Nov. 1, 1938. L. MAGERS 2,135,140

CHICK BOX CONSTRUCTION

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FIG. 1

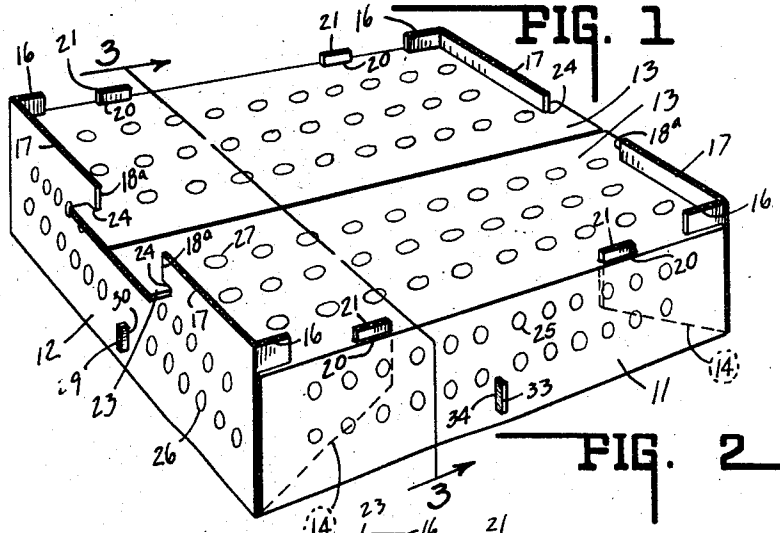


FIG. 2

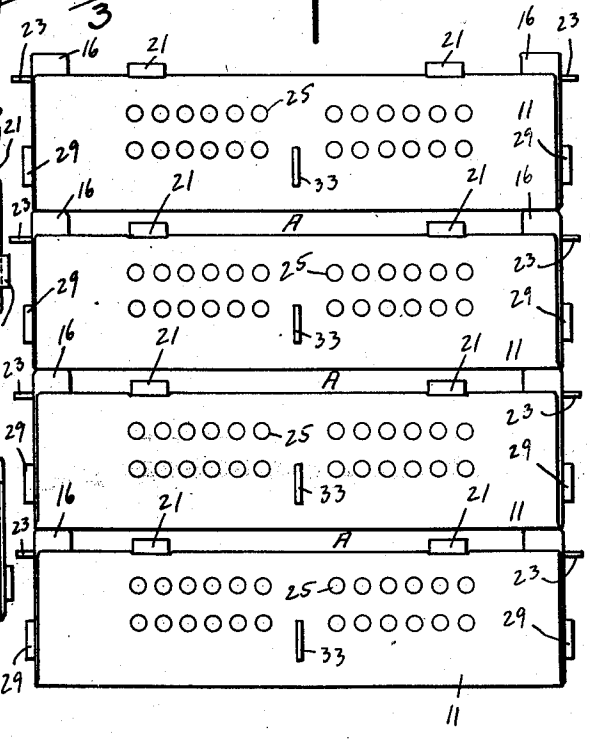


FIG. 3

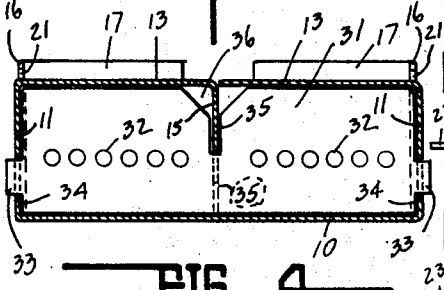


FIG. 4

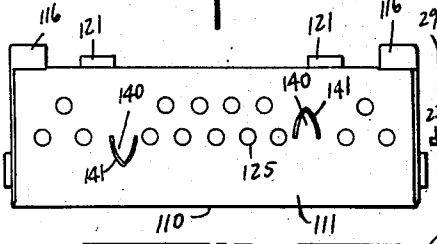
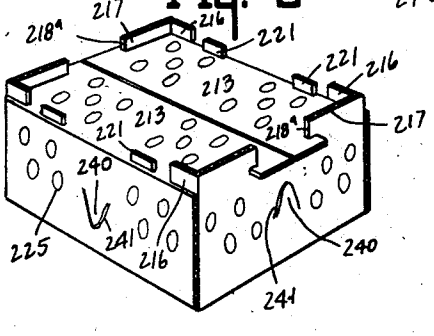


FIG. 5



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CHICK BOX CONSTRUCTION

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FIG. 6

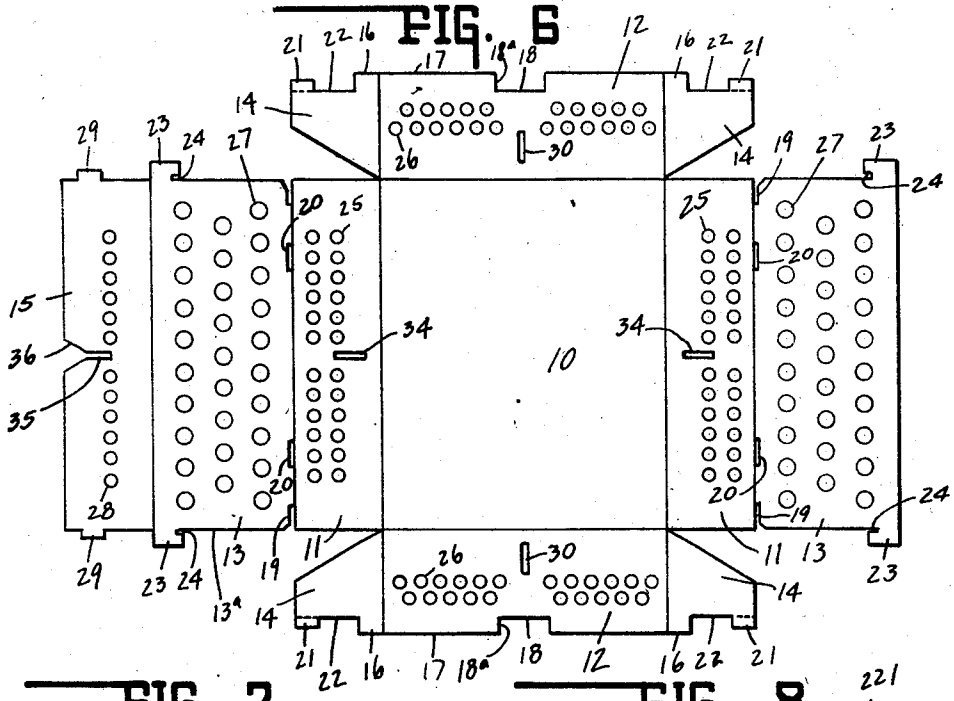

FIG. 7

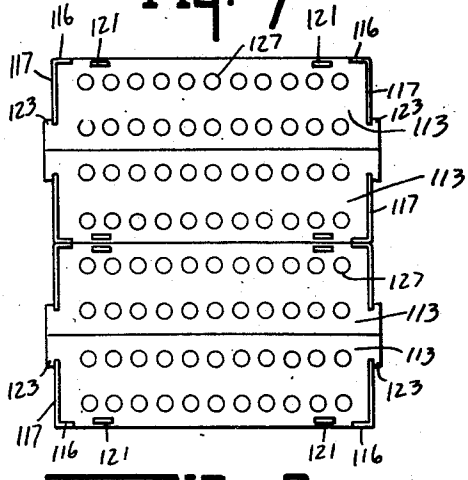

FIG. 8

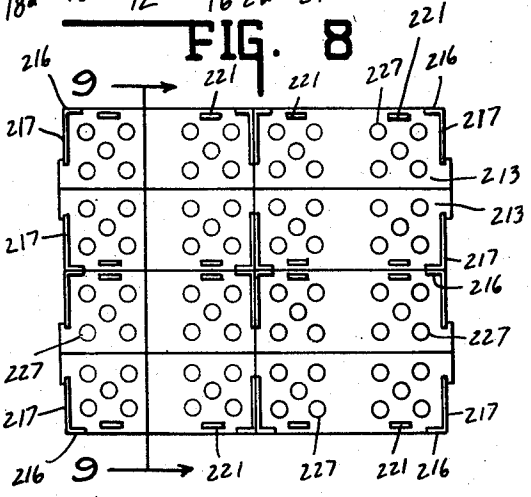

FIG. 9

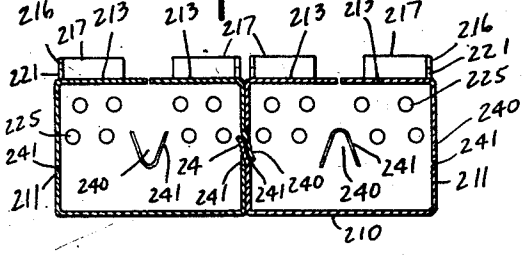

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FIG. 10

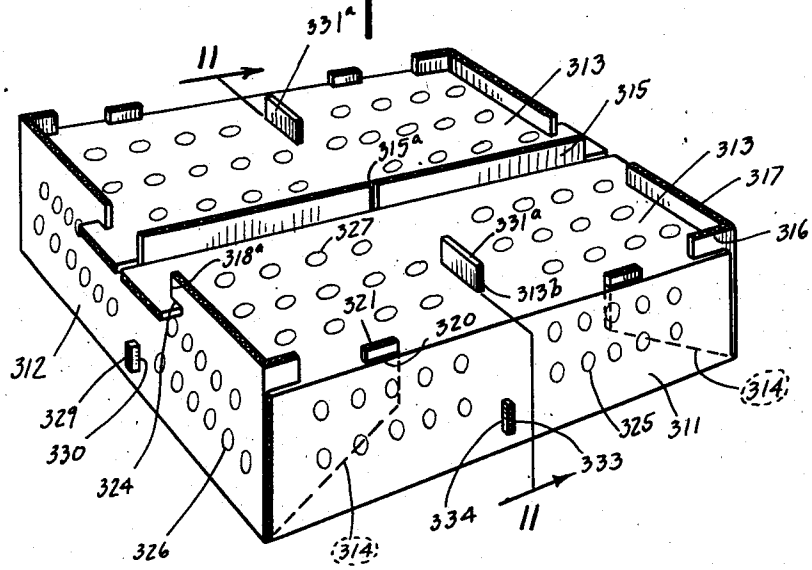
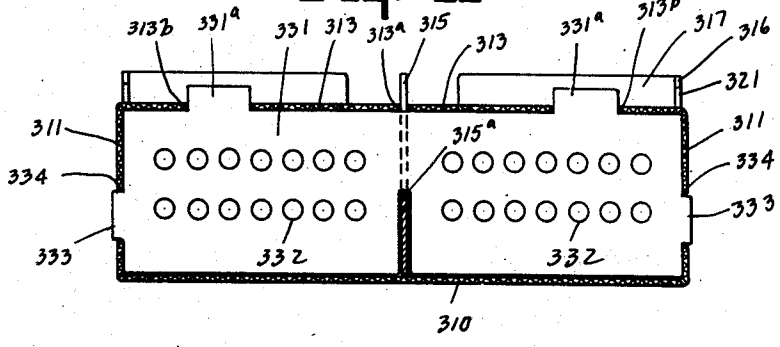


FIG. 11



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Patented Nov. 1, 1938

2,135,140

UNITED STATES PATENT OFFICE

2,135,140

CHICK BOX CONSTRUCTION

Luther Magers, Marion, Ind., assignor to Indiana Fibre Products Corporation, Marion, Ind., a corporation

Application October 14, 1936, Serial No. 105,482

16 Claims. (Cl. 229—6)

This invention relates to a stickless container suitable for the shipment of chicks and live animals, commonly called in the container industry, a "chick box". The chief object of the present invention is to provide a chick box which is formed from a minimum number of parts, one preferred form being formed from a single blank and another preferred form being formed from a similar blank and a partition member.

Another object of the invention is to provide a chick box or the like which is capable of interlocking, and consequently detachable association with another chick box to form a plural compartment box, or to form a chick box similarly associated with three other boxes to form a quadruple compartment box, the capacity being double or quadruple, respectively, that of the individual box.

One chief feature of the invention consists in the formation of a pair of opposite walls of a height different from other walls and having wall locking extension portions, a portion of which is of the same maximum height, for supporting in superposed and spaced relation a similar container for ventilating the interior of the container through the apertured top thereof.

Another chief feature of the invention consists in the formation of the partition as an integral portion of the cover and the extension of the cover laterally so as to constitute a side spacing arrangement to insure side wall ventilation between adjacent tiers or piles of boxes.

Another and complementary feature of the invention is that the container or chick box requires no extraneous locking means, such as staples, tape or the like, to secure the same in box formation.

Other objects and features of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a perspective view of one embodiment of the invention designated as the 100-chick size. Fig. 2 is a side elevation of a plurality of said boxes in superposed tier or stacked relation. Fig. 3 is a transverse sectional view of the box shown in Fig. 1 and is taken approximately in the plane 3—3 and in the direction of the arrows in Fig. 1. Fig. 4 is a side elevation of another form of the invention and of 50-chick capacity. Fig. 5 is a perspective view of another form of the invention and of a 25-chick capacity. Fig. 6 is a developed plan view of the blank from which the box shown in Fig. 1 is made, the additional partition member being omitted. Fig. 7 is a top plan view of a pair of boxes, such as shown in Fig. 4, detachably connected together. Fig. 8 is a similar view of four boxes, such as shown in Fig. 5, detachably associated together. Fig. 9 is a transverse sectional view taken on the line 9—9 of Fig. 8 and in the direction of the arrows. Fig. 10 is a perspective view of a further modified form of the invention. Fig. 11 is a transverse sectional view taken on line 11—11 of Fig. 10 and in the direction of the arrows.

Reference will first be had to Figs. 1, 3 and 6. In said figures, 10 indicates a bottom portion, 11 the side walls, 12 the end walls and 13 the half covers integral with the side walls. The end walls have projecting laterally thereof extension flaps 14.

It will be observed that one pair of the opposite walls is of greater height than the other and that the walls of lesser height are those to which the cover portions are united. In the present form of the invention there is provided a partition 15 integral with one cover portion and reference will be had thereto hereinafter, although in the smallest size box and, if desired, in the intermediate size box, this partition may be omitted.

All sizes of boxes have, with the exception of the partition, the foregoing common relationship and the following relationship now to be specifically set forth. Each end flap 14 extends transversely of its supporting wall 12 and its upper edge, as at 16, is a continuation of the upper edge 17 of the wall. Thus, a right angle bearing portion of equal height is provided. The upper edge 17 of the wall 12 is releived or notched as at 18 and the bottom of the same is substantially coincident with the top of the other walls. Each cover portion immediately adjacent its connection to the last-mentioned pair of opposite walls is notched as at 19 and is slotted as at 20. The extension 14 includes a projecting portion 21 but the latter is of lesser height than the portion having the top edge 16. Between the two spaced portions indicated by the numerals 16 and 21, is an edge 22 and the same lies substantially in the plane of the bottom of the notches 18. Each cover portion includes a lateral projection 23, notched as at 24. The blank thus formed with suitable scored connections between the respective parts is set up by positioning the two side walls parallel to each other and at right angles to the bottom and the two end walls parallel to each other and at right angles to the bottom. The four end flaps 14 are turned inwardly and lie within the two side walls and immediately adjacent the same and at right angles

to the supporting walls or ends 12. The cover portions are then turned toward each other and downwardly and the portions 16 of the end flaps nest in the notches 19 and project above the plane of the cover when closed. The projection 21 on the end flap extension 14 projects through the slot 20 and thus the end flap is locked to the side wall at the junction thereof with the cover to secure the side and end walls in rectangular relation and thus form a box structure.

The cover, when closed, has portion 23 bearing on the bottom edge of the notch 18 in the end wall and projects beyond the end wall. The notch 24 in said projection embraces the edge 18a of the end wall at the notched portion 18 thereof. Thus, the cover portions are frictionally locked to the end walls.

The foregoing, together with the openings 25 in the side walls, the openings 26 in the end walls and the openings 27 in the covers, form a ventilated structure suitable for the shipment of chicks and/or the like.

As is common in the chick box industry, these openings or apertures may be completely provided or may be partially die cut so that the hatcheryman, for example, can complete the openings by finger punching, it being quite evident that during the winter months a smaller number of openings will be required than during the summer months, due to the necessity of conserving body heat of the chicks.

Whenever the individual chick box is to be of multiple compartment character, there may be provided the partition 15, before mentioned, having the ventilating openings or apertures 28, and, for locating and retention purposes, the projecting tongues 29. The walls adjacent the side edges of the partition are slotted as at 30 and said tongues extend into, and, if desired, may project beyond the exterior of the slot. The height of this partition may be equal to the height of the side wall 11 so that, if a smaller container is supported on the cover and within the confines of the spacing portions of the box, the cover will be reinforced to that extent. The width of the partition is the same as the corresponding dimension of the bottom so that the sides of the partition may frictionally engage the interior of the end walls.

It will also be understood that the side edges 13a of the cover frictionally engage the interior of the end walls 12 although such close positioning or contact is not necessary. The projecting portions 23 serve as finger pieces for the opening of the cover. In other words, the first and second fingers of each hand engage the opposite projecting portions 23 and the thumb is placed on the corner between the edges 17 and 18a and the cover elevated. It will also be understood that the locking projection 21 preferably has a scored connection with the end flap so as to permit the ready tilting of the cover.

Reference will now be had to Figs. 3 and 6. In Fig. 3, there is illustrated another partition 31 provided with openings 32 for ventilation. This partition member includes laterally projecting portions 33 receivable by slots 34 in the side walls. The two partition portions have an interlocking slotted connection indicated as at 35. In other words, the slot 35 in each partition is about half the depth of the same, one being from the top and the other one from the bottom, and the entrance to said slots may be relieved, as indicated at 36.

Fig. 2 illustrates a tier or stack of chick boxes and shows the horizontal passages A between adjacent boxes. Between portions 21, or between portions 16 and between the plane of the cover, when closed, and the plane of the top edges 17, is a passage so that air may pass across the top of the cover and thence downwardly through the openings in the cover. Similarly, the notch 18 in the end wall provides a wall passage for a similar purpose.

Only in one of the preferred forms of the invention is the partition integral with the cover. Preferably the independent partition or partitions if two be utilized, are of a height equal to the height of the side walls 11 so that they will support the cover if a central load be applied to the cover and contact only the central portion.

In Fig. 4, numerals of the 100 series indicate like parts and in this figure there is illustrated an intermediate size box wherein no independent partition is utilized but an integral partition is utilized. One wall of this box includes a pair of tongues and complementary slots. The tongue is indicated by the numeral 140 and the slot by 141. These are reversed but are spaced equi-distant from the ends of the wall including the same. When another box of similar character is interlockingly associated therewith, as illustrated in Fig. 7, there is formed a four-compartment box structure suitably ventilated and having a capacity equal to the box or container shown in Fig. 1.

In the preferred form of the invention, the side wall of the box shown in Fig. 4 is of substantially the same height as the side wall of the box shown in Fig. 1, but of a length substantially that of the end wall of the latter box. The end wall of the box shown in Fig. 4 is of a height substantially that of the end wall shown in the box shown in Fig. 1, but has a width approximately half of that of the box shown in Fig. 1.

In Fig. 5 there is illustrated the minimum capacity box and numerals of the 200 series indicate similar parts. This container does not include any partition arrangement. Each wall is provided with a complementary tongue and slot connection 240 and 241, it being understood that the tongue and slot connections in opposite walls are reversed. Four of these minimum capacity boxes, when desired, may be interlockingly associated together as shown in Figs. 8 and 9 forming a four-compartment box structure of a capacity equal to the maximum box illustrated in Fig. 1, when the side wall of the box shown in Fig. 5 has a height equal to the height of the side wall of the box shown in Fig. 1 and a length equal to one-half the length of the side wall or equal to the entire width of the end wall of the box shown in Fig. 4 and the end wall of the box shown in Fig. 5 has a height equal to the height of the end wall of the box shown in Figs. 1 and 4 and a width equal to half the width of the side wall of the box shown in Fig. 4 and one-half the width of the end wall of the box shown in Fig. 1.

The detailed description of the lengths, heights and widths of the various walls and partition members of the several boxes is given merely by way of example and is a purely arbitrary selection, it being clearly understood, of course, that any one of the three boxes or any modification thereof as hereinbefore pointed out, may be of the same size or of any different size.

Supplementing the foregoing by way of explanation, boxes of the herein disclosed character are not solely used by hatcherymen, but are used by pet stores and the like, so that when a purchaser of small ducks, goslings, chicks and/or rabbits makes a purchase, each of the indicated purchases may be individually boxed and then

the boxes detachably associated together to form a unitary box structure arrangement, which facilitates handling. It will also be noted that when two of the 50-chick size boxes are associated together, they may stack with the 100-chick size and provide horizontal ventilation to and thence through the cover. Also, four of the 25-chick boxes, when detachably associated together, will stack in a tier with the 100-chick size boxes, or two of the 25-chick boxes, when detachably associated together, will stack in a tier including the 50-chick size boxes and permit the desired cover ventilation.

In Figs. 10 and 11 of the drawings is illustrated a further form of the invention and numerals of the three hundred series indicate like or similar parts. In this form of the invention each cover 313 terminates at 313a and a partion 315 independent of the covers projects upwardly between the adjacent edges thereof, said cover having a slotted interlocking connection 315a with the transverse partition 331. Each cover is slotted at 313b, the slots being in alignment, and through the same project the tongues 331a upon partition 313. Each partition is anchored at opposite ends to the opposite walls by tongue extensions, as partition 331 by tongues 333 in slot 334 in walls 311 and partition 315 by tongues 329 in slots 330 in walls 312. Partition 315 has an upper edge no higher than the level of the top of portions 317 and 316. Projections 331a may have a similar elevation, although as shown herein, the top edges thereof are approximately in the plane of the top edges of projections 321. Partition 315 serves as a central spacing support for superposed containers.

While the invention has been set forth in great detail in the foregoing specification, it is to be understood that the same is illustrative and not restrictive in character and the various modifications herein disclosed, as well as others which will readily suggest themselves to persons skilled in the art are all within the broad scope of this invention, reference being had to the appended claims.

The invention claimed is:

1. A container suitable for chick box purposes including a bottom, opposite side walls, opposite end walls, one pair of opposite walls having angular extensions parallel to the other pair of walls and between the same and contiguous thereto, a pair of cover portions integral with the contiguous walls and notched at each connecting corner and intermediate the same, the opposite walls having the extensions being of a height greater than the other pair of walls, each extension having a portion immediately adjacent its connection with its supporting wall and a portion spaced from the last-mentioned portion, said extension portions projecting upwardly through the registering notches, the last-mentioned portion constituting an extension lock and the first-mentioned portion with its supporting wall constituting a spacing support for a superposed container, the extension supporting wall being notched in its upper edge intermedate the ends, and laterally projecting extensions on the cover portions for wall engagement, said cover projections being notched for interlocking connection with the adjacent wall.

2. A container as defined by claim 1, characterized by the extension spaced portion terminating below the level of the other extension portion.

3. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing.

4. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, the wall upon which the cover has bearing having a slot therein, and an extension upon the partition seatable in said slot for yieldingly locking the partition in predetermined position and retaining the supporting cover in closed position.

5. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, the extension spaced portion terminating below the level of the other extension portion.

6. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, the wall upon which the cover has bearing having a slot therein, and an extension upon the partition seatable in said slot for yieldingly locking the partition in predetermined position and retaining the supporting cover in closed position, the extension spaced portion terminating below the level of the other extension portion.

7. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, and another partition extending transverse to the first-mentioned partition and from wall to wall, said partition including longitudinally aligned extensions, the last-mentioned walls including slots for second-mentioned partition extension reception, the two partitions having an interlocking, semi-slotted connection.

8. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, and another partition extending transverse to the first-mentioned partition and from wall to wall, said partition including longitudinally aligned extensions, the last-mentioned walls including slots for second-mentioned partition extension reception, the two partitions having an interlocking, semi-slotted connection, the second-mentioned partition bearing upon the bottom and having a height such that the top thereof is engaged by the cover when closed.

9. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, and another partition extending transverse to the first-mentioned partition and from wall to wall, said partition including longitudinally aligned extensions, the last-mentioned walls including slots for second-men-

tioned partition extension reception, the two partitions having an interlocking, semi-slotted connection, the second-mentioned partition bearing upon the bottom and having a height such that the top thereof is engaged by the cover when closed, the partition forming cover extension having a height such that the free edge thereof engages the bottom.

10. A container as defined by claim 1, characterized by the addition of a partition forming extension on one cover and of a length less than that of the cover portion for nesting between the opposite walls upon which the supporting cover portion has bearing, the partition forming cover extension being of a height such that the free edge thereof engages the bottom when the cover is closed and bearing on the adjacent wall.

11. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls and projecting upwardly between the covers and to a height not greater than the height of the opposite wall extensions.

12. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls, and having spaced upwardly projecting portions, each cover being slotted for partition projecting portion reception.

13. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls, and having spaced upwardly projecting portions, each cover being slotted for partition projecting portion reception, and another partition secured at opposite ends to adjacent walls and projecting upwardly between the covers and to a height not greater than the opposite walls.

14. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls and projecting upwardly between the covers and to a height substantially equal to the height of the opposite wall extensions.

15. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls, and having spaced upwardly projecting portions, each cover being slotted for partition projecting portion reception, and of a height less than that of the height of the opposite wall extensions.

16. A container as defined by claim 1, characterized by the addition of a partition secured at opposite ends to adjacent walls, and having spaced upwardly projecting portions, each cover being slotted for partition projecting portion reception, and of a height less than that of the height of the opposite wall extension, and another partition secured at opposite ends to adjacent walls and projecting upwardly between the covers and to a height not greater than the opposite walls.

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