May 20, 1952 C. CASKEY 2,597,289

PAPER BOX

Filed July 26, 1948 2 SHEETS—SHEET 1

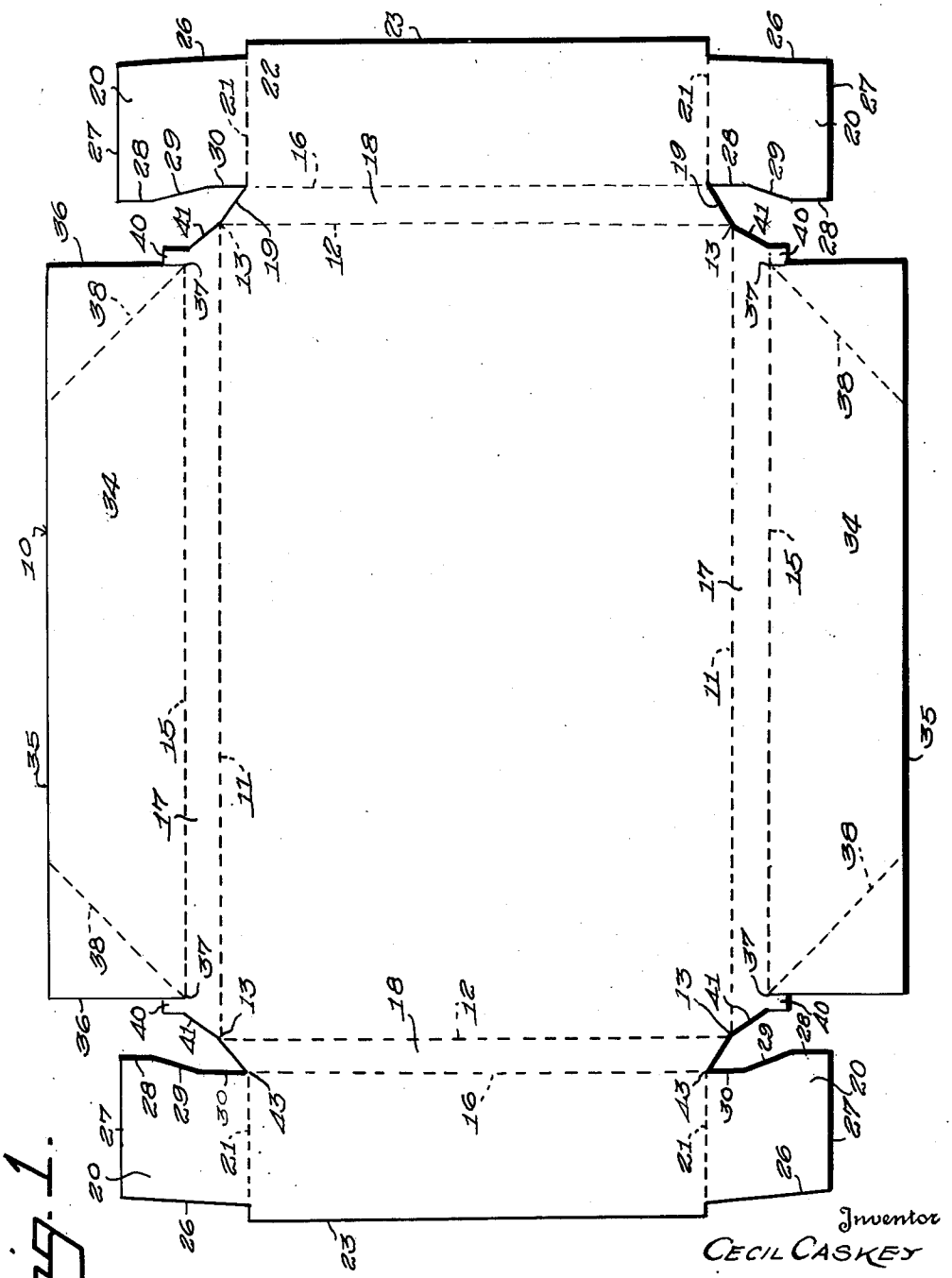


Fig. 1.

Inventor
CECIL CASKEY

By Parker and Walsh.
Attorneys

May 20, 1952 C. CASKEY 2,597,289

PAPER BOX

Filed July 26, 1948 2 SHEETS—SHEET 2

Fig. 2.

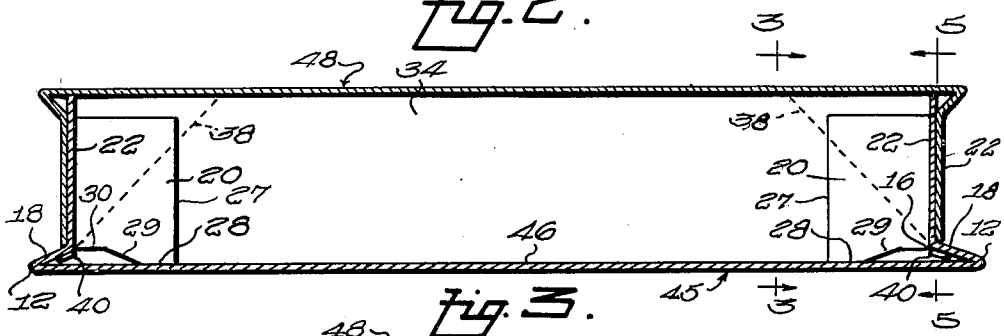


Fig. 3.

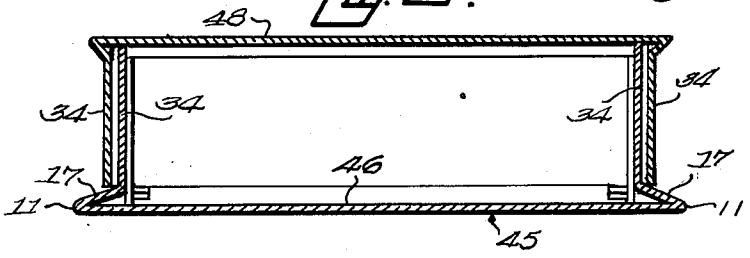


Fig. 4.

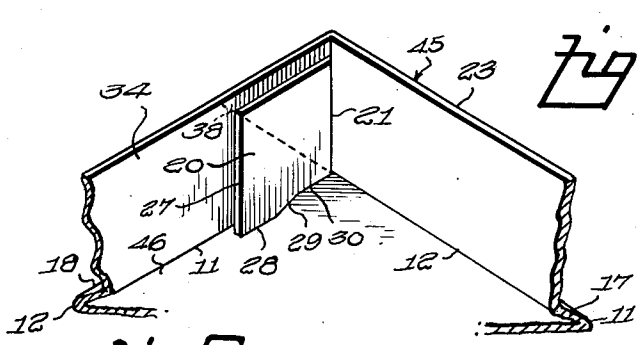
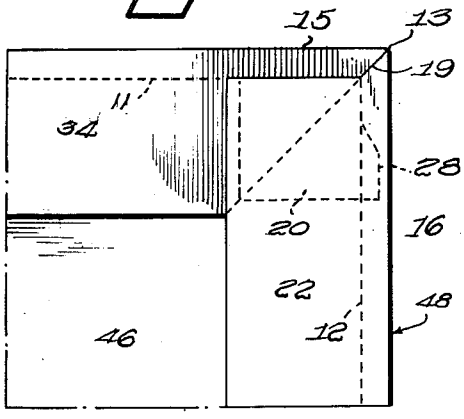


Fig. 6.



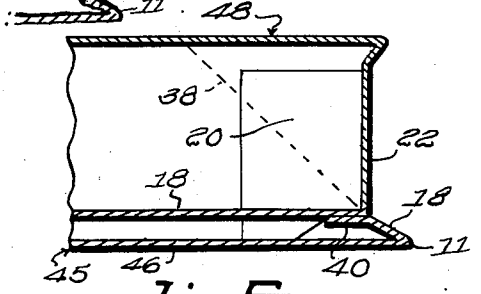


Fig. 5.

Inventor
CECIL CASKEY

By Parker and Walsh.

Attorneys

Patented May 20, 1952

2,597,289

UNITED STATES PATENT OFFICE

2,597,289

PAPER BOX

Cecil Caskey, Mingo Junction, Ohio

Application July 26, 1948, Serial No. 40,740

4 Claims. (Cl. 229—32)

1

This invention relates to folding containers and blanks therefor.

It has been the practice for many years to form pasteboard and similar boxes as containers for candy and other articles and commodities, wherein a blank is formed and secured together in a predetermined manner, whereupon the box is folded flat for shipment. When filling the boxes, the folds are opened up to form a rectangular container, the lids frequently being folded to slide into position over the bottom of the box. It also has been the common practice to form boxes for candy and the like wherein the top and bottom walls extend beyond the side walls to form horizontal outstanding flanges. These flanges improve the appearance of the box but since they are flat and formed of material usually having little bending strength, the flanges are frequently bent and broken.

An important object of the present invention is to provide a novel box of the character referred to and a blank therefor whereby a box is provided which may be folded flat and readily opened for use and wherein outstanding flanges are provided at the top and bottom of the box formed of substantially V-section to streamline and improve the appearance of the box and to impart substantial beam strength to the flanges to minimize injury thereof in handling the box.

A further object is to provide such a device wherein one of the elements of each of the top and bottom sections is provided with flat elements which prevent the collapsing of the V-section flanges, thus tending to maintain them in normal shape.

A further object is to provide such a box wherein the blank includes a small tab lying adjacent each corner of the finished box and adapted to bridge across the gap between the V-flanges at each corner of the box to prevent the formation of a gap therebetween.

A further object is to provide a blank for a box or box cover wherein all of the elements of the finished box are included in a unitary sheet of material which is cut, marked and scored so as to facilitate the initial forming of the box for shipment in folded condition and wherein it is merely necessary to perform the simple function of pulling outwardly and upwardly on the ends and side walls of the box and cover to place the elements in final assembled condition with the top and bottom V-flanges in proper shape and with the supporting elements therefor arranged in proper positions.

Other objects and advantages of this invention will become apparent during the course of the following description.

2

In the drawings, I have shown one embodiment of the invention. In this showing,

Figure 1 is a face view of the blank for the box,

Figure 2 is a vertical longitudinal sectional view through the assembled box and cover therefor,

Figure 3 is a transverse sectional view on line 3—3 of Figure 2,

Figure 4 is a fragmentary perspective view of one corner portion of the bottom of the box,

Figure 5 is a detailed sectional view on line 5—5 of Figure 2, and

Figure 6 is a fragmentary plan view of one corner of the box or cover showing the positions of the parts when folded for shipment.

Referring to Figure 1, the numeral 10 designates the blank as a whole from which the body of the box and the cover therefor are made, it being understood that the only difference between the blank for the box and cover will be in the matter of size to permit one to telescope within the other. Similar parts of the body and cover of the box accordingly are indicated by the same reference numerals.

The blank 10 is scored longitudinally along parallel lines 11 and transversely along parallel lines 12 meeting at the points 13. As will become apparent, the scored lines 11 and 12 will be the remote extremities of the top of the cover and the bottom of the body of the box. On opposite sides, the blank is scored along lines 15 parallel to the scored lines 11, and the end portions of the blank are scored along lines 16, parallel to the lines 12. The spaces 17 between the lines 11 and 15 and the spaces 18 between the lines 12 and 16 form portions of the outstanding flanges of the finished box as referred to below.

At each end of each line 16, the blank is cut angularly as at 19 along a line extending to the adjacent point 13. A flap 20 is formed at each end of the area outwardly of each scored line 16 and the material of the blank is scored as at 21 to form the inner boundary of each flap 20 and divide it relative to the adjacent wall portion 22, forming one wall of the finished box as described below. The edges 23 of the wall portions 22 define the top edge of the body of the box or the bottom edge of the cover of the box.

Each flap 20 has an edge 26 offset inwardly from the edge 23. Each flap 20 is cut along an outer line 27 perpendicular to the line 26, then

inwardly as at 28 parallel to the line 26, then at an angle as at 29 and inwardly as at 30 to a point substantially coincident with the point 13 and intersecting the adjacent line 19.

The blank is provided outwardly of each line 15 with a wall portion 34 forming a side wall of the box body or the cover therefor as will be apparent. Each wall 34 has an outer edge 35 forming the top edge of a side wall of the box body or the bottom edge of a side wall of the box cover. Each wall portion 34 is cut at each end along a line 36 spaced from and parallel to the line 28 of the flap 20 and terminates at a point 37 at the adjacent extremity of the associated scored line 15. Each wall portion 34, starting from each point 37, is scored as at 38 along a line approximately forty-five degrees to each of the adjacent lines 15 and 36.

Each space 17 at each end thereof is provided with an outwardly extending relatively small flap 40 of substantially rectangular shape and the end of the associated space 17 is cut angularly as at 41 from the base of the associated flap 40 to the adjacent point 13.

In assembling the box or cover, the blank is bent inwardly along the lines 11 and then reversely along the lines 15 as indicated in Figures 2 and 3. The flaps 20 are then folded upwardly as viewed in Figure 1 along the lines 21 to arrange the flaps within the limits of the side walls 34, the latter now being arranged as shown in Figure 3. The blank is now bent inwardly sharply along the two lines 12 and reversely along the lines 16, whereupon the body of the box, indicated as a whole in Figures 2, 3 and 4 by the numeral 45, will assume the shape illustrated in such figures. The rectangular space defined by the lines 11 and 12 will now form the bottom 46 of the box. It will be noted that the bottom 46, bent along the lines 11 and 12, will lie outwardly beyond the side walls 22 and 34, and the spaces 17 will slope upwardly and inwardly to cooperate with the projecting portions of the bottom 46 to form V-flanges as clearly shown in Figures 2 and 3. The box, thus assembled, will form a rectangular container which ordinarily will be folded in the manner to be described. In the assembled box referred to, it will be noted that the bottom edge 28 of each flap 20 will seat against the bottom 46, and these flaps are glued or cemented to the side walls 34.

The parts will now occupy the positions shown in Figures 2, 3 and 4, and the blank forming the top of the box will be similarly folded to form the cover indicated as a whole by the numeral 48.

Referring to Figure 4, the position of one of the scored lines 38 is shown. Particular attention is invited to the fact that each flap 20 is cemented to the associated side wall 34 only within the area of the flap arranged above the portion of the scored line, the portion below the scored line being free from the side wall 34. Thus in initially assembling it for shipping in flat form, the box may be folded by bending the scored line 38 at each corner of the box, whereupon the parts assume the position shown in Figure 6 with the flaps 20 still flat and unbent and with the normally bottom edges 28 thereof arranged in the V-flange formed in the adjacent end of the box.

In assembling the box in the manner referred to, the small flap 40 will occur at each corner of the box and will extend beneath the upper portion 18 of each V-flange to prevent the showing of a gap at the corner of the box. The flap 40 will assume the slightly angular position shown in Figure 2.

From the foregoing, it will be apparent that the box body and top readily may be folded flat for shipment in accordance with common practice, and the folding of the box may be carried out without bending and thus weakening the flaps 20. When the box is to be used, it merely is necessary to pull upwardly and outwardly on the end and side walls to bring them up into vertical positions as shown in Figures 2, 3 and 4, whereupon the flaps 20 will assume their operative positions with the lower edges 28 thereof in contact with the bottom of the box. As previously stated, the top or cover of the box is substantially identical with the body thereof, the principal difference being one of size so as to permit the side wall of the body of the box to telescope within the side walls of the cover. Otherwise, the structures are the same, and the covers may be folded flat in the same manner as the box body for shipment and may be unfolded in the same manner.

The V-flanges of the box body and top present a finished box of improved streamlined appearance and the V-shape of each flange greatly increases its beam strength and renders it substantially more difficult for the flanges to become bent in transit or in handling. It is well known that the flat flanges at the top and bottom of candy and similar boxes are readily bent, these boxes usually being made of cardboard which is of a brittle nature possessing little resistance to bending forces. The flaps 20 serve the double purpose of assemblying the end and side walls of the boxes in the manufacture thereof, and of supporting the side walls relative to the bottom of the box body and top of the cover, thus efficiently preventing the collapsing of the box and the closing of the V-flanges. Accordingly, these flanges are effectively maintained in normal shape.

The use of the small flap 40 is not essential to the other features of the box described. The flaps 40 are desirable, however, since there is a tendency at each corner of the box for a small gap to appear between the top walls 17 and 18 of adjacent V-flanges. The flaps 40 extend across this gap, thus completely closing it if it appears. In this connection, it will be noted that while the side and end walls of the box are held in fixed position with respect to each other by the cementing or gluing of the flaps 20 to the side walls, there is no positive means for limiting movement of the side walls of the box upwardly from the bottom of the box or movement of the side walls of the cover downwardly from the top of the box. Thus there may be some tendency at times, particularly when picking up a filled box by the top flange thereof, for the corners to gap open slightly at the point indicated. These gaps in actual practice are substantially negligible and hardly noticeable, but whatever gaps occur will be bridges by the flaps 40.

I claim:

1. A box comprising a bottom, rectangularly arranged single-thickness side walls, a reinforcing flange at each side of the box formed integral with said bottom and the associated side wall, the portions of each flange connected with the associated side wall and said bottom being of V-section whereby the lower extremity of each side wall is spaced from said bottom, and means for preserving the V-shape of each flange, said

means comprising flaps formed integral with the ends of opposite side walls and extending over and secured to the end portions of the other side walls, said flaps extending below the lower extremities of said other side walls into contact with said bottom wall.

2. A box comprising a unitary sheet of material having a central rectangular area forming a bottom wall and a side area projecting from and integral with each edge of said bottom wall, each such side area being bent along a line spaced from said bottom wall to form a vertical wall and a lower downwardly and outwardly sloping flange portion joining and cooperating with the adjacent edge of said bottom wall to form a V-section flange, and flaps formed integral with the ends of two opposite vertical walls and extending over and secured to the surfaces of the end portions of the other vertical walls, said flaps projecting below the lower extremities of such other vertical walls and contacting with said bottom wall.

3. A blank for a box comprising a unitary sheet having a central rectangular area forming a box bottom defined by scored lines along which the sheet is adapted to be bent, side areas extending outwardly beyond each of said scored lines, each side area being scored along lines parallel to the adjacent of said first-named scored lines to define therewith a flange area, each side area outwardly of said second-named scored line forming wall areas, each of a pair of said side areas having a flap at each end thereof, the inner edges of said flaps extending inwardly beyond the second-named scored line of the associated side areas and being severed from the associated flange area, the sheet being scored at the junction of each such flap with the associated wall area.

4. A blank for a box comprising a unitary sheet

having a central rectangular area forming a box bottom defined by scored lines along which the sheet is adapted to be bent, side areas extending outwardly beyond each of said scored lines, each side area being scored along lines parallel to the adjacent of said first-named scored lines to define therewith a flange area, each side area outwardly of said second-named scored line forming wall areas, each of a pair of said side areas having a flap at each end thereof, the inner elges of said flaps extending inwardly beyond the second-named scored line of the associated side areas and being severed from the associated flange area, the sheet being scored at the junction of each such flap with the associated wall area, the wall area of the other side areas being scored for bending along angular lines extending from the junction of the second-named scored lines with the longitudinal extremities of such wall areas to points on the outer extremity of such wall area spaced from the longitudinal extremities thereof.

CECIL CASKEY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
895,508	Smith	Aug. 11, 1908
914,321	Syner	Mar. 2, 1909
2,334,902	Buttery	Nov. 23, 1943
2,407,431	Madsen	Sept. 10, 1946
2,547,849	Barry	Apr. 3, 1951

FOREIGN PATENTS

Number	Country	Date
476,574	Great Britain	Dec. 8, 1937