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(54) **Pallet box**

Palettenbehälter

Caisse-palette

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(56) References cited:
**EP-A- 0 512 291 FR-A- 2 598 684
FR-A- 2 639 027 GB-A- 2 264 482
GB-A- 2 283 728 US-A- 4 880 141**

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Description

[0001] The present invention is for a box for use as a load pallet according to the preamble of claim 1. The box is made from corrugated board or other foldable material.

[0002] Packagings for transportation shall fulfill several functions. Important functions are to hold together a number of smaller items in a packaging or box, to protect against hits, blows and other mechanical effects, to protect against moisture and wetness and to prevent or make stealing of packed goods more difficult.

[0003] In the handling and transportation of goods it is common that several smaller packagings are put into a common larger box which in turn is put on a pallet for transportation to the receiver. The bottom of the larger box often has outer dimensions which correspond to the size of the pallet in order to enable maximum use of the available space. In order to avoid displacement of the box relative to the pallet the box may be fastened to the pallet. It is known to make use, for this purpose, of corrugated board boxes where in the bottom there are special fastening means which are folded around a pallet batten or otherwise fastens the box to the pallet. The fastening of the box at the pallet takes place after the box, which in most cases is delivered in folded down condition to the user, has been raised and put onto the pallet, so the underside of the pallet has to be made available. Using this method it is difficult to achieve a fastening of the box at the pallet which is satisfactory for all kinds of use, there is a risk that the fastening means will break and the box then become displaced relative to the pallet. The work of supplying a load pallet and a folded up box to the user at a given moment, raising the box and fastening it to the pallet demands a considerable amount of work and preparations. By using the box according to the invention these disadvantages and the amount of work involved to put the box in order at the load pallet are reduced.

[0004] EP 0 512 291 (corresponding to the preamble of claim 1) discloses a collapsible cardboard box, in particular of corrugated cardboard, which has, in its erected state, a rectangular bottom and four side parts which are joined to said bottom and are joined to one another via corner folds. In order to ensure that the base area of the collapsible cardboard box is just as small in the collapsed state as in the erected state, four crease folds extend on all four side parts, each fold beginning at one corner fold of the side part near to the bottom and extending obliquely up to the upper edge of the side part. Provided additionally on at least one of the side parts is at least one auxiliary fold which begins at one corner fold of the side part near to the bottom and extends obliquely up to the upper edge of said side part. As a result, all four side parts can be folded in over the bottom in the joined state.

[0005] GB 2 283 728 discloses a container comprising a base and side walls which, in the fully-erected state

of the container, stand up from the base, wherein an upper portion of at least one of the side walls in a semi-erected state of the container, extends at least partially over the base in spaced relationship therewith, to define a cavity there between. The container may be palletised and, in its fully-erected state, may be provided with a bracing frame extending there around, to prevent the side walls from bowing outwardly when the container is filled.

[0006] FR 2 639 027 discloses a pallet case comprising an American half-case and a pallet, in which the pallet is constituted by a rectangular cardboard blank whose dimensions are the length and width of the inside of the half-case and which carries several rows of blocks, a wooden runner possibly being mounted on each row of blocks, the said blank being mounted in an articulated manner along its longitudinal median axis on the edge of one or other of the two flaps joined to the bottom of the half-case, the pallet because of this being mobile between a retracted position inside the case and a position of use outside the case.

[0007] The present invention is for a box which is intended to be fastened to a load pallet. The box may be folded down both in itself and when it is fastened to the pallet and it may then contain the other parts of the packagings within the smallest possible volume. The packaging when raised and ready for use also gives a satisfactory protection of the goods which is put therein in various aspects as mentioned above. The box according to the invention has those characteristic features of claim 1 and the embodiments of the invention are defined in the dependent claims.

[0008] The invention will below be described more in detail with reference to the example of an embodiment which is shown in the enclosed figures.

[0009] Figure 1 shows a folded down box on a load pallet.

[0010] Figure 2 shows a partly raised box.

[0011] Figure 3 shows a completely raised box.

[0012] Figure 4 shows a raised box while insert parts are being put in.

[0013] Figure 5 shows a raised box on a load pallet from above.

[0014] Figure 6 shows a flattened blank for a box.

[0015] Figure 7 shows a blank for a side wall insert.

[0016] Figure 8 shows a blank of a safety cover.

[0017] Figure 9 shows a blank of an outer cover.

[0018] The box according to the invention is made from foldable material, preferably corrugated board. The box 1 comprises four side walls 5, 6, 7, 8 which are connected to one another along folding lines 26, 27, 28. One outer side wall 8 has along its outer edge a gluing flap 15 which is connected to the side wall along a folding line 29. By means of the gluing flap 15 the outer side walls 8, 5 may be joined together to a surrounding wall. In spite of the designation gluing flap the joining may be made in various ways, for example by gluing or nailing. A folding line 9 extends itself parallel with the horizontal

direction of the sides and delimits a narrow part 5a, 6a, 7a, 8a at the bottom of each side of the box. Connected to these narrow bottom parts there is at the very bottom of each of the sides a separate mounting flap 11, 12, 13, 14.

[0019] The other details of the packaging may be adapted to the actual needs, in the embodiment of the invention which is shown here there are two like side wall inserts 2, a safety cover 3 and an outer cover 4. The size of the details are adapted to the needs, for example the side wall inserts are adapted so that they fit into the box closely adjacent and fully covering the side walls of the box. Also other details may be included, for example a bottom board and/or a cover board, i.e. flat boards having a size which corresponds to the inner cross sectional area of the raised box. A bottom board is generally desirable as it is put in after the side wall inserts and renders them and the box as a whole increased stability by forcing the inserts against the outer walls.

[0020] Before delivery of the box to the place where goods shall be packed up it is prepared in the following way. The side walls 5, 6, 7, 8 are folded along the folding lines 26, 27, 28 and the gluing flap 15 is attached to the edge of the side wall 5. Then the flaps 11, 12, 13, 14 are folded inwards 90 degrees whereupon the box is put at the load pallet where it is fastened thereby that the flaps 11, 12, 13, 14 are nailed or stapled to the upper surface of the load pallet using nails, staples 30 or otherwise. A safety cover 3 which is folded double along the folding line 20 and two side wall inserts 2 which have been folded along the folding lines between the sections 16, 17, 18 of each side wall insert. The side walls are then folded in towards the middle of the box along the folding line 9 and at the same time folded along the oblique folding lines across the opposing long side walls 5, 7. The oblique folding lines start from the intersection of the surrounding folding line 9 and the folding lines 26, 27, 28, 29 between the sides of the box and extend themselves obliquely upwards to the upper edge of each side. In this way one obtains a unit of load pallet and box which occupies as little volume as possible, its height being the sum of the height of the load pallet and the height of the bottom parts 5a, 6a, 7a, 8a of the sides. In some cases an outer cover 4 is also put on top of the folded up box.

[0021] After that the unit of box and load pallet has been formed as described above it is transported to the user where it may be stored folded up to the time of use when it is raised and made ready as is apparent from figures 1-4. It is shown in figure 1 that the long sides 5, 7 are folded with some overlapping. The relative position of the sides when the short sides have been raised to about 45 degrees sloping to the top of the pallet is shown in figure 2 and figure 3 shows the fully raised box. Then the two side wall inserts 2 are taken out from the box and folded so that each of the three sections of them are at 90 degrees angle to the adjacent section. The side wall inserts are then pushed down into the box and are shown in figure 4 partly pushed down.

[0022] After that the side wall inserts have been fully pushed down into the box the goods is put therein. The safety cover 3 is then put on top of the box, its flaps 21, 22, 23, 24 are folded and inserted between the side wall inserts and the wall of the box and fastened by means of adhesive tape or other suitable means. An outer cover 4 may then be put on the box which then is ready for transportation. Fastening of the safety cover is preferably by means of an adhesive tape which extends itself all along the edge of the box, inwards on the flat surface of the safety cover and down at the outer wall of the box. In this way the box is sealed and theft or unauthorised access to the goods inside the box is prevented or causes such damage that it is rapidly observed. In order to further strengthen these properties a tape may be used which has a special adhesive capability, embossing, printing and other special properties. The safety cover also prevents water and other foreign substances from entering into the box.

[0023] Various embodiments of the box are possible within the scope of the claims and further parts may be added, for example the bottom boards mentioned above and covering boards, in which case the position of the folding line 9 is adapted so that all parts may be contained inside the folded up box.

Claims

1. Pallet box (1) for packaging and transportation of goods in a four-sided, right-angled parallelepipedic box positioned and fastened on to a load pallet, each of the connecting sides (5, 6, 7, 8) of the box is joined to a fastening flap (11, 12, 13, 14) which is nailed, stapled or otherwise fastened to the top of the load pallet, an all around folding line (9) is positioned a short distance up from the bottom of the box and two opposing sides have folding lines which start from the intersections of the all around folding line (9) and the folding lines (26, 27, 28, 29) between the sides of the box and extend themselves obliquely upwards to the upper edge of each side, **characterized in that** the pallet box (1) comprises two side wall inserts (2) which together cover the whole of the inside of the pallet box (1) and a safety cover (3) having flaps (21-24) arranged so that they may be folded and inserted between the side wall inserts (2) and the outer wall of the pallet box (1).
2. Pallet box according to claim 1 **characterized in that** the oblique folding lines are at the two long ones (5, 7) of the four sides.
3. Pallet box according to claim 2 **characterized in that** the flaps of the safety cover (3) are fastened by means of adhesive tape or in another suitable way between the side wall inserts (2) and the outer

wall of the pallet box (1).

4. Pallet box according to claim 2 or 3 **characterized in that** it also comprises an outer cover (4) which is intended to be put on top of the safety cover (3).

Patentansprüche

1. Palettenkiste (1) zum Verpacken und Transportieren von Gütern in einer vierseitigen, rechteckigen, parallelepipedförmigen Kiste, die auf einer Ladepalette angeordnet und befestigt ist, wobei jede der verbindenden Seiten (5, 6, 7, 8) der Kiste mit einer Befestigungslasche (11, 12, 13, 14) verbunden ist, die an der Oberseite der Ladepalette angenagelt, geheftet oder anderweitig befestigt ist, eine umlaufende Faltlinie (9) in einem kurzen Abstand zu dem Boden der Kiste angeordnet ist und zwei einander gegenüberliegende Seiten Faltlinien haben, die von den Schnittpunkten der umlaufenden Faltlinie (9) und den Faltlinien (26, 27, 28, 29) zwischen den Seiten der Kisten ausgehen und sich bis zur Oberkante jeder Seite schräg nach oben erstrecken, **dadurch gekennzeichnet, dass** die Palettenkiste (1) zwei Seitenwandeinsätze (2), die zusammen das gesamte Innere der Palettenkiste (1) abdecken, und eine Sicherheitsabdeckung (3) mit Laschen (21-24) umfasst, die so angeordnet sind, dass sie gefaltet und zwischen die Seitenwandeinsätze (2) und die Außenwand der Palettenkiste eingeführt werden können.
2. Palettenkiste nach Anspruch 1, **dadurch gekennzeichnet, dass** sich die schrägen Faltlinien an den zwei langen (5, 7) der vier Seiten befinden.
3. Palettenkiste nach Anspruch 2, **dadurch gekennzeichnet, dass** die Laschen der Sicherheitsabdeckung (3) mit Klebeband oder auf andere geeignete Weise zwischen den Seitenwandeinsätzen (2) und der Außenwand der Palettenkiste (1) befestigt sind.
4. Palettenkiste nach Anspruch 2 oder 3, **dadurch gekennzeichnet, dass** sie auch eine äußere Abdeckung (4) umfasst, die zum Aufsetzen auf die Oberseite der Sicherheitsabdeckung (3) bestimmt ist.

Revendications

1. Boîte pour palette pour l'emballage et le transport de marchandises dans une boîte parallélépipédique à quatre côtés à angle droit positionnée et fixée sur une palette de chargement, chacun des cotés raccordés (5, 6, 7, 8) de la boîte est raccordé à un volet de fixation (11, 12, 13, 14) qui est cloué, agrafé ou fixé de toute autre manière au-dessus de la pa-

lette de chargement, une ligne de repliement (9) s'étendant tout autour est positionnée à une courte distance vers le haut depuis le fond de la boîte et deux côtés opposés ont des lignes de repliement (26, 27, 28, 29) entre les côtés de la boîte et s'étendent à l'oblique vers le haut vers le bord supérieur de chaque côté, **caractérisé en ce que** boîte (1) comprend deux inserts de parois latérales (2) qui ensemble peuvent couvrir le totalité de l'intérieur de la boîte (1) et un couvercle de sécurité (3) comportant de volets (21 - 24) disposés de sort qu'ils peuvent être repliés et insérés entre les parois latérales (2) et la paroi extérieure de la boîte (1).

2. Boîte pour palette selon la revendication 1, **caractérisé en ce que** les lignes de repliement à l'oblique sont sur les deux côtés longs (5, 7) parmi les quatre côtés.
3. Boîte pour palette selon la revendication 2, **caractérisé en ce que** les volets du couvercle de sécurité sont fixés au moyen d'une bande adhésive ou de toute autre manière appropriée entre les parois latérales et la paroi extérieure de la boîte (1).
4. Boîte pour palette selon la revendication 2 ou 3, **caractérisé en ce qu'elle** comprend également un couvercle extérieur (4) qui est destiné être placé au-dessus du couvercle de sécurité (3).

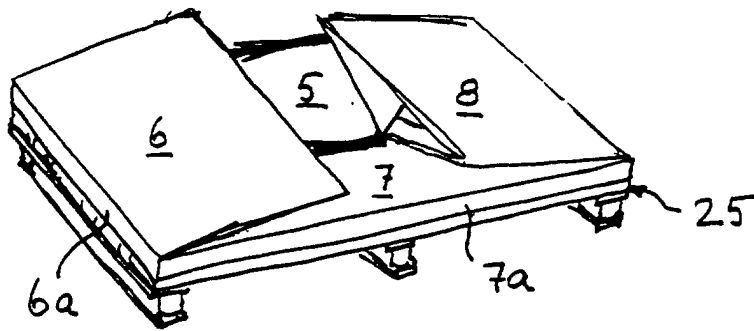


FIG 1

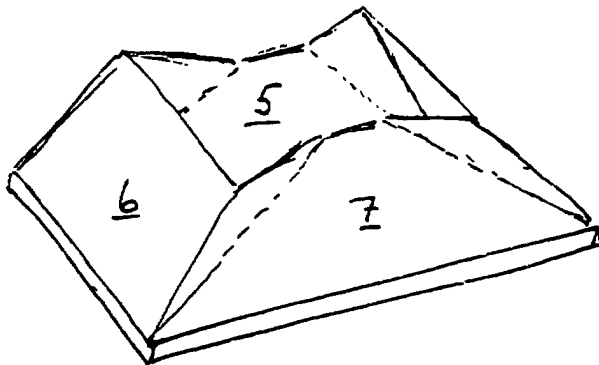


FIG 2

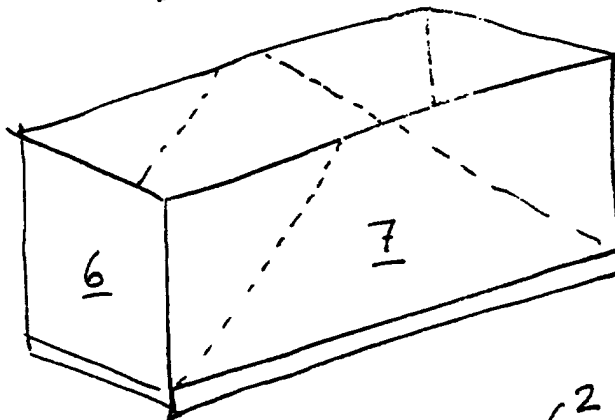


FIG 3

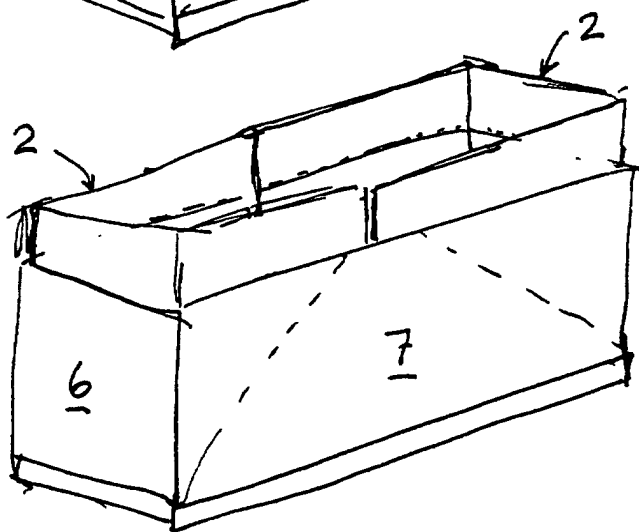


FIG 4

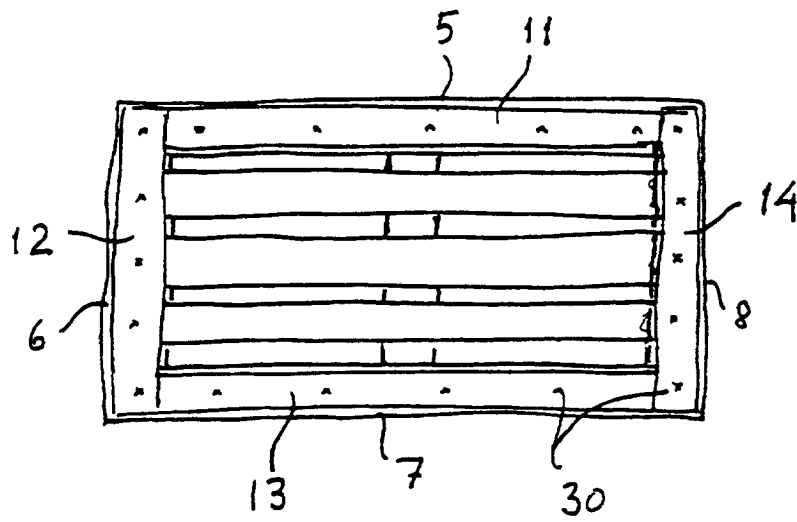


FIG 5

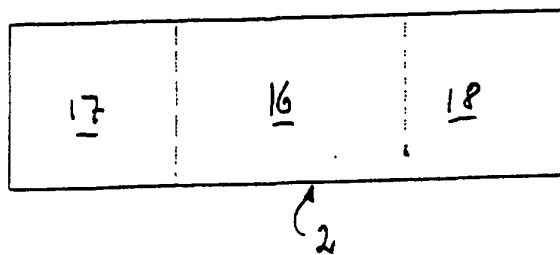


FIG 7

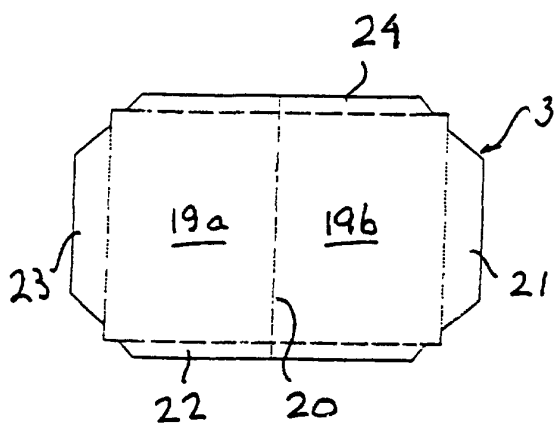


FIG 8

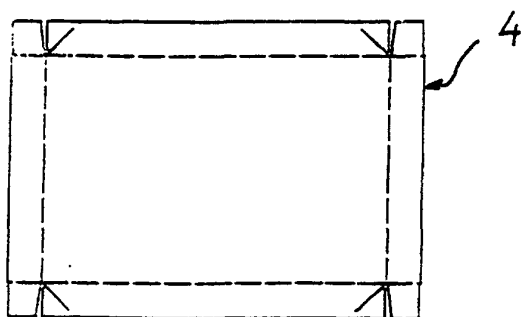


FIG 9

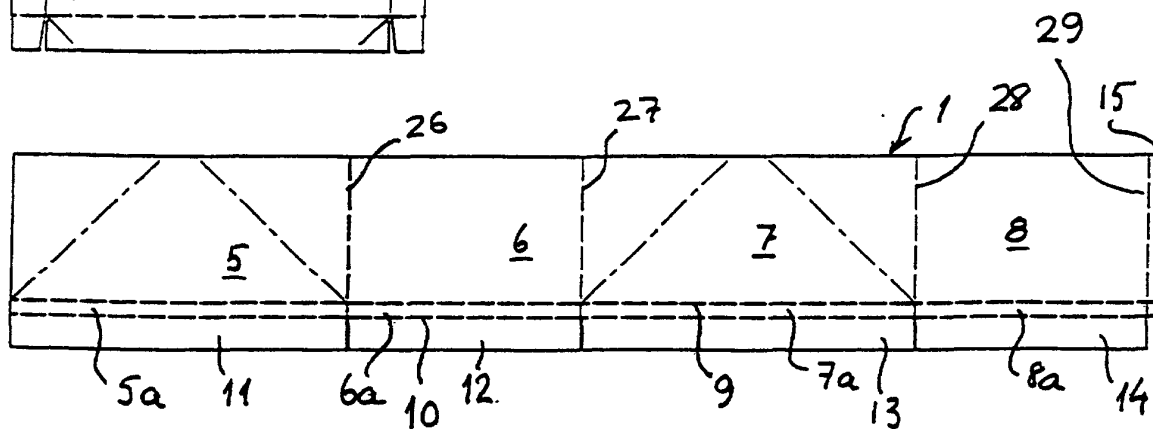


FIG 6