

June 16, 1953

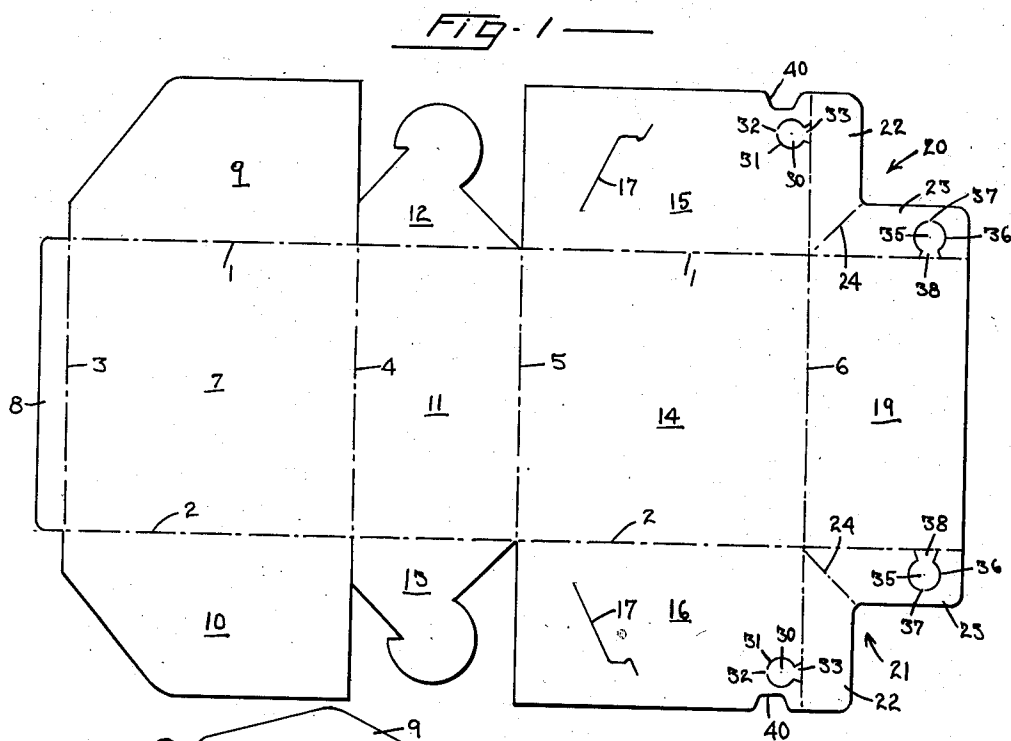
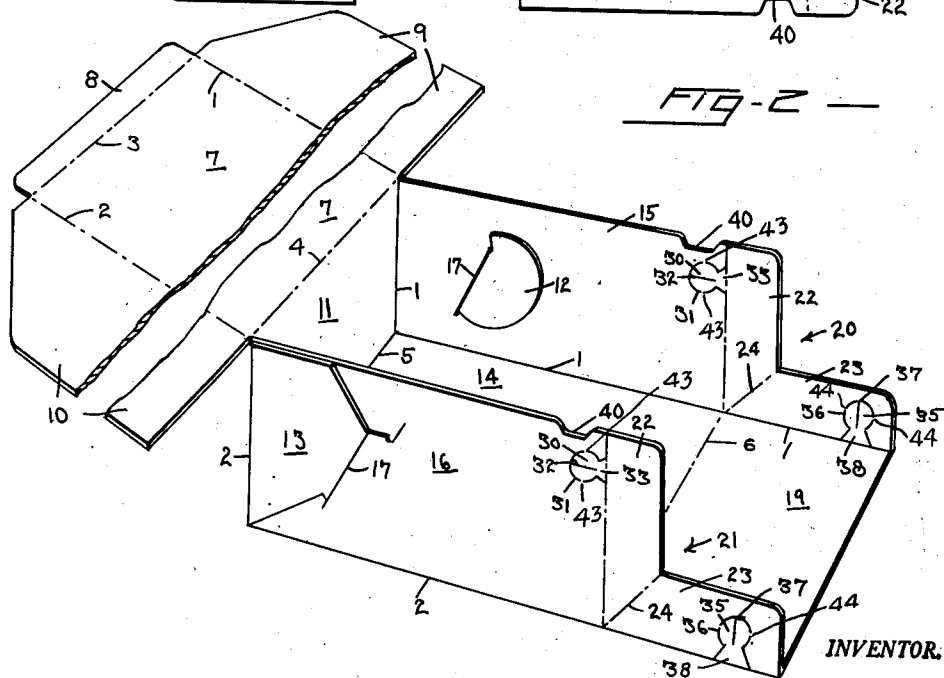
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2,642,218

FOLDING BOX LOCKING STRUCTURE

Filed Feb. 16, 1948

2 Sheets-Sheet 1



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FIG. 3

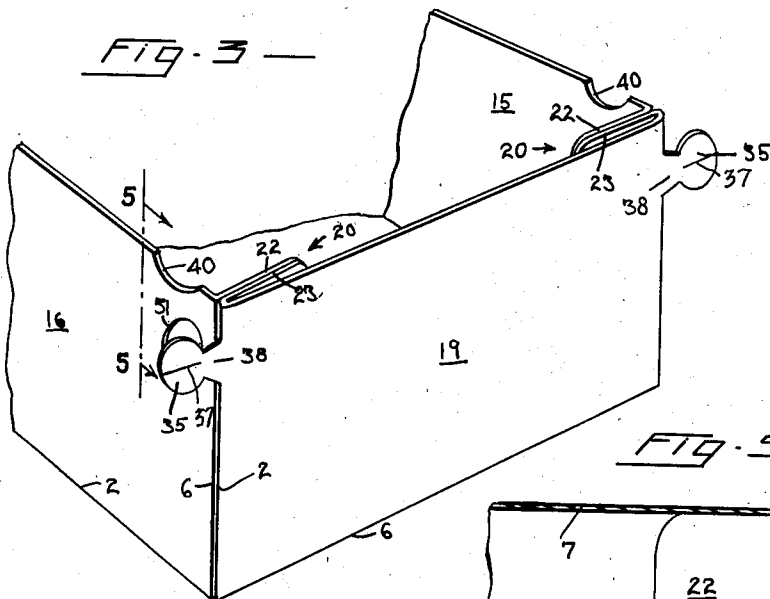


FIG. 5

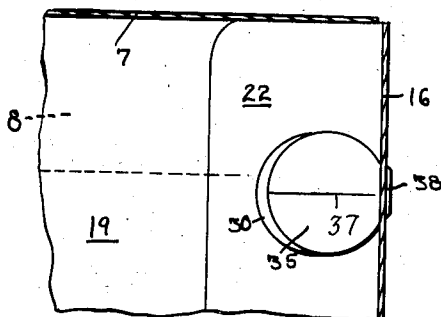
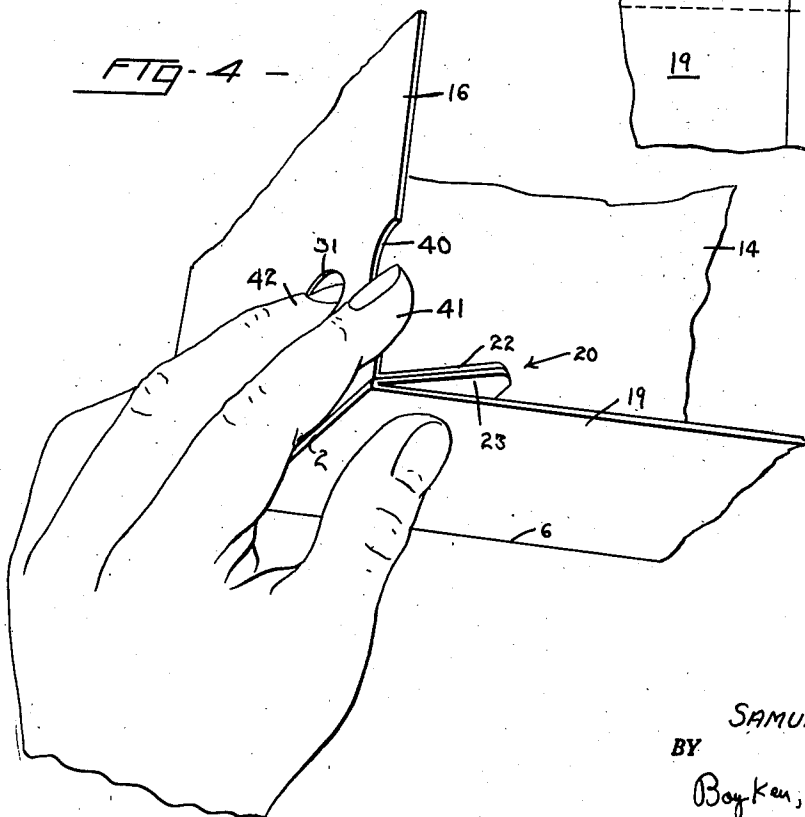


FIG. 4



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FOLDING BOX LOCKING STRUCTURE

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Application February 16, 1948, Serial No. 8,490

3 Claims. (Cl. 229—31)

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This invention relates to folding boxes generally of the type disclosed in my copending application Serial No. 592,217, filed May 5, 1945, now abandoned, in which the bottom, side walls and front wall are integral with the side walls and front wall foldable to positions at right angles to the said bottom.

One of the objects of said invention is the provision of improved means in a box of the above type for releasably holding the front wall from outfolding when it is in a position closing the front side of the box, and which means is independent of a top for said box.

Another object of the invention is the provision of improved means in a folding box to facilitate the folding of such box from a blank of cardboard.

Heretofore boxes as described in my said copending application have been used widely in bakeries for holding pastry products of various kinds. In such boxes, the cover for the box functions to hold the front side of the box closed, said cover including an extension that either overlies the outer side of the front wall so it will hold the front wall from outfolding when a string is tied around the box extending over the top, bottom and front wall, or else such extension is inserted between the front wall and folded corner pieces that are at the front corners of the box, thus holding the front wall closed independently of a string. Where such boxes are used for holding cakes, the cake is readily removed by merely raising the cover and as soon as this is done, the front side of the box will automatically outfold to a position coplanar with the bottom wall. The cake is then easily slipped out of the box through the open front side of the box without injury thereto.

In many bakeries the boxes as described above are also used for holding cookies or a plurality of small cakes or the like, and in such instances it is desirable that the front side wall stay closed while the cookies are being packed in the box and while the cover is open. In other words, the advantages of the construction whereby the front side can be readily lowered where the box is used for cakes but which box can also be held in set-up form for cookies is highly desirable and is made possible by this invention in a simple manner that requires no more material than heretofore and that is set up in substantially the same manner.

Other objects and advantages will be obvious from the description and drawings.

In the drawings,

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Fig. 1 is a plan view of a blank from which the box is formed.

Fig. 2 is a perspective view of the box ready for receiving a cake or the like and before the front wall is folded to close the front side of the box.

Fig. 3 is an enlarged fragmentary perspective view showing the front wall of the box in a position closing the front side thereof and with the locking tabs thereon in a position for locking the front side closed.

Fig. 4 is an enlarged fragmentary perspective view illustrating the positions of the locking tabs, front wall and a recess in each side wall relative to the left hand of the operator. The right hand would be in a similar position at the right front corner of the box but is omitted for lack of room.

Fig. 5 is an enlarged fragmentary sectional view taken along line 5—5 of Fig. 3 but with the cover closed and with the locking tab on the front wall in locking position.

In detail the invention as illustrated in the drawings comprises a blank creased along parallel spaced lines 1, 2 (Fig. 1) and creased along spaced lines 3, 4, 5, 6 that extend at right angles to lines 1, 2 and that intersect the latter.

The area between lines 1, 2, 3 and 4 defines a rectangle that forms the top of the box. Line 3 is adjacent one end of the blank and along the side of line 3 opposite the top wall 7 is a strip 8 that is adapted to form a flap adapted to be alongside the upper marginal portion of the front wall of the box when the box is formed.

Outwardly of lines 1, 2 relative to top wall 7 are sections 9, 10 that are adapted to overlie the two opposite lateral sides of the box when the latter is formed.

The area between lines 1, 2 and 4, 5 is adapted to form the rear wall 11 of the box while tabs 12, 13 outwardly of the lines 1, 2 at the ends of wall 11 comprise conventional locking tabs that are adapted to be inserted into slits formed in the lateral sides of the box, as will later be described.

The area between lines 1, 2 and 5, 6 substantially corresponds with the top wall 7 and forms the bottom wall 14 of the box.

The two opposite lateral sides of the box are rectangular sections 15, 16 that are along lines 1, 2 outwardly of bottom wall 14 and these have the slits 17 respectively formed therein for receiving the tabs 12, 13 for holding the rear wall 11 and side walls 15 together in a position at right angles to each other and to bottom wall 14.

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The front wall 19 of the box is at the opposite end of the blank from the flap or strip 8 and is a rectangular section along line 6 and outwardly of the bottom wall 14.

Corner pieces 20, 21 are provided at the ends of the front wall 19, which corner pieces are integral with the side walls 15, 16 and with the front wall 19. These corner pieces are in the form of coplanar right angle strips, one side 22 of each strip extending transversely of the length of each of the side walls 15, 16 at their ends adjacent the ends of front wall 19 and outwardly of line 6. Side 23 of each angle strip extends transversely of the length of the front wall 19 at the opposite ends of said front wall outwardly of lines 1, 2. A diagonal crease line 24 extends across each angle strip from the intersection of lines 1, 6 and lines 2, 6.

The folding of the box is readily accomplished by first folding up the side walls 15, 16 and corner pieces 20, 21 along lines 1, 2 and then folding up the rear wall 11 and slipping the tabs 12, 13 through slits 17. Then the box assumes the form seen in Fig. 2.

If the box is to be used for a cake in the manner shown in my said copending application, the corner pieces 20, 21 are pressed inwardly toward each other and the front wall is swung upwardly until its end edges are along the end edges of the sides 15, 16. The cover 7 is then swung downwardly over the cake and the strip 8 is folded down to extend between the infolded corner pieces 20 and front wall 19, thus locking the front wall closed. The sections 9, 10 are then folded down to overlie the outer sides of side walls 15, 16. A cord is usually then tied around the box.

When the top is raised to remove the cake, the front side is automatically released and will move back to the position shown in Fig. 2 or substantially to said position. The cake may then be slipped out of the open front of the box.

In order to secure the front wall in closed position independently of the cover, substantially circular tabs 30 are partially stamped from the side walls 15, 16 fairly close to the upper edges of said side walls and closely alongside crease line 6. These remain connected with the side walls for a distance along said line and preferably remain "tacked" in the openings 31 formed by stamping said tabs therefrom at one or more points 43. However, the tabs are easily broken from the side walls at said points. A relatively short neck 33 may constitute the securement between each tab 30 and the side wall and which neck is sufficiently strong and wide to prevent accidental tearing of the tab from the side walls.

The tabs 30 are bendable toward each other and into the box when the connecting parts 32 are broken.

The front wall 19 also carries substantially circular tabs 35 that are stamped out of the sides 23 of angle strips 20 and which tabs are "tacked" or secured in the openings 36 in said sides 23 at one or more points 44 in the same manner as tabs 30 are secured in openings 31. A neck 38 connects one side of each tab with the end wall 19 along each of the creases 1, 2. The necks 38 are slightly longer than necks 33 on tabs 30.

When the tabs 35 are broken from the corner pieces at points 37 and are outfolded to the positions seen in Fig. 3, they are adapted to be swung through the openings 31 in side walls 15, 16 by the fingers 42 (Fig. 4) of the hands of the operator. Tabs 30 will readily break at points 32 to move inwardly into the box with the tabs 35.

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The tabs 30, 35 will then be in overlying relationship (Fig. 5) and against the corner pieces 20. Tabs 35 cannot be withdrawn from the openings 31 except by positively swinging them back through the latter.

The operation of swinging the front side wall to vertical position by the thumbs of the operator's hands, as indicated in Fig. 4, is accomplished by providing a recess 40 in the upper edges of the side walls 16. These recesses are near the ends of the front wall and enable the operator to maintain a grip on the box at its front corners through positioning the forefingers 41 (Fig. 4) of the hands in said recesses, respectively, while the thumbs are used to swing the front side to a position closing the front of the box and while one of the other fingers 42 push the tabs 30, 35 inwardly into the box to locking position.

The positioning of the tabs 35 adjacent the upper edges of the front wall 19 and the correspondingly elevated position of the openings 31 insure adequate strength in the tabs for holding the front wall against unfolding inasmuch as a minimum amount of force is required for this purpose at a point or points remote from the crease line 6 that is at the juncture between the front wall and the bottom wall.

Also the shape of the tabs materially contributes to the accomplishment of the desired results. No intricate threading of tabs through slits is required, but the tabs are merely swung straight through openings 31 into the box. Thereafter the tabs will not pull out of the openings unless positively swung therethrough in the reverse direction, which would not occur unless such intentional force were applied.

With certain cardboard, it has been found desirable to slit the tabs 30, 35 as indicated at 32, 37 respectively to facilitate the passage of the tabs through the openings.

I claim:

1. In a rectangular cardboard box having a bottom wall, a front and rear wall and opposed lateral side walls integral therewith, corner pieces extending from the adjacent ends of said side and front walls and connecting said side and front walls, folding creases formed along the edges of said box and across said corner pieces for unfolding said front wall and corner pieces to a position in which said front wall is coplanar with said bottom wall and in which said corner pieces are respectively coplanar with the side wall connected thereto, the corner piece at each end of said front wall being folded on itself and projecting into said box when said front wall is in a position forming the front side of said box, and tabs respectively connected with said corner pieces and with said front wall folded into said box in engagement with each other for holding said front wall in said position forming said front side of said box, and openings formed in said side walls through which the tabs that are on said front walls extend.

2. In a rectangular cardboard box having a bottom wall, a front and rear wall and opposed lateral side walls integral therewith, corner pieces extending from the adjacent ends of said side and front walls and connecting said side and front walls, folding creases formed along the edges of said box and across said corner pieces for unfolding said front wall and corner pieces to a position in which said front wall is coplanar with said bottom wall and in which said corner pieces are respectively coplanar with the side wall connected thereto, the corner piece at

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each end of said front wall being folded on itself and projecting into said box when said front wall is in a position forming the front side of said box, and tabs respectively connected with said corner pieces and with said front wall folded into said box in engagement with each other for holding said front wall in said position forming said front side of said box, and openings formed in said side walls through which the tabs that are on said front walls extend, the tabs on said front wall being stamped from said corner pieces and the tabs on said corner pieces being stamped from said side walls.

3. In a rectangular cardboard box having a bottom wall, a front and rear wall and opposed lateral side walls integral therewith, corner pieces extending from the adjacent ends of said side and front walls and connecting said side and front walls, folding creases formed along the edges of said box and across said corner pieces for unfolding said front wall and corner pieces to a position in which said front wall is coplanar with said bottom wall and in which said corner pieces are respectively coplanar with the side wall connected thereto, the corner piece at each end of said front wall being folded on it-

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self and projecting into said box when said front wall is in a position forming the front side of said box, and tabs respectively connected with said corner pieces and with said front wall folded into said box in engagement with each other for holding said front wall in said position forming said front side of said box, and openings formed in said side walls through which the tabs that are in said front walls extend, the tabs on said front wall being stamped from said corner pieces, and the tabs on said corner pieces being stamped from said side walls to provide said openings in said side walls.

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