

Feb. 15, 1944.

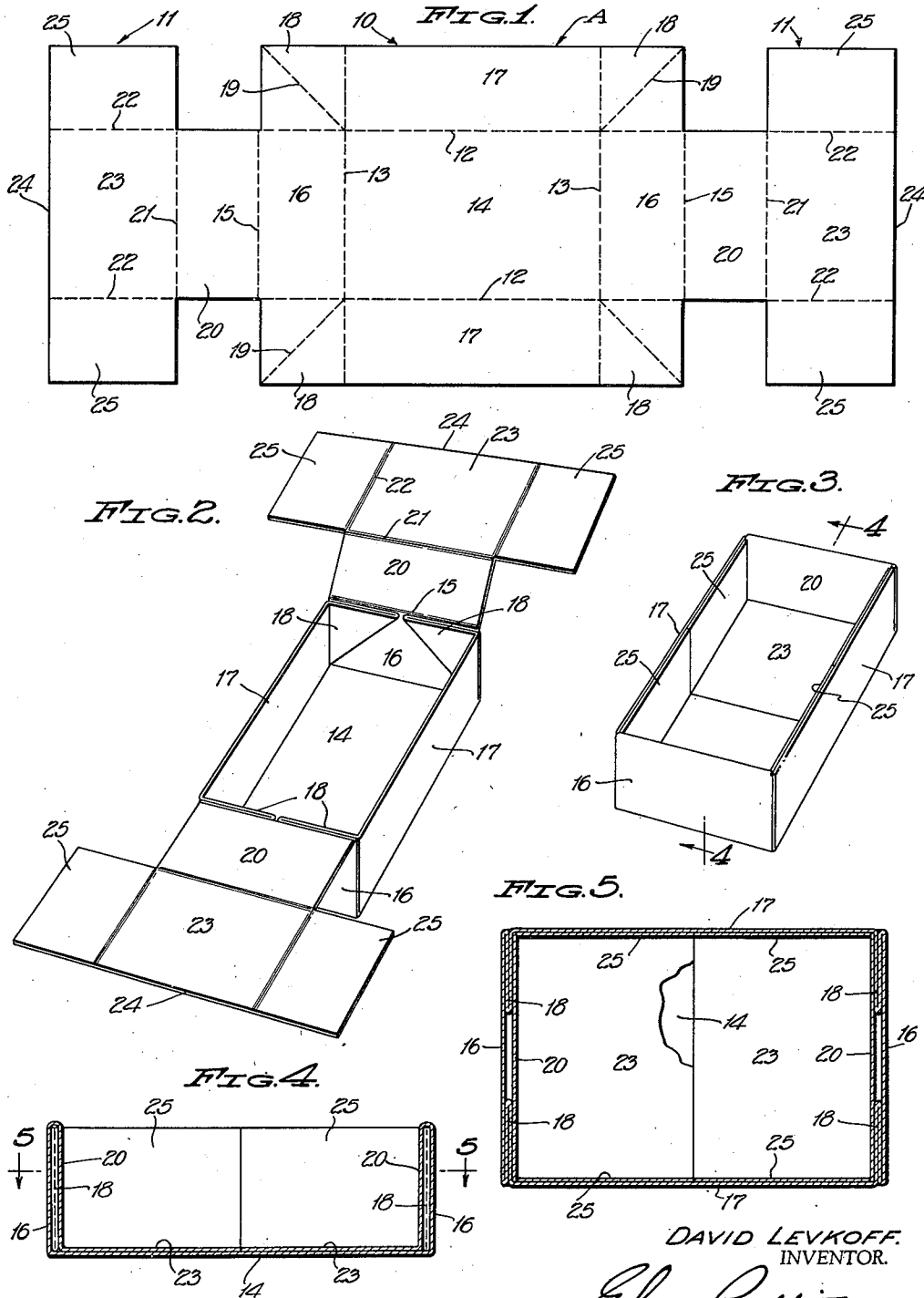
D. LEVKOFF

2,341,928

DOUBLE WALL FOLDING BOX

Filed April 10, 1941

2 Sheets-Sheet 1



WITNESS:  
*E. Newton Lusk*  
1944

BY

*Ely & Patterson*

ATTORNEYS.

DAVID LEVKOFF.  
INVENTOR.

Feb. 15, 1944.

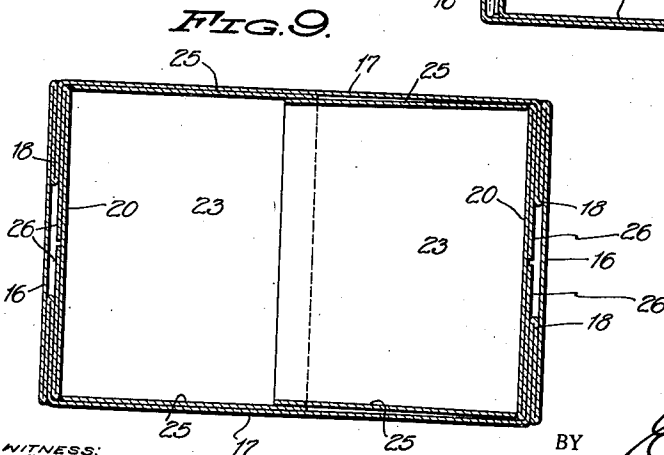
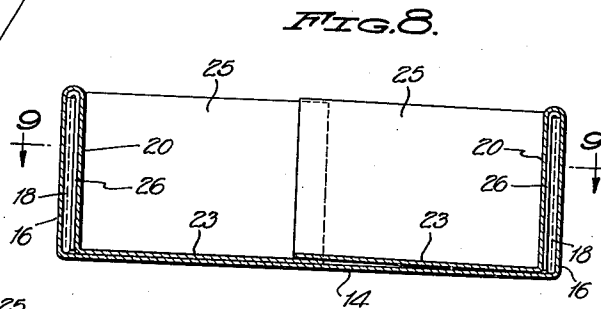
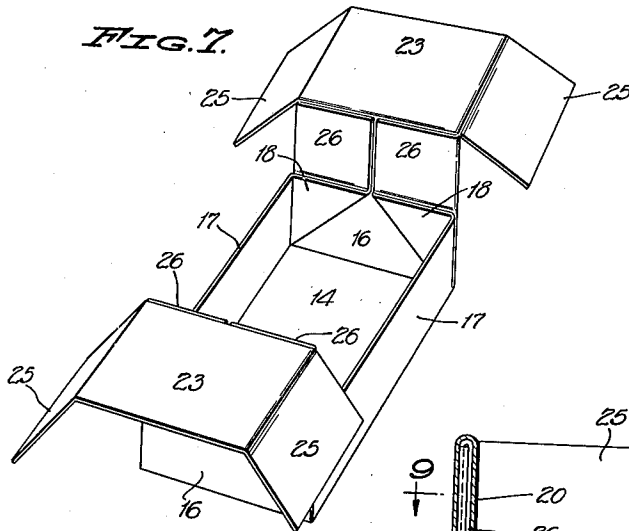
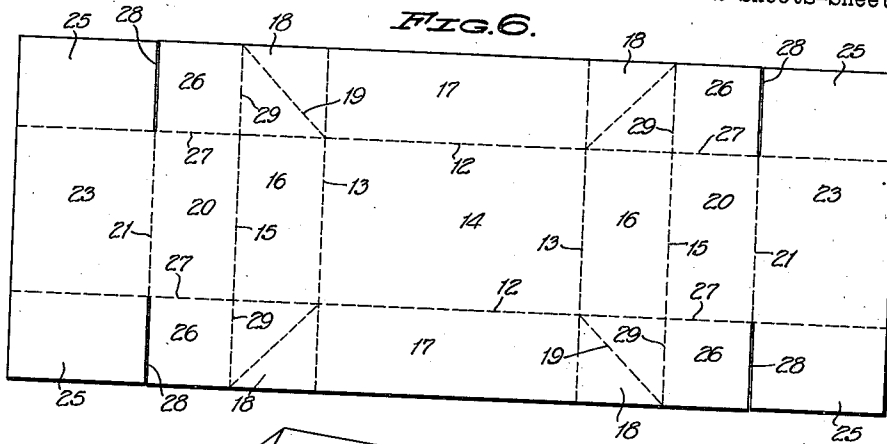
D. LEVKOFF

2,341,928

DOUBLE WALL FOLDING BOX

Filed April 10, 1941

2 Sheets-Sheet 2



WITNESS:  
*[Signature]*

BY

DAVID LEVKOFF  
INVENTOR.

*Ely & Pattison*

ATTORNEYS.

## UNITED STATES PATENT OFFICE

2,341,928

## DOUBLE WALL FOLDING BOX

David Levkoff, Brooklyn, N. Y.

Application April 10, 1941, Serial No. 387,788

1 Claim. (Cl. 229—34)

This invention relates to improvements in paper boxes, and more specifically to a folding double wall box.

The primary object of the invention resides in a rectangular folding paper box constructed from a single blank of cardboard which is cut and scored in a novel manner to provide inner and outer bottom, side, and end walls when the blank is folded into box set up position for use.

Another feature of the invention is to provide a double wall folding box in which the outer wall structure is formed from integrally connected portions of the blank, while the inner wall structure is formed from separate sections of the blank which are folded inwardly from opposed end walls and coact with the outer box structure to reinforce and lock the same in folded set up position.

A further feature of the invention is to construct a rectangular double wall folding box requiring a minimum amount of cardboard material in the cutting of the blank from which the box is constructed.

A still further feature of the invention is the provision of a rectangular double wall box in which a supply of boxes may be compactly shipped and stored until used while the blank is in flat unfolded position, the blank being easily and rapidly folded to set up position by the hands of an operator, as and when use of the box is desired.

Other novel features of the invention will become apparent as the following specification is read in conjunction with the accompanying drawings, in which:

Figure 1 is a plan view of the scored cardboard blank from which the rectangular shaped box is constructed.

Figure 2 is a perspective view illustrating the blank in partially folded position with the outer wall structure erected and the inner wall structure about to be folded thereinto.

Figure 3 is a perspective view of the box in complete set up position for use.

Figure 4 is a vertical longitudinal section on the line 4—4 of Figure 3.

Figure 5 is a horizontal sectional view on the line 5—5 of Figure 4.

Figure 6 is a plan view of the blank of a slight modification of the invention.

Figure 7 is a perspective view of the box blank shown in Figure 6 in a partially folded position with the outer wall structure completely erected and the inner wall structure partially folded, for subsequent folding into the erected outer wall structure.

Figure 8 is a vertical longitudinal sectional view through the modified form of box when in completely folded set up position.

Figure 9 is a horizontal sectional view on the line 9—9 of Figure 8.

Referring to the drawings by reference characters, and at present to Figure 1 of the drawings, the letter A designates the blank of cardboard or other like foldable material from which my folding double wall box is constructed. Broadly, the blank A consists of a central outer box wall structure 10 and inner box wall structure sections 11—11 from which the inner walls are constructed.

The outer box wall structure 10 of the blank is scored on the longitudinal parallel lines 12—12, the distance between these lines constituting the width of the box. The outer wall structure 10 of the blank is scored transversely on the spaced parallel score lines 13—13, and the distance therebetween constitutes the length of the box. The score lines 12—12 and 13—13 define an outer bottom wall panel 14 which is rectangular in configuration. The blank is further scored transversely on the parallel score lines 15—15 which are disposed beyond the score lines 13—13 to provide rectangular shaped outer end wall panels 16—16, the ends of the panels 16 terminating at the score lines 12—12. Bounded by the score lines 12—12, the longitudinal side edges of the blank, and the transverse score lines 13—13, are rectangular outer side wall panels 17—17. Connecting the ends of the outer end wall panels 16—16 with the outer side wall panels 17—17 are corner webs 18, there being four corner webs 18, one at each corner of the outer wall structure 10 of the blank. Each corner web 18 is scored on a diagonal score line 19 of substantially forty-five degrees, the said score lines extending from the corners of the bottom wall panel 14 to the opposite corner edges of the blank. The description of the outer wall structure 10 is in itself not new, but in combination with the inner wall structure sections 11—11, produces a foldable box having double bottom, side, and end walls, and a specific description of the inner wall structures will now be described.

Each inner wall structure section 11 includes a rectangular inner end wall panel 20 which is bounded by a score line 15, a parallel transverse score line 21, and opposite side edges of the blank, the said side edges being disposed in alignment with the score lines 12—12. The rectangular inner wall panel 20 is of a width equal to the width of the outer end wall panel 16 and when the

boxes are erected, the inner end wall panel is of a height equal substantially to the height of the panel 16. Bounded by the transverse score line 21 and spaced right angular score line 22—22 which are in alignment with the longitudinal score lines 12—12 is an inner bottom wall panel section 23, the edge of the panel section 23 opposite that edge defined by the score line 21 being a free edge 24. The width and length of the inner bottom wall panel section 23 is one-half or substantially one-half of the length and width of the outer bottom wall panel 14. Hinged to the inner bottom wall panel section 23 along the score lines 22—22 are rectangular shaped inner side wall panel sections 25—25. When the blank is erected, each inner side wall panel section 25 is of a height equal to the outer side wall panel 17 and of a length substantially one-half of the length of an outer side wall panel 17.

To fold the blank A to box set up position, the operator first folds the outer side wall panels 17—17 upwardly on the score lines 12—12, thence by grasping opposite ends of the blank with both hands, it is folded upwardly on the score lines 13—13, and this folding operation causes the triangular shaped web sections of the corner webs 18 to fold inwardly against the outer end wall panels 16—16 as best illustrated in Figure 2 of the drawings. The outer box wall structure is now in an erected position, and the operator proceeds to simultaneously fold the inner end wall panels 20—20 inwardly against the folded corner webs 18, whereupon the inner bottom wall sections 23 fit against and overlap substantially the entire area of the outer bottom wall panel 14, and likewise, the inner side wall panel sections 25—25 fit against the corresponding outer side wall panels 17—17 and extend substantially the length of the outer side panels. The box is now in the position shown in Figure 3, and the free edges 24—24 and the free edges of the inner side wall panel sections 25—25 are in abutting relation, thus completing the set up of the box. The inwardly folded inner end wall panels 20—20 prevent accidental unfolding of the folded corner webs 18 and by reason of the abutting engagement of the free edges of the inner wall structures 11—11, the box is prevented from accidentally unfolding.

In Figures 6 to 9 inclusive, I have illustrated a slightly modified form of the invention in which the construction is substantially identical to that of the form of the invention illustrated in Figures 1 to 5 inclusive, with the exception that the ends of the inner end wall panels 20—20 have intermediate end wall panel sections 26—26 integral therewith and hingedly connected along score lines 27—27 which are in alignment with the longitudinal score lines 12—12. Each intermediate end wall panel section 26 is separated from its adjacent inner side wall panel section 25 by a slit 28, however, each intermediate end wall panel section 26 is integrally connected to an adjacent corner web 18 by a score line 29 co-extensive with the fold lines 15—15. When the blank shown in Figure 6 is folded to set up position, the intermediate end wall panel sections 26—26 fold inwardly and lie against the inner

end wall panels 20—20 as best illustrated in Figure 7 of the drawings. Thus it will be seen that when the inner end wall panel sections 20—20 are folded inwardly, the intermediate end wall panel sections 26—26 lie against the infolded corner webs 18 as illustrated in Figures 8 and 9.

Also, in this form of blank, the length of the inner bottom wall panel sections 23—23 and the inner side wall panel sections 25—25 are of a combined length slightly greater than the length of the bottom wall panel 14 and side wall panels 17—17 respectively, so that the free edges of the wall panels of the outer wall structure sections 11—11 slightly overlap as illustrated in Figures 8 and 9. If desired, the lapping edges may be provided with interlocking elements to prevent any accidental unfolding when the box is in set up position.

From the foregoing description, it will be seen that I have constructed a folding double wall box in which the blank from which the box is constructed is cut without loss of stock, for the blanks are cut into rectangular shape, although the panel wall sections 26, shown in the modified form may be removed as illustrated in the form of blank shown in Figure 1.

While I have shown and described what I consider to be the most practical embodiment of my invention, I wish it to be understood that such changes in structure, proportion, and design may be resorted to if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

35 A folding double wall rectangular box comprising a single blank of cardboard including an outer wall structure having a bottom wall, opposed end walls, opposed side walls, and infolded corner webs integrally connecting the end walls and side walls; an inner wall structure composed of two inner wall forming sections respectively connected along fold lines to the outer end walls, each inner wall section including an inner end wall, an inner bottom wall section connected to the inner end wall section along a hinge fold, 40 opposed inner side wall sections hingedly connected to the respective opposite sides of the inner bottom wall section, the combined areas of the inner bottom wall sections being substantially equal to the area of the outer bottom wall, and the combined areas of the corresponding side wall sections being substantially equal to the areas of the respective side walls, whereby infolding of the inner wall structure into the outer wall structure by infolding the inner end wall sections to a position parallel to the respective 45 outer end walls will cause the inner bottom and side walls to fit against the outer bottom wall and outer side walls respectively and provide corresponding inner reinforcing walls therefor and hold the folded box in set up position, and intermediate end wall panel sections connected to the ends of the inner end walls and to the adjacent corner webs along hinge scores, said intermediate end wall panel sections being folded inwardly against the inner sides of the inner end walls to lie against the infolded corner webs.

DAVID LEVKOFF.