Dec. 18, 1951 S. P. BELSINGER 2,578,775

HEAVY-DUTY FIBER CONTAINER

Filed June 17, 1949 2 SHEETS—SHEET 1

FIG. 1

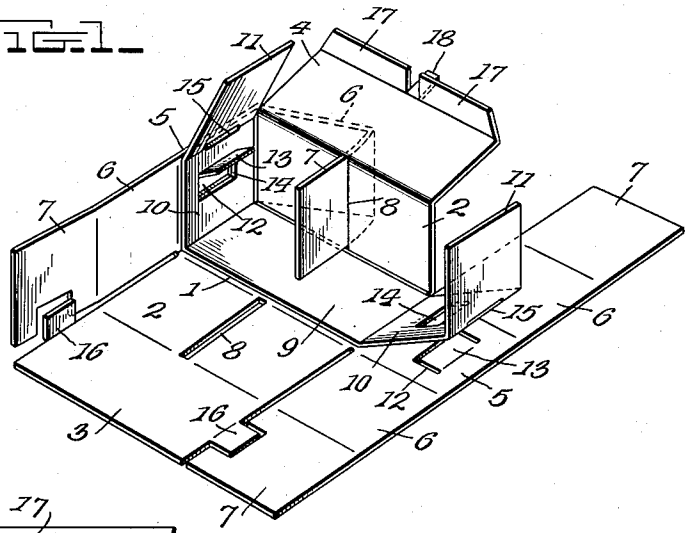
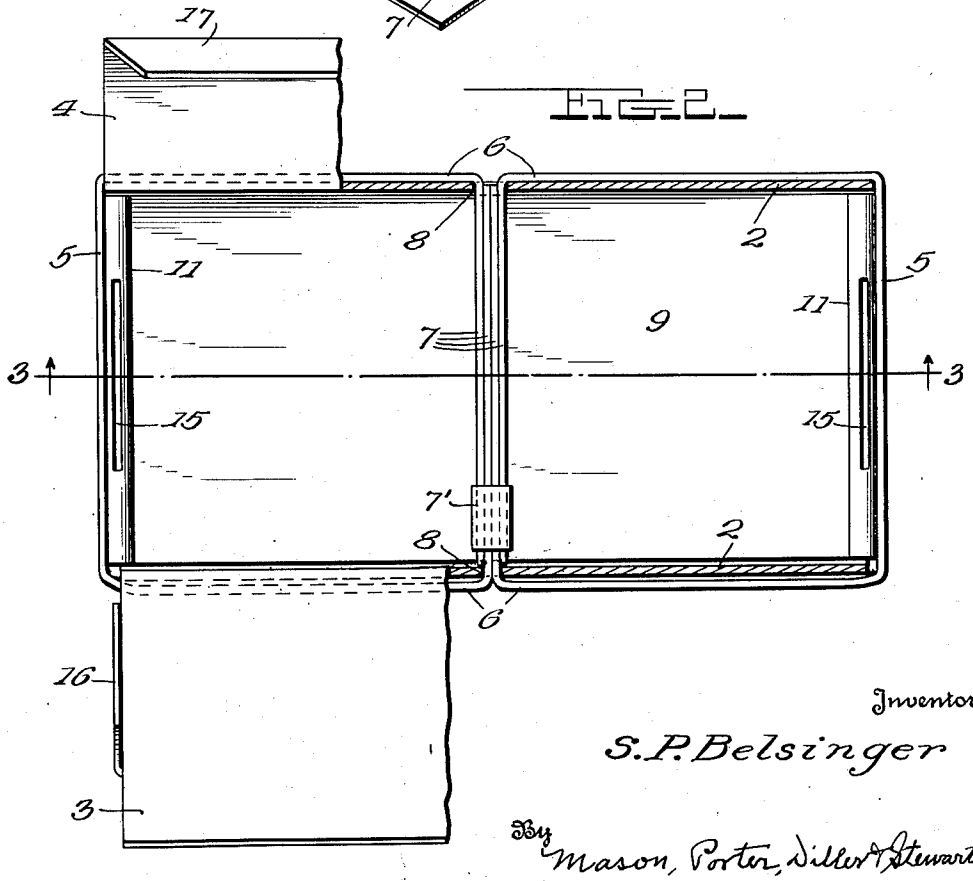


FIG. 2



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FIG. 3

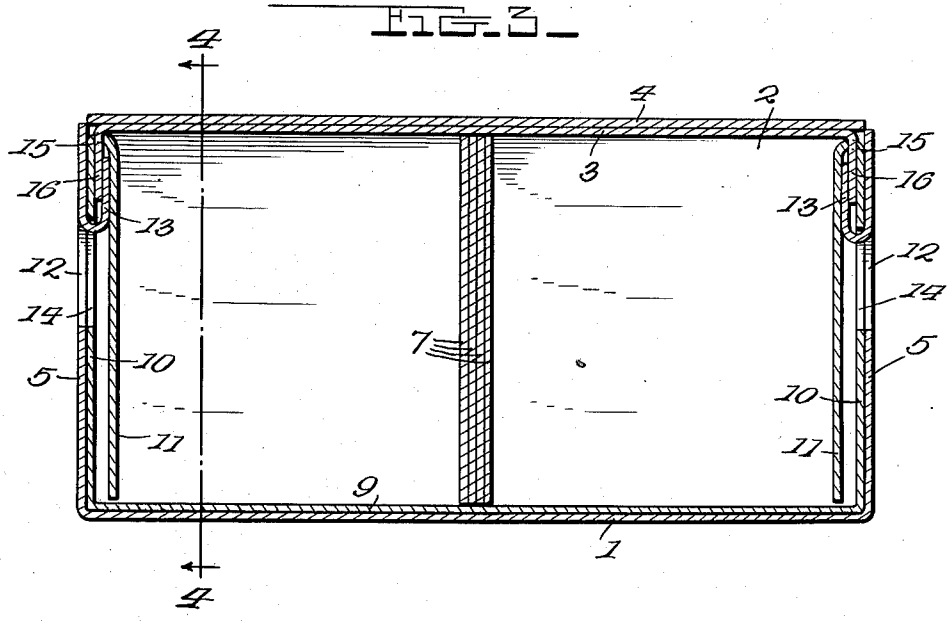
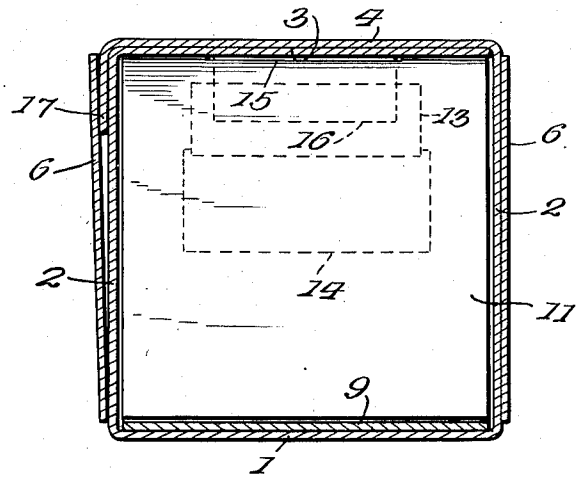


FIG. 4



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UNITED STATES PATENT OFFICE

2,578,775

HEAVY-DUTY FIBER CONTAINER

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Application June 17, 1949, Serial No. 99,817

1 Claim. (Cl. 229—23)

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The invention relates to new and useful improvements in a heavy duty fiber container.

In my copending application, Serial No. 43,487, filed August 10, 1948, there is shown and described a heavy duty fiber container made from a single blank by cutting and scoring with little or no waste material. The bottom has formed integral therewith side and end members, and the end members have formed integral therewith half side members carrying partition members. The side members are also provided with integral cover members. When the container is assembled ready for use the side walls, the partitions and the cover are all of double thickness. The bottom and end walls are of single thickness. This produces a container which is sufficiently strong and durable for general use. It has been found, however, that when the heavy duty container is used for packing citrus fruits it is preferable to reenforce the bottom and end walls and also to provide a supporting means for the ends of the inner cover member.

An object of the present invention is to provide a heavy duty container of the above construction with reenforcing members for the bottom and end walls of the container.

A further object of the invention is to provide a container of the above type wherein the reenforcing member for the bottom extends from side to side and end to end on the inner face of the bottom and lies beneath the partition, and wherein the end wall reenforcing members are formed integral with the bottom wall reenforcing member.

A still further object of the invention is to provide a container of the above type wherein each end wall reenforcement includes two members substantially conforming in shape to the inner face of the end member, one of which is integral with the bottom reenforcing member and the other of which is integral with the upper end of the first-named reenforcing member.

A still further object of the invention is to provide a container of the above type, wherein slots are formed in the fold part between the inner and outer reenforcing members at the ends of the container, which slots are adapted to receive tabs projecting downwardly from the inner cover member.

A still further object of the invention is to provide a container of the above type wherein hand holes are provided in the end members and the outer reenforcing members therefor only, so that the contents of the container is protected from contact by the hand of the operator inserted in the hand hole.

These and other objects will in part be obvious, and will in part be hereinafter more fully disclosed.

In the drawings:

Figure 1 is a view in perspective of a partly assembled fiber container embodying my improvements;

Figure 2 is a view partly in plan and partly in section with a cover member in open position;

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Figure 3 is a sectional view on the line 3—3 of Figure 2;

Figure 4 is a sectional view on the line 4—4 of Figure 3;

What might be called the main portion of my heavy duty fiber container is made from a single rectangular blank which is cut and scored so as to provide a bottom member having sides formed integral therewith.

Each side is provided with a cover member. The end members of the container are formed integral with the bottom member and each end member is provided with half side members and each half side member is provided with a partition. When the main portion of the box is in assembled position it includes side walls which are of double thickness and partition members which may be of a plurality of thicknesses. The cover is also of double thickness. Such a construction of box is shown, described and claimed in my copending application supra.

The present invention has particularly to do with a reenforcing of the bottom and end walls of the heavy duty fiber container referred to. This is accomplished by cutting and scoring a blank so as to provide a reenforcing member for the bottom wall of the container which is adapted to extend from end to end and side to side thereof. This bottom member when inserted lies beneath the partitions which hold it in snug contact with the inner face of the bottom wall. The end walls are reenforced by members which are formed integrally with the bottom wall reenforcing member and are preferably constructed so as to provide end walls of triple thickness.

Each end wall is cut so as to provide an opening leaving a flap which is integral therewith along the upper side of the opening. The adjacent reenforcing wall is also provided with an opening and the flap is folded through the opening in this adjacent reenforcing wall and laid back against the inner face thereof so that the inner reenforcing wall will cover the flap and the opening and prevent the hand from contacting with the contents of the container when inserted through the opening for lifting the container. The improvements will be better understood by a detailed description of the illustrated embodiment thereof.

The main container includes a bottom 1 having formed integral therewith side members 2—2, and integral with one of the side members at the upper edge thereof is a cover member 3, and integral with the other side member is a cover member 4.

The bottom member 1 is also provided at each end thereof with integral end walls 5—5. These end walls 5—5 are provided at their side edges with integral half side members 6—6, and each half side member has integrally formed therewith a partition member 7—7.

In the present embodiment of the invention the side walls are provided with slots 8—8 through which these partition members 7—7 may be in-

serted. The partition members are preferably dimensioned so as to extend all the way across the interior of the container and they may be held in intimate contact by a strip of adhesive material indicated at 7' in Figure 2. This forms a very strong four-ply partition member.

It is noted that these half side members 6—6 provide side walls of double thickness. The present improvement is directed more particularly to the means for reenforcing the single wall thickness of the bottom and the single wall thickness of the end members. A blank of fiber board is cut and scored so as to provide a bottom member 9 which extends from side to side and end to end of the inner face of the bottom wall of the container. At each end of the bottom reenforcing member 9 is a reenforcing member 10 shaped to substantially conform to the inner face of the end wall 5 of the container. This reenforcing member 10 extends upwardly along the inner face of the end member 5 when the container is assembled ready for use. There is a second reenforcing member 11 formed integral with the upper end of the reenforcing member 10. It is likewise shaped to conform to the inner face of the end wall 5 and is folded down against the inner face of the reenforcing member 10 when the container is assembled for use. When the container is assembled with these reenforcing members in place the bottom wall will be of double thickness and the end walls of triple thickness. This greatly strengthens the container. Each end wall is provided with a hand hold 12 by cutting the end wall so as to leave a flap 13 integral with the upper side edge of the hole. The reenforcing member 10 is provided with an opening 14 similar in shape to the opening 12 and this flap is folded through the opening and against the inner face of the reenforcing member 10. This provides a hand hole which has a smooth double thickness upper edge portion with which the hand contacts in lifting the container.

After the flap 13 has been turned against the inner face of the reenforcing member 10 then the reenforcing member 11 of each end wall is folded down so as to cover the flap 13 and also cover the hand holds 12 and 14. When the hand of the operator is inserted through the opening for lifting the container, this inner reenforcing member 11 will protect the contents of the container from being contacted by the hand of the operator.

The folded portion between the reenforcing members 10 and 11 at the central portion thereof is cut away to form an opening 15. The inner cover member 3 is provided with integral flaps 16 which are cut from one of the partition members. This flap, when the inner cover is in closed position, is adapted to extend down through the opening 15. This provides a support for the cover member 3 at the ends thereof. The cover member 3 intermediate its ends will rest on the partitions 7—7 and thus it is that the cover for the container is very strongly supported so that when packed the container can be stored on another.

The cover member 4 is preferably provided with flaps 17—17, which, when the cover is in closed position, will extend down between the half side members 6 and the side walls 2 of the container. A portion 18 is cut from the flap 17, but left integral with the cover member 14 so as to provide a tab which may be grasped for opening the container.

When the improved container is reenforced in the manner above described, the cover, the side walls, and the bottom walls are all of double thickness and the end walls are of triple thickness. Likewise, the partitions consist of a plurality of walls and the entire structure is very strong, durable and well suited for any and all purposes, and in particular for the packaging and shipping of citrus fruits. It will be understood that, inasmuch as the entire container is made from fiber blanks by cutting, scoring and folding the same into assembled position, it may be shipped in flat form and assembled for use without the use of stapling machines or the like.

It is obvious that minor changes in the details of construction and arrangement of parts may be made without departing from the spirit of the invention as set forth in the appended claim.

I claim:

A foldable heavy duty fiber container comprising a bottom, side, and end walls formed integrally therewith, each side wall having a slot midway the ends thereof and extending upwardly from the bottom wall to the top of the side wall, half side wall members formed integrally with the sides of the end walls and extending along the outer faces of the first named side walls and from the bottom to the top thereof for reenforcing the same, partition walls formed integrally with the ends of the half side walls and adapted to extend through the slots in the side walls into overlapped relation in the body of the container, said partitions extending from the bottom to the top of the container for forming two substantially identical cells of equal capacity, means for joining said partition walls into a rigid structure connecting the rear wall and side wall of the container, a cover member formed integrally with the rear side wall, and a reinforcing bottom panel extending from end to end and side to side of the bottom wall and disposed beneath said partition walls, said panel at the ends thereof having integral reenforcing end walls extending upwardly to the upper end thereof, said reenforcing end walls having formed integrally with the upper end thereof, a third reenforcing end wall extending downwardly to the bottom of the container, each end wall having a rectangular hand hold and each adjacent reenforcing end wall having a similarly shaped hand hold, the opening in the end wall being cut so as to provide a flap integral with the upper edge of the hand hold and adapted to be folded through the opening in the adjacent reenforcing wall so as to lie flat against the inner face thereof, the inner reenforcing end wall being adapted to cover the hand hold and protect the contents of the container from engagement with the hand of the operator.

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