

May 29, 1934.

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1,960,925

CARDBOARD OR PAPER BOX

Filed Nov. 8, 1932

2 Sheets-Sheet 1

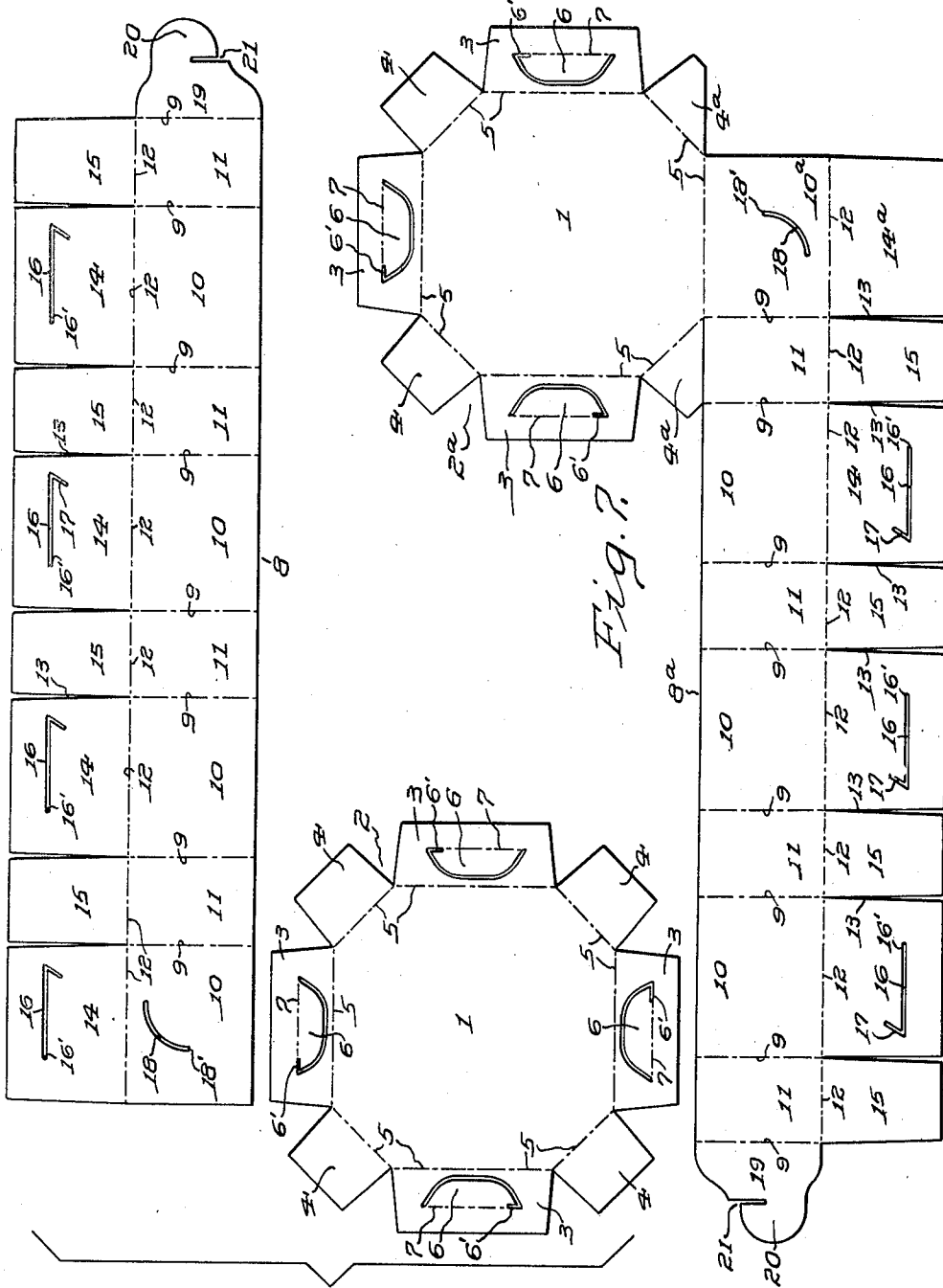


Fig. 1.

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May 29, 1934.

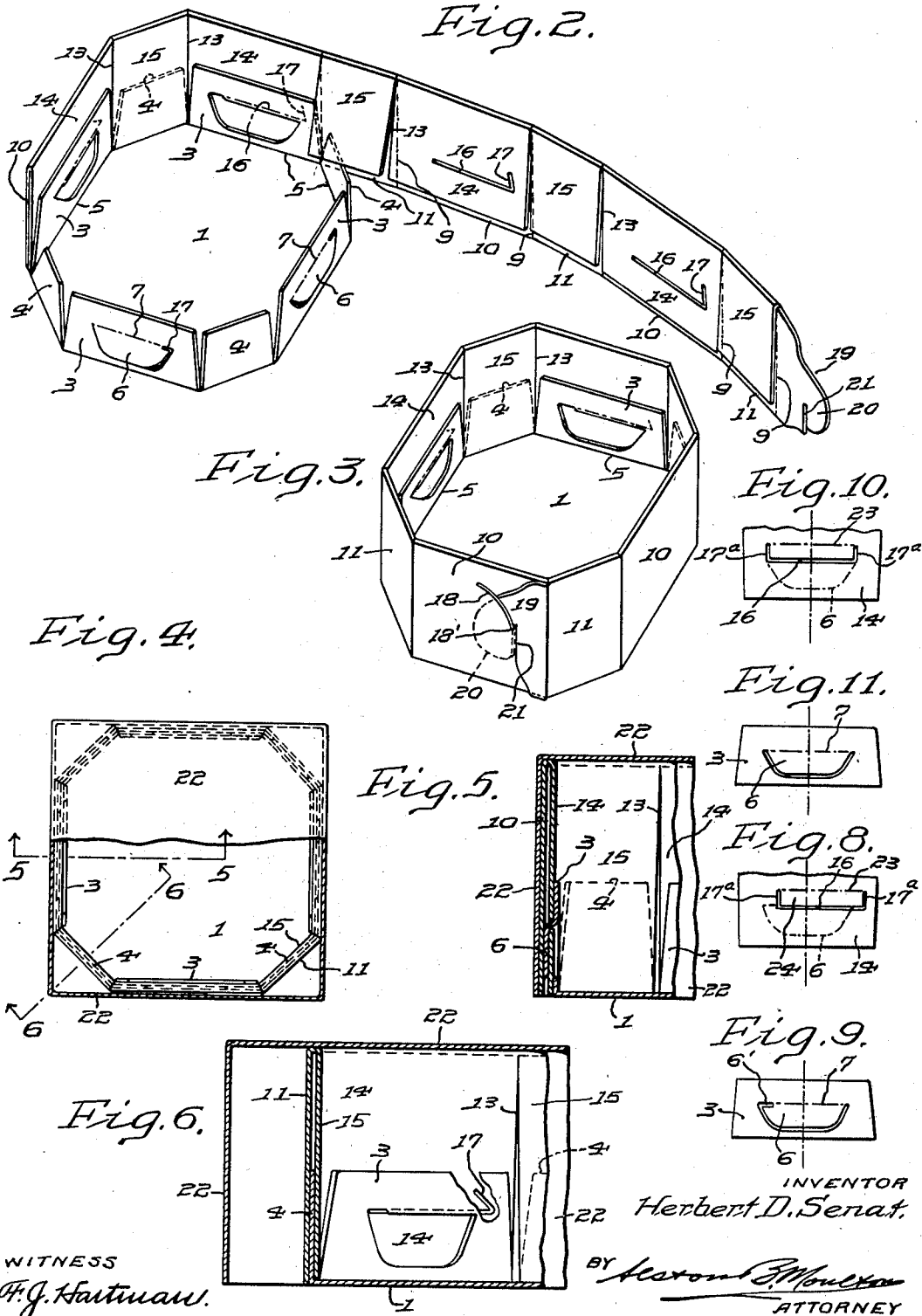
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UNITED STATES PATENT OFFICE

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CARDBOARD OR PAPER BOX

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Application November 8, 1932, Serial No. 641,694

5 Claims. (Cl. 229—16)

My invention relates to certain improvements in boxes of the type specified, the parts of which may be stamped from a sheet of cardboard or suitable stiff paper and scored at the places where the parts are to be bent, and shipped to the user flat in relatively small boxes, crates or packages, and which may be readily put together by the consignee or packer, as needed without the employment of glue, nails or any other fastening devices.

A further object of this invention is to provide a box or a container of the character specified, the parts of which are easily assembled in proper relationship to form a box and when so assembled, provide a relatively rigid structure, the parts of which are not easily separated, even though the box may be handled when empty, and in which, with the placement therein of confectionery and the like, the separate parts are the more firmly secured together by the weight of the contents of the box.

A further object of this invention is to provide a box or container of the character referred to which may be provided with a rectangular cover of any ordinary construction which fits flat against at least four sides of the box and which may provide a plurality of triangular spaces between the cover and the vertical walls of the box proper at the corners of the cover thereby providing a package having an appearance distinctive and different from those ordinarily employed and which, when adopted by a manufacturer for the packing of his goods therein, may afford substantially a distinctive and individual appearance as to identify the goods as of a known origin. The manufacturer may thus distinguish his goods from the goods of his competitors.

A further object of this invention is to provide a box, made of sheet material in the form of a blank or blanks of suitable shape and suitably scored, consisting of a bottom and side walls, the bottom being in shape preferably polygonal (all four or more sides being not necessarily of the same length), and the side wall being composed of a scored and folded strip of sheet material the lower edge of which fits around the edges of the bottom, and to which the bottom is securely fastened by means of tabs and tongues, with which the bottom is provided, the tongues being insertable into and being retained within slots in the adjacent side walls, the side wall comprising a double thickness of sheet material, the plies lying substantially flat against each other with the tongues or tabs of the bottom ly-

ing flat between the double side wall or walls and concealed from view by the outer wall.

A further object of this invention is to provide a box having the characteristics last above described and in which the inner plies of the vertical wall abut against the upper surface of the bottom to prevent any accidental detachment or removal of the tongues from the slots in which the tongues have been inserted.

Other objects of the invention will appear in the specification and claims below.

Referring to the drawings forming a part of this specification, and in which the same reference characters are employed throughout the various views to designate the same parts,

Fig. 1 is a plan view of two separate blanks with the desired cuts and scoring ready to be bent along the scored lines and formed into a box in accordance with my invention;

Fig. 2 is a perspective view of the two blanks illustrated in Fig. 1 and showing a box in the process of assembly, three of the vertical walls being in the final position in which they are in the finished box, and the other sections of the strip forming the vertical wall being in their natural position just prior to the step of bringing the fourth and fifth sections of the vertical wall of the box into the position for securing the fifth section to the said bottom;

Fig. 3 is a perspective view similar to Fig. 2 but showing the completed assembled box or container;

Fig. 4 is a top plan view of the finished box with a square or rectangular cover enclosing the same, a part of the top of the cover being broken away to show the box fitting therein;

Fig. 5 is a vertical, sectional view on the line 5—5 of Fig. 4, but on a substantially larger scale;

Fig. 6 is a section on the line 6—6 of Fig. 4 but on the larger scale employed in Fig. 5;

Fig. 7 shows in plan view a blank which is a slight modification of that shown in Fig. 1 in that the bottom and the side walls are integral, the bottom and sides being cut out of a sheet of suitable material as a single blank. Except for obvious differences in detail, the blanks are substantially identical.

Fig. 8 is a fragmentary view of one of the flaps provided with a slot offset in the same way as shown in the previous modifications but in which the cuts at the end are at right angles to the direction of the slot to form a small flap; and

Fig. 9 is a view of a bottom tab with its tongue adapted to cooperate with the flap shown in the preceding figure.

Fig. 10 is another fragmentary view of a further modification in which the slot and flap, like that shown in Fig. 8, is arranged symmetrically with respect to the median line of the flap; and

5 Fig. 11 shows a tab with a slightly modified tongue adapted to cooperate with said tab of Fig. 10.

Referring first to the preferred form of the invention as illustrated in Figs. 1 to 6 inclusive, the bottom 1 of the bottom blank 2 is shown as a symmetrical figure having eight straight side edges from each of which outwardly extend substantially rectangular tabs 3 from the longer sides or edges and the tabs 4 from the shorter sides or edges respectively. Scorings 5 are provided between the tabs 3 and 4 and the bottom 1, these scorings 5 form the boundaries of the bottom of the completed box. The larger tabs 3 are preferably provided with substantially semicircular or semielliptical tongues 6 cut through the material, the base of the tongue being integrally connected to the tab 3 but provided with a scoring 7 on which the tongue may be bent slightly out of the plane of the tab as will be referred to again below. In this embodiment of my invention, I also form in the base line or scoring 7, a short cut to form a locking slot 6' which will also be again referred to below.

The blank 8 from which the side wall of the box is made also comprises a single integral strip of sheet material provided with transverse scorings 9 spaced from each other distances respectively equal to the lengths of the straight boundaries of the bottom 1, so that the scorings 9 will lie against the apices of the angles around the bottom 1 of the box and to provide as many straight rectangular panels 10 and 11 as there are straight edges around the bottom 1 of the box.

In Fig. 1, the larger panels 10 correspond to the longer edges of the bottom and the smaller panels 11 to the shorter edges of the bottom. The blank 8 is substantially in width twice the height of the finished box. It is provided with a longitudinal scoring 12 substantially midway between the longitudinal sides of the blank and in alignment with the transverse scorings 9, the blank is provided with slowly tapering cuts 13 from the longitudinal scoring 12 to the edge of the blank, thus forming substantially rectangular wide tabs 14 connected to the wide panels 10 and narrower substantially rectangular tabs 15 connected to the smaller panels 11, these tabs being integrally connected to the corresponding panels at the longitudinal scoring 12 or top edge of the finished wall. The wider or larger tabs 14 are provided with cuts or slots 16 extending parallel to the longitudinal scoring 12 preferably spaced from the outer free edge of the tab substantially the same distance that the scoring 7 of the tongues 6 of the bottom is spaced from its adjacent scoring 5, and the cut 16 is of substantially the length of the width of the tongues 6 at the lines of scorings 7. These cuts 16, however, are not symmetrically disposed with respect to the axes or vertical median lines of the panels 10, and of the tabs 14, but are offset slightly to the right thereof (in the example shown in Fig. 1) for a purpose to be more fully disclosed below. The ends of the cuts 16 which are nearest the edges of the adjacent tabs 14 is provided with a short angular cut 17 extending toward the longitudinal scoring 12. The left-hand end panel 10 of Fig. 1 is provided with an arcuate cut or slot 18 and next adjacent and beyond the right-hand smaller panel 11, the blank

is provided with a locking tab 19 which is provided with a rounded end 20 which, in conjunction with a transverse slot, 21, forms a hook or head adapted for insertion into the slot 18 when the box is assembled, the said end 20 being retained within the slot 18 by the engagement of the bottom 21' of the slot 21 with the end 18' of the slot 18 as will more fully appear below.

While the longitudinal scoring 12 is substantially midway between the sides of the blank 8, it is, in fact, slightly offset toward the free edges of the tabs 14 and 15 so that the height of the tabs 14 and 15 will be slightly less than the height of the panels 10 and 11. This is to compensate for the thickness of the material which forms the bottom 1 so that the bottom side of the bottom or base 1 of the assembled box will be substantially in the plane of the free edges of the panels 10, and 11 and the free edges of the tabs 15 will be in the plane of and press against the top surface of the bottom 1 in the assembled box.

It is here in order to refer to the relation between the tongues 6, the cuts 6' and the slots 16. The tongues, it will be observed, are preferably symmetrically arranged with respect to the tabs 3 in which they are respectively cut, but in order that the bottom of the slots 6', when inserted into the slots 16 may bear firmly against the ends 16' of the slots 16, the slots 16, which are of substantially the width of the tongues 6, are offset to one side of the median or axial line of the wider tabs 14, a distance substantially equal to the length or depth of the slots 6'. The reason for this will now appear as the manner of assembling the bottom and the side walls is now described, attention being particularly directed to Fig. 2.

The tabs 3 and 4 of the bottom blank 2 are first bent along the scoring lines 5 to extend substantially vertically upwardly, to lie in planes substantially at right angles to the bottom 1.

The side wall blank 8 is next folded longitudinally along the longitudinal scoring line 12. Thus, from the position shown in Fig. 1, the tabs 14 and 15 are bent upwardly around the scoring line 12 and are then pressed down to lie flat against the corresponding panels 10 and 11. Having been so folded, the tongue 6 in one of the tabs 3 is flexed outwardly from the planes of the tab and away from the center of the bottom 1 and is inserted then into the slot 16 at the end of the folded side wall blank 8. After the tongue has thus been inserted into the slot 16, it and its tab 3 are drawn or slid longitudinally to the left (or the flap 14 is drawn to the right) to position the end 16' of the slot 16 at the bottom of the slot 6' of the tongue 6. In this position, the tongue 6 will be symmetrically positioned with respect to the flap 14 into slot 16 of which the tongue 6 has thus been inserted and it cannot be moved straight upwardly therefrom to remove the tongue from the said slot.

The adjacent narrower or smaller tab 4 is now held in a plane at right angles to the plane of the bottom 1 of the box and the adjacent narrow flap 15 of the wall is bent down over it so that the tab 4 lies between a narrower panel 11 and the corresponding narrow inner flap 15 of the side wall.

The tongue 6 of the next adjacent large tab 3 is then similarly bent outwardly and inserted into the slot 16 of the next large or wide flap 14 and similarly locked in position. This is the point in the assembly of the box that is shown in Fig. 2. Thereafter the operations above described are repeated with respect to the other tabs, tongues and slots. The next narrow flap 15 of the side

wall being laid on the inner side of the corresponding smaller tabs 4 of the bottom, the tongue 6, on the next large tab 3 of the bottom is inserted into the appropriate slot 16 of the now adjacent larger inner flap 14 of the side wall with the tongue 6 locked in the slot 16 and lying between the larger panels 9 of the outer wall and the corresponding inner flap 14 of the vertical wall of the box; and so on until all the tongues 6 have been inserted into the corresponding slots 16. When all the tongues 6 have thus been inserted in the slots 16' in the manner above described, the end tab 19 will lie over and against the large end panel 10 in which is the arcuate slot 18. The end 20 is then inserted into this slot 18 and when fully inserted, it is pressed downwardly to the bottom of the end 18' of the slot 18 against the end 21' of slot 21 to the rear of the head 20 of the fastening section 19. The box is now completely assembled with the free ends of the narrow flaps 15 of the side wall frictionally pressing against the upper surface of the bottom 1, that is to say, these tabs 15 are pressed manually, flat against the smaller tabs 4 of the bottom and when so positioned they will stay there because of the friction between the ends of the said flaps 15 and the bottom of the box.

This also makes clear why it is preferable to make the height of the narrow tabs 15 slightly less than the height of the panels 10 and 11, to allow for the thickness of the material which forms the bottom 1 and to cause them to press against the bottom 1 and prevent the bottom from being lifted with respect to the side walls. These flaps 15 are retaining flaps and prevent the separation of the bottom from the sides.

When so assembled and when so frictionally retained in place these tabs 15 function to prevent the bottom 1 from being pressed upwardly toward the top edge of the side walls of the box which motion would tend to remove the tongues 6 from their engagement with the slots 16 in the narrow wide tabs 14 of the side wall of the box.

In Fig. 5, the relation of the tongues 6 to the side wall of the box is clearly shown, the tongues lying between an outer panel 10 and the corresponding large inner flap 14 of the side wall, and in Fig. 6, the free end of a flap 15 is shown as in frictional engagement with the upper surface of the bottom 1 of the finished box to prevent any unintentional removal of the tongues 6 from the slots 16, and to retain the flaps 15 flat against the outer panel 11 with the tab 4 flat between them.

As shown in Fig. 4 this box so assembled is adapted to have fitted thereover, a plain rectangular cover 22 which may be of any suitable construction.

When the cover 22 is placed over the box, as is indicated in Figs. 4, 5 and 6, the box will fill the cover except at the corners, as shown in Figs. 4 and 6 and the bottom of the closed box will be of a distinctive character and will provide a different appearance from the boxes heretofore employed. The boxes may thus serve to readily identify the goods contained in the box as being of a certain origin or source of manufacture.

The goods for which this novel box has been particularly designed are such that the covers of the filled boxes are usually immediately destroyed by the purchaser (the retailer) and the goods are exposed for sale in the box itself. The square or rectangular cover 22 provides a facile way for packing and shipping a large number of filled boxes and the polygonal shaped box in which the goods are offered for sale presents an unusual and

attractive style of package by means of which the customer may immediately recognize the goods as the genuine.

In the modification shown in Fig. 7, the bottom blank 2^a and the side wall blank 8^a are integral and are cut from a single piece of sheet material. The bottom 1 is provided with three large tabs 3 and two small tabs 4 like the small tabs 4 of Fig. 1, but two of the smaller tabs 4^a are not rectangular in shape but rhomboidal due to the fact that the end panel 10^a of the side wall member replaces one of the tabs 3 of the bottom shown in Fig. 1 and is connected to the bottom 1 by the scoring 5. The panel 10^a, which is unitary with the bottom 1 in Fig. 7, is the panel in which is located the arcuate cut or slot 18 for the reception of the head 20 at the opposite end of the side wall piece or strip, and since the blank slip 8^a is integral with the bottom member 2^a, it is unnecessary to provide the flap 14^a with a slot 16. In other respects, the two forms of the device are alike. They are folded in the same manner upwardly around the scoring 12 and when so folded upwardly around the scoring 5 surrounding the bottom 1 and when all the tongues 6 have been inserted in the appropriate and corresponding cuts or slots 16 and the fastener 20—21 has been inserted into the slot 18 in the panel 10^a the box will have substantially the identical appearance as the box formed up out of the two blanks 2 and 8 of the first modification shown in Fig. 1.

While I have thus described with particularity two modifications or embodiments of this invention, the construction may be varied considerably in detail without departing from the spirit and scope of the invention. Thus, while I have shown in the two modifications above described the slot 16 with the angular cut 17 at the end thereof, this slot may be formed in a variety of ways. Thus, in Fig. 8, the slot 16 is also shown as offset with respect to the axial vertical line of the flap 14, but at the ends of the slot 16 are cuts 17^a at right angles thereto and terminating in a scoring 23, thus forming a small flap 24 which is easily pressed outwardly toward the outer ply of the wall for the insertion of the tongue 6 and after the tongue 6 has been inserted, it is slid sidewise to the center of the panel as indicated by the dot-and-dash lines in the upper portion of Fig. 8. In this case also the tab 6 is provided with the cut 6' at an end of the scoring 7.

Although, of course, the locking engagement of the cuts 6' with the ends 16' of the slot 16 are effective to prevent any unintentional elevation of the bottom of the box with respect to the side walls and a withdrawal of the tongues 6 from the slot 16, this short cut 6' may be omitted and the slot 16 may be placed symmetrical with respect to the flap 14, as shown in Fig. 9. In this construction it is the engagement of the free ends of the narrow flaps 15 with the upper surfaces of the bottom 1, which is relied upon to prevent one from sliding the bottom 1 upwardly to disengage the tongues 6 without first lifting all the flaps 15.

Nor is the invention limited to the exact shape of box or to the shape of the blanks from which they are formed, for from my above disclosure, it will be evident, to those skilled in the art of paper box making, that the invention may be embodied in different forms and shapes of boxes with vertical or tapering walls by merely providing properly shaped or formed blanks, it being only necessary to see to it that the blanks for the side walls provide a continuous strip to form the outer wall and coacting flaps, with a crease or

scoring between the flaps and the continuous strip so that the flaps may lie flat against the inner side of the outer wall, that the wall be a two-ply wall with the series of flaps forming the inner
 5 ply, and that the inner flaps be provided with slots into which tongues on the tabs of the bottom are insertable, and that in some cases certain of the inner flaps of the wall structure be of
 10 such a length that the free ends thereof frictionally engage the upper surface of the bottom when they are pressed flat against the inner surface of the ply forming the outer wall with the tongues between the plies of the side wall.

Having thus described my invention, what I
 15 claim and desire to protect by Letters Patent of the United States is:

1. In a foldable box, the combination with a bottom made of flexible sheet material and having a plurality of integral tabs at the edges thereof of upturned to make substantial angles with the plane of said bottom and provided with integral
 20 tongues cut into said tabs, the free ends of said tongues extending downwardly toward the plane of said bottom, of a side wall member also comprising a strip of sheet material folded longitudinally substantially midway between the side edges thereof to form a continuous outer wall ply and an inner wall ply integrally connected thereto
 25 at the top of said wall, the inner wall being transversely cut to provide downwardly extending flaps respectively fitting against a corresponding flap of said base, some of the flaps of said inner wall being provided with longitudinal slots into which
 30 respectively the tongues of the corresponding tabs of said base are inserted, said tongues lying between the plies of said wall, and means to prevent said base from being lifted with respect to said side walls sufficiently to permit of the disengagement of said tongues from said slots.

2. A box composed of cardboard and the like and comprising in combination a bottom provided with a plurality of integral tabs upturned into
 40 planes making a substantial angle to the plane of said base, some of said tabs being provided with integral tongues, the free ends of which extend downwardly toward the plane of said bottom and a side wall member folded longitudinally thereof
 45 to form a two-ply strip, the outer wall of which is continuous and the inner wall of which is integrally connected to the outer wall at the top edge of said wall, the inner wall ply being also transversely cut to provide downwardly extending flaps adapted to lie against corresponding tabs of said
 50 base, those flaps of said inner wall, which lie against those flaps of the base and are provided with tongues, being provided with a longitudinal slot into which the tongue of said tab is inserted to lie between the two plies of said wall, and those
 55 flaps of said inner wall, which are not provided with tongues, lying flat against the inner surface of their adjacent tabs respectively, the free ends of said last mentioned flaps being in frictional engagement with the upper surface of said bottom and operative to prevent the withdrawal of said
 60 tongues from said slots.

3. In a box composed of foldable sheet material, the combination of a flat polygonal base having a plurality of upturned integral tabs at the edges thereof, said tabs being provided with

integral vertically disposed tongues respectively cut in said tabs, the free ends of said tongues being directed downwardly toward said bottom, and a side wall comprising two plies folded flat
 80 against each other longitudinally and united integrally at the upper edge of said wall, the outer ply of said wall being scored vertically to bend around and fit against the angles of said base and the inner ply being cut vertically in registration with the scores in said outer ply to provide a series of downwardly extending flaps, those flaps
 85 which lie against the tongues of said tabs being provided with horizontal longitudinally disposed slots into which said tongues are inserted downwardly and lie between the outer and inner plies of said side wall.

4. In a box composed of foldable sheet material, the combination of a flat polygonal base having a plurality of upturned integral tabs at the edges thereof, said tabs being provided with integral
 95 vertically disposed tongues respectively cut in said tabs, the free ends of said tongues being directed downwardly toward said bottom, and a side wall comprising two plies folded flat against each other longitudinally and united integrally at the upper
 100 edge of said wall, the outer ply of said wall being scored vertically to bend around and fit against the angles of said base and the inner ply being cut vertically in registration with the scores in said outer ply to provide a series of downwardly
 105 extending flaps, those flaps which lie against the tongues of said tabs being provided with horizontal longitudinally disposed slots into which said tongues are inserted downwardly and lie between the outer and inner plies of said side wall,
 110 and intermediate flaps, between said flaps having slots, between which, and the outer ply of said wall, some of the tabs of said base lie flat, the free ends of said intermediate flaps being in frictional engagement with the top wall of said bottom, and means integral with said outer ply to
 115 separably connect the ends of the outer ply of said side walls.

5. In a box composed of foldable sheet material, the combination of a flat polygonal base having a
 120 plurality of upturned integral tabs at the edges thereof, said tabs being provided with integral vertically disposed tongues respectively cut in said tabs, and having a short transverse locking slot at the base thereof, the free ends of said tongues
 125 being directed downwardly toward said bottom, and a side wall comprising two plies folded flat against each other longitudinally and united integrally at the upper edge of said wall, the outer ply of said wall being scored vertically to bend around and fit against the angles of said base and the inner ply being cut vertically in registration with the scores in said outer ply to provide a series of
 130 downwardly extending flaps, those flaps which lie against the tongues of said tabs being provided with horizontal longitudinally disposed slots offset with respect to the coating tongues a distance substantially equal to the depth of the slot at the base of said tongue and into which said tongues,
 135 are inserted downwardly and lie in locked relationship between the outer and inner plies of said side wall.

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