

REINFORCED BOX-TRAY WITH LID

The present invention relates to box-trays for generally perishable produce such as farm products.

Cardboard boxes in the form of trays for transporting farm products, especially fruit, which have an open top part and also have means to reinforce the walls and especially the corners, which make it possible for them to be stacked up, are known.

One example of a box with reinforcement of the walls is described in the Spanish utility model application no. 88/03845 in the name of the present applicant.

This discloses the use, in the inside of the box, of two reinforcement sheets which are attached to the inside surface of the end walls of the box and which form reinforcement columns by means of a plane or portion diagonal to the right angled corner of the box.

reinforcement ribs which increase the support points for stacking up the boxes.

The present invention maintains the reinforcement features provided by the incorporation of sheets attached to the inside surfaces of the box, but aims to use these sheets for something more than simple reinforcement.

According to the present invention there is provided a box-tray having reinforcement pieces attached to the inside surfaces of the walls, which reinforcement pieces form, at the corners of the box, planes diagonal to said corners, to serve as reinforcement columns, wherein each reinforcement piece extends along an associated side wall and the end walls so that a longitudinal space is formed between each reinforcement piece and the associated side wall of the box.

In the invention reinforcement sheets are attached to the inner longitudinal sides of the box in such a way that, in assembly, longitudinal channels along its edge are formed in combination with the flaps formed by sideways extension of the end walls, which flaps are attached to the outside of the side walls. These channels serve to fit flaps provided in the laminate lid.

The reinforcement sheets may also be extended so that they totally cover the inside of all four sides of the box, simultaneously.

This formation permits the edges of the lid to rest flat on the end walls and reinforcement corners, above which the outer top corners of the box protrude for coupling in the complementary recesses in the corners of the box, as a stacking guide.

With the present invention, all the reinforcement features of the prior art box are maintained, which increases the resistance of the assembly, with the additional advantage of the provision of a lid that otherwise cannot be incorporated without hampering stacking of the boxes.

Naturally, it is possible that the areas of the sides close to the corners of the box be provided with split lines which, as in the case of Spanish patent 88/03845, form angular reinforcement ribs to support superposed boxes.

Other preferred features and advantages of the invention will be apparent from the following description and accompanying claims.

A preferred embodiment of the invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1. is a plan view of a cardboard sheet, which forms a box in accordance with the invention, and two reinforcement laminate pieces for inside the box;

Figure 2. is a perspective view of a semi-assembled box, with one of the reinforcement sheets arranged for assembly;

Figure 3. is a perspective view of an assembled box without the lid;

Figure 4. is a plan view of a sheet forming the lid for the box in figure 1;

Figure 5. is a perspective view of the lid of figure 4 arranged for assembly;

Figure 6. is a perspective view of the box assembled with the lid of figure 4 ready to be coupled;

Figure 7. is a perspective view of the box and lid of figures 1 and 4 showing in dashed outline how the boxes are stacked;

The drawings show symmetrically identical laminate pieces 3 joined to the inside of side walls 1 and 2 of a box-tray. The ends 4 and 5 of the piece 3 are extended in such a way that between them they cover the inside of the end walls of the box 6. At the corners of the box they form diagonal planes 7 and 8 which constitute

they form diagonal planes 7 and 8 which constitute support points for the boxes when piled on top of each other.

The end flaps 4 and 5 of each reinforcement sheet 3, are attached to the inside surface of the end walls, forming a reinforced or double end wall.

The end walls 6 of the box are extended sideways to form flaps 9 and 10 which in assembly are outside the side walls 1 and 2. These flaps 9 and 10, in combination with the reinforcement sheets 3, define a channel open along the top longitudinal edge, for insertion of longitudinal flaps 11 and 12 of the lid 13. The ends of the lid without flaps sit on the top edge of the end walls.

Corner elevations 14 are formed at the top corners of the box, which are integral with the end walls of the box and the end flaps thereof. These are high enough so that after the lid has been put on they still protrude from it, to maintain the centring effect of the boxes when stacked up.



CLAIMS:

1. A box-tray having reinforcement pieces attached to the inside surfaces of the walls, which reinforcement pieces form, at the corners of the box, planes diagonal to said corners, to serve as reinforcement columns, wherein each reinforcement piece extends along an associated side wall and the end walls so that a longitudinal space is formed between each reinforcement piece and the associated side wall of the box.
 2. A box-tray as claimed in claim 1 wherein a lid is provided, having flaps along its long edges which fit in the longitudinal spaces formed between the side walls of the box and the reinforcement pieces, and whose end edges rest directly on top of the end walls of the box.
 3. A box-tray substantially as hereinbefore described with reference to, and as illustrated in, the accompanying drawings.
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