

Feb. 18, 1936.

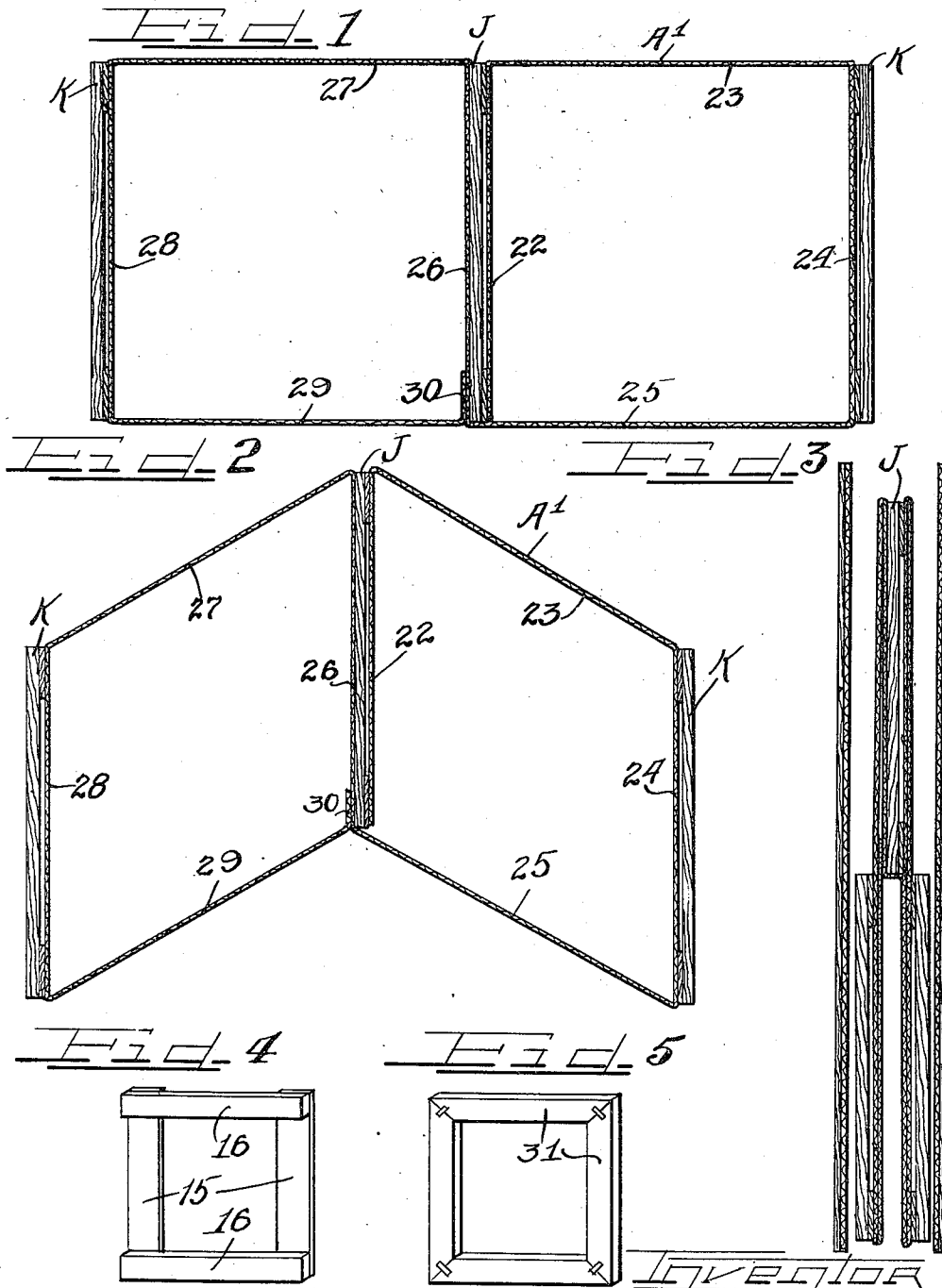
C. F. FULLER

2,030,979

EGG BOX

Filed July 11, 1935

3 Sheets-Sheet 1



INVENTOR
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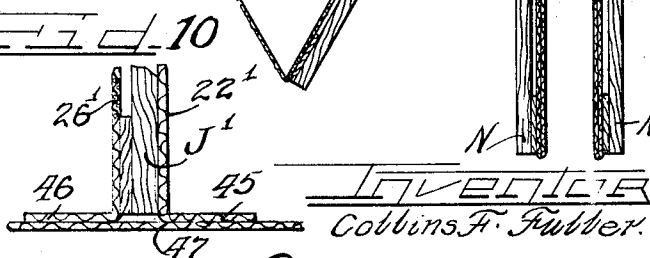
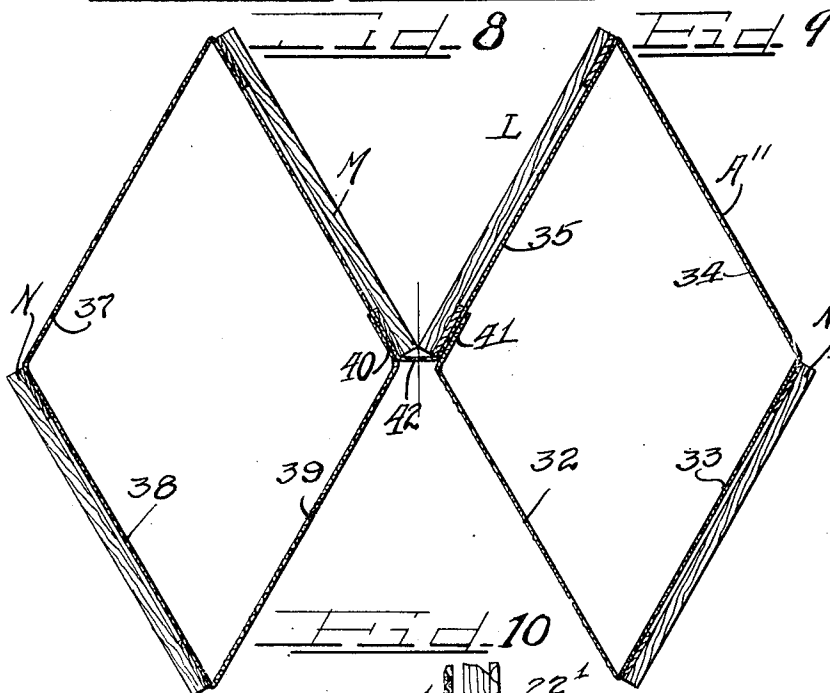
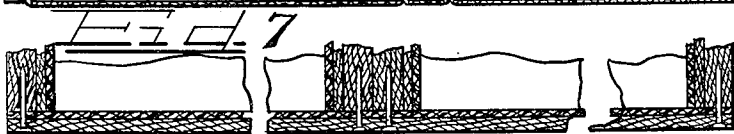
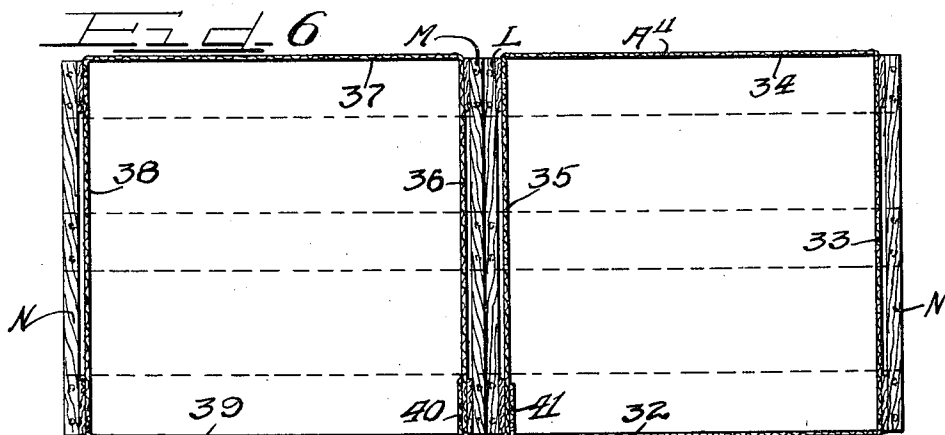
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EGG BOX

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3 Sheets-Sheet 2



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EGG BOX

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3 Sheets-Sheet 3

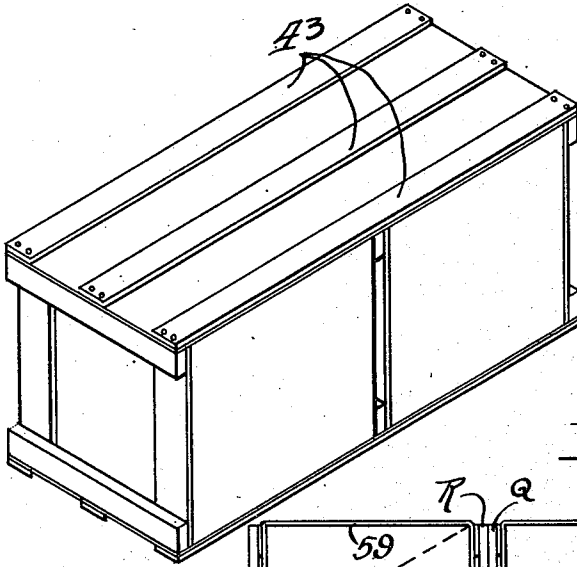


Fig 11

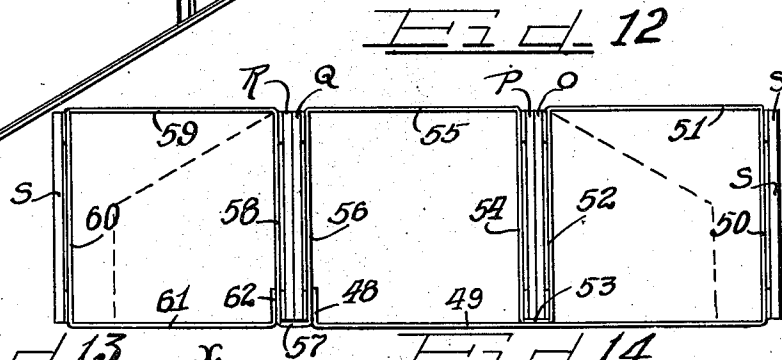


Fig 12

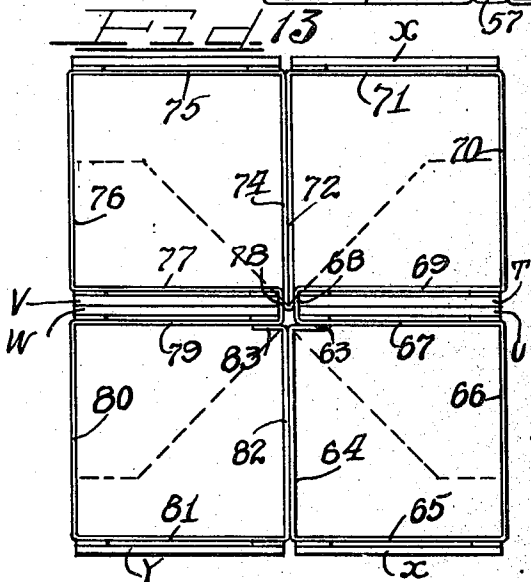


Fig 13

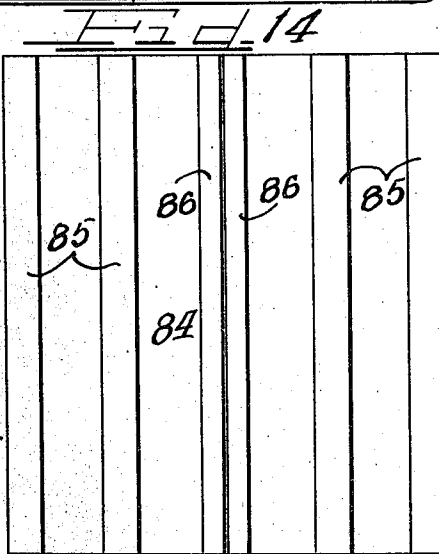


Fig 14

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2,030,979

EGG BOX

Collins F. Fuller, Chicago, Ill.

Application July 11, 1935, Serial No. 30,814

11 Claims. (Cl. 229—15)

The present invention relates to an egg box and more particularly to a box having a tubular or shell-like multi-compartment body formed from a single length of stiff fibrous material, so scored and folded as to provide body walls and partitions, and readily collapsible into substantially flat condition for shipment or storage, and extensible to open in set-up position ready to be filled with eggs or other suitable merchandise.

5 An object of the present invention is to provide a foldable or collapsible box body of tubular form, having more than one compartment, and fashioned from a continuous single piece of stiff fibrous sheet material suitably scored and folded, and with open top and bottom.

10 Another object of the present invention is to provide a collapsible multi-compartment tubular body fashioned from a continuous single piece of stiff fibrous material and so arranged that the several compartments may be severed from the whole, thereby providing box bodies of smaller capacities and usable as complete separate boxes.

15 A further object of the present invention is to provide a collapsible multi-compartment foldable tubular box body fashioned from a continuous single piece of stiff fibrous sheet material and having the partitions and the walls parallel thereto reinforced to rigidify said body in directions of the planes of said reinforced walls and partitions.

20 A still further object of the present invention is to provide a collapsible shipping box of three pre-formed and complete sections or component parts, including two similar top and bottom closure members, and a collapsible multi-compartment collapsible tubular body of stiff fibrous material.

25 The above, other and further objects of the present invention will be apparent from the following description and accompanying drawings.

Various embodiments of the present invention are illustrated in the accompanying drawings, and the views thereof are as follows:

30 Figure 1 is a top plan view of a multi-compartment tubular body, of another form, in extended position, and constructed in accordance with the principles of the present invention, provided with a single thickness reinforcement for the partitions separating the two compartments in this form of box.

35 Figure 2 is a top plan view of the box body of Figure 1, showing it in partially collapsed position.

40 Figure 3 is a side elevational view of the box

body of Figures 1 and 2 in collapsed or folded condition, with the top and bottom closure members therefor arranged for shipment or storage.

Figure 4 is an isometric view of one style of end and partition reinforcement.

Figure 5 is an isometric view of another style of end and partition reinforcement.

Figure 6 is a top plan view of a multi-compartment box of the present invention and set up in extended position, with the bottom in place, and showing double reinforcing means for the partition of the two-compartment body illustrated.

Figure 7 is a fragmental longitudinal section through a box employing the body of the style of Fig. 6 and showing one of the closure members nailed in place.

Figure 8 is a top plan view of the two-compartment tubular body of the form of Fig. 6, in partially collapsed or open position and indicating the line of severance between these compartments to provide two smaller boxes.

Figure 9 is a side elevational view of the tubular shell or body of Figures 6 and 8 in collapsed condition for shipment or storage.

Figure 10 is a fragmental sectional view through a tubular shell or body, having a single thickness reinforcement for a partition, and showing a different manner of attaching the ends of the single piece of sheet material from that illustrated in Figure 1.

Figure 11 is an isometric view of an egg box constructed in accordance with the principles of the present invention, showing the top and bottom closure members in place, illustrating the appearance of a multi-compartment box with a reinforcing partition.

Figure 12 is a top plan view of a multi-compartment tubular shell or body formed from a single continuous sheet of fibrous material providing three compartments, and with the partitions suitably reinforced.

Figure 13 is a top plan view of a multi-compartment box, fashioned from a single continuous sheet of stiff fibrous material, providing four compartments and with certain partitions reinforced.

Figure 14 is a top plan view of one of the closure members for a box of the type illustrated in Figure 13.

The drawings will now be explained.

45 The multi-compartment box of the form illustrated in Figures 1, 2 and 3, there shown as a two-compartment body or shell, is fashioned from a single piece of stiff fibrous material suitably scored and folded. The body A', is fashioned

from a single sheet of stiff fibrous material to provide the panels 22, 23, 24, 25, 26, 27, 28 and 29, and a tab 30.

The body A' is constructed by securing the panel 22 against a partition reinforcement J and the panels 23, 24 and 25 are arranged in rectangular relationship with the panel 22. The panel 26 is then applied against the opposite side of the partition reinforcement J, parallel to the panel 22, and the remaining panels are fashioned into substantially rectangular shape, as shown at the left in Figure 1 with the tab 30 secured against the panel 26 as illustrated. This construction provides a two-compartment tubular body with a reinforced partition. The body may be collapsed into substantially flat condition, as illustrated in Fig. 3, as well as extended into open position as illustrated in Figure 1. The panels or walls 24 and 28 of the body A' have applied to the outside thereof reinforcing means K, by nails, staples or other convenient means, which reinforcing means are of similar construction to the partition reinforcement J. It will be observed that this construction provides a two-compartment box body which is collapsible and extensible and which has a reinforced partition with the walls of the box parallel to the partition and similarly reinforced, so that when the top and bottom closure members are applied to the box and secured by nails or other fastening means to the reinforcements J and K a rigid box results.

The single piece of material, of which the body A' is constructed, is suitably scored so that the various panels fold or hinge, as illustrated in Figs. 1, 2 and 3 for collapse or extension of the body.

The reinforcements J and K may be of the form illustrated in Figure 4 or of different form such as that illustrated in Figure 5, wherein a wooden frame comprising members 31, of the same thickness, are secured together in rectangular formation to conform to the contours of the partition and end walls of the body A'. The form of reinforcement illustrated in Figure 4 is constructed with the members 16 of greater thickness than the members 15, while the form illustrated in Figure 5 has all of its members of substantially the same thickness.

The form of two-compartment box illustrated in Figures 6, 7, 8 and 9 is likewise fashioned from a single piece of stiff fibrous material suitably scored and folded to fashion the box there illustrated.

The piece of material constituting the shell or tubular body is suitably scored to provide panels 32, 33, 34, 35, 36, 37, 38 and 39, with a tab 41 at the free end of the panel 32 and a similar tab 40 at the free end of the panel 39. The sheet of material is so scored as to provide, between the panels 35 and 36 a connecting piece 42 which is extensive enough to bridge two partition reinforcements L and M, as may be observed in Figures 6 and 8.

The sheet of material is fashioned into tubular or shell form by securing the panels 35 and 36 against the outside of faces of the partition reinforcements L and M, when in the position of contact, as illustrated in Figure 6, and then the panels 34, 33 and 32 formed into rectangular shape, with the tab 41 secured to the adjacent edge margin of the reinforcement L to the reinforcement, by nails, staples or other suitable fastening means. In like manner the other compartment of this shell is fashioned by folding the panels 37, 38 and 39 into rectangular shape, securing the tab 40 against the panel 36 along the ad-

jacent margin of the partition reinforcement M. The piece 42 constitutes a hinge connection between the partition reinforcements L and M, as may be readily observed in Figure 8. Against the outside faces of the panels 33 and 38, which are the end panels when the box is set up ready for filling, as may be observed in Figure 6, reinforcements N are attached, by nails, staples or other suitable fastening means.

The partition reinforcements L and M as well as the end reinforcements N, may be of the character illustrated in Figure 4, or the character illustrated in Figure 5, or of any other suitable and desirable formation.

The tubular shell body A'' may be folded into substantially flatwise condition, into the formation of Figure 9, by moving the end panels 33 and 38 substantially parallel to the partition member, with the partition reinforcements L and M in contact, to the position of Figure 9. This shell or body is extended by reverse movement.

Should it so happen that a box having a capacity of that of the two compartments of the arrangement of Figures 6 and 8 is too great for use, and a smaller box is desired, then these two compartments may be severed by suitably slitting the hinge connection 42 between them, thereby providing two similar collapsible boxes each a complete shell in itself of half capacity of the whole.

As top and bottom closures for the shells or tubular bodies of the forms illustrated in Figures 1, 2, 3, and 6, 8 and 9, similar members, such as illustrated in Figure 11 may be employed. Such closure members each comprises a sheet of stiff fibrous material adapted to fit over the open top or bottom of the shell or body and on the outer surface thereof are applied thin wooden cleats 43, secured to the sheet material 44 by stitching, nailing, pasting or the like. The cleats 43 extend preferably lengthwise of the closure, in parallel relation, and are not connected at their ends, except as connected to the sheet 44.

A shell or tubular box body, of the character illustrated in Figure 1, may be modified, as illustrated in Figure 10, as far as the securing of the end tabs of the sheet is concerned. In the arrangement of Figure 10, the panel 22' has an end tab 45 while the panel 26' has an end tab 46. Instead of securing the extremities of the sheet as illustrated in Figure 1, the ends may be secured as shown in Figure 10, in which event panels 22' and 26' are suitably attached to opposite sides of the partition reinforcement J and the end tabs 45 and 46, respectively secured against the inner surface of the panel 47 of the box body. These tabs may be secured by stitching, pasting, or in any other suitable and known manner.

Figure 11 is an isometric view of an egg box, constructed in accordance with the principles of the present invention, and utilizing a tubular or shell body, of the character illustrated in Figures 1 and 6. In this figure the reinforced partition is readily apparent and may include the single thickness partition reinforcement J or the double thickness reinforcements L and M, of Figure 6.

The bottom and top closure members, as previously explained, are secured to the tubular or shell body by means of nails, staples or other fastening means driven into the end reinforcements and the partition reinforcements. Such securing means may be withdrawn when it becomes necessary to inspect the contents of an

egg box, or similar package, as occurs from time to time in transit.

The present invention contemplates a collapsible multi-compartment tubular shells or bodies, having open tops and bottoms, containing more than the two compartments heretofore discussed. Figures 12 and 13 illustrate three and four-compartment shells, respectively, constructed in accordance with the principles of the present invention, that is to say, each constructed from a single piece of stiff fibrous sheet material suitably scored and folded.

The collapsible, three-compartment shell or tube body of Figure 12 is fashioned from a single sheet of stiff fibrous material scored and folded to provide, in the order named, an end tab 48, a long panel 49, panels 50, 51, and 52, a hinge connection with panel 54, panels 55, 56, a hinge connection 57 with panel 58, and panels 59, 60 and 61, the latter of which has an end tab 62. The strip is folded as shown in Figure 12 with the panels 52 and 54 secured to the outer faces of contacting partition reinforcements O and P while the panels 56 and 58 are secured to the outside of partition reinforcements Q and R. The several panels, as well as the end tabs 48 and 62, are secured by nailing, stitching or in any other convenient and known manner.

The tubular body of the three-compartment shell of Figure 12 is scored so as to collapse into substantially flat condition for storage or shipment.

Against the outer faces of the end panels 50 and 60 are fastened reinforcements S of the same general character and construction as the partition reinforcements O, P, Q and R, which may be such as that illustrated in Figure 4, or in Figure 5, or of any other suitable character.

To collapse the tubular shell of Figure 12, the end panels 50 and 60 are moved parallel to each other and in the same direction, towards each other and thereupon the partition, including the reinforcements O and P is moved in one direction and the other partition, including the reinforcements Q and R in the opposite direction, to collapse the tubular structure into sufficiently flat formation for storage or shipment from the box manufacturer to the user.

Figure 13 illustrates the plan view of a collapsible tubular shell or body, for an egg box, constructed from a single piece of stiff fibrous material and forming four compartments. The piece of material is scored to provide an end tab 63 and, in the order named, panels 64, 65, 66, 67, a hinge piece 68, panels 69, 70, 71, 72, a fold 73, panels 74, 75, 76, 77, a hinge 78, panels 79, 80, 81, 82 with the panel 82 having an end tab 83. The piece of material is folded and assembled in the manner illustrated in Figure 13 with the panels 72 and 74 in contact, each with the other, and with the panels 64 and 82 in contact, each with the other, and in substantial alignment with panels 72 and 74. Panels 67 and 69 are separated by the hinge piece 68 to provide a partition, which partition is reinforced by two separate reinforcing means T and U. The panels 77 and 79 forming another partition, are separated by partition reinforcements V and W. The opposite panels 71 and 65 have their outer faces provided with cleated reinforcements X while the panels 75 and 81 have their outer faces provided with similar reinforcements Y.

The reinforcements T, U, V, W, X and Y are all preferably of similar construction which may

be of the arrangement shown in Figure 4, or the arrangement shown in Figure 5.

The four-compartment tubular or shell body of Fig. 13 may be collapsed into substantially flat formation for storage or shipment by movement as indicated in dotted lines in this figure, that is to say, moving the panels 71 and 65 parallel to the panels 69 and 67 respectively to the right, and the panels 75 and 81 to the left, with respect to panels 77 and 79. If desired, a four-compartment tubular shell of the character illustrated in Figure 13 may be severed to provide four smaller boxes if desired. If it is now necessary to separate a four-compartment box of this character into four separate and smaller units, then the hinges 68 and 78 may be severed between their reinforcements U and T and W and V respectively, and the fold 73 may be severed, as may be readily apparent.

As closure members for the body of Figure 13 one member is illustrated in Figure 14 and includes a sheet of stiff fibrous material 84 of proper size and contour to fit over the top or bottom of the shell body of Figure 13, and is provided with parallel slats 85 extending in one direction, and along its median line two narrower slats 86. If it is desired to sever the four-compartment shell of Figure 13 into four smaller boxes, then the end closure members would be severed lengthwise between the slats 86 and crosswise at midlength of the same. In the event that the four compartment shell of Figure 13 is cut to provide two boxes each of two compartments, then the closure members 84 would be severed lengthwise only between the slats 86.

The closure 84 applied to the shell of Figure 13 by superimposing the closures on the shell and fastening the closures to the shell by nails, staples or other fastening means driven through the cleats 85 and 86 into the reinforcements X, T, U, V, W and Y.

It will be observed that the present invention provides a collapsible, multi-compartment egg box fashioned with three component parts, two similar top and bottom closure members, and the third a body or tubular shell, which latter is fashioned from a single length of stiff fibrous material properly scored and folded.

Everyone of the shells herein described is capable of collapse to substantially flatwise condition, as shown in Figures 3 and 9, for shipment from the box manufacturer to the user in knockdown condition.

When a box is shipped by the manufacturer, the shell is collapsed and the two top and bottom closure members therefor are packaged with the shell, thus making a complete and knockdown container for ready shipment, requiring a minimum of space.

All of the boxes herein illustrated and described, have been described as egg boxes, which is the primary use to which such boxes are put. However, boxes for other merchandise, constructed in accordance with the principles of the present invention, may be very readily adapted to such other merchandise, as all that will be necessary to be done will be to alter the size of the various parts entering into the construction of the boxes.

The boxes of the present invention are made of stiff fibrous material, which is relatively inexpensive, yet inherently strong for the purpose intended, and with wooden cleats or reinforcements.

It has been found that when fiber boxes are utilized for shipment of eggs, it is impossible to store such boxes when made only of fiber, because of

the presence of moisture. It has been found that where the fiber boxes are provided with wooden cleats, the boxes may be stored for an indefinite time without harm to the packaged eggs.

5 The boxes of the present invention afford maximum rigidity and strength at minimum cost of manufacture, and are readily adaptable for severance into smaller boxes if occasion arise.

10 The boxes illustrated in Figures 1 to 9 inclusive are designed for containing thirty dozen eggs, that is to say, fifteen dozen in each compartment. If a dealer desires but fifteen dozen eggs, then the thirty dozen box may be severed to provide two fifteen-dozen boxes of eggs.

15 The three-compartment body of Figure 12 may be separated into smaller units by severing the hinge portions 53 and 57 of the fibrous material between the reinforcing means 52-54 and 56-58 respectively.

20 The invention has been described herein more or less precisely as to details, yet it is to be understood that the invention is not to be limited thereby, as changes may be made in the arrangement and proportion of parts, and equivalents may be substituted, without departing from the spirit and scope of the invention.

The invention is claimed as follows:

1. A body for an egg box consisting of a tubular shell fashioned from a single sheet of stiff, fibrous material, scored, folded and joined to provide a partitioned multi-compartment unit; said unit being collapsible into substantially flat form by folding at the corners thereof and the partition folding adjacent the body walls; and said body being severable adjacent the partition to provide separate sections, the sections constituting boxes of proportionately smaller size than said unit.

2. An egg box comprising three pre-formed and complete component parts including a collapsible tubular body member and two rigid end closure members; said body member being formed of stiff, fibrous sheet material providing side and end walls, and an intermediate cross partition parallel to the end walls; said body member being foldable at the wall junctures and also at the partition junctures for collapse and extension; said body having reinforcing cleats on its end walls and in the cross partition positioned to avoid interference with the hinging action of said panels and cross partition incidental to collapse and extension; and said body being collapsed and extended by moving the end walls parallel to each other and to the cross partition.

3. An egg box including a collapsible dual compartment tubular body formed of a single length of corrugated board and including walls and a transverse partition and conditioned at the corners and adjacent the partition for folding into substantially flat collapsed form for shipment, said partition and two of the walls parallel thereto being provided with rigid reinforcements, the planes of which reinforced partition and walls are substantially parallel in collapsed and extended condition of said body.

4. An egg box comprising two preformed top and bottom closure members and a preformed collapsible two-compartment tubular body, said body being fashioned of stiff fibrous sheet material forming side and end walls and an intermediate partition all foldable at their junctures for collapse, reinforcing frames attached to the outside of the end walls, reinforcement means interposed between the sheet material forming said partition and parallel to said first-men-

tioned frames, said reinforcements being positioned so as to avoid interference with the collapsing of said body, said top and bottom closures being secured to said body by fastening means passing through said closures and into said reinforcements, and said reinforcements constituting the major sustaining means between said closures, said body being free of sustaining means except for said reinforcements.

5. A collapsible tubular open top and bottom body for an egg box fashioned from a single length of stiff fibrous material scored and folded to provide side and end walls and cross partitions, rigid reinforcing means for the partitions, and rigid reinforcing means for the end walls, all of said reinforcing means being parallel when the box is extended for use.

6. A tubular collapsible shell body for an egg box fashioned from a single piece of stiff, fibrous material, scored and folded to provide side and end walls and partitions; the portion of the piece of material forming the partitions being folded to provide two spaced and parallel panels per partition; rigid reinforcing means between the spaced panels of the partitions to rigidify them; and rigid reinforcing means secured against the outer surfaces of the end walls; all of said reinforcing means being so placed as not to interfere with the hinging action of the walls and partitions when said body is collapsed.

7. A tubular collapsible shell body for an egg box fashioned from a single piece of stiff, fibrous material, scored and folded to provide side and end walls and partitions; the portion of the piece of material forming the partitions being folded to provide certain of the partitions with spaced and parallel panels per partition; rigid reinforcing means between the spaced panels of the partitions to rigidify them; and rigid reinforcing means secured against the outer surfaces of the body walls parallel to said reinforced partitions; all of said reinforcing means being so placed as not to interfere with the hinging action of the walls and partitions when said body is collapsed.

8. A tubular collapsible shell body for an egg box fashioned from a single piece of stiff, fibrous material, scored and folded to provide side and end walls and partitions; the portion of the piece of material forming the partitions being folded to provide double thickness partitions and with the walls of certain of the partitions spaced from each other to receive reinforcing means; reinforcing means in such partitions; and reinforcing means on the outer surfaces of the body walls parallel to said reinforced partitions; said reinforcing means constituting the major supporting means for said body between the open top and bottom of the same.

9. A tubular, multi-compartment, collapsible shell body for an egg box fashioned from a single piece of stiff, fibrous material, scored and folded to provide side and end walls and partitions; portions of the piece of material forming the partitions being folded to provide double thickness partitions and with the walls of certain of the partitions spaced from each other to receive reinforcing means; double reinforcing means in such partitions; and reinforcing means on the outer surfaces of the body walls parallel to said reinforced partitions; said shell being severable to separate the whole into individually complete smaller boxes, the said reinforcements being so positioned that in the event of severance the several smaller individual boxes so formed will be

provided with reinforcements on two opposite walls.

10. A body for a collapsible box consisting of a tubular shell fashioned of stiff, fibrous sheet material providing side and end walls, and at least one intermediate cross partition parallel to the end walls; said body member being foldable at the wall junctures and also at the partition junctures for collapse and extension; said body having reinforcing cleats on its end walls and partitions positioned to avoid interference with the hinging action of said walls and cross partitions incidental to collapse and extension; and said body being collapsed and extended by mov-

ing the end walls parallel to each other and to the cross partitions.

11. A body for a collapsible box consisting of a tubular shell fashioned from stiff fibrous sheet material scored, folded and joined to provide a double partitioned multi-compartment unit, said unit being collapsible into substantially flat form by folding at the corners thereof and with the partitions folding adjacent the body walls; and said body being severable adjacent the double partitions to provide separate sections, the sections constituting boxes of proportionately smaller size than said unit.

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