Aug. 21, 1934. J. ROSENBERG 1,970,918

COLLAPSIBLE BOX

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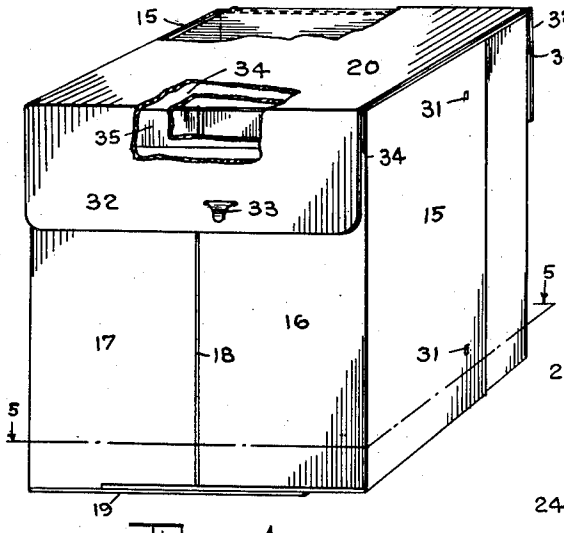


Fig-1

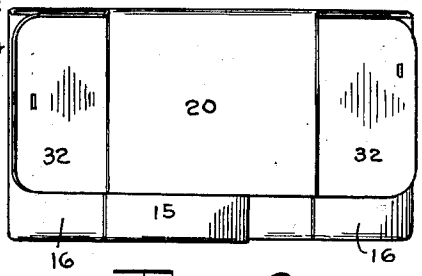


Fig-2

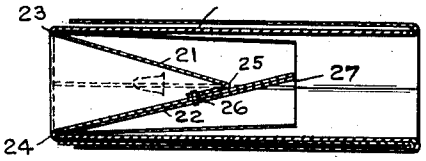


Fig-4

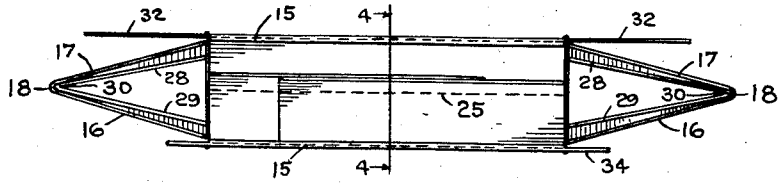


Fig-3

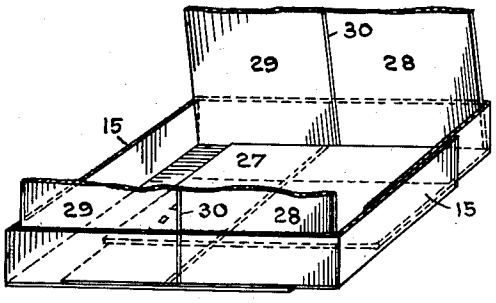


Fig-5

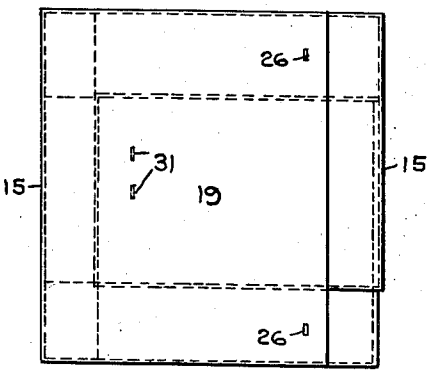


Fig-6

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COLLAPSIBLE BOX

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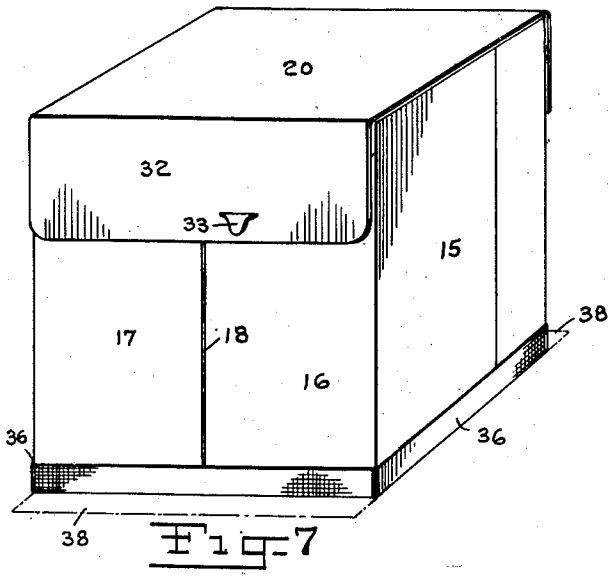


Fig. 7

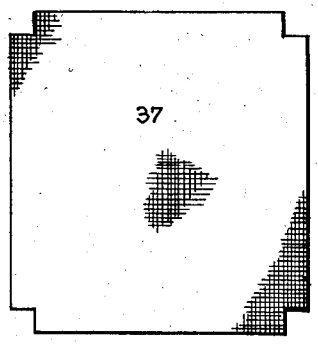


Fig. 8

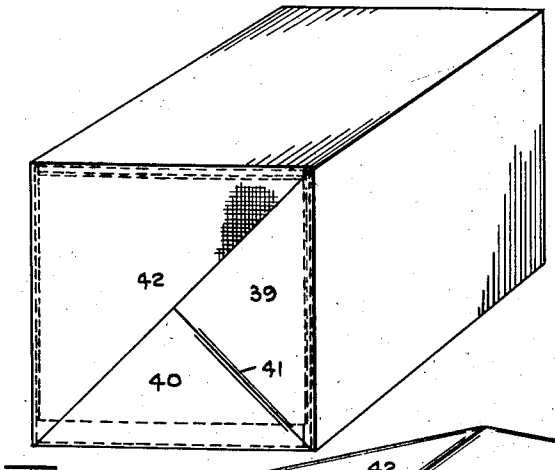


Fig. 9

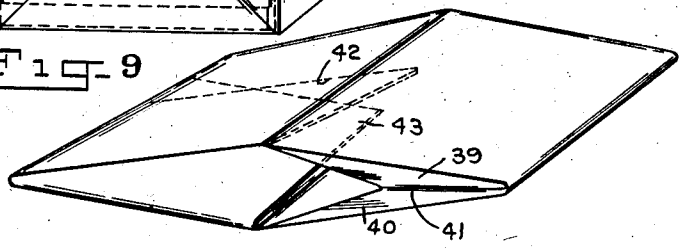


Fig. 10

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UNITED STATES PATENT OFFICE

1,970,918

COLLAPSIBLE BOX

Jacob Rosenberg, Brooklyn, N. Y.

Application August 16, 1933, Serial No. 685,342

2 Claims. (Cl. 229—41)

My present invention relates to collapsible boxes, preferably formed of a light foldable material such as cardboard or pasteboard; although, other resilient materials may be employed with equal facility; and has for its principal object the construction of a box of this character which, when assembled for use, is both rigid and strong.

A further object is to provide a collapsible box which, when folded, takes up relatively little space, and furthermore, can be readily assembled when required.

The novel details in the construction and arrangement of the several parts of the box will be apparent from the detailed description, hereinafter given, in connection with the accompanying drawings, forming part hereof, and wherein the embodiment of the invention is clearly illustrated.

Referring to the drawings:—

Fig. 1 is a perspective view of a box constructed in accordance with the present invention, a portion of the box being broken away in order to illustrate the interior structure of the same.

Fig. 2 is a perspective view, reduced in size, showing the box in a folded position.

Fig. 3 is a plan view of the box partially opened, and with the cover unfolded.

Fig. 4 is a sectional view taken on line 4—4, Fig. 3.

Fig. 5 is a sectional view taken on line 5—5, Fig. 1.

Fig. 6 is a plan view of the bottom of the box.

Fig. 7 is a perspective view showing a modification of the invention.

Fig. 8 is a detail view of the bottom of the box shown in the embodiment of the invention illustrated in Fig. 7.

Fig. 9 is a perspective view of a further modification of the invention showing the bottom of the box, when the same is in an unfolded position, and

Fig. 10 is a perspective view of the box, shown in Fig. 9, when in a partially folded position.

Referring to the drawings and particularly to Figs. 1 to 6, inclusive, the box, made in accordance with the present invention is preferably cubic in form, as shown in Fig. 1, although it is apparent that other geometrical shapes may be equally adapted to fulfill the inventive conception, herein, described. The box, as shown, is constructed of cardboard or other relatively stiff and pliable material. The body of the box includes, in part, four side walls, the front and rear walls being indicated at 15, the remaining side walls being divided into two sections, 16 and 17 at the scoring line 18, along which the same may be folded. The box also has a foldable bottom portion as indicated at 19 and a top portion 20. In constructing the bottom portion of the box, I utilize the extending flaps 21 and 22, which are adapted to fold interiorly of the box, and which extend below the scoring lines 23 and 24, through which the same are connected to the respective front and rear side portions 15. The flap 21 is scored to be foldable along the line 25. The two interiorly extending flaps are suitably connected as shown at 26, Fig. 4. It will also be noted, that the bottom flap 22 extends further than the scoring line 25, at which point the parts fold so that the portion of the flap 22 indicated at 27 rests upon the top of the flap 21 when the box is in an open position, and thereby prevents the bottom from being placed at any portion other than perpendicular to the side wall of the box. (Refer to Fig. 5.)

The side portions 16 and 17 also include interior flap portions 28 and 29, which extend from the base of the same and are adapted to be folded across the bottom of the box to stiffen and maintain the same in an open position. The flap sections 28 and 29 are separated by the scoring line 30 which permits the same to fold exteriorly of the box with the folding sections 16 and 17.

By folding the flap portions 28 and 29 across the bottom of the box, the edges of the foldable side sections 16—17 are squared, thereby assuring that the box is firmly erected and also affording additional strength on the bottom of the box when it is necessary. The overlapping sections of cardboard at the front and bottom of the box are suitably joined, as indicated at 31 in the drawings.

The cover portion 20 of the box is constructed of a piece of material, extending from the rear wall 15, which is foldable, to take a position over the top of the same. The cover has side flaps 32 which may be secured to the side portions 16—17 of the box through means of tabs, or otherwise, as indicated in the drawings at 33. The front portion of the box 15 also has an extension 34 which is adapted to be folded to a position under the cover 20. The side flaps of the under cover 34 are indicated at 35. With the cover in place the upper portion of the foldable walls 16 and 17 are firmly maintained in alignment. The scoring lines, heretofore designated, form hinge joints, along which the material of which the box is made may be readily folded.

Referring particularly to Figs. 7 and 8, a modification of the box is illustrated, in which I employ a flexible bottom, of a material such as

linen, which is secured by gluing, or otherwise, the same upon the front and rear sections 15, as indicated at 36. The other sides of the flexible bottom, which is designated at 37, Fig. 8, are left free, so that the box may be folded, as indicated at 38. When the box is in an open position ready for use the free sides of the bottom 37 are folded against the box sides 16—17 and firmly secured thereto by preferably gluing the same. In this form of the invention, the flexible bottom takes the place of the interiorly folding flaps 21 and 22 shown in the first form, so that the last-mentioned part may be eliminated entirely, or, if a very strong five-ply bottom is required, the same may be disconnected, and folded across the bottom of the box at right angles to the foldable flaps 28—29.

With reference to Figs. 9 and 10, the inwardly foldable bottom portion is constructed of material from adjacent sides, of the box, as indicated at 39 and 40, which are joined and adapted to fold along line 41. The foldable bottom in this form of the invention extends diagonally from one corner of the box to the other, and takes up only one-half the area. The rest of the bottom is constructed of the downwardly foldable interior flaps 42 and 43, which assume a position above the bottom and maintain the box in a rigid and secure manner when open. If desired, the open position of the bottom of the box, when folded, may be constructed in the same way as the closed half portion; in which instance, a separate piece of cardboard may be employed at the bottom to give the same sufficient rigidity, and maintain it in an open position. Also, in this form of the invention, a linen bottom, as described in connection with Figs. 7 and 8, may be employed to form the bottom, in which event, the side extensions, now forming the flexible bottom, may be separated and used as extra cross flaps in the bottom of the box thereby obtaining a four-ply box thickness at the base of the same.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A box of the character described, comprising a body portion having a bottom and four sides, opposite sides of the box having scoring lines to permit the same to fold in an outwardly direction, the bottom portion comprising two lower flap sections extending from the nonfolding sides of the box, said sections being joined and one of the same being scored to fold inwardly, the other section extending beyond the line of fold of the two pieces, so that the same abut when the box is open to maintain the bottom perpendicular to the sides, said foldable side portions including interior flaps arranged for folding across the bottom to secure the box in an open position.

2. A box of the character described, comprising a body portion having a bottom and four sides, opposite sides of the box having scoring lines to permit the same to fold in an outwardly direction, the bottom portion comprising two lower flap sections extending from the nonfolding sides of the box, said sections being joined and one of the same being scored to fold inwardly, the other section extending beyond the line of fold of the two pieces, so that the same abut when the box is open to maintain the bottom perpendicular to the sides, and means associated with the foldable side portions for securing the box in an open position.

JACOB ROSENBERG.