Aug. 21, 1934. G. H. SNYDER ET AL 1,970,580

BOX MAKING

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Fig. 1.

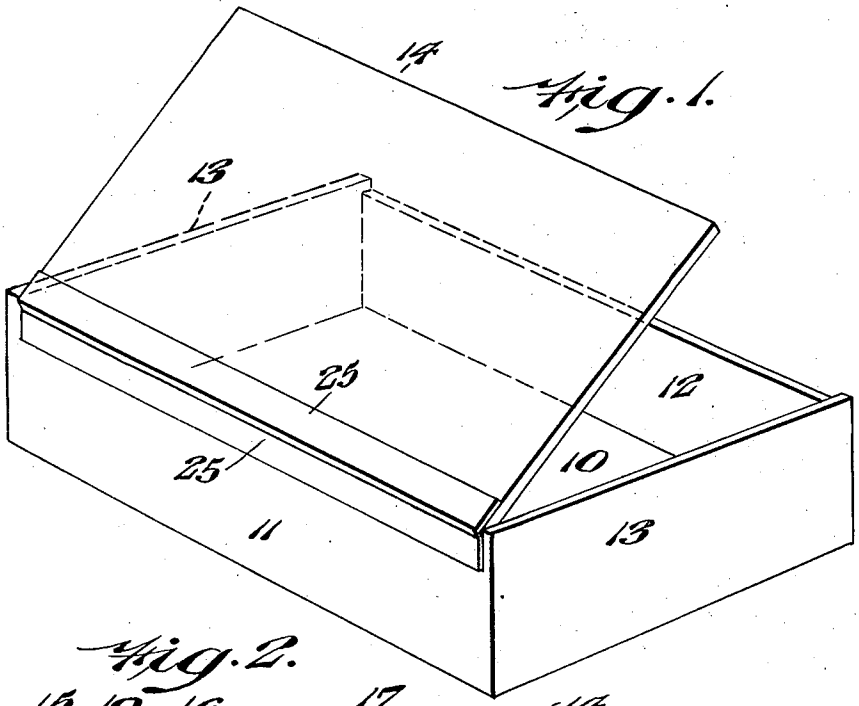


Fig. 2.

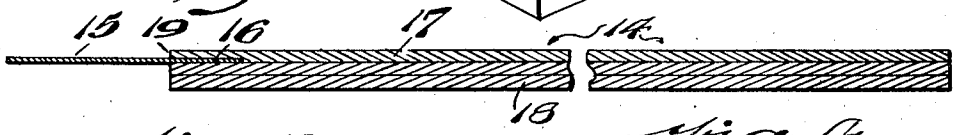


Fig. 3.

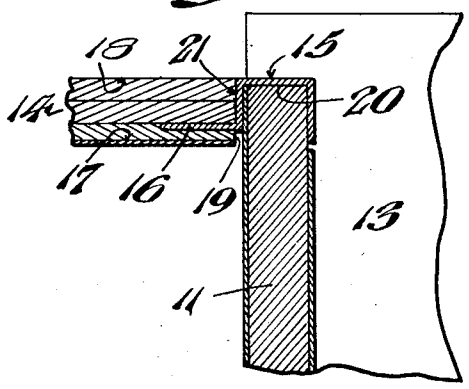
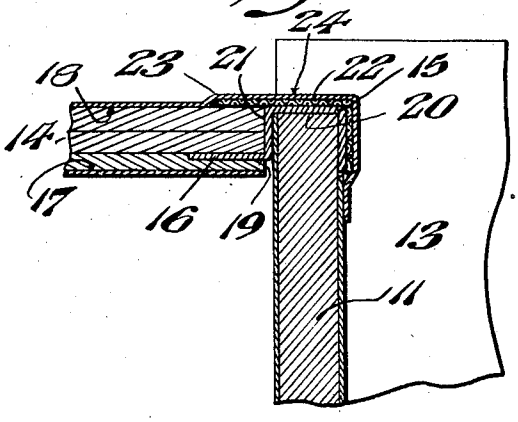


Fig. 4.



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Fig. 5.

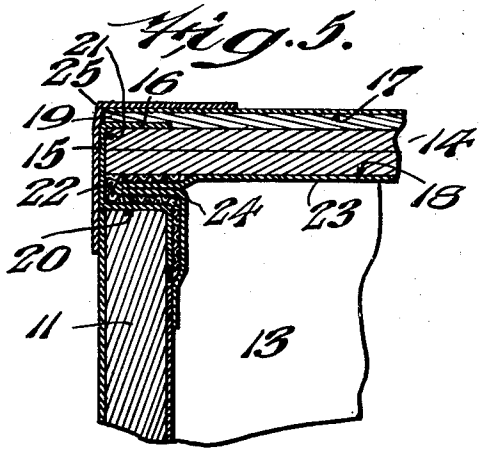


Fig. 6.

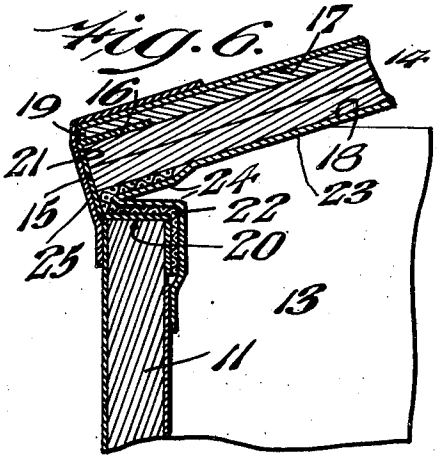


Fig. 7.

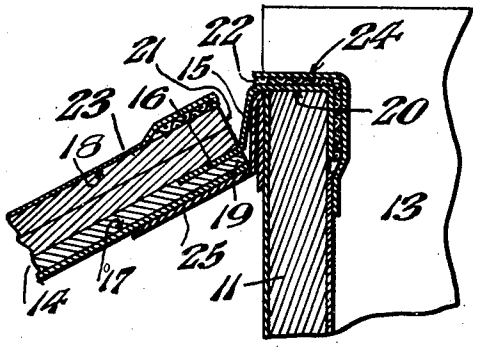


Fig. 8.

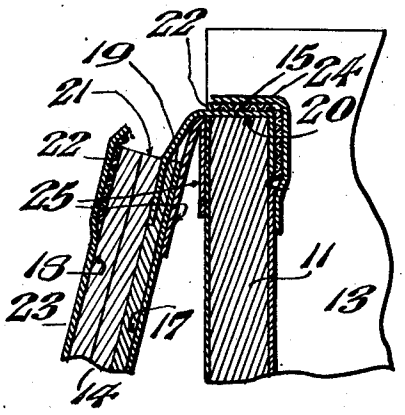
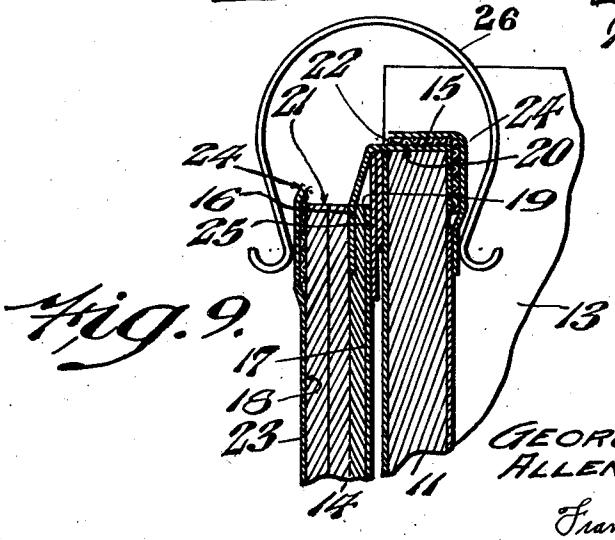


Fig. 9.



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UNITED STATES PATENT OFFICE

1,970,580

BOX MAKING

George H. Snyder, Glenside, and Allen G. Snyder, Chestnut Hill, Pa.

Application December 29, 1932, Serial No. 649,280

8 Claims. (Cl. 229—44)

This application is a continuation in part of our application Ser. No. 534,190, filed May 1, 1931.

This invention relates to the art of box making and particularly to the attachment of the lid to the box.

Boxes with flat lids as heretofore provided for cigars, among other uses, have customarily been provided with a hinging strip or piece of muslin or the like attached to the rear wall or edge of the lid and the upper outer surface of the rear wall of the box. This has usually been accompanied by the provision of a label extension attached to the inner surface of the lid and extending across the upper horizontal surface of the rear wall and down on the inside of the box against the inner surface of the rear wall. This enables the box lid to be swung to a position substantially perpendicular to the rear wall of the box to act as a handle in dispensing the box contents such as cigars, for instance, and has been found in many cases to be fairly acceptable for general purposes. In some cases it has been found helpful to provide a secondary hinging strip closing the gap between lid and box and adherent to the inner or lower rear surface of the lid and the horizontal surface of the end wall of the box. This strengthens the hinge for certain purposes but is not even now the conventional practice which still disposes the hinging strip on the rear of the lid. This is not objectionable as the main hinging element when the box is simply partially opened and then immediately closed or is handed about using the lid as the handle, with the box opened. With cigar boxes, however, it is frequently desirable to use the flat lid in a position slightly inclined from the vertical as a means to support the box in an inclined opened position. This is characterized as an easel position or an easel box. With conventional hinge strips the ordinary box is cracked or broken to permit the lid to open further than the hinge piece normally allows, in order to dispose the lid in substantial parallelism with the rear wall of the box, so that it can be clipped or secured in this position to act as a supporting leg for the box in the easel position. The cracking of the lid utilizes the lid as a lever the fulcrum of which is the top rear edge of the lid, which, turned past horizontal position abuts the rear wall and through the leverage obtained, the inner rear edge of the lid is forced outwardly away from the upper surface of the rear wall, subjecting the paper label and the hinge piece to such tensile strain as to cause it to rupture. The rupture of the hinge piece is so frequently accompanied by shearing or tearing of the decorative border or paper panel on either or both sides of the lid extending over the rear wall of the box, that the lid comes off in the hands of the operator, and its use for easel purposes is so difficult thereafter as to be practically impossible. There are other difficulties attendant upon the easel formation, such, in the case of wooden boxes, as breaking of the wood of the lid or of the rear wall of the box, so that it has never had certainty of success as an expedient for display of the box contents.

It is among the objects of this invention; to improve generally the art of box making; to provide a box with a plurality of attaching devices one of which is a hinge piece; to provide a lid for a box having an attached and anchored attaching element as a substantial extension of the lid; to provide a flat lid for a box so arranged with a hinge piece that rupture of the hinge piece and utilization of the lid for an easel stand is substantially invariably free from total or even partial separation of lid and box; to provide an improvement in the procedure of forming a box with a lid; to provide an improved non-conventional lid; and many other objects and advantages as will become more apparent as the description proceeds.

In the accompanying drawings:

Fig. 1 represents a perspective of a box constructed in accordance with the invention herein,

Fig. 2 represents an end elevation of the improved lid of this invention showing the elongated extension of the lid,

Fig. 3 represents a fragmentary vertical section through the improved lid and a portion of a box showing the first step in the association of the lid and box, on a highly exaggerated scale,

Fig. 4 is a further view of the same showing progressive steps in the association of the lid and box,

Fig. 5 represents a fragmentary vertical section through a portion of the lid and the box with the lid in a closed position showing on an exaggerated scale a further step in the operative association of the lid and box,

Fig. 6 represents a similar exaggerated section with the lid partly raised to show the association of the parts, and

Figs. 7, 8 and 9 represent successive steps in the utilization of the easel strip of the invention incident to the rupture of the hinge strip, each comprising fragmentary vertical sections through

the end wall of a box and the attached lid in the movement of the latter to the easel position.

While the particular construction of box is not of moment so far as this application is concerned it may be noted that the box is preferably a composite box formed of inner and outer members, for strength, and so finished as to have a bottom 10, a rear wall 11, front wall 12 and side walls 13. It is preferred that the box be made of cardboard suitably wrapped and decorated although obviously the invention is applicable to a box, the walls and bottom of which are made of wood.

Considering the lid or closure 14 for the box, there is provided a multi-ply flat cardboard or similar artificial fibrous laminated element which is stiff and strong and has upper and lower plane substantially parallel surfaces, respectively, 17 and 18. The lid 14 is formed separately from the box and the easel strip 15 has one edge 16 anchored and embedded between laminations or plies of the lid, as shown, preferably appreciably closer to the upper surface 17 of the lid than to the lower surface 18 thereof. The easel strip 15 forms a flexible continuation of lid 14, and while it may be effective if the edge 16 is pasted directly to the upper surface 17 instead of between the upper and lower surfaces of the lid as shown, yet the anchor or bond is not nearly as strong and simple as in the inserted anchored relation.

The lid 14 is applied to the box in a certain order which is of importance in securing a most effective and efficient use of the easel strip. Thus the lid, after being suitably wrapped for decoration, is swung to a position of perpendicularity to the wall 11 of the box so that its inner surface 18 is substantially co-extensive with the upper horizontal edge 20 of rear wall 11. The lid edge 21, perpendicular to lid surfaces 17 and 18, is parallel, substantially, to the outer surface of the rear wall 11 of the box. The easel strip 15 is bent up in abutting but non-adherent engagement with the rear lid edge 21 and is bent or folded into overlying adherent engagement with the upper edge 20 of wall 11, and is turned down to adherently engage the inner upper surface of the rear wall 11. Easel strip 15 is adhesively secured to the upper and inner surfaces of the rear wall 11 but preferably care is exercised to insure that the easel strip is not adhesively secured to the edge 21 of the lid. This secures firm anchoring of each end or edge of the strip, separated by a flexible non-attached mid-section. The reason for this will be made more clear as the description proceeds.

While still maintaining the substantial registration of lid surface 18 and wall edge 20 a hinge strip 22 preferably of muslin or similar conventional hinging material, including paper having reinforcing threads therein, is applied to the contiguous co-extensive surfaces 18 of the lid and 20 of the wall 11 and is swung down to engage the inner upper surface of the rear wall of the box. The hinge piece 22 obviously is adhesively secured to the easel strip 15 where it is disposed on the rear wall of the box. An inner label 23 having an extension 24 is adhesively secured to the surface 18, across the upper end of wall 11 and down to engagement with the inner surface of the inner wall to conceal the hinge element.

The lid is then swung around to closed position and an external decorative border or label 25 is applied to the top and rear of lid 14 and the upper edge of the outer vertical surface of wall 11. In the normal use of the box the hinge piece 22 is sufficiently strong as to enable the lid to be opened so that the corner 19 formed at the junction of the lid edge 21 and the upper surface 17 may engage the wall 11, and the lid will be held against vertical movement out of a substantially horizontal disposition perpendicular to wall 11. When it is desired, however, to utilize the easel strip the operator imparts a small downward movement to the free edge of lid 14, thus using the lid as a lever effective on a fulcrum defined by the edge 19 which subjects paper label 23 and the hinge piece 22 to such tensile strain as to cause them to part. The rupture of the hinge piece thus secured would ordinarily be accompanied by tearing of the label 25 at the rear of the box and possibly complete severance of the lid from the wall in the usual hinge assembly as heretofore provided. In the instant invention, however, the strong paper extension 15 anchors to the lid so close to the fulcrum 19 that there is no pull exerted thereon during the time that the hinge piece is subjected to the rupturing tensile strain so that breakage of the hinge piece finds the easel strip still firmly anchored both to the lid and to the box. The thicker laminations of the lid between surface 18 and anchoring edge 16 act as a gauge to determine the extent of easel strip 15 that is loose and unfastened so far as adhesive securedness is concerned relative to the edge 21 of the lid. The turning of the lid up and back and past the rupturing point of the hinge piece finds a length of easel strip capable of flexible adjustment so as to permit the fulcrum edge 19 to move upwardly on the rear wall 11 as the lid is moved to substantial parallelism with the rear wall 11 to permit the attachment of the conventional clip 26 to support the box at an inclined position while still maintaining attached association of the lid and box.

We claim as our invention:

1. In box making, a lid formed of multiple laminations and having a substantially perpendicular edge, a flexible easel strip anchored between laminations and extending substantially parallel to the laminations beyond said edge of the lid, for ultimate anchored attachment to a box, and a flexible hinge strip secured to the bottom surface of the lid substantially parallel to a part of the easel strip.

2. In combination, a box having a rear wall, a flat lid arranged for pivotal association with said rear wall, a flexible extension of said lid projecting from an edge thereof and adherent to the upper surface of said wall, a hinge piece adherent to a surface of said lid and to the part of the flexible extension of the lid on the upper edge of said rear wall.

3. In combination, a flat lid, a flexible easel strip anchored in the lid between the surfaces thereof, a box having a wall, the lid initially disposed with its lower surface substantially co-extensive with the upper surface of said wall, the flexible easel strip extending across the edge of said lid and adhesively secured to the upper edge of said wall, a hinge piece mounted on said lid and on the adherent portion of said flexible strip, said easel strip being free and non-adherent to the edge of said lid.

4. In combination, a flat lid having a fulcrum corner edge formed of an edge and a surface, a flexible strip anchored to the lid relatively close to said fulcrum corner and having a free end, a box having a wall, the lid arranged to extend perpendicularly to said wall with the surface of the lid remote from the fulcrum edge in substantial alignment with the upper edge of said wall, the

free end of said flexible strip extending parallel to the edge of the lid and bent to adherently overlie the upper edge of the box, a flexible hinge piece anchored to the said remote surface of the lid and to the free end of the strip, the arrangement being such that leverage exerted on the lid relative to the fulcrum edge subjects the hinge piece to tensile strain without applying any appreciable tensile strain to the flexible strip.

5. In combination, a box having a wall and a lid pivoted to the wall, said pivot comprising a hinge piece mounted on the inner surface of the lid and the upper surface of said wall, and means anchored to the lid and connected to the wall to maintain attached association of lid and box upon rupture of the hinge piece.

6. In combination, a multi-ply relatively flat lid having a fulcrum edge defined by the upper surface and the edge of the lid, and a flexible extension projecting beyond an edge of the lid anchored between adjacent plies relatively close to the fulcrum edge, a box having a rear wall, said flexible extension being unsecured relative to the edge of said lid but being secured to said rear wall, a hinge piece secured to the rear wall and to the lid remote from the fulcrum edge, said hinge piece being susceptible to tensile strain when the lid is swung with the fulcrum edge abutting said rear wall, and said flexible extension being simultaneously relatively free from tensile strain.

7. In combination a box having a wall, said wall having an upper edge, a lid having spaced upper and lower surfaces and an edge, a hinge strip adherent to the lower surface of the lid and projecting beyond said edge, an easel strip projecting from the lid beyond the edge in spaced relation to the hinge strip, both strips being brought into adjacency and disposed in superposed relation to anchored engagement with the upper edge of said wall.

8. In combination a lid having an edge, a flexible easel strip anchored in the lid and projecting from an edge thereof between the upper and lower surfaces of the lid, a box having a wall, the lid being disposed with said edge above said wall outwardly beyond the inner surface of the wall, said easel strip anchored to said wall to the upper inner edge thereof, and a hinge piece attached to the inner surface of said wall and to the lower surface of said lid.

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