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VENTILATING CONSTRUCTION FOR A CHICK BOX

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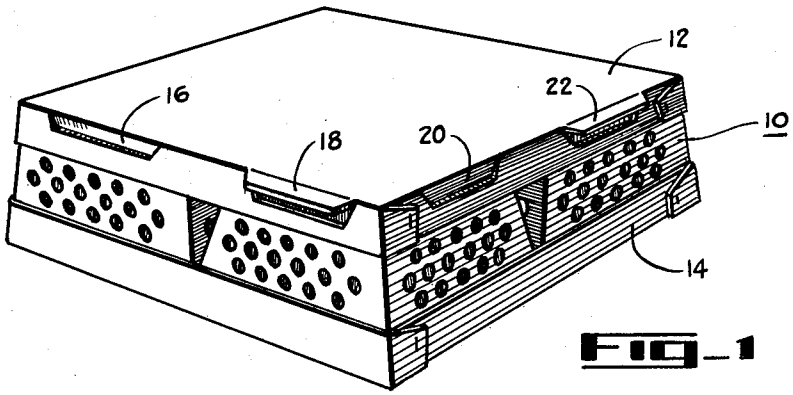


Fig_1

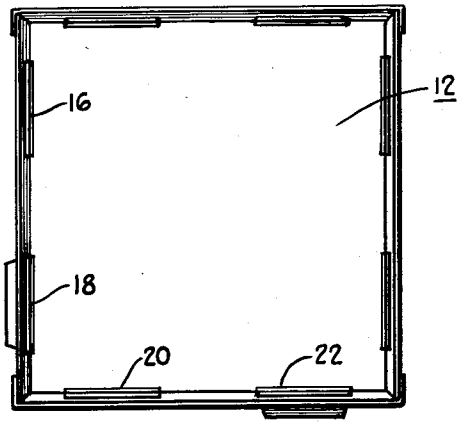


Fig_2

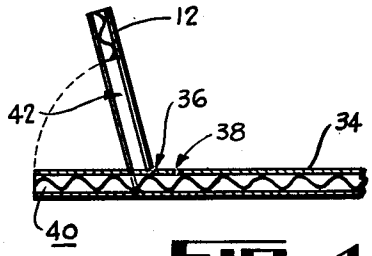


Fig_4

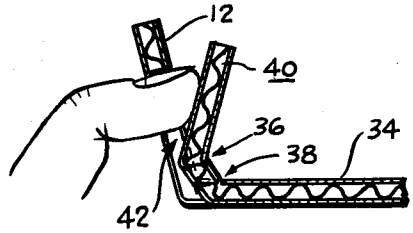


Fig_5

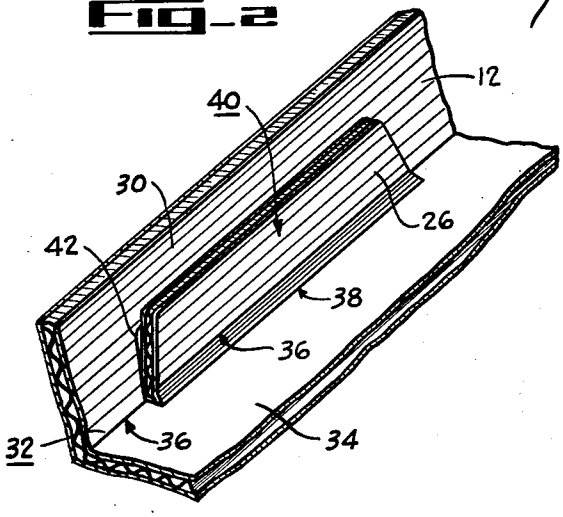


Fig_3

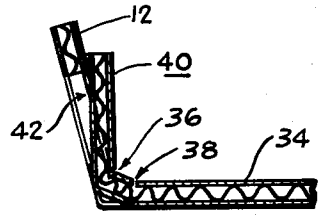


Fig_6

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VENTILATING CONSTRUCTION FOR A CHICK BOX

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This invention relates to a ventilatible container employed to transport small animals or fowl and more particularly to an improved ventilating construction for such a ventilatible container used in the transport of live baby chicks.

Baby chicks are normally hatched in the hatchery somewhat remote from the area where the chick will be raised. The live baby chicks must be transported from the hatchery to the chicken rancher. While the baby chicks in this early state of life, a few days old, are not generally susceptible to disease, they are sensitive to rapid temperature variation. Such temperature variation may cause constipation in the chicks known as "Pasting." When this develops, the droppings of the chicks are not properly discharged from the chick and they "paste" on the back of the chick, ultimately causing its death.

In order to properly care for the chicks in transit, it is necessary to preset the ventilation of the chick boxes, sometimes even change it in transit, depending upon the temperature variations between day and night, or between the hatchery and the delivery place. To this end, many different approaches have been used, including the provision of cork-like inserts to be placed in the ventilating holes of a chick box, for example, or to apply tape to cover up certain of the holes, or removal of the tapes to open up more holes, to enhance the ventilation. All of these have been cumbersome at best.

The present invention seeks to overcome the difficulties of the prior art with respect to the regulation of the ventilation, by providing an improved ventilating construction in the ventilatible container, which may be selectively placed in an open position or in a closed position, and re-used many times.

It is also desirable to use certain of the container construction, for instance, the top and the bottom of the construction, for feed trays for the chicks after their arrival at the chicken ranch. Therefore it is desirable at this time to close any ventilating ports or air vents, so that the chick feed may be retained within the confines of the box top or bottom.

The improved construction of the present invention includes formation of a regulatible ventilating construction in either a top or bottom closure, or any other angular member of the ventilatible container. At the point of angularity, or the crease between the one side and the other, a first score mark is presented by the member. A second score mark is formed and disposed in spaced-apart relation to the first score mark, along one side of the member. Thereafter, a cut-out flap extending from the second score through an entire area extending along the other side of the angle is punched from the box, forming the cutout hinged both at the first score and at the second score. This cut-out or punched-out portion provides the flap principally formed through one side and extending through the angular portion to the juncture score of the member.

Thereafter, the flap may be pressed by hand action, from the member, to provide an opening therethrough for ventilation. In the event that the user desires to close the flap, he need merely press the flap back through the opening formed by its cutout, and the flap with its dual hinging action at the first and second scores will then recess slightly within the box construction and abut against the inside part of the member. Thus the flap will be held against the inside part, by the action of the

area between the juncture score and the terminal score of the construction. The flap will be firmly held against the box providing the closed condition of the closure.

It is an object of the present invention in addition to the aforestated objects and advantages, to provide a relatively simple improved ventilating construction for a ventilatible container which construction may be readily opened to provide ventilation and closed to provide substantially air-tight integrity against ventilation.

It is a further object of the present invention to provide a simple construction whereby ventilation may be selectively adjusted to provide or not to provide ventilation, and further, to provide a closure when the ventilating aspect of that closure has ceased.

It is another object of the present invention to provide an improved ventilating construction which is simple of manufacture and trouble-free in operation.

Various other objects, advantages and features of the invention will be apparent from the following specification, when taken in connection with the accompanying drawings, wherein the preferred embodiment is set forth for the purposes of illustration.

In the drawings:

FIGURE 1 is a view in perspective of a ventilatible container utilizing the improved ventilating construction;

FIGURE 2 is a view in which closure 12 of FIGURE 1 is shown as an inverted top view;

FIGURE 3 is an enlarged partial view of one of the improved ventilating constructions or air-vent constructions shown in FIGURE 1;

FIGURES 4, 5, and 6 are each views in section through an exemplary improved construction of the air vent showing in FIGURE 4, the air vent being open, in FIGURE 5, the use of an operator's finger to press the air vent through the cut-out portion, and FIGURE 6, a closed air vent, having completed the cycle demonstrated in FIGURE 5.

Referring more particularly to FIGURE 1 for a description of the present invention, I have shown therein a chick box construction 10. A similar construction is further exemplified in my application for United States patent entitled "An Improved Chick Box Construction," Serial Number 158,262, filed December 11, 1961, now Patent No. 3,108,569. Chick box construction 10 has a top closure 12 and bottom closure 14. In order to simplify the discussion of the present invention, the reader, if he desires to examine further the exemplary container construction 10, should advert to the above identified application wherein the basic container is fully described. The container 10 and is constituent parts may be constructed in part or all, of plastic, fiberboard, cardboard, or as herein exemplified, corrugated cardboard. Further, for the purposes of the present invention, let it suffice to state that the bottom closure 14 may be constructed similar to the top closure 12, with the openings shown therein, also being provided in bottom closure 14 if so desired.

Therefore, hereafter, for purposes of exemplification of the present invention, explanatory comments will be directed primarily to the construction of the top closure 12 and the ventilating constructions provided therefor.

Top closure 12 is provided with a plurality of improved ventilating constructions or air-vent constructions 16, 18, 20 and 22. Constructions 16 and 20 are shown in a closed position, and constructions 18 and 22 in an open position. In order to further describe the construction, FIGURE 2 showing an inverted top closure 12, of FIGURE 1, shows the construction of the top closure 12 inverted and looking down into the closure 12, where we see flaps of air vent constructions 16 and 20 in a closed position, and flaps of air vent constructions 18 and 22 in an open position. It can clearly be seen, therefore, that by adjusting the open and closed position of the flaps, ventilation is controlled. Additionally, when the top closure 12 has

served its purpose in the container construction and is now ready for use as a feed tray, all flaps are closed and thus an integrally built feed tray is provided.

In order to further simplify the description of the ventilating construction, adverting to FIGURE 3, a singular cutout flap **26** is shown in a closed position with respect to the angular top closure construction **12**. The top closure **12** includes an angular member which presents a first side **30**, angularly emanating from an area of angularity **32**, and a second side **34** emanating at the area of angularity **32**, and projecting away therefrom. The first side **30** is shown as the edges of the top closure **12**, for example, and the second side **34** is shown as the base of the top closure **12**. It is within the concept of this invention that the two could, of course, be reversed and the flap be caused to extend from and through the second side instead of the first side, if this may be desired.

A first score **36** is formed at the area **32** of angularity, which, as it is the juncture between first side **30** and second side **34**, is designated as the juncture score **36**. A second score **38** spaced apart from the first score formed on the second side **34**. The cutout flap terminates at second score **38** and is thus also denominated a "terminal" score **38**. The flap portion intermediate the first score **36** and second score **38** provides the spring or resilience to flap **40** in its movements. Thereafter, flap **40** is partially cut out from second side **34** and the rest from first side **30**. The greater area of flap **40** is illustrated as being cut out from the first side **30**, with the flap **40** extending through the juncture score **36** and terminating at the terminal score **38**, in the base **34**. In operation of the ventilating construction, the cutout flap **40** may then be pressed through the resultant opening in the angular member or top closure **12**, thus providing the ventilation port for air to pass therethrough. The cutout flap **40** and its action is further illustrated in FIGURES 4 through 6 inclusive. As a result of the two spaced-apart scores, **36** and **38**, which are exemplified as substantially parallel one to the other, a unique operating feature results. Flap **40** when it is first pressed outwardly to provide the opening **42** through the top closure **12**, rotates primarily at its juncture score **36** fulcrum. When it is desired to close the opening **42**, an operator, by utilizing, for example, his finger, may press against flap **40**, inwardly of the container, causing it to go through the opening **42** as shown in FIGURE 5. When flap **40** is pressed beyond the opening **42**, the fulcrum changes from juncture score **36** alone, and also includes the fulcrum of the terminal score **38**. Terminal score **38** provides the flap with the second pivot or fulcrum. Thus flap **40** rises somewhat and is displaced upwardly within closure **12** and in abutting relation to the first side **30**, closing the opening **42** and refusing to pass ventilation or feed therethrough.

The spaced-apart section between the juncture score **36** and terminal score **38** provides the essential spring or resilience to hold flap **40** against first side **30** until manually altered in its position; this section may be referred to as the resilient or springy portion.

The particular embodiment of the invention illustrated and described is illustrative only, and the invention includes such other modifications and equivalents as may readily appear to those skilled in the art, within the scope of the appended claims.

I claim:

1. A ventilating construction for a ventilatable container comprising an angular member presenting a first side and a second side each emanating at an area of angularity and projecting away therefrom, a first score formed at and along the area of angularity, and a second score spaced apart from the first score and formed upon that second side, a cutout flap formed through the angular member and extending from the first side through the area of angularity to the second score with a substantial portion of the flap lying in the first portion, said angular member presenting an opening therein formed by the cut-out of the cutout flap for receiving transfer of the flap therethrough, whereby the flap may be extended to an open position of the opening and selectively transferred through the opening to a closed position of the opening.

2. A ventilating construction for a ventilatible container comprising an angular member presenting a first side and a second side, each emanating at an area of angularity and projecting away therefrom, a first score formed at and along the area of angularity, and a second score substantially parallel to and spaced apart from the first score and formed upon that second side, a cutout flap formed through the angular member and extending from the first side through the area of angularity to the second score with a substantial portion of the flap lying in the first portion, said angular member presenting an opening therein formed by the cut-out of the cutout flap for receiving transfer of the flap therethrough, whereby the flap may be extended to an open position of the opening and selectively transferred through the opening to a closed position of the opening.

3. A ventilating construction for a ventilatable container comprising an angular member presenting a first side and a second side each emanating at an area of angularity and projecting away therefrom, a first score formed at and along the area of angularity, and a second score substantially parallel to and spaced apart from the first score and formed upon that second side, a cutout flap formed through the angular member, and extending from the first side through the area of angularity to the second score with a substantial portion of the flap lying in the first portion, a resilient portion formed by that portion of the flap between the area of angularity and the second score, said angular member presenting an opening therein formed by the cut-out of the cutout flap for receiving transfer of the flap therethrough, whereby the flap may be extended to an open position of the opening and selectively transferred through the opening to a closed position of the opening, said resilient portion being adapted to hold the flap in the closed position.

4. An air vent construction for a chick box including top or bottom closure, comprising a closure having a base and a side joined at a juncture score, a terminal score spaced apart from the juncture score formed upon the base, a cutout flap principally formed through the side and extending a minor portion thereof through the juncture score terminating at the terminal score.

5. An air vent construction for a chick box including top or bottom closure, comprising a closure having a base and a side joined at a juncture score, a terminal score substantially parallel to and spaced apart from the juncture score formed upon the base, a cutout flap principally formed through the side and extending a minor portion thereof through the juncture score terminating at the terminal score.

6. An air vent construction for a chick box including top or bottom closure, comprising a closure having a base and a side joined at a juncture score, a terminal score parallel to and spaced apart from the juncture score formed upon the base, a cutout flap principally formed through the side and extending a minor portion thereof through the juncture score terminating at the terminal score, adapted to cause selective opening and closing of an opening in the closure, and a resilient portion presented by the flap intermediate the juncture score and the terminal score adapted to cause the flap to be held in a closed position against the side.

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