

(21) Application No: **0822936.1**

(22) Date of Filing: **16.12.2008**

(71) Applicant(s):
**Wesley Thompson Lynn
Pitt Street East, BURSLEM, Stoke-on-Trent,
ST6 2AX, United Kingdom**

(72) Inventor(s):
Wesley Thompson Lynn

(74) Agent and/or Address for Service:
**Gallafents LLP
27 Britton Street, LONDON, EC1M 5UD,
United Kingdom**

(51) INT CL:
F16B 37/04 (2006.01)

(56) Documents Cited:
US 20040131442 A1

(58) Field of Search:
UK CL (Edition X) **F2H**
INT CL **F16B**
Other: **Online: WPI, EPODOC**

(54) Title of the Invention: **Bracket assemblies**
Abstract Title: **Bracket assembly**

(57) A bracket assembly consists of a bracket portion (1) and a nut portion (2). The bracket portion (1) has one or more holes (4) enabling it to be affixed to a fixed structure, and an elongate slot (6) having two opposed edges. Mounted in the slot, sprung against the two opposed edges, is a generally U-shaped metal clip constituting the nut portion (2) having formations at the free ends of the U-shape which engage the edges of the slot (6) and a substantially circular aperture at the base of the U-shape into which a fixing screw or bolt (15) may be screwed.

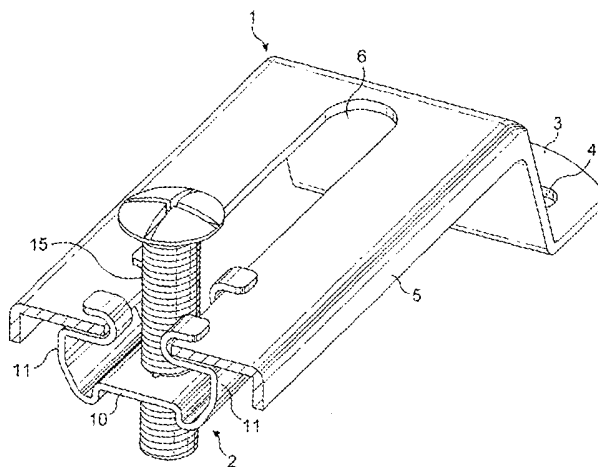


FIG. 2

The claims were filed later than the filing date but within the period prescribed by Rule 22(1) of the Patents Rules 2007.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 2007.

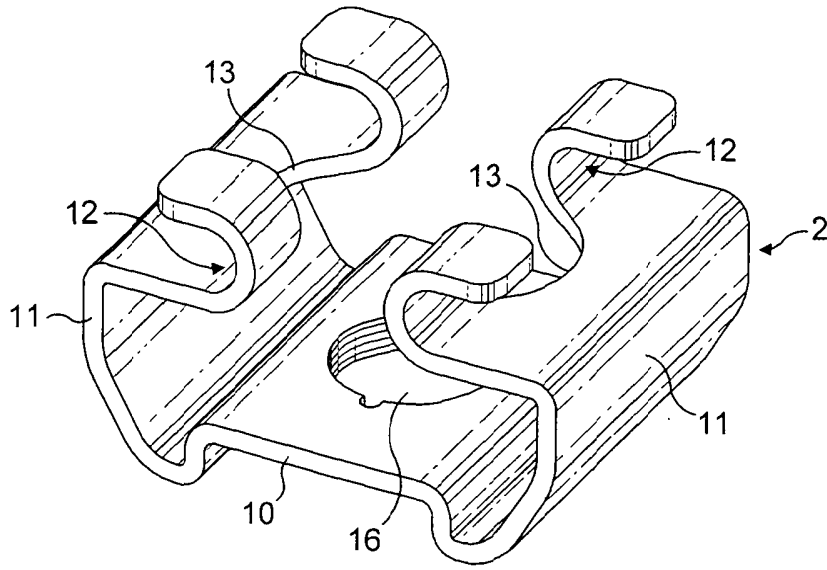


FIG. 1

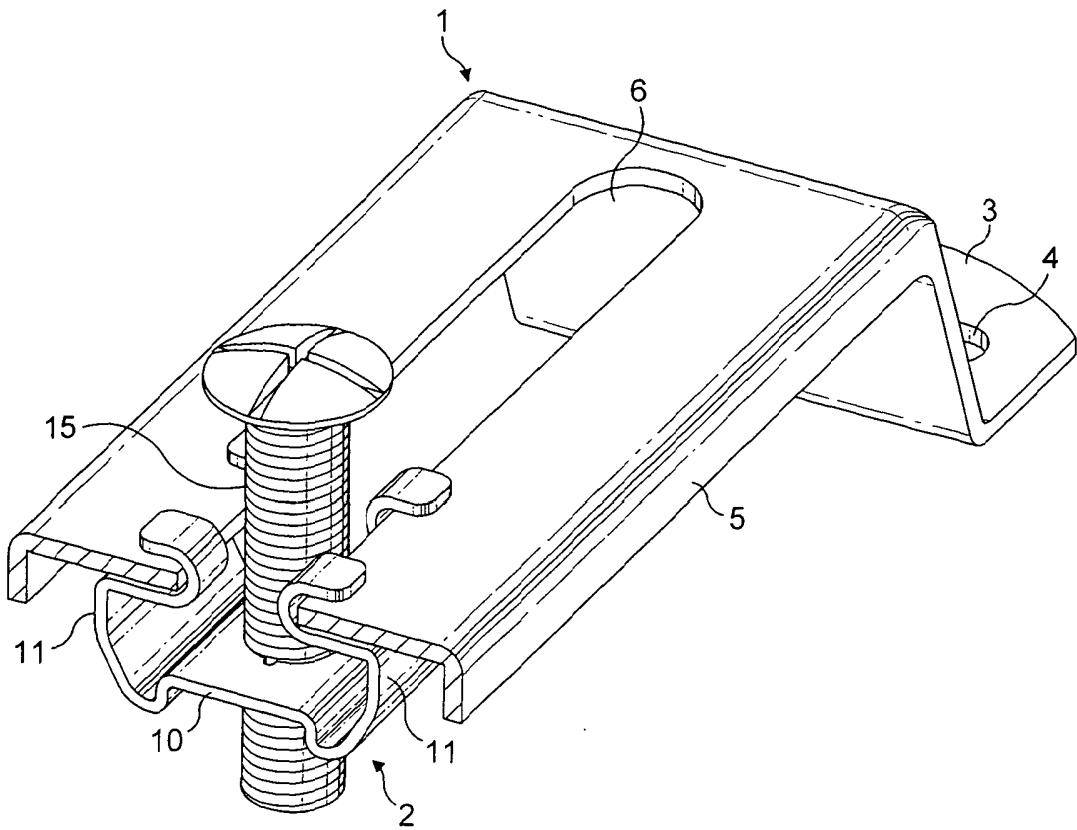
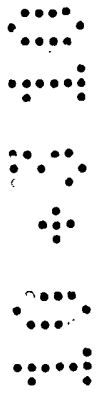


FIG. 2



Bracket assemblies

5

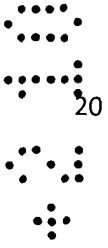
This invention relates to bracket assemblies, in particular for securing articles such as cable trays or other supports to brackets mounted on a wall or other fixed structure.

10

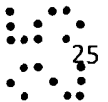
There are many instances where it is desired to secure something to a bracket which is in turn secure to a fixed structure such as a wall ceiling or floor. It is common practice to provide, in such a bracket, a slot which enables the fixing to be varied in position, for example using a nut and bolt. Assembling the nut and bolt together while holding whatever is to be fixed to the bracket in position can be difficult, especially if it is being done by one person, and especially if there are other components, for example washers, to be assembled as well.

15

It is known to provide, in order to assist assembly, a captive nut set slidably in the slot of the bracket. Captive nuts consist of a casing surrounding a nut, where the casing has formations on it which engage the bracket and hold the nut adjacent the slot. This helps, but it is particularly ill adapted for use when the slot is vertical or inclined, as the captive nut tends to slide to the lower end of the slot from which it needs to be raised during the fixing process in order to position it correctly.



20



25

In accordance with the present invention, there is provided a bracket assembly comprising a bracket portion and a nut portion, wherein the bracket portion has one or more holes enabling it to be affixed to a fixed structure, and an elongate slot having two opposed edges, and wherein, mounted in the slot, sprung against the two opposed edges of the slot, is a generally U-shaped metal clip having formations at the free ends of the U-shape which engage the edges of the slot and a substantially circular aperture at the base of the U-shape.

30

35

Preferably the circular aperture is located in a flattened portion of the base of the U-shape, and most preferably the edges of the circular aperture are deformed to provide a single turn of a helix. In this most preferred construction, it is very easy to engage a threaded fastener of

standard type and appropriate size in the circular aperture, i.e. one does not need to use a self-tapping fastener.

5 Brackets constructed in this way are easy to use, and have a number of advantages. Because the U-shaped metal clip is sprung against the sides of the slot, it is not a loose fit, but can be moved as desired to the requisite position. Because the clip is of spring metal, when the fastener is tightened up, it is stressed and acts like a spring washer, countering loosening due to vibration or the like.

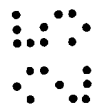
10

The invention is illustrated by way of example with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a clip member;

15

Figure 2 is a diagrammatic view of a bracket and clip member assembled together, with part of the bracket cut away for clarity.



20 Like reference numbers denote like parts in both Figures. The bracket assembly according to the invention consists of a bracket 1 and clip 2. The bracket has two ends (only one of which, denoted 3, is shown in Figure 2) in each of which is a hole 4 through which a screw or nail may pass to fix the bracket to a wall or like structure. Between the ends is a raised section 5 having a central longitudinal slot 6.

25

Clip 2 is of general flattened U-shape, with a flat base part 10 and an upstanding portion 11 to either side thereof. The tops of each portion 11 are bent in, up and outwardly from the centre of the "U", forming two outwardly facing grooves 12. The centre parts of the tops of portions 11 each have a substantially semicircular cutout 13. This is to accommodate a fixing screw or bolt 15. Bolt 15 may be threaded into a circular aperture 16 located in base part 10.

30

35 Clip 2 is made of spring steel by a manufacturing process analogous to that used for making j-nuts and c-nuts. J-nuts and c-nuts are widely used for fixing sheet metal plates, where the j-nut or c-nut is slid over an

edge of the plate which is gripped thereby, and where the edge of the plate has an aperture which coincides with the threaded aperture in the j-nut or c-nut. By choosing an appropriate spring steel material and suitably dimensioning the outwardly facing top parts of each portion 11, the sides of the U-shape may be squeezed together to insert the clip 2 in slot 6, and when the squeezing is removed, the clip sides press outwardly against the sides of slot 6 to prevent the clip 2 sliding loosely therein; however, it can easily be moved to the desired position along the slot 6.

5

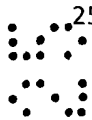
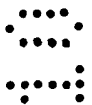
When it is desired to fix an item to the bracket 1, this may be achieved using a threaded fastener 15 passing through a hole in the item, and threaded into aperture 16. As the screw is tightened down, the clip is compressed vertically as shown in Figure 2, and the tops of the clip dig into the face of the item, thus securing it against twisting and forming a firm fastening, secure against loosening by shaking or vibration.

10

15

It should be noted that the design of clip illustrated enables the use of a screw 15 which is a fit in the slot 6, which is not the case for the usual captive nut system, where the casing portions surrounding the nut lie between the screw and the edges of the slot. Accordingly, the slot may be narrower, for the same size of screw, thus (for the same overall bracket size) increasing its strength.

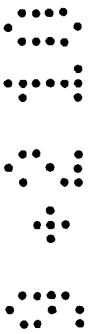
20

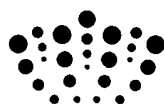


25

CLAIMS

1. A bracket assembly comprising a bracket portion and a nut portion, wherein the bracket portion has one or more holes enabling it to be affixed to a fixed structure, and an elongate slot having two opposed edges, and wherein, mounted
5 in the slot, sprung against the two opposed edges of the slot, is a generally U-shaped metal clip having formations at the free ends of the U-shape which engage the edges of the slot and a substantially circular aperture at the base of the U-shape.
- 10 2. A bracket assembly according to Claim 1 wherein the circular aperture is located in a flattened portion of the base of the U-shape.
3. A bracket assembly according to Claim 1 or 2 wherein the edges of the circular aperture are deformed to provide a single turn of a helix.





Application No: GB0822936.1

Examiner: Peter Macey

Claims searched: 1 - 3

Date of search: 27 May 2010

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 - 3	US 2004/131442 A1 (DIECKMANN) see especially figures 1 to 3

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

F2H

Worldwide search of patent documents classified in the following areas of the IPC

F16B

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC

International Classification:

Subclass	Subgroup	Valid From
F16B	0037/04	01/01/2006