

Sept. 27, 1966

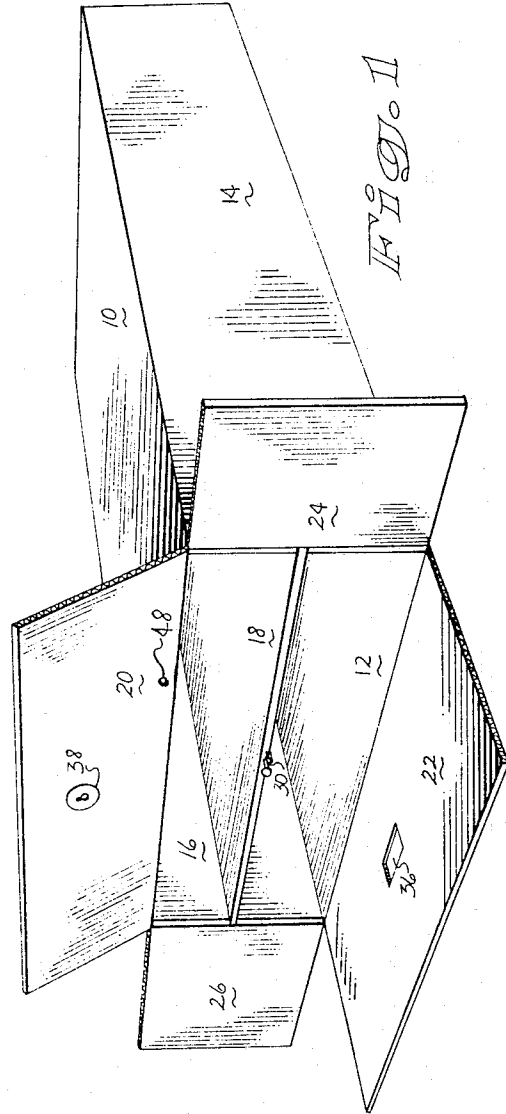
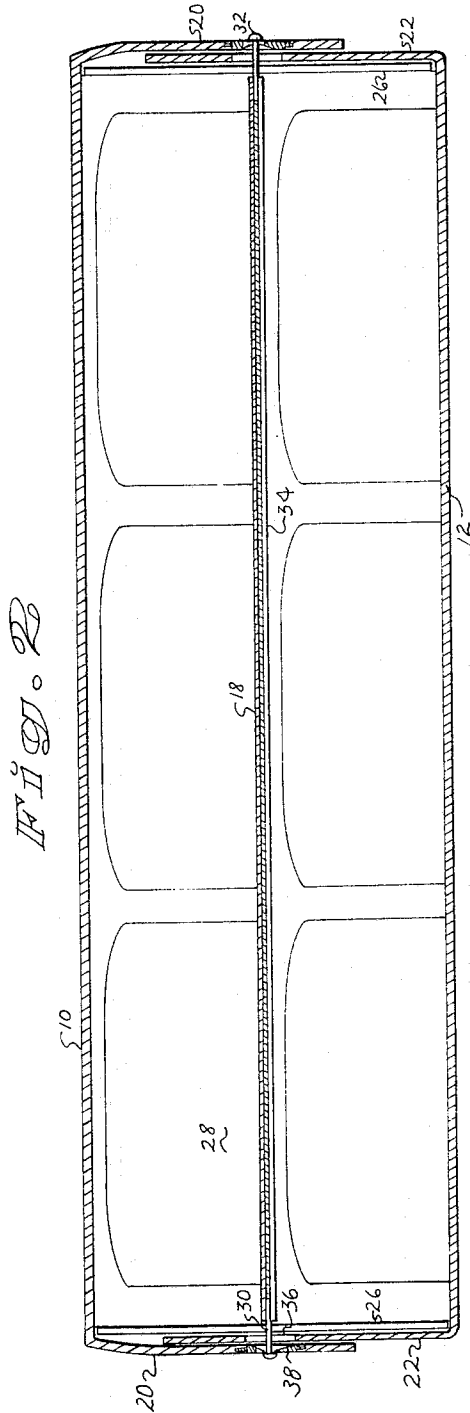
L. O. HUBBARD

3,275,220

BAKERY BOXES

Filed March 25, 1965

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

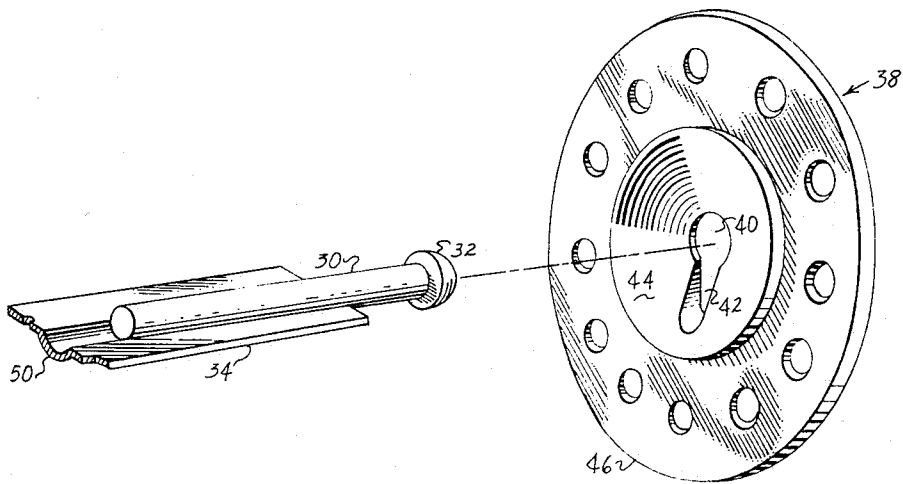


Fig. 3

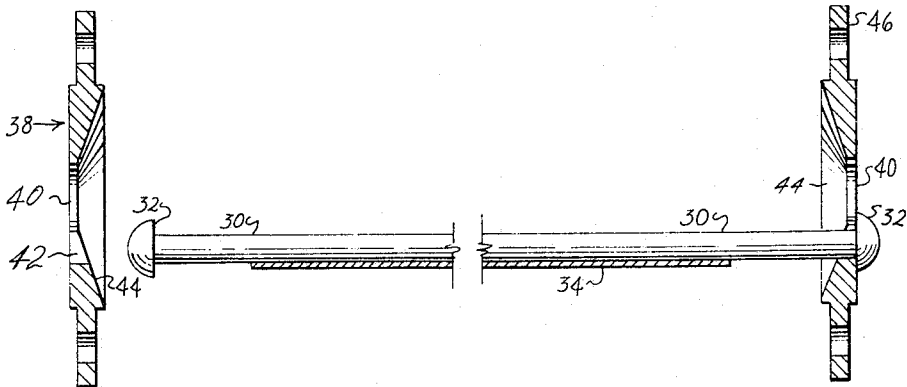


Fig. 4

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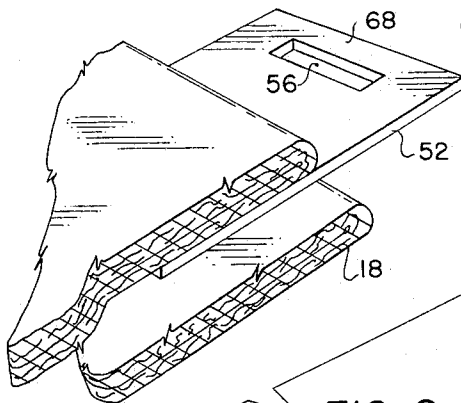
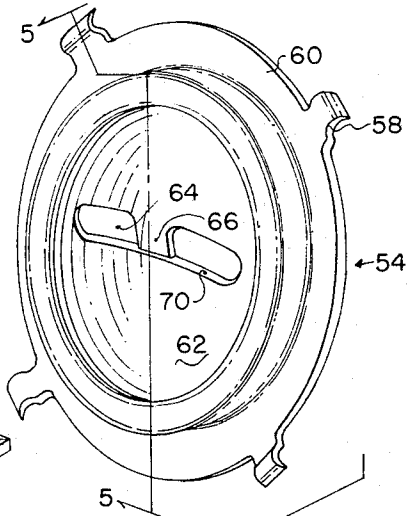
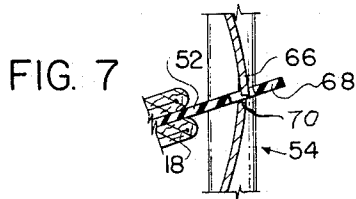
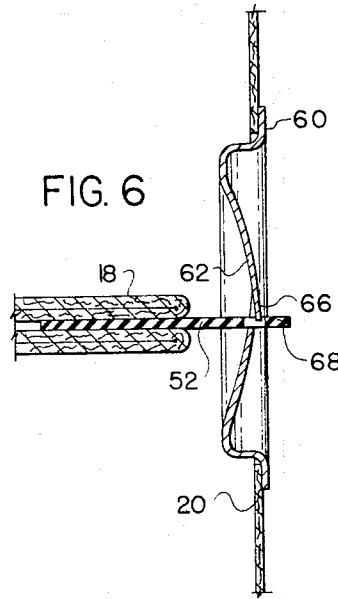
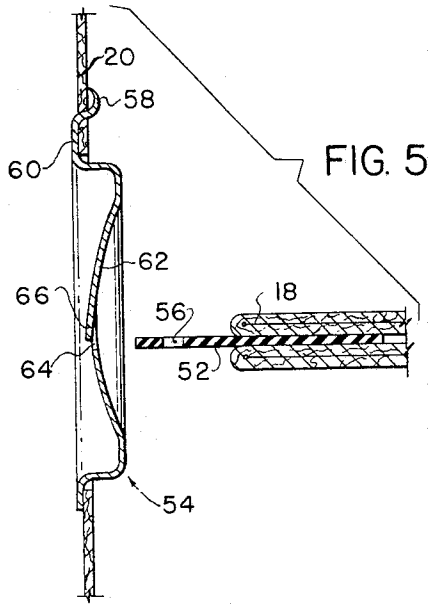
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3 Sheets-Sheet 3



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3,275,220

BAKERY BOXES

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Filed Mar. 25, 1965, Ser. No. 444,937

7 Claims. (Cl. 229-47)

This is a continuation-in-part of my co-pending application Ser. No. 210,342, filed July 17, 1962, and now abandoned.

This invention relates to pasteboard bakery boxes and more particularly to divided boxes for containing bread to be delivered from the bakery to the retail outlet.

It is common practice at the present time to deliver bread in a pasteboard bakery box from the bakery to the retail outlet. Traditionally, these boxes are designed to carry twenty-four loaves of bread in two tiers. The box has a divider and at each end there are flaps for closing the box. Under the present commercial practice, these flaps are secured by string.

I have invented a box with improved means for fastening the flaps which also tends to reinforce the center divider between the two tiers. This results in a box which has longer life. Also, inasmuch as the end fasteners are quicker to operate they will save time and eventually money, i.e. although the box has a higher initial cost, through the saving of labor in tying and untying strings, there would be an eventual monetary saving. In addition the reinforcement of the boxes causes them to last longer and this results in economy.

An object of this invention is to provide a new latch for closing the flaps of bakery boxes.

Another object of this invention is to provide a latch which is quick to close and quick to open.

Another object of this invention is to provide a latch which is an integral, structural part of the box resulting in a more secure box.

Another object of this invention is to provide a latch which is closed by both the natural springiness of the material and the weight of the product within the box.

Another object of this invention is to provide a latch wherein the box is readily collapsed and also the end flaps may be folded at right angles to the remainder of the box.

Further objects are to achieve the above with a device that is sturdy, compact, durable, simple, and reliable, yet inexpensive and easy to manufacture.

The specific nature of the invention as well as other objects, uses, and advantages thereof will clearly appear from the following description and from the accompanying drawing, the different views of which are not necessarily to the same scale, in which:

FIG. 1 is a perspective view of a box with improved latch, with the flaps open.

FIG. 2 is a sectional view of a box with the product therein, with both end flaps closed and latched.

FIG. 3 is an exploded perspective view of the latch elements of one end, enlarged for clarity.

FIG. 4 is a sectional view of the latch of a box enlarged for clarity showing one side latched and the other side open.

FIG. 5 is a sectional view of a second embodiment of a latch for the box, enlarged for clarity, in the open position.

FIG. 6 is a sectional view of the second embodiment of the latch, enlarged for clarity in the latched position.

FIG. 7 is a sectional view of the second embodiment of the latch enlarged for clarity and in a somewhat exaggerated position to show the flexed position of the divider and the latch when the box is loaded with the product.

FIG. 8 is an exploded perspective view of the second embodiment of the latch elements of one end, enlarged for clarity.

As may be seen in the accompanying drawing, the box

has a top 10, bottom 12, and sides 14 and 16. Also, there is a center divider 18 extending between the walls 14 and 16. The center divider 18 is parallel to the top 10 and the bottom 12. Top flap 20 is hinged to the top 12. Bottom flap 22 is hinged to the bottom 12. Side flap 24 is hinged to the side 14 and side flap 26 is hinged to the side 16. The box may be collapsed if the flaps extend outward from the sides and the corners wherein the top 10 joins the sides and the bottom 12 joins the sides are folded.

The side flaps 24 and 26 are the same width as the sides 14 and 16. When the side flaps 24 and 26 are folded before the top flap 20 and bottom flap 22, the box is rigid and cannot be collapsed. The box is made of fiberboard corrugated cardboard or pasteboard or similar inexpensive material. When I say the flaps are hinged or that the joints fold, it will be understood that it is not necessary for two pieces to be joined together for special movement but that a single integral piece may be folded, thus forming a "hinge."

The box as described above is conventional in every respect and is that which is commonly used on the market today. It is shown in FIG. 2 with loaves of bread or product 28 therein.

According to the first embodiment of my invention male member in the form of bolt 30 it attached to the divider 18 to project from the center thereof. The bolt 30 has round head 32 thereon. The bolt 30 may be attached to the end of a divider 18 or as illustrated it may be connected to elongated middle strap 34 which extends from one end of the divider 18 to the other. It is found that it is easier to attach the bolts 30 to the divider 18 if they include the strap 34. The bolts 30 are co-axial with the longitudinal axis of the box, or approximately so.

The bottom flap 22 has a hole 36 therein which mates with the bolt 30 when the flap 22 is closed. Female connector 38 is attached to the top flap 20 so that when the flap 20 is closed the bolt 30 is aligned with the opening in the connector 38 or is slightly below it.

The connector 38 has a keyhole opening through it. The opening includes circular portion 40 with an elongated narrow slot 42 connecting beneath it. The surface of connector 38 which is toward the inside of the box when the flap 20 is closed has conic depression 44 in it. If the round head 32 of the bolt 30 is pressed against the depression 44, the head will be guided to the circular opening 40 and passed through it. Then inasmuch as the bolt 30 in its normal position is slightly lower than the center of the connector 38, the bolt 30 will be guided into the slot portion 42. The width of the slot 42 is less than the diameter of the head 32 and therefore the flap 20 is held securely in place. The weight of the product 28 upon the divider 18 will furnish additional force for holding the latch closed, i.e., the latch is closed by the springiness of the material inasmuch as the bolt 30 in the normal position is below the central circular opening 40 and also by the weight of the material 28 resting upon the bolt 30. The bolt 30 through the opening in the connector 38 will tend to support the divider 18.

Around the circumference of the connector 38 there is flange 46 which is means for attaching the connector 38 within the top flap 20. It will be apparent to those skilled in the art that the connector 38 could be secured to the top flap 20 by means such as integral staples built around its perimeter.

The bolt 30 and the slot 42 prevent transverse movement of the flap preventing the box from collapsing. This collapse is also prevented by the flaps 24 and 26 inasmuch as they abut tightly between the top 10 and bottom 12 when they are in the closed position. However, it will be appreciated that the latch provides additional restraint in this direction. The box may be collapsed in the normal manner. Also, in some cases it is desirable to fold the

3

flaps 20, 22, 24, and 26 down so that they are at right angles to the box in the folded position. In such case, the bolt 30 will form a slight depression 48 in the top flap 20. However, the bolt 30 and its head 32 do not extend sufficiently far to prevent the top flap 20 from being folded downward.

As shown in FIG. 3 the strap 34 has a rib 50 longitudinally thereof extending from one end to the other. This gives additional rigidity to it and to the divider 18. The rib 50 has a flange (unnumbered) on either side thereof. The section of FIG. 2 is not taken on the center line of the strap 34, but slightly to one side thereof; therefore, the divider 18 and the flange of strap 34 are shown in FIG. 2 as sectioned and the rib 50 is shown in elevation.

Now referring more particularly to FIGS. 5, 6, 7, and 8 it may be seen there illustrated a second embodiment. This second embodiment is quite similar to the first except that male plate member 52 is substituted for bolt 30 and female connector 54 is substituted for connector 38. The second embodiment is similar to the first in that the weight of the product 28 upon the divider 18 causes the elements to move into a more tightly latched position.

The plate 52 has a cross-wise elongated slot 56 in the end thereof. The slot is transverse unto the longitudinal axis of the box and its position is more clearly seen in FIG. 8. The plate 52 is made of synthetic plastic material and has natural springiness. It is illustrated here that the plate 52 is rather short and is secured by adhesives, for example, between the layers of material forming the center divider 18 at the end thereof aligned with the longitudinal axis of the box.

Connector 54 is circular and is secured to the end flaps 20 by integral staples 58. These staples 58 are formed along the perimeter of flange 60. The connector 54 is illustrated made of sheet metal being pressed into its particular configuration with arcuate depression 62 in the side which faces the inside of the box. Slot 64 is located in the center of the connector 54 and at the bottom of the depression 62. It is slightly larger in width and height than the width and thickness of the plate 52. Therefore the plate 52 in operation slides through the slot 64. Tongue 66 depends within the slot 64 and extends slightly outward therefrom as clearly illustrated in FIGS. 5 and 6.

When the second embodiment latch is connected, the fore piece 68 of the plate 52 is depressed downward by the tongue 66. The natural springiness causes it to return to its original position as seen in FIG. 6. The bottom of the plate 52 rests upon the bottom 70 of the slot 64. The weight of the product 28 upon the center divider 18 will cause the divider to bend downward due to the natural springiness of the material as seen in FIG. 7. Therefore the end and fore piece 68 of the plate 52 will angle upward; the bottom 70 of the latch 54 forming a fulcrum about which the plate 52 bends. Thus the weight of the product 28 upon the center divider 18 cause the elements to latch more securely and the tongue 66 to more securely be engaged through the slot 56 within the plate 52.

It will be apparent that the embodiments shown are only exemplary and that various modifications can be made in construction, materials, and arrangement within the scope of the invention as defined in the appended claims:

I claim as my invention:

1. In a box made of stiff pasteboard with natural springiness, said box having,
 - (a) a top, bottom, and two sides,
 - (b) on each end of the box a top flap hinged to the top, a bottom flap hinged to the bottom, and a side flap hinged to each of the sides.
 - (c) the side flaps being the same width as the sides so that when they are closed before the top and bottom flap they give rigidity to the box, and
 - (d) a center divider extending in a plane parallel to the top and bottom and half-way therebetween, the improvement comprising:

4

- (e) a bolt attached to the end of edge of the center of the divider and extending inwardly along the divider,
- (f) a hole in the bottom flap so that when it is folded up, before the top flap is folded down, the bolt protrudes through the hole, and

- (g) a female connector attached in the top flap,
- (h) said female connector having a keyhole opening with a circular portion and a slot portion therein,
- (i) the keyhole opening arranged so that when the top flap is closed the slot portion has its longitudinal axis vertical and is below the circular portion within the female connector,
- (j) said bolt extending through said female connector and resting at the bottom of the slot so that the female connector with the bolt results in additional transverse rigidity to the box by preventing the top flap from moving relative to the bolt attached to the divider, and
- (k) a head on the end of the bolt to prevent the top flap from opening,
- (l) said head being rounded,
- (m) said female connector having an inward depression thereon to direct the rounded head of the bolt through the circular opening thereof.

2. The invention as defined in claim 1 wherein there is
 - (n) a bolt and latch at each end of the box, and
 - (o) a reinforcing strip connecting the bolts, and
 - (p) the reinforcing strip is connected to the divider.

3. In a box made of stiff pasteboard with natural springiness, said box having

- (a) a top, bottom, and two sides,
- (b) a top flap hinged to the top, a bottom flap hinged to the bottom, and a side flap hinged to each of the sides, and
- (c) a center divider in a plane parallel to the top and bottom,

the improved end connector comprising:

- (d) a bolt extending from the divider, and
- (e) a female connector on the top flap,
- (f) said female connector having a keyhole opening therethrough, said keyhole opening including a circular opening and a slot portion so that when the box is in the normal closed position, the bolt is in the slot portion of the keyhole opening and the springiness of the material, plus the weight of the product on the divider holds the bolt in the slot portion of the keyhole opening of the female connector.

4. In a box made of stiff pasteboard with natural springiness, said box having

- (a) a top, bottom and two sides,
- (b) a top flap, bottom flap and two side flaps hinged respectively to the top, bottom and two sides on one end thereof, and
- (c) a horizontal divider in the box in the plane parallel to the top and bottom,

the improvement comprising:

- (d) a male member connected to the divider,
- (e) a female connector member connected to the top flap,
- (f) said female member having a slot therethrough through which the male member engages,
- (g) the connection between the male and female member being such to prevent the top flap from moving in any direction relative to the center divider,
- (h) elements contained on the male and female member forming means for increasing the security with which the two elements are latched together responsive to the weight of a product carried upon the divider.

5. The invention as defined in claim 4 wherein the male member rests on the bottom of the slot in the female connector when in the security latched position.

5

6. In a box made of stiff pasteboard material with natural springiness, said box having
- (a) a top, bottom and two sides,
 - (b) on each end of the box, a top flap hinged to the top, a bottom flap hinged to the bottom, and a side flap hinged to each of the sides, and
 - (c) a center divider extending a plane parallel to the top and bottom and halfway therebetween, the improvement comprising:
 - (d) a male plate member attached to the end edge of the center divider and extending inward along the divider,
 - (e) a hole in the bottom flap so that when it is folded up, before the top flap is folded down, the male plate member protrudes through the hole, and
 - (f) a female connector attached to the top flap,
 - (g) said female connector having a slot extending therethrough,
 - (h) the slot arranged so that when the top flap is closed the slot portion has its longitudinal axis horizontal,
 - (i) said male plate member extending through said slot in said female connector and resting on the bottom of the slot,
 - (j) a tongue extending downward and outward from the top of the slot on the female connector,
 - (k) a slot in the male plate member,
 - (l) said tongue engaging said slot to prevent the top flap from opening,
 - (m) said female connector having an inward depression thereon to direct the male plate member to within the slot within the female member,

6

7. In a box made of stiff pasteboard with natural springiness, said box having
- (a) a top, bottom and two sides,
 - (b) a top flap hinged to the top, a bottom flap hinged to the bottom and a side flap hinged to each of the sides, and
 - (c) a center divider in a plane parallel to the top and bottom, the improved end connector comprising:
 - (d) a male plate member extending from the divider, and
 - (e) a female connector on the top flap,
 - (f) said female connector having a slot therethrough,
 - (g) said male plate member having a slot therethrough,
 - (h) said female member having a tongue projecting from the center of the top of said slot,
 - (i) so arranged and positioned that the tongue engages the slot of the male plate member when the connector is latched and that the weight of material upon the center divider causes the outer end of the plate to move upward to more securely engage the tongue with the edge of the slot of the male plate member.

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