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(54) **INTERMEDIATE WALL AT PALLET FRAME**

ZWISCHENWAND FÜR DEN RAHMEN EINER PALETTE

PAROI INTERMEDIAIRE D'UNE STRUCTURE DE PALETTE

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(56) References cited:
DE-A1- 19 831 640
US-A- 5 598 787

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Description

[0001] The present invention relates to an intermediate wall for use with a pallet frame with two pairs of opposed walls, standing at a pallet, intended to be arranged between one pair of opposed walls, thereby dividing the space, limited by the pallet and the pallet frame.

[0002] Modern material handling comprises standardised pallets and pallet frames, put upon the same. There is a demand for dividing the space within the pallet frame into several partial spaces or partitions. One reason is, that heavy items must be fastened, such that it will not move during transportation. There may also be a need for partitioning the space into several partitions for little articles of different arts.

[0003] Document DE 198 31 640 A shows a pallet having walls positioned at the pallet frame and comprising intermediate dividing walls.

[0004] The object of the present invention is thus to achieve an intermediate wall of the art mentioned introductorily, that is simple and flexible when used and is also inexpensive in manufacture.

[0005] According to the invention, such an intermediate wall is characterised by the features, apparent from the enclosed patent claims.

[0006] The invention shall now be described more closely, reference being made to the enclosed, schematic figures, of which:

figure 1 shows a plan view of a pallet frame with an intermediate wall according to the invention, without holder - on element,
figure 2 shows a view of part of a pallet and a pallet frame with part of an intermediate wall according to the invention, with a grip means,
figure 3 a shows a plan view of holder - on element before mounting,
figure 3 b shows a view in the longitudinal direction of an intermediate wall of holder - on element,
figure 4 shows a view of a mounted holder- on element,
figure 5 shows a view of part of pallet and a pallet frame with part of an intermediate wall with an upper and a lower holder- on element,
figure 6 shows, in part, a number of pallet frames at a pallet,
figure 7 shows, in perspective, a grip means in the form of a socket,
figure 8 shows a plan view of a double intermediate wall,
figure 9 shows, in perspective, another embodiment of a grip means in the form of a socket,
figure 10 shows, in perspective, in part, an intermediate wall with two boards vertically arranged with grip means, keeping them together,
figure 11 shows the same articles as in figure 10, seen in a side view,
figure 12 shows an embodiment of an expansion device,
figure 13 shows, in perspective, an embodiment of an expansion device, built like a unit with a holder- on element,
figure 14 shows a view towards the inner portion of the article in figure 13,
figure 15 shows a view in the longitudinal direction of the intermediate wall towards part of the article in figure 13, whilst
figure 16, in perspective, shows a holder - on element, directly guided by a displacement device.

[0007] In figure 1 there is shown from above a pallet frame with the opposed walls 1 and 3, and 2,4. An intermediate wall 5 with an indicated expansion device 6 with handle is arranged between the opposed walls 1 and 3. If there is no holder - on element, the walls 1 and 3 will bend out, from the starting positions 1a and 3a. The expansion device is of the double- acting art, i e by the handle two rods 7 and 8 are caused to be pressed, releasably locking, outwards to the opposed walls. From figure 2, showing part of a pallet frame, standing at a pallet 9, is obvious, that the rod 7 in its end is formed with a grip means 8 in the form of plate with three tags, intended to gripe into the wall, against which the grip means is pressed. Another suitable embodiment of the expansion device is shown in figure 12, where two links 29 and 30 are united journalled around a first joint 31. Each of the links is connected, via joints 32 and 33 with its grip means 8.

[0008] An upper holder - on element 9 in the form of a bent piece of sheet is provided at the end of the intermediate wall, griping the wall 1 around its upper edge. There is a certain risk, that this wall will be pressed outwardly at its lower portion, when the grip means is pressed outwardly. The solution of this problem is seen in figures 4,5 and 6. The holder- on means may be formed with patches 12,13 bent in opposite directions. By mounting at an intermediate wall, as in figures 4 and 6, the holder- on means can thereby support both the wall of an upper and a lower pallet frame from being pressed outwardly when the expansion device presses one or two grip means outwardly. A holder - on element 14 with patches 15, 16 can be mounted at a pallet 9 in order to support the wall of an upper pallet frame 1. The holder - on element may be designed in several ways. Figure 3a shows a variant, that enables a versatile use. A sheet 17 is punched such that there are formed patches 12, 13, which as is shown e g in figure 4 may be folded in each its direction at right angle from the original sheet 17. Further patches 18 and 19 may be formed to be used for fastening by nails through predrilled holes or as common support against the intermediate wall. Patches with nails 20 may also be provided, replacing common nails for mounting of the holder - on element at the intermediate wall. Especially from figures 3a, 3b and 4 it is obvious the holder - on element may be formed with a hole

in the sheet 17 for a tap 22 to be inserted in a corresponding vertical hole in the intermediate wall 4. In figure 3b there is shown an embodiment of the holder - on element, where holder springs 23 facilitate mounting at the intermediate wall. Furthermore, there is a metal bow of stronger dimension marked 24 intended to prevent, that the intermediate wall 4 bursts when the tap 22 is subject to tensile stress.

[0009] The grip means may be formed in several ways, e g according to figure 8, showing a socket 25 with tags 26. It is presumed, that the socket keeps two parallel boards 28 together, forming an intermediate wall. Between these boards there is an expansion device. The latter is coupled to the socket 25 via a joint, with an axis through a hole 27. In stead of tags, the grip means may be provided with protrusions, adapted to corresponding predrilled holes in the walls. In the figures 9, 10 and 11 there is shown an embodiment of the grip means in the form of a socket 34 keeping two vertical boards together, with an expansion device arranged in a space between the boards. The grip means, i e the socket 34 is in this case not provided with tags, but keeps relatively rigid rubber sheet, that is pressed against the wall4 of the pallet frame and is kept fixed by friction. The socket 34 is inserted in recesses 37 and 38 in the boards 35 and 36.

[0010] In the figures 13, 14 and 15 there is shown an alternative embodiment of the invention, where a holder - on element 39 is built like a unit with an expansion device 40, comprising a sheet 41 with folded protrusions 42, 43, which act as guides for a grip means 44, movable in the longitudinal direction of the intermediate wall 5. The grip means 44 is provided, at the outer edge, with three tags, from the upper end marked with 45, 46 and 47, whereof the last one is longer than the first one in order to compensate for the bend of the wall of the pallet frame. The grip means is formed with an oval recess 48, and a link 49 is journalled, turnable around an axis 50, which axis carries an excenter 51, cooperating with the recess 48, such that the grip means moves in the prolongation of the intermediate wall 5 when the link 49 is turned, which link in its outer end is formed like a bow 52, fitting over the intermediate wall 5 when the grip means is in its extended position, locking pressing against the wall of the pallet frame.

[0011] An embodiment, principally diverging from those hitherto shown, is shown in figure 16. Here the holder - on element is formed with a bow 53, at the lower portion provided with protrusions, folded inwardly, guided by grooves 54 and 55 in the intermediate wall 5, and an edge 56, bent downwards, with tags 57, directed inwardly, intended to grip in the back side of the pallet frame wall.The holder - on element is guided by a displacement device, indicated by a rail 58, of the same art as the expansion devices earlier described, in this case however pulling the holder - on element in the direction towards the intermediate wall 5, such that the edge 56 is pressed against the back side of the wall of the pallet frame.

Claims

1. An intermediate wall (5) for use with a pallet frame with two pairs of opposed walls, (1,3) standing at a pallet, intended to be arranged between one pair of opposed walls, thereby dividing the space, limited by the pallet and the pallet frame, **characterised in that** the intermediate wall (5) is provided with at least one holder- on element (10), arranged to grip around the back side of at least one of the opposed walls (1,3), whereas a displacement device is provided to vary, releasbly lockably, the mutual position of the holder- on element and the intermediate wall (5) in the longitudinal direction of the intermediate wall (5).

2. An intermediate wall according to claim 1, **characterised in that** the intermediate wall (5) is formed with at least one longitudinally variable portion **in that** the displacement device is formed like an expansion device (6) acting at at least one grip means (8) provided at the first end of the intermediate wall, which grip means is releasably lockable in the extended position supporting the intermediate wall (5) against said pair of opposed walls (1,3).

3. An intermediate wall according to claim 1 or 2, **characterised in that** the holder- on element (11) is provided to grip also around the back side of a wall belonging to a second pallet frame, arranged vertical connected to said first pallet frame.

4. An intermediate wall according to claim 2 or 3, **characterised in that** the grip means is formed like a socket (25) embracing two parallel boards (28) with the expansion device arranged between them, acting upon the grip means (28) varying its position.

5. An intermediate wall according to claim 2 or 3, **characterised in that** the grip means is formed like a socket (34) holding two vertical boards (35,36) together, inserted in recesses (37,38) in the boards, with the expansion device arranged between the boards.

6. An intermediate wall according to claim 2, **characterised in that** the grip means (44) is formed as a unit with the holder- on element (39).

7. An intermediate wall according to any of claims 1 to 6,

characterised in
that the displacement device comprises an excentrically journalled plate (51), turnable by a link (49), which plate cooperates with an oval recess (48) in a plate (44) in connection with the grip means (44).

8. An intermediate wall according to claim 7,
characterised in
that said link (49) in its outer end is formed like a bow (52), which in the locked position of the intermediate wall (5) is felled down, gripping the upper limit of the intermediate wall.

Patentansprüche

1. Zwischenwand (5) zur Anwendung mit einem Palettenrahmen, mit zwei Paaren von gegenüberliegenden Wänden (1, 3), die an einer Palette stehen, wobei die Zwischenwand dazu vorgesehen ist, zwischen einem Paar von gegenüberliegenden Wänden angeordnet zu werden und dadurch den durch die Palette und den Palettenrahmen begrenzten Raum zu teilen,
dadurch gekennzeichnet, dass die Zwischenwand (5) mit mindestens einem Halteelement (10) versehen ist, das so angeordnet ist, dass es um die Rückseite mindestens einer der gegenüberliegenden Wände (1, 3) greift, wobei ein Verstellelement vorgesehen ist, um die gegenseitige Position des Halteelementes und der Zwischenwand (5) in Längsrichtung der Zwischenwand (5) verriegelbar und lösbar zu verändern.

2. Zwischenwand nach Anspruch 1,
dadurch gekennzeichnet, dass die Zwischenwand (5) mit mindestens einem in Längsrichtung variablen Abschnitt ausgebildet ist, in dem das Verstellelement nach Art einer Spanneinrichtung (6) ausgebildet ist, die auf mindestens eine Greifeinrichtung (8) wirkt, die an dem ersten Ende der Zwischenwand vorgesehen ist, und die in der ausgefahrenen Position lösbar verriegelt werden kann und die Zwischenwand (5) gegen das Paar von gegenüberliegenden Wänden (1, 3) abstützt.

3. Zwischenwand nach Anspruch 1 oder 2,
dadurch gekennzeichnet, dass das Halteelement (11) dazu vorgesehen ist, auch um die Rückseite einer Wand zu greifen, die zu einem zweiten Palettenrahmen gehört, der vertikal angeordnet und mit dem ersten Palettenrahmen verbunden ist.

4. Zwischenwand nach Anspruch 2 oder 3,
dadurch gekennzeichnet, dass die Greifeinrichtung in Form eines Sockels (25) ausgeformt ist, der zwei parallele Platten (28) umfasst, wobei die Spanneinrichtung zwischen diesen angeordnet ist und auf die Greifeinrichtung (28) wirkt und ihre Position verändert.

5. Zwischenwand nach Anspruch 2 oder 3,
dadurch gekennzeichnet, dass die Greifeinrichtung in Form eines Sockels (34) ausgebildet ist, der zwei vertikale Platten (35, 36) zusammenhält und in Ausnehmungen (37, 38) in den Platten eingesetzt ist, wobei die Spanneinrichtung zwischen den Platten angeordnet ist.

6. Zwischenwand nach Anspruch 2,
dadurch gekennzeichnet, dass die Greifeinrichtung (44) als eine Einheit mit dem Halteelement (39) ausgebildet ist.

7. Zwischenwand nach einem der Ansprüche 1 bis 6,
dadurch gekennzeichnet, dass das Verstellelement eine exzentrisch gelagerte Platte (51) aufweist, die mit einem Glied (49) drehbar ist, wobei die Platte mit einer ovalen Ausnehmung (48) in einer Platte (44) in Verbindung mit der Greifeinrichtung (44) zusammenwirkt.

8. Zwischenwand nach Anspruch 7,
dadurch gekennzeichnet, dass das Glied (49) an seinem äußeren Ende wie ein Bogen (52) geformt ist, der in der verriegelten Stellung der Zwischenwand (5) nach unten geklappt ist und den oberen Rand der Zwischenwand erfasst.

Revendications

1. Paroi intermédiaire (5) pour être utilisée avec une structure de palette comprenant deux paires de parois opposées (1, 3) se dressant au niveau d'une palette, destinée à être agencées entre une seule paire de parois opposées, de façon à diviser l'espace, délimité par la palette et la structure de palette, **caractérisée**
en ce que la paroi intermédiaire (5) est constituée avec au moins un élément de maintien (10), agencé afin de venir en prise vers le côté arrière d'au moins l'une des parois opposées (1, 3), tandis qu'un dispositif de déplacement est constitué afin de faire varier la position mutuelle de l'élément de maintien et de la paroi intermédiaire (5), apte à être verrouillée de manière réversible, selon la direction longitudinale de la paroi intermédiaire (5).

2. Paroi intermédiaire selon la revendication 1, **caractérisée**
en ce que la paroi intermédiaire (5) est formée avec au moins une partie variable longitudinalement, en ce que le dispositif de déplacement est formé de manière analogue à un dispositif d'expansion (6) agissant au niveau d'au moins un moyen de prise

(8) constitué au niveau de la première extrémité de la paroi intermédiaire, lesquels moyens de prise sont aptes à être verrouillés de manière réversible dans la position déployée, maintenant la paroi intermédiaire (5) contre ladite paire de parois opposées (1, 3).

3. Paroi intermédiaire selon la revendication 1 ou 2, **caractérisée**
en ce que l'élément de maintien (11) est constitué afin de venir également en prise vers le côté arrière d'une paroi appartenant à une deuxième structure de palette, agencée en étant reliée verticalement à ladite première structure de palette.

4. Paroi intermédiaire selon la revendication 2 ou 3, **caractérisée**
en ce que les moyens de prise sont formés de manière analogue à un manchon (25) enfermant deux planches parallèles (28) avec le dispositif d'expansion agencé entre-elles, agissant sur les moyens de prise (28) faisant varier sa position.

5. Paroi intermédiaire selon la revendication 2 ou 3, **caractérisée**
en ce que les moyens de prise sont formés de manière analogue à un manchon (34) maintenant ensemble deux planches verticales (35, 36), insérées dans des trous (37, 38) dans les planches, avec le dispositif d'expansion agencé entre les planches.

6. Paroi intermédiaire selon la revendication 2, **caractérisée**
en ce que les moyens de prise (44) sont formés comme un ensemble avec l'élément de maintien (39).

7. Paroi intermédiaire selon l'une quelconque des revendications 1 à 6, **caractérisée**
en ce que le dispositif de déplacement comprend une plaque montée excentriquement sur palier (51), apte à tourner grâce à une liaison (49), laquelle plaque coopère avec un trou ovale (48) dans une plaque (44) en liaison avec les moyens de prise (44).

8. Paroi intermédiaire selon la revendication 7, **caractérisée**
en ce que ladite liaison (49) dans son extrémité extérieure est formée de manière analogue à un arc (52), qui est rabattu dans la position verrouillée de la paroi intermédiaire (5), venant en prise avec la limite supérieure de la paroi intermédiaire.

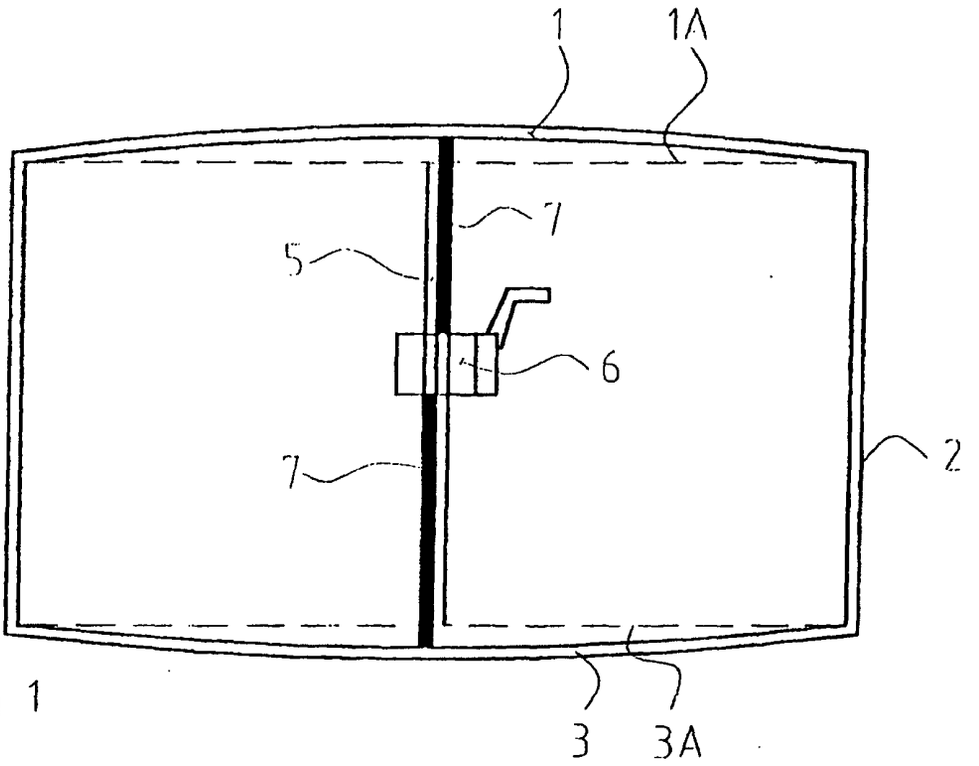


Fig 1

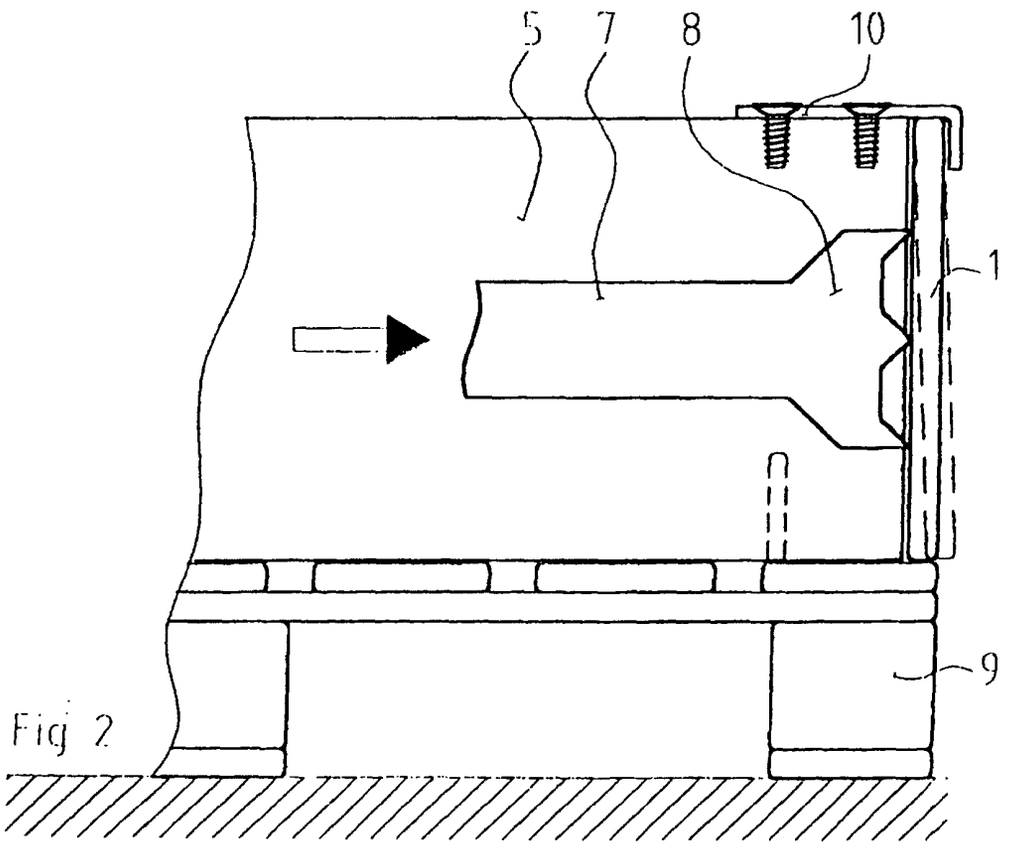


Fig 2

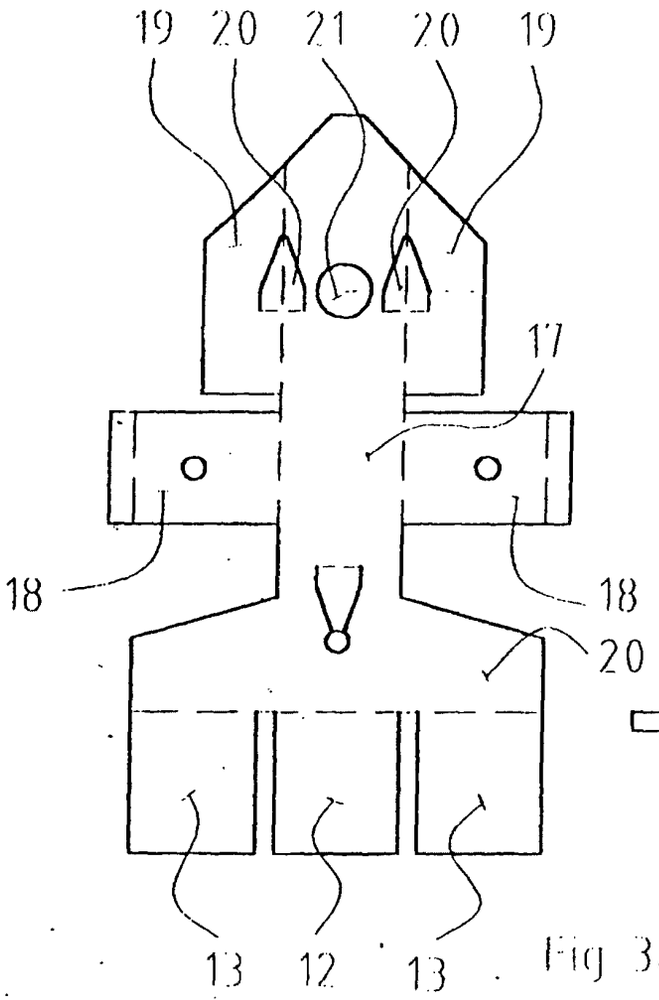


Fig 3a

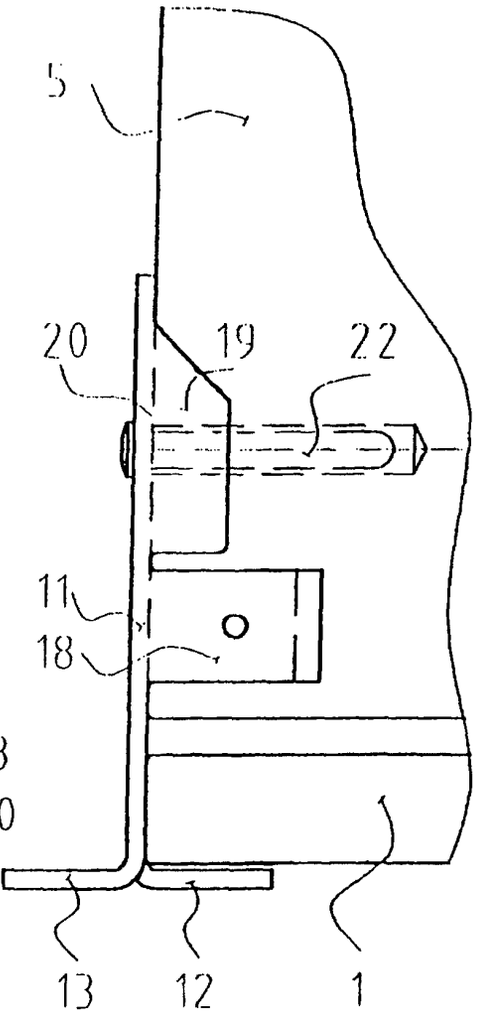


Fig 4

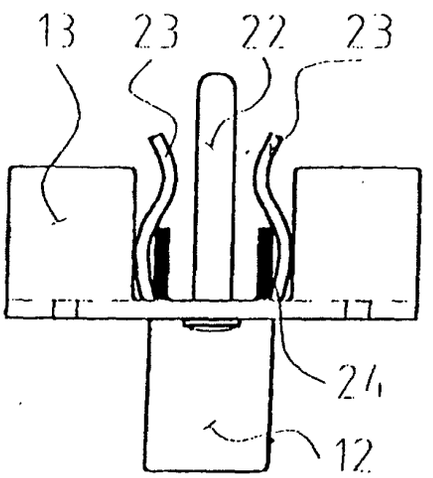


Fig 3b

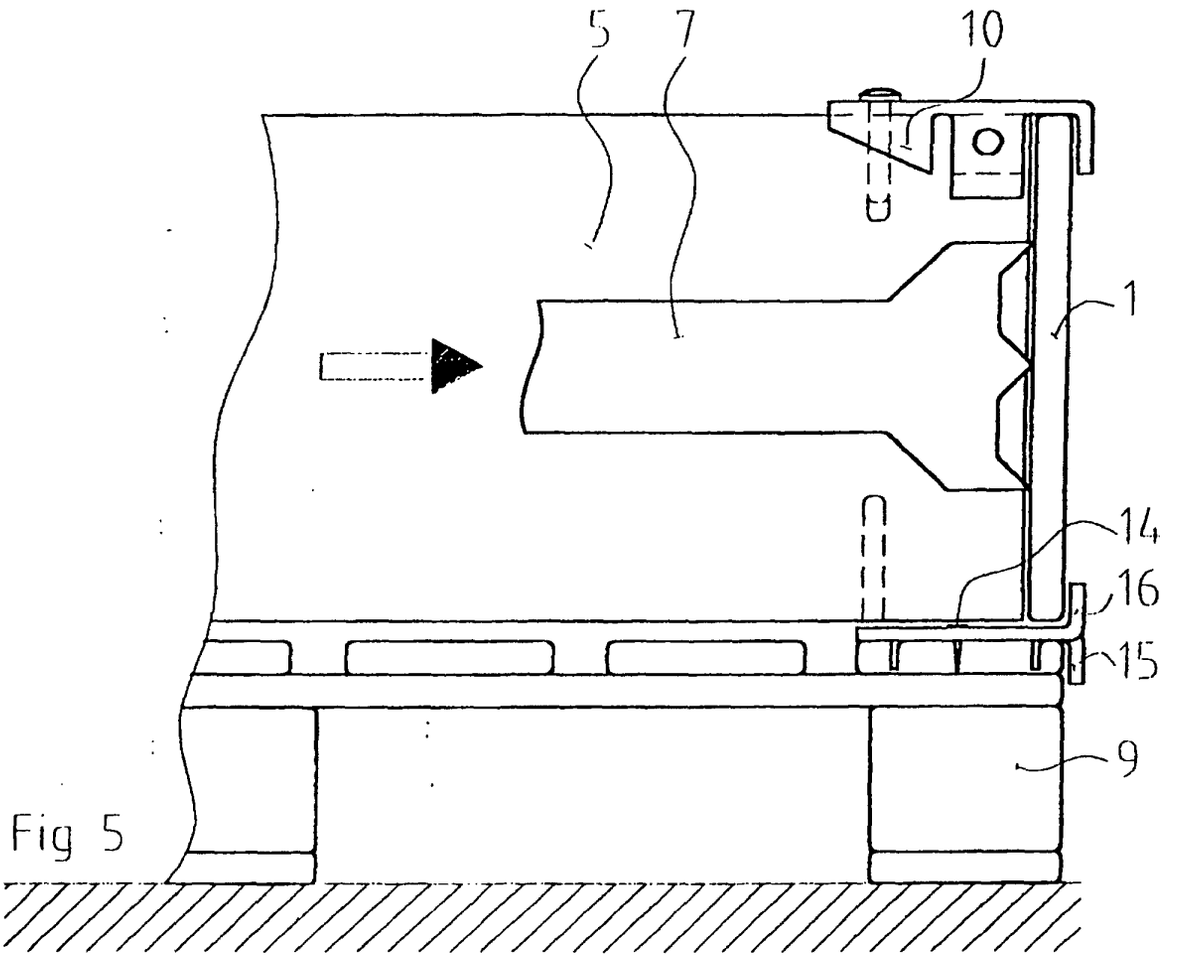


Fig 5

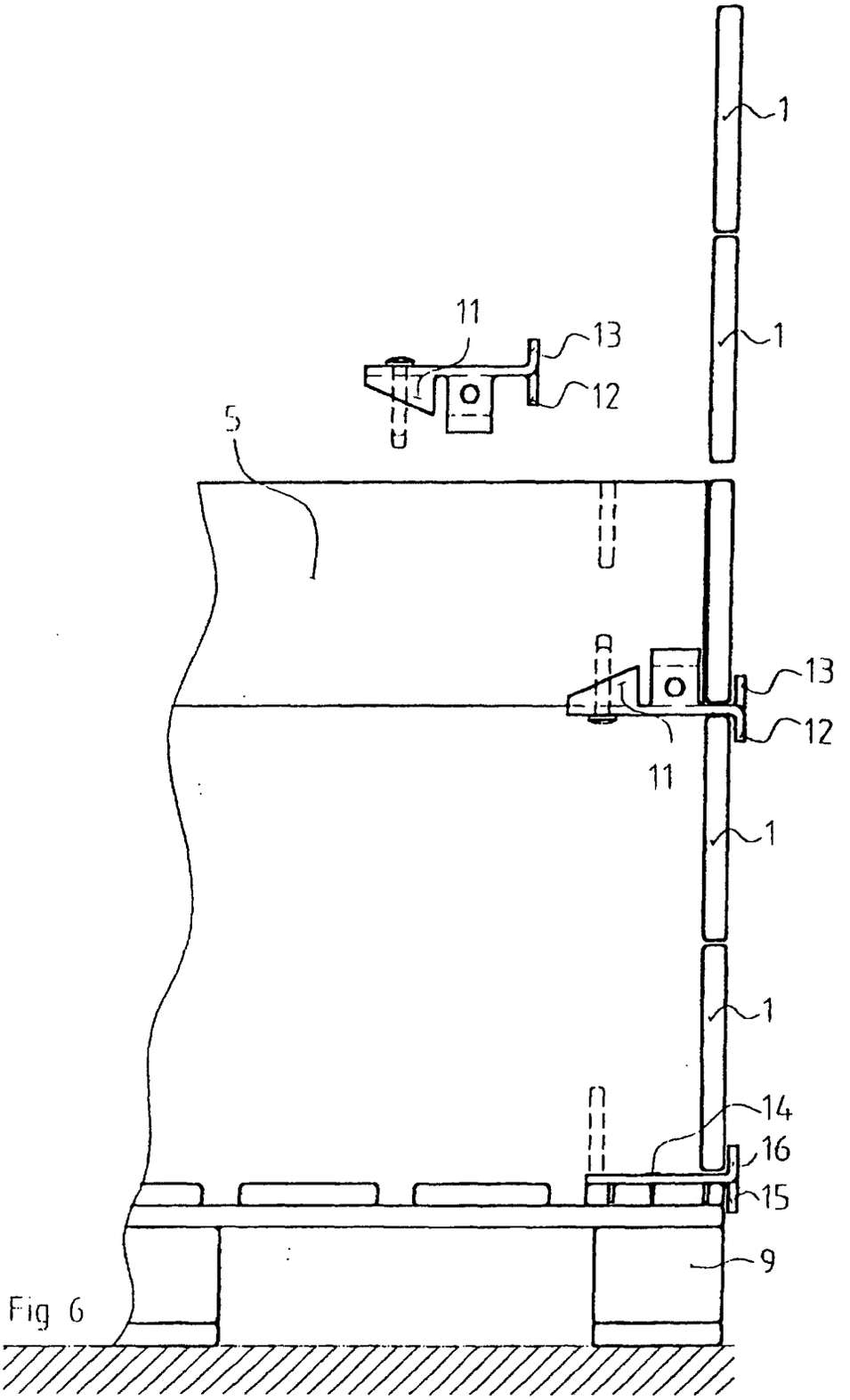


Fig 6

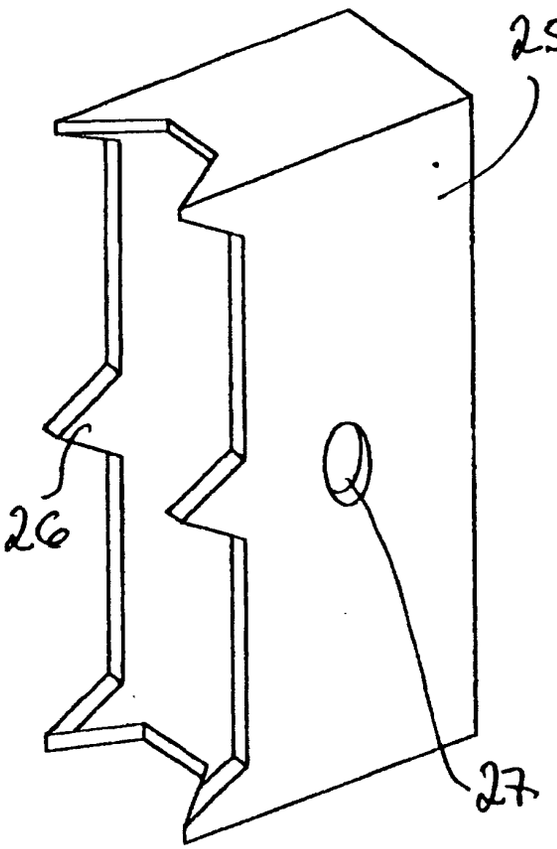


Fig 7

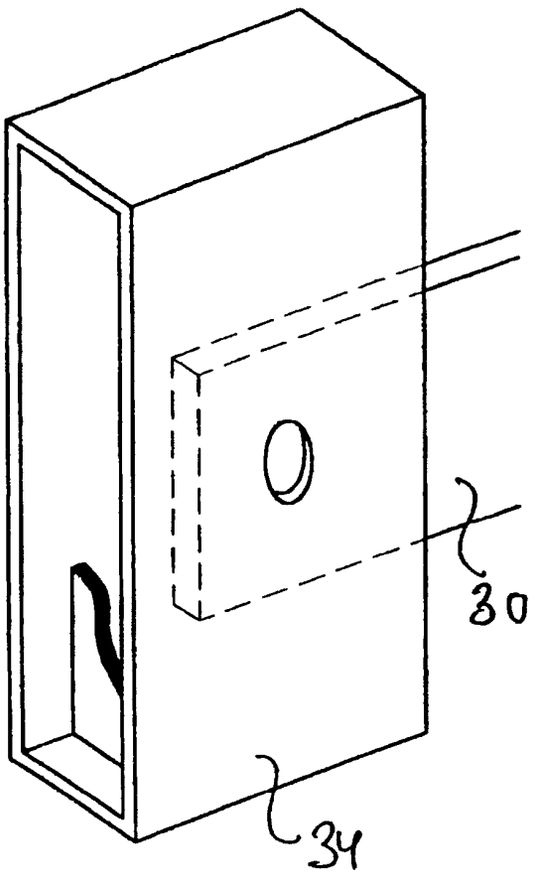


Fig 9

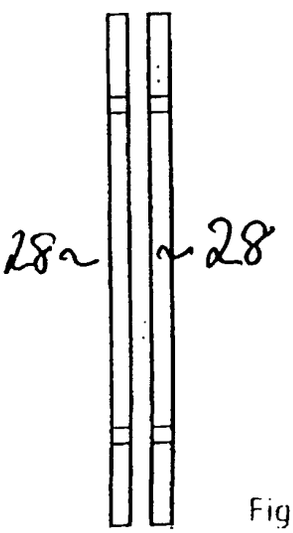


Fig 8

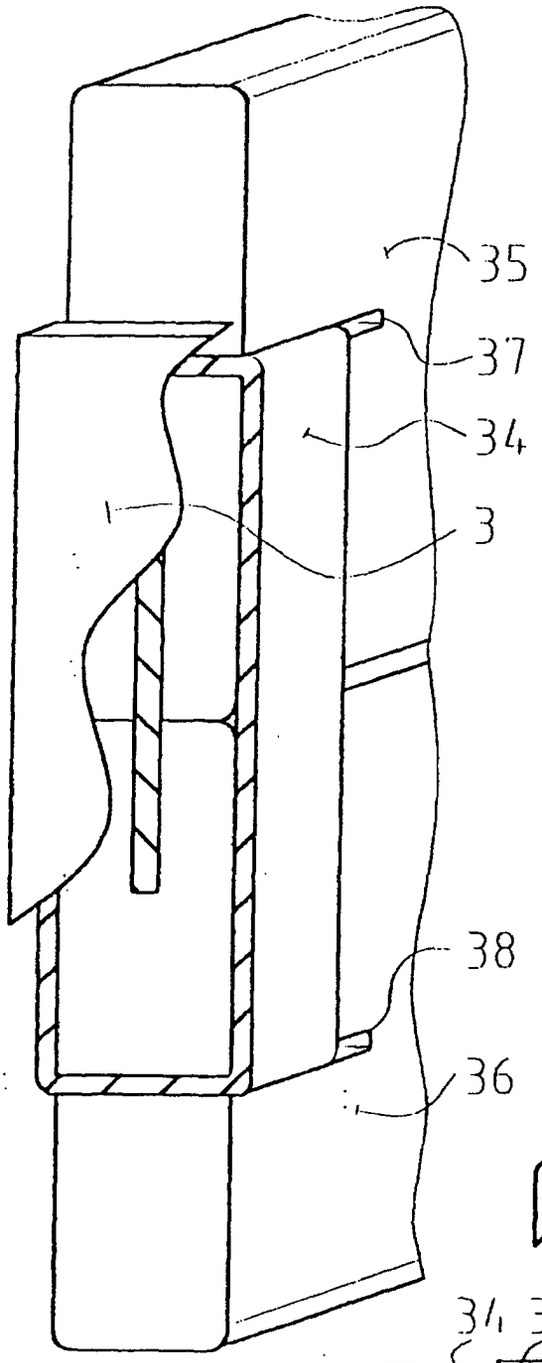


Fig 10

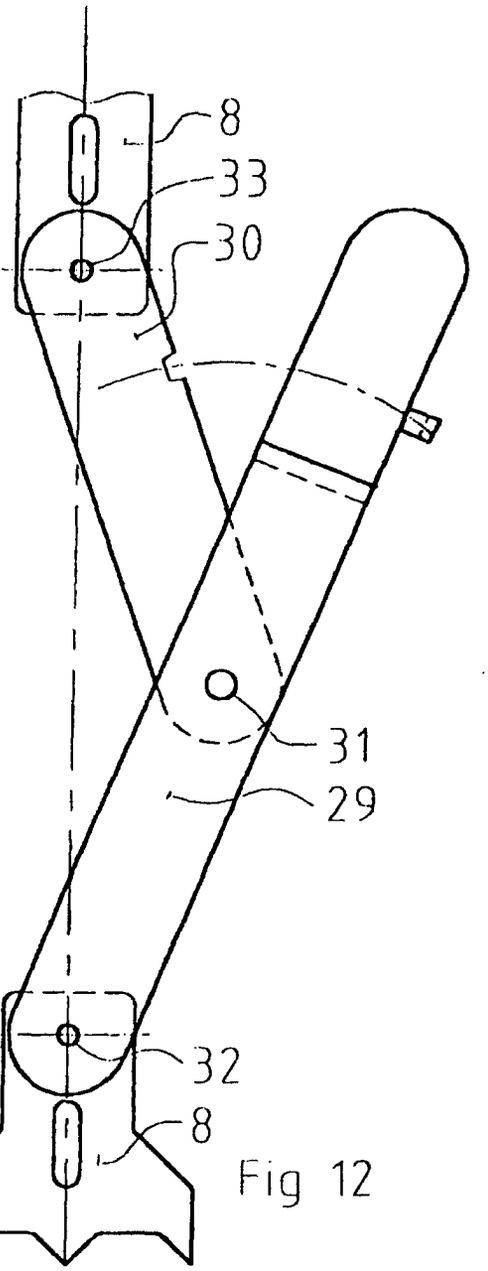


Fig 12

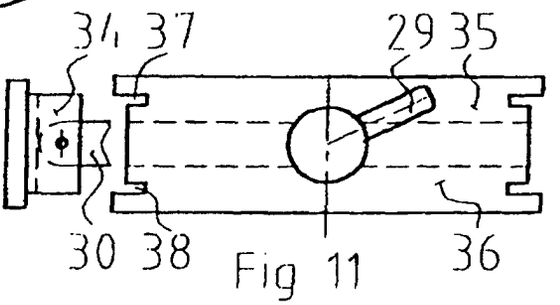


Fig 11

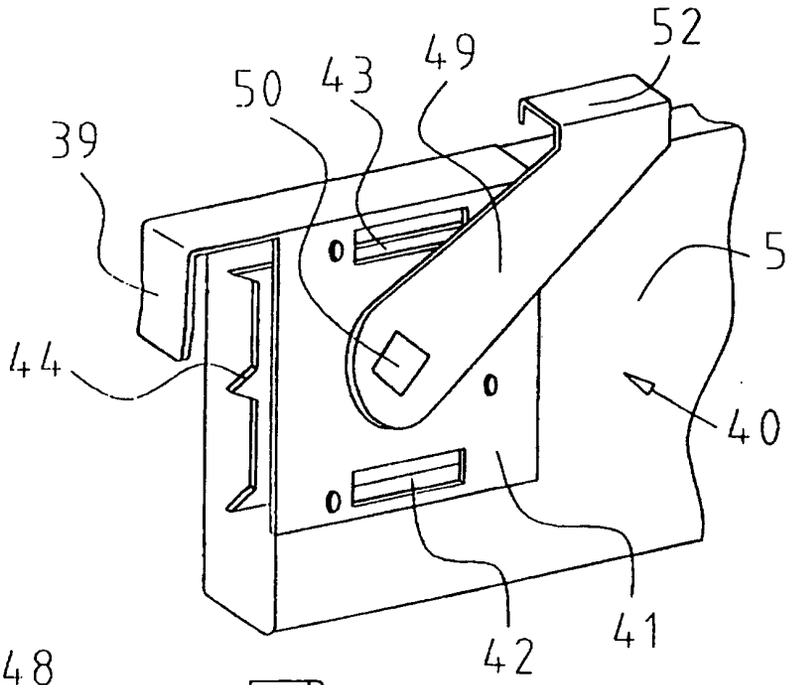


Fig 13

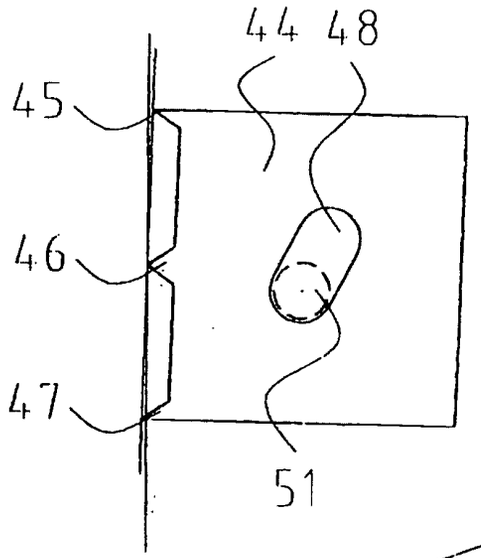


Fig 14

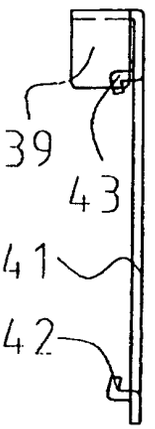


Fig 15

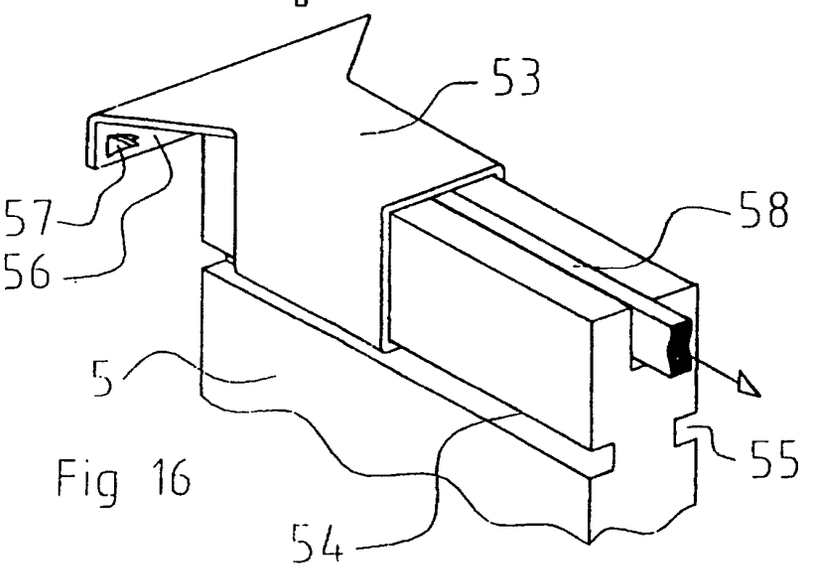


Fig 16