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C. C. MILLER

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FOLDING BOX

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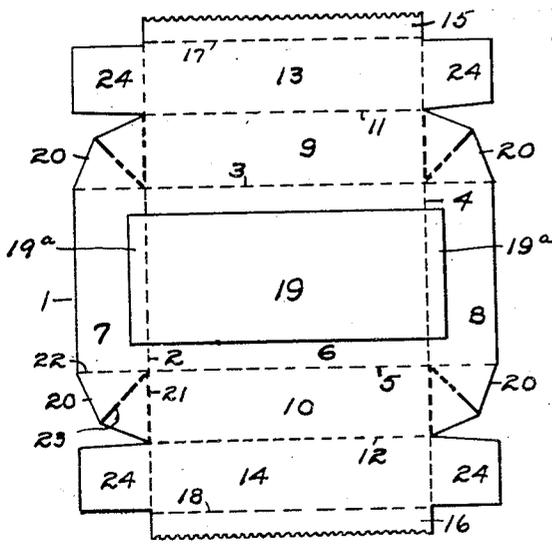


Fig. 1.

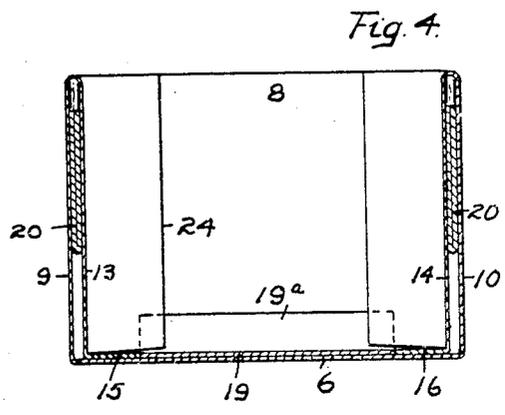


Fig. 4.

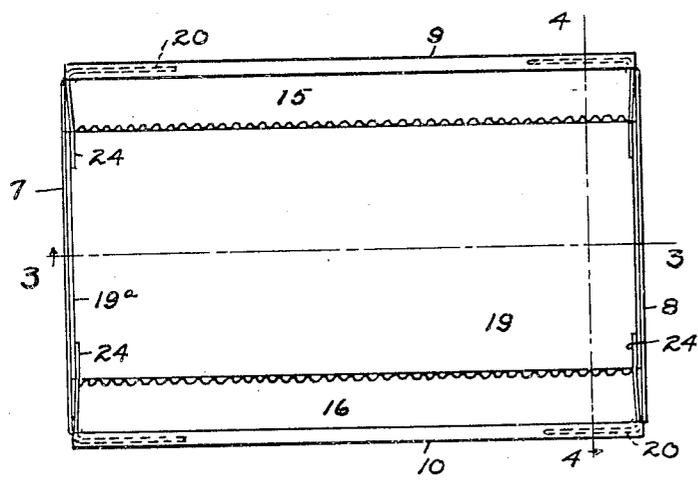


Fig. 2.

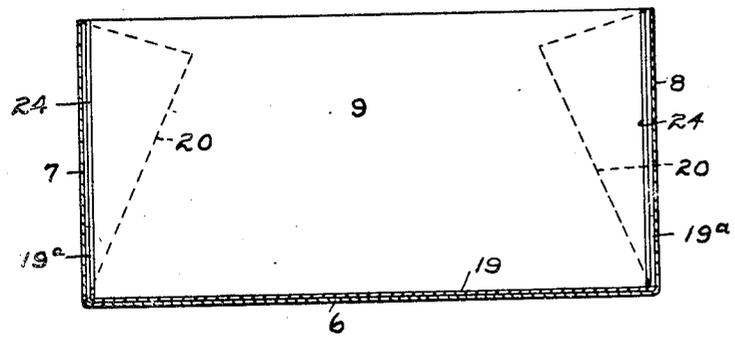


Fig. 3.

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## FOLDING BOX

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The invention relates to folding boxes and particularly to paper board boxes adapted to withstand rough handling, such as in the shipment of goods by freight or express.

The object of my invention is to provide a paper board folding box that is readily set up and which is provided with novel reinforcements to give a maximum strength to the box.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a plan view of the blank which, when set up, forms the box; Fig. 2 a plan view of the box in set-up condition; Fig. 3 a cross-section on line 3—3 of Fig. 2; Fig. 4 a cross-section on line 4—4 of Fig. 2.

In the illustrative embodiment of the invention the blank 1 is formed from a sheet of suitable paper board and is scored along the broken lines 2, 3, 4 and 5 to form the bottom section 6 and the side sections 7, 8, 9 and 10, the scorings forming fold lines for the side sections. Two opposite side sections, as 9 and 10, are extended and scored at 11, 12 to form two flaps 13, 14 which are adapted to fold inwardly and downwardly on the scorings 11, 12 when the sections 9, 10 are erect. Further extensions 15, 16 are formed on the flaps 13, 14 and defined by the scorings 17, 18, the outer edge of each extension preferably being serrated and adapted to engage the bottom section and the opposite edges of a reinforcing section 19 that is secured to the bottom section. This engagement of the extensions 15, 16 with the bottom section and with the reinforcement 19 lock the side walls in upright position. I find that by applying a minimum amount of glue to the bottom section, preferably in laterally separated relatively narrow streaks, and pressing the section 19 onto said streaks of glue that the said section 19, as thus attached to the bottom section, increases the strength of said bottom section much more than if the entire surface of the section 19 were secured to said bottom.

The corner sections 20 are defined by the scorings 21, 22, the scorings 21 between the sections 20 and the side sections 9 and 10 being such that the fold lines formed thereby are weaker than the scorings 22. Each corner

section is diagonally scored at 23, a portion of each scoring consisting of perforations in the material. The weakened scorings 21 and 23 cause the corner sections to collapse and fold against the side sections 9 and 10 when the latter sections are elevated to set up the box.

Each side section 9, 10 is extended at opposite ends to form the flaps 24 which, when the box is set up, fold inwardly against the adjacent side walls 7, 8 respectively. These flaps reinforce and stiffen the corners of the box.

Extensions 19<sup>a</sup> are formed on the reinforcing section 19 and abut the side walls 7, 8, to reinforce the latter walls along their junction lines with the section 6.

The top or cover portion of the box is similar to the bottom portion except that it is slightly larger than the bottom so that the two portions will telescope. If the box is square the top portion will be so placed on the bottom portion that its flaps 13, 14 abut the side walls 7, 8 of said bottom portion and thereby secure three thicknesses of material at each side of the box. When the box is rectangular in form the flaps 13, 14, the locking extensions 15, 16 and the flaps 24 thereon are formed on two opposite side sections of the bottom portion, such as sections 9, 10, and on the top portion said parts will be formed on the end walls 7, 8 thereof, the reinforcing flaps 19<sup>a</sup> being adapted to abut the remaining opposite side walls of the top portion, whereby to secure three thicknesses of material on all sides of the box when closed.

It is thus seen that I have provided an exceptionally strong and rigid paper board box that will withstand a maximum of abuse in handling. When collapsed the two box portions occupy a minimum of space and it requires very little effort to set them up when required for use.

What I claim is:

1. A flat, unfolded blank for folding boxes including a body portion, wall-forming portions at the sides of the body portion and defined by weakened fold lines, collapsible corner members defined from adjacent wall-

- forming portions by weakened fold lines, flap sections extending from the free edges of two opposite wall-forming portions and defined therefrom by weakened fold lines, flaps extending from the longitudinal free edges of the flap sections and defined therefrom by weakened fold lines and adapted to engage the body portion when folded, the free longitudinal edge of each latter flap being serrated, a reinforcing member on the body portion adapted to be engaged at two opposite edges by said serrated edges and flap extensions extending from the remaining opposite edges of the reinforcing member and adapted to engage the adjacent wall-forming portion and the fold line thereof. 70
2. A flat, unfolded blank for folding boxes including a body portion, wall-forming portions at the sides of the body portion and defined by weakened fold lines, collapsible corner members defined from adjacent wall-forming portions by weakened fold lines, flap sections extending from the free edges of two opposite wall-forming portions and defined therefrom by weakened fold lines, flaps extending from the opposite free end edges of the flaps and defined therefrom by weakened fold lines, flaps extending from the longitudinal free edges of the flap sections and defined therefrom by weakened fold lines and adapted to engage the body portion when folded, the free longitudinal edge of each latter flap being serrated, a reinforcing member on the body portion adapted to be engaged at two opposite edges by said serrated edges and flap extensions extending from the remaining opposite edges of the reinforcing member and adapted to engage the adjacent wall-forming portions and the fold line thereof. 80
3. In a box of the class described having a body portion and side walls thereon, corner members connecting adjacent side walls and collapsed inwardly against two opposite side walls, a reinforcing member on the body portion, flap extensions on the latter side walls folded over the collapsed corner members and having extensions engaging the body portion and two opposite edges of the reinforcing member, the reinforcing member having flaps at its remaining opposite edges engaging the remaining opposite side walls and reinforcing the same and the fold lines thereof. 85
4. In a box of the class described having a body portion and side walls thereon, corner members connecting adjacent side walls and collapsed inwardly against two opposite side walls, a reinforcing member on the body portion, flap extensions on the latter side walls folded over the collapsed corner members and having extensions engaging the body portion and two opposite edges of the reinforcing member, the reinforcing member having flaps at its remaining opposite edges engaging the remaining opposite side walls and reinforcing the same and the fold lines thereof. 90
- gaging the remaining opposite side walls, and extensions extending from the opposite ends of the flap extensions on two opposite side walls and folded inwardly to reinforce the remaining side walls and the fold lines thereof. 95
- In witness whereof I have hereunto signed my name. 100
- CHARLES C. MILLER. 105
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