Nov. 25, 1941. H. M. INMAN 2,264,208

FIBER-BOX

Filed Dec. 22, 1938 4 Sheets-Sheet 1

Fig. 1.

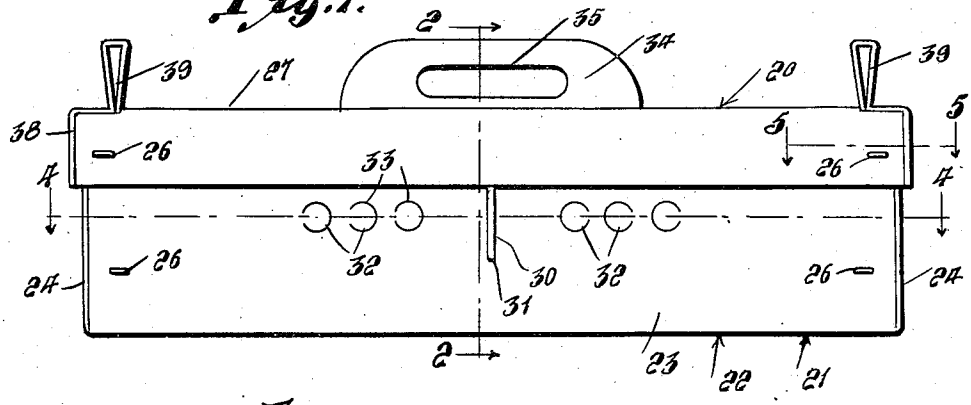
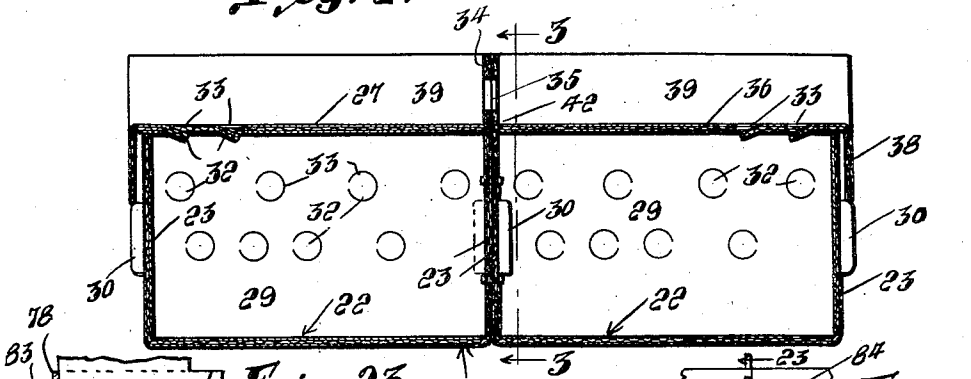


Fig. 2.



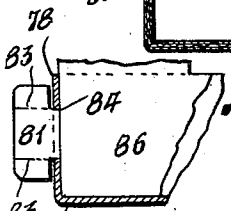


Fig. 23.

Fig. 3.

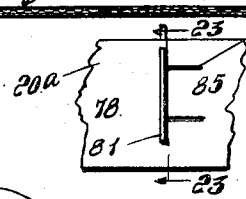


Fig. 22.

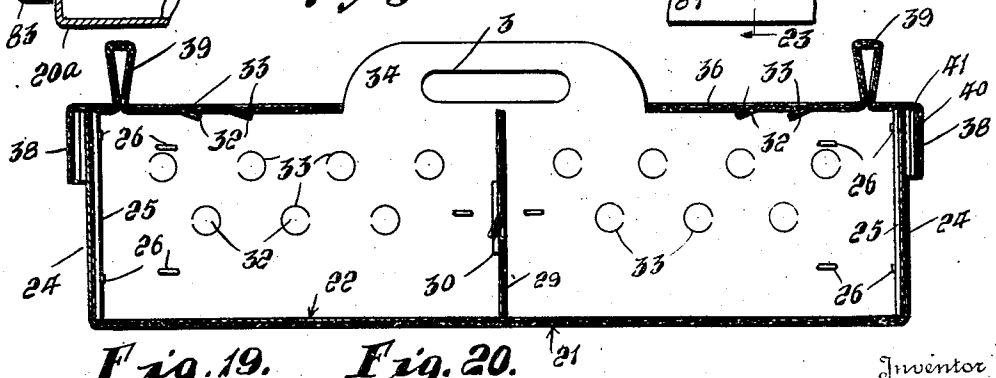


Fig. 19.

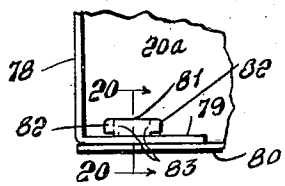
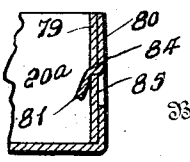


Fig. 20.



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Fig. 4.

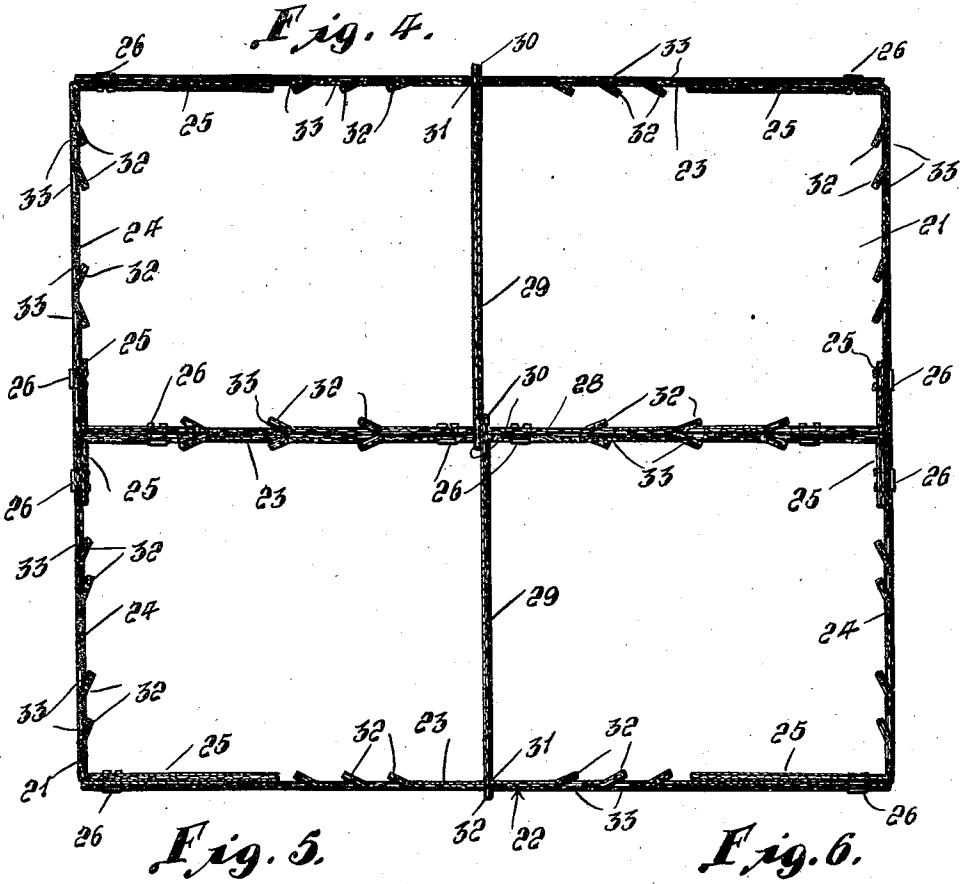


Fig. 5.

Fig. 6.

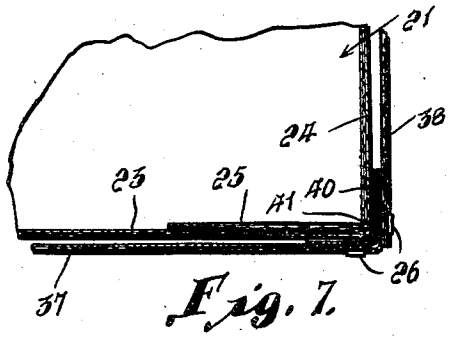
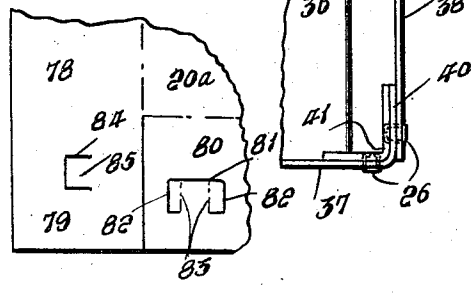
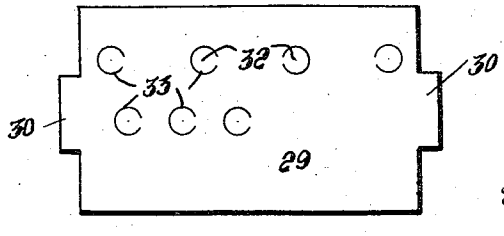


Fig. 7.

Fig. 21.





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Fig. 8.

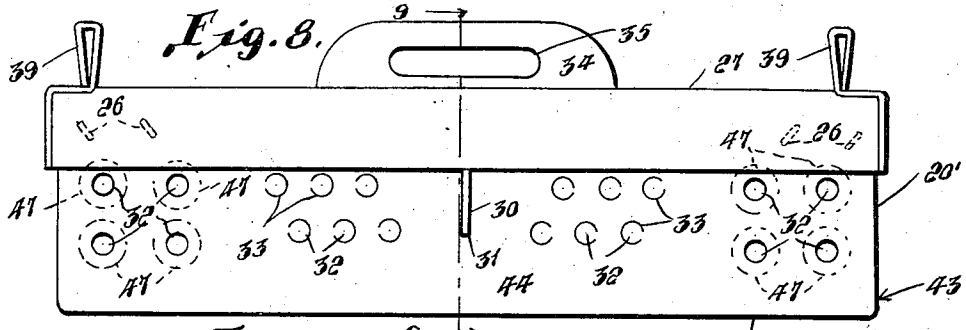


Fig. 9.

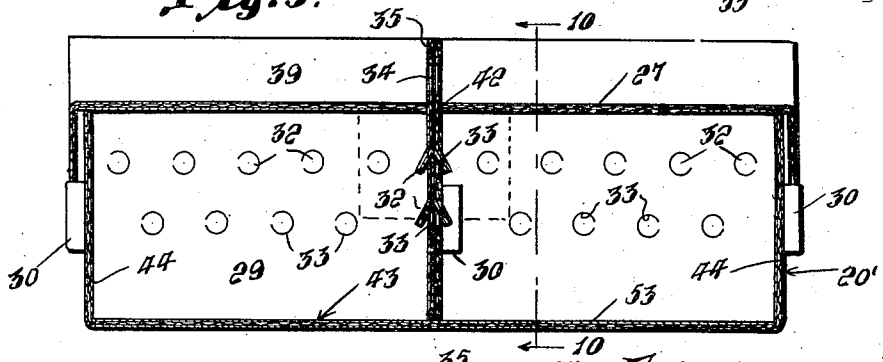


Fig. 10.

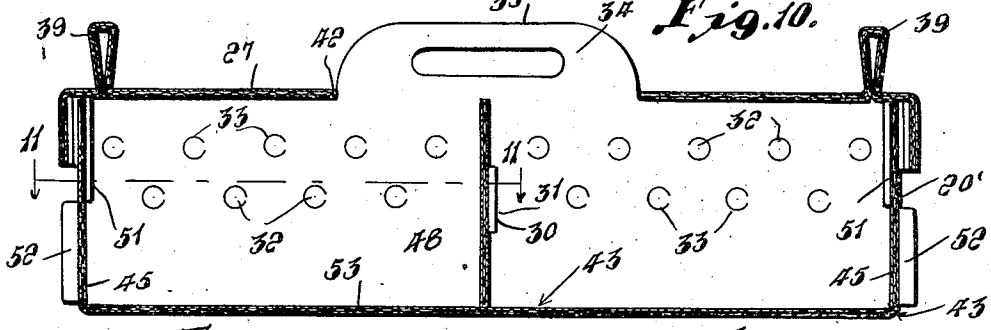


Fig. 11.

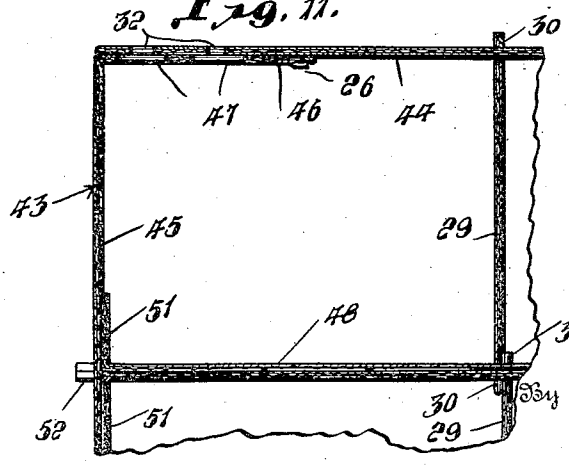
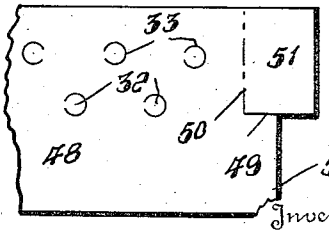


Fig. 12.



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Fig. 13.

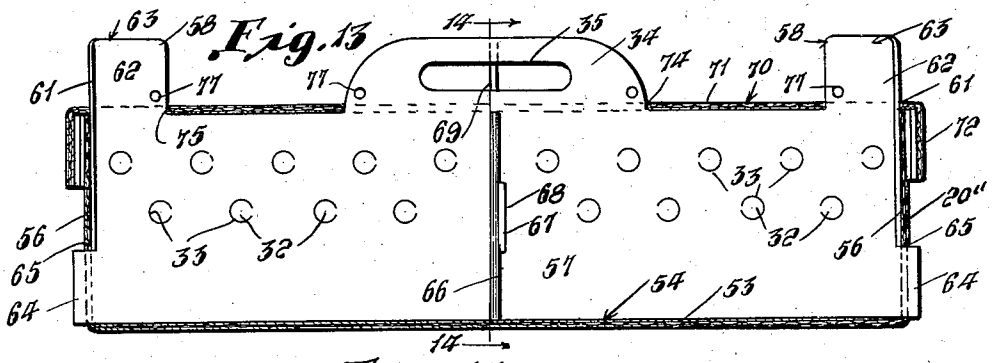


Fig. 14.

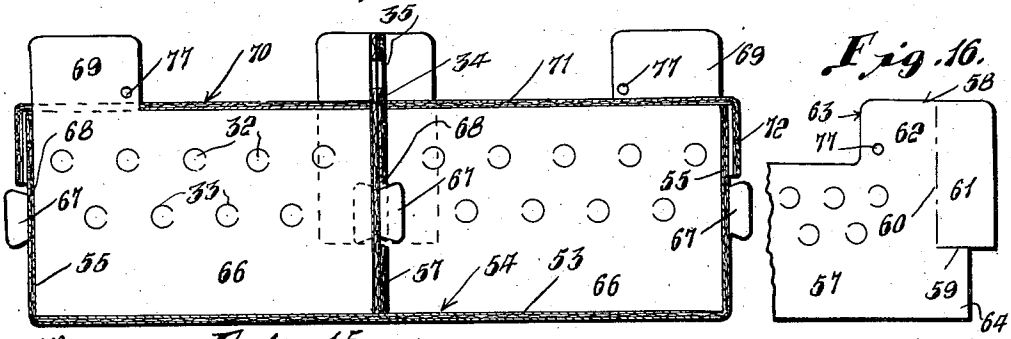


Fig. 16.

Fig. 15.

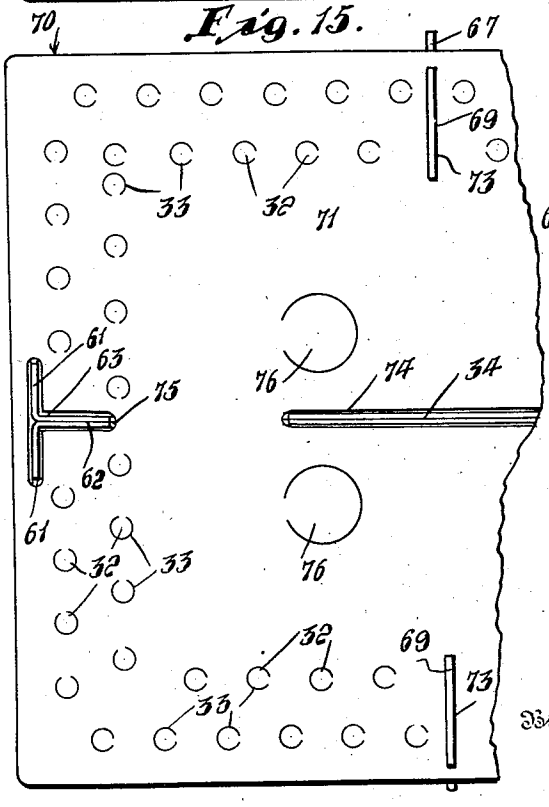


Fig. 17.

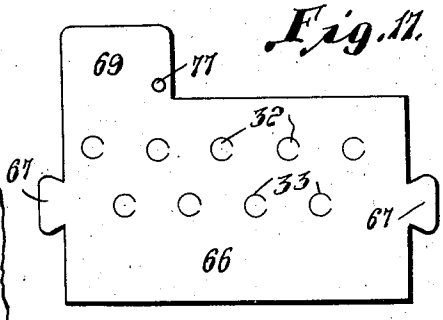
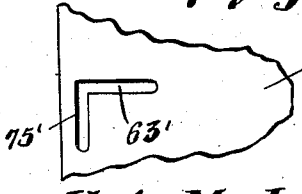


Fig. 18.



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Patented Nov. 25, 1941

2,264,208

UNITED STATES PATENT OFFICE

2,264,208

FIBER BOX

Hale M. Inman, Aberdeen, S. Dak.

Application December 22, 1938, Serial No. 247,263

3 Claims. (Cl. 229—6)

This invention relates to an improved fiber box adapted for use in the transportation of chicks, turkey poults and ducklings.

It is an aim of this invention to provide a poultry box of a fibrous material and comprising blanks adapted to be folded and lapped and secured either by staples or by tongues and slots to form a body portion and lid and provided with means for maintaining the box in spaced relationship to adjacent boxes during transportation to maintain air spaces around the box for ventilation.

Another object of the invention is to provide a box having a plurality of perforated portions in the body and lid adapted to be punched out to form air passages, said perforated portions being provided to enable the shipper to vary the number of openings formed in the box depending upon the temperature.

Still a further object of the invention, is to provide a box lid adapted to be folded transversely along its top to provide upwardly extending ribs for spacing the bottom of a superposed box from said lid, and a handle portion formed integral with the body of said box and adapted to project upwardly therefrom through the lid for carrying the box and for co-acting with said ribs in supporting a superposed box.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawings, which illustrate a preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of a preferred form of the invention,

Figure 2 is a transverse vertical sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a longitudinal vertical sectional view taken on the line 3—3 of Figure 2,

Figure 4 is a horizontal sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a horizontal sectional view taken on the line 5—5 of Figure 1,

Figure 6 is a bottom plan view of one corner of the lid,

Figure 7 is a side elevational view of one of the transverse partitions, as seen in Figure 4,

Figure 8 is a view similar to Figure 1 of a slightly modified form of the invention,

Figure 9 is a transverse vertical sectional view taken on the line 9—9 of Figure 8,

Figure 10 is a longitudinal vertical sectional view taken on the line 10—10 of Figure 9,

Figure 11 is a horizontal sectional view taken on the line 11—11 of Figure 10,

Figure 12 is a fragmentary side elevational view illustrating an end of the longitudinal partition as seen in Figures 8 to 11,

Figure 13 is a longitudinal vertical sectional view similar to Figures 3 and 10, of another form of the invention,

Figure 14 is a transverse vertical sectional view taken on the line 14—14 of Figure 13,

Figure 15 is a fragmentary top plan view of the box as seen in Figures 13 and 14,

Figure 16 is a fragmentary side elevational view of one end of the longitudinal partition, as seen in Figure 13, in its blank form,

Figure 17 is a side elevational view of one of the transverse partitions of the modified form as seen in Figure 13,

Figure 18 is a fragmentary top plan view of another form of lid adapted to fit another modified form of longitudinal partition,

Figure 19 is a plan view showing one corner of a modified box assembled by tongue and slot connections in the lapped portions thereof,

Figure 20 is a sectional view taken along the line 20—20 of Figure 19,

Figure 21 is a plan view of the corner, as seen in Figure 19, before the blank is folded,

Figure 22 is an elevational view showing a partition provided with a tongue to engage a slot in a side wall of the box, and

Figure 23 is a sectional view taken along the line 23—23 of Figure 22.

Referring more particularly to the drawings, wherein like reference characters designate like or corresponding parts throughout the different views, the box, designated generally 20, as seen in Figures 1 to 7, includes the body portion, designated generally 21 and the lid or cover 27.

Box 20, including the body 21 and lid 27 is formed of a fibrous material such as a heavy corrugated paper or cardboard. Body 21 includes the two corresponding sections 22 which are rectangular in shape and open at their tops, with each section 22 being formed of a single blank bent to provide the upwardly extending longitudinal sides 23 and ends 24 which are cut and folded to form the overlapping portions 25 secured together by the staples 26 to attach the sides 23 and ends 24 adjacent the corners of the sections.

Sections 22 are arranged side by side with two of the longitudinal sides 23 in abutting engagement and are secured to each other by means of staples 26 connecting these sides 23, as seen in Figure 2. The two connected sides 23 of the body 21 combine to form a longitudinal partition 28 of double thickness and the body 21 is further divided into four compartments by the two transverse partitions 29 having the tongues 30 projecting from their ends which extend through openings 31 in the sides 23 and partition 28. Partition 28 and partitions 29 combine to divide the body 21 into four separate compartments and as seen in Figure 4, ends 24, sides 23 and partitions 28 and 29 are perforated to provide cut-out portions 32 adapted to be punched inwardly to form openings or air passages 33 for ventilating the four compartments.

Partition 28 is enlarged intermediate of its ends and along its upper edge to provide an upwardly extending portion 34 having a slot 35 forming a handle by means of which box 20 can be carried.

Lid 27 is likewise formed from a single blank which is folded adjacent its edges to provide the top 36, sides 37 and ends 38. Top 36 adjacent its opposite ends is folded to form the upwardly projecting ribs 39 and the ends 38 are drawn inwardly and secured to the inwardly folded ends 40 of the sides 37, by the staples 26 to maintain the folds in the top 36. A reinforcing strip 41 may be provided at the corners of the lid 27 to prevent the staples 26 from being torn loose from the ends 38 and the folded portions 40 when weight is placed upon the ribs 39 as will hereinafter be explained. Top 36 is also provided with the cut-out portions 32 forming the openings 33 to ventilate the four compartments from above. Top 36 is provided with a longitudinal slot 42 through which handle 34 is adapted to extend when the lid 27 is in position, said handle effectively maintaining lid 27 on the body portion 21 against removal except by being lifted upwardly.

As seen in Figures 1, 2 and 3, the upper edge of the handle 34 is disposed in a horizontal plane with the upper edges of the ribs 39 and is adapted to cooperate therewith in supporting the bottom of a corresponding superposed box so that said bottom will be held in spaced relationship to the lid 27 to allow air to circulate freely between the boxes to reach the four compartments thereof. It will thus be seen that the handle 34 has the dual function of being employed for manually carrying box 20 and for co-acting with ribs 39 when a plurality of the boxes 20 are stacked for shipment.

Figures 8 to 12 illustrate a slightly modified form of the box, designated 20', wherein the body portion 43 is formed from a single blank folded adjacent the four sides to form the upwardly extending longitudinal sides 44 and ends 45 said sides and ends being cut along a line parallel to the end folds to form the portions 46 which are folded inwardly to lie along the inner sides of the ends of sides 44 and to be secured thereto by means of staples 26. The portions 46 are provided with the relatively large openings 47 for a purpose which will hereinafter be explained.

The body portion 43 is provided with a longitudinal two ply partition 48 the ends of which are cut along the lines 49, as seen in Figure 12, and scored along the lines 50 to form the tabs 51 at each end adapted to be bent outwardly in opposite directions, as seen in Figure 11, to rest against the inner sides of the ends 43. Tabs 51 when bent outwardly as seen in Figure 11, form the tongues 52 which extend through the end walls 45, as best seen in Figure 10 to retain the partition 48 therein in an upright position with the bottom edge of the partition resting upon the bottom 53 of the box 20'. Body portion 43 is also provided with the transverse partitions 29 corresponding to the partitions in box 20 having the tongues 30 which project through the side walls 44 and through partition 48 to position partitions 29 therein and to divide the body 43 into four distinct compartments. Partition 48 is also provided with the handle 34 having the slot 35 adapted to project upwardly through the slot 42 in the lid 27 which corresponds to the lid of the box 20, the depending sides of which are adapted to fit over sides 44 and ends 45 as seen in Figures 8 to 10 to form the cover of the box 20', in the same manner as the lid 27 fits the body portion 22 of the box 20. Box 20' differs from box 20 only in that the body portion is formed from a single blank and the longitudinal partition 48 is formed from a separate blank which is removably positioned in the box by means of the tongues 52. If desired, the tabs 51 may be secured to the ends 45 by means of staples to permanently attach partition 48 in the body portion 43. The parts of the box 20' are also provided with the perforated portions 32 in the same manner as the box 20 to be selectively punched out to form ventilating openings, and the openings 47 heretofore referred to are adapted to aline with certain of said cut-out portions 32, as best seen in Figure 8, so that when these portions are punched out the ventilating openings 33 will include the openings 47.

In Figures 13 to 17 another modified form of the invention is shown comprising a poultry box designated generally 20'' the body portion 54 of which may be formed similarly to the body portion 43, or in other words, from a single blank folded and cut to form the bottom 53, sides 55 and ends 56, as heretofore described. Box 20'' is provided with the longitudinal partition 57 which as seen in Figure 16, is provided with the enlarged end portions 58 which are cut horizontally along the lines 59 and scored along the vertical lines 60 to form the tabs 61. Partition 57, as seen in Figure 14, is likewise double ply so that when the tabs 61 are bent outwardly of each other they form with the portions 62 a T-shaped element 63, as best seen in Figure 15, which projects upwardly from the body 54, as seen in Figures 13 and 14. Tabs 61 by being bent outwardly form the tongues 64 corresponding to the tongues 52 which are adapted to extend through slots 65 in the end walls 56 to removably position partition 57 therein with its lower end resting on the bottom 53 and the lower parts of the tabs 61 may be stapled to ends 56, if desired, to rigidly and permanently position partition 57 therein.

Box 20'' is also provided with the two transverse partitions 66, as best seen in Figure 17, provided with the tongues 67 at their ends to extend through slots 68 in the sides 55 and partition 57. Partitions 66 are also provided with the enlarged upwardly extending portions 69 at their outer ends which project upwardly from the body portion 54 and are substantially the same height as the element 63, as seen in Figure 14. Partition 57 is also provided with the handle 34, corresponding to the handles in the boxes 20 and 20', the upper edge of which is disposed in a horizontal plane with the corresponding edges of the elements 63 and 69.

The lid 70 of the box 20'' is formed from a single blank scored along its sides and folded downwardly to form the top 71 and depending sides and ends 72 which are cut, lapped and stapled similarly to the blank forming the body portion 43. Top 71 intermediate of its ends adjacent its opposite sides is provided with the transversely disposed slots 73, a centrally disposed longitudinal slot 74 and a pair of T-shaped slots 75 at its opposite ends. Lid 70 fits the top of the body portion 54 in the same manner as the lid 27 with the slots 73 positioned to receive the elements 69, slot 74 to receive the handle 34, and the slots 75 to receive the element 63, these elements projecting upwardly from the lid 70, as best seen in Figures 13 and 14 to retain the lid

in position on the box and to allow it to be removed only by a direct upward movement. Elements 63 and 69 and the handle 34 combine to form supporting members on which the bottom of a superposed box is adapted to be rested and held in spaced relationship to the lid 70 to form an air space therebetween so that air may reach the compartments of the box 20'' by passing through ventilating openings 33 in the top 71 when the perforated portions 32 have been punched out. The cover 71 is also provided with four relatively large partially perforated portions 76 adapted to be pressed inwardly to form large ventilating openings one of which will communicate with each of the four compartments of the box, and the sides and ends 55 and 56 as well as the partitions 57 and 66 are provided with perforated portions 32 adapted to be punched out to form ventilating openings 33 similarly to the boxes 20 and 20'. It will also be noted that the tongues 67 project beyond the sides 72 of the lid 70 so that these tongues will hold adjacently stacked boxes away from the ends 55 to form an air space at the end of the box for admitting air to the four compartments.

Handle 34, and portions 62 and 69 are provided with the openings 77 through which wire or twine may be passed, for retaining the lid 70 in position. The twine or wire, not shown, is passed through the openings 77 in the handle 34 and through either the portions 69 or 62 or both.

Boxes 20, 20' and 20'' are adapted to be made in various sizes to contain twenty-five, fifty, a hundred or more chicks, turkey poults or ducklings for shipment and transportation and the boxes are especially adapted for use in transporting large numbers of poultry where a plurality of the boxes will be stacked side by side so that air spaces may be maintained between the boxes to allow circulation of air for ventilating the compartments of each box.

While in every instance the central longitudinal partition has been described as being of two ply thickness a single ply longitudinal partition could be employed in which case the element 63' would be L-shaped, as seen in Figure 18, and the top 71' would then be provided at its ends with L-shaped slots 75' instead of the T-shaped slots 75 as seen in Figure 15.

Figures 19 to 23 illustrate another modified form of the invention employing tongue and slot connections instead of the staples 26 and is adapted for use in assembling both the body portions and lids of either of the boxes 20, 20' or 20'' and as illustrated in Figures 22 and 23 the tongue and slot may likewise be employed for assembling the transverse and longitudinal partitions in these boxes. In Figures 19 and 20 one corner of a box designated 20*a* is shown having an end wall 78 provided with a folded end 79 to overlap an end of the side wall 80. Side wall 80, contiguously with the lapped portion 79 is cut-out to form the tongue 81 which hinges, intermediate of its upper edge, to the side 80 to form the free ends 82 adapted to be folded along the scored lines 83 and to be passed through the opening or slot 84 in portion 79. Opening 84 is formed by the struck-out portion 85 and is of a width substantially the same as the distance between the scored lines 83 so that ends 82 of tongue 81 may be extended, after the tongue has been inserted through the opening or slot 84 to retain it in position therein, and the struck-out portion 85 may be positioned in said opening, as seen in Figure 20, to hold the tongue 81 from being accidentally retracted.

In Figures 22 and 23, end 87 of the box 20*a*, intermediate of its ends, is provided with the struck-out portion 85 forming the slot 84 to receive the tongue 81 formed on the end of a partition 86 to connect one end of the partition to the box 20*a*. The opposite end of the partition 86 would be similarly connected in the opposite end of the box 20*a* and a partition, not shown, disposed at right angles to the partition 86 would be similarly connected to both of the sides 80. This tongue and slot construction may likewise be employed for connecting the two halves 22 of the body portion 20 and elsewhere where the staples 26 have been illustrated so that the poultry boxes may be formed from blanks without the use of staples or adhesives.

Various other modifications and changes in the construction and arrangement of the parts forming the poultry boxes may obviously be made and are contemplated as the drawings and description are only intended to illustrate preferred forms thereof, and the right is expressly reserved to make such variations and changes as fall within the spirit and scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A chick box comprising a body portion and lid of fibrous material, a longitudinal partition, composed of two plies, disposed in the box and provided with upwardly elongated end portions, portions of the ends of the plies being turned outwardly for engaging the inner sides of the ends of the body portion, the remaining parts of the ends of the plies forming tongues which extend through the ends of the body portion, adjacent its bottom, to detachably connect the partition thereto, said upwardly elongated end portions forming T-shaped extensions which project through the lid; a pair of transverse partitions having tongues at their ends, the tongues of the adjacent ends of the transverse partitions being connected to the longitudinal partition and the tongues of the remote ends being connected to the sides of the body portion, said transverse partitions having upwardly projecting portions adjacent their remote ends which extend through the lid, and means formed integral with the intermediate portion of the longitudinal partition and extending upwardly through the lid to form a handle for carrying the box and to combine with the T-shaped extensions and projecting portions to support a superposed box in spaced apart relationship to the lid.

2. A chick box as in claim 1, certain of the tongues being provided with end flaps foldable to extend in the same direction, and said body portion being provided with U-shaped slots for the passage of the tongues therethrough, and said flaps being returnable to their normal extended positions relatively to the tongues for retaining the tongues in engagement with the slots.

3. A chick box as in claim 1, the side and end walls of the body portion being provided with releasable tongue and slot connections, said last mentioned tongues being provided with end flaps foldable to extend in the same direction, and said slots being U-shaped for the passage of the tongues therethrough, and said flaps being returnable to their normal extended positions relatively to the tongues for retaining the tongues in engagement with the slots.

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