March 3, 1936. A. M. WHITE ET AL 2,033,020

PAPER BOX STRUCTURE

Filed July 26, 1934

Fig. 1.

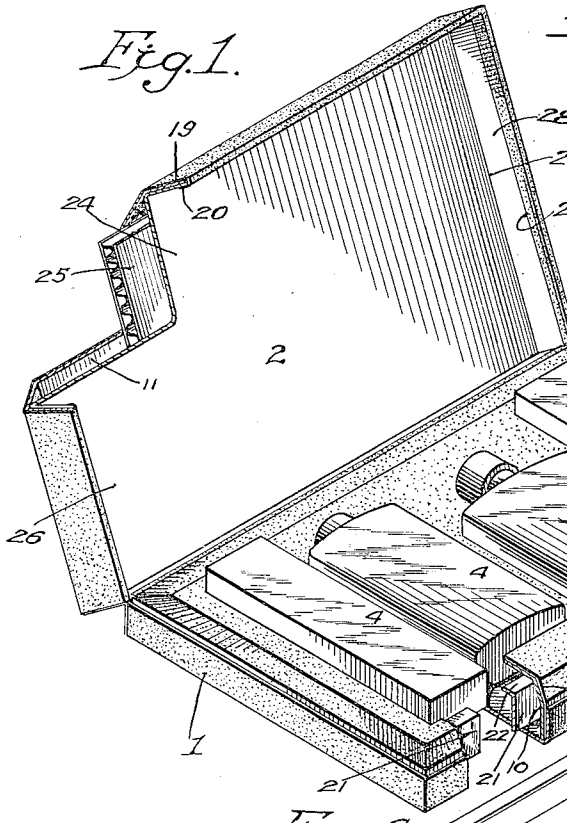


Fig. 3.

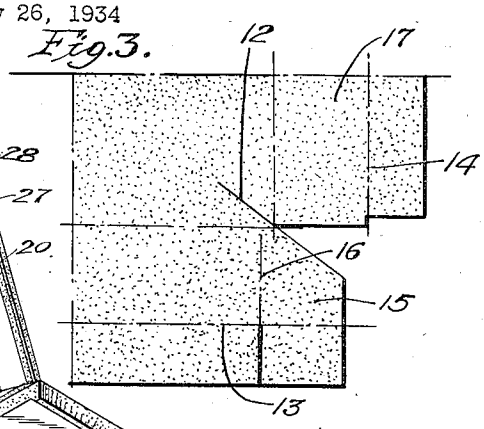


Fig. 4

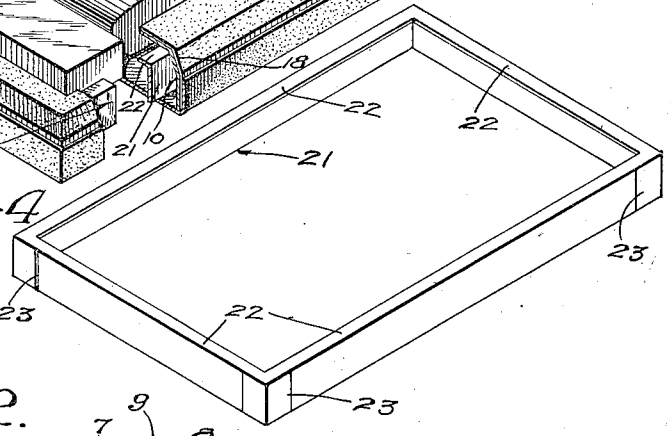
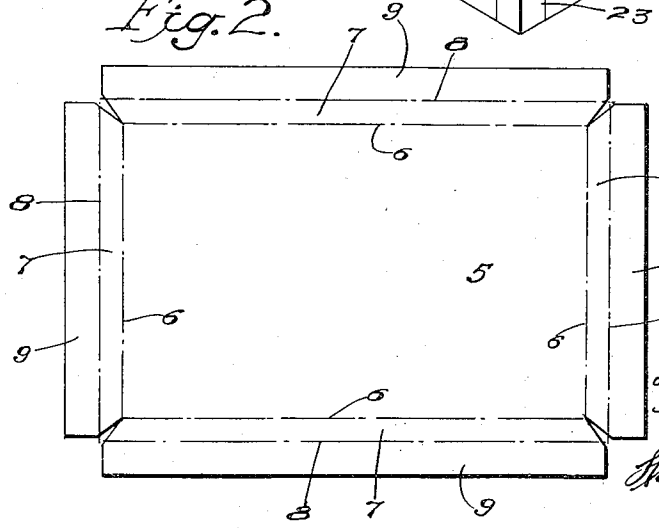


Fig. 2.



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PAPER BOX STRUCTURE

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Application July 26, 1934, Serial No. 737,126

7 Claims. (Cl. 206—44)

This invention relates to paper boxes and/or display platforms or trays, and it has for its principal object the provision of a novelly constructed box member which may find use either as the lid or cover of a box or as a display platform or tray in a box of the display type, or for a display platform or tray used apart from or independent of, any box.

By this invention, there is provided a construction having beveled or oblique walls which is not only attractive in appearance but has other advantages as well. Essentially the construction comprises a member having a body portion defined by lines of bend, trapezoidal wall members extending obliquely from the said lines with their adjacent oblique edges in abutting relation, and rectangular wall members extending from the trapezoidal members substantially at right angles to the body portion and having their edges in abutting relation.

One object of the invention is to provide a novel composite box lid or cover structure including a member such as above mentioned.

Another object of the invention is to provide a novel display tray assembly including such a member and preferably having a reinforcing frame cooperatively arranged with the said member.

Other objects and features of the invention will appear hereinafter.

In the drawing:

Fig. 1 is a perspective view of a paper box incorporating the features of the invention with portions cut away for illustration;

Fig. 2 is a face view of the blank from which the novelly constructed box member is formed;

Fig. 3 is a face view of a corner of the flexible cover which is preferably used; and

Fig. 4 is a perspective view of the reinforcing or supporting frame used in conjunction with the display tray.

By the term "paper box", as used herein and in the appended claims, we mean any box which is made of paper, cardboard, or suitable other materials. It will be understood, therefore, that the box parts about to be described may be made of any such material as is conventionally employed in the art.

Referring to the drawing, in Fig. 1 there is shown a box of the display type which comprises the box proper 1, the lid or cover 2 therefor, and the display tray 3 which is provided with a plurality of openings or recesses adapted to receive various articles designated generally by the reference character 4. Generally speaking, boxes of this type have heretofore been commonly used but in prior constructions, the display tray has been formed so as to have square corners.

By this invention, there is provided a construction which is not only adapted for use in the display tray of a box of the display type but is also equally adapted for use in the cover or lid of the box. In the box shown in Fig. 1, the lid or cover is formed in accordance with the invention, the application of the invention to both the display tray and the lid or cover being illustrated in a single box merely for the sake of simplicity of illustration. It will be understood that neither of these box parts are dependent one upon the other and that a box lid or cover formed in accordance with the invention may be used in any type of box. Conversely, the display platform or tray formed in accordance with the invention may be used in a box having a lid or cover other than that contemplated herein. Moreover, the display platform or tray may be used alone and need not be a part of a box.

The essential box member, which is used in accordance with the invention in either the display tray or the box cover, is formed from a blank such as shown in Fig. 2. This blank comprises a body portion 5 which is defined by lines of bend 6. A plurality of trapezoidal portions 7 extend from the body portion at the respective lines of bend 6. The outer edge or boundary of each of the trapezoidal portions is defined by a line of bend 8. Rectangular portions 9 extend outwardly from the lines of bend 8. The corners of the blank are cut, as clearly illustrated, to provide the various portions and to enable the blank to take the desired form when it is bent or creased along the lines of bend.

When the blank is properly bent or creased, the trapezoidal portions 7 form oblique walls with the oblique edges of adjacent portions in abutting relation as clearly shown in Fig. 1. The portions 9 constitute walls extending at right angles or perpendicular to the body portion with the edges of adjacent portions in abutting relation. The abutting edges may be held together and the finished member maintained in its desired form in any suitable manner, such as by the use of adhesive strips or an adhesively applied cover. The completed member formed from the blank of Fig. 2 may be identified in the display tray of Fig. 1 at 10 and the corresponding member of the box cover may be identified at 11.

Preferably, in either case, a flexible cover formed of thin decorative paper or the like is placed over the box member above described and

is adhesively secured thereto. In Fig. 3, there is illustrated a corner of a preferred form of such cover. By providing a rectangular cover sheet of the proper size and by cutting each corner substantially as illustrated in Fig. 3, the cover may be readily applied to the above-described box member. The specific form of the cover corner, as illustrated in Fig. 3, enables the cover to be folded over the beveled or oblique walls and over the edges of the box member. When the cover is applied, the slit 12 lies along the oblique corner line of the box member. The edge portions of the cover are bent over the edges of the box member along lines 13 and 14. The portion 15 is bent around the corner of the box member along line 16, the portion 17 overlapping portion 15. The corners of the cover thus fold very nicely and leave no bulky appearance. The cover member in the display tray of Fig. 1 is designated 18, while the corresponding member of the box lid is designated 19. The folded-over edge of the cover member may be seen more clearly on the box lid at 20. It will be understood, of course, that the specific form of covering herein illustrated is not necessary, but any suitable covering material or method of covering, with one or more pieces of paper or other material, may be used.

The display tray formed from the blank of Fig. 2, as above described, and preferably including the outer cover seats snugly within the box, as illustrated in Fig. 1, the outer surfaces of the vertical walls 9 engaging the inner surfaces of the box walls. In order to rigidify and strengthen the display tray, there is preferably provided a frame 21, such as illustrated in Fig. 4. This tray may be formed from a simple blank, as will be clearly obvious. Preferably, each side of the tray is of angle cross section so that a flat inwardly-extending flange 22 is provided on each side of the frame. The corners of the frame may be secured and strengthened by means of adhesive corner pieces 23 or the like.

The frame is preferably of such size and shape that it engages the peripheral portion of the body 5 of the tray, as shown in Fig. 1. The frame may merely be set in the box, in proper position, beneath the display tray, or it may be affixed to and made part of either the base of the box proper, the display tray, or other part thereof. Since considerable pressure is sometimes exerted on the tray in placing articles in and removing the same from the tray, the reinforcing frame is an important feature as it maintains the shape of the tray and enables the tray to withstand the pressure without collapsing or weakening. Of course, if the tray is formed of sufficiently rigid material, the frame may be eliminated.

The box cover or lid is preferably of composite form and comprises, in addition to the member 11 and cover 19, an inner member 24 seated or nested within member 11 and a cushion-like member 25 interposed between members 11 and 24. The inner member 24 serves to reinforce the lid and also adds to its appearance. This member comprises a rectangular body 26 defined by lines of bend 27, from which rectangular walls 28 extend. The walls 28 engage the outer walls of member 11. The reinforcing member 24 may be formed from a simple blank bent to the desired shape.

As illustrated herein, the reinforcing member 25, merely comprises a sheet of corrugated cardboard. Such material serves very nicely for this purpose, but it will be understood any material or method may be used to accomplish the desired purpose of strengthening and supporting the upper or outer member of the lid or tray. This member is merely placed between the other members, as illustrated. It serves not only to strengthen the lid, but if and when needed, may be provided to impart resilience to the same.

In making either of the box parts herein described, any suitable method may be employed. The parts may be made, formed, reinforced, and/or covered by hand, or they may be made wholly or in part by suitable machines. In any case, the blank illustrated in Fig. 2 may be bent or creased about suitable forms or mold members. The flexible cover, if used, may be applied to the box members in a manner in which such covers are commonly applied to box parts. While the box parts herein contemplated will usually be rectangular in form, it will be understood that they are not limited to such shape.

From the above description, it will be seen that the invention provides a simple and practical box structure which is capable of different uses and which presents a pleasing appearance. The invention is not limited to the box parts illustrated and described herein for the purpose of disclosure, but is applicable wherever suitable. Although preferred forms of the structure have been illustrated and described, it will be understood that various changes and modifications are possible without departing from the spirit and scope of the invention.

We claim:

1. A paper box member formed from a single blank of paper having rectangular notches at each corner and a diagonal slit extending inwardly of the blank from the inner corner of each of said notches, said box member comprising a body portion defined by lines of bend extending from the inner ends of the said diagonal slits, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges defined by the said diagonal slits in abutting relation, the outer edges of said wall members being defined by lines of bend extending from the inner corners of the said rectangular notches, and a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their adjacent edges defined by the said rectangular notches in abutting relation.

2. A paper lid or cover for a paper box, comprising a member having a body portion defined by lines of bend, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges in abutting relation, the outer edges of said wall members being defined by lines of bend, a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their adjacent edges in abutting relation, and a reinforcing member having a body portion defined by lines of bend, and a plurality of rectangular wall members integral respectively with said last-mentioned body portion at its respective lines of bend and extending substan-

tially at right angles to said body portion, said reinforcing member being seated or nested in said first-mentioned member with the rectangular walls of said members in engagement.

3. A paper lid or cover for a paper box, comprising a member having a body portion defined by lines of bend, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges in abutting relation, the outer edges of said wall members being defined by lines of bend, a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their adjacent edges in abutting relation, a reinforcing member having a body portion defined by lines of bend, a plurality of rectangular wall members integral respectively with said last-mentioned body portion at its respective lines of bend, said reinforcing member being seated or nested in said first-mentioned member with the rectangular walls of said members in engagement, and a cushion-like insert member interposed between the body portions of said members.

4. A paper lid or cover for a paper box, comprising a member having a body portion defined by lines of bend, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges in abutting relation, the outer edges of said wall members being defined by lines of bend, a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their adjacent edges in abutting relation, and a reinforcing member having a body portion defined by lines of bend, a plurality of rectangular wall members integral respectively with said last-mentioned body portion at its respective lines of bend and extending substantially at right angles to said body portion, said reinforcing member being seated or nested in said first-mentioned member with the rectangular walls of said members in engagement, a cushion-like insert member interposed between the body portions of said members, and a flexible cover member adhesively applied to the nested members serving to secure them together.

5. In a display box, a paper tray formed from a single blank of paper having rectangular notches at each corner and a diagonal slit extending inwardly of the blank from the inner corner of each of said notches, said tray being seated in said box and having receptacles for articles, said tray comprising a body portion defined by lines of bend extending from the inner ends of the said diagonal slits, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges defined by the said diagonal slits in abutting relation, the outer edges of said wall members being defined by lines of bend extending from the inner corners of the said rectangular notches, and a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their outer surfaces in engagement with the box walls and with their adjacent edges defined by the said rectangular notches in abutting relation.

6. In a display box, a paper tray seated in said box and having receptacles for articles, said tray comprising a body portion defined by lines of bend, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges in abutting relation, the outer edges of said wall members being defined by lines of bend, a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their outer surfaces in engagement with the box walls and with their adjacent edges in abutting relation, and a frame seated in said box beneath said tray and engaging the peripheral portion of the body of the tray.

7. A paper display platform or tray formed from a single blank of paper having rectangular notches at each corner and a diagonal slit extending inwardly of the blank from the inner corner of each of said notches, said platform or tray comprising a body portion defined by lines of bend extending from the inner ends of said diagonal slits, a plurality of trapezoidal wall members integral respectively with said body portion at the respective lines of bend and extending obliquely from said body portion at substantially the same angle with their adjacent oblique edges defined by the said diagonal slits in abutting relation, the outer edges of said wall members being defined by lines of bend extending from the inner corners of said rectangular notches, a plurality of rectangular wall members integral respectively with said oblique members at the respective last-mentioned lines of bend and extending substantially at right angles to said body portion with their adjacent edges defined by the said rectangular notches in abutting relation, and a supporting frame beneath said body portion.

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