

Oct. 1, 1940.

P. A. SCHILLING

2,216,299

BOX

Filed Oct. 15, 1938

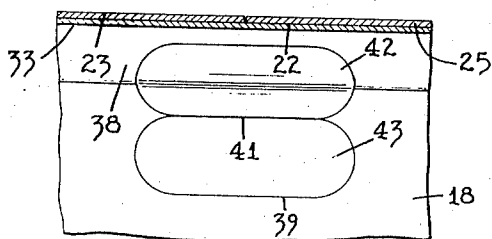
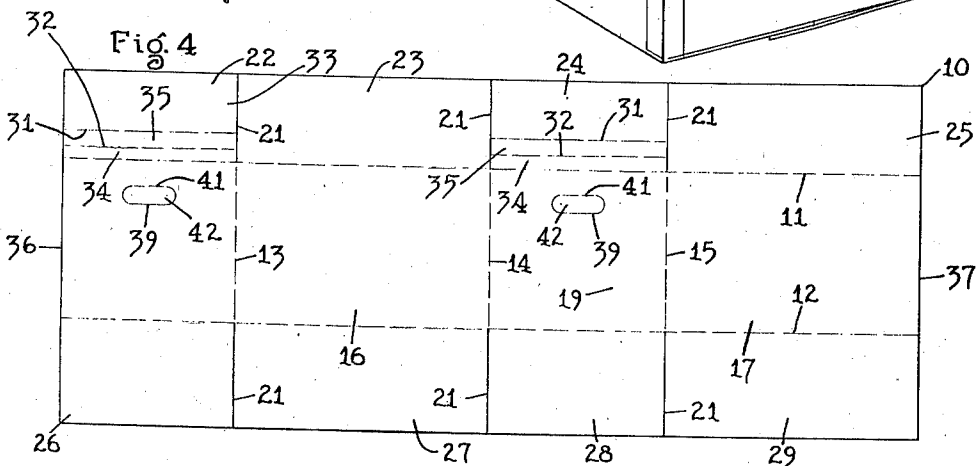
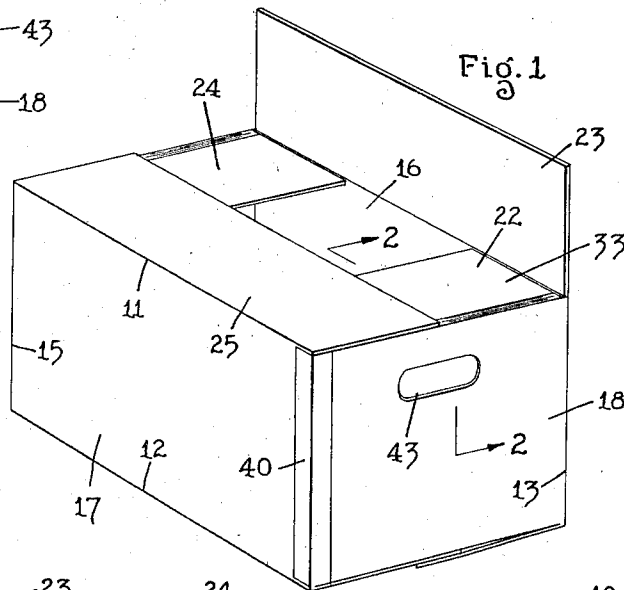
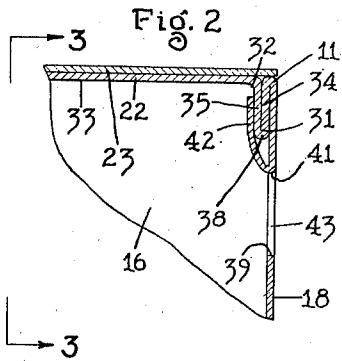


Fig. 3

Inventor

Paul A. Schilling

By *Carroll & Lagaard*

Attorneys

UNITED STATES PATENT OFFICE

2,216,299

BOX

Paul A. Schilling, St. Paul, Minn., assignor to
Waldorf Paper Products Company, St. Paul,
Minn., a corporation of Minnesota

Application October 15, 1938, Serial No. 235,189

4 Claims. (Cl. 229—37)

My invention relates to boxes and has for an object to provide a box capable of sustaining relatively great weight.

5 An object of the invention resides in constructing the box with hand holes through which the fingers may be inserted in handling the box and in providing reinforcing means associated with the box above the hand holes for transmitting the load of the box to the hands.

10 Another object of the invention resides in constructing the box with lateral walls and with one or more flaps issuing from the upper edges of the lateral walls and adapted to be folded into overlying position to provide a closure for the box and in forming one or more of the flaps with flanges depending therefrom and adapted to lie along the inner surfaces of the walls from which the flaps issue.

15 Another object of the invention resides in providing hand holes in the walls along which the flanges lie and in arranging said hand holes immediately below said flanges so as to permit of the grasping of the flanges in the handling of the box.

20 Another object of the invention resides in constructing the box of paper and in forming the flanges by doubling back portions of the blank from which the box is constructed adjacent the lateral walls of the box to form flanges of double thickness adapted to lie along the inner surfaces of the walls from which the flaps issue.

25 A still further object of the invention resides in forming the hand holes by striking tabs out of the walls of the box, said tabs being hingedly connected to the walls from which the same are formed, said tabs being adapted to be bent into the interior of the box and to overlap the flanges issuing from the flaps connected to said walls.

30 A feature of the invention resides in constructing the blank from which the box is formed with extensions extending from the upper ends of the walls to be reinforced and in constructing each extension with spaced parallel scores forming two elongated portions adapted to be folded in overlying position to form a flange of double thickness on each extension.

35 Another object of the invention resides in scoring each tab at its union with the wall from which it is constructed along a line parallel with the flange connected to said wall and immediately below the same.

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

In the drawing:

Fig. 1 is a perspective view of the box illustrating an embodiment of my invention.

Fig. 2 is a sectional detail view taken on line 2—2 of Fig. 1 and drawn to a larger scale.

Fig. 3 is an elevational sectional detail view taken on line 3—3 of Fig. 2.

Fig. 4 is a developed view of the blank from which the box in Fig. 1 is constructed.

In the handling of rather heavy articles, such as beer bottles and the like, considerable strain is exerted upon the portions of the box gripped by the person handling the same. The present invention provides a box which can be readily handled and in which the load is so distributed as to reduce the strains and stresses on the various parts of the box.

For the production of my invention I use a blank 10 constructed of paper board of suitable characteristics and thickness. This board may be what is ordinarily termed fibre board or a corrugated or any other suitable paper product may be used. The blank 10 is rectangular in form and is provided with two spaced longitudinally extending scores 11 and 12 which extend throughout the length of the blank. In addition, a number of transverse scores 13, 14 and 15 are provided which extend between the scores 11 and 12. The various scores divide the blank into lateral walls including side walls 16 and 17 and end walls 18 and 19. The marginal portions of the blank, outwardly of the scores 11 and 12, are sheared along lines 21 which divide the said marginal portions of the blank into extensions 22, 23, 24 and 25 extending from the upper edges of the lateral walls of the box and with similar extensions 26, 27, 28 and 29 extending from the lower edges of the lateral walls. The extensions 22 and 24 are further formed with spaced parallel scores 31 and 32 which divide the extensions 22 and 24 into flaps 33 and narrow elongated portions 34 and 35 between the scores 31, 32 and 11 and disposed adjacent the upper edges of the walls 18 and 19. Shortly below the score 11 the two end walls 18 and 19 are cut along lines 39 and scored along lines 41 parallel to the score 11. By means of these cuts and scores, tabs 42 are struck out of the said walls, which tabs may be formed inwardly into the interior of the box to form hand holes 43. The tabs 42 are of such dimensions and the position of the score 41 is such that the upper edge of the tab 42 when folded upon the interior of the box, extends to within a distance of the score

11 less than the width of the elongated portions 34 and 35.

In the construction of the box, the two edges 36 and 37 of the blank 10 are joined together with a suitable strip of fabric or some other suitable material indicated at 46. When the box is to be erected, the box is shifted into rectangular form and the extensions 26, 27, 28 and 29, which serve as flaps, are folded inwardly and glued together, forming a bottom for the box. Thereafter the extensions 22 and 24 are folded along the scores 11, 32 and 31 to cause the portions 34 and 35 to lie adjacent one another and to extend inwardly into the box from the flap 33. The two portions 34 and 35 form a flange which, I have indicated by the reference numeral 38 in Figs. 2 and 3 and which issues inwardly into the box and lies along the inner surface of the walls 18 and 19. After the box has been filled, the flaps 22 and 24 and the extensions 23 and 25, which also serve as flaps, are folded inwardly and the parts glued together. If desired, glue may be placed between the two elongated portions 34 and 35 and the portion 34 also glued to the inner surface of the wall from which it issues. Score 31 forms a hinge for the flap 33 and the particular wall with which it is connected when the flange 38 is glued to wall 18, while either score 31 or 11 may serve as a hinge when flange 38 is free from said wall. The various flaps, upon being folded into overlying position, are glued together and the box becomes closed. In the handling of the box, the tabs 42 are forced inwardly by the fingers and the fingers directed upwardly to swing the tabs into position to overlie the flanges 38. This forms hand holds by means of which the box may be lifted. The box may then be handled in the customary manner and the fingers held against the said tabs to cause the same to occupy the desired positions. While so disposed, the flanges 38 are held adjacent the walls from which they issue and serve to reinforce the said walls and to transmit the stresses from the load to the fingers of the user.

My invention is highly advantageous in that an extremely simple and practical construction is provided whereby boxes for use in holding relatively heavy articles may be constructed entirely from paper. With my invention, suitable reinforcing means are provided at the hand holes so that breakage of the box is prevented and the stresses at the weaker portion of the box greatly reduced. My invention can be constructed with ordinary machinery now available for the construction of the boxes and without appreciable additional expense.

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:

1. A box comprising lateral walls and a bottom connected therewith, a closure flap extending outwardly from the upper end of one of said lateral walls, said flap having a flange projecting therefrom and when the closure flap is in closing position being adapted to extend downwardly into the box in juxtaposition with respect to the lateral wall from which said flap issues, and a tab on said denoted lateral wall adapted to overlie said flange.

2. A box comprising lateral walls and a bottom connected therewith, closure flaps extending from two opposite walls of the box, said closure flaps having flanges projecting therefrom and adapted to overlie the inner surface of said walls when the flaps are in closing position, and tabs issuing inwardly from said walls and overlying said flanges.

3. A box constructed of paper and comprising lateral walls and a bottom connected therewith, a closure flap having a hinge connection to one of said lateral walls the material from which said flap is constructed being doubled back to form a flange of double thickness at said hinge connection adapted to overlie said denoted wall upon the interior thereof, and a tab struck out of said denoted wall and adapted to overlie said flange and to form a hand hold, said flange aiding in distributing the load from the bottom to said hand hold.

4. A box constructed of paper and comprising lateral walls and a bottom connected therewith, an extension formed on the upper end of one of said walls, said extension being formed with a score extending along the upper edge of said wall and with two other scores parallel therewith and spaced apart to form two transversely extending elongated portions of equal width and a flap therebeyond, said extension being folded along said scores to cause said elongated portions of the extension to lie in juxtaposition and form a flange of double thickness issuing from said flap at the first-named score and adapted to overlie the inner surface of said wall, and a tab struck out of said denoted wall at a locality below said flange and connected to said wall by a score parallel with the upper edge of said wall, and situated immediately below said flange, said tab being adapted to be folded inwardly into the box in a position overlying said flange.

PAUL A. SCHILLING.