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Palletized containers.

(57)

A palletized container comprising a pallet structure P and a container secured to the pallet structure, the container comprising side walls (9, 10, 11 and 12), top closing flaps (13, 14, 15, 16), bottom flaps (17, 18, 19, 20) which fold inwardly of the container from the side walls and defining a generally rectangular opening (21) in the base of the container, two base pads each having a rectangular attachment portion (1) which is attached to the pallet structure P under the top bearers of the pallet structure P and smaller shaped pad portions (2) formed with crease or score lines (3, 4) to define a central trapezium shaped portion T and shaped foldable ears (5, 6) extending from the sides of the portion T, said ears (5, 6) being relieved at (7, 8) so that the pad portion (2) is connected to the attachment portion (1) by an arrow neck. In use, the pad portions (2) are arranged generally perpendicular to the pallet structure P and the ears (5, 6) are bent towards each other until the pad portions may be inserted through the rectangular opening (21) in the base of the container. The pad portions (2) are then folded flat against the base of the container to prevent lateral movement of the container with respect to the pallet structure P in all directions.

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PALLETIZED CONTAINERS

This invention relates to palletized containers.

Palletized containers of various descriptions have been widely known and used for many years. Although corrugated board containers incorporating integral
5 pallet components, for example, as described in Australian Patent No. 426,164 (AU-B 23812/67), have been widely used with success for many years, the need has developed for palletized containers in which the pallet structure is relatively rigid and may, for example, be construct-
10 ed from timber components.

A palletized container of the above type is described in greater detail in Australian Patent No. 505,345 (AU-B 23926/77) in which a hinged flap having the same dimensions as the bottom of the container
15 is attached to the pallet construction and the flap is then engaged between two of the bottom flaps of the container and is held in position by the container and its contents.

This type of palletized container has short-
20 comings in that the container, particularly when empty, partially filled or enclosing a light load is capable of being displaced laterally in one direction and may therefore be detached from the pallet construction.-

This problem has been overcome by the proposal
25 of U.S. Patent No. 4,085,846 by Williams, in which the floor of the container is attached directly to the pallet and is positively located in use by folded base flanges of the container. However, this arrangement suffers from the disadvantages that notches must
30 be cut in the end base flanges to facilitate entry of the folded floor components and the floor components must be held, either manually or by means of a holding peg, during the assembly process. The notches create

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regions of weakness in the assembled container and the requirement for a holding means is generally inconvenient.

5 A similar arrangement, having an integral means for holding the folded floor components in their folded condition, is shown in French specification 2,500,810 (82 01 857). However, the same disadvantages are apparent.

10 It is the object of the present invention to provide an improved palletized container construction in which the above problems are at least reduced.

One aspect of the invention provides a palletized container comprising a pallet structure and a container adapted to be secured to said pallet structure, said
15 container comprising side walls and top closing flaps for at least part of the top of the container if required, bottom flaps which fold inwardly of the container from the side walls and defining a generally rectangular opening in the base of the container, and
20 at least one base pad having a portion secured to or integral with said pallet structure and being shaped to be disposed in use internally of the bottom flaps and adjacent at least portions of each side wall to limit lateral movements of said container when engaged
25 therewith in all directions, characterised in that - the or each base pad has fold lines about which the pad is folded to reduce its dimensions in all directions to facilitate its insertion into the base of said container through said rectangular opening, said base
30 pad(s) when folded retaining the folded condition without any external assistance or interconnection of parts of said pad(s).

It will be appreciated that the above construction not only avoids the slotting of the end base flaps,
35 as in the above described references, but also facilitates

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a simple assembly technique not requiring specially constructed external or integral flap holders such as shown in the French specification referred to above.

In the presently preferred form of the invention,
5 two base pads are provided and each is shaped to extend from a central portion of the pallet structure, each said base pad having foldable ears which when folded reduce the dimensions of the pad, when viewed in plan, to the size of approximately half of the said opening
10 in the base of the container.

Where the pallet structure is separately constructed, each base pad has a portion which is attached to the pallet structure, for example by being inserted between the top deck of the pallet and the bearers
15 or separating blocks and securely attached therebetween. This arrangement avoids another disadvantage of the prior art arrangement of point attachment along a central strip of the floor components. The foldable portion of the base pad is of course capable of being
20 folded flat against the top of the pallet structure so as to lie flat against the inside of the base of the container when attached thereto.

In another aspect of the invention a container, which is arranged to be secured to a pallet structure,
25 comprises a first container part which includes side walls and bottom flaps, hereinafter defined as the 'primary flaps', which primary flaps fold inwardly of the side walls and define an opening in the base of said first container part, and at least one second
30 container part having a first portion arranged to lie below said first container part and to be secured to the pallet, a second portion formed of a plurality of secondary flaps which can be folded to a first, erect, configuration which permits insertion of the
35 second portion directly through said opening, the

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secondary flaps thereafter being capable of being unfolded to a second, configuration in which parts of the secondary flaps overlies parts of the primary flaps and also lie adjacent the side walls to limit relative lateral movement of said first and second container parts.

In a further aspect of the invention a container comprises a first container part which includes side walls and bottom flaps, hereinafter defined as the 'primary' flaps, which primary flaps fold inwardly of the side walls and define an opening in the base of said first container part, and two base pads, each being formed from sheet material and including a first portion arranged to be secured to the pallet, and a second portion formed of three 'secondary' flaps, namely a central and two lateral flaps, the secondary flaps being so formed as to permit the second portion to be folded to an erect, configuration which permits insertion of the second portions of the two base pads directly through said opening, the secondary flaps of each base pad thereafter being capable of being unfolded to a flat, configuration in which the second portions of the base pads lie above their respective first portions and also overlies parts of the primary flaps of the first container part. In yet another aspect of the invention a container comprises a first container a part which includes four side walls arranged to extend vertically in a rectangular manner, and having bottom flaps, hereinafter defined as the 'primary' flaps which fold inwardly of the side walls and define a rectangular opening in the base of said first container part, and two base pads, each being formed from sheet material, and each including a first generally rectangular portion, the two rectangular portions, when assembled in relation to the pallet,

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each being secured to a different half of the pallet,
each base pad having an intermediate portion arranged
to extend upwardly from the first portion of its base
pad, when the latter is secured to the pallet, with
5 the two intermediate portions adjacent one another,
and a second portion formed of at least three flaps,
namely a central flap connected to the respective inter-
mediate portion, and two lateral flaps extending one
on each side of the central flap, the central and
10 lateral flaps being capable of being folded to a first
configuration which permits insertion of the three
flaps of each base pad simultaneously through said
rectangular opening of the first container part, the
said three flaps of each base pad thereafter being
15 capable of being unfolded to a flat, second, configuration
in which parts of the said three flaps of each base
pad overlies parts of the primary flaps, and also lie
adjacent the side walls to limit relative lateral move-
ment of the first container part and the two base pads.

20

Detailed Description of the Drawings

The presently preferred form of the invention
will now be described with reference to the accompany-
ing drawings, in which:

25

Fig. 1 shows the shape of one base pad;

Fig. 2 shows two base pads attached to a pallet
structure;

Fig. 3 shows the base pads in the folded condition
ready for assembly of the container body;

30

Fig. 4 is a plan view of the arrangement shown
in Fig. 3; and

Fig. 5 is a perspective view from above of the
container when assembled on the pallet structure
showing the base pads in position.

35

Referring firstly to Fig. 1 of the drawings, the

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base pad used to hold the container body described further below is formed from corrugated board or other suitable material and will be seen to comprise a rectangular attachment portion 1 which is adapted for
5 attachment to the pallet structure and a smaller shaped pad portion 2 formed with crease or score lines 3, 4 to define a central trapezium-shaped portion T and shaped foldable ears 5,6 extending from the sides of portion T. The ears 5, 6 are relieved at 7 and 8 so
10 that the pad portion 2 is connected to the attachment portion 1 by a narrow neck. Fold lines F_1, F_2 are also provided about which the pad may be folded so as to lie flat against the pallet structure.

As will be seen from Fig. 2 of the drawings,
15 the rectangular attachment portions 1 of two base pads A and B are disposed in use between the timber top deck and the bearers of a pallet structure P and is secured in position by attachment of the top deck to the bearers. This leaves the shaped pad portions 2 extending upwardly
20 from a central portion of the pallet structure ready for folding and insertion into the container body as shown in Figs. 3 and 4 of the drawings.

Consideration of Figs. 3 and 4 of the drawings will show that prior to assembly of the container body
25 onto the pallet and base pad assembly, the ears 5, 6 are folded at about right angles to the portions T. Preferably the ears when folded retain their folded condition without any external assistance or interconnection of parts of the base pads A and B. Alternatively
30 to overcome the tendency of the ears 5, 6 to unfold, the engagement of the corners of the relieved portions 7, 8 with the top of the pallet structure can be relied on to hold the pads A,B in the position shown in Fig. 3. Fig. 5 of the drawings shows that the container
35 body has four side walls 9, 10, 11 and 12 from which

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four top flaps 13, 14, 15 and 16 and four short base flaps 17, 18, 19 and 20 extend. When the container body is erected and the base flaps folded inwardly, an enlarged rectangular opening 21 is defined in the
5 base of the container.

When the container body is to be attached to the pallet structure, the ears 5 and 6 of each shaped portion 2 of each base pad are folded as described above until the corners of the ears contact the top
10 of the pallet. Frictional contact of the ears with the top of the pallet assists in holding the base pads in the required position during assembly of the container body on the base pads if necessary. In the folded condition, the dimensions of the shape portions
15 2 are approximately equal to the dimensions of the opening 21. Accordingly, the container body may easily be inserted over the folded portions 2 as shown in Fig. 3, whereupon the ears are straightened and the portions 2 folded against the inside of the base of
20 the container body as shown in Fig. 5 of the drawings. When in this position it will be noted that the sides and ends of the portions 2 of each base pad are in close proximity to the side walls of the container body whereby lateral movement in all directions is
25 effectively prevented.

Once the container is loaded with the product to be transported, the base pad portions 2 are held firmly against the base of the container body so that the container and pallet structure behave effectively
30 as an integral unit.

Although the base pad configuration described above is preferred, other configurations achieving similar results may be used. For example, by changing the angle of each relieved portion 7, 8, the ears may
35 be folded so as to be adjacent the central portion T.

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This arrangement is useful for rectangular containers. Similarly, the relieved portions 7, 8 of the ears 2 may be arcuate to facilitate folding of the ears back upon each other so that the dimensions of the folded pads are even smaller than in the preferred embodiment.

In a modification of the invention not shown in the accompanying drawings, the configuration of the base pad may be modified so as to form integral feet or joist members of the types described in Australian Patent No. 426,164 or United States Patent No. 4,119,205. Thus, the invention is not restricted to use with a separately constructed pallet structure.

Claims:

1. A palletised container comprising a pallet structure and a container adapted to be secured to said pallet structure, said container comprising side walls and top closing flaps for at least part of the top of the container if required, bottom flaps which fold inwardly of the container from the side walls and defining a generally rectangular opening in the base of the container, and at least one base pad having a portion secured to or integral with said pallet structure and being shaped to be disposed in use internally of the bottom flaps and adjacent at least portions of each side wall to limit lateral movements of said container when engaged therewith in all directions, characterised in that the or each base pad has fold lines about which the pad is folded to reduce its dimensions in all directions to facilitate its insertion into the base of said container through said rectangular opening.
2. The container of claim 1, wherein two base pads are provided, each being shaped to extend from a central portion of the pallet structure, characterised in that each base pad has foldable ears which when folded reduce the dimensions of the pad, when viewed in plan, to the size of the opening in the base of the container to facilitate insertion of the pads into said opening.
3. The container of claim 2, wherein the pallet is separately constructed and each base pad has a rectangular portion which is attached to the pallet structure between the top deck and the bearers of said pallet so that the pads are securely attached to said pallet.

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4. The container of claim 2, wherein each base pad has a rectangular attachment portion for attachment to said pallet structure, a shaped portion extending for said attachment portion by a narrow neck, a trapezium shaped central portion defined by fold or score lines and foldable shaped ear portions extending from the sides of the central portion and having relieved portions extending from the base of the central portion to the sides of the ear portions.

5. The container of claim 4, wherein said relieved portions are shaped so that said ear portions when folded define with said central portion a rectangular U-shaped structure extending outwardly and upwardly from the pallet structure with the corners of ear portions frictionally engaging the pallet structure to hold the base pads in their folded condition.

6. The container of claim 4, wherein said relieved portions are shaped so that the ear portions may be folded against said central portions, the corners of said ear portions engaging the pallet structure to hold the pads in their folded condition.

7. The container of any preceding claim, wherein said base pad(s) when folded retain their folded condition without any external assistance or interconnection of parts of said pad(s).

8. A container, which is arranged to be secured to a pallet structure, comprising a first container part which includes side walls, and bottom flaps, hereinafter defined as the 'primary flaps', which primary flaps fold inwardly of the side walls and define an opening in the base of said first container part, and

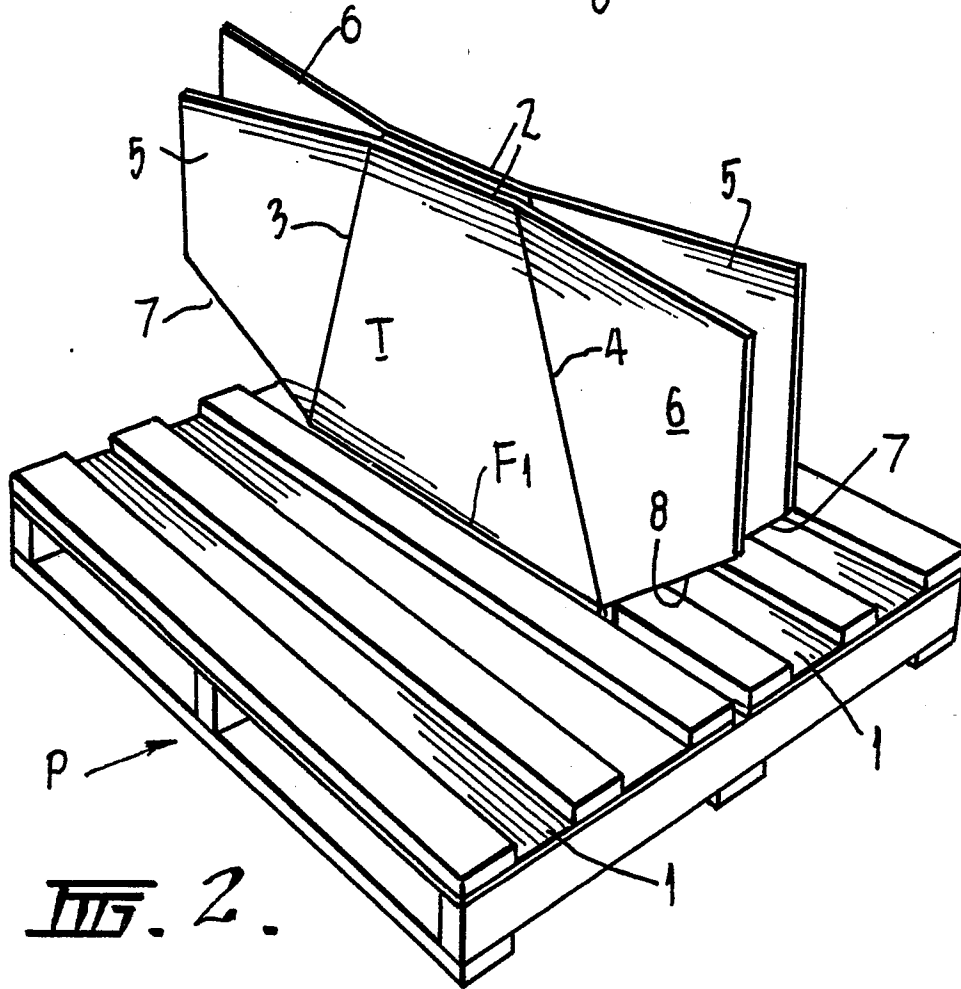
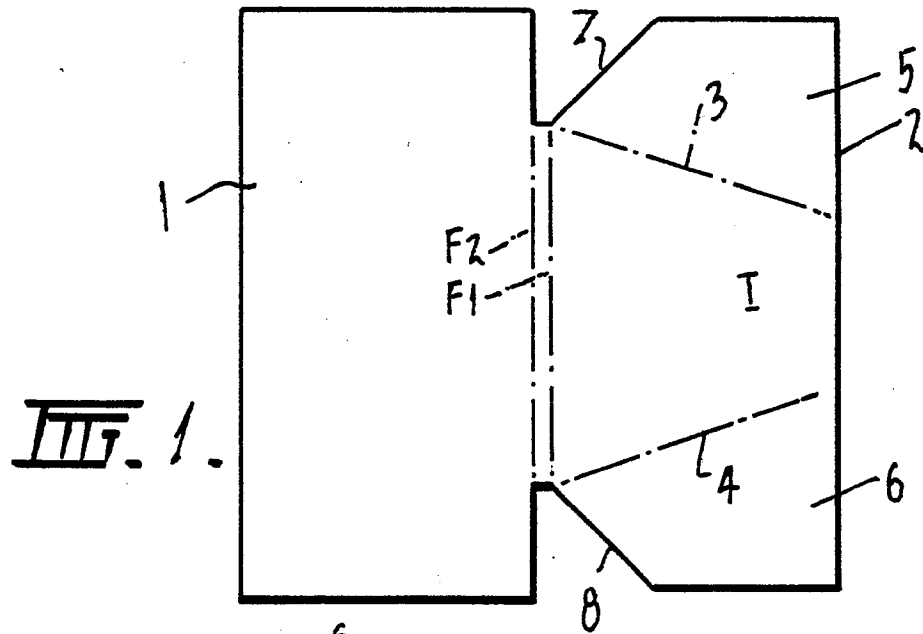
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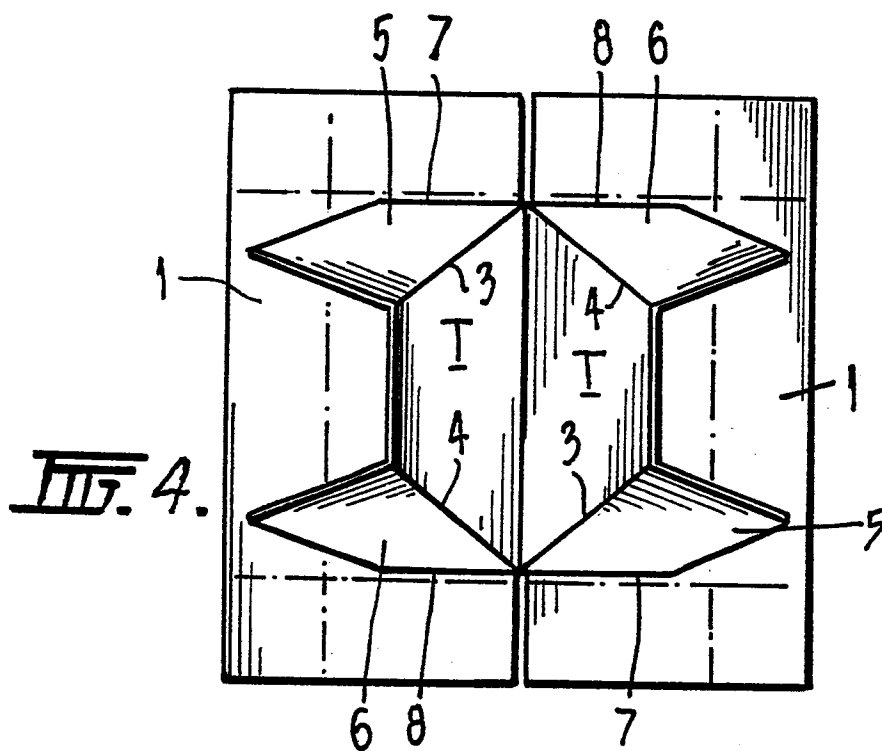
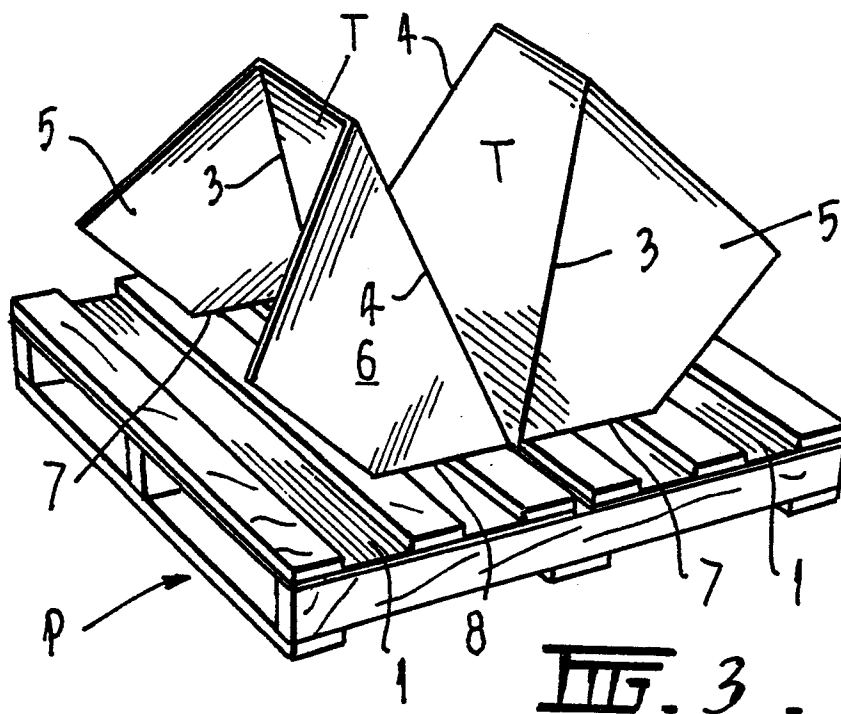
at least one second container part having a first portion arranged to lie below said first container part and to be secured to the pallet, a second portion formed of a plurality of secondary flaps which can be folded to a first, erect, configuration which permits insertion of the second portion directly through said opening, the secondary flaps thereafter being capable of being unfolded to a second, configuration in which parts of the secondary flaps overlies parts of the primary flaps and also lie adjacent the side walls to limit relative lateral movement of said first and second container parts.

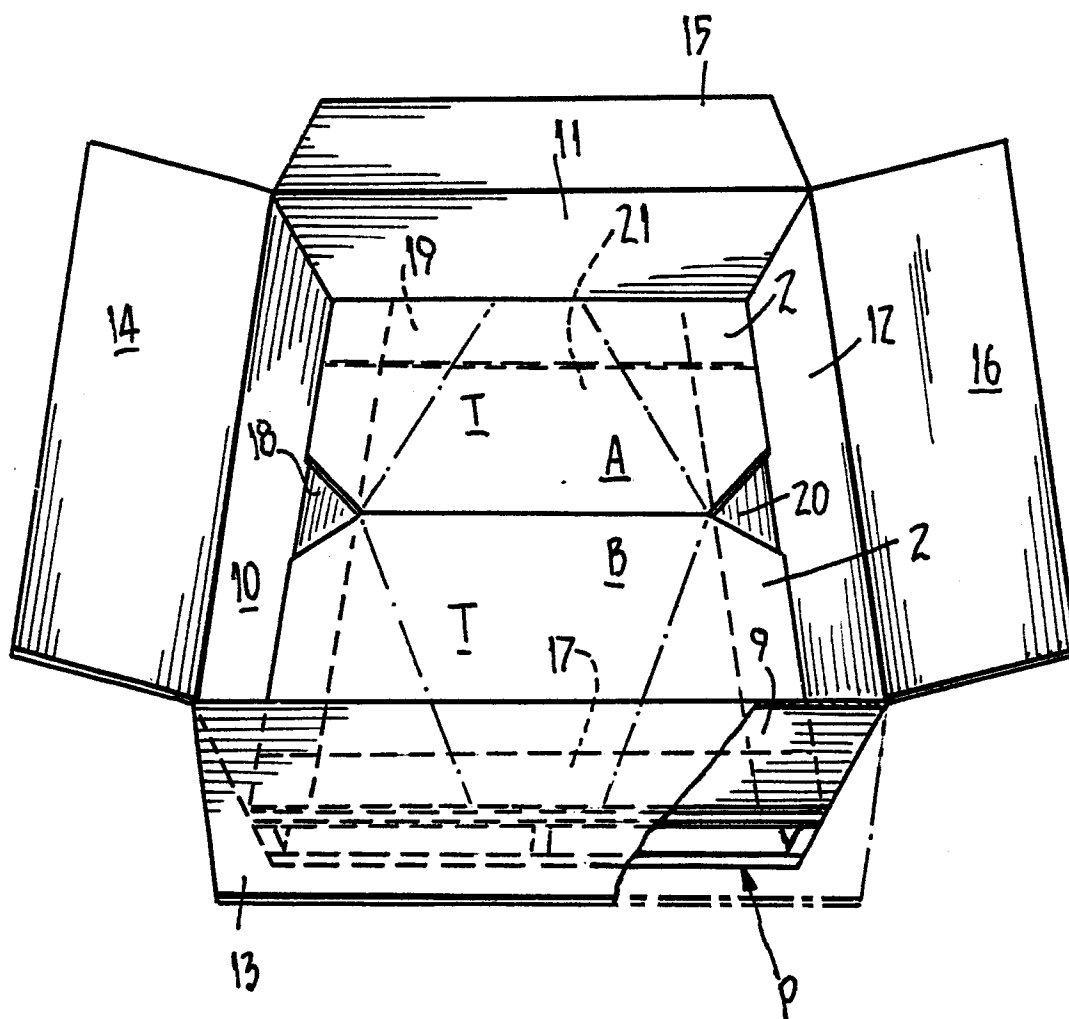
9. A container, which is arranged to be secured to a pallet structure, comprising a first container part which includes side walls and bottom flaps, hereinafter defined as the 'primary' flaps, which primary flaps fold inwardly of the side walls and define an opening in the base of said first container part, and two base pads, each being formed from sheet material and including a first portion arranged to be secured to the pallet, and a second portion formed of three 'secondary' flaps, namely a central and two lateral flaps, the secondary flaps being so formed as to permit the second portion to be folded to an erect, configuration which permits insertion of the second portions of the two base pads directly through said opening, the secondary flaps of each base pad thereafter being capable of being unfolded to a flat, configuration in which the second portions of the base pads lie above their respective first portions and also overlies parts of the primary flaps of the first container part.

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10. A container, which is arranged to be secured to a pallet structure, comprising a first container part which includes four side walls arranged to extend vertically in a rectangular manner, and having bottom flaps, hereinafter defined as the 'primary' flaps which fold inwardly of the side walls and define a rectangular opening in the base of said first container part, and two base pads, each being formed from sheet material, and each including a first generally rectangular portion, the two rectangular portions, when assembled in relation to the pallet, each being secured to a different half of the pallet, each base pad having an intermediate portion arranged to extend upwardly from the first portion of its base pad, when the latter is secured to the pallet, with the two intermediate portions adjacent one another, and a second portion formed of at least three flaps, namely a central flap connected to the respective intermediate portion, and two lateral flaps extending one on each side of the central flap, the central and lateral flaps being capable of being folded to a first configuration which permits insertion of three flaps of each base pad simultaneously through said rectangular opening of the first container part, the said three flaps of each base pad thereafter being capable of being unfolded to a flat, second, configuration in which parts of the said three flaps of each base pad overlies parts of the primary flaps, and also lie adjacent the side walls to limit relative lateral movement of the first container part and two base pads.





Fig. 5.