March 7, 1967 D. H. HUMPHREY ETAL 3,307,767

BOOK CASE

Filed Aug. 23, 1965 2 Sheets-Sheet 1

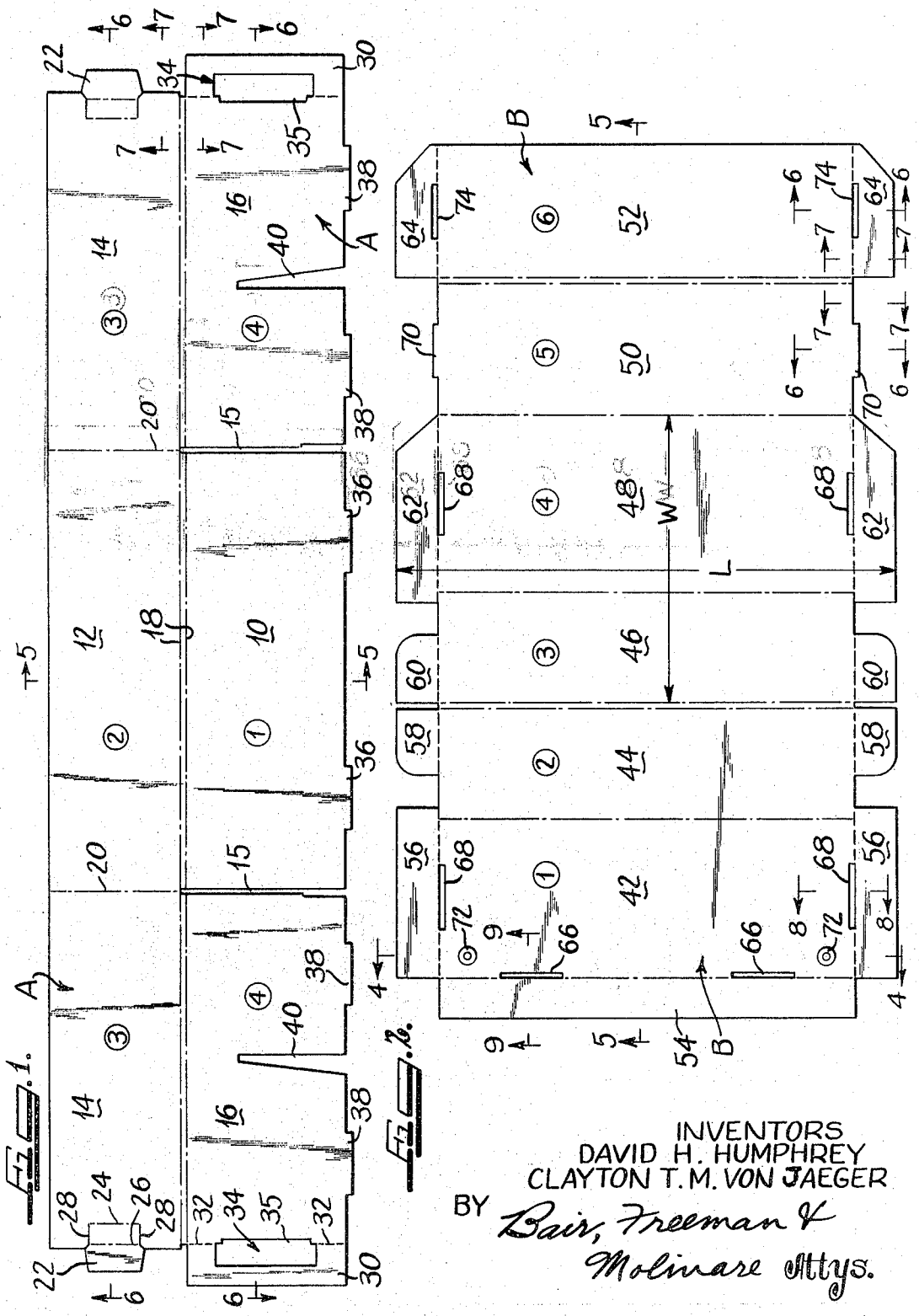


Fig. 1.

Fig. 2.

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FIG. 3.

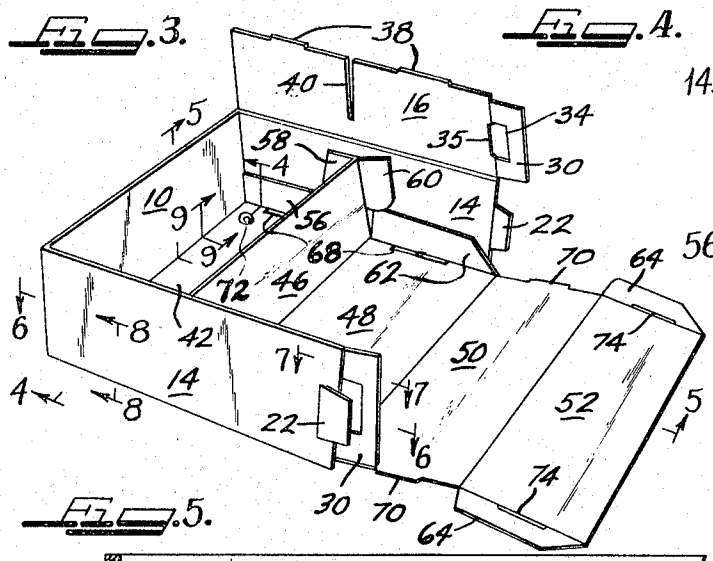


FIG. 4.

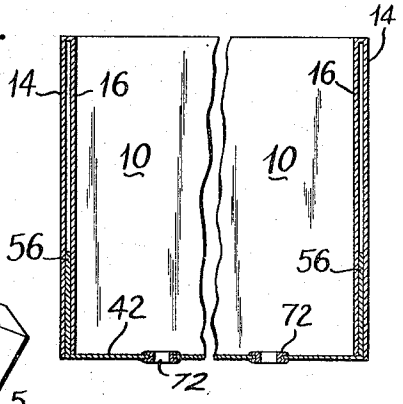


FIG. 5.

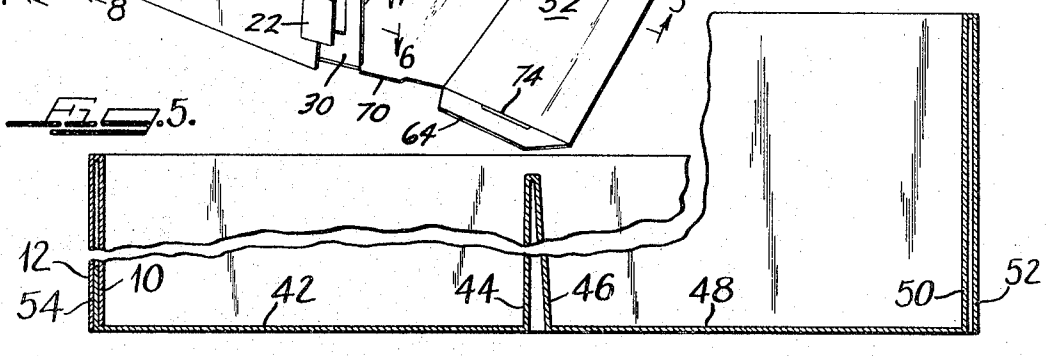


FIG. 6.

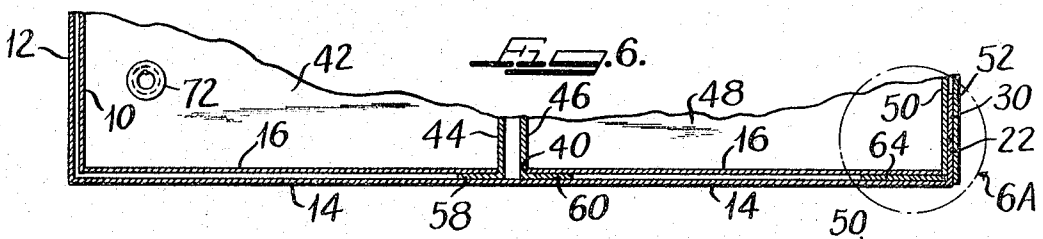


FIG. 8.

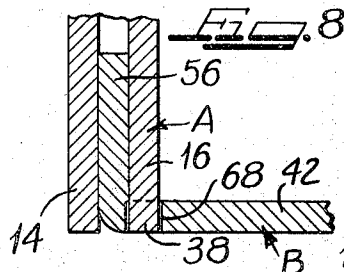


FIG. 7.

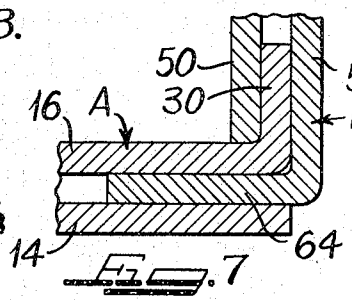


FIG. 6A.

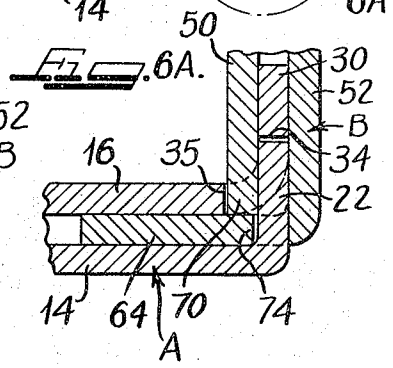
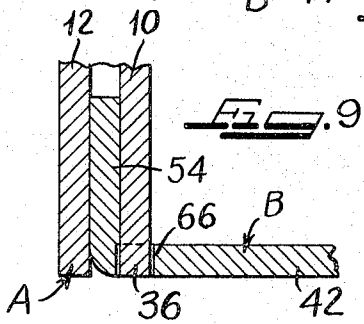


FIG. 9.



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3,307,767
BOOK CASE

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5 Claims. (Cl. 229—27)

This invention relates to a book case which may be formed of corrugated cardboard or the like.

One object of the invention is to provide a comparatively simple knocked-down item which is folded for flat-package shipping purposes but can be readily and quickly assembled into an inexpensive book case that can retail at approximately one dollar.

Another object of the invention is to provide a book case formed of two sheets of cardboard, one of which serves as a shelf unit and the other a wrap-around unit for the shelf unit, the shelf unit being operable to form the back and a pair of shelves for the book case while the wrap-around unit serves to form the top and sides of the book case, and the units being scored for ready bending along desired lines to form a box-like assembly.

Still another object is to provide the wrap-around unit of double-walled construction so that one finished surface of the unit appears both inside and outside the assembled book case to give the book case a finished appearance such as wood grain or printed paper so that it does not look like it is made of cardboard.

A further object is to provide the shelves of the shelf unit also of doubled thickness for both reinforcing the shelves and giving a finished appearance to both the top and bottom of each, the design of both units being such that no raw edges are exposed to view.

Still a further object is to provide double thickness cardboard shelves with a space between the shelves in which reinforcements such as a piece of composition panel or the like may be inserted from the back so that any tendency of the shelf to sag can be corrected by such insert, insertion from the back accomplishing reinforcement without the insert being visible.

An additional object is to provide a series of ears and slots which coact with each other to retain various panels of the shelf unit and the wrap-around unit fixed in relation to each other when the book case is assembled.

A further additional object is to provide the shelf unit with a series of flaps that fit between the doubled walls of the wrap-around unit to provide firm anchorage of one unit relative to the other.

With these and other objects in view, our invention consists in the construction, arrangement and combination of the various parts of our book case, whereby the objects above contemplated are attained, as hereinafter more fully set forth, pointed out in our claims and illustrated in detail on the accompanying drawings, wherein:

FIG. 1 is a layout view of a strip of cardboard used to form a wrap-around unit and serve as top and sides for our book case;

FIG. 2 is a layout view of a strip of cardboard used to form a back and shelf unit for our book case;

FIG. 3 is a perspective view of the book case partially assembled;

FIG. 4 is an enlarged fully assembled sectional view thereof on the line 4—4 of FIG. 3;

FIG. 5 is an enlarged fully assembled sectional view thereof on the line 5—5 of FIG. 3;

FIG. 6 is an enlarged fully assembled sectional view thereof on the line 6—6 of FIG. 3;

FIG. 6A is an enlarged sectional view of the area within the dot-and-dash line circle 6A of FIG. 6 showing the parts exaggerated in thickness to better show details; and

FIGS. 7, 8 and 9 are similar sectional views on the lines 7—7, 8—8 and 9—9, respectively, of FIG. 3.

The section lines 4—4 to 9—9, respectively, in FIG. 3 are duplicated in FIGS. 1 and 2 to show where the sections are taken on the strips of cardboard forming the book case.

On the accompanying drawings we have used the reference character A to indicate a wrap-around unit for forming the top and sides of the book case and the reference character B to indicate a shelf unit for forming the back and shelves of the book case. These are cut to the shape shown in FIGS. 1 and 2, respectively, and scored for ease in bending as indicated by dot-and-dash lines. Units of this design can be cut with a minimum of waste material.

The unit A comprises six panels identified as follows:

10—Inside top panel.
12—Outside top panel.
14—Two outside side panels.
16—Two inside side panels.

Double score lines 18 extend throughout the length of the unit and score lines 20 separate the panels 14 from the panel 12. A pair of flaps 22 are provided on the lower ends of the panels 14 and a pair of score lines 24 and 26 is provided for each in addition to cut lines 28, the purpose of which will hereinafter appear.

The lower end of each panel 16 has a flap 30 separated from the panel by a score line 32 and these flaps are provided with wide slots 34 having recesses 35. The panel 10 is provided with a pair of ears 36 and each panel 16 is provided with a pair of ears 38. The panels 16 are also provided with shelf notches 40.

The shelf unit B comprises six panels (separated by score lines) which may be identified as follows:

42—Upper back panel.
44—Upper shelf top panel.
46—Upper shelf bottom panel.
48—Lower back panel.
50—Lower shelf top panel.
52—Lower shelf bottom panel.

The score lines of the unit B are not identified by reference numerals. In FIG. 1 the six panels of the unit A are identified with encircled numbers, top panels 1 and 2 at the center and side panels 3, 3, 4 and 4. In FIG. 2 the six panels of the unit B are identified 1 to 6 inclusive and the panels are thus identified for our claims.

The panel 42 has a top flap 54 while its ends have side flaps 56. The panels 44 and 46 have side flaps 58 and 60, respectively. The panel 48 has side flaps 62 and the panel 52 has side flaps 64.

The unit B has a plurality of slots 66 for the ears 36, 68 for the ears 38 and 74 for the flaps 22. The panel 50 is also provided with ears 70 for the recesses 35 of the slots 34 and the panel 42 is provided with a pair of grommets 72 which serve to support the assembled book case on nails or screws projecting from a wall surface.

In order to assemble our book case, the shelf unit B is laid out on a table or the like as shown in FIG. 3 with the panels 44 and 46 humped up and the wrap-around unit A folded over along the double score line 18 so that the panels 14 and 16 nearest the observer form the left side of the book case, the panels 10 and 12 form the top and the panel 14 farthest from the observer is forming the outside of the right side of the book case while the panel 16 along the upper edge of the panel 14 is ready to be bent into the interior of the book case to complete the right-hand side of the case. In this operation, the slot 40 straddles the folded panels 44 and 46 while the flap 54 is entered between the panels 10 and 12 as shown at the left side of FIG. 5 and in FIG. 9. FIG. 9 also illustrates how the ear 36 enters the slot 66 to hold the panel 10

against opening inwardly and thereby away from the panel **12**. As the slot **40** receives the panels **44** and **46**, the flaps **58** and **60** of these panels are entered between the panels **14** and **16** adjacent the slot **40** as shown in the central portion of FIG. 6.

Similarly, the flaps **56**, **58**, **60** and **62** are entered between the panels **14** and **16** with the ears **38** entering the slots **68**, all of which features cooperate to retain the back of the book case and the upper shelf thereof in properly assembled relationship relative to the wrap-around unit A. FIG. 8 shows the entry of the flap **56** between the panels **14** and **16** and the coaction of the ear **38** with the slot **68**.

It now remains to fold the panels **50** and **52** as shown at the right side of FIG. 5. At the same time, the flap **30** is entered between the panels **50** and **52** as shown in FIG. 6A and the flap **22** is entered into the slot **34** while the ear **70** on the panel **50** is entered into the recess **35** of the slot **34**. Similarly, in FIG. 7 the flap **30** enters between the panels **50** and **52** and the flap **64** between the panels **14** and **16**.

In FIG. 5 space will be noted between the panels **44** and **46** and likewise between the panels **50** and **52**. These spaces are open at the back panels **42** and **48** so that reinforcing elements of cardboard, Masonite or the like may be inserted from the back and will not show from the front of the book case.

The units A and B cut and scored as shown in FIGS. 1 and 2 can be cut from strips of cardboard, corrugated board or the like of suitable width with a minimum of waste as they are substantially rectangular in shape. When scored as indicated, they may be folded into a relatively thin flat package corresponding to six layers of cardboard end with a width W equal to the width of the panels **46** and **48** as shown in FIG. 2 and a length L equal to the panel **48** plus its flaps **62**.

From the foregoing specification it will be obvious that we have provided a comparatively simple yet rugged book case capable of formation from two panels of cardboard suitably cut and scored. Then the device is readily and quickly assembled into a book case in the manner disclosed in FIG. 3 whereupon the book case presents a finished appearance because of all cardboard edges being covered except those at the back of the case. Any surface treatment such as wood graining or the like on the upper surfaces of the blanks in FIGS. 1 and 2 appears all over the exposed surfaces of the book case when it is assembled, and when completed the book case may be readily hung on the wall by means of the grommets **72** or set on a table or the like. The double thickness for the upper shelf provided by the panels **44** and **46** and for the bottom shelf (panels **50** and **52**) we have found suitably strong enough to support paper back books when completely filling the shelves. If heavier books are to be placed in the book case, reinforcing inserts for the shelves may be provided as indicated. A book case of the type disclosed can be manufactured very economically and sold at a relatively low price.

Some changes may be made in the construction and arrangement of the parts of our book case without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims any modified forms of structure or use of mechanical equivalents which may reasonably be included within their scope.

We claim as our invention:

1. In a book case of the character disclosed, a shelf and back unit comprising a plurality of contiguous panels, namely, a first panel to form the upper back wall of the book case, second and third panels to form a folded double-thickness upper shelf thereof, a fourth panel to form the lower back wall thereof and fifth and sixth panels to form a folded double-thickness lower shelf thereof, said first panel having an outstanding flap along the upper edge of said upper back wall, and a wrap-around top and side unit comprising a plurality of contiguous panels, namely, first and second central panels to form a folded double-thickness top wall of the book case, two third panels and two fourth panels to form folded double-thickness side walls thereof, said flap being positioned between the rear marginal edges of said first and second central panels forming said folded double-thickness top wall, and means for connecting the ends of said first six panels to the side walls of said top and side unit.

2. A book case in accordance with claim **1** wherein said means for connecting comprises flaps at the ends of said first mentioned first and fourth panels received between the rear marginal edges of said third and fourth panels of said wrap-around unit and flaps at the ends of said sixth panel received between the lower marginal edges of said third and fourth panels of said wrap-around unit.

3. A book case according to claim **2** wherein ear-and-slot means of connection is provided between the rear edges of said fourth panels of said wrap-around unit and the ends of said fourth panels of said shelf and back unit, said ear-and-slot means being effective to resist the tendency of said fourth panel of said wrap-around unit to unfold relative to said third panel thereof.

4. A book case in accordance with claim **2** wherein said first panel of said wrap-around unit and said first panel of said shelf and back unit are provided with ear-and-slot means of coaction effective to resist the tendency of said first panel of said wrap-around unit to unfold relative to said second panel thereof.

5. A book case in accordance with claim **1** wherein the ends of said first mentioned sixth panel and the lower ends of said third and fourth panels of said wrap-around unit are provided with flap-and-slot means of coaction to connect the lower ends of the sides and the ends of the lower shelf of said book case together, said flap-and-slot means of coaction comprising flaps on the ends of said sixth panel received between the lower marginal ends of said third and fourth panels of said wrap-around unit, flaps on the lower ends of said fourth panels of said wrap-around unit received between the end marginal edges of said fifth and sixth panels, and flaps on the lower ends of said third panels of said wrap-around unit received through slots of said sixth panel and also received between said end marginal edges of said fifth and sixth panels, said flaps on the lower ends of said fourth panels of said wrap-around unit having recesses to receive said flaps on the lower ends of said third panels of said wrap-around unit.

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