

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 796 582 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
24.09.1997 Bulletin 1997/39

(51) Int Cl.⁶: **A47G 27/04**

(21) Application number: **97301957.3**

(22) Date of filing: **21.03.1997**

(84) Designated Contracting States:
AT DE GB

(72) Inventor: **Lang, Aage**
8560 Kolind (DK)

(30) Priority: **21.03.1996 GB 9605951**

(74) Representative: **Pattullo, Norman et al**
Murgitroyd and Company
373 Scotland Street
Glasgow G5 8QA (GB)

(71) Applicant: **MILLIKEN DENMARK A/S**
8544 Mørke (DK)

(54) Mat anchoring device

(57) The invention provides a mat securing device comprising a base and attachment means for holding a mat in place on a floor. The device can comprise attach-

ment means to interact with a plurality of mats. The attachment means can cooperate through a mat or interact with means within a mat.

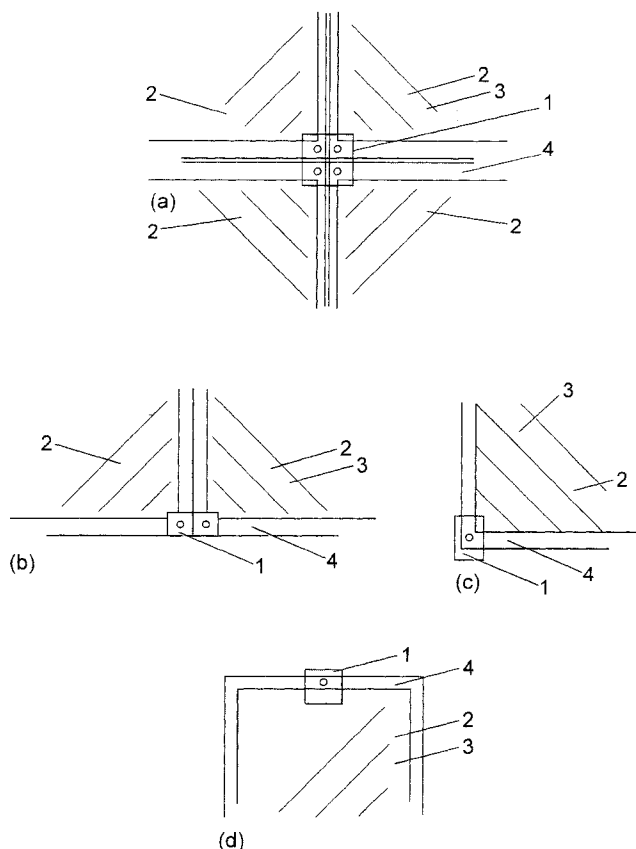


Figure 1

Description

The present invention relates to carpet mats and more particularly the invention relates to means for holding mats in place on a floor.

Mats are frequently used in areas of high pedestrian traffic, such as in the entrances to office blocks and shops. The size and shape of mats is most likely to be determined by the size of the area to be covered. Preferably the mats should be removable for cleaning.

If mats are not directly secured to the floor they may tend to creep, slip or be moved about when individuals are crossing and walking over them. When high volumes of traffic are passing over mats it is inconvenient to be constantly fixing and replacing the mat in position.

Traditionally mats have rubber or synthetic rubber like material as a backing in order to help prevent slippage.

It is known that carpet or mat tiles can be secured to a floor by gluing. This is not useful if the tiles are to be lifted for cleaning. Alternatively, carpet or mat tiles can fill a room and they are therefore held in place by neighbouring tiles with, their overall movement being constrained by the walls of the room. This is not suitable for mats which are used individually or in small numbers or are required to only cover a section of floor space.

International Patent Application No W095/13731 discloses the use of Velcro (Trade Mark) strips for holding mats together on a floor. Typically one piece of two cooperating Velcro (Trade Mark) pieces is glued to the floor and the other piece is attached to the mat such that when the mat is placed on the floor the two pieces of Velcro (Trade Mark) interact to prevent the mat moving on the floor. By this method the position of the mat or mats is determined by the position of the Velcro (Trade Mark) strips on the floor and the position cannot be easily altered.

The present invention aims to overcome the above mentioned problems by providing means for anchoring mats on a floor.

According to the present invention there is provided a mat anchoring device, the device comprising a base and means for attaching to at least one mat.

The attachment means may comprise at least one part of a fastener.

Suitably the mat comprises a cooperating part of the fastener which interacts with the fastening part of the device.

The attachment means may comprise a projection such as a hook which cooperates with a hole at an edge of a mat.

Alternatively the attachment means may comprise one half of a fastener and the other half of the fastener can act through a hole in the mat. Alternatively, the other half of the fastener may be part of or incorporated in the mat.

Suitably the attachment means cooperates with the mat at or near the corner of the mat.

In a particular embodiment the attachment means of the device may comprise a depression into which a cooperating projection which can act through the mat may be pressed. Alternatively the projection may be incorporated within the mat structure.

In one embodiment the device comprises two attachment means which can interact with two mats and hold the mats together.

The attachment means may comprise magnets.

In an alternative embodiment the device comprises four attachment means which can cooperate with up to four mats permitting the mats to be held together.

Suitably, the device may be made of metal, plastic, natural or synthetic rubber or any combination of these materials.

The device may be capable of being secured to the floor.

In a device according to the present invention up to four mats can be held together. In use the device and the mats should be able to maintain their position on a floor and not get pushed about easily even when the device is not directly secured to the floor.

The mats can be easily lifted for cleaning, with or without the device and easily replaced in position.

In an arrangement according to the present invention it is not necessary to have a range of sizes of mats as it would be possible to build up a larger mat from a number of small ones of a standard size.

The invention will now be further described with reference to the accompanying drawings in which:

Figure 1 (a) to (d) illustrates various forms of a device according to the invention in use;

Figure 2 (a) to (g) illustrates various attachment which may be employed in a device according to the invention.

Figure 3 (a) to (c) illustrates a particular embodiment of the invention.

It can be seen from Figure 1 (a) to (d) that a device (1) according to the present invention can be used to hold up to four mats (2) together (Fig.1a) on a floor, or may be used simply at the corners or edges of one mat to prevent it creeping or slipping.

Typically mats used in areas such as foyers or in department stores comprise hard wearing pile surfaces (3) which can be washed repeatedly and which generally have rubber or synthetic rubber like bases to prevent slippage and creep. The pile is generally surrounded by a pile free border (4).

Using a device (1) according to the present invention will enable the mat (2) or mats to be held more firmly in place by weighting the mat at the corner or edges.

The device in Figure 1a allows a variety of sizes of mats (2) to be built up by using a number of small mats connected together using a series of devices (1).

The device (1) in Figure 1b is useful for connecting mats (2) together along an edge.

The device (1) in Figure 1c may be used at a corner.

The device (1) in Figure 1d can be used along the edge of one mat (2) to hold it down. This would be particularly useful if large mats were being employed which may tend to turn up at the edges.

In each case, the device comprises a base or plate portion (5) and between one to four attachment parts (6) which will typically comprise an extension projection from the device or a depression in the device or other interacting means.

A cooperating part (7) for the attachment part can either act through the mat or be incorporated in the mat. The cooperating part may simply comprise a hole in the mat through which the fastening part comprising a projection from the base of the device can pass.

Figure 2 illustrates various means of fastening mats (2) using a device (1) according to the invention.

In Figure 2a, the device base (5) and the bottom of the mats comprise a series of depressions and projections (6) which are complimentary such that a mat (2) and device (1) can be held together.

In Figure 2b, 2c and 2g, magnetic systems are illustrated. The mats (2) may contain magnetic pieces (7) which will attract corresponding pieces (6) in the device (1). It can be noted from the arrangement in Figure 2b that the device (1) is not necessarily placed below the mats (2).

In Figure 2g both parts of the device (1) comprise magnets (6,7) and these are incorporated within mats (2). Rather than having to use a loose magnet to link two mats, the two mats are in this case joined together by placing a magnet on the surface of one mat in the border region and placing a magnet with opposite polarity on the border of a second mat. The mats can then be joined by placing the borders on top of each other to let magnets connect.

Figure 2d, 2e and 2f show fasteners which may be employed. In each case the cooperating part of the fastener (7) acting through the mat may either be incorporated into the mat, possibly by being incorporated into the vulcanised rubber backing, or it may be separate and act through a hole in the base of the mat.

Figure 3a illustrates a mat with holes wherein the holes are elongate. This arrangement allows a degree of adjustment and manipulability. The adjustment may be useful if the mats to be joined together are not exactly the same size. In the arrangement shown in Figure 3 suitably the holes can be about 30mm long and 10mm wide.

Figures 3b and 3c illustrate two views of a floor plate (5) with projections (6) which could be used to connect four mats (2) having holes (7) as shown in Figure 3(a). Typically the base of the projection can be approximately 8mm wide and the top is approximately 15mm to prevent the device from detaching from the mat too easily. With these dimensions the projection could be pushed

through a hole as shown in Figure 3a. Alternatively the projection could comprise two parts which cooperate. When the base of the projection is placed through the hole from below the cooperating part can be attached from the top of the mat.

Whereas the device (1) may be designed to be fixed to a floor in some way, in most occasions this should not be necessary as the weight and overall size of the jointed mats (2), should prevent slippage. The mats may be easily lifted for washing. Depending on the material that the device may be made of, it may not even be necessary to remove the device before cleaning.

A mat holding and/or mat linking system of the present invention will anchor mats more firmly than previous systems and will allow flexible use of the mats in respect of the overall size required and the positioning of mats.

Claims

1. A mat anchoring device comprising a base and mat attachment means for attaching to at least one mat.
2. A device as claimed in claim 1 wherein the attachment means comprises at least one part of a fastener.
3. A device as claimed in claim 1 or 2 wherein the attachment means comprises a projection such as a hook which cooperates with a hole at an edge of a mat.
4. A device as claimed in any of the preceding claim wherein the attachment means comprises a first part of a fastener and the second part of the fastener acts through a hole in the mat.
5. A device as claimed in claim 4 wherein the second part of the fastener is part of or incorporated in the mat.
6. A device as claimed in any of the preceding claims wherein the attachment means cooperates with the mat at or near the corner of the mat.
7. A device as claimed in any of the preceding claims wherein the first part of the attachment means comprises a depression and the second part comprises a cooperating projection.
8. A device as claimed in claim 7 wherein the projection is incorporated within the mat structure.
9. A device as claimed in any of claims 1 to 6 wherein the first part of the attachment means comprises a projection and the second part of the attachment means comprises a corresponding depression.

10. A device as claimed in any of the preceding claims comprising two attachment means which can interact with two mats and hold the mats together.
11. A device as claimed in any of claims 1 to 9 comprising four attachment means which can cooperate with up to four mats permitting the mats to be held together. 5
12. A device as claimed in any of the preceding claims further comprising means for by which the device may be secured to the floor. 10

15

20

25

30

35

40

45

50

55

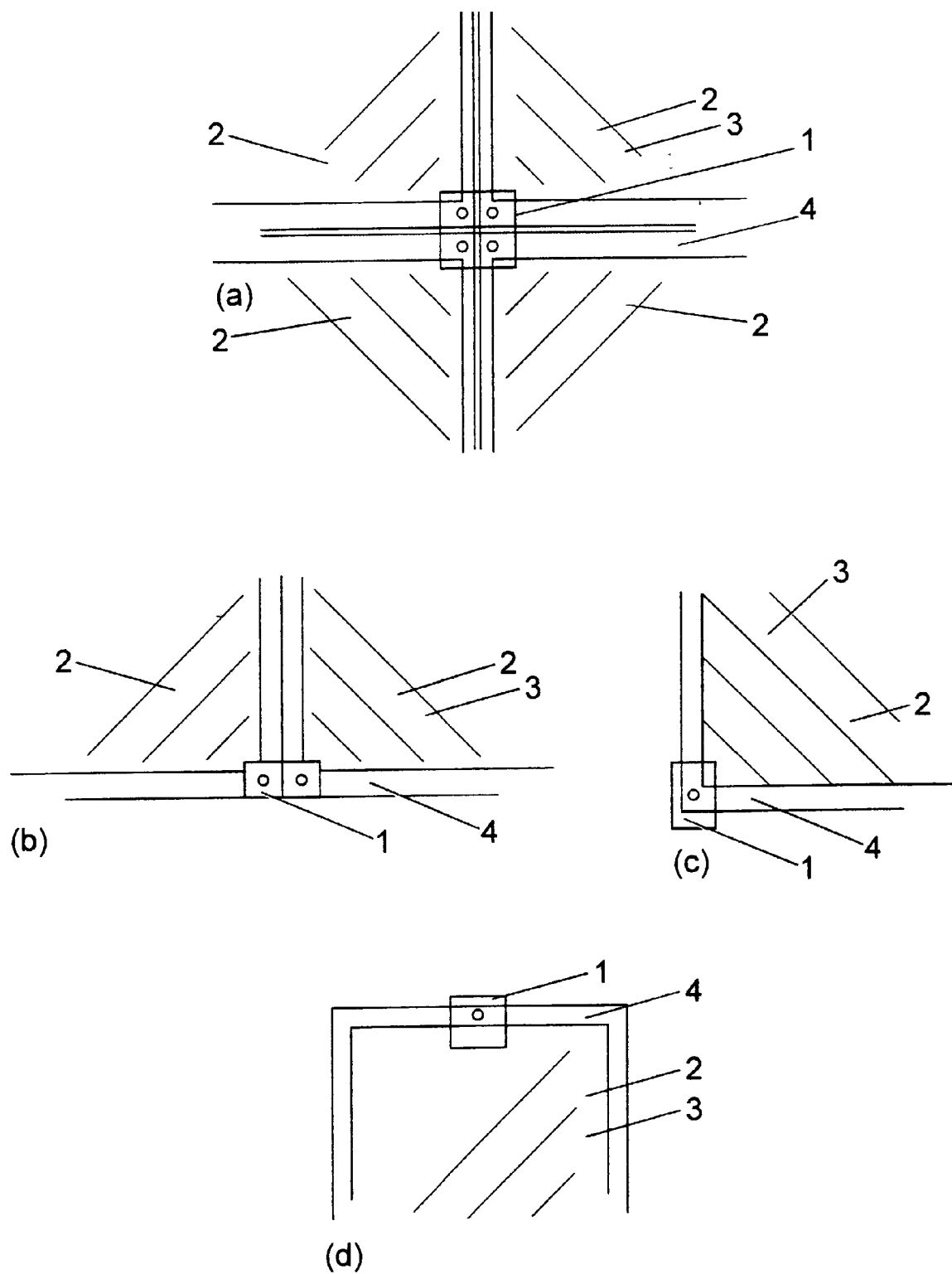


Figure 1

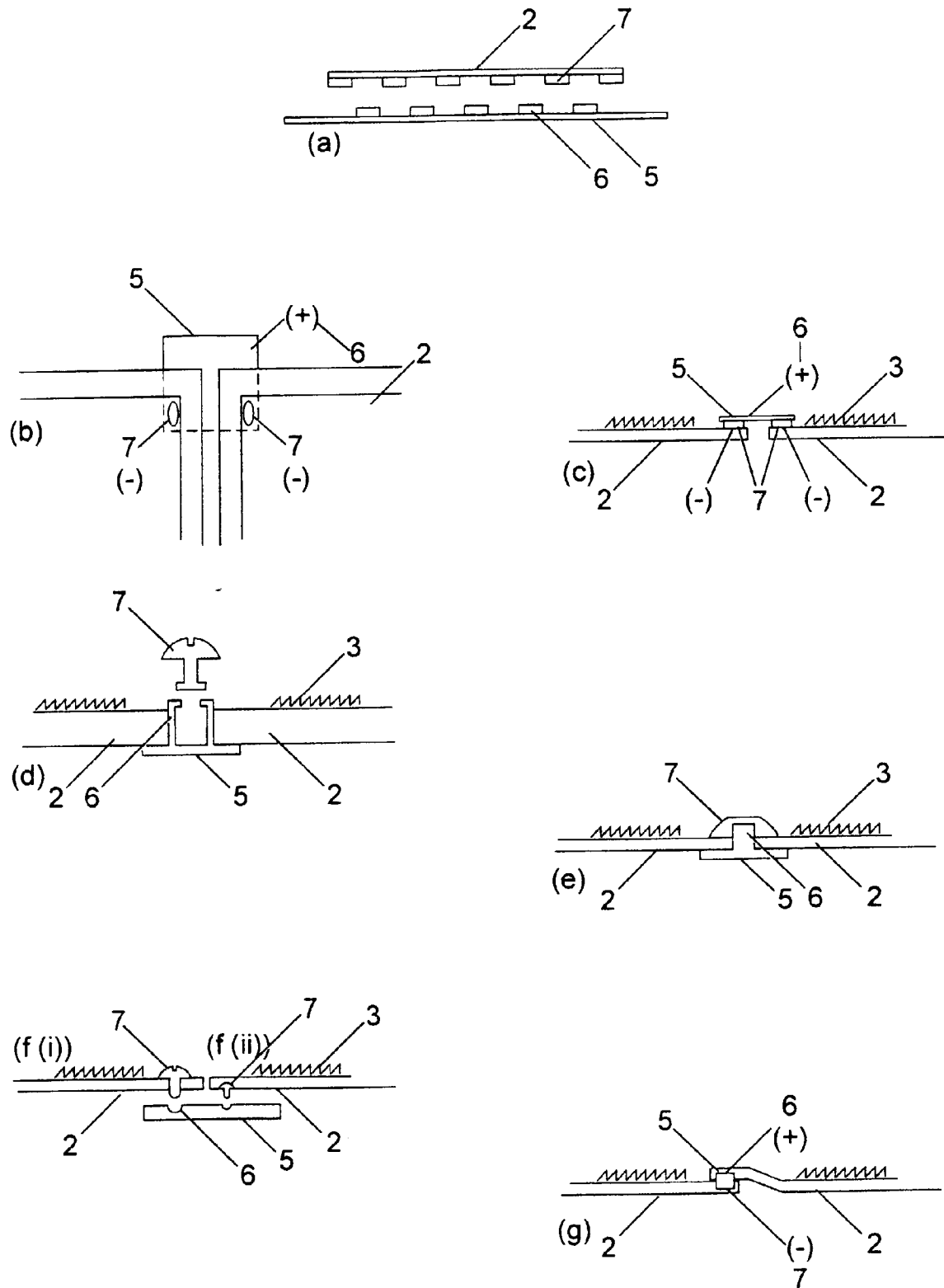


Figure 2

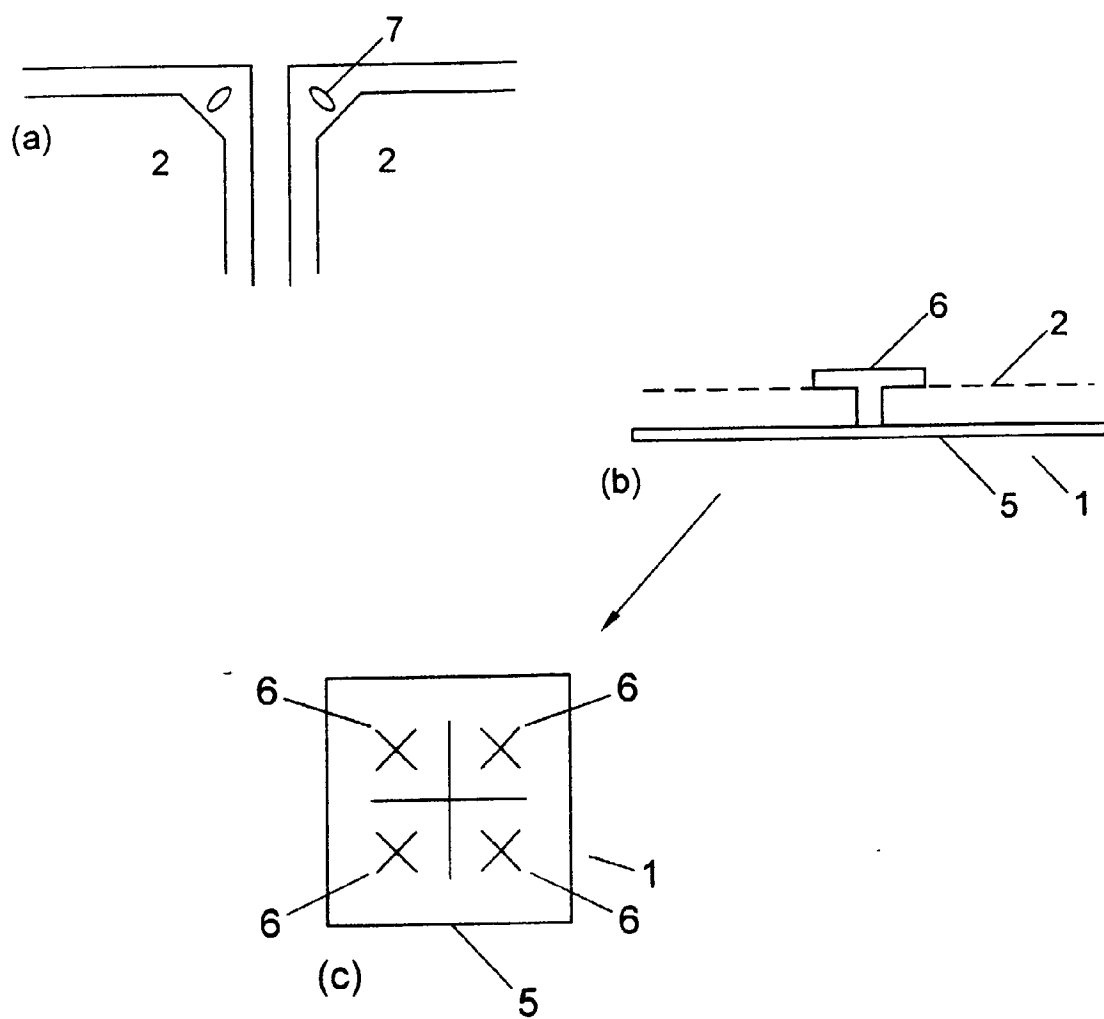


Figure 3