

Feb. 12, 1935.

O. M. BABCOCK

1,991,071

SHIPPING CONTAINER

Filed Nov. 11, 1931

3 Sheets-Sheet 1

Fig. 1

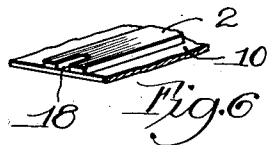
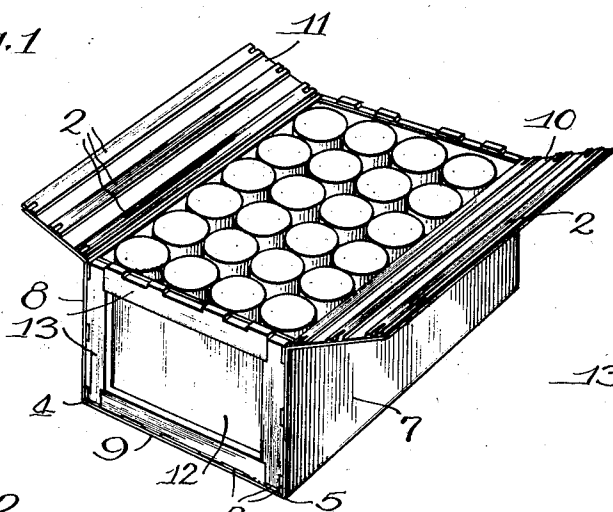


Fig. 3

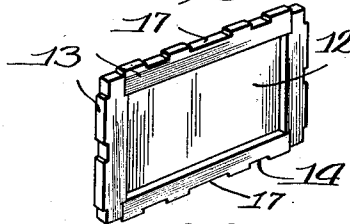


Fig. 2

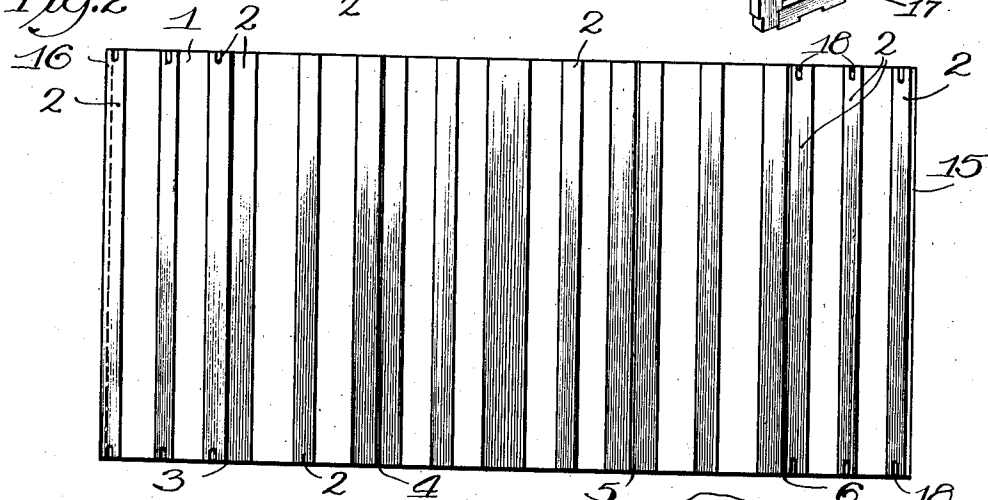


Fig. 5

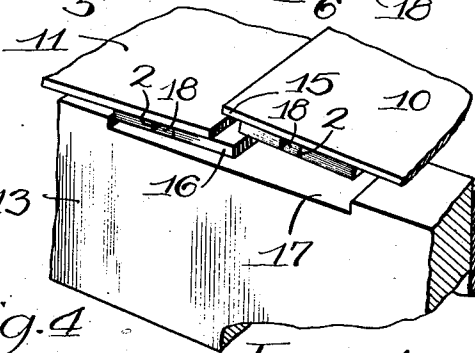
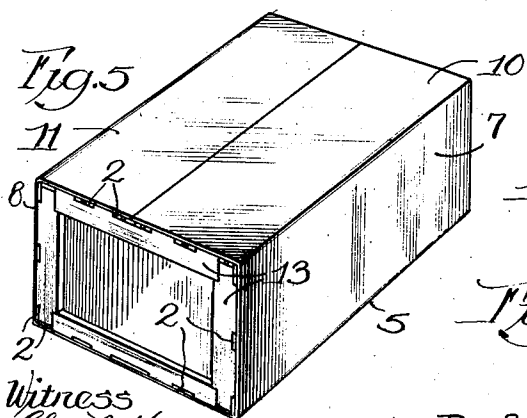


Fig. 4

Witness
Chas. R. Korsch

Inventor,
Oliver M. Babcock
By Wallace R. Lane, Att'y.

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3 Sheets-Sheet 2

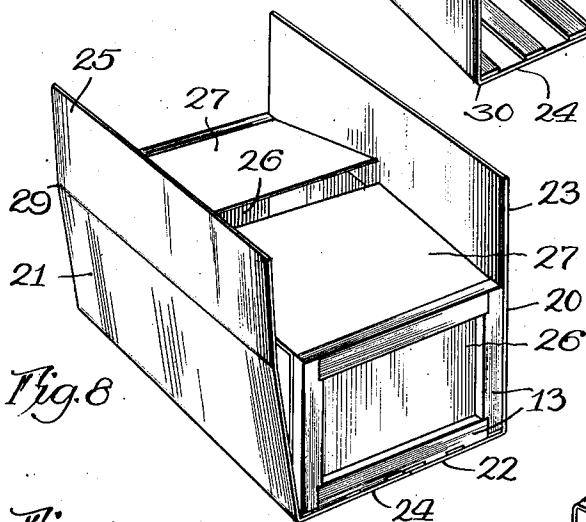
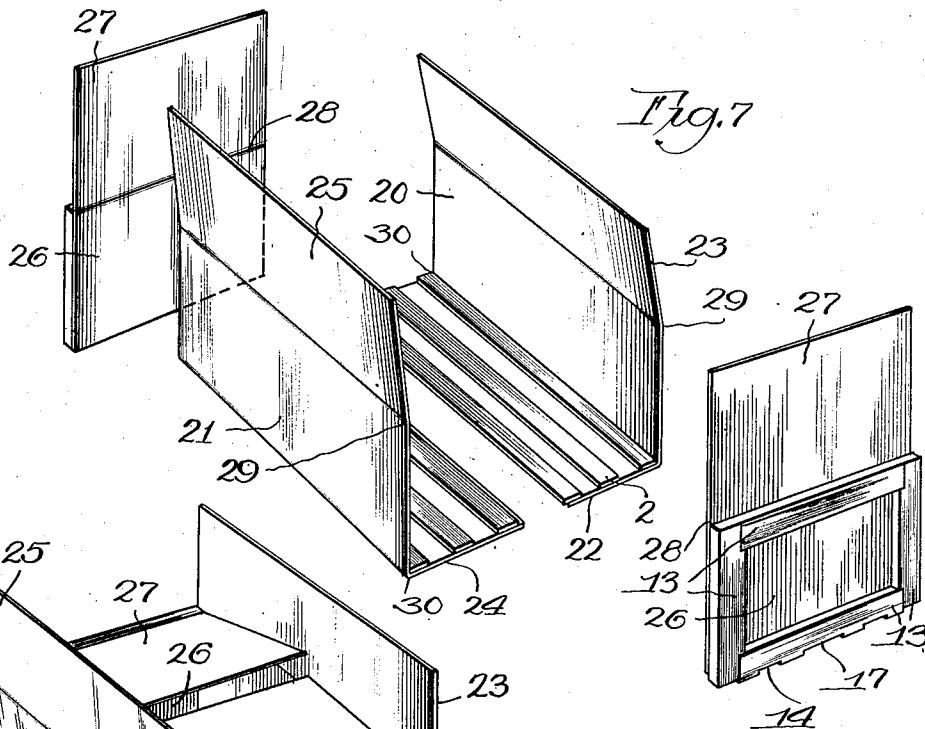


Fig. 10

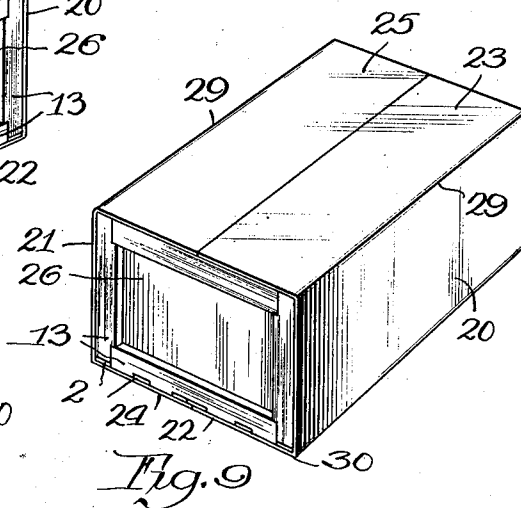
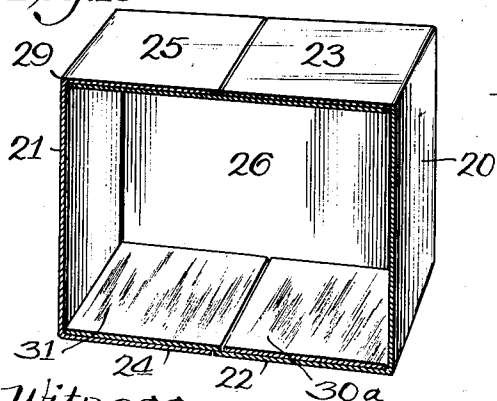


Fig. 9

Witness:
Chas. R. Korsch

Inventor,
Oliver M. Babcock
By Wallace R. Lane Atty.

Feb. 12, 1935.

O. M. BABCOCK
SHIPPING CONTAINER
Filed Nov. 11, 1931

1,991,071

3 Sheets-Sheet 3

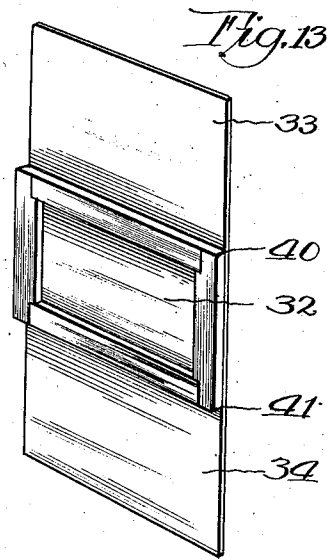
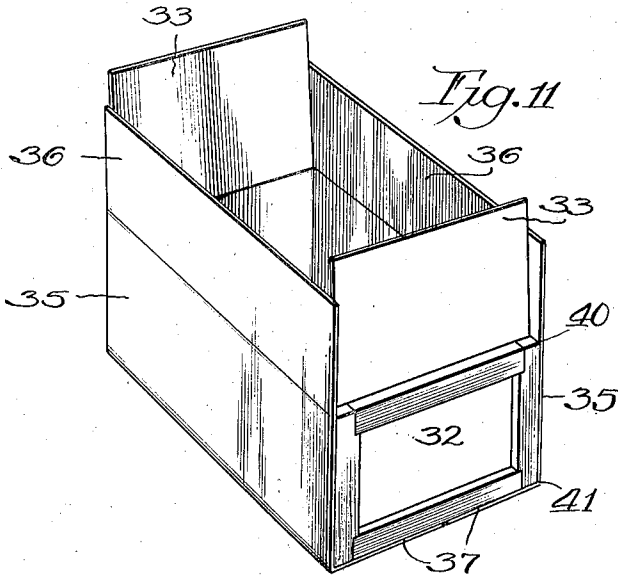


Fig. 12

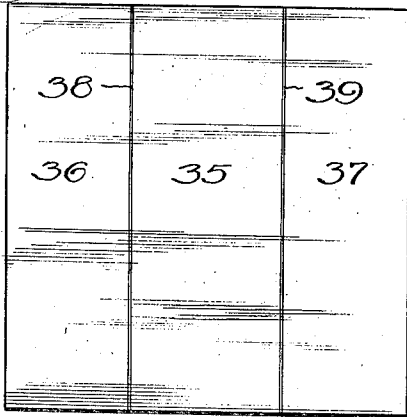


Fig. 15

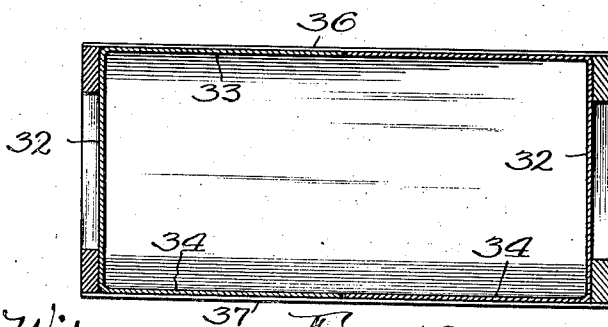
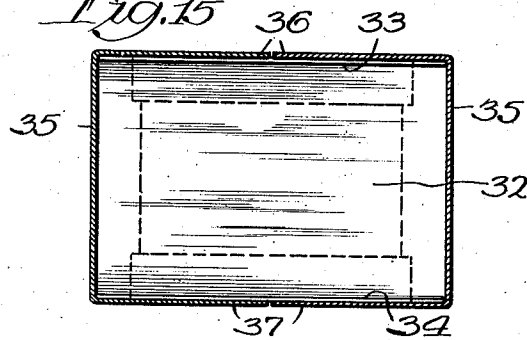
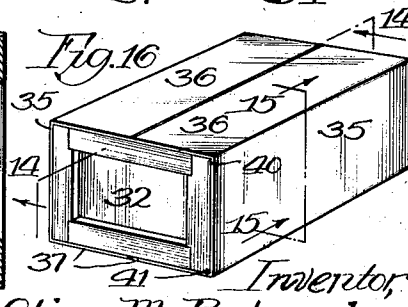


Fig. 16



Witness:
Chas. R. Koush.

Fig. 14

Inventor,
Oliver M. Babcock
By Wallace R. Lane, Attorney

UNITED STATES PATENT OFFICE

1,991,071

SHIPPING CONTAINER

Oliver M. Babcock, Evanston, Ill.

Application November 11, 1931, Serial No. 574,249

5 Claims. (Cl. 229—23)

This invention relates to shipping containers, and more particularly constitutes an improvement over the container shown in my Patent No. 1,704,118, of March 5, 1929.

Among the objects of my invention are:—

To provide a shipping container that is unusually light in weight, rigid, strong and economical to manufacture;

To provide a shipping container that instead of having six separate panels assembled to form a container by nailing along the twelve edges, the body of the container, which is of fibre board, or the like, is formed with score lines to permit folding around rigid ends, so as to do away with the necessity of further attaching the side walls to the top or bottom walls;

To have the two ends of the foldable body blank meet along a face of the container instead of along one of the edges, thus eliminating the necessity of attaching the meeting parts together along one of the edges of the container;

To provide means whereby the meeting edges of the body blank overlap in such a way that the face of the container on which they meet and overlap is perfectly flat and prevents the entrance into the container of dust and dirt, and also gives additional strength along the meeting edges;

To add reinforcing strips to the wall material and form notches in the ends of said strips to facilitate removal of the fastening nails after the top has been pried open, the reinforcing strips being rigidly secured to the wall material;

To provide an improved type of shipping container made from fibre board, corrugated board, or the like, and reinforced with wood cleats on two faces of the container, and which may or may not have reinforcing strips on one or more of the other faces of the container;

To provide a shipping container that will require less sheet material in its manufacture than is now required in the so-called regular slotted type fibre or corrugated board boxes, which latter are in use in this country to the extent of hundreds of millions per year;

To provide a shipping container that can be shipped in knocked down condition from the box factory to the consumer;

To provide a light, strong and cheap shipping container that can be closed with the nailing machines and sealing equipment in common use today;

To provide a light, strong shipping container in which the cleats or reinforcing strips, or both, are advantageously located so as to give great

protection to the contents of the container at a minimum cost;

To provide a shipping container which in its preferred form has cleated panels on two faces of the container, which cleats provide handholds so as to make it easy, attractive and economical in handling and shipping;

To provide a preferred form of shipping container with which one face can be opened by prying up the nails like in a nailed box, and which on another face may be opened similar to the way the slotted fibre boxes are now opened;

To provide a shipping container which can be economically opened and reclosed for reuse;

To provide a strong, light shipping container which adapts itself advantageously for reuse as a grocer's delivery box, or as a handy box in which to store things;

To very considerably decrease the weight of shipping containers without sacrificing strength, and thereby make possible very considerable savings in freight charges;

To utilize material in the making of the cleats and reinforcing strips which are produced from the same class of wood as that from which building laths are made, and which laths sell for considerably less than lumber of similar quality, thereby effecting an economy;

To produce a shipping container of fibre board or other light material, having reinforced end walls, at least some of the walls being constructed to have interfolding relation with adjacent walls to promote strength with unusual lightness;

To so reinforce the wall material of shipping containers as to produce maximum lightness with strength.

Other objects, advantages and capabilities will later more fully appear.

My invention also resides in the combination, construction and arrangement of parts illustrated in the accompanying drawings, and while I have shown therein my preferred form, with modifications, I wish it understood that the same are susceptible of modifications and change without departing from the spirit of my invention.

In the drawings:—

Fig. 1 is a perspective view of the preferred form of my shipping container, showing the cover flaps open and the container packed with cylindrical packages.

Fig. 2 is a development of the main sheet of material, having reinforcing strips rigidly secured thereto, said sheet being provided with scorings whereby it may be folded to form the

bottom, two sides and two cover flaps of the container.

Fig. 3 is a perspective view of one of the end panels.

Fig. 4 is a fragmentary perspective detail showing the construction to permit the overlapping joint at the meeting edges of the cover flaps.

Fig. 5 is a perspective view of a completed and closed box of the type shown in Fig. 1.

Fig. 6 is a fragmentary perspective detail showing one of the slotted ends of the reinforcing strips to permit removal of the nails after the cover flap has been pried open.

Fig. 7 is a perspective view of a modified form of container, and showing the several parts slightly separated from each other prior to being secured together to form a completed container.

Fig. 8 is a perspective view of the box whose parts are shown in Fig. 7, but showing the parts in assembled relation, with the near side not yet fastened to the end members, and the top being partially open.

Fig. 9 is a perspective view showing the container of Figs. 7 and 8 completed and fastened in closed position.

Fig. 10 is a perspective transverse sectional view through a box similar to that shown in Figs. 7 to 9, but being provided on its interior bottom faces with sheets of veneer, or the like, instead of elongated strips shown in Fig. 7.

Fig. 11 is a perspective view of a further modified form of container, with the cover flaps standing open.

Fig. 12 is a lay-out or development of a piece of sheet material forming one of the side walls, and a top cover flap and bottom flap, as used in the container of Fig. 11.

Fig. 13 is a perspective view showing the outer face of an end wall of the container shown in Fig. 11, said end wall having foldably connected therewith integral top and bottom flaps.

Fig. 14 is a longitudinal vertical section through a closed box of the type shown in Fig. 11, said section being taken on the line 14—14 of Fig. 16.

Fig. 15 is a vertical transverse section through a closed box of the type shown in Fig. 11, said section being taken on the line 15—15 of Fig. 16.

Fig. 16 is a perspective view of the container shown in Fig. 11, showing the same in closed position.

Referring more particularly to Figs. 1 to 6 of the drawings, my improved container, as there shown, comprises primarily four integral sides foldably connected together, the fourth or top side being preferably constructed in the form of two cover flaps, each being integral and foldably connected to its adjacent side wall.

The sheet of material from which the integral bottom, sides and cover flaps are made is shown at 1 in Fig. 2. Rigidly secured to the inner face of sheet 1, at suitably spaced distances, are the elongated reinforcing strips 2. Sheet 1 at predetermined positions is transversely scored, as along lines 3, 4, 5 and 6, these scorings being such as to permit sheet 1 to be folded along these lines to form the container sides 7 and 8, bottom 9, and top flaps 10 and 11. In assembling the container, sheet 1 is folded around the end wall members 12, which are formed of suitable sheet material, which is reinforced by the marginal cleats 13. Cleats 13 are provided with notches 14 to receive the ends of reinforcing strips 2 when the sheet 1 is folded around these

end wall members, as will be readily understood in Fig. 1.

As noted in Fig. 2, the reinforcing strips 2 may be spaced from each other as desired, but at the folding lines 3, 4, 5 and 6 the strips are preferably spaced only a slight distance apart, so that when the fold or bend is made along such lines the adjacent strips will touch each other, or one strip will overlap the other, as shown in the two bottom corners of the near end of Fig. 1. As viewed in Fig. 2, sheet 1 at the right hand end extends at 15 a slight distance beyond the adjacent reinforcing strip 2, while at the left end of said sheet the reinforcing strip 2 extends a slight distance (as indicated at 16) beyond the edge of sheet 1. At its middle portion (or other location desired other than at the side edge of the box) each of the top and bottom cleats 13 of the end walls is provided with an elongated notch 17, which is preferably of a length equal to the combined width of two reinforcing strips. The purpose of this is seen in Fig. 4 to be the provision of overlapping surfaces along the meeting edges of the cover flaps, which greatly strengthen the cover of the container, and also leaves the top of the same flat, which is advantageous both from the standpoint of printing, writing or stenciling on the container cover, as well as stacking the containers in piles.

To improve the reuse value of my containers I have provided means to facilitate the removal of nails from the cover flaps, which nails if not removed would be a hazard to anyone working with or around the container. This feature is shown in Fig. 6, in which a notch 18 is provided in each end of each of the strips 2, which are secured to the cover flaps 10 and 11. In nailing the cover flaps to the panel 13 of the end walls (or solid wood end walls if desired), the nails are driven first through the sheet of wall material of the cover flaps, and then through the slots 18 and into the wood of cleats 13, or other end material. As will be readily understood, the head of the nail will straddle slot 18 so that it will bear against the material of the strip on each side of the slot, but will permit easy removal of the nail after the cover flap has been pried open, which would not be true if the nail were forced to form its own hole through strips 2 when being driven.

As shown in Fig. 1, the reinforcing strips 2 are so positioned on sheet 1 that in the finished box these strips will prevent the cans, cartons, or other packaged goods packed in the container from coming in contact with the outer sheet material, thereby avoiding the danger of same damaging the sheet material and at the same time adding rigidity and strength to the container. The integral foldable joints between the bottom, sides and cover flaps eliminate the necessity of nailing these parts together, and yet provide great strength between these parts. This very materially cheapens the manufacture of containers, as four sides of the container may be made in one strip (see Fig. 2), and shipped in knocked down condition from the factory to the consumer. All the consumer has to do is assemble the end wall members in position and fold the sheet 1 therearound, and nail the side walls and bottom to the end wall members by nailing machinery now in common use. After the container is packed the top flaps may also be nailed shut in nailing machines or by hand, as desired.

It is thus seen that I have provided a container

that may be easily and quickly manufactured and shipped in knocked down condition, readily assembled by the consumer, and while being unusually light in weight possesses very considerable strength, may be readily handled due to the cleats 13 serving as handholds, and which container is not only pleasing in appearance but is readily adapted for reuse either as a shipping container or as a grocer's delivery box, or the like.

The modified form of container shown in Figs. 7, 8 and 9 comprises the two side members 20 and 21, to the former of which is integrally and foldably connected the bottom flap 22 and top flap 23, while to said member 21 is integrally and foldably connected the bottom flap 24 and the top flap 25. Each of bottom flaps 22 and 24 have elongated reinforcing strips 2 rigidly secured thereto, the arrangement of the adjacent strips at the meeting edges of the bottom flaps 22 and 24, in the preferred form, being similar to that described above and shown in Fig. 4.

The end wall members 26 are each provided with an integral foldably connected upstanding flap 27, which, in the preferred construction, are of a height sufficient to enable them to meet at the center of the box when folded downwardly, as suggested in Fig. 8. Suitable scoring lines 28 are provided between flaps 27 and end wall members 26 to facilitate their being folded inwardly during the operation of closing the container. Scorings along lines 29 and 30 are also provided in each of the side wall members 20 and 21 with their integral flaps, to permit said flaps to be folded around the end wall members after the latter have been placed in proper position between the side walls 20 and 21. Notches 14 and 17 similar to those shown in Figs. 1 to 5 are also formed in the bottom of the bottom cleat of each of end walls 26 to receive reinforcing strips 2 of the bottom flaps.

End walls 26 in position between the side walls, and with the bottom flaps folded against the bottom of the end walls, are shown in Fig. 8, except that the near side wall is shown a slight distance away from the edge of the end walls for the sake of clearness. The flap extensions 27 of end wall members 26 in the form of box shown in Figs. 7 and 8 stand higher after assembly than do the top flaps 23, in order that the flaps 27 in an elongated box may meet at the middle without such waste of material as would be occasioned in the so-called regular slotted type fibre or corrugated board boxes. As will be understood, in closing a container of the type shown in Figs. 7 to 9, the end flaps 27, after the box is filled, will be pushed inwardly, as shown in Fig. 8, after which the top flaps 23 and 25 may be pushed downwardly and attached to the end flaps 27 in the same manner and with the same standard and efficient equipment now used in closing the present slotted type of shipping carton which is in general use, or they may be fastened into position by nailing into the cleats 13 of the end walls, as desired.

A container similar to that shown in Figs. 7 to 9 is shown in Fig. 10, except that sheets 30a and 31 are substituted for the reinforcing strips 2, by being glued, stapled, or otherwise rigidly secured to the inner faces of the bottom flaps 22 and 24, in such manner that they in conjunction with the bottom flaps will produce an overlapping joint of the type shown in Fig. 4. These reinforcing sheets 30a and 31 may be made of rotary cut lumber, fibre-board, corrugated

fibre-board, or other suitable reinforcing material, as desired.

Still another modification is shown in Figs. 11 to 16, in which each of the end wall members 32 is provided with an integral top flap 33 and an integral bottom flap 34, and the side wall members 35 are each provided with an integral top flap 36 and an integral bottom flap 37, suitable scoring lines 38 and 39 being provided to enable the folding of the various parts at the corners of the box.

Scoring lines 40 and 41 may also be provided, if desired, between the flaps 33 and 34 and the end wall members to facilitate folding the said flaps inwardly during assembly and closing of the container.

In assembling the box shown in Figs. 11 to 16 the two side wall members 35 will be suitably secured in proper relation to the end walls 32 by means of nails, staples or other suitable means. After the side walls 35 have been attached to the end walls 32 (which are of the preferred cleated construction but which may, if desired, be of solid wood construction) the bottom end flaps 34 may be attached to the lower side wall flaps 37 by means of an adhesive, staples or other well known means (or the container may be filled before closing the bottom) and then after the container has been filled it may be closed in any of the established methods of closing the slotted type of fibre boxes. This invention relates to a shipping container which has rigid end construction with foldable end flaps which may be attached to the foldable top and/or bottom flaps of the sides by means of and with similar efficient equipment which is in standard use by the thousands of users of the well known slotted type fibre or corrugated board box. A saving of material is also effected, as the end, top and bottom flaps 33 and 34 may be cut any length desired without wasting material of the top and bottom flaps of the side walls, as would be the case if the top and bottom flaps of the end walls were made to meet at the middle of the box in the so-called regular slotted type fibre or corrugated board boxes now in use.

It is thus seen that I have provided a shipping container of unusually light weight, but still of great strength, and one which is cheap to manufacture, pleasing in appearance, can be shipped in knocked down condition, and may be easily and readily reused either for shipping purposes or for delivering or storing any material desired.

Having thus described my invention, I claim:—

1. In a shipping container a pair of side walls each having on its top edge a first flap foldably connected therewith, and on its bottom edge a second flap foldably connected therewith, a pair of wood reinforced end members each having on one edge a top flap foldably connected therewith, and on its opposite edge a bottom flap foldably connected therewith, said side walls being secured to said end walls with said bottom flaps folded into lapping contact with said second flaps, which four flaps are secured in position to form a double bottom wall, the said top flaps being folded into lapping contact with said first flaps, which four flaps are secured in position to form a double top wall.

2. In a shipping container a pair of opposite side walls, and a pair of opposite wood reinforced separate end walls, each of said walls having a flap foldably secured to each of its two opposite edges, said walls being secured together in box relation with one pair of flaps being folded in-

side the adjacent pair of flaps on each of the top and bottom of the container, each of the outside flaps being secured in position, said flaps being of such length that the ends of opposite flaps substantially abut each other whereby to form a double top and bottom for said container.

8. In a shipping container a pair of opposite separate side walls, each having a flap foldably secured to each of its two opposite edges, and a pair of opposite rigid separate end walls each having wood reinforcing means along a plurality of its marginal edges, and each end wall also having a flap foldably secured to each of its two opposite edges, said walls being secured together in box relation.

4. In a shipping container a pair of opposite separate side walls, each having a flap foldably secured to each of its upper and lower edges, and a pair of opposite rigid separated end walls each having wood cleat marginal reinforcement, and each end wall also having a flap foldably secured along its upper and lower edges adapted to interfold with the flaps secured to the upper and lower edges of the side walls when folded into closed position, said walls being secured

together in box relation forming a box having double top and bottom walls.

5. In a shipping container a pair of opposite side walls each having an integral flap at each of its top and bottom edges, each of said flaps being of a width substantially equal to half the width of the container, a pair of opposite wood reinforced separate end walls each having an integral flap at each of its top and bottom edges, each of said last mentioned flaps being of a length substantially equal to half the length of the container, so that when the said side and end walls are secured together in box relation with the flaps of the end walls folded inside of the flaps of the side walls the end edges of the adjacent end wall flaps will substantially abut, and the side edges of the adjacent side wall flaps will substantially abut to provide a container having a double bottom and a double top with side material extending substantially entirely around the container in one direction and end material extending substantially entirely around the container in the other direction.

OLIVER M. BABCOCK,