June 22, 1948. W. G. ANDERSON, JR 2,443,713

FOLDING PAPER BOX

Filed Nov. 24, 1947 3 Sheets-Sheet 1

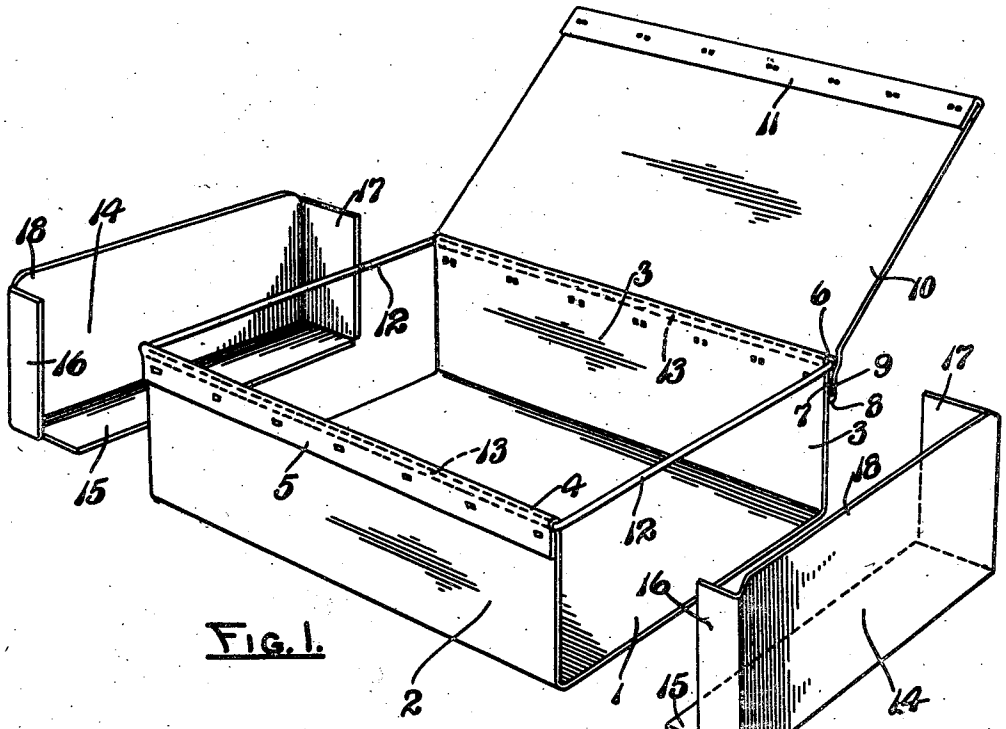



FIG. 1.

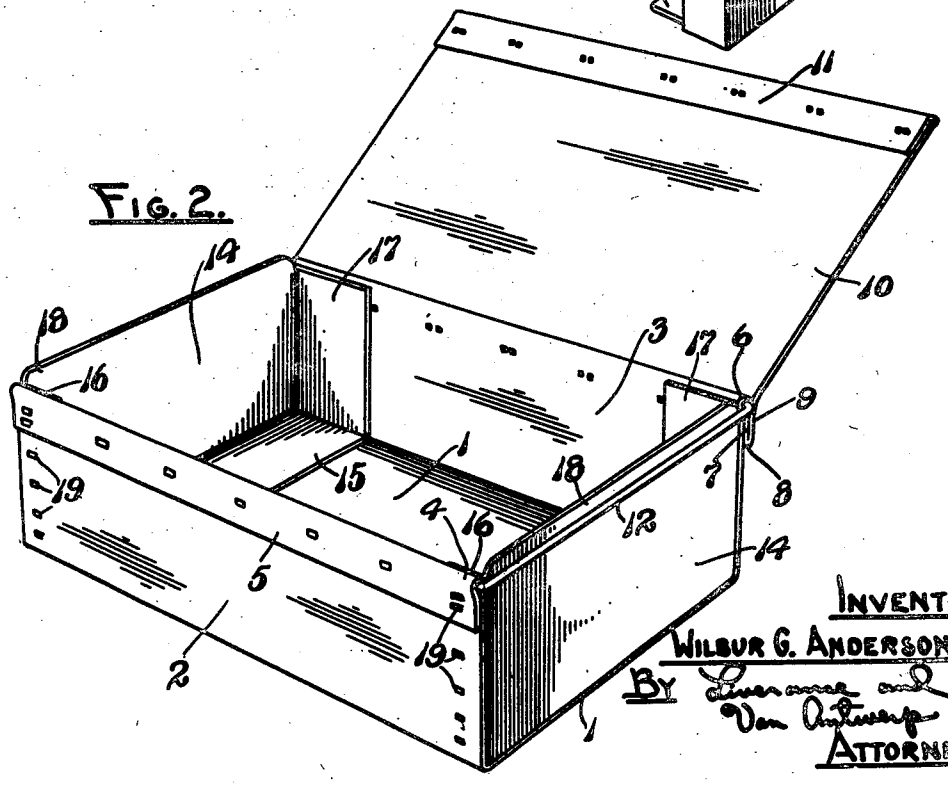



FIG. 2.

INVENTOR
WILBUR G. ANDERSON, JR.
BY Lowe, Price & Van Antwerp
ATTORNEYS

June 22, 1948. W. G. ANDERSON, JR 2,443,713

FOLDING PAPER BOX

Filed Nov. 24, 1947 3 Sheets-Sheet 2

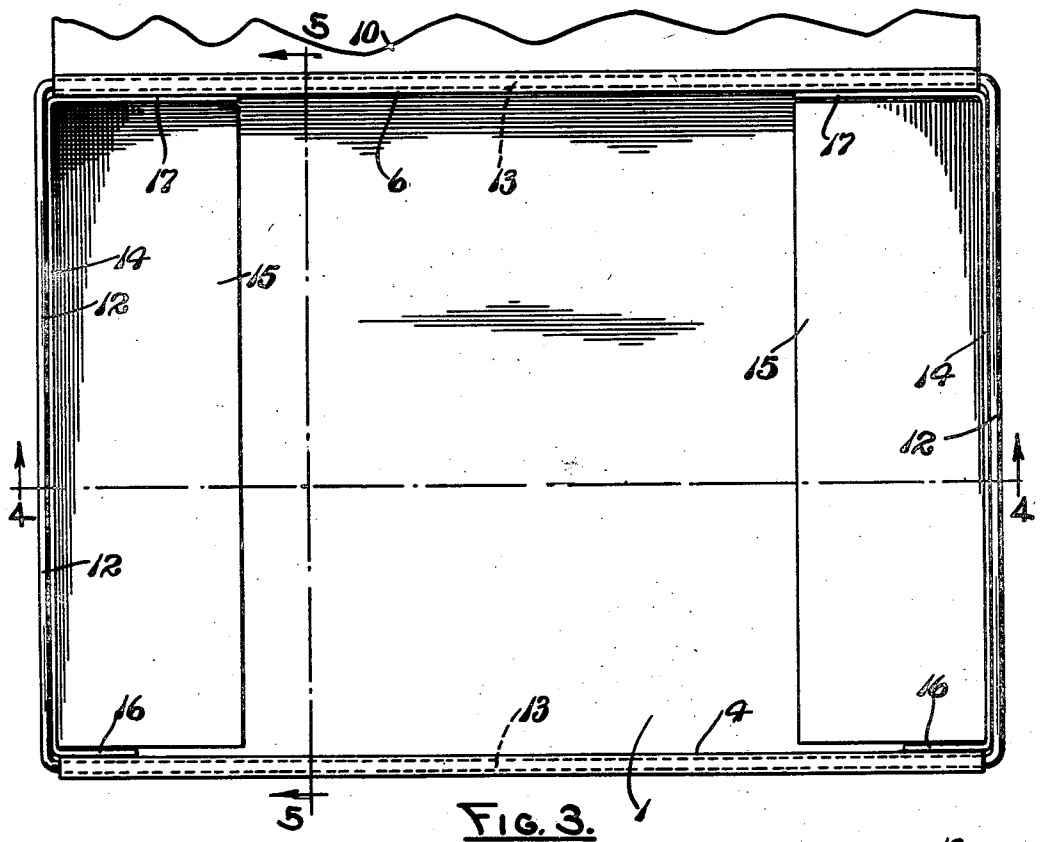



FIG. 3.

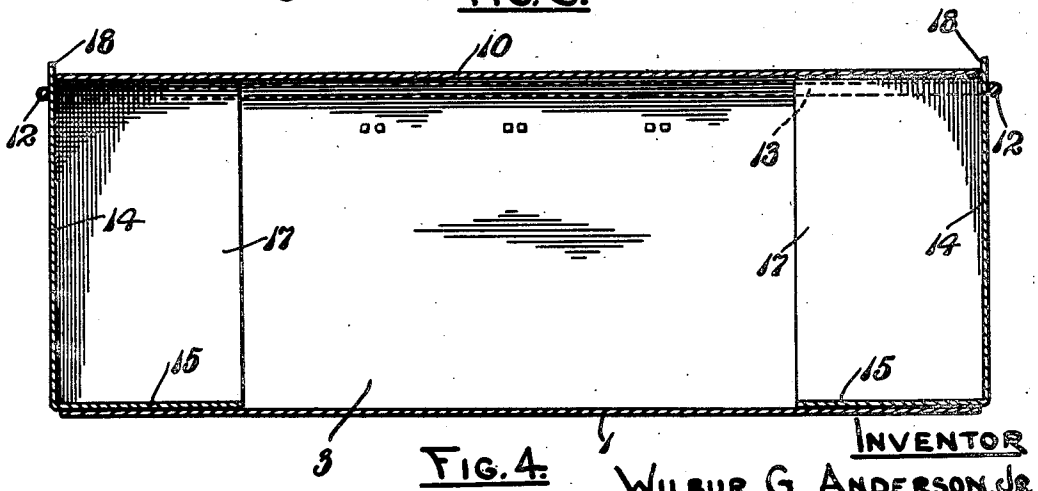



FIG. 4.

INVENTOR
WILBUR G. ANDERSON, JR
BY Livernois and Van Antwerp
ATTORNEYS

June 22, 1948. W. G. ANDERSON, JR 2,443,713

FOLDING PAPER BOX

Filed Nov. 24, 1947 3 Sheets-Sheet 3

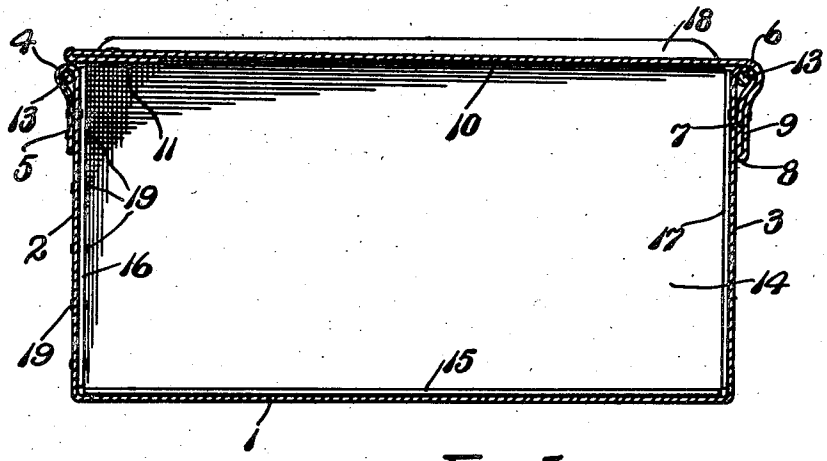
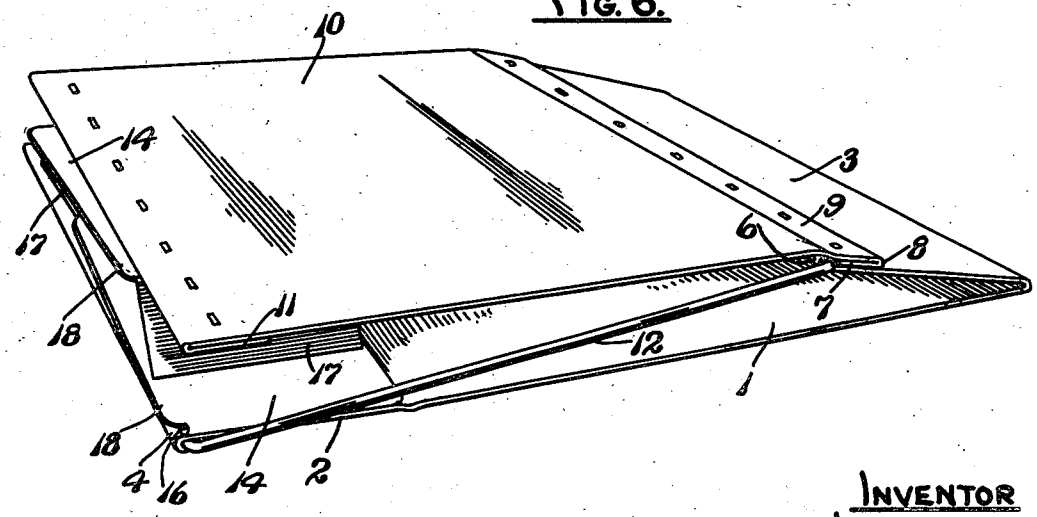



FIG. 5.

FIG. 6.




INVENTOR
WILBUR G. ANDERSON, JR.
BY Lawrence and Van Antwerp
ATTORNEYS

Patented June 22, 1948 2,443,713

# UNITED STATES PATENT OFFICE

2,443,713

## FOLDING PAPER BOX

Wilbur G. Anderson, Jr., Grand Rapids, Mich., assignor to American Box Board Company, Grand Rapids, Mich., a corporation of Michigan

Application November 24, 1947, Serial No. 787,629

7 Claims. (Cl. 229—23)

1

The present invention relates to a very practical and economical box made largely of paper stock, and which has been designed primarily for the transportation and delivery of baked products, and more particularly, buns and small baked food products of a similar character.

The delivery of buns, for example, from a bakery to the retailer, requires receptacles or containers for the buns which are carried in delivery wagons or motor vehicles. The containers normally require closures to keep the buns or similar food articles sanitary and out of contact with dirt and dust, and such containers should be of ample strength so that numbers of them may be stacked one upon the other. Containers made of paper stock have heretofore been used, but their durability has not been good and it has been necessary to discard them after they have been used a few times.

With my invention a particularly practical, sturdy and durable box, made out of low priced materials such as paperboard, is provided, which after a load has been delivered, is instantly foldable so as to occupy substantially the smallest possible space and when again to be used, is set up at once, requiring no tools or fastenings in the process of either setting up for bun-receiving or collapsing for transportation. Of course, the collapsibility of the box for shipment from the factory to purchasers of said boxes is likewise very desirable, both for conserving space and for saving the boxes from injury.

With my invention the various objects and purposes above outlined have been accomplished in an exceptionally satisfactory manner.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawings, in which,

Fig. 1 is a perspective view showing the three parts which are used to make up the box, before their permanent connection together,

Fig. 2 is a similar view showing the box completed,

Fig. 3 is a somewhat enlarged plan of the box shown in Fig. 2, the top or cover being shown fragmentarily,

Fig. 4 is a longitudinal vertical section through the closed box substantially on the plane of line 4—4 of Fig. 3,

Fig. 5 is a transverse vertical section therethrough substantially on the plane of line 5—5 of Fig. 3, and

Fig. 6 is a perspective view showing the box folded or collapsed when not in use.

Like reference characters refer to like parts in the different figures of the drawings.

In the construction of the box, a single rectangular length of suitable and rather heavy and strong paperboard is used to provide the bottom, the spaced sides and the top of the completed box. The bottom 1, of rectangular form, has what may be termed front and rear sides 2 integral therewith extending upwardly. The front side at its upper edge portion is return bent in a generally circular bend 4 of short radius, from which an outside flap 5 extends downwardly lying against the side 2 and being permanently staple-connected therewith.

2

The upper edge of the rear side 3 is similarly return bent in a generally circular bend 6 of like short radius, from which a section 7 of approximately the same width as the flap 5 extends downwardly at the outer side of the rear side 3, and is then sharply return bent at 8 and continued in a vertically extending section 9 bearing against the section 7. Said sections 7 and 9 are permanently connected by staples with the rear side 3. The outer rear section 9 is shaped and curved to pass partly around the bend or loop 6 and continued in a cover 10 which, at its free edge, is turned back upon itself, providing a reinforcing flap 11 stapled thereto.

An open wire frame having ends 12 and sides 13 is connected with the box structure described, the sides 13 passing lengthwise through the loops or bends 4 or 6, and the ends 12 extending between the ends of said sides 13 substantially directly above the end edges of the bottom 1, as shown in Fig. 1.

The bottom is completed by two end members. Each is formed from like paperboard material with a vertical rectangular section 14, from the lower edge of which a flap 15 is turned inwardly at right angles. At opposite ends of the vertical end section 14, two vertical flaps 16 and 17 are likewise turned inwardly at right angles, as shown, the flaps 16 being of less width than those at 17. Said end members are connected with the box by inserting them at the ends of the box with the flaps 15 against the upper side of the bottom, the flaps 17 against the inner side of the rear side 3, and the flaps 16 against the inner side of the front side 2. When thus inserted, the upper edge lip portion 18 of each end section 14 is at the inside of and extends above the adjacent end 12 of the open wire frame, as best shown in Fig. 2. The end members are permanently connected by staples 19 through the front narrower flaps 16 and the end portions of the front side 2 of the box.

As thus constructed (Fig. 2), the bottom flaps 15 extending inwardly from the vertical end sections 14 and at their ends may come within the flaps 16 and 17 and fold upwardly against the vertical end members 14 when the box is to be collapsed. When the box is set up to receive the articles carried therein (Fig. 2), the articles, such as buns, will hold the bottom flaps 15 down against the bottom 1 and the rear flaps 17 against the rear side 3. The lower ends of flaps 17 bear-

ing against the bottom 1, the ends 14 can not be pushed out at their lower portions. The top or cover 10 may be brought downwardly to cover the open upper side of the box, and at its end edges will be within the inner sides of the upwardly extending lips 18 of the vertical end members 14. The reinforcements made to the free longitudinal edge of the cover 10 and the upper edge of the front side 2, insure against damage at such edges. The box is of a particularly sturdy and durable character. The upper portions of the ends 14 are held from any outward movement by the ends 12 of the wire frame.

When the box is empty and is to be collapsed for return, the flaps 15 are turned upwardly against the vertical end sections 14 and the ends are swung inwardly, one overlapping the other, against the inner side of the front side 2. The bottom will then readily move to the same plane as the front 2 and the rear side 3 fold partly over the bottom and the top 10 extend over the folded ends, as shown in Fig. 6. To set the box up for service, it is merely necessary to unfold the top and lift the rear side to vertical position, whereupon the front side will follow by reason of the connection made by the end wires 12, the ends are swung to come against said wires 12 and the bottom flaps turned down to horizontal position. The setting up or collapse of the box when empty is substantially instantaneously performed.

The box structure disclosed and fully described is economical to produce and before it becomes worn out and has to be discarded, may be used scores of times. The food material carried in such box is kept in a clean and sanitary condition. While subjected in service to rough usage, it is able to withstand such usage for a long time.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. A box structure having, a horizontal rectangular bottom and upwardly extending vertical sides at its longitudinal edges, each of said sides at its upper edge portions being returned upon itself and extended downwardly along the outer sides thereof for a short distance and permanently secured thereto, an open rectangular frame having sides covered by the upper edge portions of the sides of the box at the return portions thereof and having ends connecting the sides of said frame, an end at each end of the box comprising, a vertical end member, a horizontal flap extending from its lower edge and vertical flaps, one extending from each end of each of the end members and foldably connected therewith, said horizontal flaps lying against the bottom and said end flaps lying against the inner sides of the sides of the box, and means permanently connecting the flaps at one end of each of the vertical end members to the adjacent side of the box, said bottom flap and remaining end flap being free of connection to said box, said vertical end section of each end member at its upper edge portion being located at the inner sides of the ends of the open frame.

2. A structure as defined in claim 1, said return and downwardly extending portion at the upper edge of one side of the box at its lower edge having integrally connected therewith a vertical section lying against its outer side from which a rectangular cover extends, said cover being adapted to be moved between a position closing



the upper end of the box and an open position, and said vertical end members having lips at their upper edge portions extending above the upper edges of the sides of the box between which said cover is located when in closed position, with its upper edges inside of said lips and closely adjacent thereto.

3. A box structure of paper material comprising, a rectangular length of such material transversely scored at spaced apart distances and at right angles to the length of said material to provide a rectangular bottom, a front vertical side, a rear vertical side, an outwardly return bent flap at the upper edge of each of said sides lying against the outer sides thereof, one of said return bent flaps at the rear side of the box having a return bent vertical section lying thereagainst integral therewith, and continued from which is a cover having a length equal to the length of the box and a width equal generally to the distance between the front and rear sides thereof, an open rectangular frame of wire rod having the sides thereof located at the upper edges of the sides of the box and covered by the return bent flaps thereof, and frame ends between the ends of the sides of the frame ends for closing the ends of the box, means for hingedly connecting each end to the front side of the box whereby the ends may be folded against the inner side of said front side of the box or unfolded to their end closing positions, said ends at their upper edge portions engaging against the ends of said open frame, and means connected with said box ends engaging the bottom and the rear side of the box to prevent said ends moving outwardly at their lower portions beyond the vertical planes of said ends of the open frame.

4. A structure as defined in claim 3, each of said ends at its upper edge having an upwardly extending longitudinal lip extending above the adjacent end of the open frame, between which the end edges of the cover are adapted to be located when the cover is in closed position, and said cover at its free longitudinal edge having a return bent flap permanently secured in place adapted to bear against the upper edge of the front of the box.

5. A box structure having a horizontal rectangular bottom, vertical sides foldably connected with said bottom at the longitudinal side edge thereof, rods paralleling said bottom extending from the upper corner portions of one side to the upper corner portions of the other side at the ends of the box, means for pivotally connecting said rods to said sides of the box at said upper corner portions thereof, a vertical end foldably connected at each end of the box to one side of said box and adapted to extend to the other side thereof, said ends lying within said rods at the upper portions of said ends when extending between the sides, a horizontal member foldably connected at the lower edge of each of said ends adapted to extend over the bottom of the box, and a vertical member foldably connected at an end of each end member adapted to lie against the inner side of the side of the box to which said box ends are not connected, as described.

6. A structure as described in claim 5, and a top foldably connected to the vertical side of the box to which said box ends are not connected, adapted to uncover the box when in one position and to cover the open side thereof in closed position.

7. A box structure having a horizontal rectangular bottom and upwardly extending front

and rear vertical sides at its longitudinal edges foldably connected thereto, each of said sides at its upper edge portion being returned upon itself and extended downwardly against its associated vertical side of the box for a short distance and permanently secured thereto, rods extending between the upper corner portions of said sides, means for pivotally connecting said rods at their ends to said sides at their upper corner portions, a box end for each end of the box comprising, a



vertical end member, a horizontal flap foldably extending from the lower edge of each box end, an end flap foldably extending from each end of the box ends, said horizontal flaps lying against the bottom and said end flaps against the inner sides of the sides of the box, and means connecting said vertical flaps lying against the inner sides of the front side of the box to said front side of the box.

WILBUR G. ANDERSON, JR.