March 9, 1954 J. P. H. LEAVITT 2,671,601

SHIPPING CONTAINER

Filed Oct. 25, 1949 2 Sheets-Sheet 1

Fig. 3

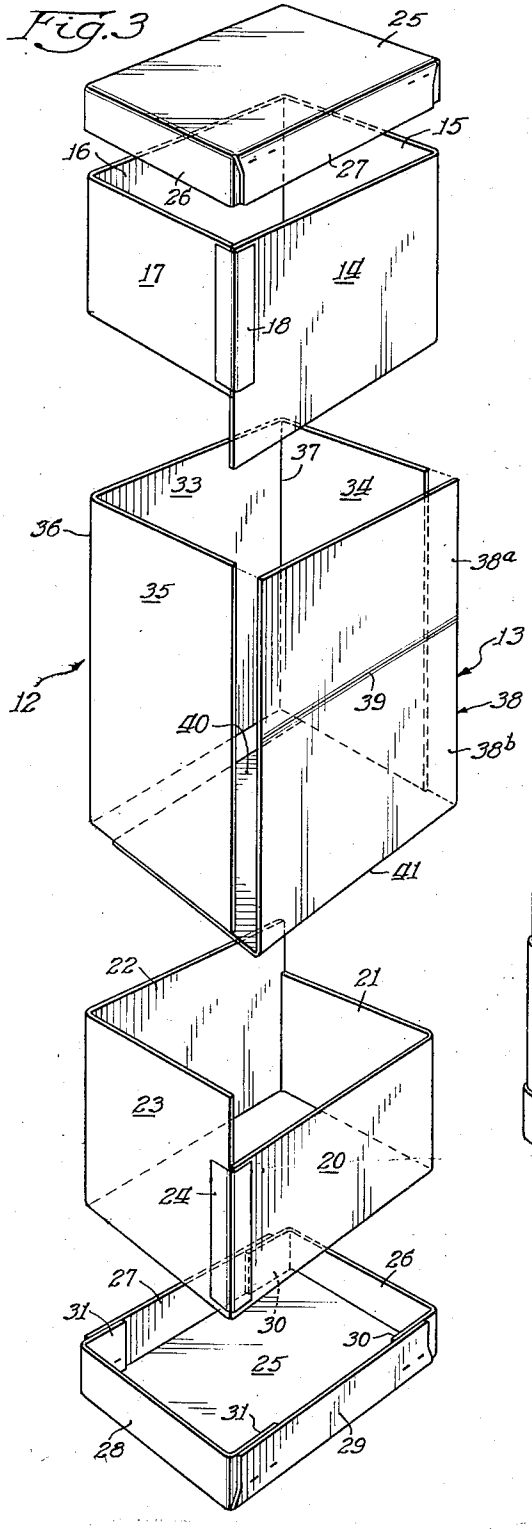


Fig. 1

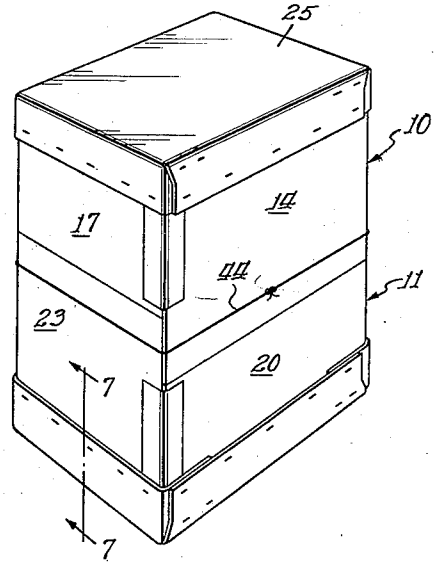
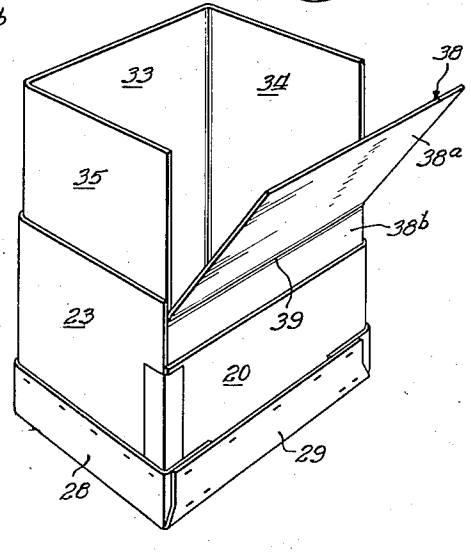


Fig. 2



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March 9, 1954 J. P. H. LEAVITT 2,671,601

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Filed Oct. 25, 1949 2 Sheets-Sheet 2

Fig. 4

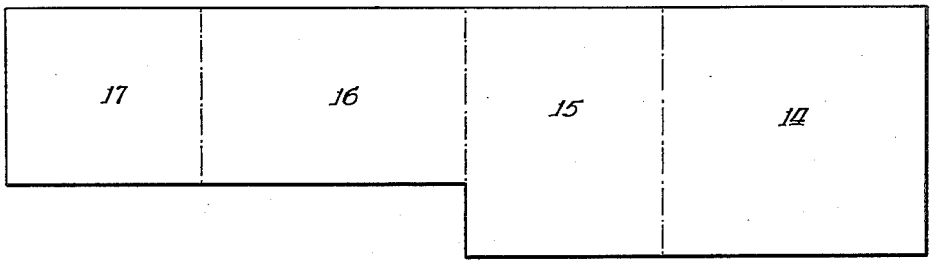


Fig. 5

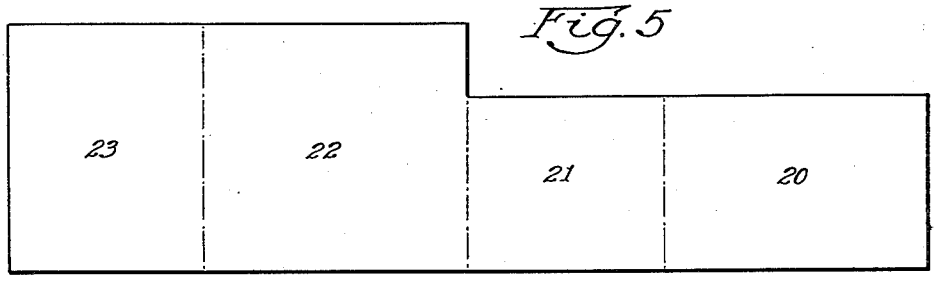


Fig. 6

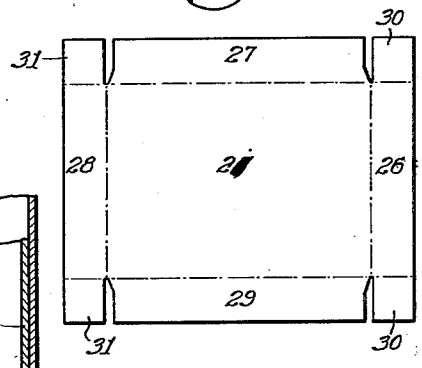
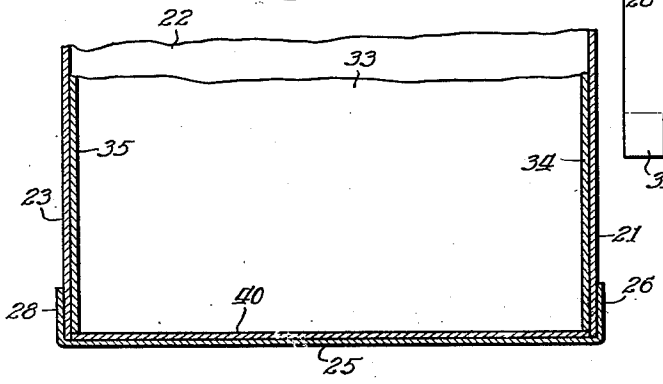


Fig. 7



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SHIPPING CONTAINER

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1 Claim. (Cl. 229—23)

1

The present invention relates to shipping containers and more particularly to a type of paperboard shipping container of multi-wall construction in which outer container parts are telescopically related to inner liner parts.

One object of the invention is to provide a paperboard container which is particularly effective for manufacture in large sizes and at the same time can be relatively easily loaded with articles, such as textiles and similar goods, or emptied without requiring difficult reaching on the part of persons using the container.

Another object is to provide a multi-wall paperboard container construction which may be partially assembled and prepared to receive its contents by relatively few and simple manipulations, whereby an inner liner element is brought into snug fitting relationship with an outer container, the complete contents being loaded into the liner portion of the container while held in load-receiving position by a section of the outer container, after which the assembly of the complete container is easily effected by telescoping an additional outer container section over the upper portion of the filled liner.

A further object of the invention is to provide outer container sections adapted to fit telescopically over inner liner parts, the liner parts being brought into end to end seating arrangement along a plurality of separate lines which are out of alignment with each other so as to avoid having a line of juncture which extends in a straight line around the container, thereby providing cover sections that will telescope readily over a liner portion and providing for increased strength of container for a given strength of container board.

A further object of the invention is to provide a multi-wall container comprising a liner with telescoping outer parts that can be made up in a large size and at the same time provide for easy access to the interior by having at least one wall of the liner partly displaceable outwardly over the upper edge of a relatively low outer container wall.

Other objects are generally to improve and simplify paperboard containers of the type above described, making them easier as well as more economical to manufacture, assemble and load for a given area and strength of paperboard utilized.

Additional and more specific objects and advantages will be apparent in the following specification and in the claim appended thereto.

In the drawings:

Fig. 1 is a perspective view of a container constructed in accordance with a preferred form of the invention, illustrating it as closed and banded and ready for delivery to a transporting vehicle;

2

Fig. 2 is a perspective view of the container substantially as it appears preparatory to being loaded;

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

Figs. 4 and 5 are plan views, respectively, of the blanks for the body part of the upper and lower cover sections;

Fig. 6 is a plan view of the blank for an end closure cap; and

Fig. 7 is a fragmentary sectional view taken along line 7—7 of Fig. 1, looking in the direction of the arrows, illustrating the manner of assembling the liner parts with respect to the lower cover section.

In general the preferred form of the invention comprises a liner portion open at its ends which are receivable into outer telescoping cover sections, the cover sections each having two longer walls and two shorter walls, such pairs of walls being reversely dimensioned to provide composite outer walls of uniform length in the completed container.

Referring particularly to the drawings, the outer container parts or cover sections are indicated generally at 10 and 11, and the principal elements of the liner portion are indicated generally at 12 and 13.

The outer cover sections are preferably made from paperboard blanks of similar form, in that each cover section has a short wall or walls where the companion section has a long wall or walls so that the end edges of the two cover sections will seat one upon the other to provide a uniform rectangular container in completed form. The container, in the present instance, is illustrated as being other than square in cross section; that is, two opposite vertical walls are wider than the others. In this form the finished blank of one cover section differs from the blank of the other cover section but the two blanks can be cut without waste from sheets of proper size, as is apparent by reference to Figs. 4 and 5.

In Fig. 4, illustrating the blank for the upper cover section 10, the main body portion of the cover section preferably comprises a front wall 14 and side wall 15 of equal length, rear wall 16 and side wall 17 equal in length to each other but shorter than walls 14 and 15. The free edges of the walls 14 and 17 at the ends of the blank are hingedly secured together as by means of a strip of tape 18.

The blank for the lower cover section 11, as

illustrated in Fig. 5, preferably comprises a front wall 20 and a side wall 21 of equal length, rear wall 22 and side wall 23 equal in length to each other but longer than walls 20 and 21. The free edges of the walls 20 and 23 at the ends of the blank are hingedly secured together by a strip of tape 24.

By this construction of the two cover sections, as illustrated in Figs. 1 and 2, the two longer walls of the upper cover section will seat in edge to edge contact with the two shorter walls of the lower cover section, and the shorter walls of the upper cover section will seat against the longer walls of the lower cover section to provide composite side walls of uniform length in the completed container.

The end closure caps for the upper and lower cover sections are preferably identical and a description of one will suffice. The blank for the closure cap (see Fig. 6) provides a main panel 25 and marginal flaps or flanges 26, 27, 28 and 29. These flaps are preferably secured together at their corners by means of short corner flaps 30, 30 and 31, 31 carried on the ends of the respective marginal flaps 26 and 28. The closure caps are suitably secured across the ends of the cover sections as by means of staples as indicated in Fig. 1.

The complete liner comprising the separate parts 12 and 13 is adapted to be firmly inserted in one of the cover sections, preferably section 11, as illustrated in Fig. 2, so that the contents of the container may be loaded into the liner while held in place by the lower cover section. For this purpose the part 12 is constructed of U-shape in horizontal cross section and comprises interconnected panels 33, 34 and 35 hinged together along crease lines 36 and 37.

The liner part 13 preferably comprises a panel 38 adapted to fit snugly against the interior of a composite wall of the completed container, this being preferably the aligned wall panels 14 and 20—see Fig. 1. An upper portion 38*a* of the panel 38 is defined from the lower portion 38*b* by a transverse crease line 39 for a purpose presently to be explained. The vertical side edges of the panel 38, when in place within the assembled cover sections preferably bear snugly against the inner faces of the cover section walls which adjoin walls 14 and 20—that is, walls 21 and 23 of the lower cover section and walls 15 and 17 of the upper cover section.

The U-shaped liner part 12 is so dimensioned that, when folded as illustrated in Fig. 3, the corners of the folded liner part adjacent the hinge lines 36 and 37 will engage firmly within the adjacent corners of the upper and lower cover sections. The panels 34 and 35 are dimensioned so that their free vertical edges will bear firmly against the inner face of the panel 38 of liner part 13 at the same time that the panels 34 and 35 are disposed flat against their corresponding composite container walls in the assembled container.

The liner part 13 preferably includes an additional panel portion 40 hingedly connected to the portion 38 along fold line 41. The panel portion 40 is adapted to be folded at right angles to the portion 38 so that it will lie flat against the closure cap of the lower cover section. This panel portion 40 also is preferably so dimensioned that, when the outer face of panel portion 38 is resting flat against the wall 20, the three free edges of the panel 40 will firmly engage the lower inner surfaces of the walls 21, 22 and 23. It is thus apparent that the U-shaped liner part 12 will have its lower edges resting upon the upper surface of panel part 40 in the assembled container.

The length of each of the panel parts 12 and 13 is such that when such parts are brought into the relationship just described and the two cover sections brought into position in which their edges seat one upon the other, the upper edges of the liner parts 12 and 13 will bear against the inner surface of panel 25 of the closure cap for the upper cover section 10.

As shown in Fig. 2, the crease line between panel portions 38*a* and 38*b* is preferably impressed so that when the liner parts are assembled within the lower cover section the line 39 will be below the plane defined by the upper edges of the lower cover section walls 22 and 23. If the invention is embodied in a relatively large size container, it is desirable to locate crease line 39 relatively closely above the upper edge of the wall 20. This arrangement facilitates loading the contents into the container or unloading contents therefrom by relatively small sized persons without undue strain being encountered in reaching into the container to place or remove articles.

The container parts are preferably designed for shipment flat to the user, the body portions of the cover sections being in the form of flat tubes with taped joints. The user in ordinary practice will staple the flanges of the outer end caps and also will staple the flanges of such caps to the ends of the cover sections.

When it is desired to load articles into the container the lower cover section 11 will be placed on a flat surface with its open end upward and the single panel liner part 13 will preferably be inserted with the panel 40 disposed flat against the interior surface of the end cap and with the panel 38 flat against wall 20. In this position the vertical edges of the panel 38 bear firmly against the interior surfaces of walls 21 and 23 adjacent the corners of the cover section. The liner part 12 is next inserted, preferably with panels 34 and 35 swung somewhat inward toward each other. When the lower edge portions of the liner part come to rest against the panel 40 the panels 34 and 35 are swung outward until they come to rest flatwise against the interior surfaces of walls 21 and 23. As the edges of panels 34 and 35 move outward they bear with increasing firmness against the inner surface of the panel 38, and, in final position, the liner parts are caused to fit relatively snugly against the interior of the lower cover section walls, thus making a firm, sturdy, multi-wall construction.

In the process of loading the partially assembled container the upper panel portion 38*a* may be conveniently swung outward and downward to enable the packer to reach within the bottom part of the container without undue strain. Due to the wall 20 being one of the shorter walls of the cover section the upper edge portion of the liner part 38, formed by swinging the portion 38*a* downward, will be disposed along a conveniently low line thus enabling large size containers to be loaded and unloaded with relative ease.

When the liner portion has been completely filled with articles the upper cover section will be telescoped over the upper end of the liner portion and moved downward until the corresponding free edges of each of the cover section walls are seated one against the other, as illustrated in Fig. 1. When the cover sections are in

this position the upper ends of the liner portion will be in contact with the inner surface of the upper end cap of the cover section.

Due to the construction in which the front wall 14 and one side wall 15 of the upper cover section 10 extend down below the edge of the walls 16 and 17, telescoping of the cover section over the top of the liner portion is facilitated. The cover section is first moved to a position in which the walls 14 and 15 bear closely against the liner panels 34 and 38. This causes the panel part 38a of panel 38 to come to rest against the edges of the walls 34 and 35. Thereafter, further downward movement of the upper cover section will cause the edges of walls 16 and 17 to slip easily past the edges of the liner portion panels 33 and 35.

The completed container is preferably secured by a binding element 44, such as a steel band or wire, which extends around the mid portion of the container parallel with the end edges of the cover sections. By securing the binding element in this manner it will engage the longer walls of each cover section, thereby with a single strand of binding element tending to hold both sections against relative displacement.

If desired, additional strips of gummed tape can be employed at corners where the longer walls of the separate cover sections are in partial edge to edge contact. Each pair of meeting edges may, if desired, also be secured with tape in a well known manner.

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 claim rather than to the foregoing description to indicate the scope of the invention.

I claim:

In a paperboard shipping container, a lower four-panel cover section rectangular in cross-section, an end closure for one end of the cover section, a first U-shaped liner part having three vertically extending hingedly interconnecting panels fitting snugly against the interior surfaces of three adjacent vertical walls of the cover section, and extending thereabove, a second liner part separate from said first liner part and comprising a first panel portion coextensive with the fourth wall of the cover section and extending thereabove, a second panel portion disposed at right angles to the first panel portion and coextensive with the end closure, and a third panel portion hingedly secured to the upper edge of the first panel portion and extending upwardly therefrom and serving to close the open upper regions of the U-shape liner part by bridging the distance between the parallel walls thereof, a second cover section telescopically received over the upper end of the structure formed by said liner parts and snugly fitting therearound and with its lower edges fitting upon the upper edges of the other cover section, two adjoining walls of one cover section being secured together and of greater length than the other two adjoining walls, the lengths of the corresponding walls of the other cover section being reversely dimensioned whereby walls of greater length will register with walls of lesser length to receive composite walls of equal length in the assembled cover sections.

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