March 28, 1944. L. J. MARKWARDT ET AL 2,345,350

CARTON

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Fig. 1.

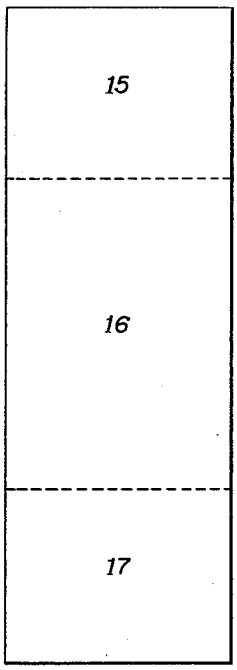


Fig. 2.

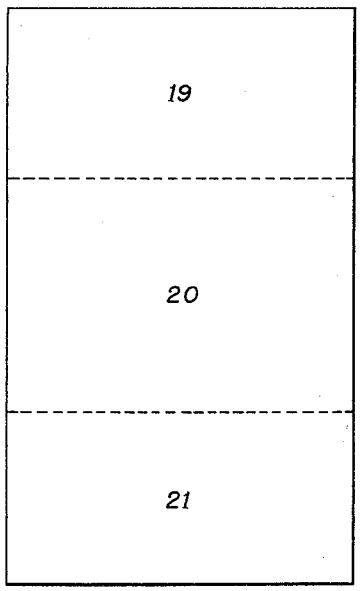


Fig. 3.

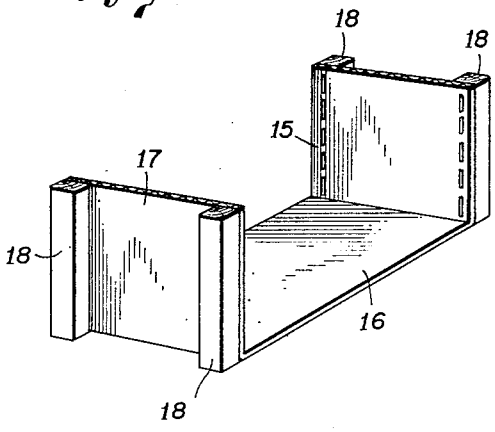
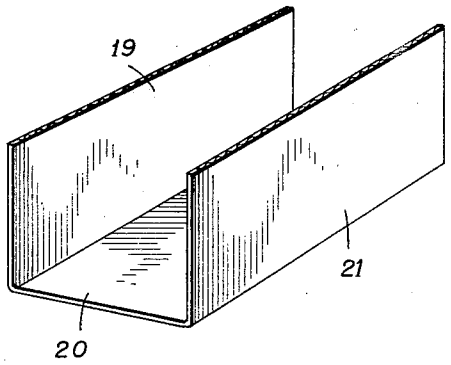


Fig. 4.



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Fig. 5.

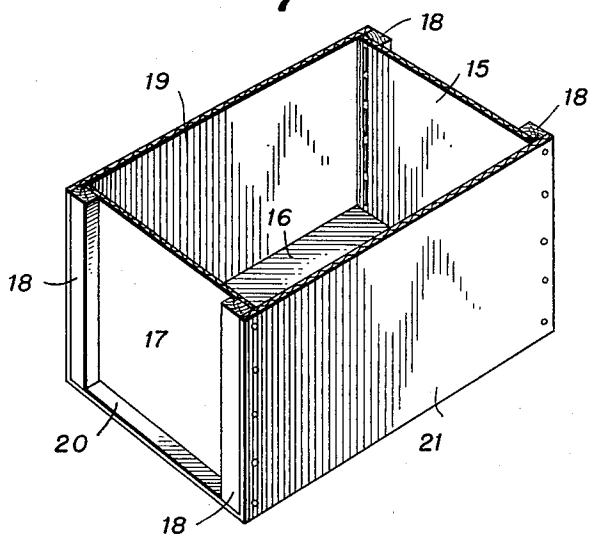
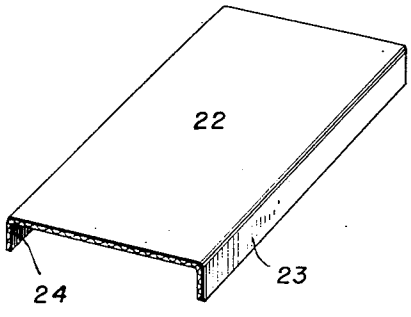
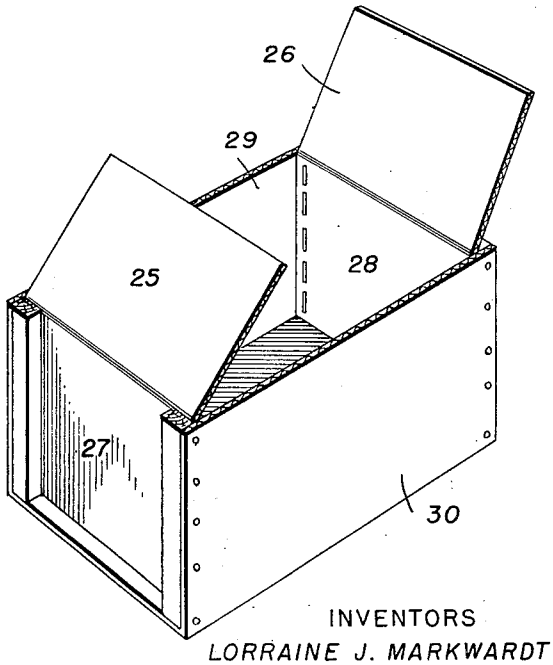


Fig. 7.

Fig. 6.





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Fig. 8.

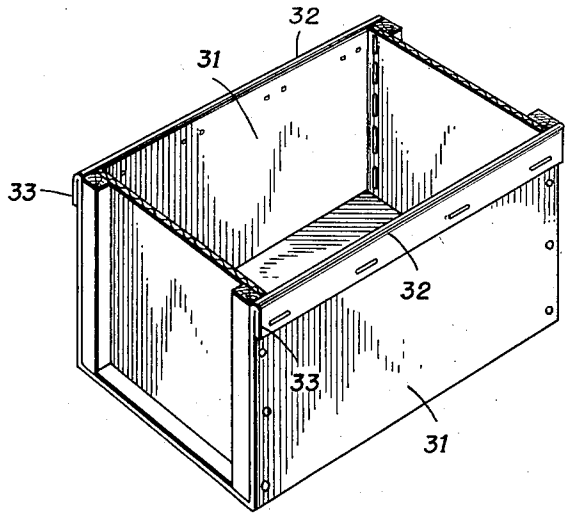


Fig. 9.

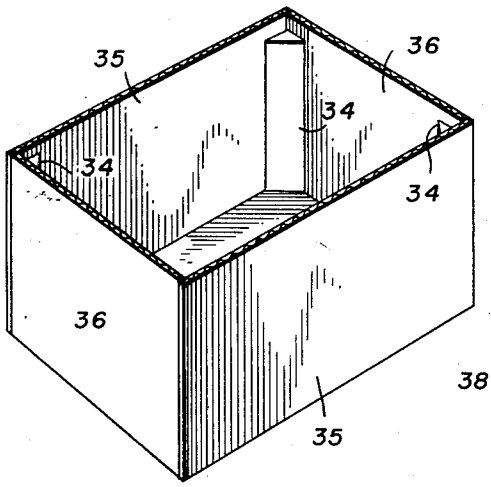
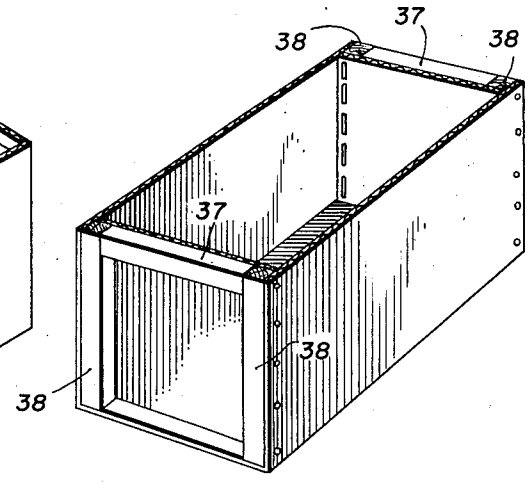


Fig. 10.



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UNITED STATES PATENT OFFICE

2,345,350

CARTON

Lorraine J. Markwardt and Thorwald A. Carlson, Madison, Wis., assignors to Henry A. Wallace, as Secretary of Agriculture of the United States of America, and his successors in office

Application August 10, 1940, Serial No. 352,052

3 Claims. (Cl. 229—23)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This application is made under the act of March 3, 1883, as amended by the act of April 30, 1928, and the invention herein described and claimed, if patented, may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment to us of any royalty thereon.

This invention relates to boxes and shipping cartons which are generally made of corrugated or solid fiber board.

An object of this invention is the provision of cartons of the type mentioned which are simple and inexpensive and which possess increased strength and rigidity as compared to ordinary cartons made of similar materials.

In the accompanying drawings there is illustrated in Figures 1 and 2 separate sheets of material used in making a carton in accordance with this invention. These sheets may be of fiber board, either corrugated or solid, or of any other suitable material. The first sheet, illustrated in Figure 1, has a width substantially equal to the width of the carton to be manufactured. This sheet is divided into three sections 15, 16, and 17, respectively, the sections 15 and 17 being the end sections which form the end walls of the carton. The middle section 16 is substantially coextensive with the base of the carton. The two end sections 15 and 17 are bent upward at right angles to the middle section 16. Figure 3 is an isometric view illustrating the sheet in Figure 1 after the end sections are bent upward. On the outer side of the end sections 15 and 17, near the lateral edges, cleats 18, preferably of wood, are secured by any suitable means, such as stapling, nailing, gluing, or otherwise.

The second sheet, illustrated in Figure 2, has a width somewhat greater than the length of the carton and is also divided into three sections designated by the numerals 19, 20, and 21, respectively. The outer sections 19 and 21 form the side walls of the carton, and the middle section 20 forms the bottom of the carton. The sections 19 and 21 of this sheet are bent upward from the section 20. Figure 4 is an isometric view illustrating the sheet in Figure 2 after the sections 19 and 21 thereof are bent upward. The deformed sheet illustrated in Figure 3, with the cleats 18 secured thereto, is placed on the deformed sheet illustrated in Figure 4 so that the section 16 rests on the section 20, and the sections 19 and 21 extend beyond the edges of the sections 15 and 17 adjacent the cleats 18. The sections 19 and 21 are then secured to the cleats 18 by any suitable means, such as nailing, stapling, gluing, and so forth. Sections 16 and 20 may be disconnected or may be fastened together by suitable means, such as stapling or gluing, to provide additional strength. This simple procedure results in the complete fabrication of the carton without the cover. Figure 5 is an isometric view illustrating the completed carton. The cover for the carton is illustrated in Figure 6, and comprises a sheet 22 of the same or of a different material, having downwardly extending flap portions 23 and 24 at the sides thereof.

If desired, the cover for the carton may be made integral with the end sections of the first sheet by providing extending portions therefrom. Figure 7 is an isometric view illustrating a carton with such a cover formed by flaps 25 and 26 extending from the end walls 27 and 28. If desired, however, only one flap need be provided on either one end wall or the other, in which case the flap would be sufficiently long to cover the top of the carton. It is obvious that cover flaps may be extended from the side walls 29 and 30 of the carton instead of from the end walls 27 and 28; or from all four walls.

In some instances it may be desirable to reinforce the carton lengthwise. In Figure 8 there is illustrated an isometric view of a carton in which the side walls 31 are provided with a reinforced section 32 formed by overlapping and securing in place an extended portion 33 of the side walls.

Another modification of this invention comprises disposing the holding cleats within the carton instead of on the exterior thereof. Figure 9 illustrates this modification wherein cleats 34, preferably having the shape of a right-triangular prism, are secured at the corners within the carton to the adjacent walls thereof. In this embodiment it is unnecessary for the side walls 35 to extend beyond the end walls 36.

It is to be understood, however, that cleats of the type illustrated in Figure 9 may be used with the embodiment illustrated in Figures 6, 7, and 8. Also, additional cleats may be provided anywhere on the carton to reinforce it. For example, cleats may be disposed in the embodiment illustrated in Figure 8 against the end walls between the upright cleats, either at the top of the carton or at the bottom, or at both places. Figure 10 illustrates a carton utilizing horizontal cleats 37 secured between the vertical cleats 38. These cleats 37 not only reinforce the carton, but also provide grips for lifting the carton. Where such cleats

37 are not used, the usual hand holes may be provided in the end walls of the carton.

Having thus described our invention, we claim:

1. A carton having a double thickness base section, side walls integral with one thickness of base section, and end walls integral with the other thickness of base section, said side walls extending beyond the end walls, disconnected cleats for securing said side walls to said end walls, each cleat being secured to an extending portion of a side wall exterior to the carton and to the adjacent end wall.

2. A carton having a double thickness base section, side walls integral with one thickness of base section, and end walls integral with the other thickness of base section, disconnected cleats for securing said side walls to said end walls, said cleats being vertically disposed at the corners between the end walls and the side walls and secured to said walls.

3. A carton having a double thickness base section, side walls integral with one thickness of base section, and end walls integral with the other thickness of base section, said side walls extending beyond the end walls, vertical disconnected cleats for securing said side walls to said end walls, each cleat being secured to the extending portion of a side wall exterior to the carton and to the adjacent end wall, and a horizontal cleat secured at the top of each end wall between the vertical cleats.

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