

Jan. 6, 1970

B. ROHRBACH

3,487,913

CONTAINER

Filed April 1, 1968

2 Sheets-Sheet 1

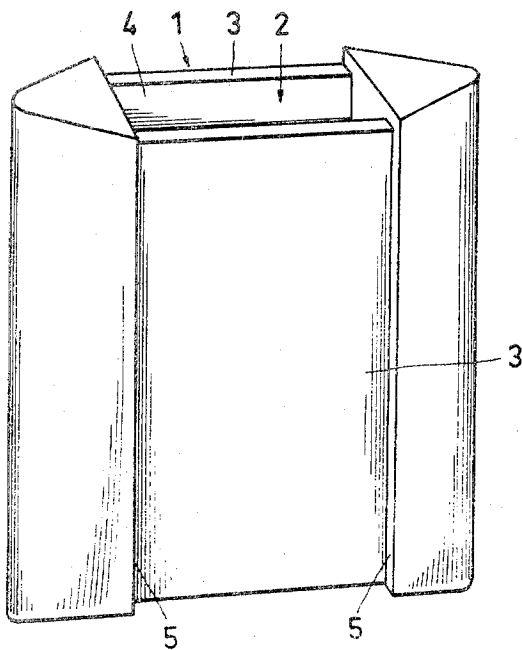


Fig. 1

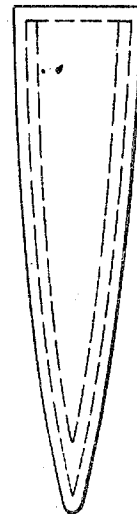


Fig. 2

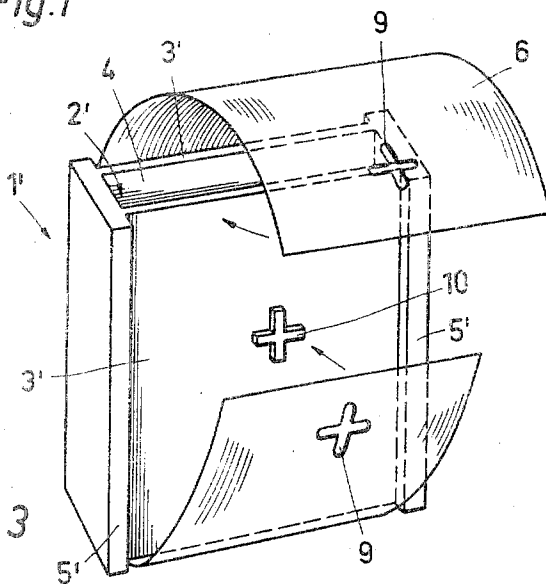


Fig. 3

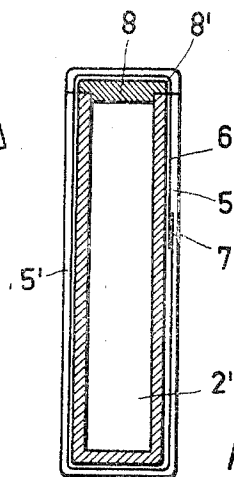


Fig. 4

Jan. 6, 1970

B. ROHRBACH

3,487,913

CONTAINER

Filed April 1, 1968

2 Sheets-Sheet 2

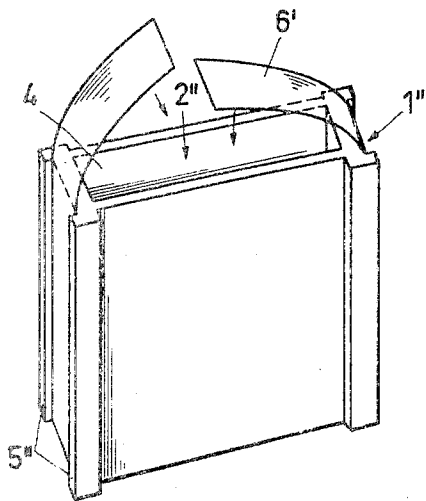


Fig. 5

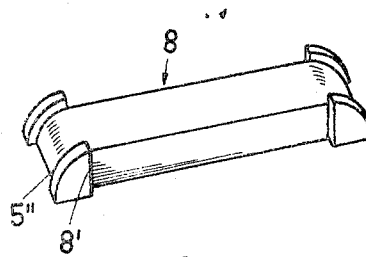


Fig. 6

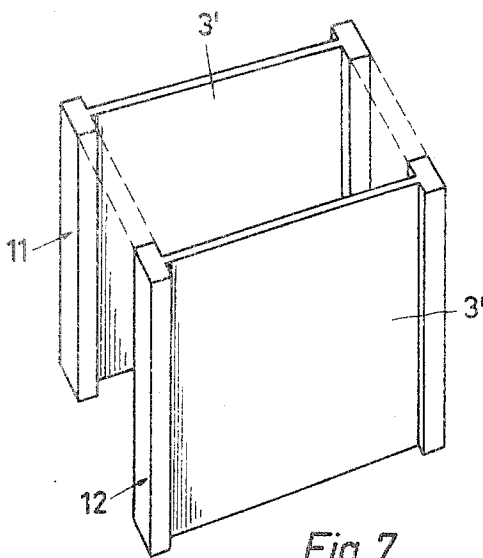


Fig. 7

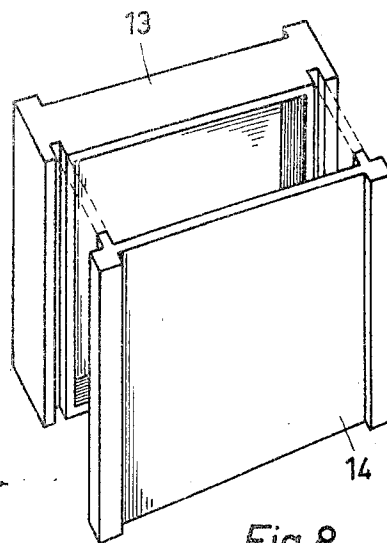


Fig. 8

1

3,487,913

CONTAINER

Bernd Rohrbach, Kettenhofweg 80,
Frankfurt am Main, Germany

Filed Apr. 1, 1968, Ser. No. 717,719

Claims priority, application Germany, Apr. 3, 1967,

R 45,664

Int. Cl. A45c 11/00; B65d 7/00, 33/16

U.S. Cl. 206-1

10 Claims

ABSTRACT OF THE DISCLOSURE

A light but shape-retaining shipping container comprises two side walls defining a chamber therebetween for holding an object to be shipped. An access opening to the chamber is defined between the side walls, and rims project outwardly from the lateral edges of the side walls perpendicularly to the access opening to hold and guide therebetween a flexible closure band which extends about the side walls and opening.

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to containers for shipping such objects as, for instance, books, valuable papers, drawing, photographs and the like, which are to be protected against bending, or frangible articles.

It is a primary object of this invention to provide a shipping container which is very light and, therefore, saves mailing costs, while at the same time being shape-retaining so as to protect the object shipped therein fully.

It is another object of the invention to provide a shipping container of this type with closure means which securely seal the same, and which may be re-used many times.

The above and other objects and advantages are accomplished in accordance with the invention by making the container of a light and shape-retaining plastic material, the container comprising two side walls defining a chamber therebetween and having respective edges along one end of the side walls defining an opening providing access to the chamber. Rims project outwardly from the lateral edges of the side walls perpendicularly to the access opening, and a flexible closure band extends over the opening and the side walls between the rims. The closure band has overlapping ends adapted to be attached to each other.

The container is preferably made of a rigid foamed plastic, such as polystyrene foam. Also, the overlapping ends of the closure band may carry a pressure-sensitive adhesive for attaching the ends to each other. It may be found desirable to position the band in relation to the side walls by providing cooperating latch means on one of the container side walls and on the overlapping closure band ends, such as a notch star on the side wall and matching cutouts in the closure band ends.

If desired, a cover may be mounted over the opening, which also has outwardly projecting lateral rims at its corners, the cover rims being aligned with the rims on the side walls. Furthermore, additional rims may project outwardly from the lateral edges of the side walls and from the corners of the cover, if provided, the additional rims extending in a direction perpendicular to the first-named rims. An additional flexible closure band may then extend over the opening and/or the cover transversely of the first-named band.

BRIEF DESCRIPTION OF DRAWING

The above and other objects, advantages and features of the present invention will become more apparent in

2

the following detailed description of certain now preferred embodiments thereof, taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a perspective view of one embodiment of the shipping container according to this invention;

FIG. 2 is a side view of the container of FIG. 1;

FIG. 3 is a perspective view of another embodiment, also showing the closure band;

FIG. 4 is a longitudinal section taken perpendicularly to the side walls of the container of FIG. 3 but including a cover;

FIG. 5 is a perspective view of a modification of the embodiment of FIG. 3;

FIG. 6 is a perspective view of a cover as used in the embodiment of FIG. 4;

FIG. 7 is a perspective view of yet another embodiment; and

FIG. 8 is a view similar to that of FIG. 7 but showing a modification of that embodiment.

DETAILED DESCRIPTION

Referring now to the drawing, wherein like reference numerals designate like parts of like function in all figures, FIGS. 1 and 2 show one embodiment of the shipping container, the closure band being omitted for a clearer showing of the container and being positioned in the same manner as shown in FIGS. 3 and 4.

The container 1 of FIGS. 1 and 2 comprises two like side walls 3, 3 defining a chamber 2 therebetween and having respective edges along one end of the side walls defining an opening 4 providing access to the chamber 2 through which an object to be shipped may be placed into the container chamber. As best seen in FIG. 2, the two side walls are tapered towards each other and integrally united at their bottom so that the chamber 2 forms a pocket, the profile of the container being wedge-shaped. The lateral ends of the chamber 2 are closed by wedge-shaped end walls which form rims 5 outwardly projecting from the lateral edges of the side walls 3, 3 perpendicularly to the opening 4.

In the embodiment of FIGS. 3 and 4, the container 11 has a rectangular cross section in a plane perpendicular to the opening 4, i.e. the two side walls 3', 3' are substantially parallel to each other and the rims 5' are formed by end walls perpendicular to the side walls, an integral bottom wall (see FIG. 4) closing off the end of chamber 2' opposite to access opening 4. A flexible closure band 6 extends over the opening 4 and the side walls 3', 3' between the laterally extending rims 5', the recess between the rims serving as a secure seat for the closure band and the rims constituting a guide for the band.

To position the band in relation to the side walls, cooperating latch means 9, 10 are provided on one side wall and on the overlapping ends of the closure band 6 which are adapted to be attached to each other. The illustrated latch means is constituted by a notched star 10 on a side wall and cooperating star-shaped cut-outs in the overlapping closure band ends. In this preferred embodiment, the band is positioned about the container by first attaching one end of the band to the notched star 10 by its star-shaped cut-out 9, lapping the band about the container and then attaching the cut-out 9 in the other band carry a pressure-sensitive adhesive so that one end need only be pressed against the other to attach the two ends together and thus to seal the container. The shipping address may have been written on to band before its attachment at a point overlying one of the side walls, or a shipping label may be attached to such a point after the closure band has been attached.

3

The shipping container 1" of FIG. 5 is in all respects similar to that of FIG. 3, except that it comprises additional rims 5" projecting from the lateral edges of the side walls in a direction perpendicular to the rims 5', and an additional flexible closure band 6' extends over the opening giving access to chamber 2" transversely of the closure band 6 (which has not been shown in this FIG. 5 for sake of clarity). The overlapping ends of closure band 6' need not be attached together over the opening and, as a matter of fact, will preferably be attached along one of the end walls or along the bottom wall unless a cover 8 is used, as will now be described.

FIG. 6 shows a cover 8 which may be placed over the access opening in a manner indicated in FIG. 4. The cover also has lateral rims 8' which project outwardly from the corners of the cover and which are aligned with the rims of the side walls. The closure band or bands then extend over the cover and between the cover rims.

While the side walls of the containers of the above-described embodiments are fixedly connected to each other so that the container forms an integral unit, it is also possible, as shown in FIGS. 7 and 8, to constitute the two side walls 3", 3" as detached container halves 11 and 12. After the object to be shipped is placed into the chamber defined by the two halves, the two halves are unitized by placing a closure band or bands about the two side walls in the manner shown in FIGS. 3-5.

In the modification shown in FIG. 8, the container half 13 defines a recess therein constituting the chamber for the object, and the other container half 14 constitutes a cover over the recess, the two halves again being unitized by a closure band or bands. The two halves are readily fitted together by providing a mating tongue-and-groove connection between the two halves.

To reduce shipping costs, the container should be of a very light material and yet shape-retaining in order to protect the object shipped therein, such as books, magazines, photographs and the like. A very useful material for this purpose is a rigid foamed plastic, such as polystyrene foam. Such material may be reused frequently, in addition to assuring full protection to the object to be shipped and low transportation costs due to its light weight. When used again, it is merely necessary to replace the closure band.

Of course, the configuration of the container may be changed to any suitable shape adapted to the size and configuration of the object to be shipped. Also, if desired, the two side walls of the container may define top and bottom openings, both of which are closed by a removable cover. Also, any shape-retaining plastic may be used for the shipping container of this invention and this plastic material may be fully rigid or slightly resilient. All of these and other modifications and variations may occur to those skilled in the art, particularly after benefiting from the present teaching, without departing from the scope of this invention.

I claim:

1. A shipping container for books, magazines, photographs and other similar articles which require protection during shipment, said container being formed from shape-retaining light plastic material such as polystyrene or the like, and comprising a pair of side walls defining therebetween an article receiving chamber with an open top, a pair of end walls connecting together end edges of said

4

side walls, said side walls being substantially vertically coextensive with said end walls so that said chamber is completely closed at the sides thereof, said end walls projecting laterally outwardly beyond the side walls to provide perpendicular rims at the junction of the side walls and end walls, a flexible band extending completely around said side walls and closing the open top of said chamber, said band being seated between and having its side edges engaged by said rims, and means for connecting overlapped end portions of said band together.

2. The container as defined in claim 1 wherein said connecting means comprise pressure-sensitive adhesive provided on the overlapped end portions of said band.

3. The container as defined in claim 1 wherein said connecting means comprise cooperating latch means provided on one of said side walls and on the overlapped end portions of said band.

4. The container as defined in claim 1 together with a cover removably positioned on the open top of said chamber, and lateral projections provided on said cover in alignment with said rims, said band extending over said cover between said projections.

5. The container as defined in claim 1 together with a second set of rims provided on said end walls and projecting outwardly therefrom in directions parallel to said side walls, and a second flexible band extending completely around said end walls and across the top of said chamber transversely of the first mentioned band, said second band being seated between and having its side edges engaged by said second set of rims.

6. The container as defined in claim 5 together with a cover removably positioned on the open top of said chamber, and projections provided at corners of said cover in alignment with said first and second set of rims, said first and second bands extending over said cover between said projections.

7. The shipping container of claim 1 wherein the side walls are fixedly connected to each other by said end walls.

8. The shipping container of claim 1 wherein the two side walls constitute two detached container halves.

9. The shipping container of claim 8 wherein one of the container halves defines a recess therein constituting said chamber, and the other container half constitutes a cover over said recess.

10. The shipping container of claim 9 further comprising a mating tongue-and-groove connection between the two container halves.

References Cited

UNITED STATES PATENTS

2,004,098	6/1935	Andrews	206—65
2,078,665	4/1937	Horsley.	
2,412,332	12/1946	Hansen.	
3,103,278	9/1963	Kuzma et al.	206—65
3,162,997	12/1964	Schmidt	206—45.18
3,172,132	3/1965	Mucha	206—1
3,251,460	5/1966	Edmonds	220—4

WILLIAM T. DIXSON, JR., Primary Examiner

U.S. Cl. X.R.

150—3; 220—4