

Dec. 10, 1929.

H. B. WALTER

1,738,744

BOX

Filed Nov. 5, 1927

2 Sheets-Sheet 1

Fig. 1

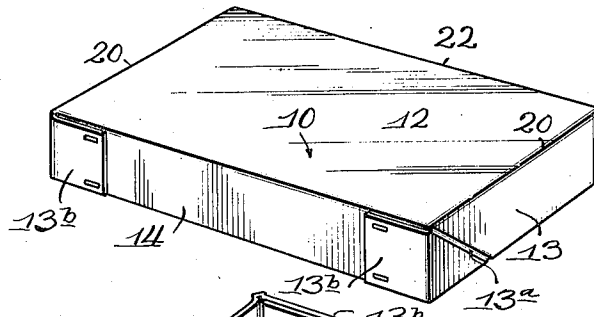


Fig. 2

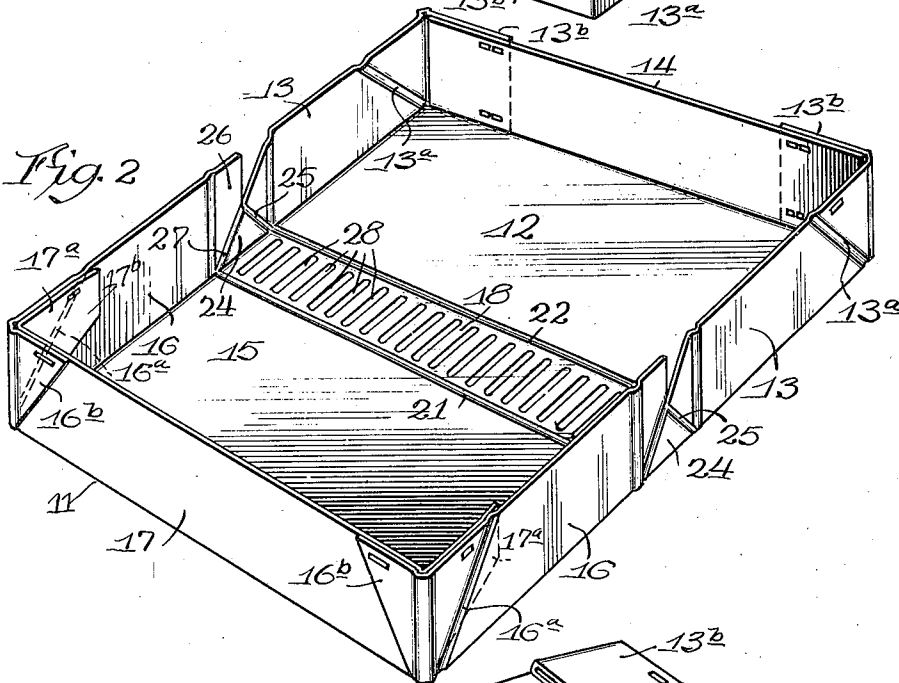
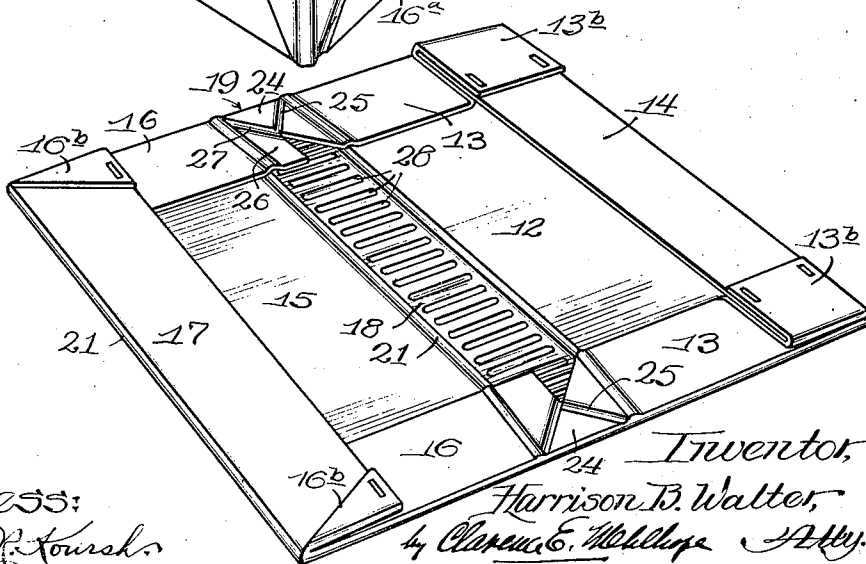


Fig. 3



Witness:
Chas. P. Toursh

Inventor,
Harrison B. Walter,
by Charles E. Hollingsworth, Attorney.

Dec. 10, 1929.

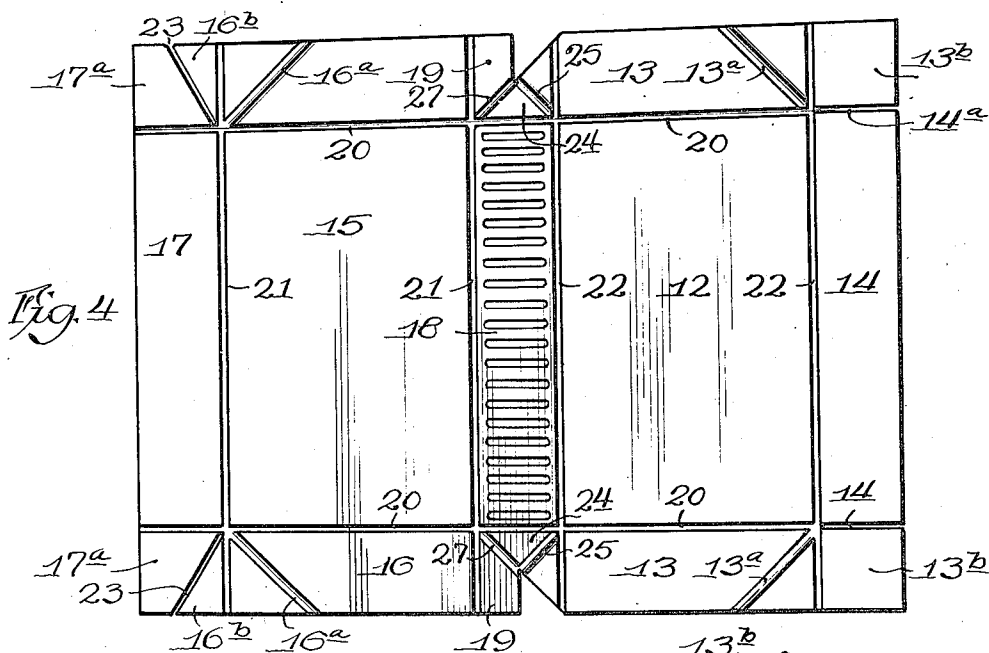
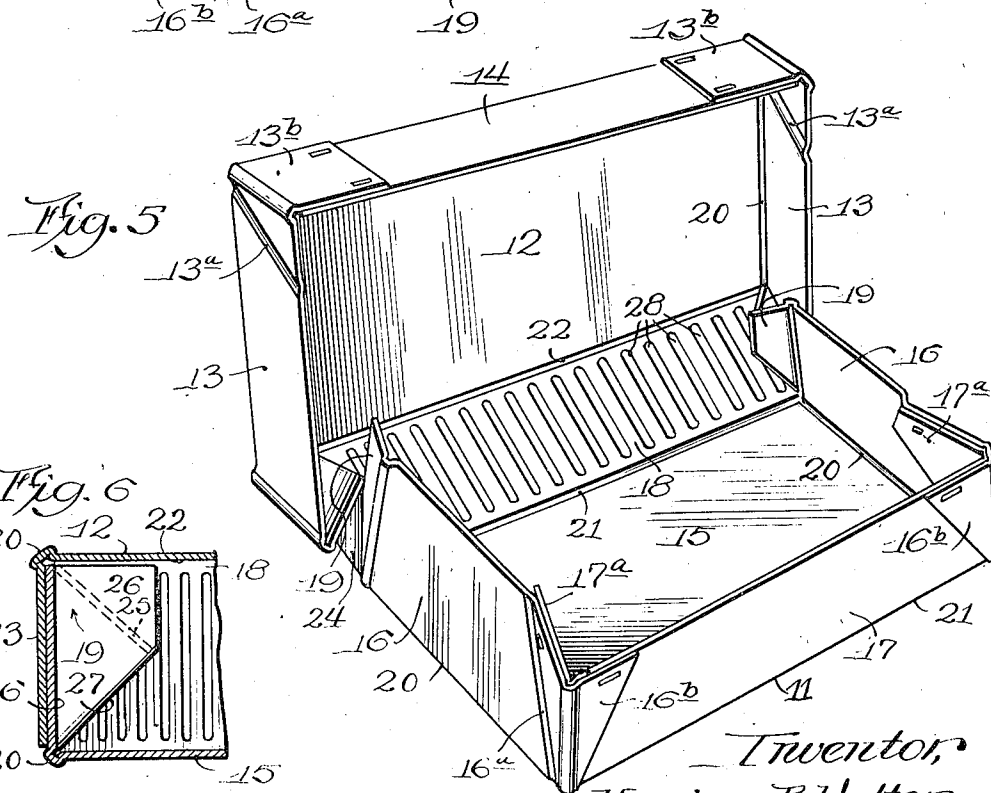
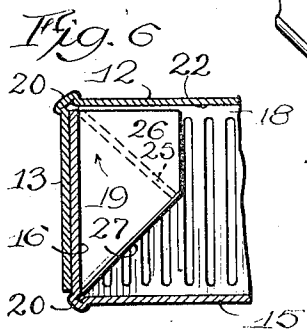
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1,738,744

BOX

Filed Nov. 5, 1927

2 Sheets-Sheet 2



Witness:
Chris. R. Korsch.

Inventor,
Harrison B. Walter,
by Clarence E. Kehlo Atty.

UNITED STATES PATENT OFFICE

HARRISON B. WALTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO CONTAINER CORPORATION OF AMERICA, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE

BOX

Application filed November 5, 1927. Serial No. 231,211.

This invention relates to improvements in boxes made of fiber or paper board and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The invention relates more specially to a well known type of collapsible box comprising top and bottom sections and a common intermediate side section with the parts so constructed and correlated that the top section may be closed down on and telescoped upon the bottom section.

The object of the invention is to provide a novel and improved box of the kind of cheap and economical construction which is capable of being quickly set up for packing and which, after packing, may be readily manipulated to bring about the telescoping of the lid section upon the bottom section in the act of swinging the top section towards said bottom section. The increased facility with which the box may be operated to close the lid section upon the body section arises from certain novel features of construction and correlation of the several parts of the box by reason of which the natural and obvious positioning of the parts of the body section after said body section is packed, will cause said parts to assume the relative positions necessary in order that the lid section will close upon and embrace the bottom section.

Another object of the invention is to provide certain novel features of construction at the ends of the side wall common to the two box sections, whereby the box is not only completely closed at the corners adjacent the ends of said side wall, but is also reinforced and strengthened at those corners which generally constitute the weakest parts of a box of the kind.

These and other advantages and objects of the invention will appear more fully as I proceed with my specification.

In the drawings:—

Figure 1 is a perspective view of my improved box as it appears when packed and closed.

Figure 2 is a perspective view of the box as it appears when set up ready for packing.

Figure 3 is a perspective view of the box as it appears when collapsed ready for shipment in bundles containing a number of said collapsed boxes.

Figure 4 is a plan view of a blank from which the box is made.

Figure 5 is a perspective view illustrating the box in process of being closed, as after packing.

Figure 6 is a detail sectional view on an enlarged scale showing a reinforcing strut or post which is provided in the new construction at the ends of the common side wall of the two box sections to resist crushing strains against the top and bottom walls of the closed box.

Referring now to that embodiment of the invention illustrated in the drawings:—10 indicates the lid section and 11 indicates the body section of the box. The lid section 10 includes the top wall 12, two end walls 13, 13 and what may be called an outer side wall 14. The body section includes a bottom wall 15, two end walls 16, 16 and an outer side wall 17. The top and bottom walls 12, 15 of the body section are connected by a common side wall 18 and the end walls 13 and 16 of the two box sections are connected by webs 19 suitably scored or creased to permit the end walls 13 of the top to be brought into embracing relation against the outer faces of the end wall 16 of the body section, all as clearly appears in Figure 2. The construction thus far described is familiar and well known.

Referring to Figure 4 in which is shown a plan of the blank from which the improved box is formed: The parts of the blank which form the several side and end members of the two box sections are indicated by the like numerals used in other figures of the drawing. 20, 20 indicate crease lines running lengthwise of the blank and spaced apart to define the length of the box. The distance of said crease lines from the lateral edges of the blank determine the depth of the ends of the box. The crease lines 20 near one end of the blank, namely the lid end, (the right hand end as shown in Figure 4), are spaced a somewhat greater distance apart than near the other or body end, (the left hand end) of the blank, so

that said crease lines 20, 20 converge somewhat from the right towards the left hand end of the blank.

21, 21 indicate transverse crease lines which determine the width of the bottom section and 22, 22 indicate like crease lines which determine the width of the top section of the box.

The several crease lines 21, 21, 22, 22, are parallel but the distance between the crease lines 22, 22, which determine the width of the lid section are spaced at a somewhat greater distance apart than the crease lines 21, 21 which determine the width of the body section of the box.

By the creasing of the blank as described, the lid section of the box, when set up is made not only wider but also longer than the body section, so that the ends and outer side of the lid section will readily embrace and telescope outside of the like members of the body section.

The end walls 13 and 16 are provided with crease lines 13^a, 16^a so located as to permit the end walls 13, 16 to collapse respectively upon the top wall 12 and bottom wall 15 with the outer side walls 14 and 17 folded down upon top of said end walls 13 and 16, as clearly shown in Figure 3.

The end walls 13, 13 of the lid section of the blank have integral folding extensions 13^b, 13^b severed from the outer side wall 14, as indicated at 14^a, 14^a. In setting up the box, the end walls 13 are attached to the outer side wall 14 by means of said folding extensions 13^b. Said extensions 13^b are folded on the crease line 22 with reference to the end walls 13, 13 and are brought into engagement with the outer face of the side wall 14, (which in the meantime has been folded on the crease line 22 into right angular position with reference to the top wall 13), and are secured to said outer side wall by means of staples or otherwise, as illustrated in Figure 2.

In the case of the end walls 16, 16 and the outer side wall 17 of the box body, a somewhat different means is provided for the like connection. In this case each corner piece defined by the crease lines 20 and 21 is severed along a line 23, (see Figure 4) to provide a narrow triangular piece 16^b integral with and foldable with reference to the end wall 16 along the crease line 21 and a larger rhomboidal piece 17^a, integral with and foldable with reference to the outer side wall 17 upon the crease line 20. In assembling the box the larger, rhomboidal pieces 17^a, 17^a are folded into position against the inner faces of the end walls 16 of the box body (which end walls have in the meantime been brought to right angular position with reference to the bottom wall 15) and are stapled to said end walls, while the smaller triangular pieces 16^b are folded into position against the outer face of

the outer side wall 17 and are stapled thereto, as shown in Figure 2.

The larger rhomboidal pieces 17^a extend beyond the crease lines 16^a in the end walls 16, as clearly shown at 17^b in Figure 2; and the staple or staples securing them to the end walls 16 are located in the space between the proximate corners of the box body and the creases 16^a, so that the projecting part 17^b is free of connection with the end walls beyond the creases. The result of this construction is that the walls 16 may be easily swung inwardly or towards each other (as when collapsed for example) but the projecting parts 17^b, when said end walls 16 are swung away from each other towards positions at right angles to the bottom wall 15, will engage the inner faces of said end walls and prevent them from being swung outwardly beyond said right angular positions. The construction of this feature of the box is like that described in my application S. N. 755,363, filed December 12, 1924.

By the construction provided for attaching the outer side wall 14 to the end walls 13 of the lid section, on the other hand, the said end walls may swing to either side of a right angular position with reference to the top wall 12 of the box. The importance of these differences in the construction of the top and body sections of the box will appear more clearly as I describe the operation of the parts when the sections are manipulated to telescope the one upon the other.

Each web 19 connecting the end walls 13 and 16 of the top and bottom sections of the box, consists of a triangular piece 24 provided with a median crease 25 and of a rhomboidal piece 26 integral with said triangular piece 24 but foldable with reference thereto by a crease 27. The creases 25 and 27 are such as to permit the triangular piece 24 to fold upon itself along the crease line 25 and the rhomboidal piece 26, to fold against the folded piece 24. When the lid section is telescoped upon the body section with the end walls 13 of the lid section outside of the end walls 16 of the bottom section, the webs 19, by reason of said creases, are caused to fold back against the common side wall 18. This brings the rhomboidal pieces 26 into close juxtaposition with the end parts of the side wall 18 (with the folded part 24 only between them and said wall) with the top edges 27^a of said rhomboidal pieces in supporting engagement with the top wall 12 of the lid section. And since said rhomboidal pieces are connected to the end walls 16 of the body section and run the full depth thereof, although diminishing in width towards the bottom wall 15, there are manifestly presented rigid posts or struts to resist crushing strains applied to the box at or near the ends of the common side wall of the two box sections.

Since the common side wall 18 is of single

thickness, as compared to the double thicknesses of board at the other sides and at the ends of the box when closed, it may be preferred to strengthen said common side wall by means of parallel corrugations 23 running substantially its full depth.

The box, as will be understood, is delivered to the packer in collapsed condition, as illustrated in Figure 3. It is readily set up into position for packing by drawing the outer side walls 14 and 17 away from each other which brings the end walls 13 and 16 into right-angular relation with the top and bottom walls, as shown in Figure 2. After the body or bottom section has been packed, the natural position of the hand against the outer side wall 17 of the box body to hold the articles (as for example a suit), packed therein against dislodgment while the lid is in process of being closed, will cause the outer side wall section 17 of the bottom to incline inwardly towards the bottom wall 15, as shown in Figure 5. The construction including the rhomboidal pieces 17^a connecting the side walls 17 to the end walls 16, as heretofore described, in combination with the creases 16^a, will permit the end walls 16 likewise to collapse inwardly, as shown in Figure 5, but will manifestly block or resist any tendency of said end walls to flex outwardly beyond a right angular position with reference to the bottom wall 15. Said end walls thus naturally assume the position shown in Figure 5. When the lid section 10 is swung up, over and above the bottom section, the end walls 13 of the top section will naturally assume an approximately right angular position to the top wall 12 of the lid section, as illustrated in Figure 5, so that in the further closing movement of the lid upon the body, the end walls 13, 13 of the lid will descend outside of and embrace the end walls 16 of the body section and the outer side wall 14 of the lid section will descend upon the outside of and embrace the outer side wall 17 of the body section. This operation will also be much facilitated by the fact that the lid section, by reason of the converging score marks defining the length of the two sections, as heretofore described, is of greater length as well as of greater width than the body section.

Since the outer side walls of both lid and body sections are without creases, it will be apparent that there will be no gap between said walls when the box sections are in closed relation.

It will be noted that the rhomboidal pieces 26, forming parts of the collapsible webs 19 connecting the end walls of the two box sections, are without fold or crease, as heretofore pointed out. Thus when the box is closed, although the said webs 19 are necessarily folded to permit said closure, the pieces 26 present rigid, inflexible supports or posts at the box corners at the ends of the common

side wall 19. And this structure is presented while still maintaining said corners closed by reason of the foldable webs 19 integral with the end walls of the two box sections.

I claim as my invention:

1. A box comprising lid and body sections, each having a main wall, outer side walls and end walls, with a side wall common to both, all of said walls being connected and foldable with reference to each other, and foldable webs connecting like end walls of the two sections, the lines of fold of said end walls with reference to the main walls of the two sections, when said main walls are in a common plane, converging from the outer side wall of the lid section towards the outer side wall of the body section, and the lines of fold defining the sides of the main wall of the lid section being spaced a greater distance apart than the like lines of the main wall of the body section.

2. A box comprising lid and body sections, each having a main wall, outer side walls and end walls, with a side wall common to both, all of said walls being connected and foldable with reference to each other, and foldable webs connecting like end walls of the two sections, the end walls being creased adjacent the outer side walls to permit the outer side walls to be collapsed upon the main walls, and said webs each including an uncreased piece integral therewith and with an adjacent end wall adapted when the box is closed to present a supporting post extending between the main walls of the two box sections.

3. A box comprising lid and body sections, each having a main wall, outer side walls and end walls, with a side wall common to both, all of said walls being connected and foldable with reference to each other, and foldable webs connecting like end walls of the two sections, the end walls being creased adjacent the outer side walls to permit the outer side walls to be collapsed upon the main walls, means on the end walls of the body to limit the swinging movement of said end walls outwardly from the main wall of said body, and said webs each including an uncreased piece integral therewith and with an adjacent end wall adapted when the box is closed to present a supporting post extending between the main walls of the two box sections.

In testimony that I claim the foregoing as my invention, I affix my signature, this 3rd day of November, 1927.

HARRISON B. WALTER.