

[54] **PILLOW-PAK CARRYING CASE**
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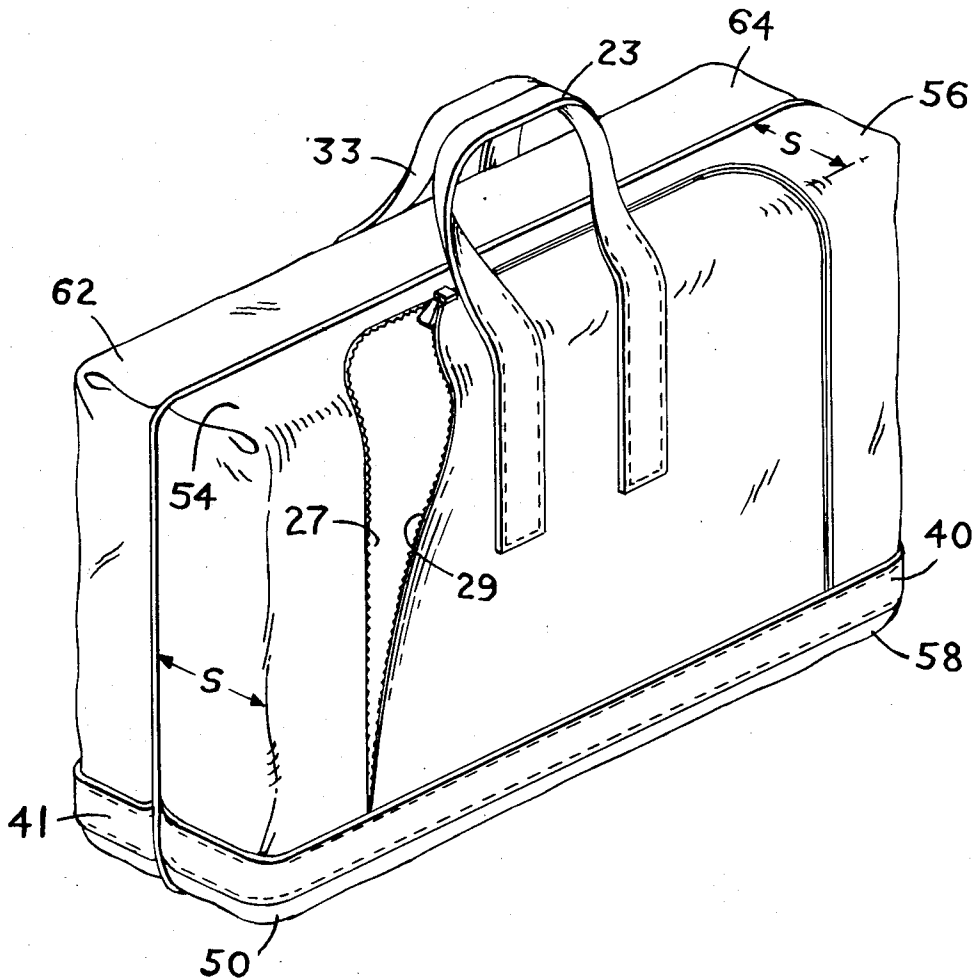
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[52] **U.S. Cl.** 190/43, 190/41 Z
 [51] **Int. Cl.** A45c 13/26
 [58] **Field of Search** 229/54 R, 54 C;
 190/43, 41 R, 41 Z

[57] **ABSTRACT**
 Improved carrying case of two piece construction. The case includes four double pleated corners which provide structural stability.

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3 Claims, 10 Drawing Figures



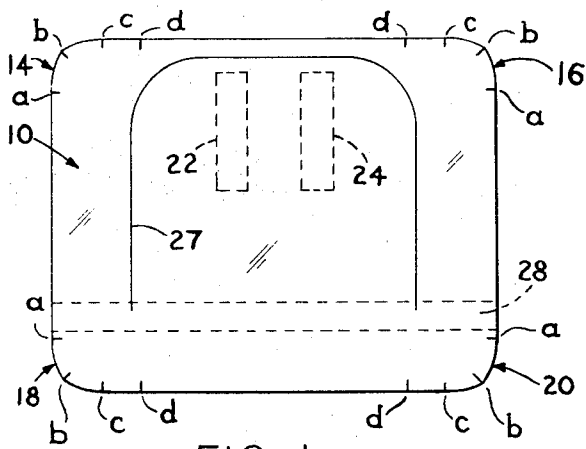


FIG. 1

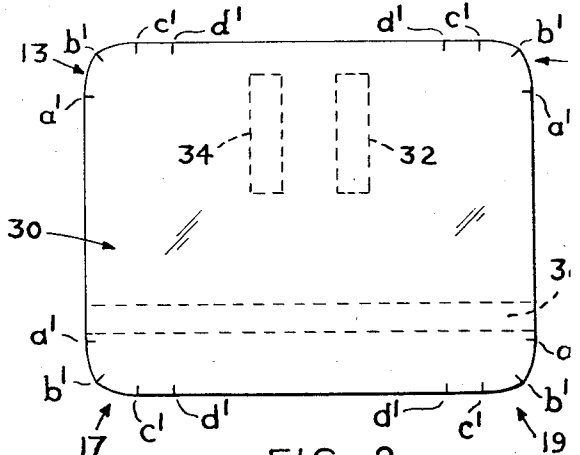


FIG. 2

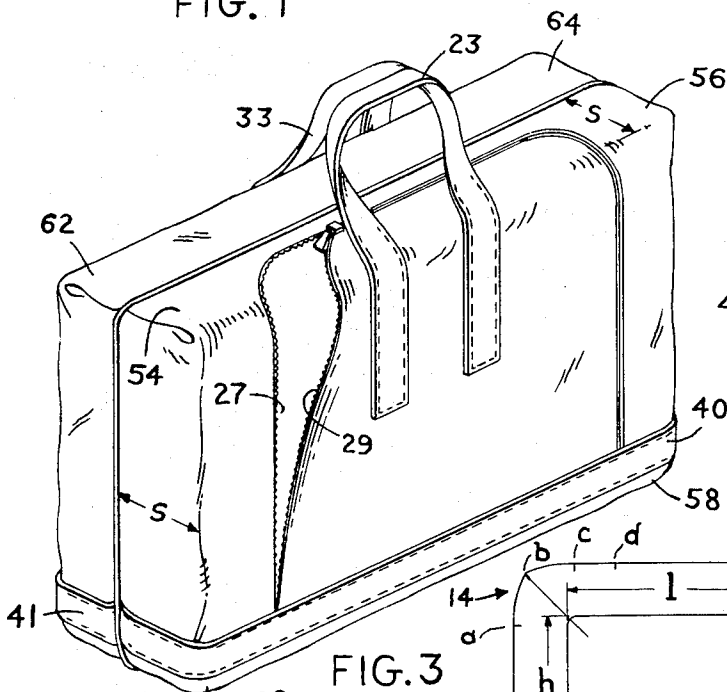


FIG. 3

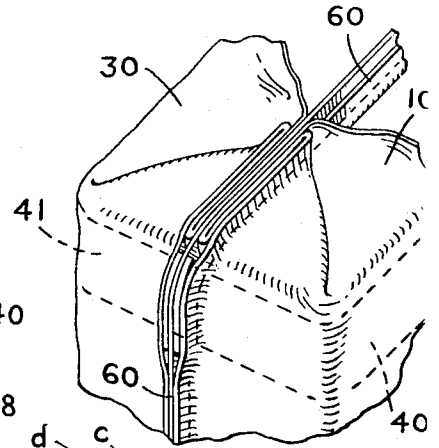


FIG. 4

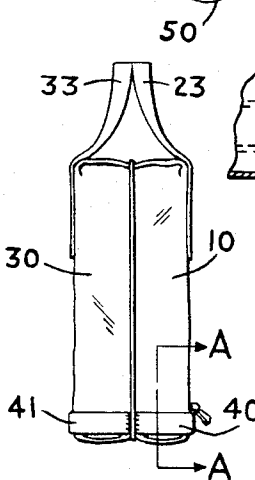


FIG. 5

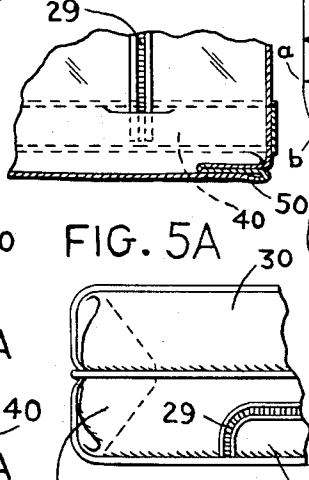


FIG. 6

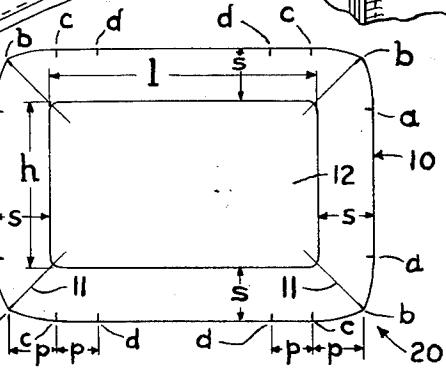


FIG. 7

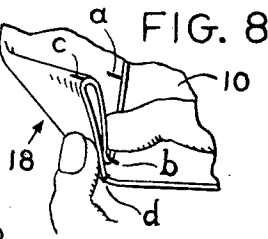


FIG. 8

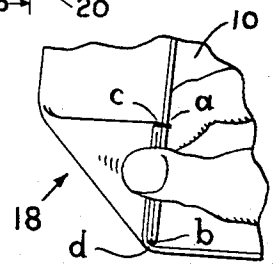


FIG. 7A

PILLOW-PAK CARRYING CASE

BACKGROUND OF THE INVENTION

The present invention relates to luggage and methods of constructing the same. Soft-sided luggage, and more particularly, soft-sided carrying cases have been long known in the art. A typical carrying case is generally constructed around a wooden frame, approximately rectangular in shape, except for the corners, which are curved. The portion of the wood frame which forms the interior of the case is usually lined with a material. The outside of the case, which may be of leather, vinyl plastic or canvas construction has already been formed into an envelope, into which the wood frame is inserted. This insertion is accomplished by first cutting the frame in half to form two U-shaped members. On each leg of one of these members, a metal frame plate is riveted. Both halves are then inserted into the envelope and a special machine known to the art is used to move both halves away from each other until they form the shape of the original frame. While being held in this position, both legs of the remaining U-shaped half are riveted to the adjacent metal frame plates, thus forming the completed case. Handles would then be applied to the case in a rivet type operation. The wooden frame gives the carrying case structural stability and provides the main support therefor. A wooden frame, however, increases the weight of the case; as an additional element in the manufacturing process, the frame also increases the cost of production.

The present invention eliminates the need for a wood frame and instead uses two pieces of material which when joined together with a center welt, according to the methods of the present invention, produces a three-dimensional case which is both light in weight and structurally stable.

Additionally, the cost and production time required to fabricate a wood frame for inclusion in a carrying case is eliminated by the present invention.

SUMMARY OF THE INVENTION

The present invention has certain beneficial features, one of which is a method of construction which eliminates the necessity for a wood frame. Another feature is the use of only two pieces of material to form a three-dimensional case. Still another feature is a case which is light in weight. A still further feature is a method of construction which provides a large access opening while retaining the items already packed.

It is an object of the present invention to provide an improved carrying case.

It is a further object of the present invention to provide a structurally stable three-dimensional case from only two pieces of material.

A still further object is to provide a carrying case which is light in weight and economical to manufacture.

In accordance with one embodiment of the present invention, each of two panels are prefabricated to provide for supporting corners, closure means, structural support binding, and carrying means. Both panels are then joined along their edges to each other with their exterior faces in juxtaposition. The finished assembly is then inverted through the access opening to form the completed carrying case.

THE DRAWINGS

With the foregoing objects and features in mind, the invention will be more fully understood by reference to the drawings, the accompanying detailed description and the appended claims.

FIG. 1 is a plan view of a front panel used in the construction of the carrying case of the present invention.

FIG. 2 is a plan view of a rear panel used in the construction of the carrying case of the present invention.

FIG. 3 is a perspective view of a carrying case constructed in accordance with the present invention.

FIG. 4 is a partial perspective view of the case of FIG. 3 inverted, showing internal construction.

FIG. 5 is a side elevation of the case of the present invention.

FIG. 5A is a section taken along line A—A in FIG. 5.

FIG. 6 is a partial top view of the case of the present invention showing internal corner construction.

FIGS. 7 and 7A show a typical panel corner during its formation.

FIG. 8 shows the contour of the panel of FIG. 1 with the front profile of the finished case superimposed thereon.

DESCRIPTION OF THE INVENTION

Referring now to the drawings, the carrying case of the present invention may be constructed of any pliable cost material such as leather, vinyl plastic, or canvas. FIG. 1 shows a panel 10 which has been precut, notched and superficially marked as indicated in the drawing. The foregoing may be done either manually using a pattern with the use of a cutting die which in an automated operation, would cut and mark similar panels from a source of material. The panel has corners indicated generally as 14, 16, 18, and 20. Each corner has pleat marks *a*, *b*, *c*, and *d* which are, in the construction of the case, aligned in a manner to be described shortly hereafter.

Referring to FIG. 8, a front profile of the finished case has been superimposed on panel 10. The case will typically have a finished length *l*, a finished height *h* and a finished width *w*. In FIG. 8, the measurement indicated by *s* represents one-half the finished case width or *w*/2. Therefore, panel 10 will have an over-all length $l + 2s$ and an over-all height $h + 2s$. Each corner of panel 10 is an arc of a circle having its center on a line 11 which bisects the angle formed between the sides of panel 10. It has been found by the inventor, that locating notch *b* at the intersection of line 11 and each corner arc; notches *a* and *c* at the respective tangent points of the arc and notch *d* a distance *p* away from notch *c* will produce a pleated corner that exhibits only a slight degree of sharpness. An examination of the geometric relationships will show that $p = s \sqrt{2}$. If desired, the location of the notch marks *a*, *b*, *c* and *d* can be varied, resulting in a different degree of sharpness at each finished corner. This of course is an aesthetic consideration which will be determined by the desired size and shape of the constructed case.

Panel 10 includes location areas 22 and 24 to each of which are attached the corresponding parts of handle 23 (FIG. 3). Handle 23 may typically be fabricated from a webbing material. An access opening is shown indicated generally as 27 and the closure means shown as zipper 29. Alignment marks *e*, *f*, *g*, and *h* are located

around the periphery of panel 10 and aid in the alignment of panel 10 to panel 30 (FIG. 2). Side panel webbing strips 40 and 41 (FIG. 3) are attached to the panels at areas 28 (FIG. 1) and 38 (FIG. 2) respectively and are used to define the bottom of the case and lend structural stability thereto.

Referring now to FIG. 2, panel 30 includes corners 13, 15, 17, and 19. Each corner includes pleat marks a^1 , b^1 , c^1 , and d^1 . Areas 32 and 34 serve to locate the position of handle 33 (FIG. 3) when the latter is attached to the panel. Alignment marks e^1 , f^1 , g^1 , and h^1 are located around the periphery of panel 30 and are aligned with the corresponding marks of panel 10 when both panels are joined together during construction.

Referring to FIGS. 1, 2, and 3, in a typical manufacturing operation, both panels are prefabricated by first cutting and notching them to the desired size and shape. Specifically, access opening 27 is cut and areas 22, 24 and 28 are spotted on panel 10; areas 32, 34 and 38 are spotted on panel 30. Pleat marks a , b , c , d and a^1 , b^1 , c^1 , d^1 are notched on each corner of the respective panels.

In a typical manufacturing operation, handle 23 is sewn on panel 10 after being placed on location areas 22 and 24. A similar operation is performed in attaching handle 33 to panel 30. Zipper 29 is sewn to the panel along access opening 27. Side panel webbing strips 40 and 41 are sewn onto the panels and perform the dual function of defining the case bottom to give the case structural stability and of sealing off the ends of the access opening where zipper 29 has been attached.

The final step in the prefabrication of panels 10 and 30 is the formation of each of the corners. Referring to FIGS. 7 and 7A, this is accomplished on panel 10 by first aligning mark b with mark d to form a first pleat. Mark a is then aligned with mark c to form a second pleat and thereby complete the formation of the corner. A line of stitching is run along the edge of the panel and through the corner to hold the latter in its folded position. In FIG. 5A, a flat portion 50 has been formed on the case bottom at corner 18. Similar surfaces are formed at the case top at corners 14, 16, and at the bottom at corner 20 and provide shape and structural stability for the case (54, 56, 58 in FIG. 3). Panel 30 is prefabricated in a manner similar to panel 10 i.e.,

at each corner, mark b^1 is aligned with mark d^1 and mark a^1 is aligned with mark c^1 . Each corner is then finished with a line of stitching. Flat surfaces 62, 64 (FIG. 3) 66, 68 (not shown) are formed at each corner at the top and bottom portions of the case.

In joining the prefabricated panels together, panels 10 and 30 are placed with their exterior faces juxtaposed and with marks e , f , g , and h in alignment with marks e^1 , f^1 , g^1 , and h^1 . A piece of welting 60 (FIG. 3) is placed between the interior edges of both panels and the operator then sews all three members together around the entire periphery of the panels. If desired, a binding may be applied to finish off the welt seam.

The operator then inverts the case through the access opening to form the completed case.

Although the present invention has been described with reference to a specific embodiment, it will be appreciated by a person skilled in the art that a wide variety of changes may be made without departing from the scope of this invention. Additionally, certain features may be used independently of others and equivalents may be substituted for the elements, all within the spirit and scope of the invention.

I claim:

1. A carrying case comprising two rectangular pieces of pliable material, each piece having pleats at each corner to form sides and top, bottom and end sections, said top, bottom and end sections extending generally perpendicularly from the respective side, means for securing said pleated corners in folded condition, said pleats providing shape and structural stability to said case, said sections being generally one-half the width of said case, adjacent top, bottom and end sections of respective pieces secured together along the entire interior periphery of adjacent sections to form said case, a welt positioned around the periphery between adjacent respective sections, an opening in at least one side of said pieces providing access to the interior of said case and closure means for said opening.

2. The carrying case of claim 1 wherein the means for securing said pleated corners is stitching.

3. The carrying case according to claim 1 wherein handles are provided one each attached to the sides of said case.

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