Jan. 16, 1945. K. C. FERGUSON 2,367,491

CORRUGATED PAPER BOARD CHICK FEEDER

Filed Feb. 25, 1943 2 Sheets-Sheet 1

FIG. 1

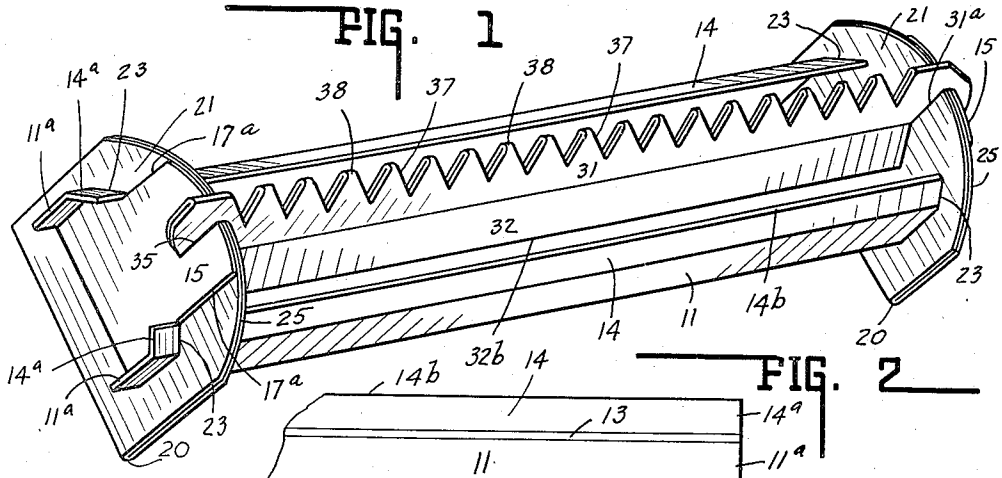


FIG. 1-A

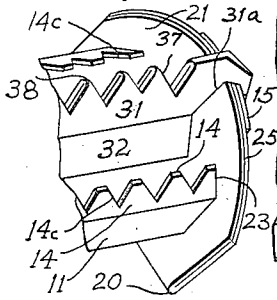


FIG. 2

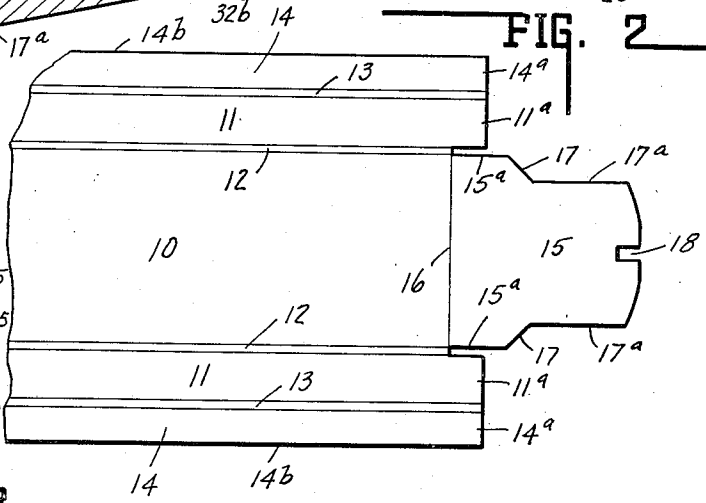


FIG. 3

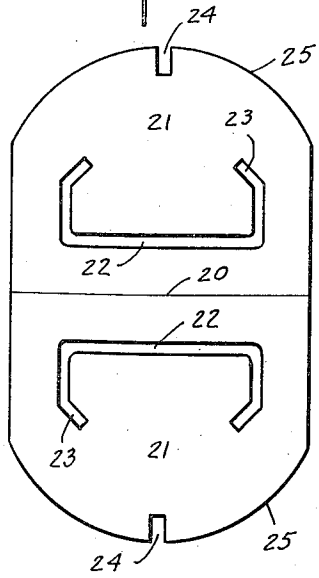
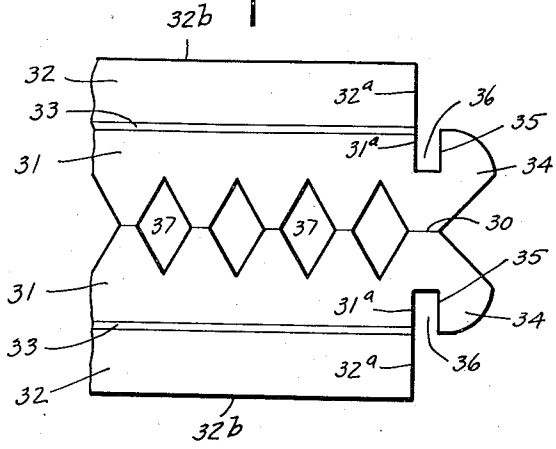


FIG. 4



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Filed Feb. 25, 1943 2 Sheets-Sheet 2

FIG. 5

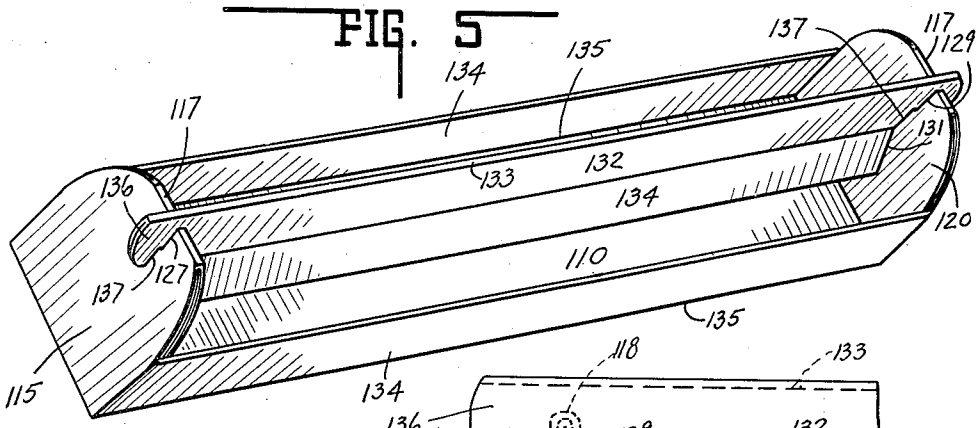


FIG. 6

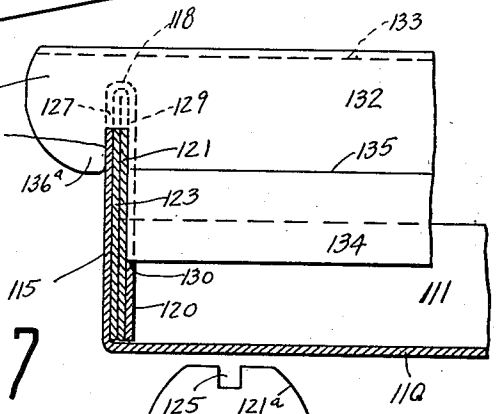


FIG. 7

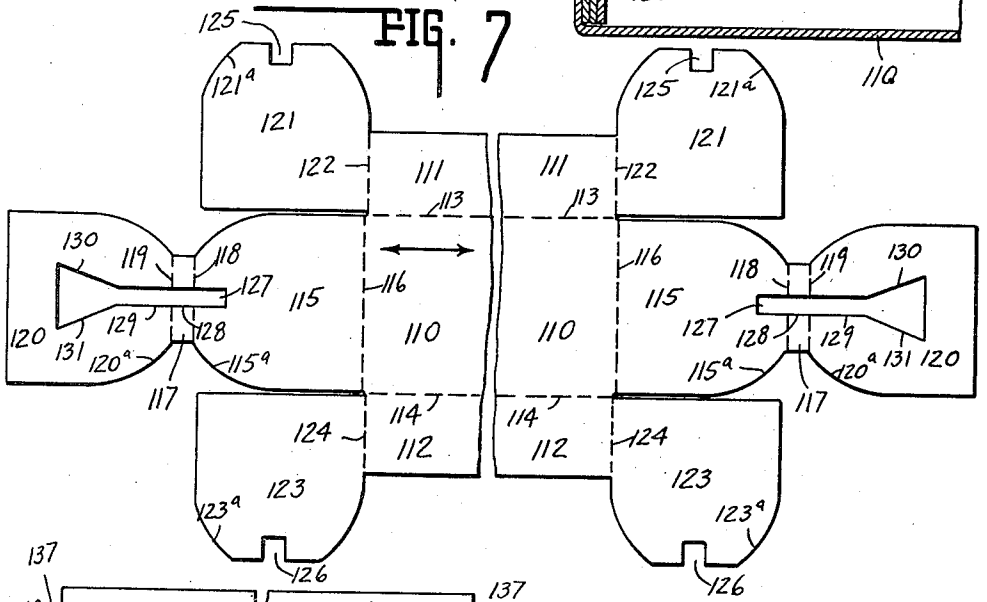
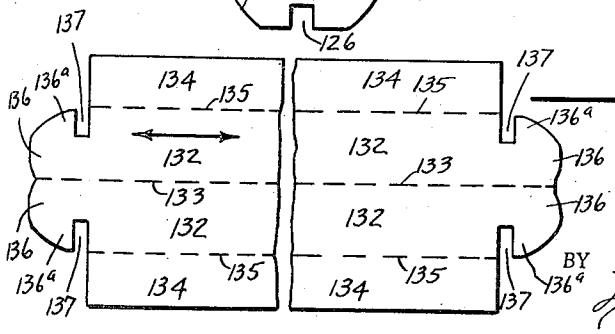


FIG. 8



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2,367,491

CORRUGATED PAPERBOARD CHICK FEEDER

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Application February 25, 1943, Serial No. 477,007

19 Claims. (Cl. 119—61)

This invention relates to a feed trough for chicks and the like.

The chief object of this invention is to provide a feeder of the aforesaid character and from paperboard stock, preferably of corrugated type, and which is comprised of a minimum number of parts, the same being so formed that they can be readily erected and associated together to form said feeder, thereby permitting shipment in the knockdown condition to the ultimate purchaser.

Heretofore it generally has been the custom to form feeders of sheet metal, which, however, under present conditions is difficult to obtain for this use. The present invention provides an equally satisfactory substitute having a comparatively long life and devoid of all metal.

The chief feature of this invention is to provide two or more blanks, suitably formed with creases, notches or slots at the time of blank fabrication, whereby the two or more blanks may each be readily erected and then associated together by the ultimate purchaser to form the feeder.

Another feature of the present invention in the preferred form thereof is to provide two support members, each of which is of double thickness board and provided with registering U-shaped slots therethrough near the lower central portion, the ends of the slots being inclined upwardly and towards each other and each support member being suitably notched at its upper edge, a single blank forming the bottom, sides and an end wall, each of the sides being provided with a lip extension, and ridge means in the form of a single blank folded longitudinally upon itself and with its folded portion notched to provide a serrated upper edge and two downwardly and outwardly directed wing or edge portions, the end walls being notched similarly and registering with the adjacent support notches and the ridge means being oppositely notched for end wall and support notch association with an interlocking connection therebetween to retain the parts in feeder formation.

Other objects and features of the invention will be set out more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings

Fig. 1 is a perspective view looking down into a feeder embodying the preferred form of the invention.

Fig. 1A is a perspective view of one end of a modification thereof.

Fig. 2 is a developed plan view of one end of the main blank therefor.

Fig. 3 is a developed plan view of one double thickness support member.

Fig. 4 is a developed plan view of one end of the ridge means forming member in the Fig. 1 embodiment.

Fig. 5 is a perspective view looking down and into a feeder embodying another form of the invention.

Fig. 6 is a longitudinal central sectional view of one end thereof.

Fig. 7 is a plan view of the trough forming blank, central portions being broken away.

Fig. 8 is a similar view of the non-serrated form of median ridge member for the last mentioned blank.

In Figs. 7 and 8, double headed arrows indicate the longitudinal direction of the corrugation.

In Figs. 1 to 4 of the drawings, 10 indicates a bottom wall, 11 two parallel side walls, the same each being connected to opposite sides of the bottom wall by comparatively wide creases 12. Each of the side walls 11 at its opposite edge is suitably connected by a wide crease 13 to a lip portion 14. Integral with each end of the bottom wall 10 is an end wall forming member 15 connected thereto by the crease 16. This end wall 15 is reduced from its full width, indicated at 15a, to its free end portion, as indicated at 17a, by means of an inclined edge 17, the purpose of which will be set forth hereinafter. Extending downwardly and inwardly, when erected, and formed in the end wall 15 is a vertical central notch 18.

Herein each support member, as previously stated, is of double thickness and includes two portions substantially identical, but united together by one liner of the blank from which the support is formed. The corrugated layer and opposite liner is separated, the first mentioned liner forming the hinge 20, which connects together the two body portions 21 of the support means. This is shown in Figs. 1 and 3.

Each portion 21 includes near its lower central portion a U-shaped slot 22 and each end of the slot is extended and inwardly directed as at 23, the extensions being directed upwardly toward the central notch 24 in the upper edge 25 of the support member. When the two support portions 21 are folded upon the hinge 20, the two slots 22—23 register and the notches 24 also register.

When thus positioned the blank forming the bottom, end and side walls is arranged in the

position shown in Fig. 1 and then each support member is placed on the ends of the properly positioned portions of the blank. In this mounting in this form, each end wall 15 passes completely through the elongated bottom or central portion of the U-shaped slots 22. When this end wall portion 15 has completely passed through the slot, the end wall 15 is turned upwardly at 16 and transversely of the bottom wall 10 and then lies outside of the support member 21.

Each side wall at its projecting end 11*a* and each lip portion at its projection end 14*a* projects through slots 22—23 and bears against the side edge 15*a* of the end 15 and the inclined edge 17 thereof respectively. This increases the friction lock between the end wall member 15 and the projecting ends of the side walls and the lip portions. When thus erected the notch 18 registers with the two adjacent notches 24 of the dual thickness support member.

The longitudinal direction of the corrugations in the bottom is co-extensive with the side lip and bottom longitudinal dimension and the ridge means longitudinal dimension. The direction of the corrugations in the end wall portion of the main blank and the double thickness support members is directed substantially vertical.

When the blanks are formed of corrugated board stock, certain advantages accrue in addition to the customary reduction in weight. Some of these advantages are, when the longitudinal direction of the corrugations coincides with the length of the feeder, the side and bottom crease connections and subsequent folding are easily effected, the side upper edges only present two or three linear edges and the median overhead member not only readily folds but the upper folded edge is readily serrated or left smooth as desired.

The ridge means, as shown in Figs. 1 and 4, includes a single blank that is medianly created as at 30 and this provides two portions 31, which form a double thickness ridge arrangement terminating in face 31*a*. These faces or edges bear against the adjacent face of the support member, as illustrated in Fig. 1. Integral with and extending longitudinally of each of the portions 31, are the edge or wing portions 32, the same being connected thereto by a comparatively wide crease 33. This creasing is so effected that when the ridge means is mounted on the ends and supports, these two portions 32 extend downwardly and outwardly or divergingly relative to each other and toward the lip portions 14 as shown in Fig. 1.

Also, as shown therein, the lower edge 32*b*, or free edge, of the portion 32 is positioned at a lower elevation than the upper and free edge 14*b* of the lip 14, the two edges being substantially parallel and forming therebetween a restricted longitudinal opening through which feed is accessible to the chicks and which is of such a character that the chicks cannot fall into the trough.

The ridge means edge end includes a locking tongue 34, which has a face 35 spaced from and parallel to the face 31 forming a notch 36 therebetween. The two notches at each end of the ridge means register with each other and they are, in the preferred form of the invention, of triple width character, being sufficiently wide to slidably receive the three layers of the double thickness support 21 means and the end wall 15 previously described. The locking construction is such that it is of intersecting character, as it were, and the notches 36 and 24 and 18 cooperate together to form an interlocking connection between the adjacent parts.

To prevent chick roosting on the ridge means, the portions 31 adjacent and on opposite sides of the crease 30 are apertured as at 37. When the two portions 31 are brought towards each other, and not necessarily in abutting relation, except at the tongue interlocked portion, the upper edge of the ridge means is of notched or serrated character, as illustrated more clearly in Fig. 1. Herein the tips of the serrations are indicated by the numeral 38.

To prevent chick roosting on the top edge of the lip 14, it also may be serrated as at 14*c* in Fig. 1A, although the close proximity of the wing portion 32 thereto is such that this is not very likely to occur.

From the foregoing, it will be understood that the side edges 31*a* and 32*a* of the ridge means maintain the support means in spaced relation and prevent inward movement thereof. It will also be apparent that the end wall 15 prevents outward movement of said support means as well as the locking tongues 34 of the ridge means. The parts, therefore, are all locked together by means of the cooperating transversely positioned notches 18 and 24 and the notch 36.

The resulting feed trough is one wherein the bottom is supported by the slot in the support means and the lower face of this slot, by reason of dual thickness of said means, is of appreciable area. Also, the bottom of the trough proper is spaced from the ground or support upon which trough is placed and by that portion of the support means which lies below the lowermost portion of the U-shaped slots 22.

It will be apparent that the support means provides a bottom bearing edge 20 of appreciable length and of considerable width. By reason of the length thereof, overturning of the trough is most difficult despite the fact that the trough in this embodiment is elevated from the supporting surface, for the chicks have insufficient strength to overturn it.

Reference will now be had to Figs. 5 to 8 inclusive wherein a second embodiment of the basic invention is illustrated.

Reference will first be had to Fig. 7 wherein the trough forming blank includes the bottom 110, side 111 connected thereto by crease 113 and side 112 connected thereto by crease 114. Connected by creases 116 to opposite ends of the bottom are the flaps 115. Connected to each flap 115 by portion 117 is the extension 120. The connections are formed by crease 118 and 119, respectively, and the flap and extension are of similar outline as indicated at 115*a* and 120*a*, respectively.

Integral with each end of the side 111 and connected thereto by crease 122 is the tab 121. It is capable of transverse positioning when the blank is erected into trough formation. Side 112 is similarly provided with tabs 123 connected thereto by creases 124. These tabs have outlines 121*a* and 123*a*, substantially similar to outlines 115*a* and 120*a*.

Each tab 121 includes a notch or slot 125 in its upper edge. Each tab 123 similarly includes a notch or slot 126. When the two tabs 121 and 123 lap each other as shown in Fig. 5, these notches register. Each flap 115 is slotted or notched as it were, as at 127. The connecting portion 117 is as wide as the thicknesses of the lapping tabs 121 and 123. The extension 120

is slotted or notched at 129. Herein the slots, 127, 128 and 129 are continuations of each other.

Reference now will be had to Fig. 8, wherein the median member blank is illustrated. The elongated blank includes two portions 132 with a crease 133 therebetween. These portions when folded upon themselves, form the smooth upper edge 133 in Fig. 5. Integral with each portion 132 and connected thereto by an oppositely directed crease 135 is the wing 134. Extension 136 on portions 132 is notched or slotted as at 137, the two registering when the portions are folded. These notches form lateral projections 136a.

When the median member is medianly folded and the wings are "broken" apart, the wings diverge from each other and extend downwardly and outwardly toward the adjacent side walls of the trough. To prevent undue divergence, the slot 129 in the flap extension 120 is extended downwardly and outwardly forming two wing restraining diverging walls 130 and 131, and the result is a pocket that seats the ends of said wings.

As illustated in Figs. 5 and 6, the sides are turned upwardly from the bottom, and then the tabs are turned inwardly into lapping relation, then the flaps are turned upwardly, and the flap extensions are turned inwardly towards each other and then downwardly to lie parallel to the supporting flap and nest the lapping tabs therebetween.

The width and length of the extension is such that herein the sides and bottom are frictionally engaged by said extension edges. When so erected the resulting trough portion is notched or slotted at each end and portions 136 of the median member seat therein. The notches 137 also seat the upper edges at the root of notches 125 and 126 in the lapping tabs. The wing ends seat against walls 130 and 131. The projecting portions 136a extend downwardly outside of flaps 115 and lock the trough structure and median member together to form the complete feeder.

While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. An elongated paper board feeder for chicks including a trough forming blank including a bottom wall and two side walls extending upwardly therefrom and two end walls extending upwardly from the bottom wall, each end wall including a notched upper edge, an independent median member extending from end to end and between the side walls and having at opposite ends interlocking association with the notched upper edges and means parallel to and immediately adjacent the end walls and of a width greater than half the width of the end wall and adjacent the ends of each side wall and opertively connected thereto and positioned substantially transversely thereof and interlockingly associated with the adjacent end of the median member for trough form retention purposes.

2. A feeder as defined by claim 1 characterized by the last mentioned means being integral with the side walls at the ends thereof.

3. A feeder as defined by claim 1 characterized by each of the last mentioned means being slotted above the bottom edge thereof for side wall end reception and spacing the bottom wall above the bottom edges.

4. A paper board chick feeder including bottom, side and end walls arranged in trough formation, and ridge means extending from end wall to end wall retaining the walls in trough formation and having a serrated upper edge.

5. A paper board chick feeder including bottom, side and end walls arranged in trough formation, and independent ridge means extending from end wall to end wall retaining the walls in trough formation, said ridge means having divergingly outwardly and downwardly directed wing portions.

6. A paper board chick feeder including bottom, side and end walls arranged in trough formation, and independent ridge means extending from end wall to end wall retaining the walls in trough formation, each side wall including an inwardly directed lip.

7. A feeder as defined by claim 4 characterized by said means having divergingly outwardly and downwardly directed side edge portions and each side wall including an inwardly and upwardly directed lip, the adjacent longitudinal edges of a lip and edge portion being spaced apart and the latter edge being at a lower elevation than the former edge to provide a restricted feeding opening and prevent a chick seating in the trough.

8. A paper board chick feeder including a blank forming end walls, side walls and a bottom wall, a pair of support and end forming blanks each including a downwardly directed notch in its upper edge, and a U-shaped slot in its lower central portion, the ends of the side and bottom wall projecting therethrough, the end wall being beside the support blank and extending upwardly from the bottom, the slots in the support blanks maintaining trough formation, and a ridge means extending from end wall to end wall and having adjacent its ends upwardly directed notches for support seating, the support notches and ridge means notches having an interlocking connection.

9. A paper board chick feeder including a blank forming end walls, side walls and a bottom wall, a pair of support blanks each including a U-shaped slot in its lower central portion, the ends of the bottom and side walls projecting therethrough, the end wall being beside the support blank and extending upwardly from the bottom and having a downwardly directed notch in its upper edge, the slots in the support blanks maintaining trough formation, and a ridge means extending from end wall to end wall and having upwardly directed notches adjacent its ends for end wall association, the end wall and ridge means notches having an interlocking connection.

10. A paper board chick feeder including a blank forming end walls, side walls and a bottom wall, a pair of support and end forming blanks, each including a U-shaped slot in its lower central portion and a downwardly directed notch in its upper edge, the ends of the bottom and side walls projecting through the slots, the end walls being beside the support blanks and extending upwardly from the bottom and each having a notch in its upper edge registering with the support blank notch, and a ridge means extending from end wall to end wall and having adjacent

its ends upwardly directed notches for end wall and support blank seating, the support, end wall and ridge means notches having an interlocking connection.

11. A paper board chick feeder including a blank forming end walls, side walls and a bottom wall, a pair of support and end forming blanks, each including a U-shaped slot in its lower central portion and a downwardly directed notch in its upper edge, the ends of the bottom and side walls projecting through the slots, the end walls being beside the support blanks and extending upwardly from the bottom and each having a notch in its upper edge registering with the support blank notch, and a ridge means extending from end wall to end wall and having adjacent its ends upwardly directed notches for end wall and support blank seating, the support, end wall and ridge means notches having an interlocking connection, said ridge means having a serrated upper edge, said ridge means being a blank of paper board folded medianly, the two longitudinal side edge portions being directed downwardly and divergingly of each other, each side wall including an inwardly and upwardly directed lip, extended upwardly and inwardly towards each other and the lip portions being extended and seating in said slot extensions.

12. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation.

13. An elongated corrugated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, the corrugations extending longitudinally of the feeder, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation.

14. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, said median member including a strip of paper board material, and an interlock between each end of the strip and the adjacent flap and of interfitting opposed slot character.

15. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, said median member including a medianly folded strip of paper board material with diverging wings between the trough ends, the folded portion at each end including an upwardly directed notch adjacent said wings, and the flap adjacent thereto having a downwardly directed notch, the notched formations interfitting.

16. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, each end flap having a downwardly directed extension for nesting the lapping tabs adjacent thereto between the flap and its extension, said median member including a medianly folded strip of paper board material with diverging wings between the trough ends, the folded portion at each end including an upwardly directed notch adjacent said wings, and the flap adjacent thereto having a downwardly directed notch, the notched formations interfitting, the extensions terminating adjacent the bottom and each including divergingly directed slot forming walls, the wings having cooperating ends for slot wall engagement.

17. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, each end flap having a downwardly directed extension for nesting the lapping tabs adjacent thereto between the flap and its extension, each tab including a notch in its upper edge, the median member including a strip of paper board material, the tab notch registering with a flap slot and the median member seating therein and including a projection for flap retention in trough forming position.

18. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and extending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom, and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, each end flap having a downwardly directed extension for nesting the lapping tabs adjacent thereto between the flap and its extension, each tab including a notch in its upper edge and each flap and its extension including a slot formation registering with the same, the median member including a strip of paper board material seating in the registering slot and notch and including a projection for flap and extension retention in trough forming position.

19. An elongated paper board feeder for chicks including a trough forming blank having a bottom and two sides integral therewith and ex-

tending upwardly therefrom, tabs on each side at the ends and extending laterally thereof, tabs on adjacent sides lapping each other at adjacent ends, and a flap extending upwardly at each end of the bottom and a median member operatively associated at the ends with said end flaps for locking the trough forming blank in trough formation, each end flap having a downwardly directed extension for nesting the lapping tabs adjacent thereto between the flap and its extension, each tab including a notch in its upper edge and each flap and its extension including a slot formation registering with the same, the median member including a strip of paper board material seating in the registering slot and notch and including a projection for flap and extension retention in trough forming position, the median member being of folded character with diverging wings, said wings extending downwardly and outwardly toward the sides.

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