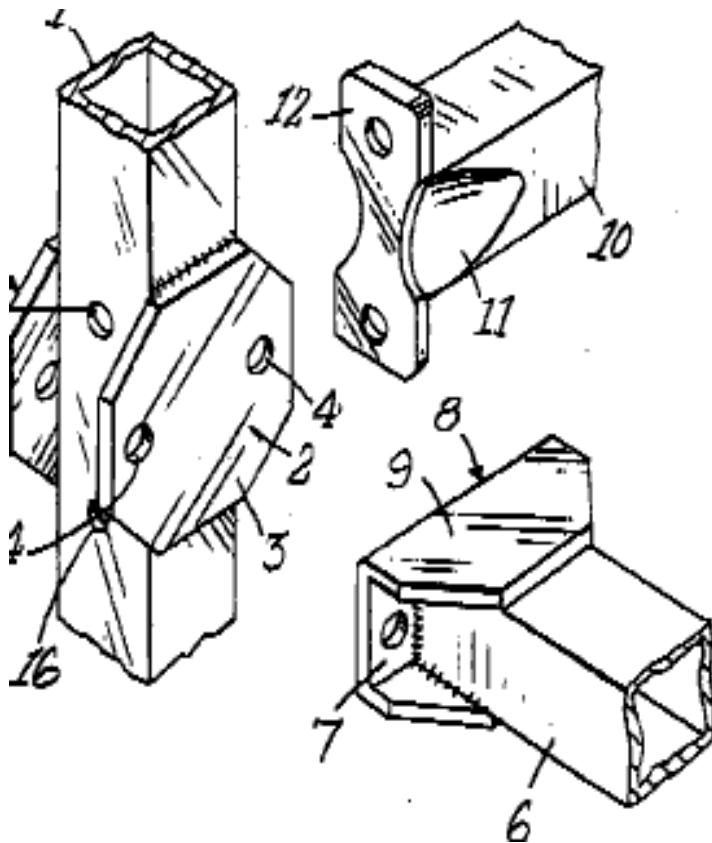
F16B 2200/506

bolted or riveted

Definition statement

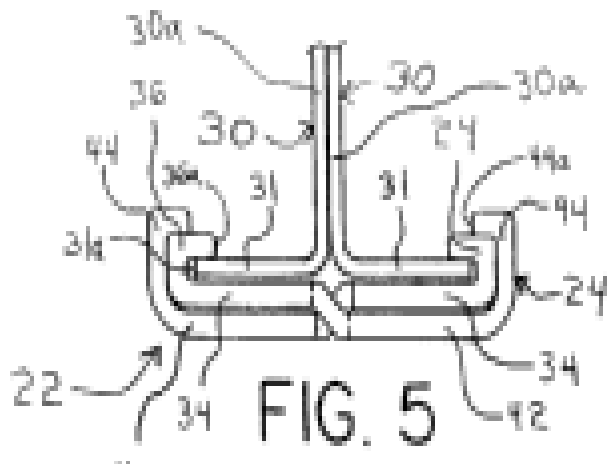
This place covers:

Illustrative example of subject matter classified in this group.



F16B 2200/509**clamped****Definition statement***This place covers:*

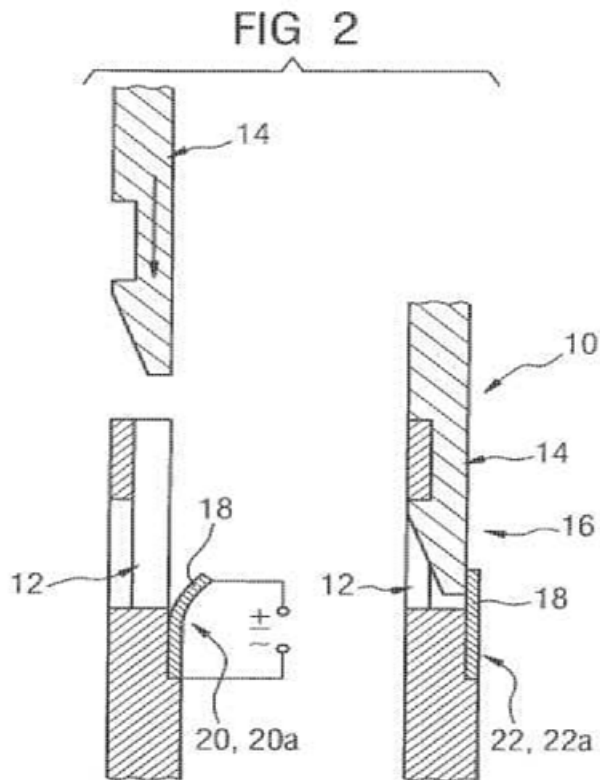
Illustrative example of subject matter classified in this group.



F16B 2200/77**Use of a shape-memory material****Definition statement**

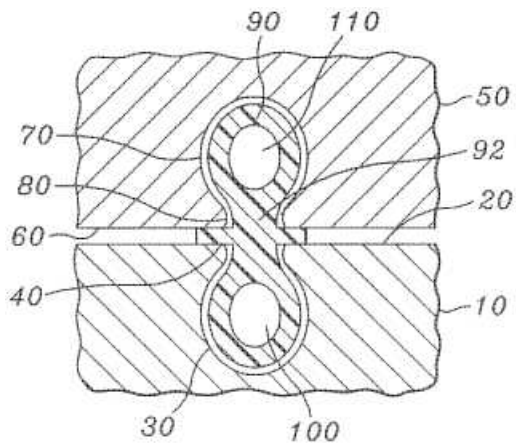
This place covers:

Illustrative example of subject matter classified in this group:

**F16B 2200/89****Use of a hydraulic action****Definition statement**

This place covers:

Illustrative example of subject matter classified in this group:



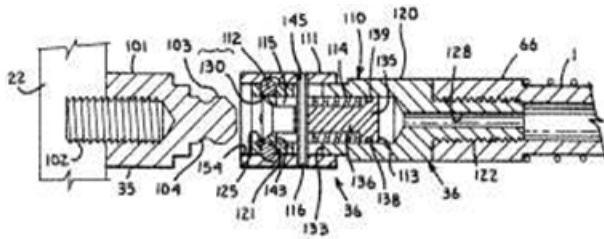
F16B 2200/91

Use of a pneumatic action

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



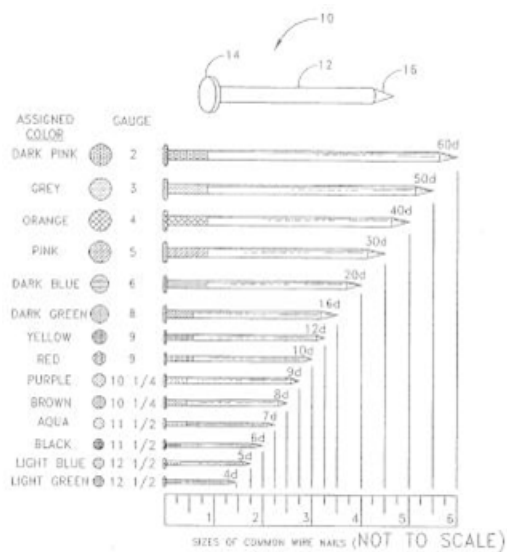
F16B 2200/95

with markings, colours, indicators or the like

Definition statement

This place covers:

Illustrative example of subject matter classified in this group:



References

Informative references

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

For indicating tensile load	F16B 31/02
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