

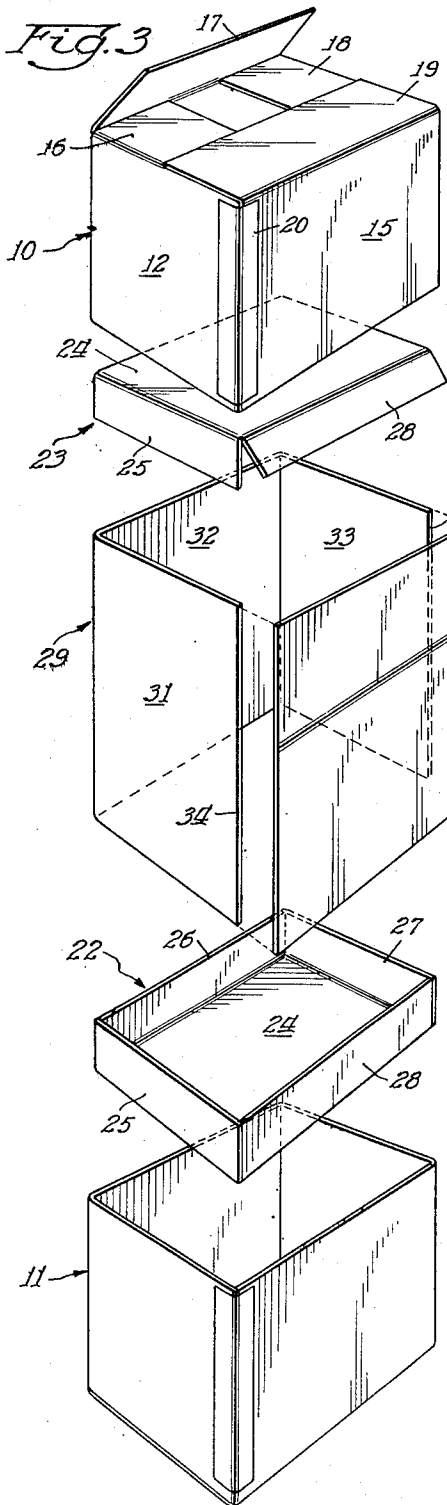
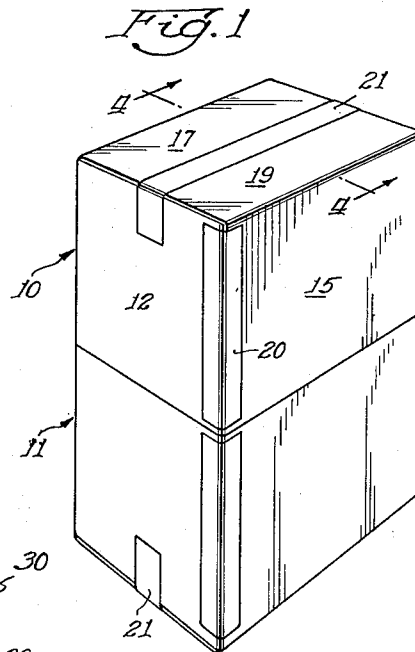
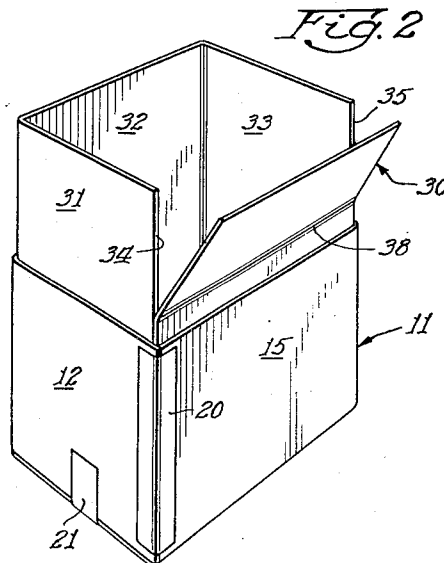
March 9, 1954

J. P. H. LEAVITT
SHIPPING CONTAINER

2,671,600

Filed Oct. 25, 1949

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 4

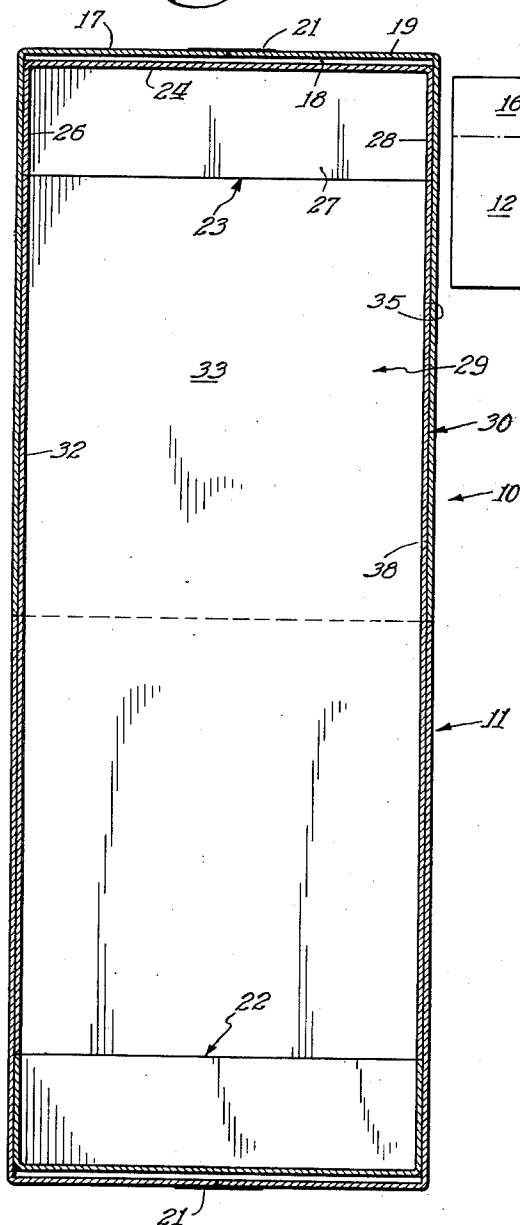


Fig. 5

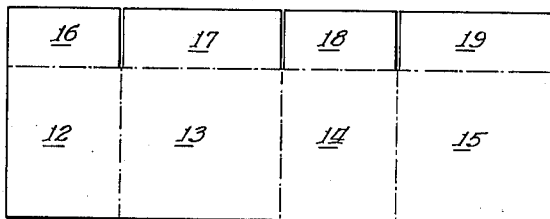


Fig. 6

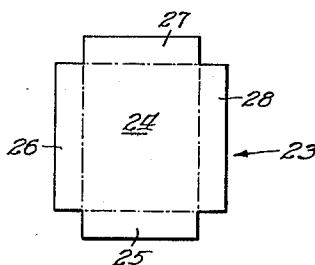
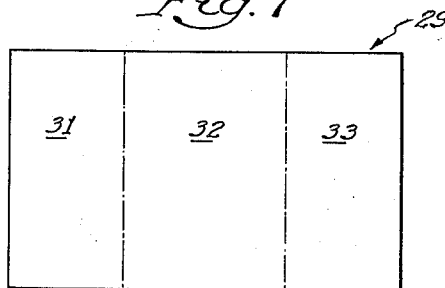


Fig. 7



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UNITED STATES PATENT OFFICE

2,671,600

SHIPPING CONTAINER

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2 Claims. (Cl. 229—23)

1

The present invention relates to shipping containers and more particularly to a type of paperboard shipping container having telescoping parts to form a construction of multi-wall thickness, being especially useful for shipment of textiles and other articles requiring more than ordinary protection.

Objects of the invention are to provide a relatively strong and sturdy form of shipping container that can be made up in large sizes, the parts being so constructed and arranged that a multi-walled container construction is produced and at the same time both inner and outer surfaces are free from projecting parts that are likely to catch upon other objects during transportation and handling; also to provide parts having the characteristics just referred to and at the same time provide a construction which is easy to assemble and load, the assembly of the container being partly completed prior to loading and finished after the load is completely in place and held within an inner liner portion.

Another object of the invention is generally to decrease the cost and simplify the work of manufacture and assembly of containers of this type without affecting the strength of the container construction.

Other and more specific objects and advantages of the present invention will be apparent in the following specification and in the claims appended thereto.

In the drawings, illustrating a preferred embodiment of the invention—

Fig. 1 is a perspective view of the container as it appears when loaded and substantially ready for shipment;

Fig. 2 is a perspective view showing a partially assembled container as it appears in condition preparatory for loading;

Fig. 3 is an exploded view of the container illustrated in Fig. 1, showing all of the parts disassembled;

Fig. 4 is a vertical cross-sectional view taken along line 4—4 of Fig. 1;

Fig. 5 is a plan view of the blank of one of the cover sections;

Fig. 6 is a plan view of the blank of one of the inner end caps; and

Fig. 7 is a plan view of the blank of one of the liner parts.

In general the present invention, in its preferred form, comprises two outer cover sections each in the form of one-half of a so-called slotted container, having side walls and end closure flaps, the two outer cover sections being of the same

2

size so that their open ends may seat one upon the other. The closed ends of the cover sections have inner end caps inserted therein which have marginal flaps extending inward of the cover sections. The central portion of the two assembled cover sections enclose a liner portion formed of a U-shaped part and a single panel part. The length of the liner parts is such that they will fit snugly in between the inwardly directed edges of the end caps when the cover sections are seated one upon the other. The longitudinal free edges of the U-shaped liner part are so dimensioned as to fit snugly against the inner face of the single panel liner part whereby the liner parts and the cover sections form a compact, sturdy multi-walled container.

Referring in detail to the drawings, the cover sections are referred to as a whole at 10 and 11. These cover sections are of paperboard and are preferably alike, each comprising four side walls 12, 13, 14 and 15 and a closure portion in the form of overlapping end flaps 16, 17, 18 and 19. The edges of walls 12 and 15 are secured together as by means of a strip of gummed tape 20 so that the cover sections may be transported in the form of flat tubes. When set up the cover sections will each have their end flaps folded over into overlapping position and sealed as by means of a strip of tape 21.

In order to reinforce the ends of the cover sections inner end caps, indicated generally at 22 and 23 are provided, preferably formed of paperboard, and each having a central panel 24, comparable in size to the interior of the end of the cover section, and having marginal flaps 25, 26, 27 and 28 preferably of equal length, adapted to be folded at right angles to the panel 24 and which are directed inwardly from the closed end of the cover section.

An open ended liner portion, preferably of paperboard, is provided formed of two parts indicated at 29 and 30. The part 29 is preferably of U-shape and comprises panels 31, 32 and 33 hingedly connected along crease lines. The panel 32 is of such size that it will fit snugly against corresponding walls of the cover sections such as walls 13, 13 when seated one upon the other, with panels 31 and 33 lying flat against aligned walls 12, 12 and aligned walls 14, 14.

The single panel part 30 is preferably of such size as to fit snugly at its edges in between the walls 12 and 14. The panels 31 and 33 of the U-shaped liner part are of such width that when the single panel liner part 30 is in place, the free edges of these panels, indicated at 34 and 35 will

fit snugly against the lateral edges of the inner face of the part 30.

The length of the liner portion, that is, its dimension parallel with the hinge lines of the panels, is such that when the cover sections 10 and 11 are assembled with their ends seated one upon the other, the upper and lower edges will snugly abut the inwardly directed marginal flaps on the inner end caps 24.

The liner portion and the inner end caps are preferably made from paperboard of uniform thickness so that the interior of the container will be smooth and without any inwardly projecting portions.

By referring to Figs. 3 and 4, it is apparent that ends are formed for the completely assembled container which are substantially of three thicknesses of paperboard throughout except for the relatively small space left between the end flaps 16 and 18—see Fig. 3. The remainder of the container is formed of smooth, double thickness walls without projecting edges either on the outside or inside.

The single panel liner part 30 is preferably formed with the fold line 38, which extends transversely of the part 30 so that it will be disposed somewhat above the edge of its adjacent cover section wall when the liner parts have been assembled with one cover section—see particularly Fig. 2.

In the manufacture of the container of the present invention the cover sections will be cut and creased and will have their ends secured together by tape so that they may be delivered to the user in the form of flat tubes. The other parts are cut and creased and delivered flat to the user. When it is desired to prepare the container for loading, the cover sections 10 and 11 will be expanded and the cover flaps of each will be folded over and suitably secured. The inner end cap 22 will then have its marginal flaps folded at right angles to the central panel and this end cap will be pushed down into the cover section 11 until the central panel comes into engagement with the inner closure flaps of the cover section, the marginal flaps being extended inwardly.

The three-panel liner part 29 may then conveniently be inserted in one of the cover sections, preferably with the panels 31 and 33 swung somewhat toward each other, after which the single panel liner part 30 is inserted, so that the fold line 38 will be disposed above the upper edge of the cover section, as indicated in Fig. 2. After the part 30 has been inserted the panels 31 and 33 will be swung outwardly so that their front edges 34 and 35 will begin to bear upon the inner face of the part 30 with increasing pressure until the panels 31 and 33 reach their final position against the adjacent side walls. At this point the panels 31 and 33 are snugly engaged with their edges in contact with the inner face of the part 30, thus firmly securing the liner parts within the cover section.

While the liner parts have been illustrated as being placed so that the edges of panels 30 and 31 meet at the corner of the cover section which is joined with tape it is obvious that the meeting edges of panels 30 and 31 may be disposed at an integral or untaped corner.

The container, as thus partly assembled is ready for loading. For convenience in placing articles in the lower part of the container the upper panel section of the liner part 30 is preferably folded downward. This enables the per-

son packing the container to reach in over the folded edge formed by hinge line 38, thereby making the container easy to pack with articles even though the container is of relatively large size.

When the load has been completely delivered to the partly assembled container, illustrated in Fig. 2, the upper panel of the liner part 30 is moved to vertical position after which the remaining cover section, with inner end cap 23 placed therein, is telescoped down over the upper ends of the liner portion. The edges of the upper cover section come to rest upon the corresponding edges of the lower cover section and at the same time, due to the dimensioning of the liner parts, the marginal flaps of the end cap 23 will come to rest upon the upper edges of the liner parts. In order to fill the lower part completely it is apparent that the articles packed in the liner portion will extend above the edges of the liner approximately a distance equal to the width of the marginal flaps on the end cap.

After the container has been filled and closed it may be sealed additionally in a well known manner with tape secured along the meeting edges of the cover sections, or metal bands or wire can be bound longitudinally around the assembled parts.

By reason of the size relationship of the liner parts and enclosing cover sections the liner may readily be inserted within one of the cover sections and by the fact that the free edges of the U-shaped liner part bear tightly against the face of the single-panel liner part to cause the liner parts to be in firm engagement with the cover section walls, a very strong and compact multi-wall shipping container is produced which will afford a high degree of protection for the contents for a given amount of paperboard employed. By the provision of end reinforcements in the form of inner end caps with relatively short marginal flaps additional strength is provided for the end portions of the assembled container with a minimum of waste in the production of the end caps.

The marginal flanges on the inner end cap panel 24 provide, in effect, inner angular reinforcing portions along each of the end edges of the container which, together with the outer cover section construction, makes a very strong composite structure enabling the corners of the container to withstand relatively great deflecting or crushing forces and making the container extremely well suited for carrying heavy loads and enduring rough handling without injury to the contents.

While the present description sets forth a preferred embodiment of the invention, certain changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A paperboard shipping container comprising a lower cover section rectangular in plan open at its upper end and having closure means at its lower end, a one-piece reinforcing end cap fitting tightly within the lower portion of said cover section comprising a panel coextensive with and seating on said closure means and side flaps of equal height extending upward from said panel

and of materially less height than one-half the height of said cover section and seating against the inner faces of the side walls thereof, a first one-piece liner portion substantially U-shaped in plan comprising three hingedly connected side panels seating against the inner faces of three of the side walls of said cover section, said panels of said liner portion seating at their lower edges on the upper edges of the corresponding three flaps of said cap and said liner portion extending upwardly a substantial distance beyond said cover section, a second liner portion comprising a one-piece rectangular panel of approximately the same width as and seating against the inner face of the fourth wall of said cover section, said second liner portion being of the same length as said first liner portion and seating at its lower edge on the upper edge of the fourth flap of said cap, an upper cover section rectangular in plan open at its lower end and having closure means at its upper end, and a one-piece reinforcing end cap fitting tightly within the upper portion of said upper cover section comprising a panel coextensive with and seating on said closure means thereof and side flaps of equal height extending downward from said panel and of materially less height than one-half the height of said upper cover section and seating against the inner faces of the side walls thereof, said upper cover section fitting over said liner portions with the lower edges of its side walls seating on the upper edges of the side walls of said lower cover section and the lower edges of the flaps of said upper cap seating on the upper edges of the panels of said liner portions, the two opposed panels of said first liner portion being wedged tightly between the side edge portions of said second liner portion and the wall of the respective cover sections opposite to said second liner portion effective for maintaining the latter and the opposite panel of said first liner portion in pressure contact with the corresponding side walls of said cover sections.

2. A paperboard shipping container comprising a lower cover section rectangular in plan open at its upper end and having closure means at its lower end, a one-piece reinforcing end cap fitting tightly within the lower portion of said cover section comprising a panel coextensive with and seating on said closure means and side flaps extending upward from said panel and seating against the inner faces of the side walls of said

cover section, a first one piece liner portion substantially U-shaped in plan comprising three hingedly connected panels seating against the inner faces of three of the side walls of said cover section and seating at their lower edges on the upper edges of the corresponding three flaps of said cap, said liner portion extending upwardly a substantial distance beyond said cover section, a second liner portion comprising a one-piece rectangular panel of approximately the same width as and seating against the inner face of the fourth wall of said cover section, said second liner portion seating at its lower edge on the upper edge of the fourth flap of said cap, an upper cover section rectangular in plan open at its lower end and having closure means at its upper end, and a one-piece reinforcing end cap fitting tightly within the upper portion of said upper cover section comprising a panel coextensive with and seating on said closure means thereof and side flaps extending downward from said panel and seating against the inner faces of the side walls of said upper cover section, said upper cover section fitting over said liner portions with the lower edges of its side walls seating on the upper edges of the side walls of said lower cover section and the lower edges of the flaps of said upper cap seating on the upper edges of the panels of said liner portions, the two opposed panels of said first liner portion being wedged tightly between the side edge portions of said second liner portion and the wall of the respective cover sections opposite to said second liner portion effective for maintaining the latter and the opposite panel of said first liner portion in pressure contact with the corresponding side walls of said cover sections.

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