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(54) **PALLET (LOAD CARRIER)**

PALETTE (LASTTRÄGER)

PALETTE (TRANSPORTEUR DE CHARGES)

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Description

Technical Field

[0001] The Invention relates to a pallet of the type indicated in the introductory part of claim 1

Background Art

[0002] From GB patent specification No 2312415A a plastics pallet is known, said pallet being of the type having a plurality of hollow feet at its underside. Said feet have been obtained by depressing the pallet material, whereby at least one of the feet (the central one) has a length substantially corresponding to the length or width of the pallet. Said at least one foot contains two inner comparatively wide support parts arranged in series and projecting from the lower surface of the foot. Between the support parts and in the pallet deck holes are provided, the hole area being rather big. Because of these holes it is rather easy for the air in case of fire - to flow from goods on a lower placed pallet to the pallet in question or reversed; this is not satisfactory.

[0003] Further a pallet is known which is provided with hollow feet facing downwards. It is known to provide a small support part on the upwards facing inner bottom surface of each foot, said support part participating in bearing goods placed on the top side of the pallet. However, this pallet is not quite satisfactory with respect to its ability to stop a fire with much goods placed on the pallet, when several pallets with goods are stacked on top of each other.

Disclosure of Invention

[0004] The object of the invention is to provide a pallet of the above type and which - when placed in a pile of identical pallets - is more effective than the prior art pallets in extinguishing a fire in goods on a pallet below or a fire on the pallet in question, thus reducing the risk of fire spreading.

[0005] The pallet according to the invention is **characterized in that** each support part is directed upwardly, the hollowness of said support part being directed downwardly, and in that webs are provided between the wall of each foot and the wall of each support part.

[0006] In this way - according to fire tests where several identical inventive pallets filled with goods were stacked on top of each other - a pallet is obtained having a unique ability to extinguish flames generated in goods on the pallet located directly below or on the pallet in question. - Moreover, the pallet presents a considerable dimensional stability and is particularly suitable for the transport of goods on transport means, optionally roller conveyors (with many bumps).

[0007] According to the invention, the support parts may be hollow. Thus, the pallet becomes particularly light.

[0008] Moreover, according to the invention, there may be provided at least two, preferably three webs inside each support part. Thus, the pallet becomes comparatively sturdy.

[0009] According to the invention, each foot may have a width which is 0.10-0.56 times the length of the foot. This provides a particularly suitable embodiment of the pallet.

[0010] Additionally, according to the invention, the side wall of the long foot may be provided with elongated holes at positions located between the support parts. This results in certain material savings.

[0011] Further, according to the invention, at least two, preferably four, webs may be provided at each support part, said webs having e.g. a substantially U-shaped form. In this way, a particular stabilisation of the support part with respect to the wall of the foot and thus with respect to the surrounding part of the pallet is obtained, since said webs kind of "tether" the support parts.

[0012] Moreover, according to the invention, the pallet may be made of plastics, preferably plastics containing wood fibres, particularly 40-60 % by weight, e.g. 45-55 % by weight plastics and the remainder wood fibres. This material is particularly suitable, since it displays good strength and does not burn easily.

[0013] According to the invention, the middle support part of the long foot, seen in horizontal cross-section, may have an area which is smaller than approx. 35 % of the area of the horizontal cross-section through the support part having the largest horizontal cross-section. This embodiment has turned out to be particularly suitable.

[0014] Additionally, according to the invention, the long foot having a length, which is a little shorter than the length L of the pallet, may have a width β of 0.10-0.26, preferably approx. 0.2 times the width B of the pallet, whilst the outer feet may have a width b of 0.10-0.15, preferably approx. 0.13 times the width B of the pallet. It has been found that this results in a pallet with appropriate stiffness.

[0015] According to the invention, the long foot having a length L' may contain two support parts each having a length l' of 0.10-0.25, preferably approx. 0.20 times the length L' of the long foot, where the outer feet may have a length l of 0.10-0.30, preferably approx. 0.25 times the length L of the pallet. In this way, the middle area of the pallet displays a certain flexibility.

[0016] Further, according to the invention, the free height of each of the pallet feet may be up to approx. 0.13 times the length of the pallet, thus resulting in the pallet being comparatively easy to move by means of a fork-lift truck.

Brief Description of the Drawing

[0017] The invention is explained below with reference to the drawing, in which

Fig. 1 shows a top view at an angle of a first embod-

iment of the pallet according to the invention, and

Fig. 2 shows a bottom view at an angle of the same embodiment,

Fig. 3 shows a section through the support part 13 of Fig. 1. In a plane perpendicular to the top side of the pallet and parallel to the front edge of said pallet, and

Fig. 4 is a bottom view at an angle of the pallet illustrated in Fig. 1.

Best Mode for Carrying out the Invention

[0018] The pallet 1 shown in Fig. 2 is provided with a plurality of hollow feet 2, 3, 4, 5, 6, 7, 8, at its bottom side 10, said feet being obtained by completely or partially depressing the pallet material from the top side 11 (Fig. 1) of the pallet. As is apparent, the foot 8 in the middle (Fig. 2) is a long foot having a length L' , which almost corresponds to the length L of the pallet (cf. Fig. 1). The long foot 8 contains three inner comparatively wide support parts 13, 14, 15 arranged in series and projecting from a bottom part 16a of the foot 8.

[0019] As seen in Fig. 3, the support parts 13, 14, and 15 are hollow, the hollowness facing downwards. At least two webs, preferably three webs 21, 22, 23, may be provided inside each support part 13, 14, 15 (cf. Fig. 4).

[0020] As seen in Fig. 4, each foot may have a width β , which is 0.10-0.56 times the length l of said foot.

[0021] As seen particularly in Fig. 1, the long foot 8 (of Fig. 2) having a length L' substantially corresponding to the length L of the pallet is arranged in the middle of the pallet seen in the longitudinal direction of the pallet.

[0022] As seen particularly clearly in Fig. 2, the side wall of the long foot 8 may be provided with elongated holes 26, 27, 28, and 29 at the places located between the support parts 13, 14, and 15.

[0023] As illustrated in Fig. 1, there may be provided at least two, in the present case four webs 40, 41, 42, and 43 between a wall 31 of the long foot 8 and a side wall 13a of each support part 13, said webs each having a substantially U-shaped form.

[0024] The illustrated pallet 1 may be made of different materials, e.g. plastics, preferably plastics containing wood fibres, particularly 40-60 % by weight, e.g. 45-55 % by weight plastics and the remainder wood fibres.

[0025] The middle support part 14 of the long foot 8, seen in horizontal cross-section, may have an area which is smaller than approx. 35 % of the area of the horizontal cross-section through the support part 13 or 15 having the largest horizontal cross-section. The long foot 8 (cf. Fig. 2) has a length L' (cf. Fig. 1) substantially corresponding to the length L of the pallet. The long foot 8 may have a width β of 0.10-0.25, preferably approx. 0.2 times the width B of the pallet. The feet 2, 3, 4, 5, 6, and 7 may have a width b of 0.10-0.15, preferably approx. 0.13 times

the width B of the pallet.

[0026] The two support parts 13 and 15 of the foot 8 (cf. Fig. 1) may each have a length l' , which is 0.10-0.25, preferably approx. 0.20 times the length L' of the long foot 8. The feet 2, 3, 4, 5, 6, and 7 may have a length l of 0.10-0.30, preferably approx. 0.25 times the length L of the pallet.

[0027] With respect to the free height h' of the pallet 1, it may be up to approx. 0.13 times the length L of the pallet. However, in Fig. 2, the free height h' is only approx 0.05 times the length L of the pallet.

[0028] The pallet 1 may typically have a length L of 1140-1200 mm, a width B of 760-800 mm, and a height h' of 110-150 mm.

Claims

1. A pallet (1) made of plastics material or other materials and of the type having a plurality of hollow feet (2, 3, 4, 5, 6, 7, 8) at its underside (10), said feet being obtained by depressing the pallet material, whereby at least one of the feet (8) - the long foot (8) - has a length (L') substantially corresponding to the length (L) or width (B) of the pallet (1), and being positioned in the middle of the pallet (1), seen in the longitudinal direction or the transverse direction, respectively, of the pallet, said long foot (8) containing at least two inner, comparatively wide support parts (13, 14, 15) arranged in series and projecting from the bottom part of the long foot (8), **characterized in that** each support part (13, 14, 15) is directed upwards, the hollowness of said support part being directed downwards, and that webs (40, 41, 42, 43) are provided between the wall (31) of each foot (8) and the wall (13a) of each support part.
2. A pallet as claimed in claim 1, **characterized in that** at least two, preferably three, webs (21, 22, 23) are provided with each support part (13).
3. A pallet as claimed in claim 1 or 2, **characterized in that** each foot (2, 3, 4, 5, 6, 7, 8) has a width (b ; β), which is 0.10-0.56 times the length (l ; L') of the corresponding foot.
4. A pallet as claimed in one or more of claims 1-3, **characterized in that** the side wall of the long foot (8) is provided with elongated holes (26, 27, 28, 29) at positions located between the support parts (13, 14, 15).
5. A pallet as claimed in one or more of claims 1-4, **characterized in that** at least two, preferably four webs are provided at each support part, each web having e.g. a substantially U-shaped form.
6. A pallet as claimed in one or more of claims 1-5,

characterized in that it may be made of different materials, preferably plastics, in particular plastics containing wood fibres, particularly 40-60 % by weight, e.g. 45-55 % by weight plastics and the remainder wood fibres.

7. A pallet as claimed in one or more of claims 1-6, **characterized in that** the middle support part (14) in the long foot (8), seen in horizontal cross-section, has an area which is smaller than approx. 35 % of the area of the horizontal cross-section through the support part (13 or 15) having the largest horizontal cross-section.
8. A pallet as claimed in one or more of claims 1-7, **characterized in that** the long foot (8) has a length (L'), which is a little shorter than the length (L) of the pallet and has a width (β) of 0.10-0.25, preferably approx. 0.2 times the width (B) of the pallet, and that the outer feet (2, 3, 4, 5, 6, 7) have a width (b) of 0.10-0.15, preferably approx. 0.13 times the width (B) of the pallet,
9. A pallet as claimed in one or more of claims 1-8, **characterized in that** the long foot (8) contains two support parts (13, 15) each having a length (l') of 0.10-0.25, preferably approx. 0.20 times the length (L') of the long foot, and **in that** each of the outer feet (2, 3, 4, 5, 6, 7) have a length l of 0.10-0.30, preferably approx. 0.25 times the length (L) of the pallet.
10. A pallet as claimed in one or more of claims 1-9, **characterized in that** the height (h') of each of its feet (2, 3, 4, 5, 6, 7, 8) is up to approx. 0.13 times the length (L) of the pallet (1).

Patentansprüche

1. Palette (1) hergestellt aus Plastikmaterial oder anderen Materialien und von der Art mit einer Vielzahl an hohlen Füßen (2, 3, 4, 5, 6, 7, 8) an ihrer Unterseite (10), wobei die Füße durch Herabdrücken des Palettenmaterials erhalten werden, wodurch zumindest einer der Füße (8) - der lange Fuß (8) - eine Länge (L') aufweist, die im Wesentlichen der Länge (L) oder Breite (B) der Palette (1) entspricht, und in der Mitte der Palette (1), wenn in der Längsrichtung bzw. der Querrichtung der Palette betrachtet, angeordnet ist, wobei der lange Fuß (8) zumindest zwei innere, vergleichsweise breite Abstützteile (13, 14, 15) umfasst, die in Reihe angeordnet sind und sich von dem Bodenabschnitt des langen Fußes (8) erstrecken,
dadurch gekennzeichnet, dass
jeder Abstützabschnitt (13, 14, 15) nach oben gerichtet ist, der Hohlraum des Abstützabschnittes

nach unten gerichtet ist und dass Rippen (40, 41, 42, 44) zwischen der Wand (31) von jedem Fuß (8) und der Wand (13a) von jedem Abstützabschnitt vorgesehen sind.

2. Palette nach Anspruch 1, **dadurch gekennzeichnet, dass** zumindest zwei, bevorzugt drei, Rippen (21, 22, 23) für jeden Abstützabschnitt (13) vorgesehen sind.
3. Palette nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** jeder Fuß (2, 3, 4, 5, 6, 7, 8) eine Breite (b; β), die 0,10-0,56 mal der Länge (l; L') des entsprechenden Fußes entspricht, aufweist.
4. Palette nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** die Seitenwand des langen Fußes (8) mit verlängerten Löchern (26, 27, 28, 29) an Positionen, die zwischen den Abstützabschnitten (13, 14, 15) angeordnet sind, versehen ist.
5. Palette nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** zumindest zwei, bevorzugt vier, Rippen an jedem Abstützabschnitt vorgesehen sind, wobei jede Rippe beispielsweise eine im Wesentlichen U-förmige Form aufweist.
6. Palette nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** sie aus verschiedenen Materialien hergestellt werden kann, bevorzugt Plastikmaterialien, insbesondere Plastikmaterialien aufweisend Holzfasern, insbesondere mit 40-60 Gewichts-%, beispielsweise 45-55 Gewichts-%, Plastikmaterialien und dem Rest aus Holzfasern.
7. Palette nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** der mittlere Abstützabschnitt (14) des langen Fußes (8), wenn in horizontalem Querschnitt betrachtet, einen Bereich aufweist, der schmaler als ungefähr 35% des Bereichs des horizontalen Querschnitts durch den den größten Querschnitt aufweisenden Abstützabschnitt (13 oder 15) ist.
8. Palette nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** der lange Fuß (8) eine Länge (L') aufweist, die etwas kürzer ist als die Länge (L) der Palette und eine Breite (β) von 0,10-0,25, bevorzugt ca. 0,2 mal der Breite (B) der Palette aufweist und dass die äußeren Füße (2, 3, 4, 5, 6, 7) eine Breite (b) von 0,10-0,15, bevorzugt ca. 0,13 mal der Breite (B) der Palette aufweisen.
9. Palette nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** der lange Fuß (8) zwei Abstützabschnitte (13, 15) umfasst, die jeweils eine Länge (l') von 0,10-0,25, bevorzugt 0,20 mal der Länge (L') des langen Fußes aufweisen, und dass

jeder der äußeren Füße (2, 3, 4, 5, 6, 7) eine Länge 1 von 0,10-0,30, bevorzugt, 0,25 mal der Länge (L) der Palette aufweist.

10. Palette nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** die Höhe (h') von jeder ihrer Füße (2, 3, 4, 5, 6, 7, 8) bis zu ca. 0,13 mal der Länge (L) der Palette (1) beträgt.

Revendications

1. Palette (1) fabriquée en matière plastique ou d'autres matériaux et du type ayant une multiplicité de pieds creux (2, 3, 4, 5, 6, 7, 8) au niveau de son côté inférieur (10), lesdits pieds étant obtenus en enfonçant la matière de palette, de sorte que au moins un des pieds (8) - le pied long (8) - a une longueur (L') correspondant sensiblement à la longueur (L) ou à la largeur (B) de la palette (1), et est positionné au milieu de la palette (1), vu dans la direction longitudinale ou la direction transversale, respectivement, de la palette, ledit pied long (8) contenant au moins deux parties de support intérieures comparativement larges (13, 14, 15) disposées en série et dépassant de la partie inférieure du pied long (8), **caractérisée en ce que** chaque partie de support (13, 14, 15) est dirigée vers le haut, le creux de ladite partie de support étant dirigée vers le bas, et **en ce que** des nervures (40, 41, 42, 43) sont prévues entre la paroi (31) de chaque pied (8) et la paroi (13a) de chaque partie de support.
2. Palette selon la revendication 1, **caractérisée en ce qu'**au moins deux, de préférence trois, nervures (21, 22, 23) sont prévues pour chaque partie de support (13).
3. Palette selon la revendication 1 ou 2, **caractérisée en ce que** chaque pied (2, 3, 4, 5, 6, 7, 8) a une largeur (b ; β), qui est de 0,10 à 0,56 fois la longueur (1 ; L') du pied correspondant.
4. Palette selon une ou plusieurs des revendications 1 à 3, **caractérisée en ce que** la paroi latérale du pied long (8) est pourvue de trous allongés (28, 27, 28, 29) dans des positions situées entre les parties de support (13, 14, 15).
5. Palette selon une ou plusieurs des revendications 1 à 4, **caractérisée en ce que** au moins deux, de préférence quatre nervures sont prévues au niveau de chaque partie de support, chaque nervure ayant par exemple une forme sensiblement en U.
6. Palette selon une ou plusieurs des revendications 1 à 5, **caractérisée en ce qu'**elle peut être fabriquée dans différents matériaux, de préférence des matiè-

res plastiques, en particulier des matières plastiques contenant des fibres en bois, en particulier de 40 à 60 % en poids, par exemple 45 à 55 en poids de matières plastiques et le reste étant des fibres en bois.

7. Palette selon une ou plusieurs des revendications 1 à 6, **caractérisée en ce que** la partie de support du milieu (14) dans le pied long (8), vue dans la section transversale horizontale, a une surface qui est plus petite qu'approximativement 35 % de la surface de la section transversale horizontale à travers la partie de support (13 ou 15) ayant la plus grande section transversale horizontale.
8. Palette selon une ou plusieurs des revendications 1 à 7, **caractérisée en ce que** le pied long (8) a une longueur (L'), qui est un peu plus courte que la longueur (L) de la palette et a une largeur (β) de 0,10 à 0,25, de préférence approximativement 0,2 fois la largeur (B) de la palette, et **en ce que** les pieds extérieurs (2, 3, 4, 5, 6, 7) ont une largeur (b) de 0,10 à 0,15, de préférence approximativement 0,13 fois la largeur (B) de la palette.
9. Palette selon une ou plusieurs des revendications 1 à 8, **caractérisée en ce que** le pied long (8) contient deux parties de support (13, 15) ayant chacune une longueur (1') de 0,10 à 0,25, de préférence approximativement 0,20 fois la longueur (L') du pied long, et **en ce que** chacun des pieds extérieurs (2, 3, 4, 5, 6, 7) a une longueur 1 de 0,10 à 0,30, de préférence approximativement 0,25 fois la longueur (L) de la palette.
10. Palette selon une ou plusieurs des revendications 1 à 9, **caractérisée en ce que** la taille (h') de chacun de ses pieds (2, 3, 4, 5, 6, 7, 8) est jusqu'à approximativement 0,13 fois la longueur (L) de la palette (1).

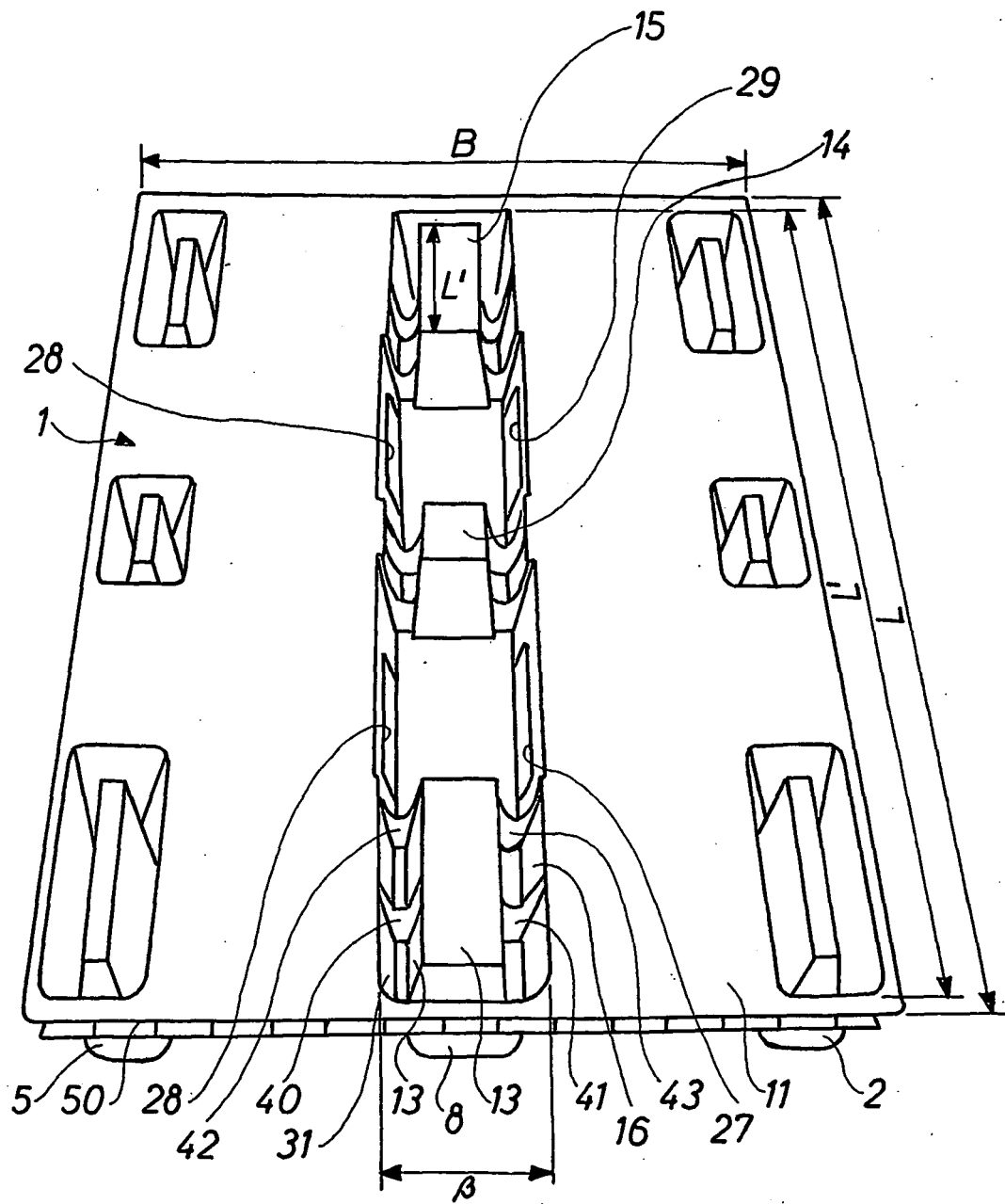


Fig. 1

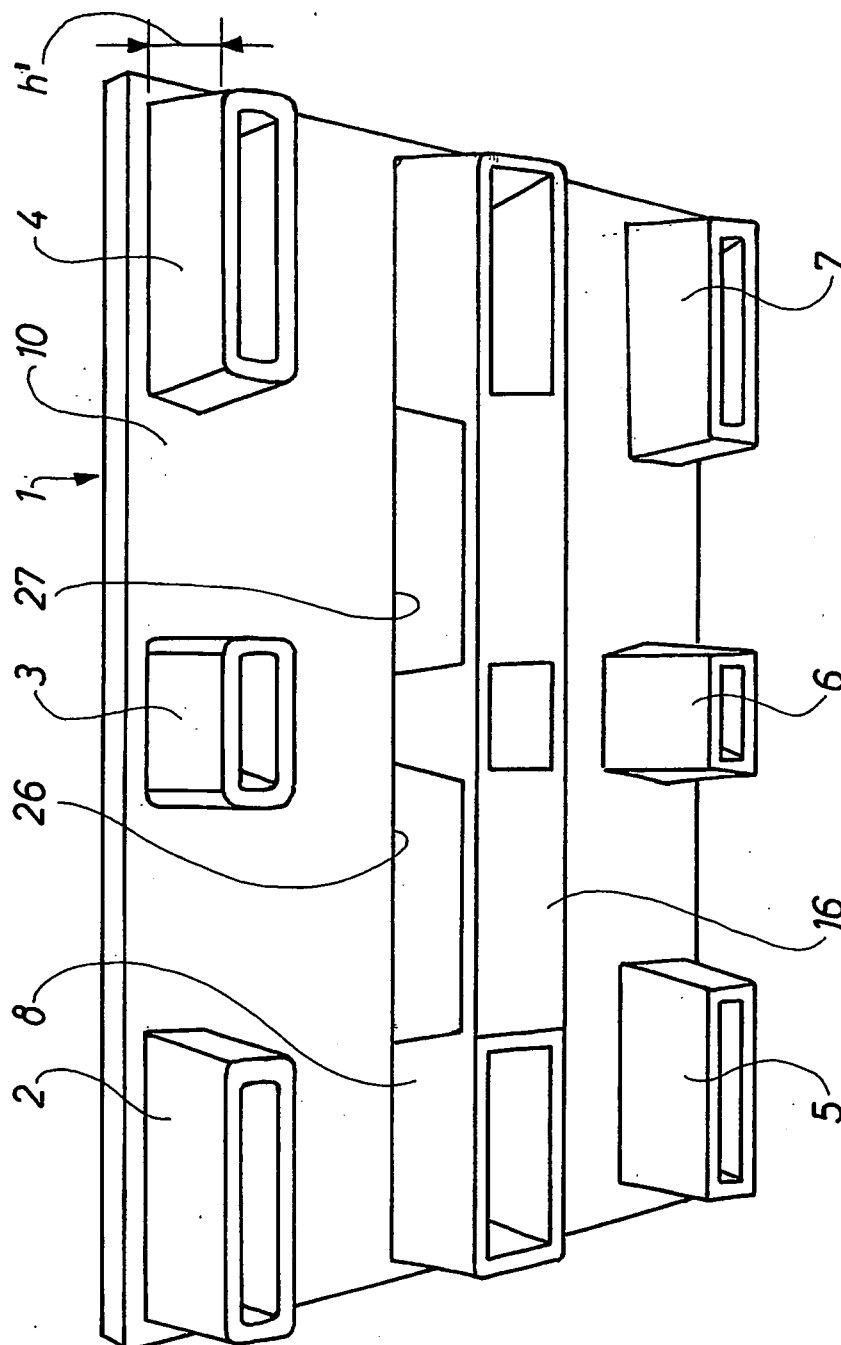


Fig. 2

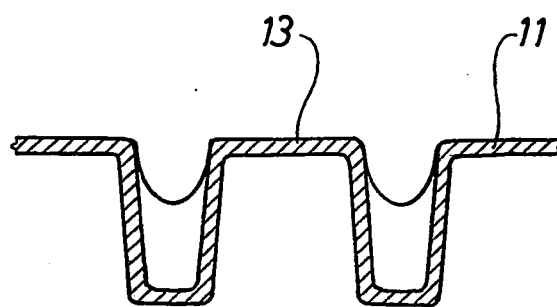


Fig. 3

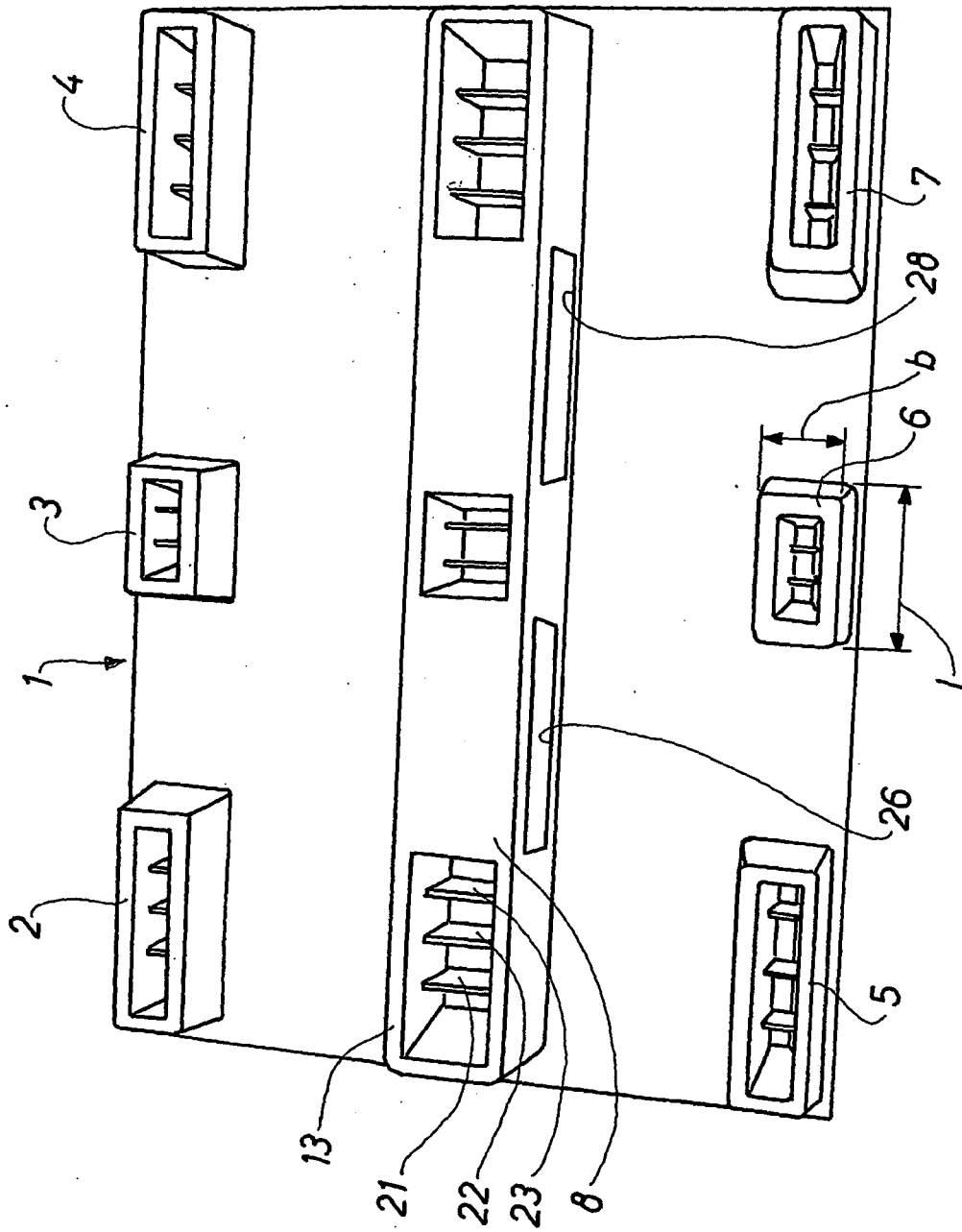


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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