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RIGID PASTEBOARD BOX

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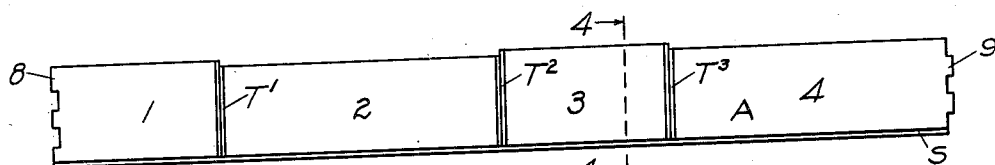


Fig. 1.

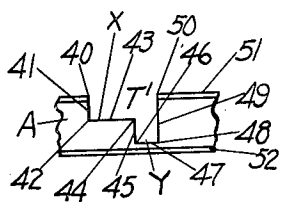


Fig. 2.

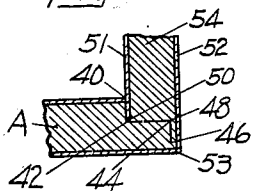


Fig. 3.

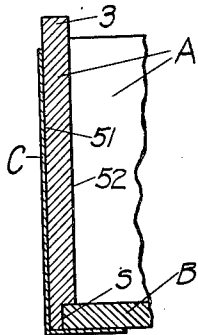


Fig. 4.

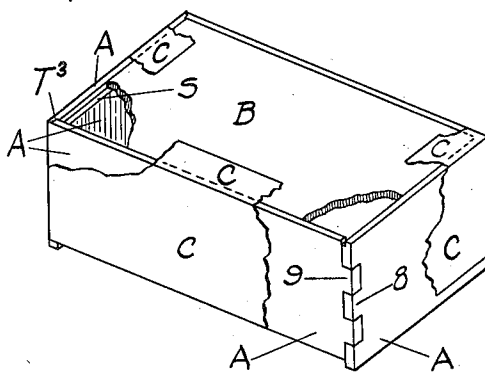


Fig. 5.

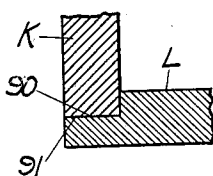


Fig. 6.

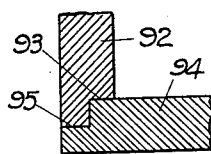


Fig. 7.

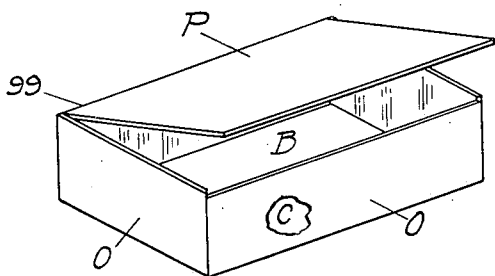


Fig. 8.

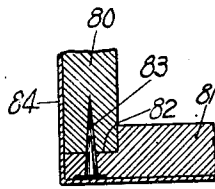


Fig. 9.

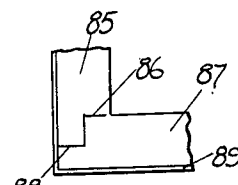


Fig. 10.

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1,997,882

RIGID PASTEBOARD BOX

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4 Claims. (Cl. 229—23)

This invention relates to pasteboard boxes parts of boxes or other boxes having a plurality of sections.

The particular purpose of this invention is to provide an accurate non-slipping joint at any bent edge of any box-like structure such as a pasteboard box which is to be used as a substitute for the well known type of wooden cigar box which is substantially rigid and in which the short sides or ends stick up above the long sides or front and back and the cover is hinged at the back so that when the box is closed it rests between the ends, the cover usually being fastened at the front by means of a tack.

Objections to other boxes for cigars made of pasteboard are that the edges slip and the fastening strips break. This box is easily put together by well known machines and when finished is not only rigid, but as the adjoining edges both vertical and horizontal are preferably provided with rectangular scores, channels, grooves or recesses, the sides and bottom are held firmly in place.

Preferably I then use one or more holding strips on some of the edges and one or more sheet members, or one or more sheet members alone without the strips, glued or stuck to the outside of the box members whereby the box is kept firmly together with adjoining sides and edges always kept at ninety degrees with each other.

By extending a sheet member around and sticking it to the outside vertical edges and also to the bottom edges, the adjoining wall edges and bottom edges are firmly kept and held at right angles to each other.

In the drawing, Fig. 1 is an elevation of a wall member such as I prefer to use.

Fig. 2 is an enlarged plan view showing in detail the preferred type of scores and the preferred type of pasteboard wall member before bending.

Fig. 3 is a horizontal section of Fig. 2 after bending.

Fig. 4 is a vertical section somewhat enlarged showing part of the wall member, part of the bottom member and part of the holding sheet member.

Fig. 5 is a perspective view of a box of my preferred construction bottom side up with parts broken away to show the construction.

Fig. 6 is a vertical sectional detail showing a modification of the recess arrangement between the bottom edge of a wall member and a bottom member.

Fig. 7 is another vertical sectional view showing still another modification of the relation be-

tween the recess or recesses and the bottom edge of the wall member and the bottom member.

Fig. 8 is a perspective of a complete and finished box of my preferred construction.

Fig. 9 is a horizontal section showing another method of uniting the edges of the wall member.

Fig. 10 is a plan view showing another method of uniting the vertical edges of the wall member.

In the drawing, A represents what I will call a wall member or bendable box blank which may embody all or part of the faces of a complete box made from a sheet of substantially rigid cardboard or pasteboard preferably of about the thickness of a wall of a cigar box. This wall member A is cut from the sheet by any suitable mechanism and as shown in Fig. 1 is so cut that it is divided into four sections 1, 2, 3 and 4 by vertical scores indicated by T¹, T² and T³.

The sections 1 and 3 are higher than the sections 2 and 4 and the ends of the wall member A which are also the ends of the sections 1 and 4 are mortised as shown at 8 and 9 in such a way that when brought together to form the walls or sides of the box, these vertical ends 8 and 9 interlock and by friction tend to hold the four sections of wall member A in position in the shape of a rectangle.

The scores T¹, T² and T³ are on the inside and there is also an angular recess S which is preferably continuous along the inside bottom of member A to receive a bottom member B of substantially rigid cardboard which fits into said recess or recesses and thus holds the whole box in rectangular position.

The member A is folded and the ends 8 and 9 interlocked as described after which the bottom member B is slipped into the recess S and while being held in position, a holding sheet member C is bent around and stuck to substantially all of the outside of the four walls 1, 2, 3 and 4 and part way around the bottom edges onto the outside of bottom member B to which it is stuck.

This holding sheet member firmly holds the whole box together. Such a sheet member C, however, as shown in Fig. 4, may be entirely omitted, or it may be replaced by a gummed strip of paper or cloth over the open joints or by glue between the contacting parts or even by nails such as 83, as shown in Fig. 9, or by any other suitable means for holding such contacting parts together.

My preferred form of scores include a deep channel such as Y and a contiguous shallow channel X as shown in Fig. 2.

These channels are cut by suitable knives and gouges and have clean cut straight sides and edges.

Referring to Fig. 2, 40 is the inside edge of the shallow channel, 41 the adjoining side, 42 the outside edge, 43 the outer side, 44 one edge which adjoins the deep channel Y, 45 the shallow side of deep channel Y, 46 and 48 the outside edges and 47 the outer side of deep channel Y, 49 the long side and 50 the inside edge of channel Y.

When folded, the inner face 51 of wall A abuts on inside edge 40 and side 41 of shallow channel X while the inside edge 50 of deep channel Y engages the outside edge 42 of shallow channel X and the edge 48 preferably engages the edge 44, the bend coming substantially at the edge 46. By using a score with channels of two depths the part between the outer side 47 of the deep channel and the outside face of wall A can be made very thin because when the inside edge 50 engages the outside edge 42, particularly if the distance from 48 to 50 is the same as from 42 to 44, the parts are locked firmly in place and no slipping is possible. This permits the web between 46 and 48 to be thin and it need not be as strong as if there were a side strain or slipping strain put upon it. It can, therefore, be made very thin and flexible and if the distance from 46 to 48 is the same as from 46 to 44 when adjoining sections such as 1 and 2 or 2 and 3 are folded together at ninety degrees, all the parts are closely locked together with a perfectly tight joint as shown in Fig. 3.

The wall member A is preferably made of pasteboard in any well known way with the face 51 which is to be on the inside of the box made of a sheet which can be printed or lithographed and will give a good finish to the inside while the outside layer such as 52 should be of jute or craft stock which can be readily bent to form a clean-cut edge such as at 53.

The interior 54 of wall member A can be of any cheap stock to give body to the walls.

Preferably the sides of the vertical scores should be parallel and the bottom or bottoms parallel with the inner face such as 51 of the wall member and should make a right angle with the sides.

Instead of the angular recess S in a wall member A, as shown in Figs. 1, 4 and 5, a wall member K with no recess at the bottom can be used, the lower edge 90 fitting into an angular recess 91 which extends around the inner edge of a bottom member L.

As another alternative, a wall member 92 can have an angular recess 93 similar to S and the corresponding bottom member 94 can have an angular recess 95 corresponding with 91.

While the mortised construction at 8 and 9 is preferable, as shown in Fig. 9, I may join the free vertical edges such as 80 and 81 of my wall member by fitting the end of 80 into the rectangular channel 82 in the other end 81 and holding the parts together by one or more tacks 83 over which preferably would be stuck a holding strip 84.

As shown in Fig. 10, the tacks could be omitted and an end edge 85 could be channeled at 86 to fit a suitable channel such as 88 in the other end 87 the parts being fastened by a strip 89.

A complete box of the commercial cigar box type is shown in Fig. 8.

O represents the labels or label which ordinarily would go outside over the holding sheet C but which as described might take the place of this holding sheet while P is a cover also made of pasteboard fastened to the box proper along the

edge 99 by any well known device such as a strip of cloth such as used in wooden cigar boxes.

A single holding sheet member such as C or two holding sheets such as C and O can be used.

Some part of the bottom member such as B, L or 94 should fit inside the wall member to hold the box firmly in shape.

While I have shown and described my preferred construction of a box forming substantially a rectangular parallelepiped, it is obvious that the angles of the sides of the scores in the wall member could be varied to correspond with the angles made by the adjoining edges of a bottom member if these edges made acute and obtuse angles with each other.

It is obvious that where the terms bottom, top and sides are used in this description, these terms may be interchangeable and that a side may become an end, a top or a bottom according to the position in which the box is placed. Moreover where the term inside is used, it means the inside of a box or boxlike structure or more specifically it means that side or face of the material from which any particular score is cut and towards which the two sections which adjoin that score are bent. By outside is meant what is ultimately the outside of the box or boxlike structure, or more particularly the other side or other face of the material not the inside, or the side from which the score is not cut. By top edge with reference to a score or channel is meant an edge at the inside face of the material and by bottom edge or side is meant an edge or side of a score or channel which is nearest the outside face of the material.

The faces of the channels which are substantially at right-angles to the faces of the material may be called the walls while the faces which are parallel with the faces of the material may be called the bottoms of the respective channels.

One of the most common uses of this invention is a part of a pasteboard box and may be called a bendable box blank but it can also be used in connection with what is known as beaver board or wall board for the vertical joint at a corner of a room. Such a room, I call a boxlike structure and, of course, a two step joint such as I claim herein can be used, as indicated in the claims, as part of any similar boxlike structure.

A bendable box blank made of substantially rigid cardboard or similar material to what is shown at A may have like A the four sections such as 1, 2, 3 and 4, but it might have any less or greater number of sections provided there are two or more. In other words, I claim to be the first to provide a bendable or angularly bent blank of substantially rigid cardboard having one or more scores each score having a deep cut channel and a contiguous shallow cut channel whereby such blank is divided into a plurality of sections.

It is also obvious that all of the sections, whether two or more, may or may not be of the same height or size and it is also obvious that a box such as shown in Fig. 5 may be rested on the small end which then becomes the bottom whereby B would be the front or back and section 1 would become a hinged cover, provided the taper strip C was entirely omitted and the other adjoining parts were held together by friction, glue or in any other manner such, for instance, as by nails like 83 shown in Fig. 9.

Obviously such a section 1 might be omitted whereupon such a box would have an open top,

The principal feature of the invention is such a bendable or bent blank of sheet material having in one face a straight score which includes a shallow channel and a contiguous deep channel, both cut instead of bent from the material, whereby the blank can be bent along the web of material at the bottom of the deep score and when so bent will have a multiple depth interbraced angular joint between any two adjacent sections.

I claim:

1. A bendable box blank for a rigid pasteboard box made of substantially rigid cardboard having an outside layer of tough bendable material and being divided into sections by a score cut from the inside which comprises a deep channel and a contiguous shallow channel, the sides of said channels being parallel with or at right-angles to the face of the cardboard so that when the adjacent sections are bent at right-angles to each other the inside edge of the deep channel rests in the angle along the outside edge of the shallow channel to form a multiple depth interbraced angular joint between said sections.

2. A blank for a boxlike structure, which blank is made of substantially rigid cardboard or other similar material and is divided into sections by a score cut from the inside of the material, which score comprises a deep-cut channel and a contiguous shallow-cut channel, the adjacent sections being bent at the web at the bottom of the deep-cut channel so that the

top edge of the deep channel rests in the angle along the bottom edge of the shallow channel whereby a multiple depth interbraced angular joint is formed between said sections.

3. A blank for a boxlike structure which blank is made of substantially rigid cardboard or other similar material which can be bent when scored and which is divided into sections by a score cut from one side of the material, which score comprises a deep-cut channel and a contiguous shallow-cut channel, the channels being so cut and of such size that the adjacent sections can be bent at the web at the bottom of the deep-cut channel and when so bent that the top edge of the deep channel will rest in the angle along the bottom edge of the shallow channel whereby a multiple depth interbraced angular joint can be formed between said sections.

4. In a box, the combination of a bendable box blank made of substantially rigid cardboard or other similar material which is divided into sections by a score cut from the inside of the material, which score comprises a deep-cut channel and a contiguous shallow-cut channel, the adjacent sections being bent at the web at the bottom of the deep-cut channel so that the top edge of the deep channel rests in the angle along the bottom edge of the shallow channel whereby a multiple depth interbraced angular joint is formed between said sections; with another section rigidly fastened to the bent blank to strengthen and hold the parts in place.

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