

12

EUROPEAN PATENT APPLICATION

21 Application number: 90610013.6

51 Int. Cl.⁵: B65D 5/20, B65D 5/48

22 Date of filing: 01.03.90

30 Priority: 02.03.89 DK 1018/89

43 Date of publication of application:
05.09.90 Bulletin 90/36

84 Designated Contracting States:
DE GB NL SE

71 Applicant: **COLON EMBALLAGE A/S**
Banemarksvej 38
DK-2605 Brøndby(DK)

72 Inventor: **Jensen, Poul Nedergaard**

Agerbovej 26
DK-8900 Randers(DK)

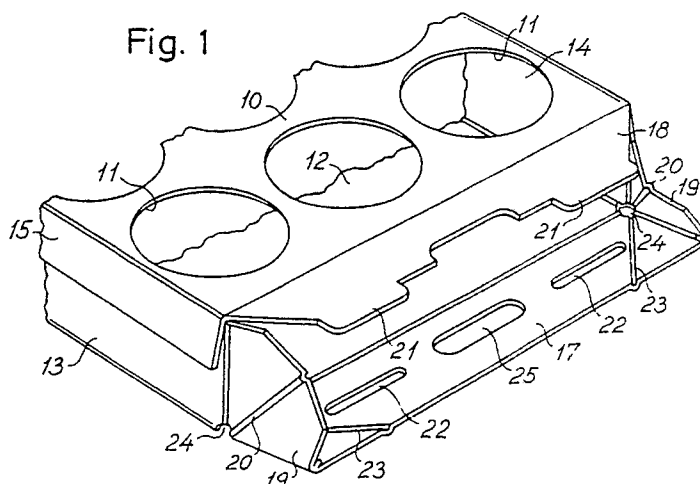
74 Representative: **Nielsen, Henrik Sten et al**
Plougmann & Vingtoft Sankt Annae Plads 11
P.O. Box 3007
DK-1021 Copenhagen K(DK)

54 **A box-shaped foldable packing and a blank for use in making the same.**

57 A box-shaped foldable packing of small height comprises an upper side wall (10) having openings (11) therein for receiving potted plants or similar goods. The packing further comprises a lower bottom wall (12) and a pair of narrow side wall (13, 14). The four side walls (10, 12, 13, 14) preferably form a tubular body and the packing is preferably dispatched and stored in a flattened condition. When the packing is erected the side walls are moved to a position in which they extend substantially at mutually right angles. Each end of the packing is closed by folding an inner end wall panel 17 upwardly whereafter an outer end wall panel (18) is folded

downwardly and locking tabs (21) formed thereon are brought into engagement with slots or slits (12) of the panel (18). The inner end wall panel (17) is provided with oblique folding lines (23) making the end wall panel elastically depressible whereby the insertion of the locking tabs (21) into the slits (22) is facilitated. The inner end wall panel (17) has at each end a flap (12, 26) with a height corresponding substantially to the height of the packing and extending into the inner of the packing when erected. The flap serves to stabilize the packing in its erected condition.

Fig. 1



A BOX-SHAPED FOLDABLE PACKING AND A BLANK FOR USE IN MAKING THE SAME

The invention relates to a box-shaped foldable packing of small height and comprising a pair of opposite broad side walls, the upper side wall of which defines openings therein for receiving goods, especially potted plants, in such a manner that they are resting on the upper surface of the lower side wall and extend outwardly from the upper side wall, a pair of opposite narrow side walls, a pair of opposite end walls each formed by first and second end wall panels connected to the upper and lower side wall, respectively, along a folding line.

Such box-shaped foldable packings which are used as sale packings for potted plants are known. The packings are delivered to the producer of the potted plants as plane, non-erected foldable sales packings. These known packings are erected manually by initially folding the narrow side walls and the end walls to a position in which they extend at right angles to the lower broad side wall whereafter they are mutually retained by means of locking taps and at last the upper broad side wall provided with openings for receiving the potted plants is folded downwardly as a lid towards the upwardly extending narrow side walls and end walls whereafter the lid is fastened to the erected packing by means of locking taps formed on the lid or on the upper broad side wall.

Thus, erecting of the known foldable packings of the type described is rather complicated and time consuming. Therefore, the object of the invention is to provide a foldable packing of the above type which may be dispatched and stored in a flat condition and which may quickly be erected to a position in which it is ready for use.

US patent No. 4,053,099 discloses a packing of the above type wherein the innermost of the two end wall panels extends over the full height of the packing and is provided with taps at its upper end said taps engaging in the erected condition of the packing into adjacent potted plant receiving openings in the upper side wall. When this known packing is delivered to the producer of potted plants the two broad side walls and the two narrow side walls may form a flattened tubular body. The packing may then be brought into a condition ready for use by erecting the packing to a shape in which these walls are mutually extending at substantially right angles, whereafter the end walls are closed.

In this known packing the taps engaging with the potted plant receiving openings will retain the inner end wall panels in a position in which the end wall panels to some extent may support the upper side wall with the potted plant receiving openings. However, the taps extending into the potted plant

receiving openings are less convenient.

The packing according to the invention is also of the type wherein the innermost of the end wall panels extends over the total height of the packing such that its upper edge is in abutting engagement with the lower surface of the upper side wall and is elastically depressible, the outer end wall panel having at its lower edge locking taps being received in longitudinal slits in the inner end wall panel, and the packing according to the invention is characterized in that the inner end wall panel at each end is provided with a flap extending into the packing and having a height corresponding substantially to the height of the packing. The said flap will then extend between the upper surface of the lower side wall and the lower surface of the upper side wall so as to further stabilize the packing in its erected position without the necessity of taps extending into the potted plant receiving openings in the upper side wall.

According to the invention the flap may also be connected to the end of the adjacent narrow side wall and may further be provided with a folding line extending from the adjacent lower corner of the packing in the erected position of the packing. The flap will then form a double wall strengthening rib extending diagonally into the inner of the packing.

The inner end wall panel may be made elastically depressible in any suitable manner. However, in the preferred embodiment the inner end wall panel is provided at each end with a folding line directed inclined upwardly from the adjacent lower corner of the packing, the folding line being preferably positioned outside the slits of the side wall panel. The central portion of the inner end wall panel containing the slits may then resiliently be pressed inwardly into the packing whereby the locking taps may easily be inserted into the slits before the inner end wall panel again returns to its original position. In the preferred embodiment each of the folding lines passes the outer end of the adjacent slit in the end wall panel closely adjacent thereto.

As mentioned above, the pair of broad side walls and the pair of narrow side walls of the packing may form a flattened tube when delivered by the manufacturer. As the blank of the packing is normally formed by cutting from cardboard, pasteboard or similar plate material, the tubular shape may be formed by gluing or stapling or otherwise permanently fastening two of the side wall panels to each other. However, it is also possible to releasably fasten the side wall panels to each other, for example by means of locking taps formed on one of the side wall panels and being received in

corresponding slits or slots in the other panel. When the side wall panels are releasably fastened to each other in this manner, the packing may be delivered by the packing manufacturer as a plane, single-walled blank which is then transformed into the said tubular shape by the producer of the potted plants.

The invention also relates to a blank which may be erected or folded to a foldable packing as that described above having broad and narrow side wall panels which form or are adapted to be made into a tubular body having at each end two end wall panels which are connected to the upper and lower side wall panel, respectively, along a folding line, one of said end wall panels having a width corresponding to the width of the narrow side wall panel while the other of the end wall panels is provided at its outer edge with locking taps being adapted to be received in longitudinal slits formed in said one end wall panel. The packing blank according to the invention is characterized in that said one end wall panel has at each end a flap adapted to be inserted into the erected packing so that it may serve to stabilize the same in its erected condition.

The invention will now be further described with reference to the drawings, wherein

Fig. 1 is a perspective view of one end of a packing according to the invention where the end wall panels are in an open condition,

Fig. 2 is the end of the package shown in Fig. 1 with the end wall panels closed, and

Fig. 3 is a perspective view showing part of one end portion of a modified embodiment of the packing according to the invention.

The packing shown in the drawings comprises an upper side wall 10 provided with a pattern of openings 11 for receiving potted plants or similar goods. The packing further comprises an opposite lower bottom wall 12 on which potted plants arranged in the openings 11 may rest. The upper side wall 10 and the lower side wall 12 are mutually connected by two opposite narrow side walls 13 and 14. A longitudinal closure panel 15 connected to the upper side wall 10 may be glued, stapled or otherwise permanently fastened to the outer surface of the side wall 13 so that the side walls 10, 12, 13, and 14 together form a tubular body. As indicated in the embodiment shown in Fig. 3 the closure panel 15 may alternatively be releasably fastened to the side wall 13 since locking taps 16 may be formed on the closure panel 15 and may be received in corresponding slits or slots in the side wall 13.

The packing may at each of its ends be provided with an inner side wall panel 17 and an outer side wall panel 18. The inner end wall panel 17 is connected to the adjacent edge of the narrow side

wall 13 and 14, respectively, by means of a connecting flap 19 provided with a folding line 20. The outer end wall panel 18 is provided with a pair of locking taps 21 which may be received in corresponding slits or slots 22 in the inner end wall panel. The inner end wall panel 17 has at each end a folding line 23 extending obliquely upwardly closely past the outer end of the adjacent slit or slot 22. A hand grip opening 25 is also formed in the inner end wall panel 17.

The embodiment shown in Fig. 3 substantially corresponds to that shown in Figs. 1 and 2 apart from the fact that in Fig. 3 the connecting flap 19 is replaced by a flap 26 which is connected only to the end wall panel 17 and having such a width that the flap extends between the upper surface of the lower side wall 12 and the lower surface of the upper side wall 10 when the end wall panels 17 and 18 are closed.

The packings shown in the drawings may be delivered by the packing manufacturer in a flattened condition with open end wall panels. Before use the packing is erected to the shape shown in Figs. 1 and 3 in which the side wall panels 10, 12, 13, and 14 are mutually extending at substantially right angles. Thereafter, the end wall panel 17 may be folded upwardly whereby the connecting flap 19 is folded and caused to extend into the inner of the packing as a diagonally extending, double walled supporting or strengthening rib. The end wall panel 18 is now folded downwardly and while the inner end wall panel 17 is slightly folded along the folding lines 23 the part of the end wall panel 17 defined between these folding lines is depressed to such an extent that the locking taps 21 may be brought into engagement with the slits or slots 22. When the pressure applied to the end wall panel 17 is released the end wall panel resiliently moves out again and retains the end wall panels 17 and 18 in their closed and locked condition so that the erected packing becomes very stable.

The packing shown in Fig. 3 is erected and closed in a manner corresponding to that described above in connection with Figs. 1 and 2. However, the longitudinal closure panel 15 should initially be connected to the side wall 13 by means of the locking taps 16 if this has not already taken place prior to delivery of the packing blank to the user of the packing. When the end wall panel 17 is folded upwardly the flap 26 is inserted into the space defined between the upper and lower side walls 10 and 12 and thereby contributes to the stability of the erected packing.

Claims

1. A box-shaped foldable packing of small

height and comprising

a pair of opposite broad side walls (10, 12), the upper side wall (10) of which defining openings (11) therein for receiving goods, especially potted plants, in such a manner that they are resting on the upper surface of the lower side wall (12) and extend outwardly from the upper side wall (10), a pair of opposite narrow side walls (13, 14), and a pair of opposite end walls (17, 18) each formed by first (18) and second (17) end wall panels connected to the upper (10) and lower (12) side wall, respectively, along a folding line, the innermost (17) of said end wall panels extending over the total height of the packing such that its upper edge is in abutting engagement with the lower surface of the upper side wall (10) and is elastically depressible, the outer end wall panel (18) having at its lower edge locking taps (21) being received in longitudinal slits (22) in the inner end wall panel (17),

characterized in that the inner end wall panel (17) at each end is provided with a flap (19, 26) extending into the packing and having a height corresponding substantially to the height of the packing.

2. A foldable packing according to claim 1,

characterized in that the flap (19) which is also connected to the end of the adjacent narrow side wall (13, 14) is provided with a folding line (20) extending from the adjacent lower corner (24) of the packing.

3. A foldable packing according to claim 1 or 2,

characterized in that the inner end wall section (17) is provided at each end with a folding line (23) directed inclined upwardly from the adjacent corner of the packing.

4. A foldable packing according to claim 3,

characterized in that the folding line (23) passes the outer end of the adjacent slit (22) of the end wall panel (17) and is closely spaced therefrom.

5. A foldable packing according to any of the claims 1-4,

characterized in that the packing is glued or stapled together such that the broad (10, 12) and the narrow (13, 14) side walls form a tubular body.

6. A foldable packing according to any of the claim 1-4,

characterized in that one (13) of the narrow side walls (13, 14) is formed by a pair of side wall panels one (15) of which is provided with locking taps (16) which are received in corresponding slits or slots in the other panel.

7. A blank which may be erected or folded into a foldable packing according to claim 1 and comprising broad and narrow side wall panels (10, 12, 13, 14) forming or being adapted to be made into a tubular body having at each end two end wall panels (17, 18) which are connected to the upper and lower side wall panel (10, 12), respectively,

along a folding line, one (17) of said end wall panels having a width corresponding to the width of the narrow side wall panels (13, 14), the other (18) of the end wall panels (17, 18) having at its outer edge locking taps (21) adapted to be received in longitudinal slits (22) formed in said one end wall panel (17),

characterized in that said one end wall panel (17) has at each end a flap (19, 26) adapted to be inserted into the erected packing so as to serve to stabilize the same in its erected condition.

8. A blank according to claim 7,

characterized in that the flap (19) which is also connected to the end of the adjacent narrow side wall panel (13, 14) is provided with a folding line (20) extending from the adjacent corner (24) of the lower side wall panel (12).

9. A blank according to claim 7 or 8,

characterized in that said one end wall panel (17) including the slits (22) also has folding lines (23) formed therein extending such that the part of the panel including the slits (22) is elastically depressible.

10. A blank according to claim 9,

characterized in that said one end wall panel (17) is provided at each end with a folding line (23) extending from the adjacent corner (24) of the lower side wall panel (12) obliquely against the opposite free edge of the end wall panel.

Fig. 1

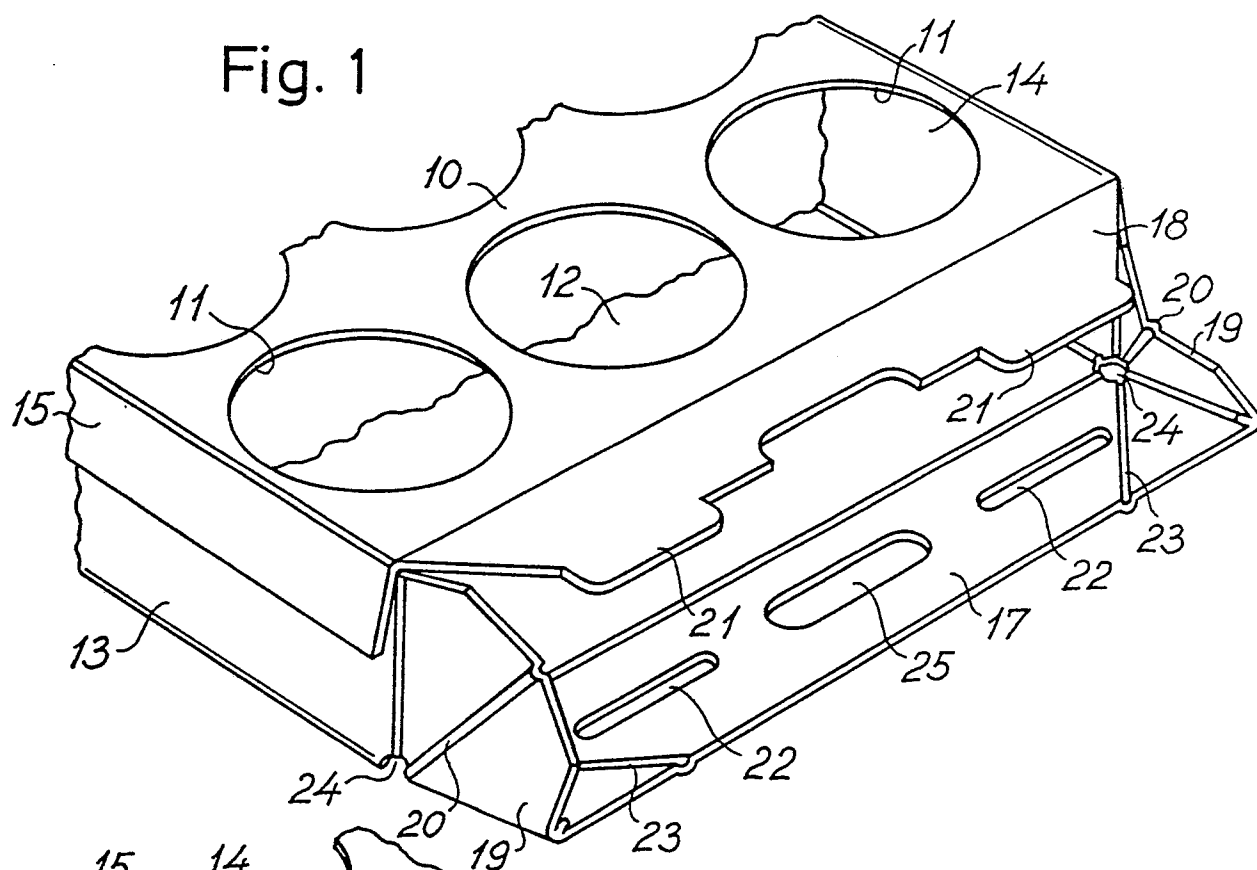


Fig. 3

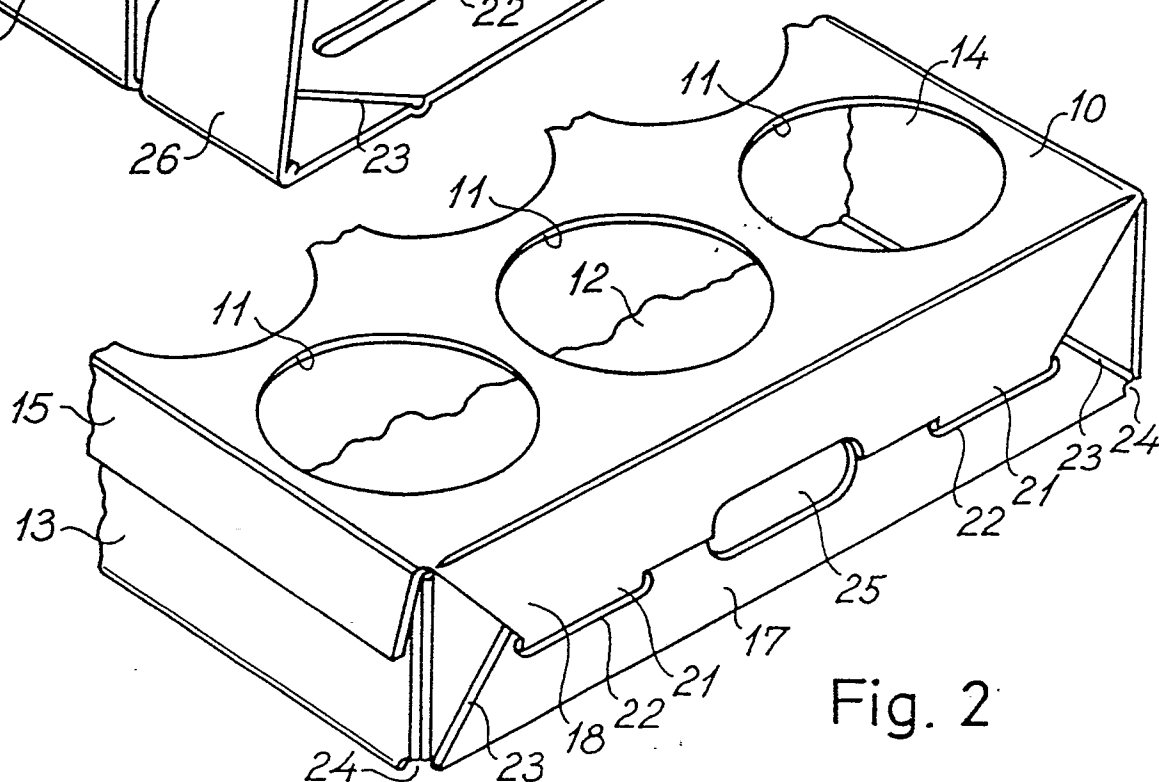
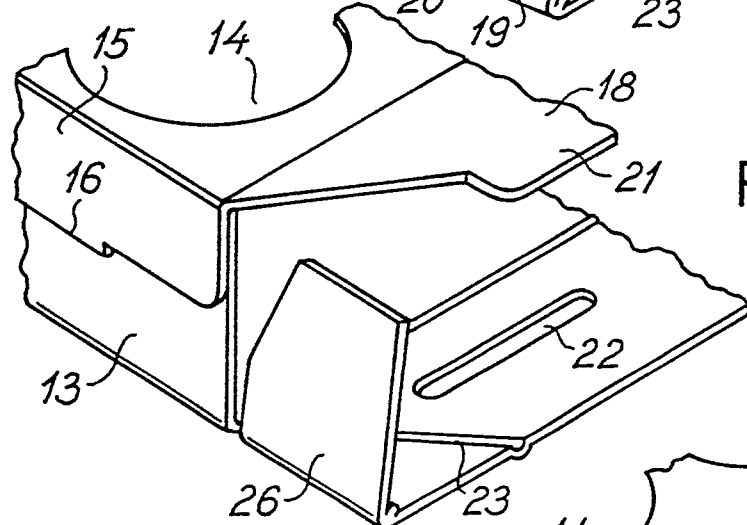


Fig. 2



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	US,A, 4 053 099 (LOCK) 11 October 1977 *See column 3, lines 8-64, figs. 4-6* - - -	1,8	B 65 D 5/20 B 65 D 5/48
Y	US,A, 2 646 916 (MELLER R.B.) 28 July 1953	1,8	
A	*See column 4 lines 9-67, figs. 1 & 2* - - -	7	
Y	US,A, 2 419 646 (INMAN W.H.) 29 April 1947	1,8	
A	*See column 2, line 29 - column 3, line 7, figs. 2, 4 & 5* - - -	2-4	
A	CH,A5, 443 125 (NEUSIEDLER AG) 31 January 1968 *See claim 1, figs. 1 & 2* - - -	1,8	
A	CH,A5, 502 237 (STAUSS) 15 March 1971 *See column 3, lines 28-54, figs 1 & 2 - - -	1,8	
A	FR,A1, 2 589 433 (HUGUES NICOLLET S.A.) 7 May 1987 *See claim 1, figs. 2A-2C* - - -	1-4	TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
A	US,A, 2 472 516 (BUTTERY) 7 June 1949 *See the whole document* - - -	6,8-10	B 65 D
The present search report has been drawn up for all claims			
Place of search STOCKHOLM		Date of completion of the search 18-05-1990	Examiner SÖRSDAHL P.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	