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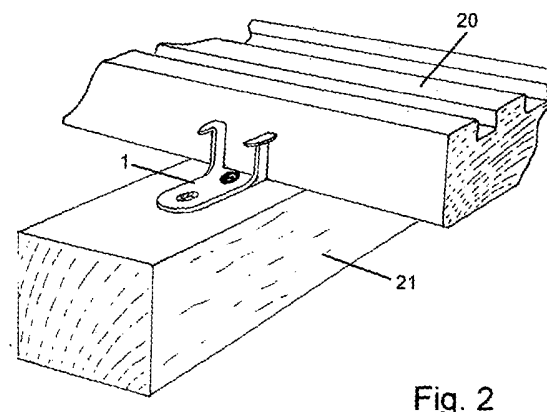
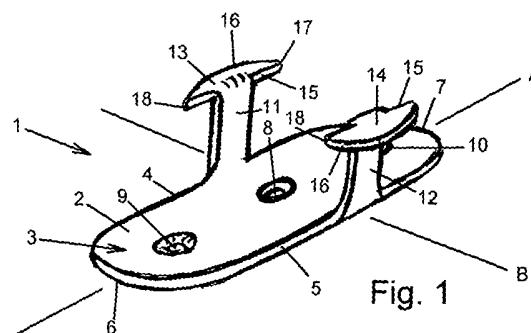
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(56) Documents Cited:
GB 2387210 A **WO 2003/010401 A**
WO 1996/018776 A **WO 1995/025856 A**
US 4925141 A **US 3619963 A**
US 20050252154 A

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Other: **EPODOC, WPI**

(54) Title of the Invention: **Fixing clip for use in timber deck construction**
Abstract Title: **Fixing clip for use in timber deck construction**

(57) A clip 1 is formed from a single piece of sheet metal and includes a planar base 2 provided with at least one hole 8, 9, 10 for insertion of a screw, nail or similar fixing element for fixing the clip to a joist. A pair of shanks 11 and 12 upstand from opposite sides of the base, and each of the shanks carries a piercing head 13, 14 which extends outwardly from the shank. Each piercing head has a pair of oppositely directed piercing spikes 17, 18. The heads are preferably half-moon shaped with straight edges on the inside, forming the pair of piercing spikes 17, 18. The shanks may act as spacers for two adjacent decking boards which are driven onto the opposing spikes. The base 2 preferably projects in opposite directions from the two shanks 11, 12 so that the base provides a ventilation gap between the boards and the support structure. An end fixing clip and an applicator tool are also described and claimed in combination with the clip 1.



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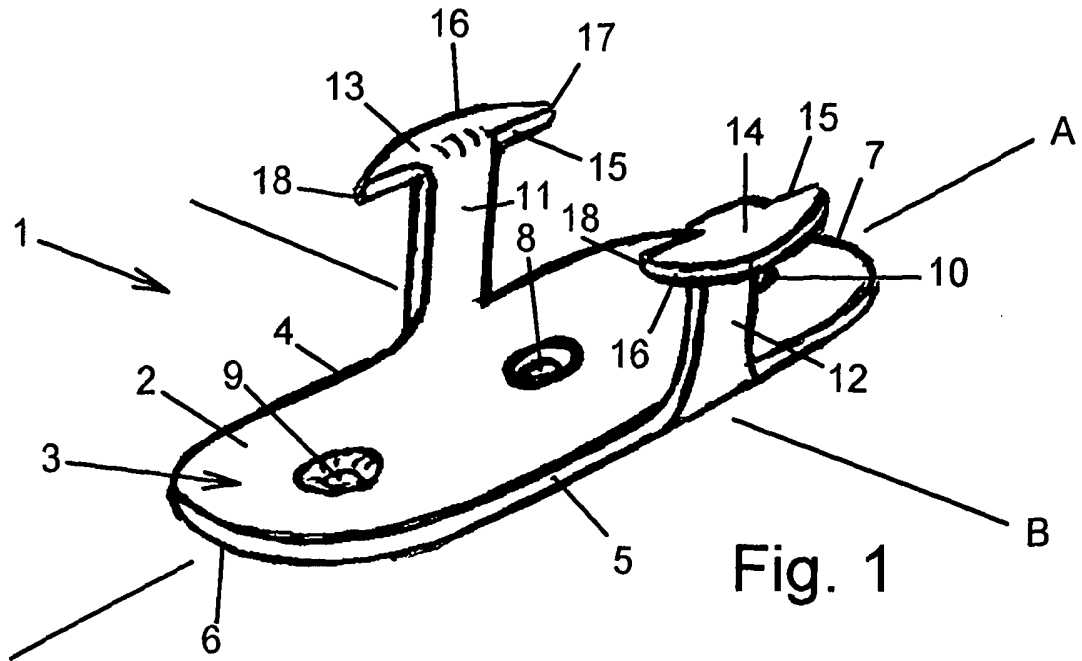


Fig. 1

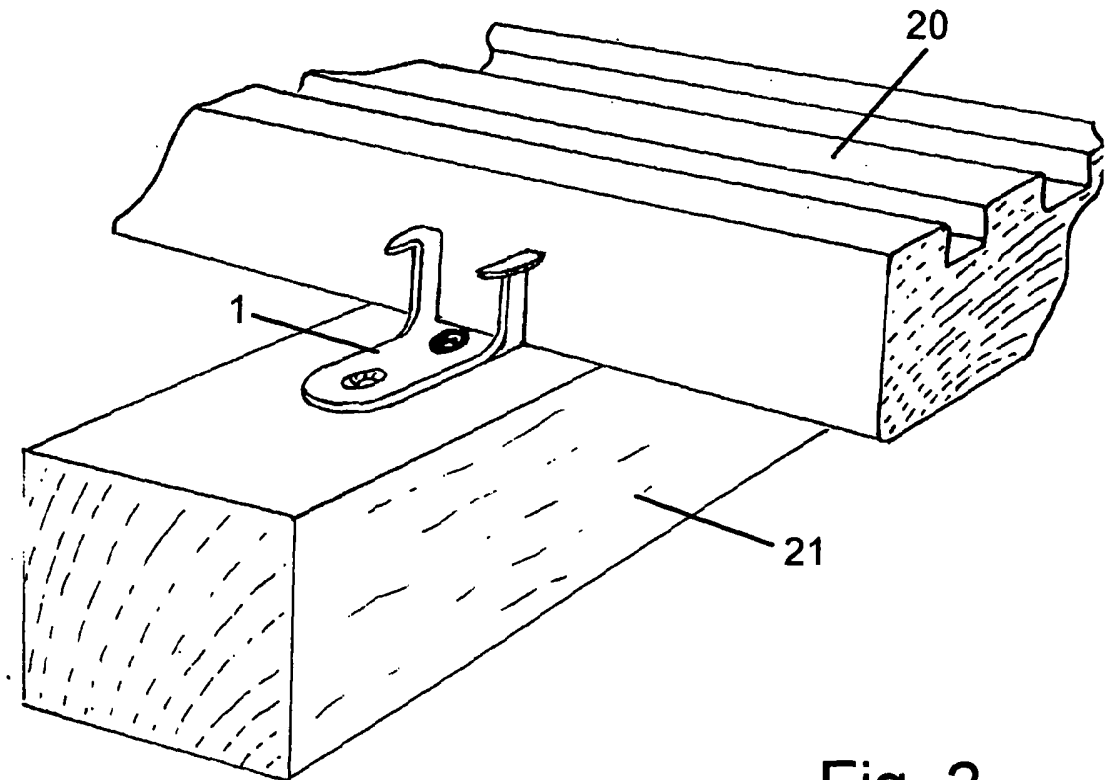


Fig. 2

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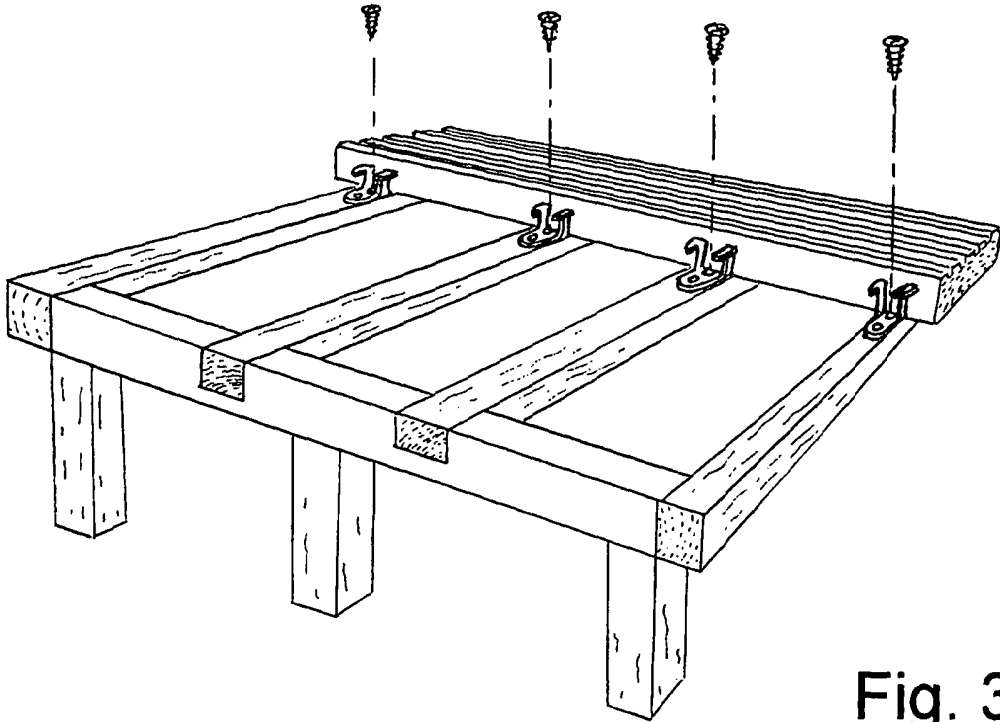


Fig. 3

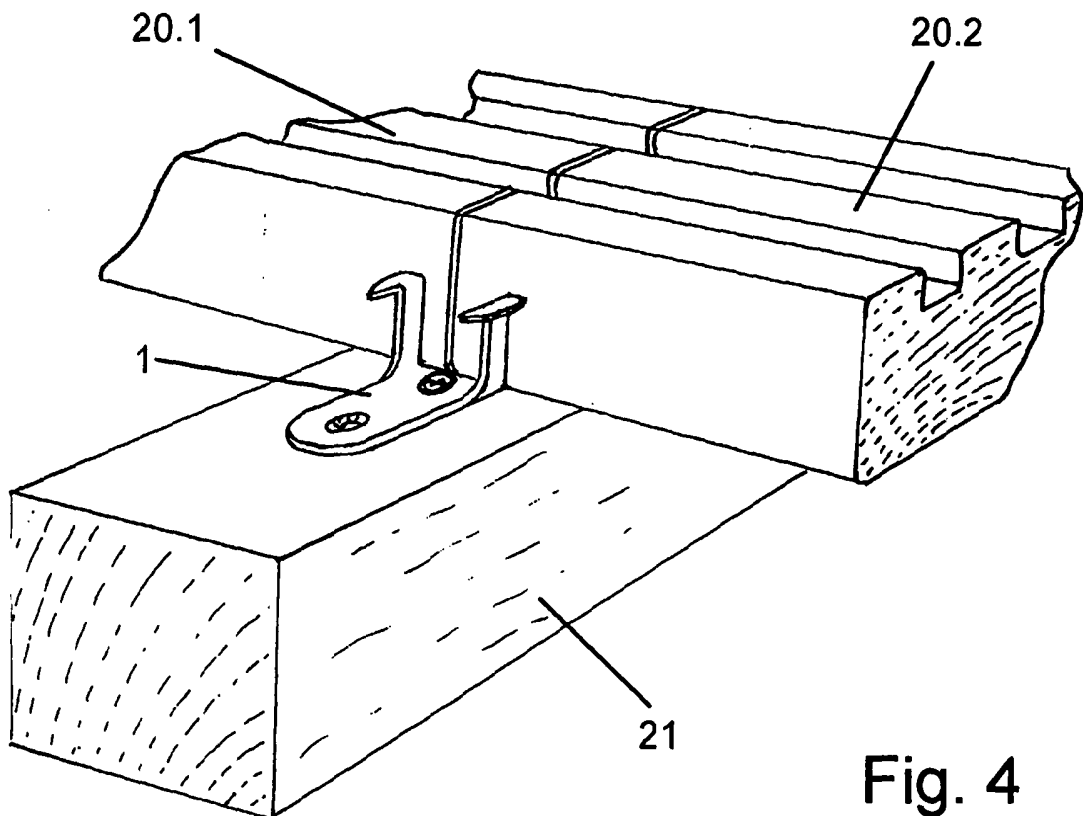


Fig. 4

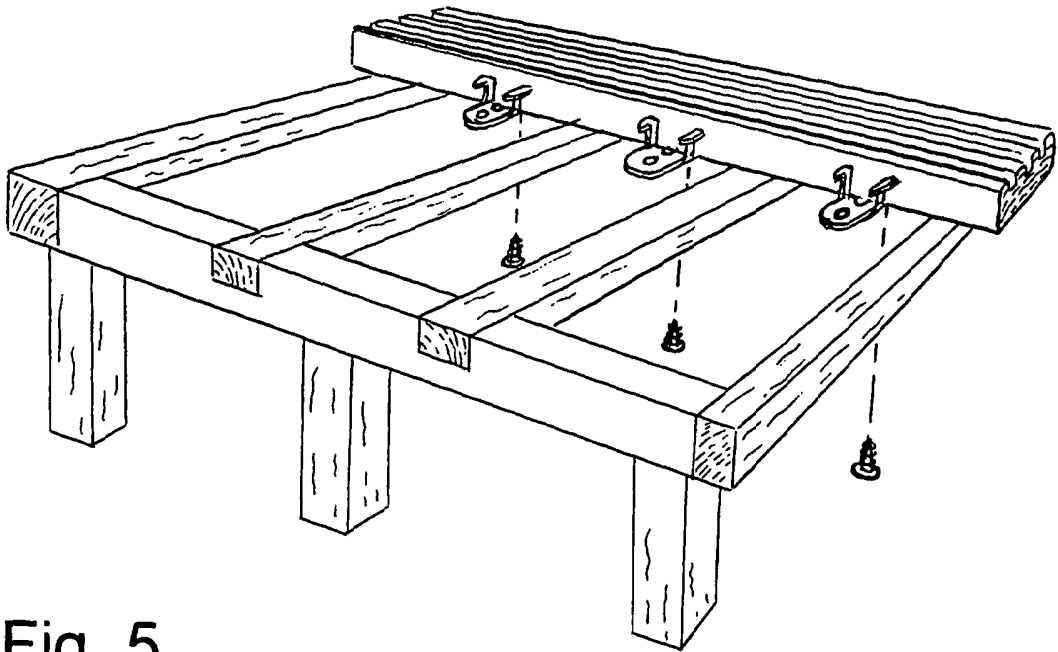


Fig. 5

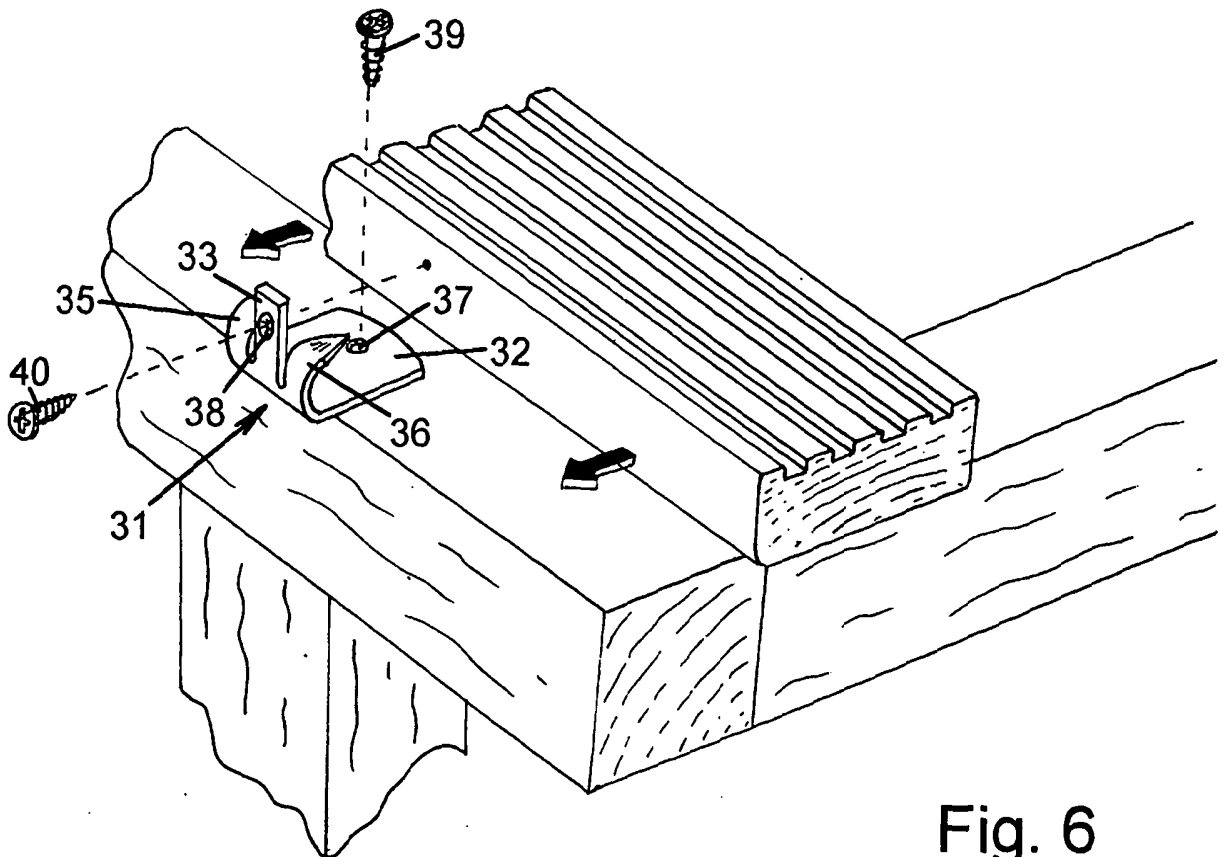


Fig. 6

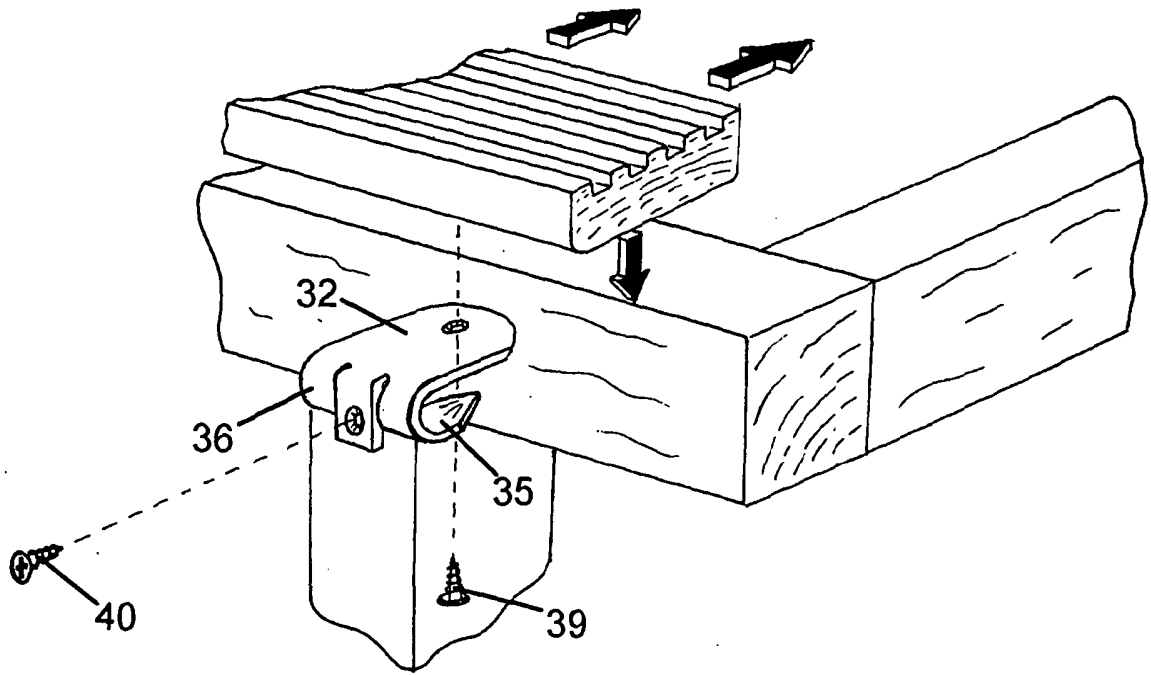


Fig. 7

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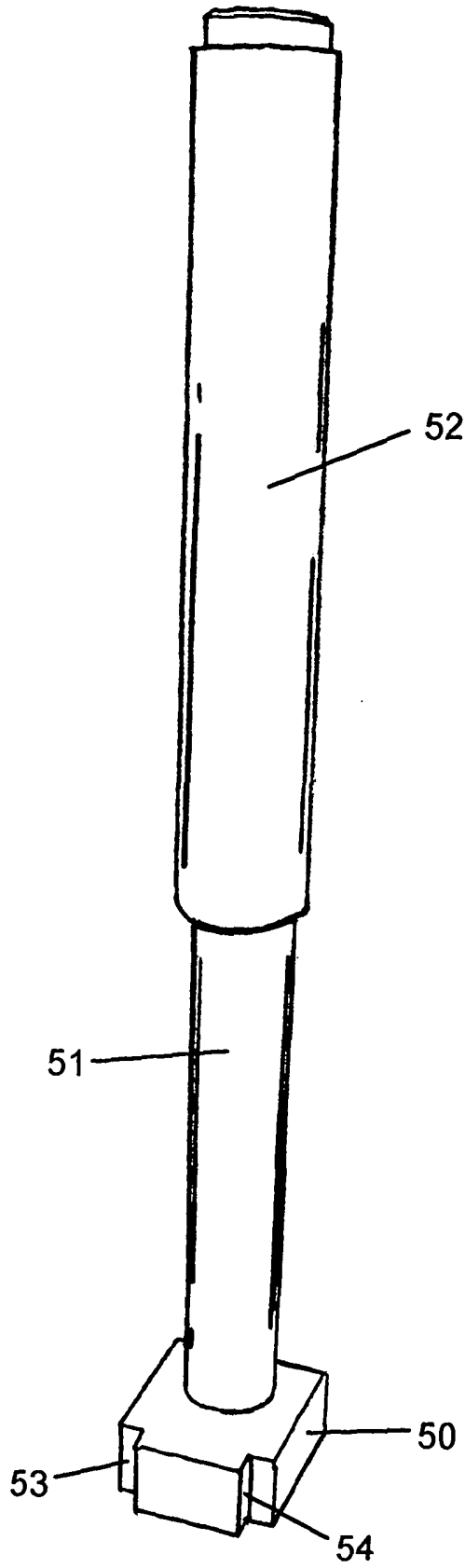


Fig. 8

FIXING CLIP FOR USE IN TIMBER DECK CONSTRUCTION

TECHNICAL FIELD OF THE INVENTION

This invention relates to fixing clip for use in timber deck construction.

BACKGROUND

Numerous forms of fixing clip have been proposed for attaching timber decking boards to a timber support structure. The most successful clips are easy to fix, provide a uniform spacing between the decking boards to allow for expansion when wet, and also provide a ventilation gap between the boards and the joists of the underlying support structure.

Timber boards constantly expand and shrink with varying moisture content. As well as shrinking in their transverse dimensions, boards also contract longitudinally as they dry out. With existing forms of clip the boards can sometimes lift away from the boards when they shrink, causing them to become loose and move or rattle.

The present invention seeks to provide a new and inventive form of clip which is easy to fit, unobtrusive, and provides a more secure fixing which is maintained under a wide range of climatic conditions.

SUMMARY OF THE INVENTION

The present invention proposes a fixing clip for use in timber deck construction, the clip being formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a pair of mutually spaced shanks upstanding from the base, each of the shanks carrying a piercing head which includes a pair of piercing spikes which project in opposite directions from the shank.

The shanks act as spacers for two adjacent decking boards which are driven onto the opposing spikes. The shanks are preferably of substantially the same width and length.

The base is secured to the support structure by means of a screw, nail or similar fixing element. The base preferably projects on opposite directions transverse to an axis which extends between the two shanks so that the base extends between the two adjacent boards and provides a ventilation gap between the boards and the support structure.

The two piercing heads are preferably disposed on opposite

sides of the two shanks. Each spike preferably has a straight edge which extends substantially perpendicular to a plane containing the two shanks. A second edge of each spike is preferably angularly disposed relative to the straight edge. In a preferred configuration the two piercing heads are half-moon shaped with straight edges on the inside.

The invention includes an end fixing clip for use in timber deck construction, the clip being formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a fixing lug upstanding from one edge of the base, and a pair of piercing spikes which project parallel to the base on opposite sides of the lug.

The invention further includes an applicator tool having a handle secured to an applicator head which has opposing notches for receiving the two shanks.

BRIEF DESCRIPTION OF THE DRAWINGS

The following description and the accompanying drawings referred to therein are included by way of non-limiting example in order to illustrate how the invention may be put into practice. In the drawings:

Figure 1 is a general view of a fixing clip in accordance with the invention;

Figure 2 is a general view of the clip being used to secure a decking board to a timber joist;

Figure 3 is a general view of the clips being used to secure a decking board to a decking structure;

Figure 4 is a general view of the clip being used to secure two decking boards to a timber joist;

Figure 5 shows the fixing clips being used as spacers;

Figure 6 is a general view of an end fixing clip being used to secure the first decking board to a support structure;

Figure 7 shows the end fixing clip being used to secure the last decking board; and

Figure 8 is a general view of an applicator tool for use with the fixing clips of Fig.s 1 to 5.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring firstly to **Fig. 1**, the fixing clip 1 is formed from a single piece of sheet metal such as a stainless steel or another material which can be post-treated to prevent corrosion, e.g. hot

dip galvanised, and is capable of being mass produced by a simple stamping operation. The clip 1 has an elongate base 2 having a top face 3 and parallel longitudinal edges 4 and 5. The ends 6 and 7 may be rounded, making the clip comfortable to handle. The clip, is symmetrical about two axes, namely a longitudinal centre line A and a perpendicular centre line B, so that the clip does not require orientation and is very quick to use. The base 2 contains at least one fixing hole. In this example a choice of three fixing holes are provided on the longitudinal centre line A. One of the holes 8 is located in the centre of the base at the intersection of the two axes A and B, and the other two 9 and 10 located equidistant at opposite ends.

The opposite edges 3 and 4 are provided with a pair of flat shanks 11 and 12 which initially extend in opposite directions on the transverse axis B but are bent perpendicular to the base 2 to stand above the top face 3 in a parallel relationship on a plane containing the axis B. The width of the shanks 11 and 12 transverse to axis B determines the spacing between adjacent decking boards during fixing. The upper ends of the two shanks 11 and 12 are each provided with a pair of out-turned flat heads 13 and 14 which extend outwardly in opposite directions from the shanks 11 and 12. The heads 13 and 14 are each half-moon shaped, having an inner straight edge 15 and an arcuate outer edge 16. The heads therefore provide a pair of fixing spikes 17 and 18 which project in opposite directions from opposite edges of the respective shank 11, 12.

Referring to **Fig. 2**, the spikes 18 which project to one side of the plane containing the two shanks 11 and 12 are driven into the side face of a timber decking board 20, with the base 2 in contact with the bottom face of the board. The parallel inner edges 15 of the fixing heads tend to ensure that the spikes both travel straight into the board maintaining the shanks 11 and 12 in a substantially parallel relationship. When the edges of the shanks 11 and 12 are in contact with the side of the board the base 2 is secured to the underlying support joist 21 using a screw or nail driven through the fixing holes 8, 9 or 10. Normally the centre fixing hole 8 will be used, although one of the outer holes 9 or 10 can be used if desired. The next board is then driven onto the two remaining fixing spikes 17 until the board contacts the shanks 11 and 12, to accurately determine the spacing between the boards.

A separate clip is used to secure the boards to each of the underlying joists, as shown in **Fig. 3**.

When all the boards are fixed, the fixing clips are enclosed between the boards and the joists so that they are very unobtrusive. The base 2 maintains a small air gap between the boards and the joists to ensure good ventilation. When the boards undergo any longitudinal movement, e.g. due to shrinkage, the shanks 11 and 12 become inclined relative to the base 2 and tend to pull the board down hard against the base, maintaining a secure fixing irrespective of the direction of movement.

The advantages of the fixing clips are even more apparent when a clip 1 is used to fix the abutting ends of two boards 20.1 and 20.2 onto a joist 21, as shown in **Fig. 4**. If both boards shrink, longitudinal movement will pull both boards down onto the base 2, ensure that both boards remain firmly anchored. In accordance with usual practice, two non-jointed boards would normally be used on opposite sides of each joint. With the present clip, however, the non-jointed boards will tend to reduce the risk of the two heads 13 and 14 moving apart, thus resisting any tendency for the joint to open up.

If screws or skew nailing is the preferred method of fixing the boards to the joists, the clips can also be used as board spacers between the joists, as shown in **Fig. 5**. The bases 2 are screwed to the underside of the boards, as shown.

Fig. 6 shows an end fixing clip 31 which is used to join the outer edge of the first board to the underlying support structure. The end clip is again formed from a single sheet, and includes a base 32 with a perpendicularly upstanding lug 33 formed on one edge of the base. The same edge is formed with spikes 35 and 36 on opposite sides of the lug, which are both bent back to extend parallel above the base 32. The base and lug are both formed with fixing holes 37 and 38 so that the base 2 can be fixed down to the support structure by a fixing screw 39. After driving the side face of the board onto the spikes 35 and 36, seated on the base 32, a further fixing screw 40 can be used to secure the lug

33 to the side of the board.

The same end fixing can be used to secure the last board as shown in **Fig. 7**. In this case the base 32 is fixed to the underside of the board by screw 39 and the spikes 35 and 36 are then driven into the support structure. Finally, the lug 33 is fixed to the support structure by screw 40.

The standard fixing clips shown in **Figs 1 to 5** are best installed using a special applicator tool, as shown in **Fig. 8**. The tool has a rectangular applicator head 50 mounted at the end of a perpendicular handle 51, which may include a friction hand grip 52. The applicator head 50 has opposed notches 53 and 54 and is dimensioned so that the head can slide onto the base 2 with the shanks 11 and 12 in notches 53 and 54 and the heads 13 and 14 overlying the upper surface of the applicator head 50 to which the handle 51 is secured. When the clip is engaged with the tool it can be accurately positioned against the decking board. A swift blow with a hammer or mallet on the rear face of the tool will embed the spikes 17 or 18 into the board without risk of damaging the opposing spikes. The tool can then be slid off the clip, allowing the clip to be secured to the joist.

Whilst the above description places emphasis on the areas which are believed to be new and addresses specific problems which have been identified, it is intended that the features disclosed herein may be used in any combination which is capable of providing a new and useful advance in the art.

CLAIMS

1. A fixing clip for use in timber deck construction, the clip being formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a pair of mutually spaced shanks upstanding from the base, each of the shanks carrying a piercing head which includes a pair of piercing spikes which project in opposite directions from the shank.
2. A fixing clip according to Claim 1 in which the shanks are of substantially the same width.
3. A fixing clip according to Claim 1 or 2 in which the shanks are of substantially the same length.
4. A fixing clip according to Claim 1, 2 or 3 in which the base projects in opposite directions transverse to a plane containing the two shanks.
5. A fixing clip according to any preceding claim in which the two piercing heads are disposed on opposite sides of the two shanks.
6. A fixing clip according to any preceding claim in which each spike has a straight edge which extends substantially perpendicular to a plane containing the two shanks.

7. A fixing clip according to Claim 6 in which each spike has a second edge which is angularly disposed relative to the straight edge.

8. A fixing clip according to Claim 7 in which the two piercing heads are half-moon shaped with straight edges on the inside.

9. A fixing clip according to any preceding claim in combination which an end fixing clip formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a fixing lug upstanding from one edge of the base, and a pair of piercing spikes which project parallel to the base on opposite sides of the lug.

10. A fixing clip according to any preceding claim in combination with an applicator tool having a handle secured to an applicator head which has opposing notches for receiving the two shanks.

11. A fixing clip substantially as described with reference to the drawings.

CLAIMS

1. A fixing clip for use in timber deck construction, the clip being formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a pair of mutually spaced shanks of substantially the same width upstanding from opposite edges of the base in a mutually parallel relationship, each of the shanks carrying a piercing head which includes a pair of piercing spikes which project in opposite directions from the shank on opposite sides of a plane containing the two shanks.
2. A fixing clip according to Claim 1 in which the piercing heads extend substantially perpendicular to the respective shanks.
3. A fixing clip according to Claim 1 or 2 in which the shanks are of substantially the same length.
4. A fixing clip according to Claim 1, 2 or 3 in which the base projects in opposite directions transverse to a plane containing the two shanks.
5. A fixing clip according to any preceding claim in which the two piercing heads are disposed on opposite sides of the two shanks.

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6. A fixing clip according to any preceding claim in which each spike has a straight edge which extends substantially perpendicular to a plane containing the two shanks.

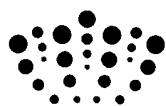
7. A fixing clip according to Claim 6 in which each spike has a second edge which is angularly disposed relative to the straight edge.

8. A fixing clip according to Claim 7 in which the two piercing heads are half-moon shaped with straight edges on the inside.

9. A fixing clip according to any preceding claim in combination which an end fixing clip formed from a single piece of sheet metal and comprising a planar base provided with at least one hole for insertion of a fixing element, a fixing lug upstanding from one edge of the base, and a pair of piercing spikes which project parallel to the base on opposite sides of the lug.

10. A fixing clip according to any preceding claim in combination with an applicator tool having a handle secured to an applicator head which has opposing notches for receiving the two shanks.

11. A fixing clip substantially as described with reference to the drawings.



Application No: GB1003162.3

Examiner: Eleanor Wade

Claims searched: 1 to 10

Date of search: 30 July 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 and 5 to 7	US2005/252154 A MARTEL et al. see whole document
A	-	WO96/18776 A Howell
A	-	US4925141 A CLASSEN
A	-	GB2387210 A PARKES PRODUCTS
A	-	WO95/25856 A SACHS
A	-	WO03/010401 A GREEN
A	-	US3619963 A OMHOLT

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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.
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Field of Search:

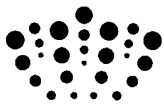
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Worldwide search of patent documents classified in the following areas of the IPC

E04B; E04F; F16B

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

EPODOC, WPI



International Classification:

Subclass	Subgroup	Valid From
E04F	0015/04	01/01/2006
F16B	0005/00	01/01/2006