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CARTON AND LINER FOR THE SAME

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Fig. 1

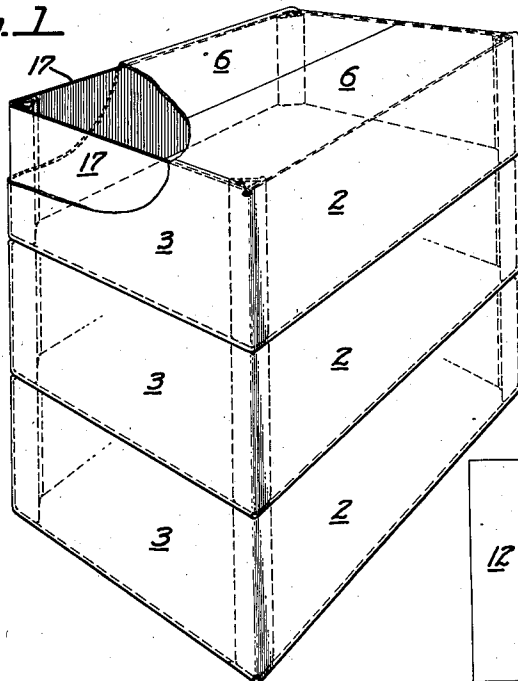


Fig. 3

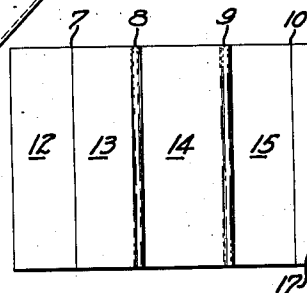
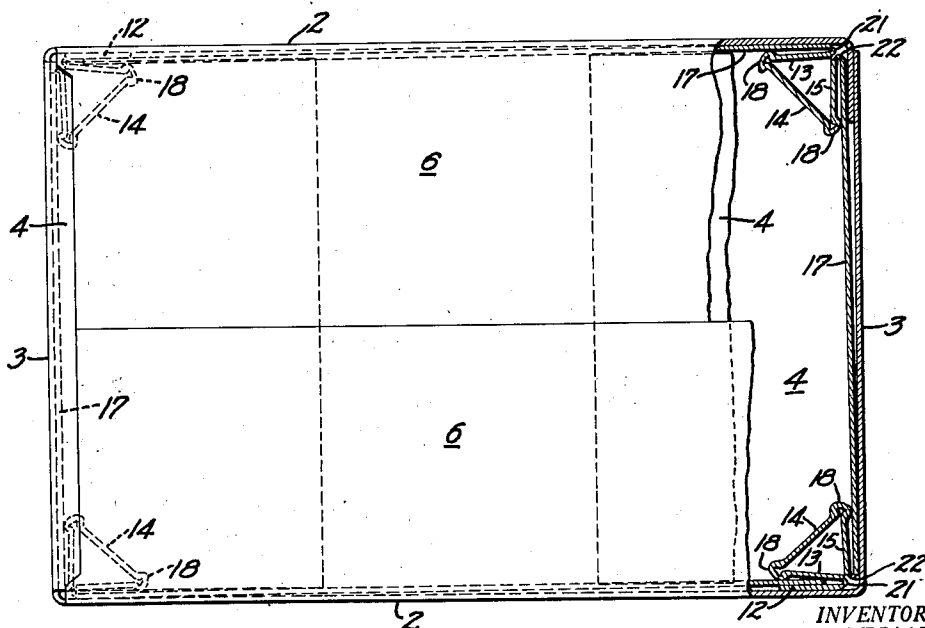


Fig. 2



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CARTON AND LINER FOR THE SAME

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6 Claims. (Cl. 229-14)

My invention relates to packing devices, and particularly to fibreboard cartons and means for reinforcing them.

One of the objects of my invention is the provision of a carton having reinforcing columns so that large numbers of filled cartons may be stacked without collapsing the lower ones.

Another object of the invention is the provision of means to reinforce the side walls of the carton, and to resist deterioration of the carton by the action of moisture from materials packed therein.

My invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a perspective view showing several cartons embodying my invention stacked together; a portion of the top carton is broken away to show the construction.

Figure 2 is a top elevation of the carton, a portion being broken away to show the details of construction.

Figure 3 is a plan view of a fragment of the liner showing the arrangement of the creases forming the corner construction.

Broadly, my invention comprises a carton having side and end walls, and flaps on the walls to provide a top and bottom for the carton. Disposed within the carton and seating snugly against its inner walls is a liner having wall portions to protect and strengthen the carton walls, and other portions adjacent each corner folded out of the planes of the liner walls to provide a vertical beam and supporting column to reinforce the corners of the carton against transverse and compressive stresses.

In greater detail my invention comprises a carton, made preferably of fibreboard or corrugated board, having side walls 2, and end walls 3, on both of which the bottom flaps 4, and the top flaps 6, are disposed. The common carton thus far described has many uses, but it cannot be used as a container for moisture bearing products such as dried fruits. For example, dried prunes are subjected to a steam and dipping treatment immediately before being packed, and the hot moist fruit is packed directly in the container which is promptly closed. Wooden boxes have been universally used for handling such products, until recently when efforts have been made to utilize fibreboard cartons, but with little

success. The moisture causes the fibreboard to wilt; and in a short time the carton collapses. Even if it does not actually break down, it will be so weakened that it is impossible to stack one full carton upon another.

To overcome these objectionable features, I provide a liner formed from a sheet or strip of heavy fibreboard, having a width substantially equal to the depth of the carton. Arranged near one end of the liner strip is a group of spaced transverse creases 7, 8, 9 and 10, which divide that portion of the strip into four panels, 12, 13, 14 and 15. The second and last panels 13 and 15 are preferably of the same width and the panel 12 at the end of the strip is preferably equal to or greater in width than the panel 13, and constitutes a short wall section of the liner, separated by the three panels 13, 14 and 15 from the longer wall section 17. The outside creases 7 and 10 are deeply scored to facilitate folding inwardly, so that when the liner is folded, the panels 13 and 15 are doubled back against the inner side of the adjacent wall sections 12 and 17.

The creases 8 and 9 are scored to facilitate folding in the opposite direction from the folding on the creases 7 and 10; and because it is important to avoid cutting or breaking the stock at this point, the creases 8 and 9 are preferably of the embossed wide type which, when folded, form a double or T-shaped head 18.

When the edges 21 and 22 formed by folding the liner on the creases 7 and 10 respectively are brought into abutting position in the corner of the carton, they form the vertex edge of a right angle triangular prismatic column which fits snugly into the corner with the perpendicular sides 13 and 15 of the column lying against the adjacent wall sections of the liner. Thus, a vertical beam and column is provided which reinforces the carton against both compressive and transverse stresses.

Similar groups of transverse creases are spaced along the strip at intervals to coincide with the corners of the carton. In this way the strip is divided into one short section 12 and four longer wall sections 17, the longer sections being of substantially the same size as the carton wall which they overlie, and into four groups of panels 13, 14 and 15 which form the reinforcing column at each corner and separate the main wall sections. When in position in the carton the columns are rigidly held in position by the liner side walls and by the contents of the carton when filled.

If the liner is designed for a small carton a

single strip may be creased and folded to form the liner. In this case the end of the strip having no creases is inserted between the narrow wall section 12 at the other end of the strip and the panel 13 forming one side of the column. The parts are thus interlocked and held securely in position in the carton. If on the other hand the carton is large it will be found expedient to utilize two like strips to make up the liner. Each portion comprises two main wall sections, two corner columns, and one short wall section adjacent one end of the strip. The two portions are interlocked in the same manner as described above so that a rigid unitary structure is provided, as is shown in Figure 2.

The column supports loads from above in the same manner as does any compression member, and furthermore increases the rigidity of the carton corner by preventing the buckling of the stock when heavy loads are placed on it. Since the contents of the filled carton bear against the entire surface of the panel 14 it is obvious that any shock will be transmitted through the column against the contained materials. Thus, if a carton is dropped or subjected to a blow along one of the corner edges the reinforcing column acts as a vertical beam preventing localization of the blow so that it is distributed and absorbed without injury.

I have also found it desirable to line the top and bottom of the carton and for this purpose a sheet of fibrous material similar to that used for the liner wall sections may be used. The fruit packed in the container of my invention contacts only with the liner walls which absorb the moisture from the fruit and so prevent deterioration of the carton stock.

I claim:

1. A liner for a carton comprising a strip of fibrous material having a plurality of transverse creases, and folded to form wall sections and reinforcing columns having a uniform right angled triangular cross section, the perpendicular sides

of the column lying snugly in the corners of the carton.

2. A liner for a carton comprising a strip of fibrous material having a plurality of transverse creases, and folded to form wall sections and reinforcing columns having a uniform right angled triangular cross section, the perpendicular sides of the column lying in the corners of the carton and bearing against the adjacent wall sections.

3. A liner for a carton comprising a strip of fibrous material having a plurality of groups of transverse creases, and folded to form reinforcing columns at each corner, intervening wall sections, and a short wall section at one end of the strip between which and the adjoining wall of the column the opposite end of the strip seats to interlock the parts.

4. A liner for a carton comprising a strip of fibrous material having a plurality of groups of transverse creases, and folded to form reinforcing columns at each corner and intervening wall sections, coextensive with the walls of the carton so that an end of a wall section seats between a column and the carton wall to interlock the parts.

5. A liner for a carton comprising a strip divided into a wall section and reinforcing panels by parallel transverse creases, and folded about said creases to form the panels into a triangular prismatic column at the corner of the carton, with a substantially 180 degree fold about one crease line to position one panel flatly against the wall section.

6. A liner for a carton comprising a strip divided into a pair of wall sections and immediately positioned reinforcing panels by parallel transverse creases, and folded about said creases to form the panels into a triangular prismatic column at the corner of the carton, with substantially 180 degree folds about two of the crease lines to position a pair of the panels flatly against the wall sections.

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