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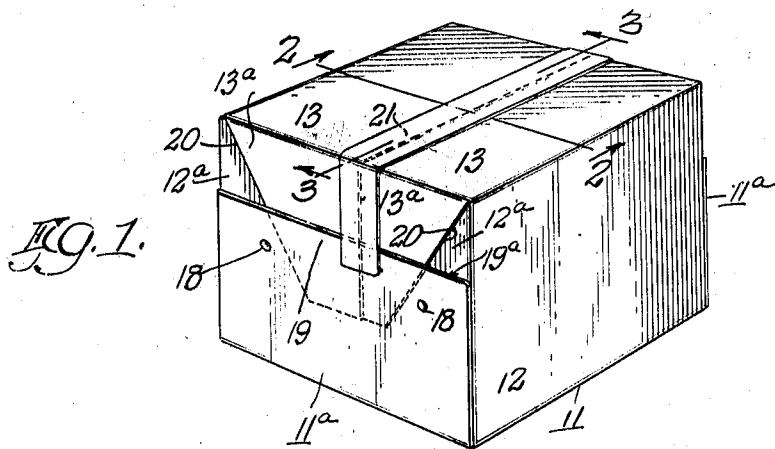
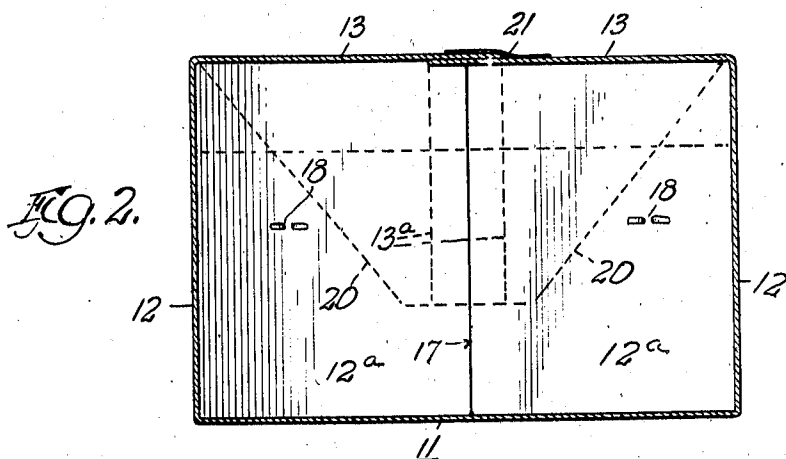
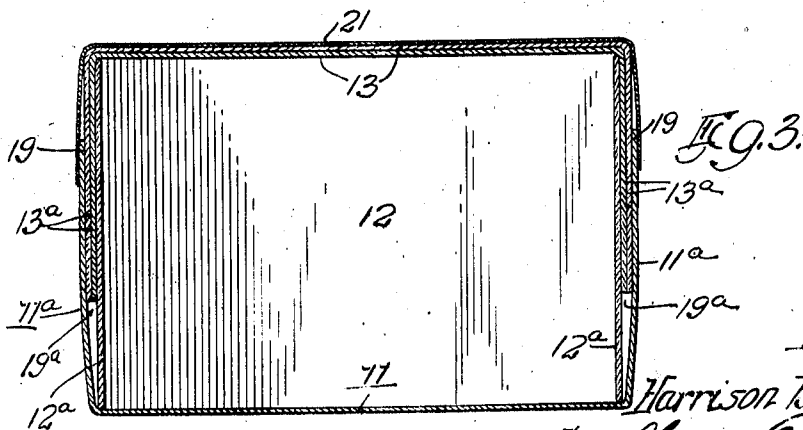
H. B. WALTER

1,616,014

BOX

Filed Jan. 4, 1923

4 Sheets-Sheet 1



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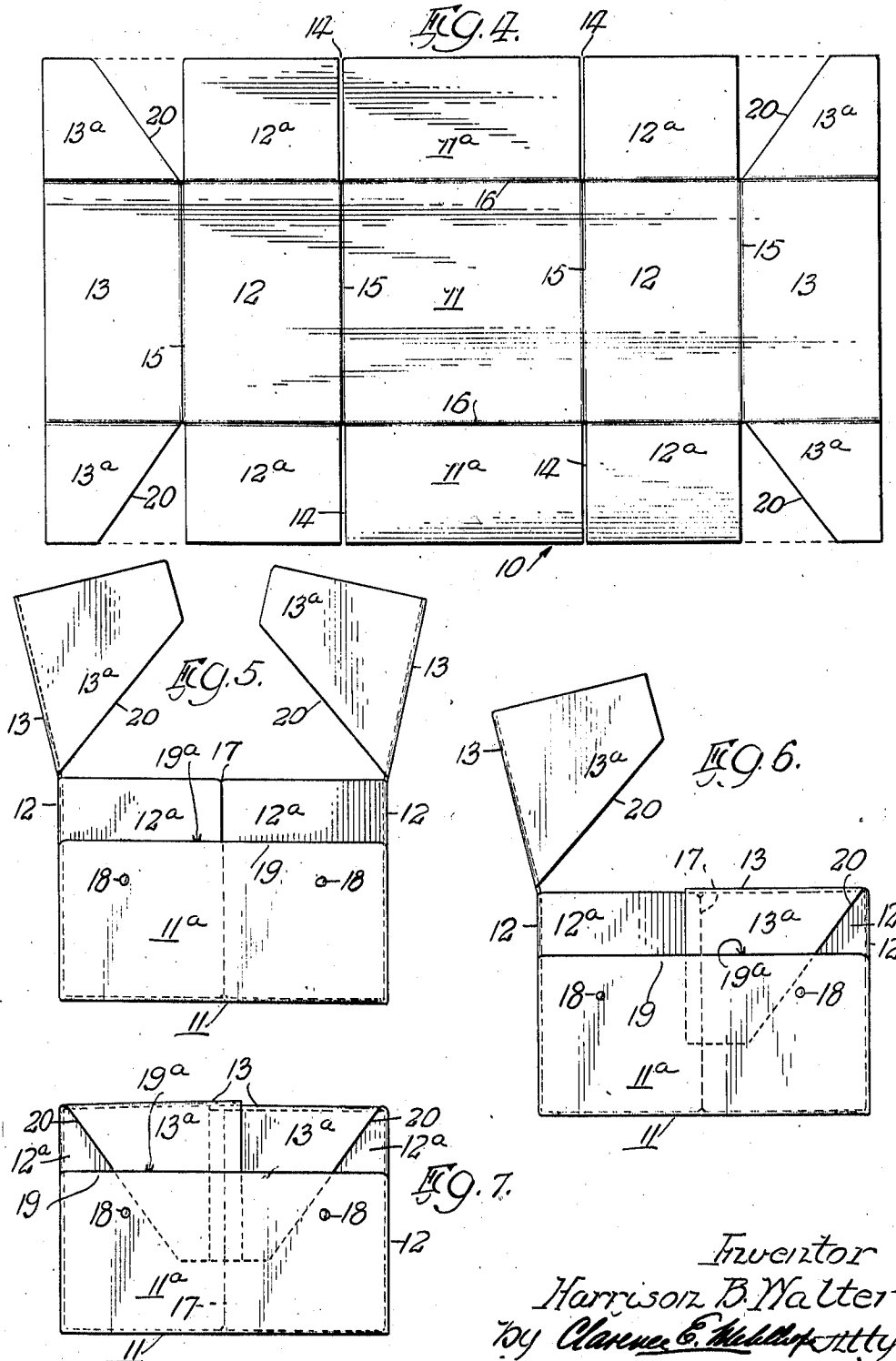
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Fig. 8.

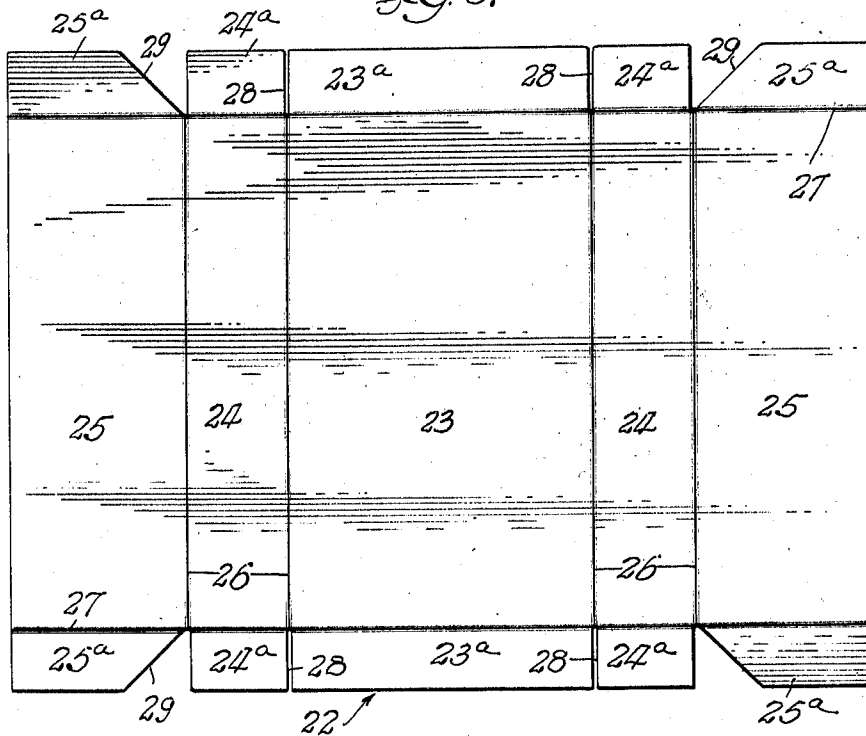
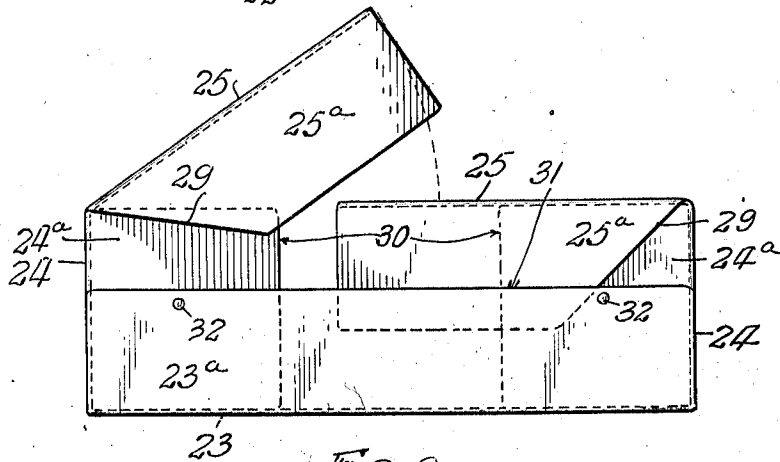


Fig. 9.

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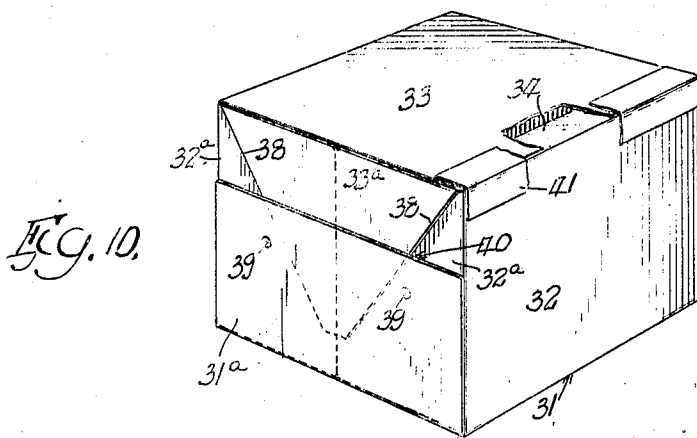
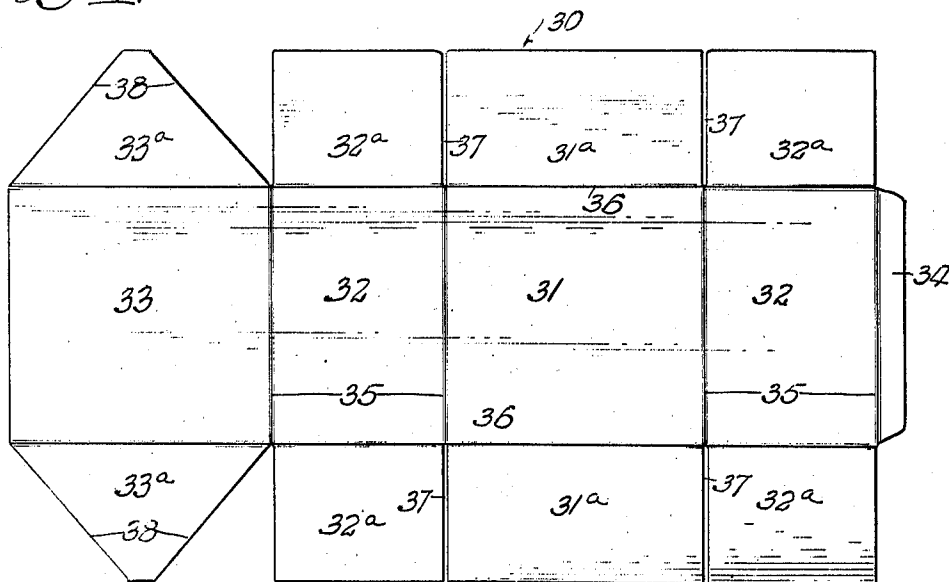


Fig. 11.



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UNITED STATES PATENT OFFICE.

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BOX.

Application filed January 4, 1923. Serial No. 610,558.

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

The object of the invention is to produce a box in which the ends of the box are provided with slots or pockets and in which the top closure is provided with end extensions adapted to be readily and easily engaged in said slots or pockets to properly lock and hold the top closure in position and yet, adapted to be detached to permit the raising of said closure to open the box when desired.

Another object of the invention is to produce a knock-down box of the kind, designed more particularly for packing apples, potatoes or similar heavy vegetables or fruits, which is readily and easily set up for use and which is made from a blank of such design that it may be cut from a board considerably narrower than heretofore required for a box of the same dimensions, with the result of greatly increased economy in the board required for the manufacture of such boxes.

The advantages of the improved box will appear more clearly as I proceed with my specification.

In the drawings:—

Fig. 1 is a perspective view of the improved box set up, packed, closed, and sealed.

Fig. 2 is a view representing a transverse section through the box in a plane indicated by the line 2—2 of Fig. 1.

Fig. 3 is a view representing a longitudinal section through the box in a plane indicated by the line 3—3 of Fig. 1.

Fig. 4 is a top plan view of the blank from which the box is formed.

Fig. 5 is an end elevation of the box as it appears when set up and, with the top closure flaps raised.

Figs. 6 and 7 are like end elevations showing the top closures in successive steps of being brought to closed position.

Fig. 8 is a top plan view of a blank of somewhat modified form, adapted to make a wide, shallow box.

Fig. 9 is an end view of the box showing one top closure flap in closed position and the other in an intermediate stage on the way to closed position.

Fig. 10 is a perspective view of another box embodying my invention as it appears when set up, packed, closed and sealed.

Fig. 11 is a top plan view of the blank from which the box shown in Fig. 10 is made.

Referring now to that embodiment of my invention illustrated in Figs. 1 to 7:—10 indicates a blank of paper or fibre board from which the box is formed. Said blank is cut and creased to provide a part which forms the bottom 11 of the box; parts at each side of the part 11, which form the sides 12, 12 of the box; and flap extensions 13, 13 at the ends of the blank which provide the top closure for the box. Said closure as illustrated, in the figures referred to, is thus made in two parts, the one at one end of the blank and the other at the other end, as described. At each side of the blank are flap extensions 12^a, 11^a, 12^a of the parts 12, 11 and 12 respectively, said extensions being separated from each other by cuts or slots 14, 14. The several side and top parts and the extensions just referred to are defined by parallel, spaced, crease lines 15, extending transversely of the blank, and by two parallel spaced crease lines 16 which extend the length of the blank. The distance between the last named crease lines determines the length of the box, whereas the distances between the first named crease lines determine respectively the width and height of the box. The flaps 13, 13 have folding, end-extensions 13^a, 13^a which project at each side of the blank and are defined by the two longitudinal crease lines 16, 16.

The extensions 12^a, 12^a at the ends of the parts 12 of the blank, in the case of the box shown in Figs. 1 to 7 inclusive, are made of a length approximately equal to one-half of the width of the bottom section 11 of the blank. The extensions 11^a of the bottom section of the blank, and the folding end-extensions 13^a, 13^a of the flaps 13 are made

of the same length as the aforesaid extensions 12^a. Thus when the blank is folded into box form and the parts 12, 12, are folded into position to form the sides of the box, the ends of the extensions 12^a, 12^a of the two opposed side parts 12, 12 when the extensions are brought into position at right angles to said sides 12, 12, will approach the median longitudinal plane of the box, as indicated by the line 17 (see Fig. 2). The extensions 11^a, 11^a of the bottom part 11 of the box are then folded into upright position against the outer faces of the extension parts 12^a, 12^a and are riveted or secured thereto, as indicated at 18, thus holding the blank in box form.

The extensions 12^a, 12^a being of the same width as the side parts 12, provide by their width a closure for the full depth of the end of the box; and being, in the case of the box shown in Figures 1 to 7, each of a length equal to one-half of the width of the bottom part, 11, they provide by their added lengths an end closure equal to the width of the box. The extensions 11^a are shorter than the depth of the box,—that is to say than the width of the parts 12, 12 of the blank—so that when folded against and attached to the extensions 12^a, as described, their upper edges 19 will be located considerably below the top of the box. The rivets or eyelets 18, 18 are placed near the side and top edges of the extensions 11^a, which location leaves spaces or pockets 19^a opening at the top edges 19 of the extensions 11^a, and extending between said rivets.

The folding extensions 13^a, 13^a at the ends of the two flaps 13, 13 are cut away to provide inclined edges 20 so that when the flaps 13, 13 are folded down to close the box, said extensions may be inserted into the spaces or pockets 19^a at the ends of the box, as shown in Figs. 6 and 7, without interference from said rivets. The inclination of the edges 20 and the location of the rivets 18 are so correlated, that the edges 20 will approach the rivets closely inclosing the box. Since each pocket space adjacent the location of the rivets is narrow and approaches the close contact of the parts forming the pocket at the rivets, the folding extensions 13 are frictionally gripped adjacent their edges 20 and are thus locked in the pockets.

The flaps 13, 13 are preferably made wide enough so that they will overlap at their ends. When closed down, as described, they may be permanently secured by means of a string or, and preferably, by means of a sealing strip 21 applied at the overlapped edges of the flaps 13 and of the folding extensions 13^a, 13^a and extended down a short space upon the top parts of the extensions 11^a below their upper edges 19, as clearly shown in Fig. 1.

A box of this kind is quickly and easily set up. In addition, by reason of the fact that the top edges 19 of the extensions 11^a are below the top of the box, the folding extensions 13^a, 13^a on the top closure flaps 70 are more readily inserted into the pockets 19^a provided at said top edges, thus greatly facilitating the closing of the box.

As will be manifest from an examination of the end view of the box in Fig. 7, the end extensions of the sides of the box, namely, the extensions 12^a, need not be of a length such that together, they will equal the width of the box as described and entirely close the ends of the box, as in the case of the embodiment illustrated in Figures 1 to 7. It will be noted that the extensions 11^a and the folding extensions 13^a provide a closure for substantially the entire end of the box. A box made in accordance with the invention and with still further economy in the use of material may be made in which the extensions 12^a, 12^a and likewise the other extensions 11^a, 13^a, may all be shortened; the only limitations are that when the blank is folded into box form, the several extensions shall provide end closures for the box, and that the slots or pockets to receive the folding extensions of the top closures shall open at a level above the horizontal median plane of the box in order to provide efficient locking engagement for the ends of the extensions of the top closures.

In the modification shown in Figures 8 and 9 the invention is embodied in a wide, shallow box such for example, as the boxes used for laundry purposes and the like.

22 indicates the blank in this case, which is cut, creased and slotted as before, to provide a bottom part 23, side parts 24, 24, top closure flaps 25, 25, and the respective end extensions of said parts,—23^a, 24^a, 24^a, and 25^a, 25^a. 26 indicates the transverse crease lines and 27 indicates the longitudinal crease lines. 28 indicates the slots which separate the end extensions and 29 indicates the inclined edges of the folding extensions at the ends of the top closure flaps.

The end extensions 24^a of the sides 24 in this case, it will be noted, are much shorter in length than one-half the width of the bottom part 23,—in fact said extensions cover only approximately one-third of the width of the end of the box, leaving a gap or space 30 between their end edges. The extensions 23^a, however, are of such length that their end edges come to a plane above the horizontal median plane of the box, and the folding extensions 25^a of the top closure flaps are long enough to project below said horizontal median plane of the box, thus providing ample engagement of the end parts of said extensions in the pockets 31. Here again the inclined edges 29 on the extensions 25^a and the location of the rivets 130

32 (securing the end extensions 23^a to the end extensions 24^a) are so correlated that the edges 29 approach closely to the rivets 32 so as to make use of the increased frictional grip in the neighborhood of the said rivets 32.

In the construction illustrated in Figs. 10 and 11, the invention is embodied in a box similar to that shown in Figs. 1 to 7 inclusive, with the exception that the top closure is provided by a single and wider flap extension arranged at one end of the blank, instead of two narrower extensions, arranged one at each end of the blank as in said Figs. 1 to 7 inclusive.

In Fig. 11, 30 indicates the blank which is cut, creased and slotted as before to provide a bottom part 31, side parts 32, 32^a, a top closure part 33 of a width equalling the bottom part, at one end of the blank, and a narrow flap extension 34 at the other end of the blank; the bottom, side and top closure parts have respective end extensions 31^a, 32^a, 32^a, and 33^a. 35 indicates the transverse crease lines and 36 indicates the longitudinal crease lines. 37 indicates the slots which separate the end extensions and 38 indicates the inclined edges of the folding extensions 33^a at the ends of the top closure part 33.

The end extensions 32^a, 32^a being of the same width as the side parts 32 and of a length equal to one half the width of the bottom part 31, provide an end closure equal to the width of the box. The extensions 31^a are shorter than the depth of the box so that when folded against and attached to the extensions 32^a by rivets 39 similar to the rivets 18 before mentioned, the upper edges of said extensions 31^a will be located considerably below the top of the box. The rivets 39, 39 are placed near the side and top edges of the extensions 31^a to provide pockets or spaces 40 opening at the top of the extensions 31^a between the rivets 39.

When the folding extensions 33^a of the top closure part 33 with their cut away, inclined side edges 38, are folded down to close the box, said extensions may be inserted into the spaces or pockets 40 at the ends of the box, as shown in Fig. 10, without interference from the rivets 39, and said extensions are frictionally gripped adjacent their edges 38 and are thus locked in said pockets. When the top closure has thus been folded down, its free marginal part will overlap the narrow flap extension 34 on the other side wall part 32, which flap extension has been theretofore folded inwardly. An adhesive strip 41 is then applied to the adjacent parts of the free margin of the top closure and the top marginal part of the side wall part 32 adjacent its narrow flap extension 34. The narrow flap extension 34 not only provides a support for the free marginal

part of the top closure, but also acts to stiffen the box along this corner so that it more ably withstands the crushing strain when the packed boxes are piled, the one upon the other.

From the foregoing, it will be manifest that the length of the extensions at the sides of the main blank, (which extensions form the end closures of the box) may be varied within wide limits. But they may all be made of the same length and no unnecessary stock is required for the blank to produce the box, nor is it necessary to cut away parts and thus lose stock at the sides of the blank, as heretofore has been necessary in the case of boxes of this character.

It will be observed that in the case of all of the forms embodying the inventions, the pockets provided at the ends of the box for the reception of the end extensions of the top closure, (whether the same be made of a single part adapted to extend all the way across the top, or whether it be made in two parts which meet or overlap along the middle line of the top of the box) are located below the top of the box. This location as will be manifest, greatly facilitates the insertion of the end extensions of the top closure into said pockets.

While in describing my invention I have referred to certain details of construction and arrangement of the parts of the box, it is to be understood that the invention is in no way limited thereto except as may be pointed out in the appended claims.

I claim as my invention:

1. A box made from fibre or paper board, having sides, a bottom, and a top closure, the said parts being provided with end extensions to form the ends of the box, the end extensions of the bottom being folded against the end extensions of the sides and being secured thereto by laterally spaced securing means near the tops and lateral edges of said bottom extensions, providing pockets located below the top of the box and between said securing means, and the end extensions of the top closure being reduced in width toward their ends so as to be capable of insertion into said pockets and between the points where the end extensions of the bottom are secured to the end extensions of the sides.

2. A box made from fibre or paper board, comprising a bottom wall section, two side wall sections, and a flap connected to each of the side wall sections, the side wall sections being provided with end extensions, the bottom wall section having end extensions which are folded against the end extensions of the side wall sections and are secured thereto by laterally spaced securing means near the top and lateral edges of the end extensions of the bottom wall section, thus providing pockets below the top of the

box and between said securing means, one of the flaps connected to one of the side wall sections being adapted to cover the box and to overlap the flap connected to the other side wall section, and having end extensions, which are reduced in width toward their ends and are adapted to be engaged in said pockets between the points where the end extensions of the bottom wall are secured to the end extensions of the side wall sections. 10

In testimony that I claim the foregoing as my invention, I affix my signature this 28th day of December, A. D. 1922.

HARRISON B. WALTER.