

Oct. 2, 1934.

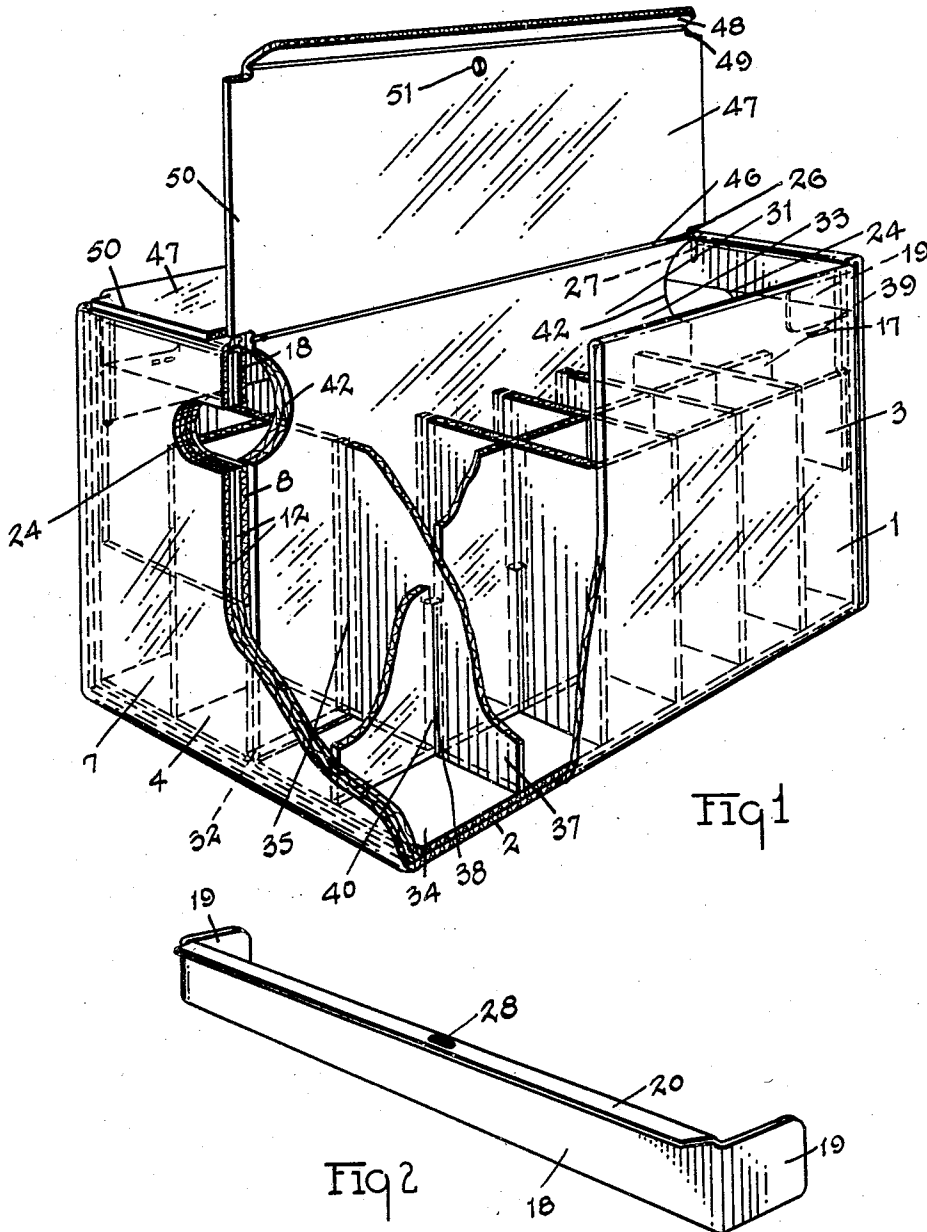
K. E. VERHOVEN

1,975,240

DELIVERY CONTAINER

Filed June 2, 1933

3 Sheets-Sheet 1



Inventor

Kramer E. Verhoven

By Faust F. Crampton

Attorney

Oct. 2, 1934.

K. E. VERHOVEN

1,975,240

DELIVERY CONTAINER

Filed June 2, 1933

3 Sheets-Sheet 2

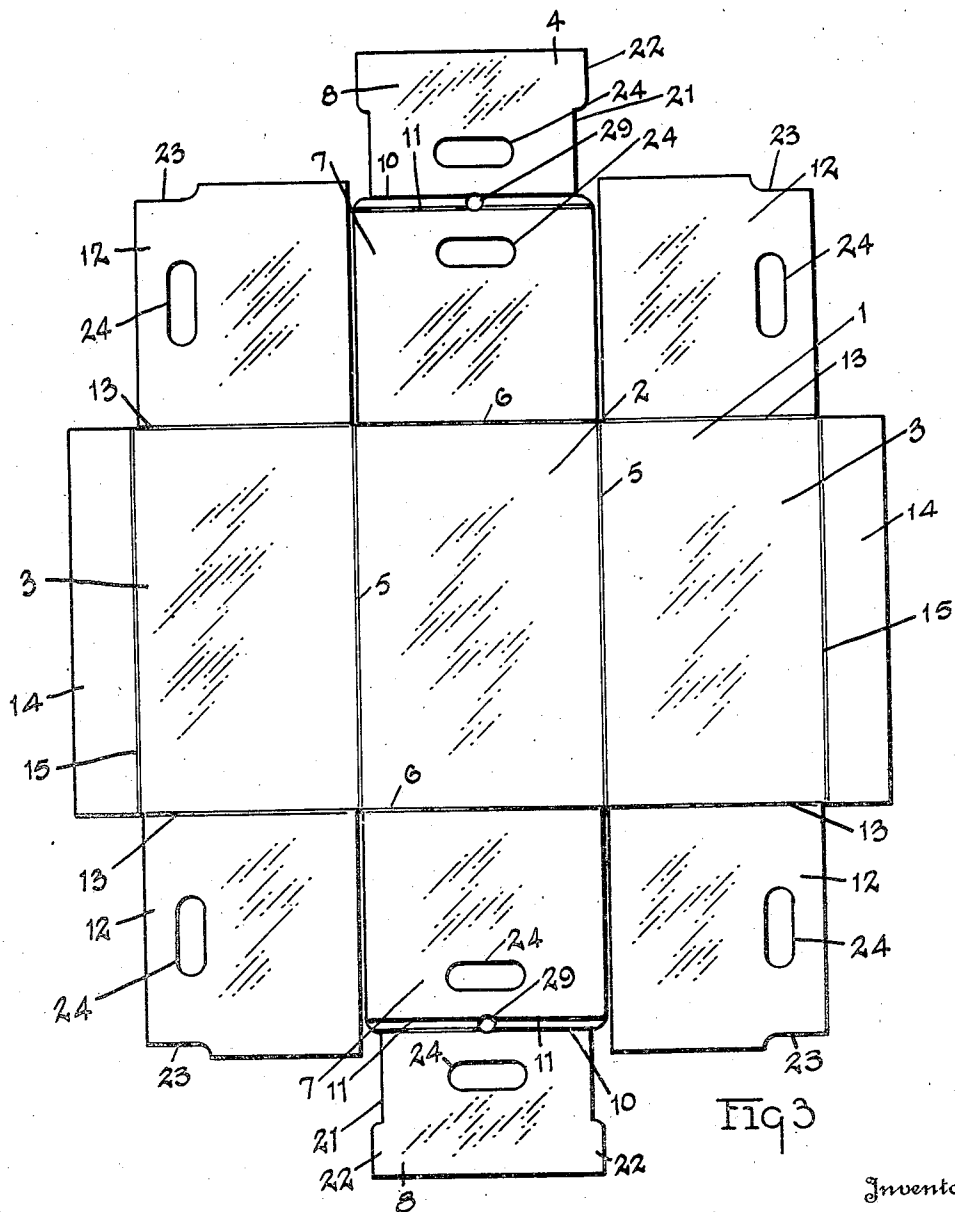


Fig. 3

Inventor

Kramer E. Verhoven

By *Faust J. Crampton*

Attorney

Oct. 2, 1934.

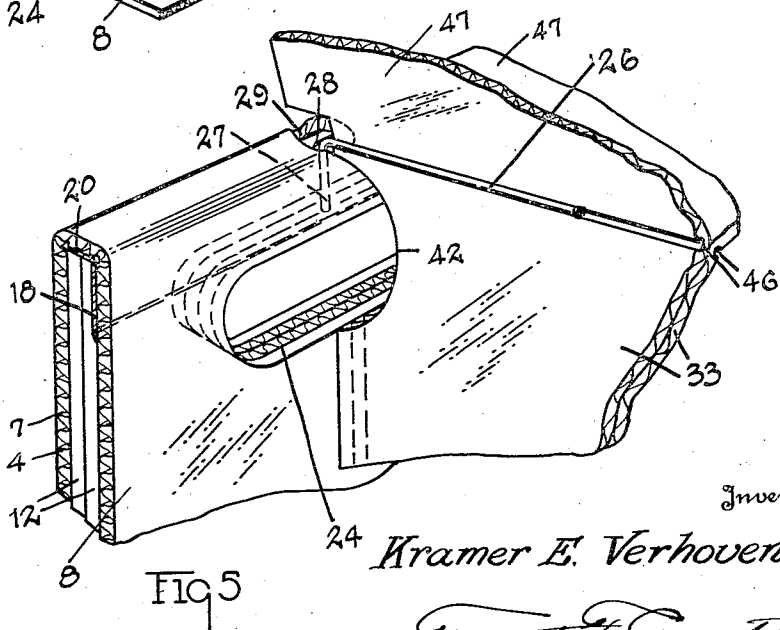
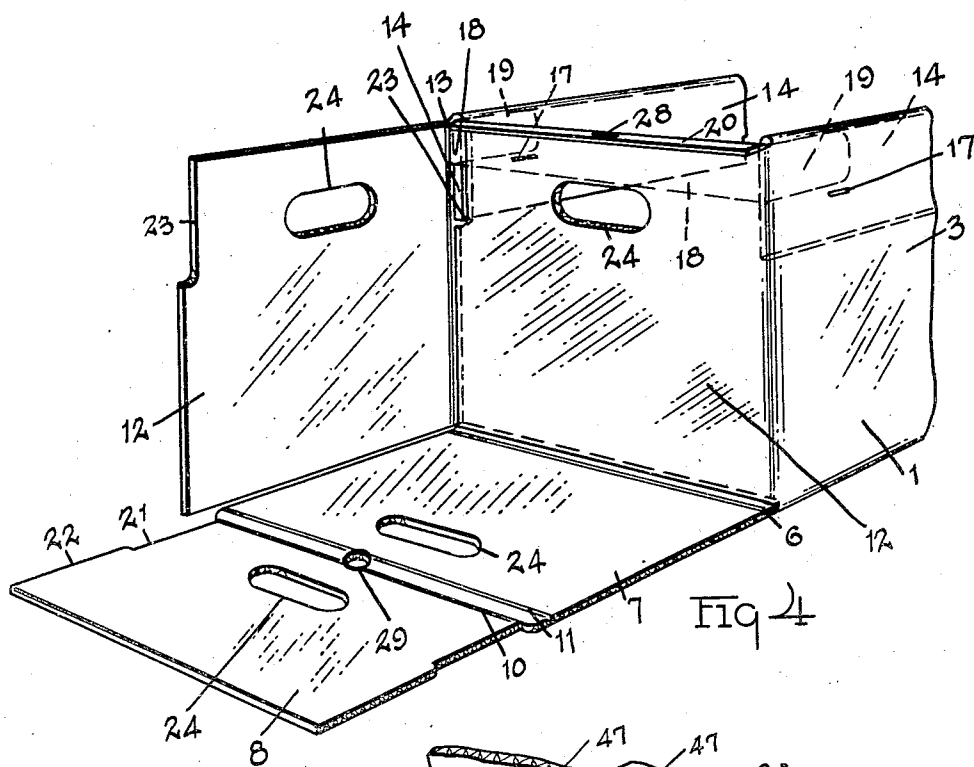
K. E. VERHOVEN

1,975,240

DELIVERY CONTAINER

Filed June 2, 1933

3 Sheets-Sheet 3



Inventor

Kramer E. Verhoven

By *Frank J. Crampton*

Attorney

UNITED STATES PATENT OFFICE

1,975,240

DELIVERY CONTAINER

Kramer E. Verhoven, Monroe, Mich., assignor to
The Consolidated Paper Company, Monroe,
Mich., a corporation of Michigan

Application June 2, 1933, Serial No. 674,069

5 Claims. (Cl. 229—52)

My invention has for its object to provide a shipping or delivery container that is strongly made to support the weight of material delivered or shipped in it, and having a minimum weight in itself so that it can be easily handled. The container is formed of sheet material, either of fiber board or corrugated paper board. Preferably it is formed from one or more blanks that may be shipped flat and readily folded and assembled to produce an exceedingly light and strongly reinforced delivery box.

The invention also provides a strong, durable box which may be produced at a low cost of construction and easily and rapidly assembled.

The invention also has for its object to provide a delivery box which is adapted for containing and delivering materials in breakable containers, or materials which, by their nature, must be kept separate from each other in the course of delivery. The invention provides partitioning members that have slotted and dovetailed portions that interfit and form separate compartments or chambers into which the materials may be inserted.

The invention also provides means for interlocking the parts which form the box in their folded positions and for locking the partitioning members in their proper positions.

The invention also provides means for reinforcing the box to withstand the rough usage to which it is subject in the process of delivery of materials and particularly for reinforcing the end portions to prevent bending or breaking or distortion of the box when it is shifted or carried from one place to another.

Another object of the invention is to provide a convenient cover for the box, which, by reason of its formation and use, is particularly adapted to the box embodying my invention.

Other features and advantages of the invention will appear from examination of the drawings and the description hereinafter set forth. The invention may be contained in boxes and containers of different forms, and to illustrate a practical application of my invention, I have chosen a box that is particularly adapted to the delivery of material contained in bottles as an example of a form of construction embodying my invention. The particular form of construction selected and partitioning and cover constructions therefor are shown in the drawings and in the accompanying description.

Fig. 1 is a perspective view of a box formed from corrugated paper board, a part being shown broken away to show the construction of the

partitions of the box. Fig. 2 is a perspective view of an end wall reinforcement member. Fig. 3 shows a blank from which the box shown in Fig. 1 may be formed. Fig. 4 is a view of the end parts of the box and of the end wall reinforcement member. Fig. 5 shows a metal reinforcing member.

The box is preferably constructed of corrugated paper board or fiber board. The parts that form the bottom, sides, and end walls are formed from the blank, cut and scored so that parts thereof may be folded to form the box shape.

The blank 1 is cut to form the bottom 2, the sides 3 and the ends 4. The sides 3 and the ends 4 are made foldable with respect to the bottom 2 by means of the score lines 5 and 6 respectively, which are of the well known type. The score lines 5 and 6 are made by depressing the board along the lines 5 and 6 to render the parts 3 and 4 foldable with respect to the bottom 2 within limited angular movements. Thus the score lines 5 and 6 permit the sides 3 and the end parts 4 to be folded to planes at substantially right angles to the bottom 2.

The ends 4 each comprise two parts 7 and 8 separated by the double score lines 10 and 11.

The sides 3 are each provided with the parts 12, which are defined by the score lines 13 and foldable along the score lines to planes at substantially right angles to the sides 3. The sides 3 are also each provided with the side edge sections 14, which are foldable with respect to the sides 3 along the score lines 15.

To form the box from the cut and scored blank, the side edge sections 14 are folded along the score lines 15 and stapled or stitched in any of the well known ways to the sides 3, as at 17. The sides 3 are folded along the lines 5 to planes at right angles to the bottom 2.

In order to eliminate bending or breaking ends of the box, and to reinforce the handle parts of the box, a sheet metal reinforcement member 18 is positioned between the side walls 3. The end wall reinforcement member 18 has the rings 19 projecting from it at substantially right angles. The wings 19 are inserted between the side walls 3 and the side edge sections 14 and maintained in position with respect to the side walls and the side edge sections by reason of the stapling or stitching as at 17.

The parts 12 are then folded at right angles to the sides 3 so as to overlap and come in close proximity to the end wall reinforcement member 18. The end parts 12 are preferably cut out as

at 23 to form an interengagement between the parts 12 and the side edge sections 14.

The ends 4 are bent along the score lines 6 and folded to planes at right angles to the bottom 2.

5 The parts 8 are then folded along the double score lines 10 and 11 to enclose the parts 12 and fold over the flanged portion 20 of the end wall reinforcement member 18. The parts 8 are brought into contact with the innermost of the parts 12. The parts 8 are preferably cut away, as at 21, to form an interengagement between the side edge sections 14 and the ends 4.

10 The parts 7, 8, and 12 are preferably of such dimension that the ends of the box are formed of four layers of corrugated board substantially throughout. To facilitate rapid assembly of the box, the width of the parts 8 is somewhat less than the width of the parts 7, as indicated at 22. If desired, the parts 7, 8, and 12 may be stapled or stitched together.

20 For convenience in handling the box when assembled, slots 24 of suitable size to form handle parts are cut in the parts forming the end of the box. The slots 24 are cut in the parts 7, 8, and 12, so that when the parts are folded, the slots register with each other. By reason of the quadruple thickness of corrugated board that is formed at the ends of the box, an exceedingly convenient handle is provided for manipulation of the box.

30 Inasmuch as the slots 24 are located in the parts 7, 8, and 12, which are connected to the bottom and sides of the box, they provide efficient means for sustaining the weight of the contents of the box by reason of the fact that the bottom is sustained by the side walls and the end walls, and these parts contain the slots forming the handle parts and are supported when the box is lifted.

40 The slots forming the handle parts are greatly reinforced by the metal end wall reinforcement members 18, which permit the box to be dragged or carried at one end, the ends thus supporting the greater part of the weight of the contents of the box without causing the ends of the box to bend or break.

45 It is well known that in unloading containers from drays or trucks it is customary to drag the container to the edge of the vehicle in order that it may be easily grasped and swung to the ground by one end or delivered by carrying the box at one end. The metal end wall reinforcement member prevents bending or breaking of the end wall when the box is handled in this manner, permitting the box to be used over an indefinite period of time and rendering it as strong as the wooden boxes heretofore commonly used and more efficient than the wooden boxes by reason of its light weight.

60 For further reinforcement of the box, and to prevent weakening of the parts, particularly those parts involved in the end of the box, by rough usage, the box may be provided with an additional reinforcement member 26 which serves to maintain the ends of the box in parallel planes with respect to each other, notwithstanding the strain to which either end may be subjected in pulling or lifting the box.

70 The rod member 26 is preferably a substantially rigid metal strip or heavy wire and has end parts 27 bent at right angles to it which are inserted in the slots 28 of the flange portions 20 of the end wall reinforcement member 18. The ends 4 of the box are cut out as at 29 to permit insertion of the end parts 27 through the ends 4 and

into the slots 28. When the box is dragged or carried by one end, the end part 27 is engaged by the end wall reinforcement member 18, and the rigidity of the reinforcement member 26 prevents distortion of the box.

For delivering or shipping materials in breakable containers or other materials which, by their nature, should be maintained in separate compartments, the box may be provided with partitions of the nature disclosed in the structures and modifications described in my co-pending application 657,822.

80 As shown in Fig. 1, a central, longitudinally extending partition, reinforcement, and cover part is provided by a pair of members 31. Each member 31 is scored along the score line 32 and bent to form a partition part 33 and a bottom-reinforcing part 34 located at substantially right angles to the partition part 33. When the members 31 are positioned in the box, the partition parts 33 contiguous to each other and the bottom reinforcing parts 34 extending oppositely to each other to substantially the inner surfaces of the sides 3, covering and reinforcing the bottom 2 of the box, each of the members 31 forms an exceedingly rigid, load-sustaining L-construction.

90 The partition parts 33 have slots 35 adapted to receive and engage partitions 37. The partitions 37 are slotted as at 38 and dovetail with the longitudinally extending partitions 39, which are slotted at 40. The partitions 37 are of a length and height such that they may be located below the edge of the flanged edge sections 14 and held in position by the flanged edge sections, as are the partitions 39 and the partitioning and reinforcing members 31 by reason of their interfitting and dovetailing with respect to the partitions 37.

100 If desired, the partition parts 33 may be provided with recesses 42 to give additional room for the user's hand when the box is carried. The additional room given by the recesses permits the user to obtain a firm grip on the handle parts of the box without interference with the partition parts, which is particularly advantageous when heavy materials are transported from one place to another.

110 In order to provide suitable cover parts, the members 31 are scored along the lines 46 to form cover parts 47, which are thus hingedly connected to the partition parts 33. The cover parts 47 are provided with flanged edge sections 48 which are bent at substantially right angles to the cover parts along the score lines 49. The widths of the cover parts 47 are such as to cause the flanged edge sections 48 to be frictionally engaged by the inner surfaces of the side edge sections 14, which will resist the tendency of the flanged edge sections 48 to return to the plane of the cover parts 47.

120 The rod 26 coincides with the score lines 47 of one of the cover parts 47 and thus maintains the part 38 in a plane at right angles to the bottom-reinforcing parts 34 and prevents shifting of the cover part in transit.

130 If desired, a pair of parallel rods 26 having the protruding parts 27 may be supported in the slots 28 to maintain the parts 38 in a plane at right angles to the bottom-reinforcing parts 34 and prevent shifting of either of the cover parts.

140 If desired, the cover parts 47 may be provided with protruding end edge sections 50 that extend beyond the ends of the flanged edge sections 48 and may be placed on the quadruple thickness

80

85

90

95

100

105

110

115

120

125

130

135

140

145

150

of the upper edges of the ends of the box formed by the parts 7, 8, and 12.

The cover parts 47 may be provided with suitable finger openings 51 for convenient manipulation of the covers in opening and closing the box.

I claim:

1. In a box formed of fibrous sheet material folded to have bottom, side, and folded end portions, the end portions having openings extending through the folded parts of the end portions, to form handle parts, a partitioning member extending from one end of the box to the opposite end of the box and from the bottom of the box to above the said openings, the said partitioning member having recesses located at the said openings.

2. In a box formed of fibrous sheet material folded to have bottom, side, and end portions, the end portions having openings to form handle parts, a partitioning member extending from one end of the box to the opposite end of the box, a rod interconnecting the end portions, the partitioning member having flaps forming a cover to the box and foldable along the said rod.

3. In a box formed of fibrous sheet material folded to have bottom, side, and end portions, and having openings extending through the end portions to form handle parts, rigid members connected to the end portions intermediate the openings and the edges of the end parts, a partitioning member extending from one end of the box to the opposite end of the box, parallel rods interconnecting the rigid members, the partitioning members having flaps forming a cover to the box and foldable along the said rods.

4. In a box formed of fibrous sheet material folded to have bottom, side, and end portions, the

end portions having foldable parts and registering openings extending through the folded parts of the end portions and forming box handles, the said side portions having foldable parts, a rigid member located within the folded parts of the end portions and having integrally formed end parts extending at right angles to the body parts of the rigid members and located within the folded parts of the side portions, one of the folded parts of each of the side portions operating to engage edge-wise with the edges of the folded parts of the end portions.

5. In a box formed of fibrous sheet material scored and cut to form bottom, side, and end portions, the end portions formed of two parts, the side portions having end parts and reinforcing edge sections, the end portions foldable to enclose the parts of the side portions, each of the parts of the side portions having a length substantially the same as the width of the box, the parts of the end portions and the end parts of the side portions having registering openings located substantially centrally with respect to the width of the box and near the upper edges of the box and forming box handles, rigid sheet metal members located intermediate the said openings and the edges of the ends of the box and having flanges located on the edges of the said end parts of the said side portions and enclosed within the said parts of the said end portions, the said rigid members having end parts bent at right angles to the body parts of the rigid members and located within the fold of the edge sections of the side portions, the edge sections operating, when folded, to lock the said parts of the end portions in their folded positions.

KRAMER E. VERHOVEN.

115

120

125

130

135

140

145

150

40

45

50

55

60

65

70

75