United States Patent

Ross

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[54] **COMBINATION BOOKCASE AND SHIPPING CONTAINER**

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[52] **U.S. Cl.**.....**206/45.22,** 229/34

[51] **Int. Cl.**.....**B65d 25/00**

[58] **Field of Search**.....211/42, 72; 248/441, 346; 206/45.22, 45.2; 229/34 R, 43

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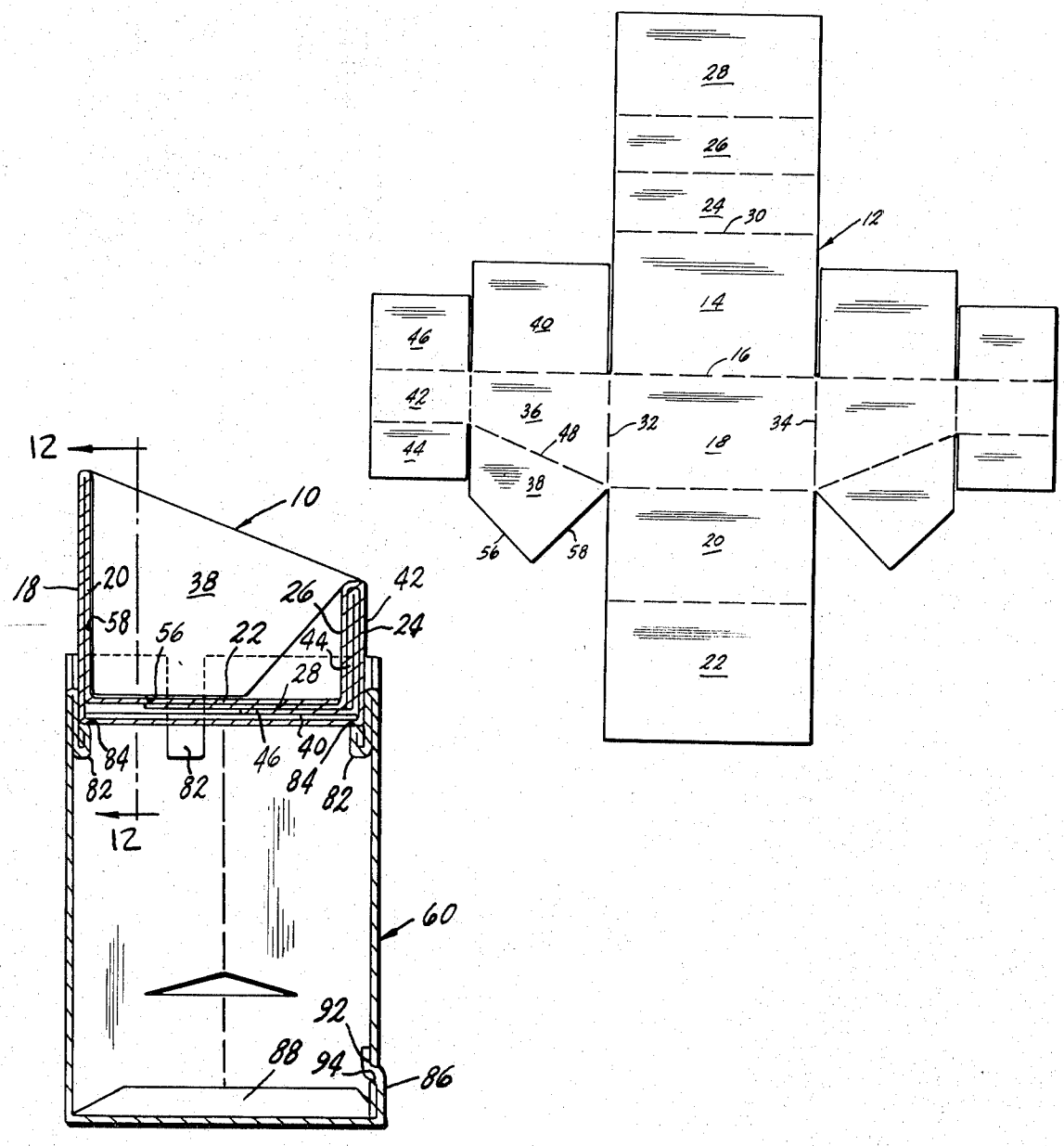
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[57] **ABSTRACT**

Paperboard or the like is blanked and formed to provide a bookcase and a base for supporting the bookcase. The base and bookcase can be separated, and the base can be inverted and placed over the bookcase as a cover to provide a shipping container for the books in the case.

10 Claims, 12 Drawing Figures



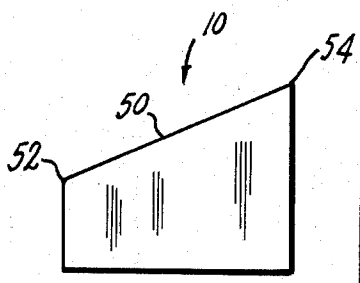


FIG. 3

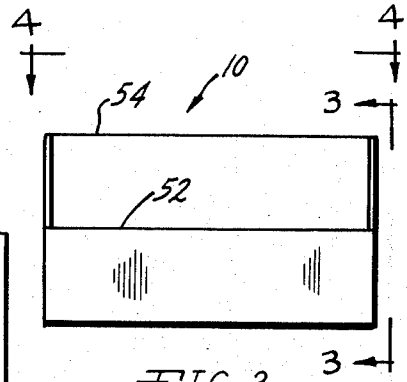


FIG. 2

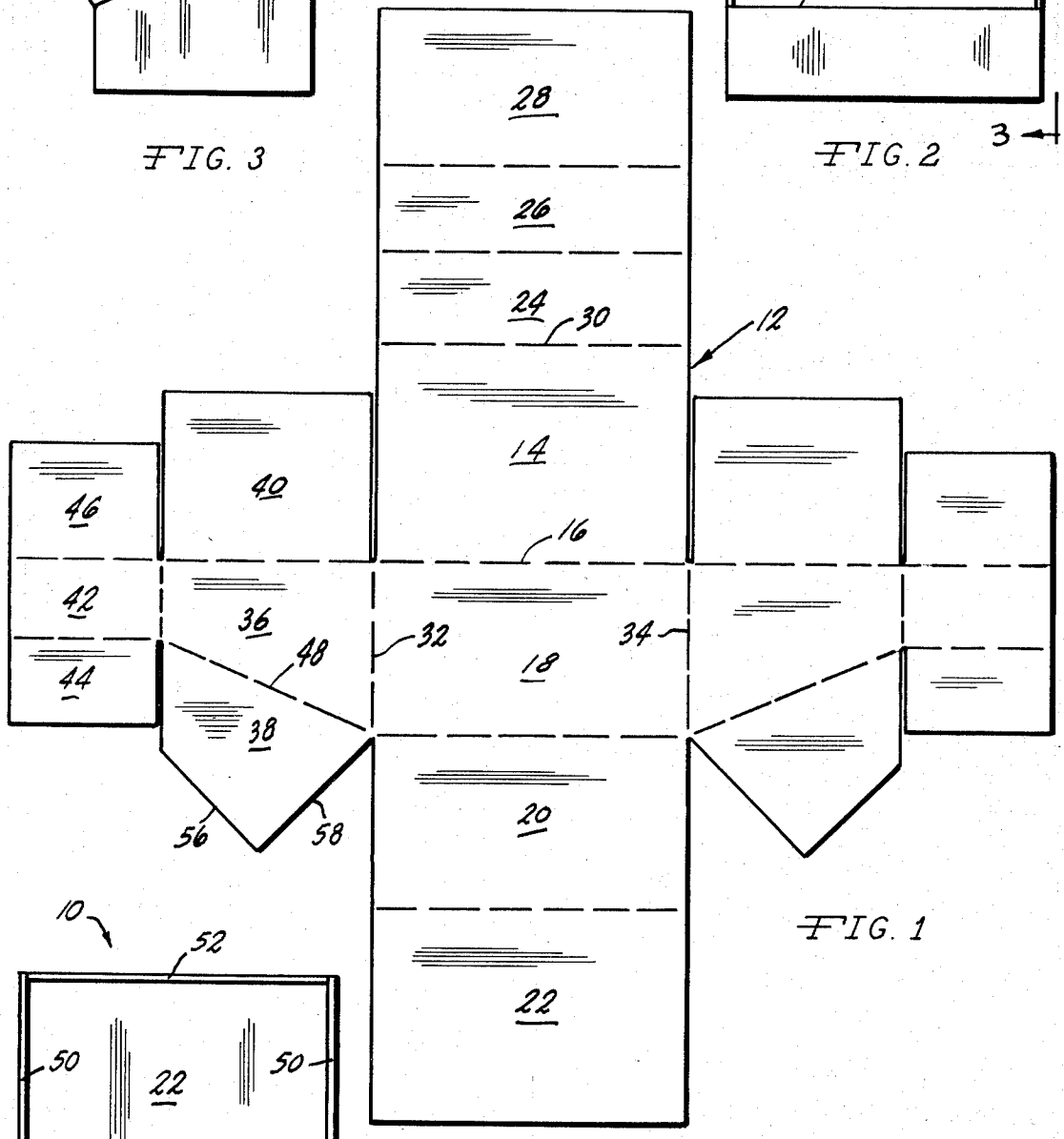


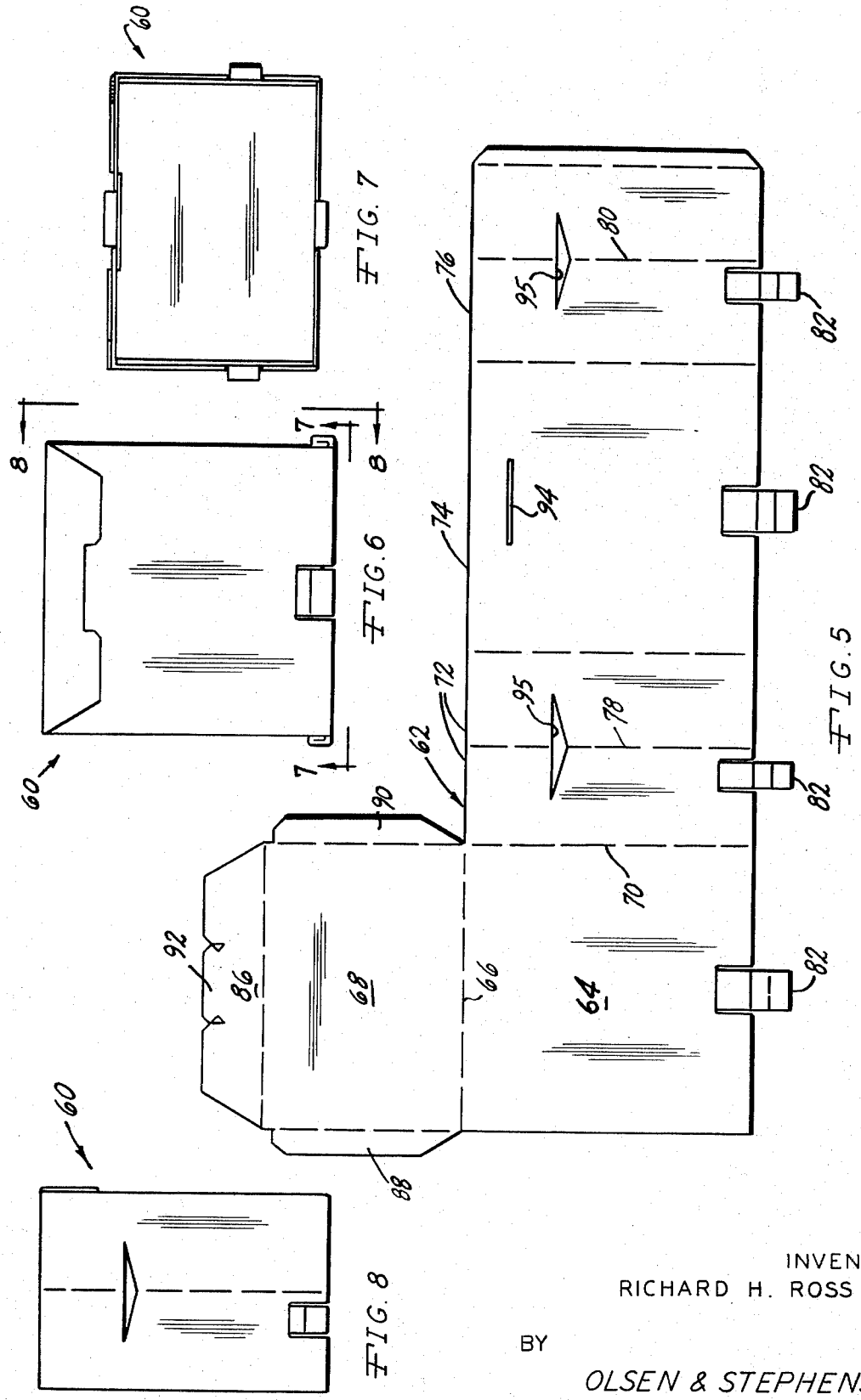
FIG. 1

FIG. 4

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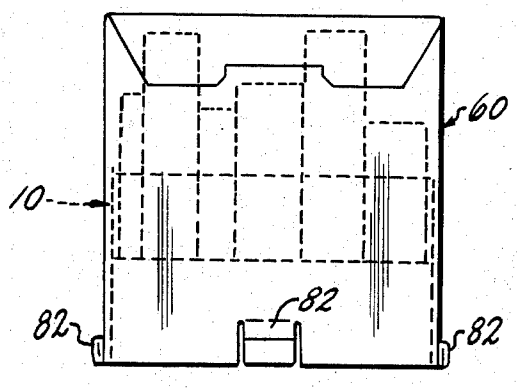


FIG. 9

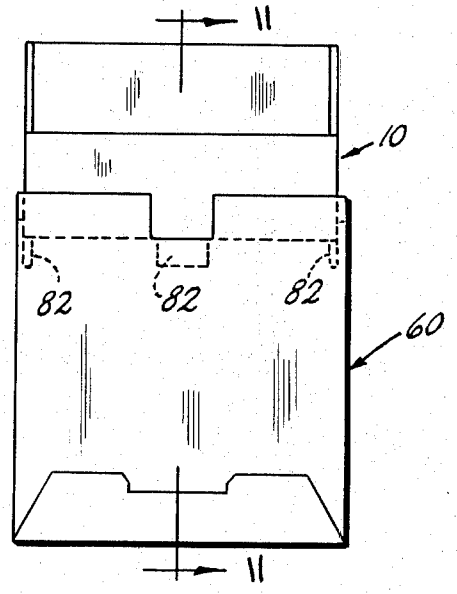


FIG. 10

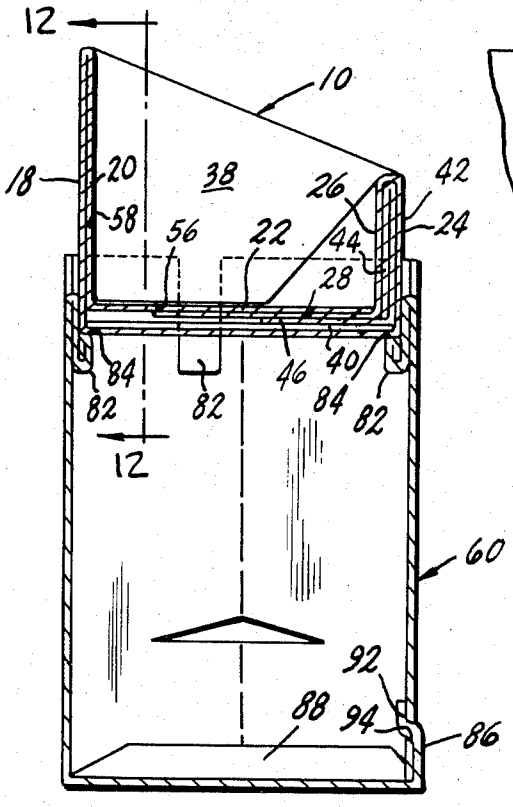


FIG. 11

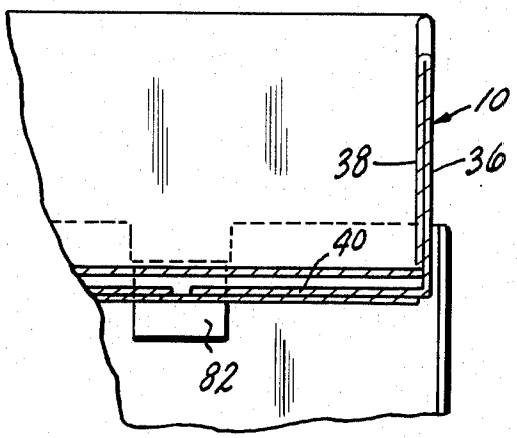


FIG. 12

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COMBINATION BOOKCASE AND SHIPPING CONTAINER

BACKGROUND OF THE INVENTION

The present invention relates to a combination bookcase and shipping container which can be purchased in blanked forms of paperboard or the like. The forms can be assembled for use as a bookcase and can be converted readily into a shipping container for the books. While the invention is especially adapted for use with books, it can also be used to display and ship other items.

There is constant need among students who are studying away from home for storage space in the form of bookcases and the like for their books and subsequently for shipping containers in which these books can be transported or shipped. Devices have been suggested in the past which can be used for display and shipping purposes, but such devices have not adequately served the needs of students for reasons of excessive costs, lack of sufficient strength when made of low-cost materials, or the like.

SUMMARY OF THE INVENTION

The present invention has overcome the shortcomings of the prior art by providing a low-cost article of manufacture in the form of a pair of sheets of paperboard or the like which are blanked so that they can be formed readily into a combination bookcase and shipping container of sound construction for storage and shipment purposes. If desired, the invention can be used only as a bookcase, in which event only one of the sheets of paperboard need be used.

According to one form of the present invention, a bookcase is provided comprising a single sheet of relatively rigid material blanked and formed to provide an exterior bottom wall panel and series of panels hingedly connected to the rear and front margins of the bottom wall panel. The series of panels connected to the rear margin are hingedly connected and folded to form an exterior rear wall panel, an interior rear wall panel and an interior bottom wall panel. The series of panels connected to the front margin are hingedly connected and folded to form an exterior front wall panel, an interior front wall panel and an intermediate bottom wall panel. One of the rear wall panels has a series of panels connected to its side margins, each of the series of panels connected to a side margin being hingedly connected and folded to form an exterior side wall panel, an interior side wall panel, an intermediate bottom wall panel and an intermediate front wall panel. By virtue of the interlocked wall panel arrangement a rigid bookcase is formed so that when filled with books the bookcase is self-sustaining and cannot be unfolded. Other wall panels are used to provide still additional interlocking of the various wall panels.

The invention also contemplates a second sheet of relatively rigid material blanked and formed to provide a cover for the bookcase for shipment purposes. The cover is constructed and arranged so that it can be inverted and positioned to form a base, and the bookcase can be inserted into and supported in an elevated position within the inverted cover.

Thus, it is among the objects of the present invention to provide an improved bookcase and shipping container which is characterized by its low cost construction and strength when used as a shipping container or as a bookcase.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS.

FIG. **1** is a plan view of a blank from which a bookcase embodying the present invention can be formed;

FIG. **2** is a front elevational view of a bookcase formed from the blank illustrated in FIG. **1**;

FIG. **3** is a side elevational view of the bookcase;

FIG. **4** is a top plan view of the bookcase;

FIG. **5** is a plan view of a blank from which the cover for the bookcase can be formed and which also can be used as a base for the bookcase;

FIG. **6** is a front elevational view of the cover formed from the blank illustrated in FIG. **5**;

FIG. **7** is a bottom view of the cover as seen in the direction of the arrows **7—7** of FIG. **6**;

FIG. **8** is a side elevational view of the cover as seen in the direction of the arrows **8—8** of FIG. **6**;

FIG. **9** is a front elevational view of the shipping container formed by the cover and bookcase;

FIG. **10** is a front elevational view similar to FIG. **9**, but showing the cover supporting the bookcase when the cover serves as a base for the bookcase;

FIG. **11** is a sectional view taken on the line **11—11** of FIG. **10**; and

FIG. **12** is a fragmentary section taken on the lines **12—12** of FIG. **11**.

DESCRIPTION OF THE PREFERRED EMBODIMENT.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practised or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Referring now to the drawings, the invention will be described in greater detail. Reference is made first to FIGS. **1—4**, inclusive, for a description of the bookcase **10**. The latter is formed from the blank **12** which may be made from a sheet of any suitable material such as paperboard, organic plastic materials, or the like. When paperboard is used, the blank normally will be scored along the broken lines shown in FIG. **1** to provide hinge-like connections between the various wall panels, and when plastic material or the like is used, webbing can be provided between these wall panels so that the panels are hingedly connected.

The sheet is blanked to provide an exterior bottom wall panel **14** which has hingedly connected to its rear margin **16** a series of panels **18**, **20** and **22**. As shown in FIG. **11**, these wall panels provide in the formed bookcase **10** the exterior rear wall panel **18**, the interior rear wall panel **20**, and the interior bottom wall panel **22**. Another series of panels comprising the wall panels **24**, **26** and **28** are hingedly connected to the front margin

30 of the bottom wall panel 14. Again, as seen in FIG 11, when folded into place these wall panels will provide the exterior front wall panel 24, the interior front wall panel 26 and the first intermediate bottom wall panel 28.

One of the rear wall panels 18 has a series of panels hingedly connected to each of its side margins 32 and 34. The series of panels connected to the side margin 32 includes the panels 36, 38 and 40. As shown in FIG. 12 they form the exterior side wall panel 36, the interior side wall panel 38 and the second intermediate bottom wall panel 40. Also forming a part of the series of panels connected to the side margin 32 are the wall panels 42, 44 and 46. The hingedly connected panel 42 forms the first intermediate front wall panel 42, panel 44 forms the second intermediate front wall panel 44, and the panel 46 forms the third intermediate bottom wall panel 46.

The series of panels connected to the other side margin 34 of the rear wall panel 18 will not be described in detail, because these panels form on the opposite side of the bookcase 10 the same series of panels described with respect to the side margin 32. It will be recognized that when the bookcase 10 is folded together in the manner described above the various wall panels are interlocked so that when the books are stored within the bookcase the panels cannot readily be withdrawn from one another. Thus, the bookcase normally cannot lose its rigid form except by a complete rupture of the material from which the blank 12 is made. The blank 12 can be sold in a relatively small flat package, and it can quickly and easily be folded together into the rigid bookcase shown in the drawings. When in the assembled position the panel 38 will be folded at its margin 48 at an oblique angle to provide a top edge 50 which connects the front edge 52 with the relatively higher rear edge 54. To provide a shape such as this, the rear wall panels 18 and 20 have a greater vertical dimension than the front wall panels 24 and 26.

It is also to be noted that when the interior side wall panel 38 is in its folded position, its margin 56 will be in abutting relation to the bottom wall panel 22, and its margin 58 will be in abutting relation to the rear wall panel 20, thereby further rigidifying the bookcase 10.

With particular reference to FIGS. 5–8, inclusive, the cover 60 which is adapted to serve both as the cover for the shipping container and as the base for the bookcase will be described. The cover 60 is formed from a single sheet or blank 62 of relatively rigid material, which preferably is the same as that used for the bookcase 10. The sheet 62 is blanked as shown in FIG. 5 to provide a back wall panel 64 to which is hingedly connected at the margin 66 the top wall panel 68. A series of panels are hingedly connected to another margin 70 of the back wall panel 64 to provide the side wall panel 72, the front wall panel 74, and the other side wall panel 76. For storage purposes, it is preferred that the side wall panels 72 and 76 be formed in two sections divided by the scored or hinge lines 78 and 80 for collapsing and storage of the cover 60 when not in use.

A plurality of tongues 82 are part of the blank 62 and the distal ends of the tongues are folded back upon the remainder of the tongues, as shown in FIG. 11, to provide seats 84 for the bookcase 10 when the cover 60 is in the inverted position shown in FIGS. 10 and 11. As shown, the bookcase 10 is telescoped into the open end of the inverted cover 60 and is retained in the illustrated position by the seats 84 and the vertical wall panels of cover 60.

The top wall panel 68 also includes the flaps 86, 88 and 90 which are hingedly connected to the remaining margins of the top wall panel 68. The side flaps 88 and 90 are adapted to fit within the side wall panels 72 and 76, and the flap 83 has a tongue 92 for fitting through the slot 94 of the front wall panel 74 for securing the top wall panel 68 in place. Also, hand grip holes 95 may be provided, if desired, in the cover 60.

As shown in FIG. 9, the bookcase 10 with books therein can be closed by the cover 60 to provide a shipping container. As shown in FIG. 10, the cover 60 can also be used as the base for the bookcase 10, although the bookcase 10 can be used equally well independently of the cover 60.

It is claimed:

1. A bookcase comprising a single sheet of relatively rigid material blanked and formed to provide an exterior bottom wall panel and series of panels hingedly connected to the rear and front margins of said bottom wall panel, the series of panels connected to the rear margin being hingedly connected and folded to form an exterior rear wall panel, an interior rear wall panel and an interior bottom wall panel, the series of panels connected to the front margin being hingedly connected and folded to form an exterior front wall panel, an interior front wall panel and a first intermediate bottom wall panel, said exterior rear wall panel having a series of panels connected to its side margins, each of the series of panels connected to a side margin being hingedly connected and folded to form an exterior side wall panel, an interior side wall panel, a second intermediate bottom wall panel and a first intermediate front wall panel, each of the first intermediate front wall panels having hingedly connected to its upper and lower margins respectively a second intermediate front wall panel and a third intermediate bottom wall panel, said rear wall panels having a greater vertical dimension than said front wall panels and said side wall panels being folded at an oblique angle to provide a top edge extending from the top edge of said rear wall panels to the top edge of said front wall panels.

2. The bookcase that is defined in claim 1, wherein the margin of each interior side wall panel remote from its hinged margin is in abutting relation to the bottom wall panels.

3. The bookcase that is defined in claim 2, wherein the rear margin of each interior side wall panel is in abutting relation to the rear wall panels.

4. The bookcase that is defined in claim 3, wherein said sheet of material is paperboard which is scored to provide hinge connections between the panels.

5. The bookcase that is defined in claim 1 in combination with a cover having top, front, rear and side wall panels for enclosing said bookcase to provide a shipping case.

6. The combination that is defined in claim 5, wherein support means are formed in the lower marginal portion of said cover so that the cover can be removed from the bookcase and inverted to provide a base for the bookcase with the latter fitted into the cover and supported on said support means.

7. The combination that is defined in claim 6, wherein said support means comprise a plurality of tongues formed from the material of the side, front and rear wall panels of the cover, the distal ends of the tongues being folded back upon the remainder of the tongues and such folded tongues being pivoted into the interior of the cover so as to provide seats for the bookcase.

8. The combination that is defined in claim 5, wherein said cover comprises a single sheet of relatively rigid material blanked and formed so that said top wall panel is hingedly connected at one of its margins to

the top margin of said back wall panel, and said side wall panels and said front wall panels are a series of panels hingedly connected to a side margin of said back wall panel.

9. The combination that is defined in claim 8, wherein each of said side wall panels of the cover is formed as two hingedly connected sectional panels.

10. The combination that is defined in claim 8, wherein said top wall panel has flaps hingedly connected to its other margins.

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