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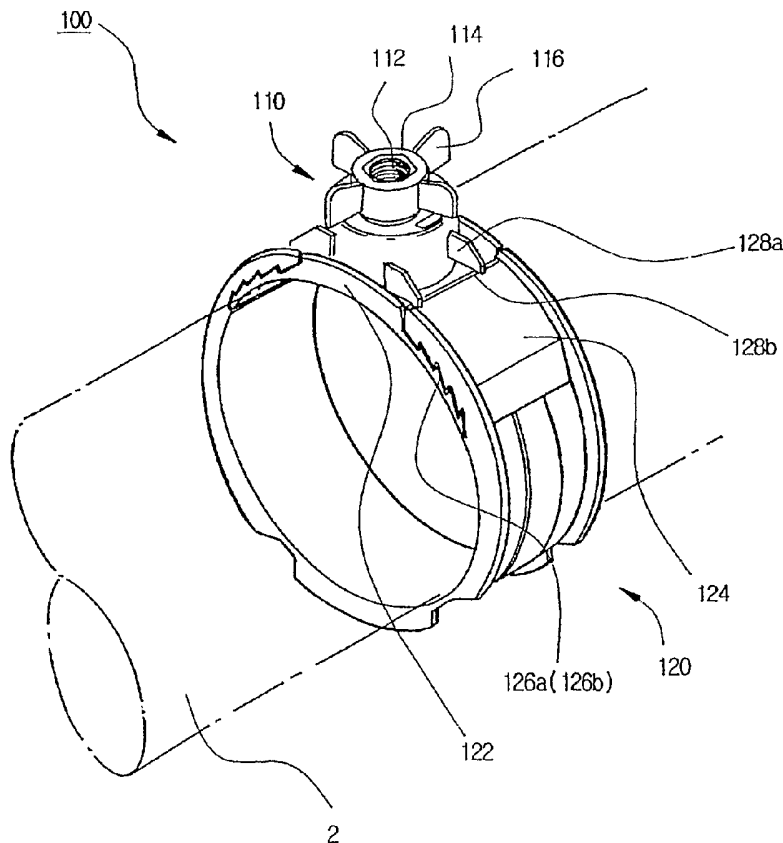
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[Continued on next page]

(54) Title: PIPE HANGER FOR HANGING PIPES



(57) Abstract: A pipe hanger for hanging pipes is provided, in which the pipe hanger is made of non-corrosive resin and assembled on a one-touch manner to support and fix pipes on the ceiling, conveniently and quickly. The pipe hanger includes an adjustment unit having a nut and a rotating body and a clamp having a connection member and a fixing ring. First protrusions of saw-tooth shape are formed on the lower surface of either end of the clamp, and second protrusions of saw-tooth shape corresponding to the first protrusions are formed on the outer surface of either end of the fixing ring, to thereby fix the pipe in the form of surrounding the pipe.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

PIPE HANGER FOR HANGING PIPES

Technical Field

The present invention relates to a pipe hanger for supporting and fixing various pipes which are chiefly installed on the ceiling in the cellar of buildings, and more particularly, to a pipe hanger made of non-corrosive resin and assembled on a one-touch manner to support and fix pipes on the ceiling, conveniently and quickly after to fitting the pipes into the pipe hanger, at the time of connecting the pipe hanger with an anchor bolt buried on the ceiling to fix pipes without requiring a particular tool such as spanners.

Background Art

In general, various pipes for various uses are installed on the ceiling in the cellar or each floor of buildings. A pipe hanger is used for fixing the pipes to suspend on the ceiling.

A configuration of a conventional pipe hanger is shown in FIGS. 1 and 2.

FIG. 1 is a perspective view showing a conventional pipe hanger for hanging pipes, and FIG. 2 is a cross-sectional view of FIG. 1.

As illustrated, a conventional pipe hanger largely includes a center support member 10, a pair of clamp members 20 and 20'

which are suspended in the lower portion of the center support member 10, and a bolt 30 and a nut 40 which connect the center support member 10 and the pair of clamp members 20 and 20' with each other.

5 Here, the center support member 10 has a nut 11 which is connected with an anchor bolt 2 installed on a ceiling 1 and a connector 12 which is bent and formed in the lower portion thereof. An engagement hole 13 is formed in the connector 12 so that the bolt 30 can penetrate through the engagement hole 13.

10 Connection pieces 21 and 21' which suspend the clamp members 20 and 20' on the connector 12 in the center support member 10 are formed on the clamp members 20 and 20'. Engagement holes 22 and 22' through which the bolt 30 penetrates are formed on the connection pieces 21 and 21'.

15 In addition, a locker 23 which connects the pair of clamp members 20 and 20' and a locking hole 24 through which the locker 23 is fitted are formed in the lower portion of the clamp members 20 and 20', in order to support and hang pipes.

20 As shown in FIG. 2, the conventional pipe hanger is used for hanging pipes, in which the bolt 30 penetrates through the engagement holes 22 and 22' and engages the center support member 10 and the clamp members 20 and 20' at the state where the bolt 30 is engaged with the nut 40. Here, the nut 11 is engaged with the anchor bolt 2 installed on the ceiling 1. The pipe hanger

performs a pipe clamping work in which the pipe hanger is put into an opened state and then a pipe is fitted into the pipe hanger to then put the pipe hanger into a closed state.

5 A number of the pipe hangers are installed at interval to support pipes. Thus, anchor bolts are installed on the ceiling at the time of construction of buildings to then connect pipe hangers with the anchor bolts, so that pipes can be supported and fixed on the ceiling by the pipe hangers.

10 However, the conventional pipe hanger is made of iron plates which are assembled with bolts and nuts. Thus, the pipe hanger should be treated with an electrical zink galvanizing plate for preventing corrosion. Such a zinc galvanizing plate may cause an environmental pollution.

15 Also, the conventional pipe hanger should use an insulation material such as PVC and rubber in order to prevent corrosion at the portions where iron contacts copper and iron contacts stainless steel, to thereby cause cost to rise up. Further, noise may occur due to friction between iron and steel pipes (or copper or stainless steel pipes).

20 As well, the conventional pipe hanger should be assembled with bolts and nuts to thereby cause inconveniences in its construction. That is, in order to engage the pipe hangers with the anchor bolts which have been installed in advance on the ceiling, a separate tool such as spanners should be used, which

causes inconveniences in its construction. Further, in order to support and fix pipes horizontally, the horizon of the pipes should be adjusted by adjusting engagement position of the nuts with the tool such as spanners, which also causes much
5 inconveniences.

Disclosure of the Invention

To solve the above problems, it is an object of the present invention to provide a pipe hanger which is made of non-corrosive
10 resin and assembled on a one-touch manner to support and fix pipes on the ceiling, conveniently and quickly

To accomplish the above objects of the present invention, there is provided a pipe hanger which is connected with an anchor bolt buried on the ceiling to fix pipes, includes an adjustment
15 unit having a nut on the inner circumferential surface of which a female screw portion is formed to be connected to the anchor bolt and a rotating body which is installed on the outer circumferential surface of the nut to rotate the nut and has handles protruded outwards, and a clamp having a connection member
20 in which the nut is rotatably buried and first protrusions of saw-tooth shape are formed on the lower surface of either end of the clamp, and a fixing ring formed of a ring shape whose upper portion is opened to be connected with the connection member, and second protrusions of saw-tooth shape corresponding to the first

protrusions are formed on the outer surface of either end of the fixing ring, to thereby fix the pipe in the form of surrounding the outer circumferential surface of the pipe.

Preferably, locking pieces are provided in either end of the connection member provided in the clamp and locking stops are provided in either end of the fixing ring.

Preferably, the connection member and the fixing ring in the clamp are made of resin.

Brief Description of the Drawings

The above and other objects and advantages of the present invention will become more apparent by describing the preferred embodiment thereof in more detail with reference to the accompanying drawings in which:

FIG. 1 is a perspective view showing a conventional pipe hanger for hanging pipes;

FIG. 2 is a cross-sectional view of FIG. 1;

FIG. 3 is a perspective view showing a pipe hanger for hanging pipes according to the present invention;

FIG. 4 is cross-sectional view showing a separation status of the pipe hanger for hanging pipes according to the present invention; and

FIG. 5 is a perspective view showing a separation status of a nut and a rotating body which are used for fixing the pipe hanger

to an anchor bolt according to the present invention.

Best Mode for Carrying out the Invention

Hereinbelow, a pipe hanger according to a preferred
5 embodiment of the present invention will be described with
reference to the accompanying drawings.

FIG. 3 is a perspective view showing a pipe hanger for hanging
pipes according to the present invention. FIG. 4 is
cross-sectional view showing a separation status of the pipe hanger
10 for hanging pipes according to the present invention. FIG. 5 is
a perspective view showing a separation status of a nut and a
rotating body which are used for fixing the pipe hanger to an anchor
bolt according to the present invention.

As shown in FIGs. 3 to 5, the pipe hanger 100 according to
15 the present invention includes an adjustment unit 110 which is
connected with an anchor bolt (not shown) buried on the ceiling
to fix a pipe 2. The adjustment unit 110 includes a nut 112 and
a rotating body 114.

The nut 112 on the inner circumferential surface of which
20 a female screw portion is formed to be connected to the anchor
bolt buried on the ceiling is pivotally buried in a connection
member which will be described later. The rotating body 114 is
installed on the outer circumferential surface of the nut 112 to
rotate the nut. Here, the rotating body 114 has handles 116

protruded outwards. Here, the nut 112 can be tightened or released with respect to the anchor bolt in which the rotating body 114 can be rotated by hands using the handles 116. Thus, the present invention does not need any special tools in order to tighten or
5 release the nut 112. Accordingly, height of the pipe hanger 100 can be further conveniently adjusted since the nut 112 can be rotated manually without requiring any special tools.

As illustrated, the pipe hanger 100 for hanging pipes according to the present invention includes a clamp 120. The clamp
10 includes a connection member 122 and a fixing ring 124 both of which are made of resin. The nut 112 is rotatably buried in the connection member 122, in which first protrusions 126a of saw-tooth shape are formed on the lower surface of either end of the clamp 120.

15 The fixing ring 124 whose upper portion is formed of an open ring shape fixes a pipe 2 in a manner of surrounding the pipe 2. The fixing ring 124 whose upper portion is formed of an open ring shape is connected with the connection member 122 on a one-touch style. Second protrusions 126b of saw-tooth shape corresponding
20 to the first protrusions 126a are formed on the outer surface of either end of the fixing ring 124, to thereby enable the fixing ring 124 to be connected with the connection member 122 on a one-touch style.

Further, locking pieces 128a are provided in either end of

the connection member 122 provided in the clamp and locking stops 128b are provided in either end of the fixing ring 124 so that the locking pieces 128a can be engaged with the locking stops 128b. When the first and second protrusions 126a and 126b are connected
5 with each other on a one-touch style by the locking pieces 128a and the locking stops 128b, a firm retention force can be maintained and the connection status can be more reliably maintained.

The pipe hanger 100 for hanging pipes according to the
10 present invention which has the above-described structure is fixed on the ceiling by engaging the nut 112 with the anchor bolt which has been installed on the ceiling in advance. Here, a rotating body 114 is further provided on the outer circumferential surface of the nut 112. Accordingly, the nut 112 can be turned
15 manually using handles 116 so that the nut 112 can be tightened or released, to thereby adjust height of the pipe hanger 100.

As described above, the pipe hanger 100 according to the present invention supports and fixes a pipe 2 in which the pipe 2 is combined with the pipe hanger 100 on a one-touch style by
20 the first and second protrusions 126a and 126b of saw-tooth shape in a manner of surrounding the pipe 2 by means of the fixing ring 124 of the clamp 120 at the state where the pipe hanger 100 is fixed on the ceiling. Here, as shown in FIG. 4, the connection member 122 and the fixing ring 124 in the clamp 120 can be

completely separated from each other. Accordingly, when the pipe 2 is fixedly supported by the pipe hanger 100, any one end of the connection member 122 and the fixing ring 124 is firstly combined with the pipe 2, and then the other end thereof is combined with the pipe 2. In this manner, the pipe 2 is supported by and fixed to the pipe hanger 100.

Meanwhile, the connection member 122 and the fixing ring 124 are made of resin. Accordingly, when the pipe 2 is supported by and fixed to the pipe hanger 100, the fixing ring 124 becomes wider by an elastic force of resin. As a result, the pipe can be firmly combined with the connection member 122 at the state where the pipe 2 has been fitted with the pipe hanger 100.

Industrial Applicability

As described above, the present invention is applied to a pipe hanger for hanging pipes in a piping work. The pipe hanger according to the present invention is made of resin which does not cause corrosion of insulation. Also, the pipe hanger can be assembled on a one-touch style by first and second protrusions of saw-tooth shape which much conveniences an installation work. The pipe hanger does not raise noise due to friction between resin-made pipe hanger and steel pipes. Any special tool such as spanners need not be used in a installation work, in which the pipe hanger can be simply combined with the pipe and height of

the pipe hanger can be very easily adjusted. That is, since the pipe can be fixed with the pipe hanger conveniently and quickly, to thereby enhance a working efficiency, shorten a construction period, and save labor cost. The pipe hanger made of resin can
5 be also recycled in view of feature of resin.

As described above, the present invention has been described with respect to particularly preferred embodiment. However, the present invention is not limited to the above embodiment, and it is possible for one who has an ordinary skill in the art to make
10 various modifications and variations, without departing off the spirit of the present invention. Thus, the protective scope of the present invention is not defined within the detailed description thereof but is defined by the claims to be described later and the technical spirit of the present invention.

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What is claimed is:

1. A pipe hanger which is connected with an anchor bolt buried on the ceiling to fix pipes, the pipe hanger comprising:

an adjustment unit having a nut on the inner circumferential surface of which a female screw portion is formed to be connected
5 to the anchor bolt and a rotating body which is installed on the outer circumferential surface of the nut to rotate the nut and has handles protruded outwards; and

a clamp having a connection member in which the nut is rotatably buried and first protrusions of saw-tooth shape are
10 formed on the lower surface of either end of the clamp, and a fixing ring formed of a ring shape whose upper portion is opened to be connected with the connection member, and second protrusions of saw-tooth shape corresponding to the first protrusions are formed
15 on the outer surface of either end of the fixing ring, to thereby fix the pipe in the form of surrounding the outer circumferential surface of the pipe.

2. The pipe hanger according to claim 1, wherein locking pieces are provided in either end of the connection member
20 provided in the clamp and locking stops are provided in either end of the fixing ring.

3. The pipe hanger according to claim 1, wherein the

connection member and the fixing ring in the clamp are made of resin.

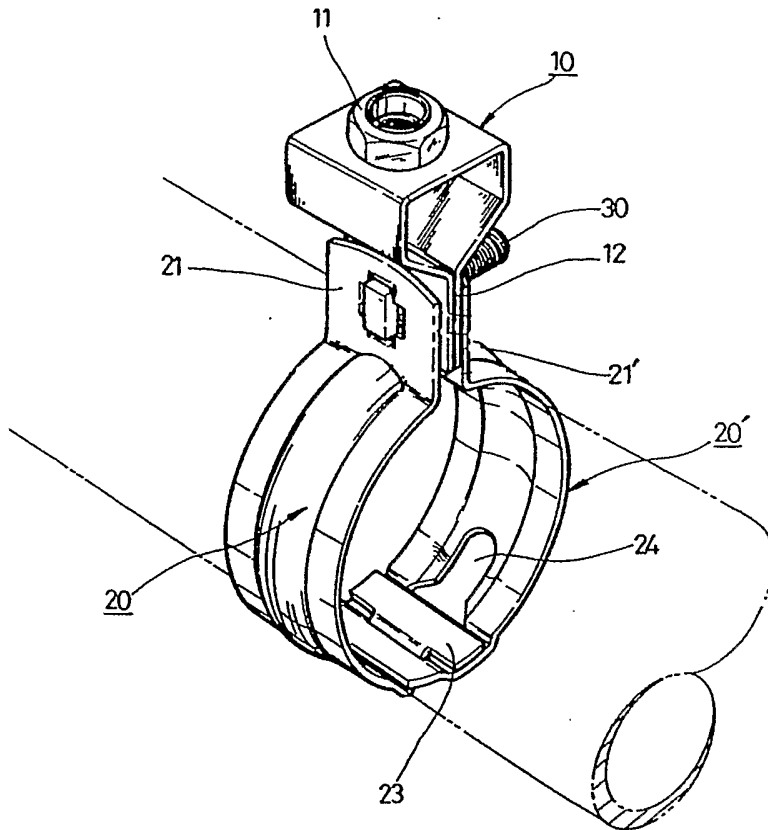
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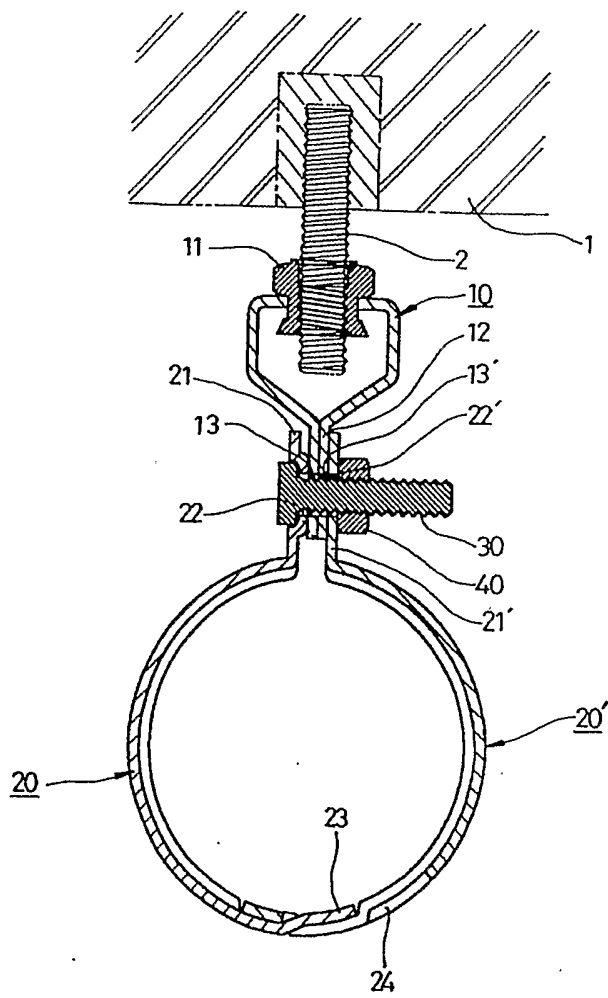
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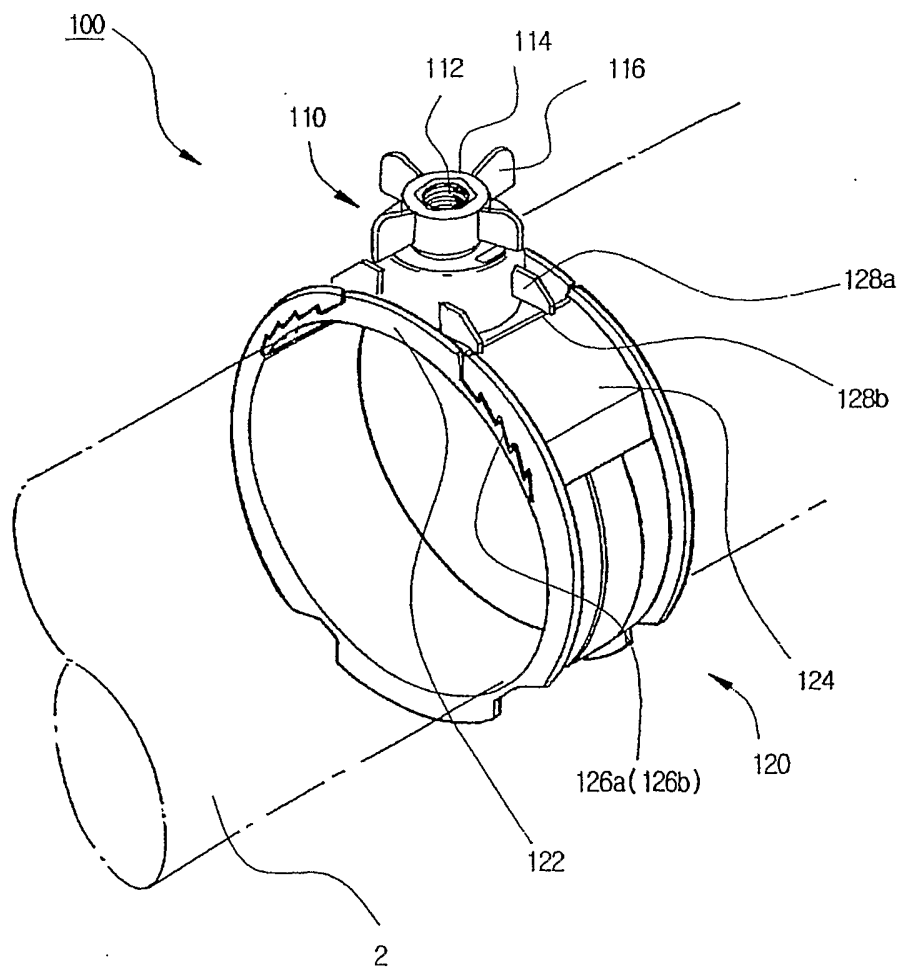
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FIG. 1



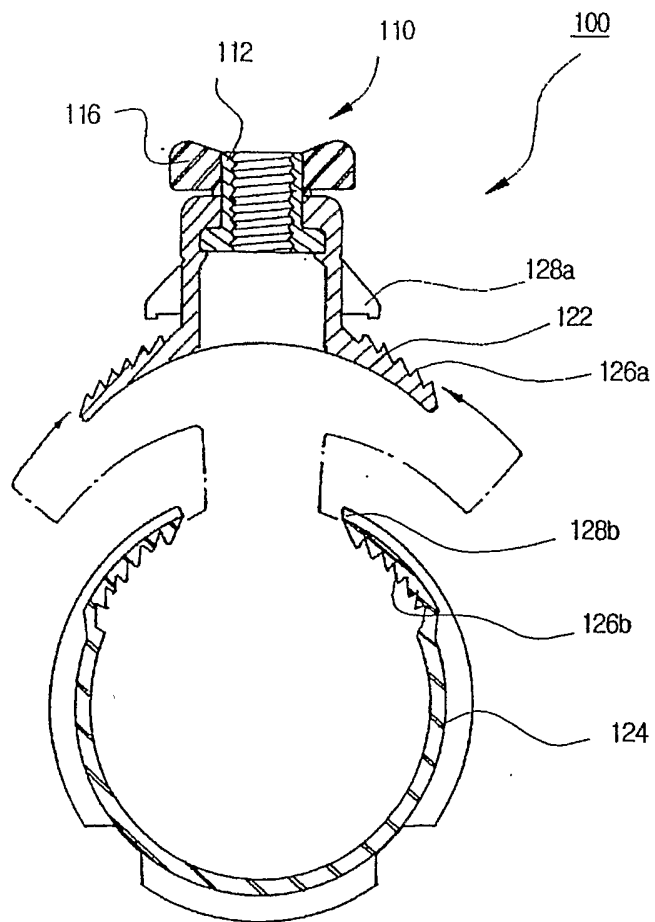
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FIG. 2



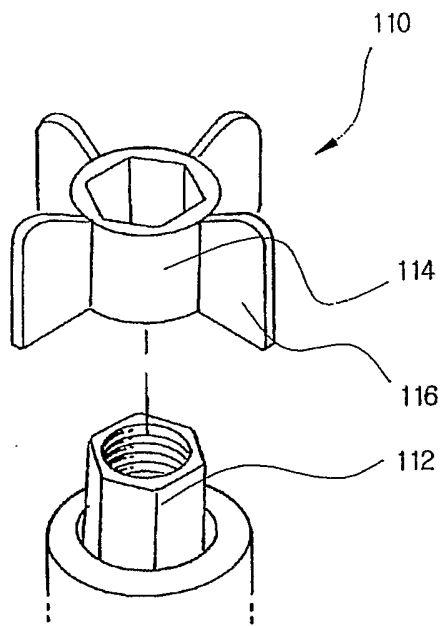
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FIG. 3



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FIG. 4



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FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/002999**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 F16L 3/10, 3/14**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC as above

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR, JP: classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

New Patent and Utility Model Search System(KIPO): pipe, hanger, teeth, clamp, nut

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11-230418 A, 27 Aug. 1999 (27.08.1999) Figs. 1 - 14	1 - 3
A	JP 10-160046 A, 16 Jun. 1998 (16.01.1998) Figs. 1 - 7	1 - 3
A	JP 3029318 U, 10 Jul. 1996 (10.07.1996) Figs. 1 - 2	1 - 3
A	EP 0223680 A2 (PLACOPLATRE) 28 Oct. 1986 (28.10.1986) Figs. 1 - 4	1 - 3

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

25 MARCH 2005 (25.03.2005)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/002999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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