

2,353,183

Original Filed July 23, 1941

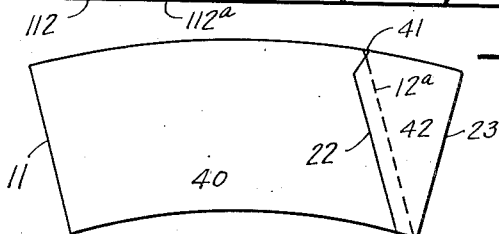
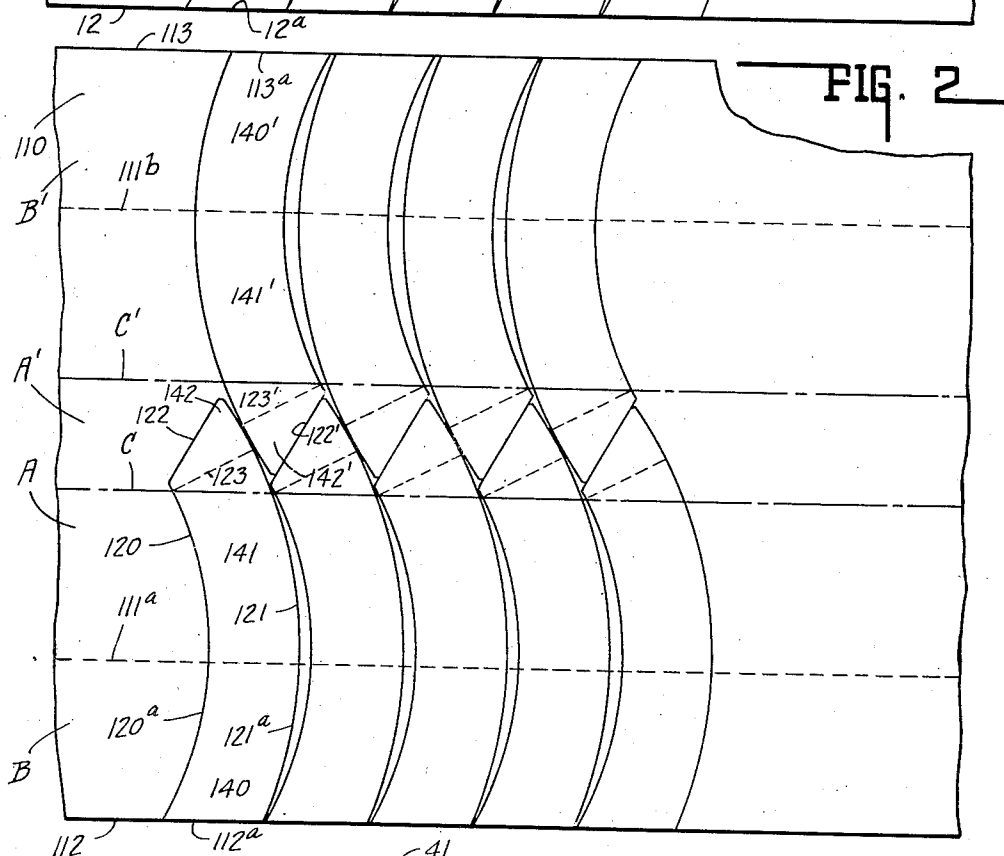
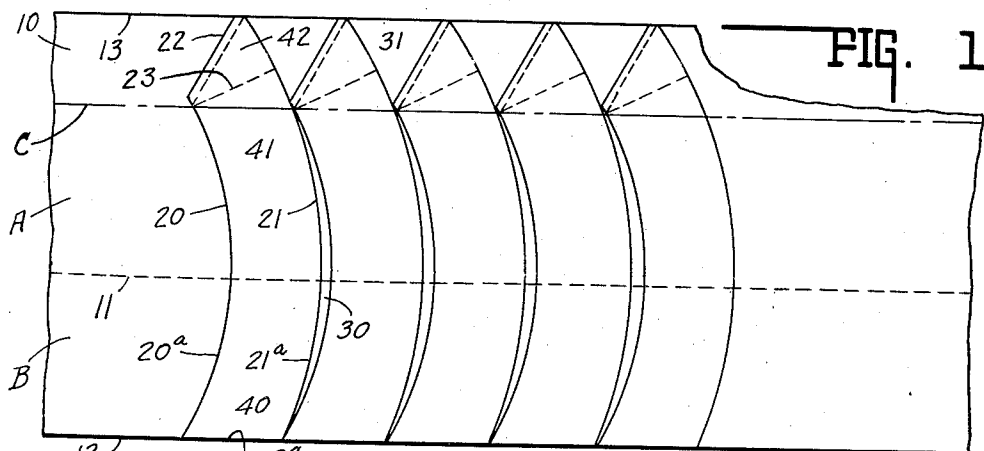


FIG. 3

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BASKET LINER

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Original application July 23, 1941, Serial No. 403,719. Divided and this application December 10, 1942, Serial No. 468,472

3 Claims. (Cl. 217—3)

This invention relates to "one piece" liners for baskets and the like.

This application is a division of application Serial No. 403,719 filed July 23, 1941.

The chief object of this invention is to provide a liner of the broad character disclosed in Hiatt Patent No. 1,593,302, dated July 20, 1926, and specifically a liner that, while of one piece type, is accurate and in its production produces but little waste as required for present liner production.

The latter permits the production savings to be passed on to the consumers (fruit packers, etc.) in the form of lower costs.

The former is of similar character, but due to the identity of all liners, the packing operators become more efficient in packing so that the fruit packers' labor packing costs are correspondingly reduced.

The waste normally required generally can be cut in half or more in the production of the present liner.

The chief feature of the present invention resides in a liner which, when formed of one piece of stock, has its ends suitably secured together in lapped relation, as by gluing or the like, can be shipped flat or in the collapsed position, all of which is old in the liner art, but in addition thereto the liner of this invention has a diagonal or inclined lap and when collapsed the corresponding edges of both portions register, such edges having predetermined arcuicity relative to each other and triangular extensions at the joint.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing, Fig. 1 is a representation of an elongated portion of the strip supplied from a roll to a machine and previous to operation thereon, the dotted line parallel to the side edges of the strip indicating the initial preliminary or prefold line and the arcuate full lines illustrating the subsequently formed blanks, the radial dotted lines included between such arcuate liners indicating crease or score lines formed during the cutting operation or later as desired.

Fig. 2 is a similar view of a modified form of the invention, this view illustrating the double folded arrangement and the reversed position of two contiguous blanks.

Fig. 3 is a plan view of the completed liner in collapsed relation, conventional knock-out portions for providing ventilating apertures being

intentionally omitted since same are conventional in the industry.

Another advantage incident to practicing either form of the invention is that all liners are accurately assembled because only a small or short flap is manipulated for adhesive or like connection of the free end of the "one-piece" liner blank; hence, slight variation or departure has little or no effect in insuring accurate jointing. Such is not the case, when comparatively long flaps are utilized. For example in a one bushel capacity basket liner, the maximum chord thereof is approximately 54". The radial depth is approximately 11". The two end flaps have maximum chords of approximately 14" and the midportions lapped thereby has a maximum chord of approximately 27", when the liner is of seal joint type.

In the present invention for the same size liner, the central portion has the same chord of approximately 27" and a radial depth of approximately 11". The short flap has a maximum chord of approximately 5", while the larger end flap has a maximum chord of approximately 23". Accordingly, a slight departure in shifting a 5" flap is comparatively negligible, whereas in the 14" flap any similar shift is multiplied almost three times. This means greater care must be exercised in handling 14" flaps than with 5" flaps. This effects an appreciable saving in time in the present invention when hand pasting is employed, and permits greater speed when pasted by machine.

Reference first will be had to Fig. 1. In this figure 10 indicates a sheet of paperboard material of the proper weight suitable for one-piece liner fabrication. This sheet 10 as it comes from the roll is folded along the dotted line 11. This forms the main portion A and an overlapping portion B. The dot-dash line C indicates the edge 12 when the part B is folded over the part A. All this occurs preliminary to any blank cutting, et cetera, and this is a continuous folding operation so long as the strip 10 is supplied to the machine for liner fabrication. The strip then passes between the cutting rolls.

In Fig. 1, the width of the sheet from the edge 12 to the edge 13 is approximately 51 3/8". The width of the folded sheet represented by the line 11 or folding line and the edge 13 is 31". The cutting equipment, therefore, need only be 31" wide.

If it be assumed the folding has been completed, then it will be noted the area or width of the strip between the line C and edge 13 ex-

poses that portion of the sheet that is to receive glue and that is to be creased in addition to the previous folding or crease formation at 11.

The cutting rolls, as a sheet passes through, simultaneously cut the registering arcuate edges 20 and 20a and the arcuate edge 21 and registering extension 21a thereof, 21a lapping edge 21 and 20a lapping edge 20. The cutting rolls also provide the radial free edge 22. The cutting rolls may include creasing dies in the form of rule material and the like, that simultaneously provide the radial crease 23 adjacent but angular to the radial edge 22. It will be quite apparent that the other edge of the one-piece blank is the edge portion 12a as shown, which when the blank is folded coincides with the line C, before mentioned.

The next operation after cutting and creasing is to remove the waste indicated by the numeral 30 and the waste indicated by numeral 31. This leaves the one-piece liner blank properly formed as to shape and with the long flap 40 folded down on the central or intermediate flap 41, so that neither requires further attention.

While the invention has been described as being formed from a strip from the roll and by means of cutting cylinders, the aforesaid may be formed from the sheets of the desired size cut by rotary cutting cylinders or such sheets or the strip may be cut by intermittent cutters conventional to the paper board fabrication industry.

After the waste has been stripped from the blank, the prefolded and partially formed blank then enters the folding equipment. This folding equipment folds the short flap 42 on the crease line 23 so as to lap the edge 12a of the portion 40. The adhesive may be applied to a portion immediately adjacent to the edge 22 following blank formation in partial prefolded condition or in the folding of the short flap 42, the portion immediately adjacent edge 22 may engage a gluing roll and have glue applied thereto. Upon the completion of the infolding movement of this sheet flap, the glued area overlaps the edge 12a of the portion 40 and the adhesive joint is effected by pressure application through pressure means common to the paperboard machine industry.

If desired, the adhesive may be applied to the portion immediately adjacent to the edge 12a instead of edge 22, this being done after waste has been stripped from the blank and before short flap 42 is folded.

The article as thus fabricated is discharged in the collapsed relation and completely fabricated, and the desired number may be collected in one bundle and packaged for shipment in the flat to the fruit packer and the like. The fruit packer when desiring to utilize the liner need only take one fabricated blank, open it, insert it into the bushel basket or packing shell and then pack the fruit therein substantially as described in the Hiatt liner patent mentioned.

Reference now will be had to Fig. 2. In this form of the invention the numeral 110 indicates a sheet of considerable greater width than the sheet 10 shown in Fig. 1. Opposite sides of the sheet are simultaneously infolded as indicated by the dotted lines 111a and 111b. This forms a central portion A and two side portions B and B'. The portion B has the edge 112. The portion B' has the edge 113. When the portion B is folded upon the portion A on the line 111a the edge 112 then coincides with the dot-dash line C. When the portion B' is folded upon the

dotted line or crease line 111b the edge 113 then coincides with the dot-dash line C'. These lines C and C' indicated the position of these side edges only. This leaves exposed the central portion A' between the lines C and C'.

The cutting dies then form the edges 120 and 120a and the edges 121 and 121a. They also form the radial edge 122, and the side edge 112a is the side edge of the strip. The radial creases 123 and 123' may be applied to the blank simultaneously with the cutting thereof or by a subsequent operation. The former is preferred since it merely means the inclusion of a scoring or creasing die in the cutting cylinders. One blank thus formed includes the long flap 140 lapping the central flap 141 and projecting therefrom is the short flap 142.

Referring to the upper half portion of Fig. 2, it will be noted that another series of liner blanks is being simultaneously formed with the first mentioned series at the lower half side of the sheet but these blanks are reversely positioned with respect to the first mentioned series of blanks and they are similarly designated by numerals of the prime series, except that herein the edge 113a corresponds to the edge 112a.

It thus will be noted that not only do the several blanks in each series interfit or nest, as it were, relative to the adjacent blanks, but that the adjacent ends of oppositely positioned blanks interfit or nest, as shown between the lines C and C' in portion A'. This is one of the reasons when blanks are formed "two-up" instead of "one-up," as in Fig. 1, the waste is reduced from the maximum of 10% to 3%. After the blanks have been thus formed and creased as at 123 and 123', these series of blanks are handled in substantially the same manner as that previously described with reference to the handling of the blanks formed in Fig. 1, with this exception, that the parts of the machine are of necessity reversed for handling the prime series of blanks with respect to the position of the parts handling the lower half series of blanks illustrated in Fig. 2, or, if desired, the prime series of blanks may be allowed to collect in a pile and later reversed in position and fed into same machine used for folding and gluing the blanks of the first mentioned or lower half series of blanks.

The width of the strip of paperboard shown in Fig. 2 is approximately 95%". The width between the lines 111a and 111b is 54½". A paperboard fabricating machine having a 56" length of cutting cylinder, which is a conventional length now, by reason of the prefolding, can be utilized to simultaneously form two blanks in the same time.

The several advantages of both forms of the invention have been set forth in sufficient detail initially hereinbefore, so that no further reference, it is believed, need be made, except that reference is had to Fig. 3 wherein the completed blank in its collapsed relation, as completely fabricated, is illustrated.

It has been preferred to illustrate and describe the article by its method of production because in no other way could the advantages and merits thereof be pointed out.

While the invention has been illustrated and described in great detail in the drawing and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest them-

selves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to appended claims.

I claim:

1. A one-piece, collapsed, liner having upper and lower substantially concentric curved edges and two folded end edges substantially perpendicular to the tangents to said first named edges, said liner having a lap type joint from substantially one curved edge to the other and longer than either of the first named folded end edges, the joint starting at or immediately adjacent one corner defined by one folded edge of the liner and the lower curved edge thereof, and the general direction of the joint being substantially parallel to the other folded edge of the liner, said lap joint being of adhesive connected type.

2. A one-piece, collapsed, liner having upper and lower substantially concentric curved edges and two folded end edges substantially perpen-

dicular to the tangents to said first named edges, said liner having a lap type joint from substantially one curved edge to the other and longer than either of the first named folded end edges, the joint being located close to one folded edge of the liner, the general direction of the joint being substantially parallel to the other folded edge of the liner.

3. A one-piece, collapsed, liner having upper and lower substantially concentric curved edges and two folded end edges substantially perpendicular to the tangents to said first named edges, said liner having a lap type joint from substantially one curved edge to the other and longer than either of the first named folded end edges, the joint starting at or immediately adjacent one corner defined by one folded edge of the liner and the lower curved edge thereof, and the general direction of the joint being substantially parallel to the other folded edge of the liner.

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