

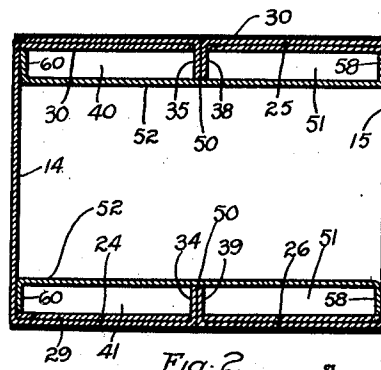
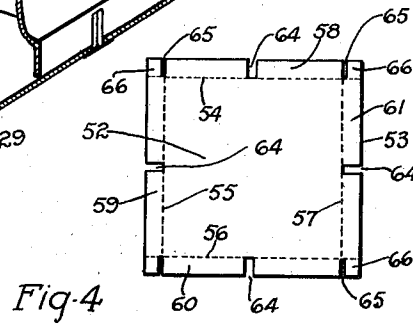
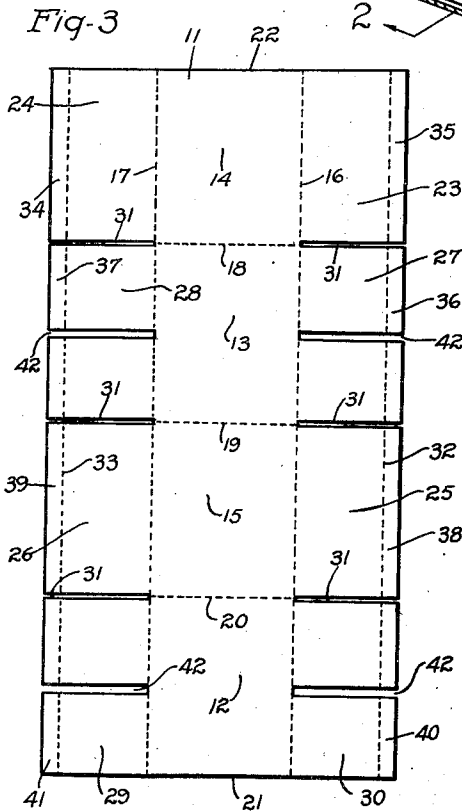
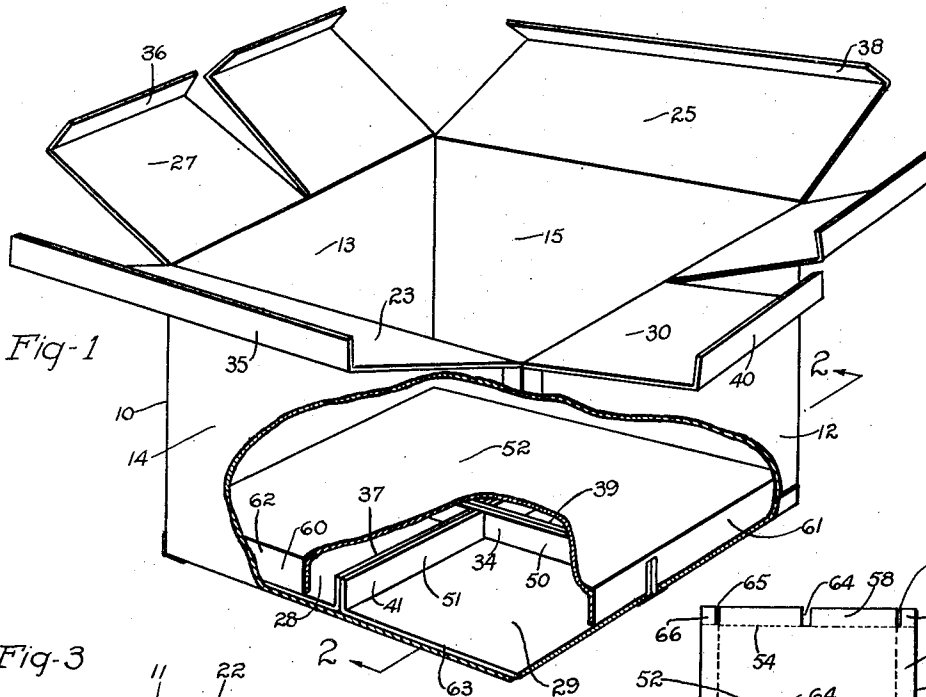
Sept. 5, 1933.

P. F. BOEYE

1,925,298

BOX

Original Filed Feb. 18, 1929



Inventor

Paul F. Boeye

by Alex. Lagaard

Attorney

UNITED STATES PATENT OFFICE

1,925,298

Box

Paul F. Boeye, St. Paul, Minn., assignor to Wal-
dorf Paper Products Company, St. Paul, Minn.,
a corporation of Minnesota

Application February 18, 1929, Serial No. 340,697
Renewed July 24, 1933

1 Claim. (Cl. 229—14)

My invention relates to paper boxes and has for its object to provide a paper box having a reinforced bottom therein.

Another object of the invention resides in providing a box having sides and in providing flaps on said sides adapted to be bent inwardly to form a bottom and to further provide a false bottom superimposing said bottom.

A still further object of the invention resides in providing struts between said bottom and false bottom and in attaching some of said struts to the bottom and other of said struts to said false bottom.

Another object of the invention resides in forming said struts by bending portions of said bottom and false bottom outwardly at right angles thereto.

A feature of the invention resides in disposing the struts on said bottom in different relative positions with respect to the struts on said false bottom.

Another object of the invention resides in forming the struts on the bottom of the box by bending the marginal portions of the meeting edges of said flaps at right angles to said flaps, and in positioning said edges adjacent one another so as to cause the same to engage one another and hold the strut in erect position.

A still further object of the invention resides in bending the marginal portions of said false bottom to form the struts thereon, and in making the size of said false bottom such as to cause said struts to engage the sides of the box to be held in erect position by engagement therewith.

A feature of the invention resides in constructing the box so that the same, together with the false bottom, may be readily collapsed and packed in a flat state.

Other objects of the invention reside in the details of construction thereof and in the novel combination and arrangement of parts hereinafter illustrated or described.

In the drawing:

Fig. 1 is a perspective view of a box illustrating an embodiment of my invention with a portion of the sides thereof cut away to show the interior construction of the box.

Fig. 2 is an elevational sectional view illustrating the box in closed position and taken along line 2—2 of Fig. 1.

Fig. 3 is a developed view of the blank from which the box proper is made.

Fig. 4 is a developed view of the blank from which the false bottom is made.

For the purpose of illustrating my invention, I

have shown a box comprising a body portion 10 which is constructed from a blank 11 formed of a single sheet of material such as is indicated in Fig. 3. The body 10 comprises end walls 12 and 13 and side walls 14 and 15 which are formed by scoring the blank 11 along two longitudinal lines 16 and 17 and along three transverse lines 18, 19 and 20. The box is constructed by folding the blank along the score marks 18, 19 and 20 and bringing the edges 21 and 22 together at a corner of the box. These edges may be secured together as by gluing a reinforcing strip along the corner of the box or by metal clips, or by gluing the overlapping portions of the flaps together, or in any other suitable manner.

A number of flaps 23, 24, 25 and 26 extend outwardly from the edges of the sides 14 and 15 of the box, while similar flaps 27, 28, 29 and 30 extend outwardly from the edges of the ends 12 and 13 of the box. These flaps are formed by severing the stock of the blank 11 along lines 31 which are in alignment with the score marks 18, 19 and 20 and which extend from the edge of the stock up to the score marks 16 and 17. These various flaps are adapted to be folded inwardly at right angles to the side and end walls of the box to provide top and bottom closures therefor.

Adjacent the outer edges of the blank 11, I provide two score marks 32 and 33 which extend completely across all of the flaps and form short tabs 34, 35, 36, 37, 38, 39, 40 and 41 at the ends of the flaps. These tabs are adapted to be bent at right angles to the respective flaps on which they are attached and when said flaps are arranged to close the box, said tabs extend inwardly into the box to provide struts which I have indicated in their entirety in Fig. 1 at 50 and 51. In the construction of the box, the length of the flaps 27, 28, 29 and 30 is equal to one-half the length of the side walls 14 and 15 so that when these flaps are folded into closed position, the tabs 36 and 41 on flaps 27 and 30 meet one another in the center of the box, and similarly the tabs 37 and 41 of flaps 28 and 29 meet one another in the center of the box. Due to the engagement of the respective flaps with one another, as illustrated, the said flaps are held in erect position to form the struts 50.

Along the center of each of the flaps 27, 28, 29 and 30 is formed a slot 42 which extends from the edge of the blank up to the respective score marks 16 or 17. When the various flaps 27, 28, 29 and 30 are folded into closing position, the slots extend in continuous formation across the partial closure formed by said flaps. The flaps 23, 24, 25

and 26 are made of a length equal to one-half the length of the end walls 12 and 13 of the box so that when the same are folded into closing position, the tabs 34, 35, 38 and 39 lie adjacent to one another along the meeting edges of said flaps and are adapted to be received within the slots 42 extending across the flaps 27, 28, 29 and 30 so as to extend into the interior of the box proper and form additional struts 51 which intersect the struts 50, as best shown in Fig. 1. These struts are similarly held in erect position through the engagement of the component tabs thereof with one another.

In conjunction with the bottom structure of the box, I employ a false bottom 52 which is constructed from a blank 53 shown in detail in Fig. 4. This blank is scored along lines 54, 55, 56 and 57 near the edges of the blank to provide marginal tabs 58, 59, 60 and 61 of a height equal to the height of the struts 50 and 51. These tabs are adapted to be bent at right angles to the plane of the false bottom 52 to provide struts 62 issuing outwardly from the false bottom at the edges thereof. The false bottom 52 is preferably of such a size as to fit snugly within the box so that the various tabs 58, 59, 60 and 61 thereof engage the walls 12, 13, 14 and 15 of the box, and are held in erect position through engagement therewith.

In the use of the device, the false bottom 52 is inserted into the box proper and in inverted relation with respect to the bottom 63 thereof. For the reception of the ends of the struts 50 and 51, notches 64 are cut in the various tabs 58, 59, 60 and 61 which receive the said strut ends and serve to assist in holding the same in erect position. At the corners of the blank 53 are cut notches, designated at 65, which form ears 66. These ears are bent at right angles along the score marks 54 and 55 and are folded back into the plane of the adjoining tabs to reinforce the struts attached to the false bottom.

When the false bottom 52 has been installed within the box, the various corners of the box and the seams situated between the flaps forming the struts 50, may be sealed by means of any suitable adhesive tape. When so constructed, a box with a suitably reinforced bottom is

provided, capable of sustaining an appreciable weight. It will be noted that the struts formed on the false bottom are disposed at relatively different position to the struts formed on the bottom proper so that sufficient reinforcement is provided throughout the entire area of the bottom so as to effectively withstand the weight placed upon the same.

In the drawing, I have illustrated only the bottom and top of the box as constructed in accordance with my invention to reinforce the same, though it can readily be comprehended that other walls of the box structure can be similarly constructed if desired, and where I have used the terms bottom and false bottom, these terms refer to any of the walls of the box structure. Likewise, in the drawing, the box shown is of square formation though boxes of rectangular form in which the sides are not of the same length may be equally as well constructed embodying the principles of my invention.

My invention is highly advantageous in that it provides a simple and effective reinforcing structure for paper boxes whereby an appreciable weight may be placed upon the bottom of the box. The removal of the substance from the corners of the box serves to reduce the breakage of the box where the strain upon the same is the greatest. The box can be constructed at a nominal cost and from stock material by machinery ordinarily available for the manufacture of paper boxes. The box may be collapsed and packed in a compact state for shipment and storage when not desired for use.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

A box comprising a bottom, struts integral with said bottom and issuing inwardly therefrom, a false bottom superimposing said bottom, struts integral with said false bottom and extending toward said bottom, all of said respective bottom and false bottom struts intersecting one another.

PAUL F. BOEYE.

50

125

55

130

60

135

65

140

70

145

75

150