United States Patent [19]

Kotkins

[11] **3,737,980**

[45] **June 12, 1973**

[54] **METHOD OF MANUFACTURING LUGGAGE CASES AND THE LIKE AND PRODUCTS PRODUCED THEREBY**

[75] Inventor: **Henry L. Kotkins, Seattle, Wash.**

[73] Assignee: **Skyway Luggage Company, Seattle, Wash.**

[22] Filed: **Feb. 8, 1971**

[21] Appl. No.: **113,192**

[52] **U.S. Cl.** **29/515**, 29/445, 190/28

[51] **Int. Cl.** **B21d 39/00**

[58] **Field of Search** ..... 29/420, 400, 400 C, 29/400 D, 509, 513, 445, 515; 190/49, 58 B, 28

[56] **References Cited**

UNITED STATES PATENTS

3,201,744	8/1965	Dean	29/509
3,553,822	1/1971	Bergh	29/509
3,165,827	1/1965	Stollman	29/445
3,477,553	11/1969	Kish	29/445

Primary Examiner—Charles W. Lanham
Assistant Examiner—J. W. Davie
Attorney—Seed, Berry & Dowrey

[57] **ABSTRACT**

A method of making a luggage case including the steps of forming a pair of frame members adapted to abut in interlocking relationship, attaching the material which, together with the frame members, forms the peripheral surface of the case to said frame members while they are in a substantially linear condition, bending the framework and the material attached thereto to the required shape of the outer periphery and attaching to the resulting peripheral surface the side panels, lining and other necessary accoutrements. The luggage case resulting from the method of construction has no passage for dirt, water and the like to enter the luggage case at the place where the framework is attached.

4 Claims, 6 Drawing Figures

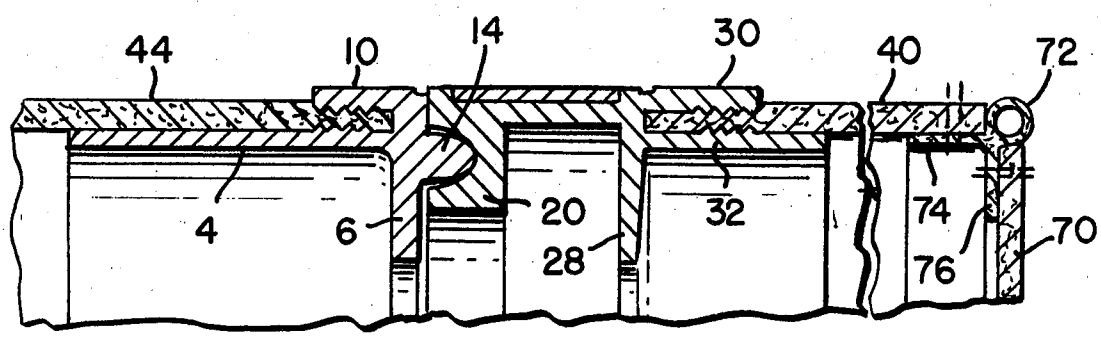


FIG. 1

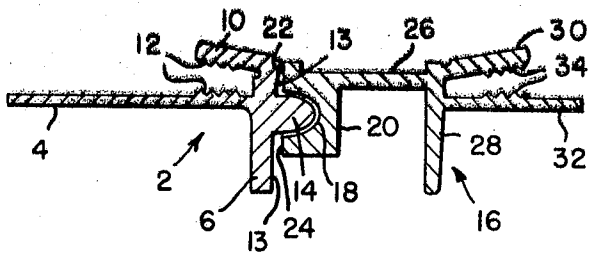


FIG. 2

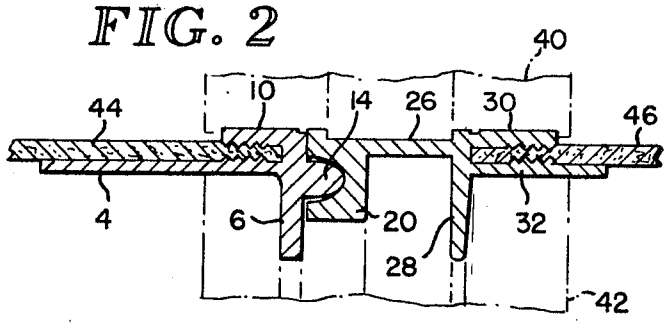


FIG. 3

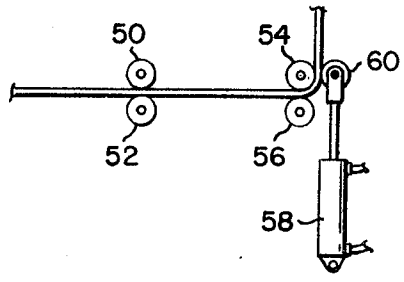
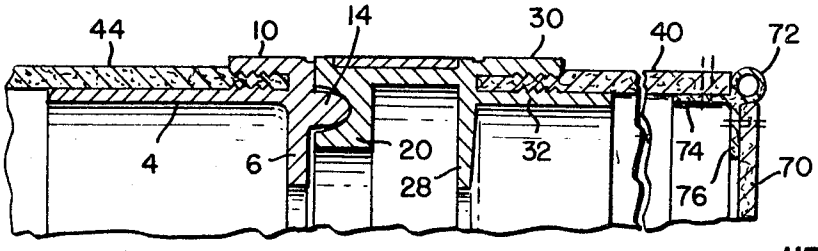


FIG. 5



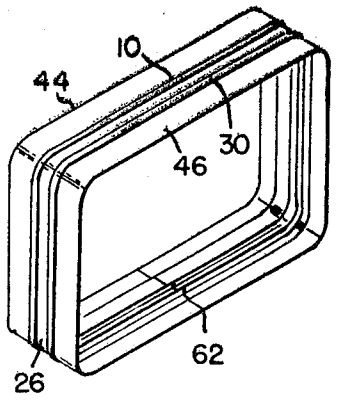


FIG. 4

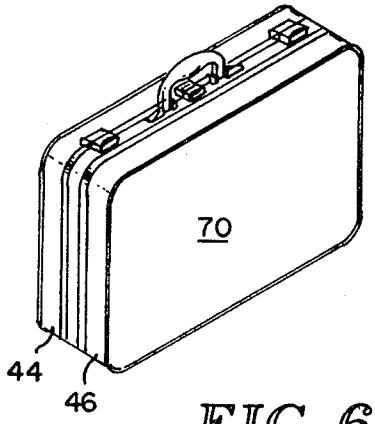


FIG. 6

INVENTOR.
HENRY L. KOTKINS
BY
Synd, Berry & Downey
ATTORNEYS

METHOD OF MANUFACTURING LUGGAGE CASES AND THE LIKE AND PRODUCTS PRODUCED THEREBY

BACKGROUND OF THE INVENTION

There are presently on the market a multiplicity of luggage cases wherein each of the opposed sides are secured to a metallic strip which extends around the abutting edge of the sides. The metallic strips which form the framework of the luggage case are secured to the peripheral fabric of the soft case or shells of a rigid case by rivets which extend through the framework or alternatively sewed through the material and framework.

One difficulty with the prior art luggage cases which have the rivets or threads extending through the exterior portion of the case, is the fact that it results in a surface which is not smooth and attractive in appearance and further the resultant holes which pass through the framework provide an opening through which water or contaminants may easily pass to the contents of the case.

Yet another problem with the prior luggage cases lies in the fact that when the framework is formed into the desired configuration it tends to become crimped at the corners closing the opening necessary for the fabric making it difficult, and often impossible, to get the fabric into the proper position for securement thereto.

A difficulty with the method of making suitcases prior to the present invention exists in the time and inherent expense involved in securing the peripheral fabric to the framework. The framework has traditionally been formed to the desired configuration after which the fabric shell was inserted into slots in the framework and secured therein. This operation is time consuming in that the material must necessarily be located by hand and then secured. The insertion of the material is often rendered nearly impossible due to crimping of the framework during forming which partially or completely closes the opening designed to receive the material.

With these problems in mind it is an object of the present invention to provide a luggage case wherein the exterior portion of the opposing sides adjacent the framework is smooth and has no holes therethrough increasing the attractive appearance of the luggage case and inhibiting the entry of water, dust or other contaminants.

It is yet another object of the present invention to provide a method of constructing a luggage case wherein the frame and the peripheral material of the luggage case are each cut to a predetermined length, secured together and then the frame is bent to the appropriate configuration.

Yet another object of the present invention is to provide a method of constructing a luggage case wherein the only securement between the frame and the peripheral material of the case is the compression of the material by the frame between a pair of adjacent flanges designed to receive the material therebetween.

Still another object of the present invention is to provide a method of constructing a luggage case wherein the entire frame and peripheral structure for the luggage case is formed integrally. Particularly, the framework consists of two metal bands adapted to be in opposed face to face relationship when the luggage case is closed. A portion of the peripheral material is simultaneously secured by crimping to each half of the framework and then the entire unit, i.e., both pieces of framework and material attached thereto, formed into the desired shape as a unit. Following the shaping, the side panels are secured in place and the other accoutrements attached.

Yet a further object of the present invention is to provide a method of constructing a luggage case wherein the framework of the case is cut to length, the material which forms the remainder of the periphery of the case is cut to the same length and then the elements placed in proper interrelationship and secured together in one operation. Following the securement of the elements, the portion which forms the periphery of the case is formed as an integral unit thus eliminating the time consuming and problematical operations heretofore necessary.

With the above and other objects of the invention in mind and various novel details of construction in combinations and parts will now be particularly described with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional view through the framework prior to attachment of the peripheral material.

FIG. 2 is a sectional view through the framework with the peripheral material in place and depicting in phantom the roller means which secures the material to the framework by compressing the material between a pair of adjacent flanges on the frame member.

FIG. 3 is a plan view showing one possible method of forming the framework and attached material to the desired configuration.

FIG. 4 is an isometric view of the frame and the material secured thereto following the crimping and bending operation.

FIG. 5 is a sectional view through the frame and peripheral material combination showing the relative location of parts and further including one possible means of attaching the side panels.

FIG. 6 is an isometric view of the completed luggage case.

DETAILED DESCRIPTION OF THE DRAWINGS

As can be seen in FIG. 1 the frame member comprises two sections, adapted to interlock. The sections, shown in cross section, are elongated extensions and when cut to length and formed extend around the entire periphery of the luggage case. The two sections, for the purpose of clarity, will be described as facing each other, the position they will assume when the completed case is closed.

The leftwardmost section **2** of the frame comprises a rearwardly extending wide flange **4** and a second narrow rearwardly extending flange **10** spaced from and approximately parallel to the flange **4.** The two flanges **4, 10** are adapted to be squeezed together and provide the securement for peripheral material as hereinafter described. The face of the section **2** includes a pair of uniplanar faces **13** separated by a tongue portion **14,** the lowermost face is formed upon the surface of a relatively stiff reinforcing flange **6.** The facing surfaces of the flanges **4** and **10** have serrations **12** to assist in holding the material in position when clamped therebetween.

The righthand frame member as seen in FIG. **1,** denoted as **16,** has a substantially U-shaped outwardly

facing groove 18 to receive the tongue 14 in the opposing member 2 hereinabove described. The groove 18 is formed in an enlarged portion 20 of the section 16 and has relatively flat surfaces 22, 24 upon its face for abutment against the faces 13 of the opposing frame member. Extending rearwardly from the enlarged portion 20 is a bridge member 26 terminating in a downwardly extending reinforcing flange 28 generally parallel to surfaces 22, 24 and extending at right angles to the bridge 28. Flange 28 likewise extends slightly above the bridge 20 and has a pair of rearwardly extending spaced flanges 30, 32 having serrations 34 upon their facing surfaces. As noted above, the serrations are designed to assist in retaining the fabric in place when the case is completed as hereinafter described.

The frame members as hereinabove described are preformed and cut to length. The length of the frame, will of course, vary with the size of the case since as described above it passes around the outer periphery of the case. The material which forms the remainder of the peripheral surface of the completed case is likewise cut to length and then inserted between the flanges 4, 10 and 30, 32. The frame members 2, 10 and the fabric which is to be secured thereto are passed as a unit between a roller mechanism which simultaneously presses flanges 4, 10 and 30, 32 into contact with the fabric thus forcing the serrations into the fabric firmly holding the fabric and framework in proper relationship.

Referring now in particular to FIG. 2 it can be seen that the frame elements particularly described with reference to FIG. 1 are operated upon by contoured rollers 40, 42 adapted to press the flanges of the frame into the fabric without deforming the rest of the framework. If the fabric is not exceptionally wide and sufficiently stiff, guides may be used to assure that the fabric is positively seated within the grooves.

The combination of the frame members 2, 16 and their attached fabric 44, 46 as hereinabove described are placed within a mechanism which bends the frame-fabric combination to the appropriate shape. One possible method of bending the frame members is shown in FIG. 4. The central or front portion of the frame is held in position by rollers 50, 52 to prevent bowing of the frame as the ends of the frame bent about roller 54 whose opposing member 56 holds the frame in proper position. The bending force is provided by a hydraulic ram 58 having a roller 60 mounted at the outer end. The roller moves along the frame forming it around the surface at 54. It is well within the scope of this invention that for a rectangular case, two of the corners will be formed simultaneously, followed by the simultaneous forming of the other two corners. The forming of the framework with the fabric in place assists in securing the parts together in that if a crimp is formed as the flanges 2, 10 and 30, 32 are bent, the crimp will pinch the fabric offering further resistance to separation of the elements. It is to be understood that the apparatus for forming the peripheral member is not limited to that shown but could be any normal or automatic mechanism capable of accomplishing the result.

As can be seen in FIG. 4 the frame and attached fabric when completely shaped will form the entire outer periphery of the luggage case and will have a unitary seam as shown at 62, normally hidden beneath a hinge at the bottom of the luggage case.

The unit as shown in FIG. 4 then has attached thereto the side panels 70. One method of attaching the side panels 70 to the frame-fabric combination as hereinabove described would be through the use of a bead 72 having flanges 74, 76 which are placed inside the peripheral fabric and the side panel respectively and secured thereto by sewing through both the bead and the respective fabric or panel. Following this operation the interior lining, pockets, hinges and locks are placed in position resulting in the completed luggage case as shown in FIG. 6.

In summary, the luggage case is manufactured by the steps of (a) cutting the frame to proper length (b) securing the fabric in position by crimping it between the serrated flanges of the framework, (c) bending the frame to the proper configuration, (d) sewing the side panels in position and (e) adding the finishing touches resulting in an attractive luggage case ready for the market. The luggage case which is the result of the hereinabove described method is superior in appearance and durability because there is nothing breaking the smooth lines of the framework and there are no openings through the frame allowing entry of water or contaminants.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method of manufacturing a luggage case comprising the steps of;
   a. cutting a pair of interlocking frame members each having a pair of integral, spaced, outwardly facing flanges to a length predetermined by the size of the case to be manufactured,
   b. placing fabric between the flanges,
   c. squeezing the flanges together by passing the frame member with the fabric in place between a pair of contoured rollers, said rollers being shaped to apply pressure and compress only the flanges of the frame member thereby frictionally holding the fabric,
   d. bending the frame into a desired configuration forming the peripheral edge of the sides of the case,
   e. attaching the side panels and adding hardware necessary to complete the luggage case.

2. A method as in claim 1 wherein the interlocking frame members each include an integral reinforcing rib extending outwardly therefrom.

3. A method as in claim 1 and further including the steps of cutting a pair of fabric pieces to a predetermined size prior to placing the fabric between the flanges.

4. A method of manufacturing a luggage case comprising the steps of cutting a pair of interlocking frame members each having a pair of integrally spaced outwardly facing flanges to a length predetermined by the size of the case to be manufactured, placing fabric between the flanges, squeezing the flanges together, thereby securing the fabric to the frame, bending the frame into a desired configuration forming a peripheral edge for the sides of the case, attaching the side panels to the peripheral fabric by means of a bead having outwardly extending flanges, sewing the side panel to one flange, sewing the peripheral fabric to the other flange and adding the hardware necessary to complete the luggage case.

* * * * *