

E. G. GEREKE,
 FOLDING CARDBOARD BOX.
 APPLICATION FILED OCT. 18, 1920.

1,437,511.

Patented Dec. 5, 1922.
 2 SHEETS—SHEET 1.

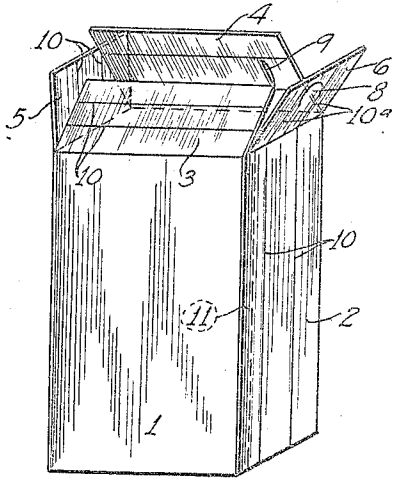


Fig. 1.

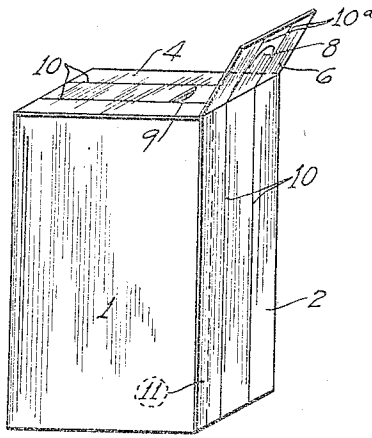


Fig. 2.

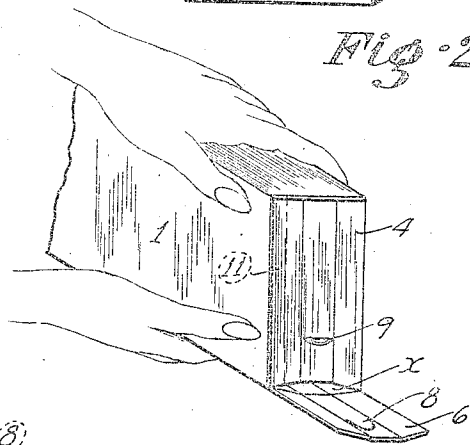


Fig. 4.

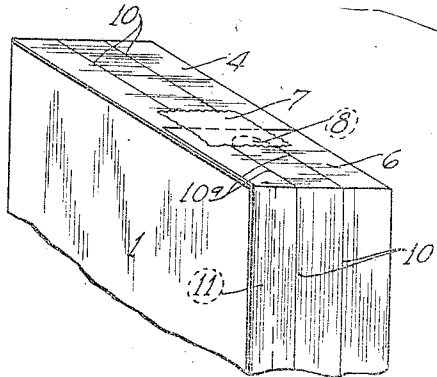


Fig. 3.

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Fig. 5.

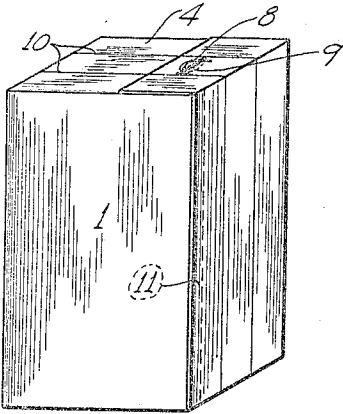


Fig. 7.

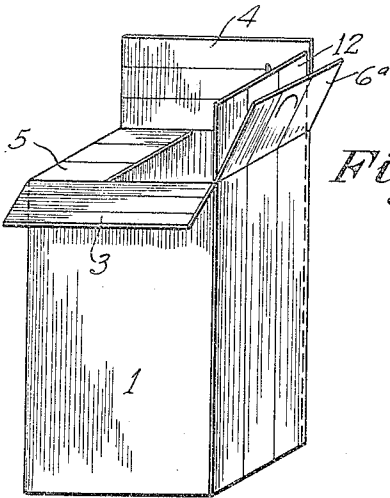
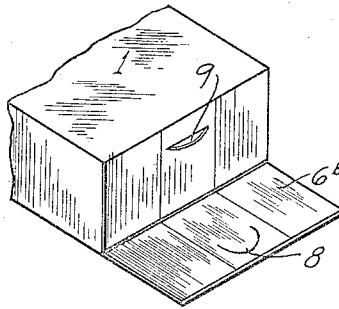


Fig. 6.

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FOLDING CARDBOARD BOX.

Application filed October 18, 1920. Serial No. 417,709.

To all whom it may concern:

Be it known that I, EDWARD G. GEREKE, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Folding Cardboard Boxes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to folding cardboard boxes of the type which are provided with overlapping end flaps that are sealed or permanently connected together with an adhesive at the time the box is filled so as to protect the contents of the box from air, moisture, dirt, etc.

Boxes of the kind referred to are used extensively as containers for breakfast foods and various kinds of granular substances, and while such boxes form efficient containers for transporting materials from the manufacturer or packer to the consumer, they do not form very efficient containers for materials which are removed in small quantities from time to time from the container in which the material is packed. This is due to the fact that such boxes have no provision for protecting the contents of the box from air, moisture, dirt, insects, etc., after the box has been opened, and have no means for facilitating the removal of the material from the box without spilling said material. Usually a consumer opens a box of the kind referred to either by cutting a hole in the end wall of the box or by tearing the end flaps apart. A hole in the box of course exposes the contents of the box to air, moisture, dirt, insects, etc., and if the box is opened by tearing the end flaps apart, it is difficult, if not impossible, to keep the contents of the box dry and in a sanitary condition on account of the tendency of the end flaps to spring upwardly after they have been disconnected from each other. In removing material from a box of the kind referred to the user generally tilts the box so as to pour out the material and if the entire end wall of the box is open, as is usually the case, there is great liability of spilling the material, on account of the relatively great dimensions of the discharge opening.

The object of my invention is to provide a cardboard box equipped with a slit that is normally closed or in such a condition that the edges of same are together, but which is adapted to be opened so as to form a dis-

charge opening, by pressing certain portions of the box so as to deform the box, and a movable flap normally arranged over said slit so as to serve as a sealing device for same and adapted to be used as a spout in the operation of removing material from the box or introducing material into the box. Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a perspective view of a folding cardboard box constructed in accordance with my invention, showing the flaps at one end of the box raised so as to permit the box to be filled.

Figure 2 is a perspective view of said box, showing how the stationary end flaps are arranged in overlapping relation and secured together after the box has been filled.

Figure 3 is a perspective view, illustrating the movable end flap secured to the stationary flaps of the end wall so as to produce a sealed package ready for shipment to the consumer.

Figure 4 is a perspective view, showing how the consumer manipulates the box during the operation of removing material from the box.

Figure 5 is a perspective view, showing the movable end flap temporarily locked in its closed position; and

Figures 6 and 7 are perspective views, illustrating modifications of my invention.

Referring to Figures 1 to 4, inclusive, of the drawings which illustrate the preferred form of my invention, 1 designates the front and rear walls of a folding cardboard box of substantially oblong shape in horizontal cross section, 2 designates the side walls of said box, 3 and 4 designate flaps connected to the upper edges of the front and rear walls, and 5 and 6 designate flaps connected to the upper edges of the side walls. The end flaps 3, 4 and 5 are adapted to be arranged in overlapping relation and permanently connected together with an adhesive or other suitable means so as to form a permanent top or closure for the upper end of the box, thus leaving a slit between the overlapped flaps 3 and 4 and the upper edge of the side wall 2 that carries the flap 6. Normally, said slit is closed and the flap 6 extends across same so as to virtually seat said slit. The bottom of the box may be formed by overlapping flaps on the front and rear walls and on the side walls, or in any other preferred manner. The complete

box is preferably formed from a single sheet of cardboard or other suitable material that is cut and scored in such a way as to form a blank which can be set up or bent so as to produce a box having the walls and flaps previously referred to.

After the box has been set up, as shown in Figure 1, the material is introduced into the box and the end flaps 3, 4 and 5 are then folded downwardly and permanently connected together, as shown in Figure 2. Thereafter, the flap 6, which I will hereinafter refer to as the movable end flap, is folded downwardly over the exposed stationary flap 4 and secured to same by an adhesive or by means of a sticker or gummed wafer 7, as shown in Figure 3, thus forming a sealed package that embodies all of the essential requisites of a package that is used for transporting material from the manufacturer or packer to the consumer.

Assuming that the box has reached the consumer and the consumer desires to remove part of the contents of the box, the first operation is to break the sticker 7 or disconnect the free edge of the movable flap 6 from the stationary flap 4 of the end wall and move said flap 6 upwardly into longitudinal alignment with the side wall 2 of the box which carries said flap. Thereafter, the user grasps the box in the manner shown in Figure 4, and exerts pressure on the front and rear walls of the box at points in proximity to the upper end of the box, so as to deform or bow out the side wall 2 which carries the movable end flap 6 and also bow out the permanent top or end wall of the box formed by the overlapping stationary flaps 3, 4 and 5, thereby opening up the slit between the end flaps 3 and 4 and the side wall 2 that carries the flap 6, and thus forming a discharge opening α , as shown in Figure 4, through which the contents of the box can readily escape. The operation of deforming the box or pressing inwardly on the front and rear walls causes the movable end flap 6 to assume such a shape that it forms a discharge spout that accurately guides the material into the receptacle to which the material is being transferred from the box. After the desired quantity of material has been removed from the box the pressure of the user's fingers on the front and rear walls of the box is removed so as to permit the deformed side wall 2 and flap 6 and the deformed upper end of the box to spring back to normal position, thus automatically contracting or closing up the slit that constitutes the discharge opening α . Thereafter, the flap 6 is moved downwardly into overlapping relation with the stationary upper end wall of the box and temporarily secured in position by inserting a tongue 8 on said flap 6 in a

slit 9 formed in the exposed stationary flap 4 of the end wall, as shown in Figure 5, thus sealing the slit that is used to form the discharge opening of the box and protecting the contents of the box from air, moisture, insects or dirt practically as effectively as before the box was first opened by the consumer. While I prefer to use a tongue and co-operating slot for temporarily holding the flap 6 in its closed position, I wish it to be understood that any other suitable means could be used for this purpose without departing from the spirit of my invention.

The upper end wall of the box and the side wall 2 which carries the movable flap 6 have a normal tendency to bow out when the front and rear walls are pressed inwardly, as previously described, but, in order to insure said end wall and side wall bowing out automatically when the discharge opening is being expanded, I prefer to crease or score said end wall and side wall. Each of the portions of the box referred to can be provided with a single longitudinally-disposed crease or scoring or with a plurality of longitudinally-disposed creases. In practice I prefer to provide the side wall 2 which carries the flap 6 with two longitudinally-disposed creases 10 and also provide the permanent flaps 3, 4 and 5 of the upper end wall with similar parallel creases 10, as shown in Figure 1. The movable flap 6 is also scored or creased at one or more points, as indicated by the reference character 10^a, so as to insure said flap automatically assuming the form of a trough or member of concave or substantially channel shape in cross section when the box is deformed so as to open up the discharge slot α .

In the box shown in Figures 1 to 4, inclusive, the part of the blank that constitutes the body portion of the box, or in other words the part of the blank which forms the front and rear walls and the side walls, has its longitudinal edges connected together by a shallow flange 11 on the front wall 1 which is glued or connected in any other preferred manner to the inner side of the adjacent side wall 2. In some instances, however, it may be desirable to make the attaching flange above referred to the full width of the side wall 2 over which said attaching flange overlaps and provide said attaching flange at its upper end with a flap 12, as shown in Figure 6, so as to provide an end wall for the box that is composed of four stationary overlapping flaps, all of which are integrally connected to the vertical walls of the box and permanently secured to each other in the same manner as in the folding cardboard boxes now in general use. When the box is constructed in this manner the flaps 5 and 12 on one of the side walls and on the connect-

ing flange that overlaps the other side wall are folded downwardly after the box has been filled, and the flaps 3 and 4 on the front and rear walls are then folded downwardly in overlapping relation and permanently secured together by an adhesive or in any other preferred manner. Thereafter, the movable flap 6^a is folded downwardly and secured in position either by an adhesive or by a sticker or wafer, as illustrated in Figure 3. To open such a box it is necessary to first raise the movable flap 6^a in the manner previously described in connection with the box shown in Figures 1 to 4, and then draw a knife blade across the point where the flap 12 is connected to the upper edge of the attaching flange 11, so as to separate said flap and flange and thus produce a slit that will open up or spread apart intermediate its ends when the front and rear walls of the box are pressed inwardly in the manner shown in Figure 4 during the operation of discharging material from the box.

While I prefer to make the box substantially oblong-shaped in horizontal cross-section, and use the flap at the upper end of one of the narrow side walls of the box to form the combined discharge spout and closure for the discharge opening, I wish it to be understood that the particular cross-sectional shape of the box is immaterial, and furthermore, that the combined discharge spout and closure for the discharge opening may, if desired, be formed by an extension or flap on one of the wide front or rear walls of the box, as shown in Figure 7 and indicated by the reference character 6^b.

A box of the construction above described can be manufactured as cheaply and set up as easily as a folding cardboard box of the type now in general use, and it has the following desirable characteristics which the ordinary folding cardboard box does not possess: namely, it has a permanent top which is integrally connected to three of the vertical walls of the box, thus forming a closure for the upper end of the box that adequately protects the contents of the box after the box has been opened; it has a discharge opening which is normally covered or protected by a closure that is held temporarily in its closed position by a relatively small tongue located some distance back from the extreme end of the closure and adapted to be inserted in a slot in the end wall which is overlapped by the closure; it has a discharge opening in the form of a slit that is normally closed, but which will open or expand automatically when the user presses on two of the vertical walls of the box during the operation

of discharging the contents of the box, and it has a portion which automatically assumes the form of a discharge spout when pressure is applied to the walls of the box grasped by the user's fingers, said spout permitting material to be removed from the box without spilling the material and also permitting material to be poured back or reintroduced into the box without spilling, for when the box is deformed so as to open up the discharge slit, the spout 6 forms an upright concaved wall at one edge of said slit that will guide material back into the box.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A box constructed of cardboard or similar material and provided with a permanent end wall that is separated from one of the upright walls of the box by a slit that is normally closed but which is adapted to be enlarged to form a discharge opening by pressing portions of the box so as to cause said end wall and upright wall to bow out, the latter having a normal tendency to bow out under such pressure, and a closure for said slit formed by an integral flap or extension on said upright wall that normally extends across said slit but which is adapted to be used as a spout.

2. A folding cardboard box provided with a permanent end wall that is separated from one of the vertical walls of the box by a slit which is normally closed, a flap on said vertical wall that is adapted to serve as a sealing device for said slit and also as a spout for material that is being discharged from or introduced into the box, and means in said end wall, vertical wall and flap that assists in the deformation of said parts to open up said slit and cause said flap to automatically assume the form of a spout.

3. A folding cardboard box provided at one end with four flaps arranged in overlapping relation and permanently connected together so as to seal the box, four vertical walls to which said flaps are connected, one of said vertical walls having an extra thickness of material that is provided at its upper end with a movable flap that is adapted to be used as a closure for a discharge opening formed by severing one of the four flaps first referred to from the vertical wall to which it is connected, and means for securing said movable flap in its closed position in such a way that the terminal portion of said flap is arranged on the outside of said end wall.

EDWARD G. GEREKE.