April 5, 1938. N. F. SCHAEFER 2,113,097

STICKLESS STAPLESS CHICK BOX

Filed Dec. 28, 1936 2 Sheets-Sheet 1

FIG. 1

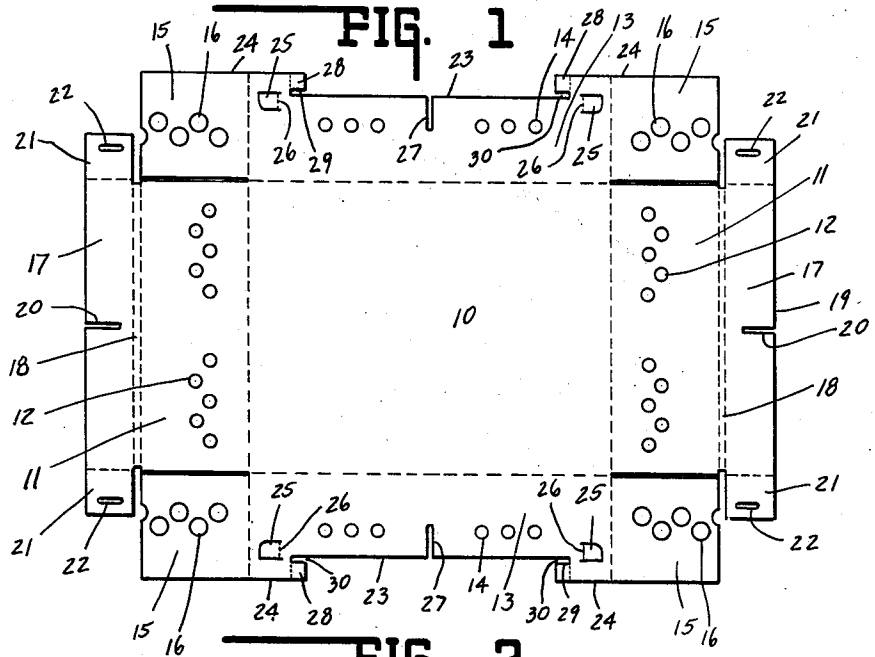
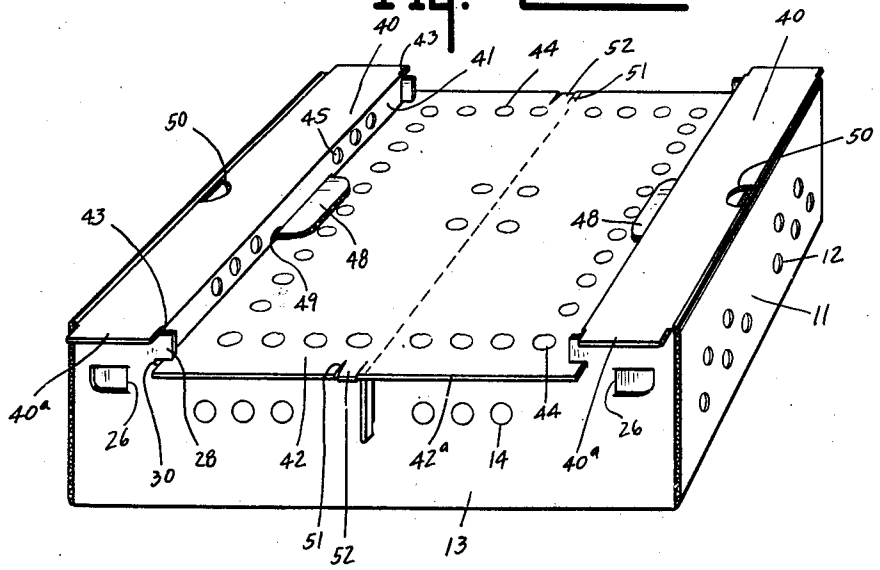


FIG. 2



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FIG. 3

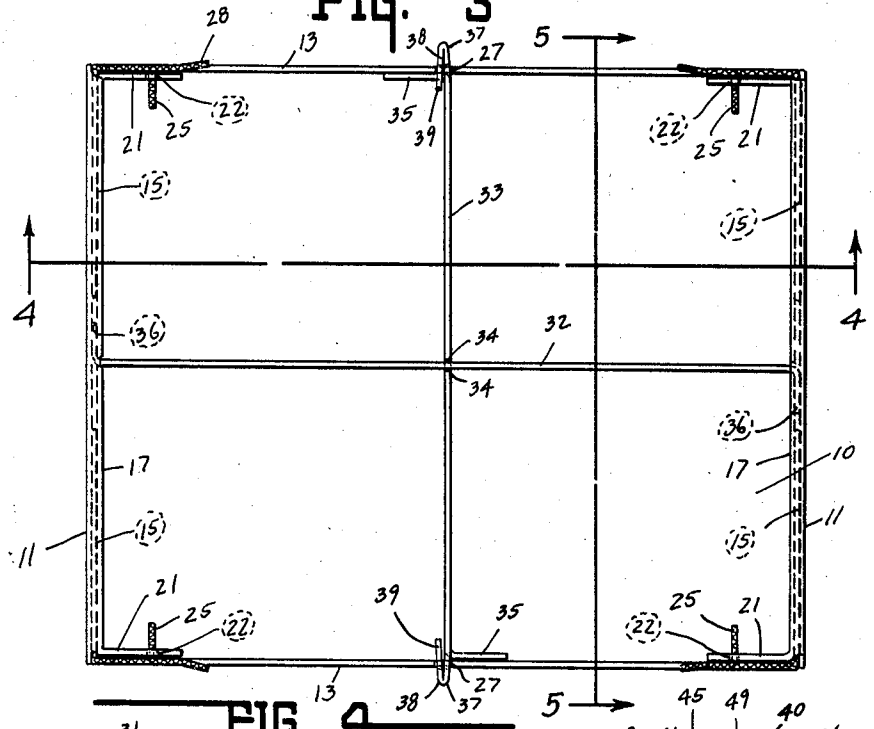


FIG. 4

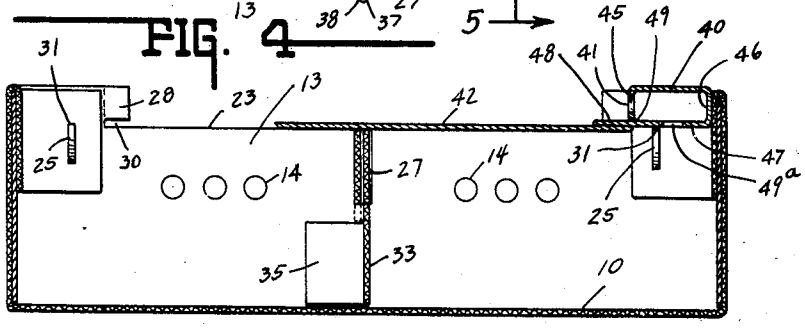
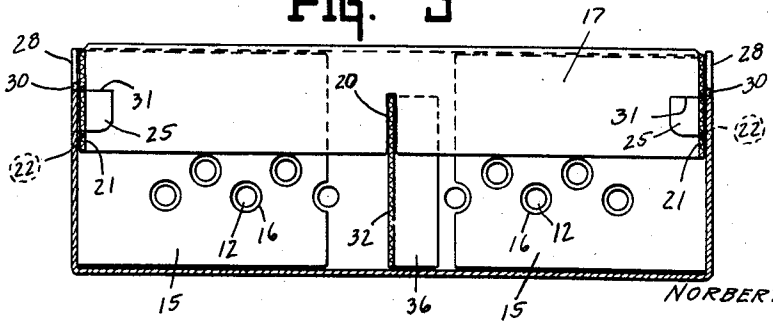


FIG. 5



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2,113,097

STICKLESS STAPLESS CHICK BOX

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Application December 28, 1936, Serial No. 117,825

22 Claims. (Cl. 229—6)

This invention relates to a chick box of the general character represented by the disclosures found in the Bomberger Reissue Patent 19,122, dated March 27, 1934, and the Mohler-Schaefer Patent No. 2,011,069.

In view of the complete disclosure in said patents of the general purposes of a box of this general character, no further description thereof is believed necessary.

The chief object of the present invention is to provide a stickless, stapless box having intersecting partitions, if, as and when desired, and having the characteristics that the completed box has a ventilating channel extending across the same between opposite ends and adjacent the channel there is provided at each side thereof a supporting cover portion adapted to support another box in superposed relation so that ventilation to the interior of the supporting chick box is obtainable through channel apertures.

The chief feature of the invention consists in the formation of the box, whereby the aforesaid object is accomplished, which box includes a novel cover-locking arrangement, a novel partition-retention arrangement, and a novel interlocking wall arrangement, the same being adapted, when desired, for cover support purposes.

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

In the drawings,

Fig. 1 is a plan view of the blank forming the box bottom.

Fig. 2 is a perspective view of a box embodying the invention.

Fig. 3 is a top plan view of the box bottom structure.

Fig. 4 is a longitudinal, sectional view taken on line 4—4 of Fig. 3 and in the direction of the arrows.

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 3 and in the direction of the arrows.

Reference will be had to Fig. 1, wherein 10 indicates the bottom or body portion of a blank from which the box bottom structure is formed. Hingedly connected thereto at opposite sides of the blank, are what are herein arbitrarily termed the two end walls 11, the same including a plurality of semi-perforated portions 12 that are readily removable by finger punching, or the like, to form ventilating apertures in the end walls. Integral with the two opposite sides of the body portion 10 and hingedly connected thereto by a creased connection, or the like, are what have been herein arbitrarily termed, the side walls 13, having small readily removable portions 14 therein for ventilation, when desired.

Projecting oppositely from the sides of each of the walls 13 are flap extensions 15 provided with similar portions 16 readily removable, which are adapted to register when the walls are in box formation with certain of the portions 12 in the walls 11. Integral with each of the walls 11 is an extension 17 having a slightly reduced connecting portion 18 and extending inwardly from the free edge 19 of the portion 17 but not entirely through said portion 17, is a slot or notch 20. Projecting from each side edge, as it were, of the portion 17 and connected thereto by a creased or scored connection, is a flap extension 21 having a slot 22 therein.

Each side wall, see Fig. 1, has an intermediate edge 23 offset with respect to the end edge portions 24. In registration with the edge 23, there are die-cut tongues 25 each having a hinge connection 26 with the side wall 13. Each side wall portion 13 has an inwardly directed slot or notch 27 extending from edge 23 of side wall 13. Extending inwardly into the offset cut-out portion defined by edges 24 and 23, and at each side thereof, are tongues 28 having the edge 29 slightly spaced from the edge 23 and forming a notch or groove 30 therebetween.

As shown clearly in Fig. 3, the box bottom is set up by turning upwardly at right-angles to the body portion 10 the four walls 11 and 13. In this folding movement, the flaps 15 are turned at right-angles not only to the body 10 but also to the wall 13 and inwardly into the box, and thus lie immediately adjacent and parallel to the walls 11.

When this operation has been effected, the flaps 21 are turned into parallelism and at right-angles to the portion 17. When the portion 17 is turned inwardly and downwardly to envelop the flap extensions 15 of the walls 13 when positioned adjacent the walls 11, the several portions are in box formation but unsecured. The portions 21, when portion 17 is infolded over the flaps 15, lie parallel to the side walls 13 and the slots 22 register with the anchoring connection between the tongues 25 and the side walls 13 as at 26. These tongues 25 are turned inwardly as shown clearly in Fig. 3 and project through the slots 22 and thus the several side and end walls of the bottom box are interlocked without the use of staples. It is also to be

noted—see Figs. 4 and 5—that the top edges 31 of said locking tongues 25 lie in a plane common to the edges 23. All of these serve as a cover support, see more especially Fig. 4 wherein a portion of the cover structure is shown thus supported.

Before proceeding to a description of the cover structure which is somewhat similar to that disclosed in the Mohler-Schaefer patent, before mentioned, reference will be had to the partition arrangement. Herein the partition arrangement is shown of transverse intersecting character,—that is, a partition member 32 extends from one side of the box to the other and a partition member 33 extends from an intermediate side of the box to the opposite intermediate side of the box. The two partitions at their mid-portions each are provided with a slot or notch 34, the same being oppositely directed so that the two partitions can interfit, as is well known in the art. The height of the partitions as shown in Fig. 4, is that of the height of the intermediate portion of the side wall 13—that is, the distance between the body 10 and the top edge 23. The partition 33 at its remote end is divided longitudinally and one portion 35 upon partition 33 extends laterally thereof and frictionally bears upon the interior face of the side wall 13. Each end of partition 32 includes a lateral extension 36 and frictionally engages the adjacent end wall 11.

It is to be noted as seen at the right and left-hand sides of Fig. 3 that the flap extensions 15 when the bottom blank structure is assembled in box formation, are considerably spaced apart and thus there is provided a groove, as it were, between the free ends thereof which may readily receive said lateral friction bearing partition extension 36. Partition 33 at each end has its other longitudinal division 37 projecting through the notch or slot 27 and to frictionally lock the partition therein, the extended end being turned back upon itself as at 38 and the turned-back portion 39 frictionally interlocks with the walls of the slot 27. The partition 32 does not have this type of anchorage except so far as the lateral portions 36 are concerned. With reference to the lateral projection 36, it is noted that in the infolding and downturning of the portions 17, the notch 20 nestingly receives the end of the partition 32 immediately adjacent its connection to the lateral extension 36 thereof.

It will be apparent from the foregoing that longitudinal movement of the partition 32 is prevented by the inturned end portions 17 and that upward withdrawal movement of said partition is prevented by the partition engaging the roots of the slots 20.

It will be observed that the transverse partition 33 is prevented from longitudinal movement by the lateral portions 35 and tilting or cocking movement about a longitudinal axis is prevented by the extensions 37. Also, the friction lock associated with this extension serves to retain this partition in the box bottom. It is to be understood, that preferably in order to retain the partition 33 against upward withdrawal, that it includes a slot 34 extending downwardly at the intersection and to approximately half the height or width of this partition, and the transverse partition 32 includes a slot 34 which extends upwardly from the bottom of the partition to an extent approximately half the height of the partition, both partitions herein being shown of substantially equal height. In this manner, partition 32, since it is locked against withdrawal by the inturned ends 17, automatically locks partition 33 against vertical withdrawal from the box.

It will also be observed the inturned ends 17 retain the inturned flaps 15 in parallel and contacting relation with the end walls and the locking tongues 25 serve to prevent these inturned portions from turning upwardly and outwardly to release the walls from box formation. The portion 18 prevents upward and outward tilting of the flaps 15.

Reference will now be had to the cover structure shown more especially in Fig. 2 and also a portion of which is shown in section in Fig. 4. This cover structure is somewhat similar to the cover structure shown in the Mohler-Schaefer patent, in that it includes a pair of spaced portions 40 lying in substantially the same plane and connected by downwardly directed portions 41, the latter at their lower edges being continued as the intermediate portion 42. The dimensions of these portions of the cover are such that portions 40 and 42 when the cover is mounted, bear upon the edges 24 and 23, respectively, of the side walls 13 of the box and project outwardly beyond the same.

The portions 41 at each end are reduced as at 43 for a purpose hereinafter to be set forth. Also the cover may be provided with semi-die cut portions 44 readily removable by finger punching, or the like. Also the walls 41 may be similarly provided with readily removable portions 45. Herein the wall 40 is continued as a downwardly directed portion 46 and the same includes an extension 47 adapted to lie parallel to portion 40. The portion 47 has a tongue 48 projecting inwardly through a slot 49 formed in the wall 41 immediately adjacent its connection to the intermediate portion 42. The portion 47 is similarly provided with readily removable portions 49a so that ventilation may be had through the openings when formed by removal of portions 45, and through openings formed by the removal of portions 49a to the interior of the chick box.

As shown clearly in Fig. 4, portion 47 bears upon the upper edge 31 of the locking tongue 25. Also the projecting portions 40a bear upon the upper edges 24 of the side walls 13. Similarly, the projecting portions 42a of the intermediate portion 42 bear upon the upper edge 23 of the intermediate and downwardly offset portion of the side wall 13.

The locking tongues 28, previously described as being formed integral with wall 13 and inwardly directed toward each other in each wall, are adapted to seat in the notches or slots 43 formed by the reduction in length of the walls 41. Also, in the notch or slot 30 formed between the edge 23 and the portion 28, there is seated the adjacent portion of the intermediate cover portion 42.

To facilitate ready removal of the cover, the finger openings 50 may be provided. This also serves as a ventilating opening, except when one chick box is stacked upon another, as illustrated in the before-mentioned patents.

Whenever it is desired to provide additional anchorage other than the interlocking tongue and slot or tongue and groove connection, indicated as at 30, 28 and 42, a string, cord, tape or twine, not shown, may encircle the covered box in the channel portion thereof and to facilitate the same and prevent lateral displacement of said

anchoring member, the cover is slit a slight distance inwardly, as at 51, there being two closely positioned slits at each overhanging edge 42a of the intermediate portion of the cover. Thus, when the twine, or the like, encircles the covered box and is securely tied, the intervening portions 52 between the adjacent slits at each end are downwardly depressed and thus the remainder of the cover is not mutilated at a point other than where desired.

It is again pointed out that Fig. 5 illustrates the nesting, as it were, of the lateral extension 36 of partition 32 between the two infolded flap extensions 15. Also, said figure discloses that the openings 16 in said flap extensions are of greater area than the openings 12 in the end walls so that when the readily removable portions are removed, the openings will be in registration and there will be an effective opening at least equal to the area of the smaller openings 16, irrespective of the exact positioning or anchorage of the flaps 15 with reference to said openings 16.

While the invention has been described in great detail in the foregoing specification and the same has been illustrated in similar detail in the drawings, the aforesaid is merely illustrative and not restrictive in character. Various modifications of the invention which will readily suggest themselves to persons skilled in this art, are all considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. In a chick box, the combination of opposite side and end walls, a wall-to-wall partition, in-and-down-turned extensions on two opposite walls, each extension having a slot therein extending upwardly from the free lower edge thereof toward the top and nesting the adjacent end of the partition, said partition having a laterally directed flap extension below each inturned extension and frictionally engaging the interior of the adjacent inturned extension supporting wall.

2. In a chick box, the combination of opposite side and end walls, a wall-to-wall partition, a pair of opposite walls each including a substantially vertical slot extending an appreciable distance therein, said partition including at each end a portion projecting through the adjacent slot, the free end of each slot-receivable portion being reversed into turned-back relation and seated in the adjacent slot for frictionally locking the partition to the slotted wall, said partition adjacent each slot, vertically offset from the slot-projecting portion, having a laterally directed flap extension frictionally engaging the interior of the adjacent slotted wall.

3. In a chick box, the combination of opposite side and end walls, a wall-to-wall partition, one wall including a slot extending vertically an appreciable distance therein, a portion on the end of said partition adjacent the slotted wall and projecting through the slot, the free end of said projecting portion being reversed into turned-back relation and seated in the slot for frictionally locking the partition to the slotted wall, and a laterally directed flap extension on said partition adjacent said slot-projecting portion and frictionally engaging the interior of the slotted wall.

4. In a chick box, the combination of opposite side and end walls, a pair of transversely arranged intersecting wall-to-wall partitions, an in-and-down turned extension on one of two opposite walls, said extension having a slot therein extending upwardly from the free lower edge thereof toward the top and nesting the adjacent end of a partition, said last-mentioned partition having a laterally directed flap extension below the inturned extension and frictionally engaging the interior of the inturned extension supporting wall, one of the other pair of walls including a slot extending vertically therein an appreciable distance, a portion on the end of the other partition adjacent the second-mentioned slot and projecting therethrough, the free end of said slot-projecting portion being reversed into turned-back relation and seated in the second-mentioned slot for frictionally locking the second-mentioned partition to the second-mentioned wall.

5. In a chick box, the combination of a bottom structure including adjacent walls, one of said walls remote from the adjacent edge of the other wall having a reduced upper edge, a cover structure for the bottom structure including laterally projecting similarly offset portions for overlying the uppermost and lower offset upper edges of the reduced wall and projecting exteriorly beyond the same, and an intermediate connecting portion therebetween, having its edge recessed between the overlying portions, and a locking tongue on the recessed wall between the upper and lower edges thereof and seatable in the intermediate cover portion edge recess for cover-retention.

6. A box as defined by claim 5, characterized by one of the adjacent walls having an infolding flap extension with a slot therein and adapted to lie immediately adjacent the reduced wall, and a tongue formed in the last-mentioned wall adjacent the infolded flap-supporting wall and seatable in the extension slot for securing the adjacent walls in box formation.

7. In a chick box, the combination of a bottom structure including opposite end and side walls, a wall-to-wall partition therein and an inturned and downturned extension on one of said walls and with a slot therein extending upwardly from the lower free edge of said extension for nesting the adjacent edge of the partition, an adjacent wall having a reduced intermediate upper edge, a cover structure for the bottom structure including laterally projecting similarly offset portions for overlying the uppermost and lower offset upper edges of the reduced wall and projecting exteriorly beyond the same, and an intermediate connecting portion therebetween and having its edge recessed between the overlying portions, and a locking tongue on the recessed wall between the upper and lower edges thereof and seatable in the intermediate cover portion edge recess for cover-retention.

8. A box as defined by claim 7, characterized by one of the adjacent walls having an infolding flap extension with a slot therein and adapted to lie immediately adjacent the reduced wall, and a tongue formed in the last-mentioned wall adjacent the infolded flap extension supporting wall and seatable in the flap extension slot for securing the adjacent walls in box formation.

9. In a chick box, the combination of a bottom structure including opposite end and side walls, a wall-to-wall partition therein, one of said walls including a slot extending vertically an appreciable distance therein, a portion on the end of said partition adjacent the slotted wall projecting through the slot, the free end of said projecting portion being reversed into turned-back rela-

tion and seated in the slot for frictionally locking the partition to the slotted wall, and a laterally directed flap extension on said partition adjacent said slot-projecting portion and frictionally engaging interior of the slotted wall, one of the walls having a reduced intermediate upper edge, a cover structure for the bottom structure including laterally projecting similarly offset portions for overlying the uppermost and lower offset upper edge of the reduced wall and projecting exteriorly beyond the same and an intermediate connecting portion therebetween and having its edge recessed between the overlying portions, and a locking tongue on the reduced wall between the upper and lower edges thereof and seatable in the intermediate cover portion edge recess for cover-retention.

10. A device as defined by claim 7, characterized by the addition of a laterally directed flap extension upon said partition at the slot nested end thereof and nestable between the inturned extension and the supporting wall therefor.

11. A box as defined by claim 9, characterized by one of the walls adjacent the reduced wall having an infolding flap extension with a slot therein and adapted to lie immediately adjacent the reduced wall, and a tongue formed in the reduced wall adjacent the infolded flap supporting wall and seatable in the flap extension slot for securing the adjacent walls in box formation.

12. A device as defined by claim 7, characterized by the addition of a laterally directed flap extension upon said partition at the slot-nested end thereof and nestable between the inturned extension and the supporting wall therefor, a wall adjacent the reduced wall having an infolding flap extension with a slot therein and adapted to lie immediately adjacent the reduced wall, and a tongue formed in the reduced wall adjacent the infolded flap extension supporting wall and seatable in the flap extension slot for securing the adjacent walls in box formation.

13. In a chick box, the combination of a bottom structure including opposite end and side walls, a pair of transversely arranged intersecting wall-to-wall partitions therein, an inturned and downturned extension on one of said walls and with a slot therein extending upwardly from the lower free edge of said extension for nesting the adjacent edge of the adjacent partition, an adjacent wall including a slot extending vertically an appreciable distance therein, the other of said partitions including a portion projecting through the wall slot, the free end of said slot-projecting portion of the partition being reversed into turned-back relation and seated in the wall slot for frictionally locking the last-mentioned partition to the slotted wall, the slotted wall having a reduced intermediate upper edge, a cover structure for the bottom structure including laterally projecting similarly offset portions for overlying the uppermost and lower offset upper edges of the reduced wall and projecting exteriorly beyond the same and an intermediate connecting portion therebetween having its edge recessed between the overlying portions, and a locking tongue on the recessed wall between the upper and lower edges thereof and seatable in the intermediate cover portion edge recess for cover-retention.

14. A device as defined by claim 13, characterized by the addition of a laterally directed flap on the last-mentioned partition at the slot-nested end thereof and frictionally engaging the interior of the slotted wall.

15. A box as defined by claim 13, characterized by the inturned extension supporting wall having an infolding flap extension with a slot therein adapted to lie immediately adjacent the reduced wall, and a tongue formed in the reduced wall adjacent the flap extension supporting wall and seatable in the last-mentioned flap extension slot for securing the adjacent walls in box formation.

16. A device as defined by claim 13, characterized by the addition of a laterally directed flap on the last-mentioned partition at the slot-nested end thereof and frictionally engaging the interior of the slotted wall, the inturned extension supporting wall having an infolding flap extension with a slot therein adapted to lie immediately adjacent the reduced wall, and a tongue formed in the reduced wall adjacent the flap extension supporting wall and seatable in the last-mentioned flap extension slot for securing the adjacent walls in box formation.

17. In a chick box, the combination of a bottom structure including a pair of adjacent walls, one of said walls having an intermediate portion, the upper edge thereof lying below the upper edge of the other wall, a cover structure for the bottom structure including laterally offset portions lying appreciably above the plane of the upper edge of the intermediate portion and an intermediate portion therebetween and lying below the offset portions and immediately above said plane and bearing on the upper edge of the intermediate wall portion, the cover-offset portions being of tubular character, an inwardly projecting tongue on the wall having the reduced intermediate portion and adjacent the other wall, and an extension on the wall adjacent the reduced wall and lying parallel to and in interior contact with the reduced wall and slotted to receive said tongue for locking said walls together in box formation, said tongue projecting inwardly an appreciable extent and having an upper edge arranged for tubular portion support.

18. A device as defined by claim 17, characterized by the cover structure having a connecting portion intermediate an offset portion thereof and the intermediate portion thereof, said connecting portion including a notch in its edge, and by the addition of a locking tongue coextensive with the reduced wall and above the upper edge of reduced portion of the reduced wall and seatable in the notch in the edge of the cover-connecting portion, the last-mentioned tongue and upper edge of the reduced portion of the reduced wall forming a groove seating the first-mentioned intermediate cover portion.

19. In a chick box including a detachable cover structure and a bottom structure, each having a complementary intermediate offset arrangement forming a ventilating channel between opposite ends of the box such as broadly illustrated in any one of the following Patents No. 2,011,069, No. 1,910,480 and Re. No. 19,122, the cover having parallel but spaced portions overlying and projecting beyond the bottom structure, the bottom having portions projecting into the channel above the intermediate offset arrangement of the cover for detachably locking the cover and bottom structure together.

20. A device as defined by claim 4, characterized by the addition of a laterally directed flap extension on the second-mentioned partition adjacent and vertically offset from the turned-back portion thereof and frictionally engaging the interior of the slotted wall.

21. A device as defined by claim 4, character-

ized by the addition of a laterally extending flap extension on the first-mentioned partition at the slot nested end thereof and nestable between the slotted inturned extension and the supporting wall therefor.

22. A device as defined by claim 4, characterized by the addition of a laterally extending flap extension on the first-mentioned partition at the slot-nested end thereof and nestable between the slotted inturned extension and the supporting wall therefor, and a laterally directed flap extension on the second-mentioned partition adjacent and vertically offset from the turned back portion thereof and frictionally engaging the interior of the slotted wall.

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