

[54] SEATING UNIT

[76] Inventor: David L. Rowland, 8 E. 62nd St.,  
New York, N.Y. 10024

[22] Filed: Sept. 9, 1971

[21] Appl. No.: 179,123

**Related U.S. Application Data**

[62] Division of Ser. No. 889,155, Dec. 30, 1969.

[52] U.S. Cl. .... 297/445, 297/455, 5/341,  
5/359

[51] Int. Cl. .... A47c 1/12, A47c 5/00, A47c 7/02

[58] Field of Search ..... 297/445, 382, 454,  
297/455, DIG. 1; 5/341, 359

[56] **References Cited**

**UNITED STATES PATENTS**

2,853,124	9/1958	Shapiro .....	297/456
3,083,496	4/1963	Feiwerman .....	5/341 X
3,061,844	11/1962	Coursey .....	297/DIG. 1
3,063,753	11/1962	Mitchell .....	297/384 X

**FOREIGN PATENTS OR APPLICATIONS**

199,301	7/1907	Germany .....	5/341
---------	--------	---------------	-------

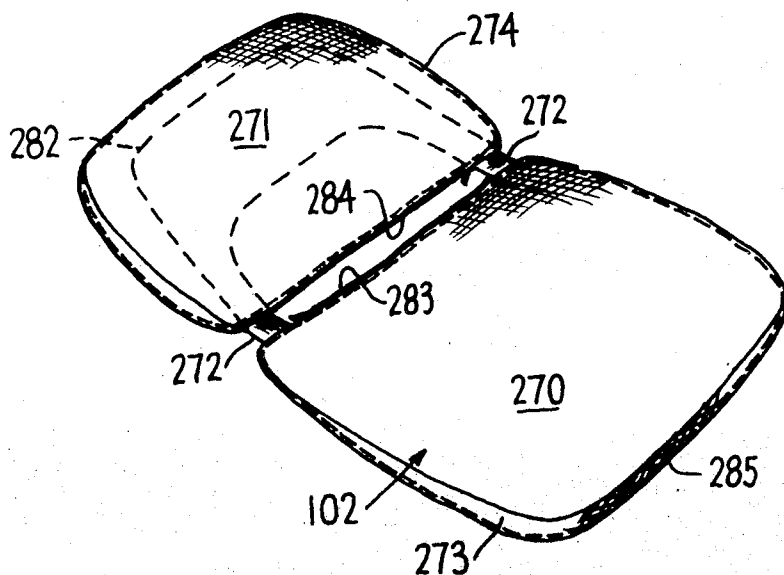
482,422 4/1952 Canada ..... 297/382

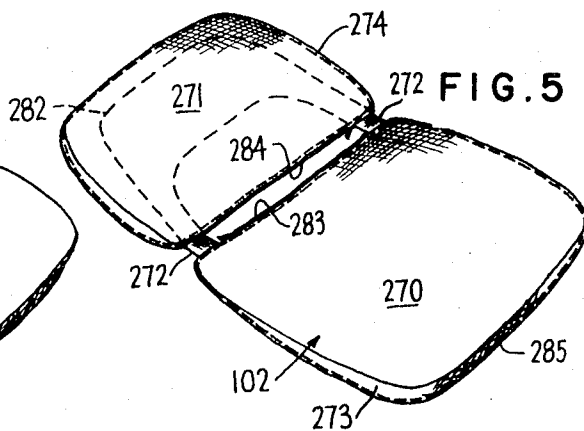
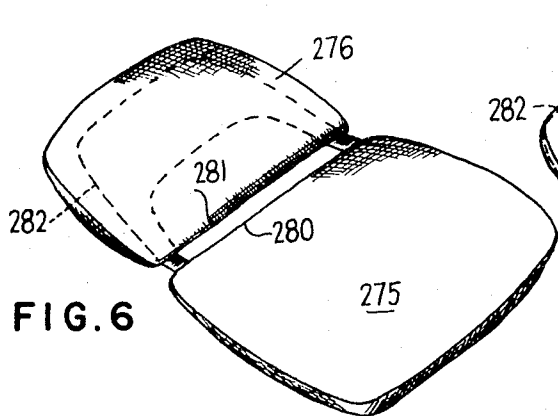
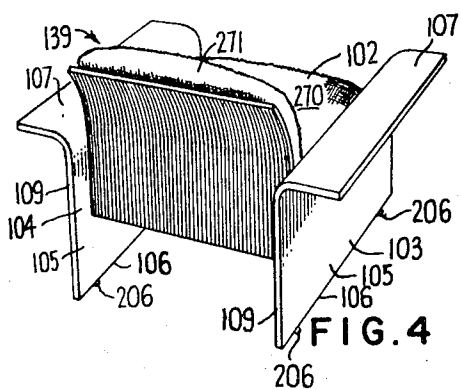
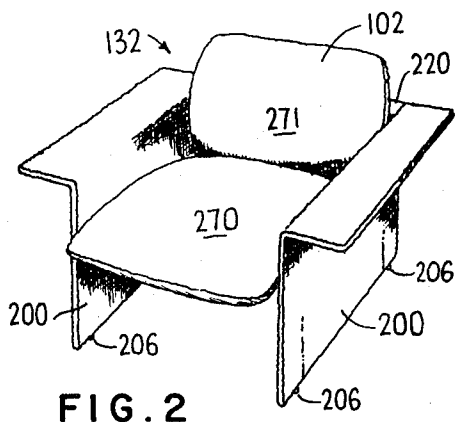
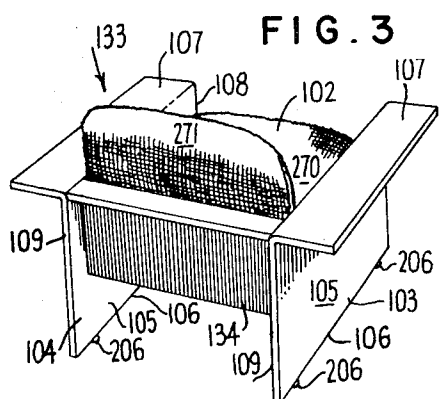
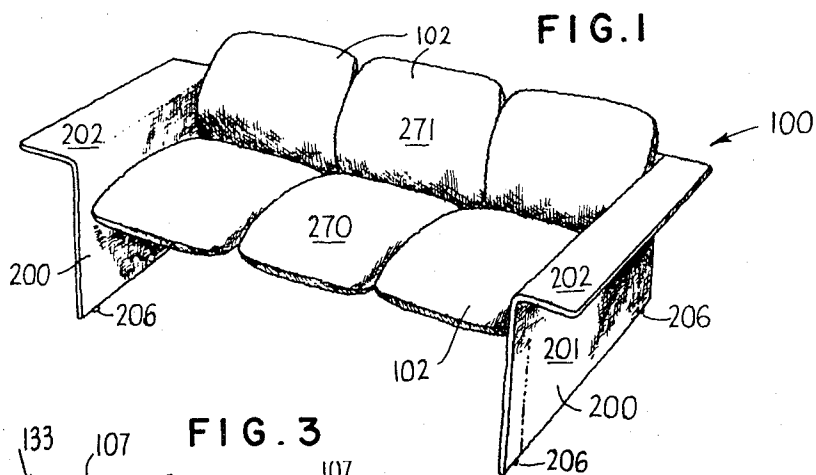
*Primary Examiner*—Paul R. Gilliam  
*Attorney*—Owen, Wickersham & Erickson

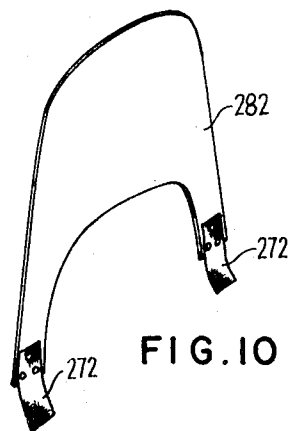
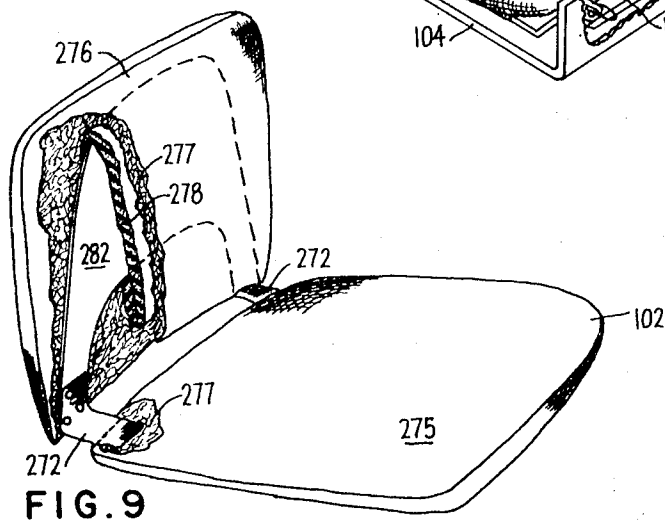
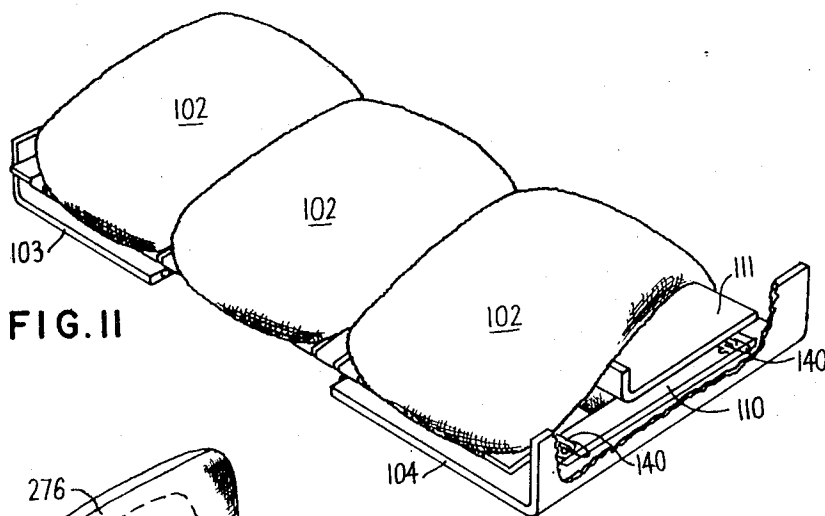
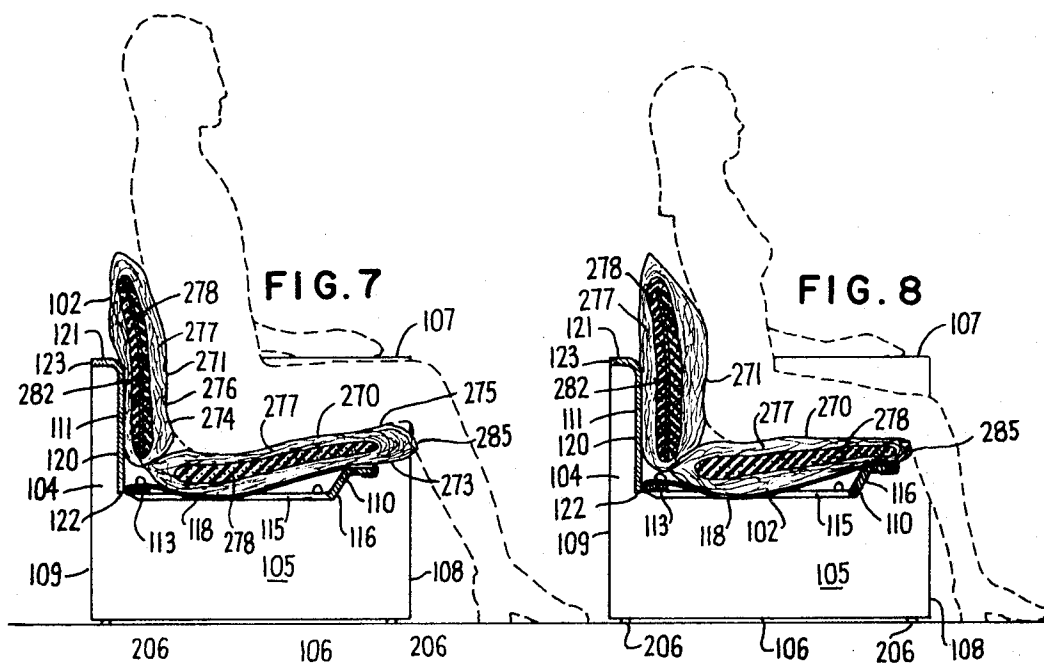
[57] **ABSTRACT**

A cushion assembly having a seat portion and a back portion joined together. Each portion comprises an inner cover filled with resilient stuffing, an upholstery fabric outer cover, and a stiffening member inside the stuffing is inside the inner cover of the back portion. The stiffening member has a plurality of cloth tabs secured to the inner covers of both the seat portion and the back portion, and each portion is sewn together by a seam whose thread is passed through the tabs. These tabs serve not only to keep the stiffening member in place but also as cloth hinges joining the seat portion to the back portions. The stiffening member is a sheet-like member of generally rigid material and prevents the cushion from being bent back more than a certain amount so that it provides support even where the seat or sofa on which the cushion is placed has a low back.

**4 Claims, 11 Drawing Figures**







# 1

## SEATING UNIT

This is a division of application Ser. No. 889,155, filed Dec. 30, 1969.

This invention relates to improvements in cushions for furniture, such as sofas, loveseats, and lounge chairs.

Sofas, large lounge chairs, and other upholstered furniture have traditionally been cumbersome, heavy, and disposed to get dirty though they are not easy to clean. Typically, they have been available in a limited number of upholstery fabrics, have been expensive, and reupholstery has also been very expensive. The front edges of the arms of the sofa or chair have generally been exposed to the greatest traffic and so generally have become the first parts to wear. When they were worn through, it has usually been necessary to reupholster the whole sofa or chair or to discard it. The present invention is directed to a solution of these problems.

Customarily, sofas, for example, have been designed in two ways. In one, the backs are higher than the arms and in the other the arms have been equal to the height of the backs. The latter approach, although employed by several avant-garde designers in an endeavor to achieve a simple appearance, has heretofore sacrificed the comfort of the person sitting in it, because the arm has been put so high that it really could not properly function as an arm to support the arm of the sitter. The present invention enables the overcoming of these disadvantages and is also applicable to high-back sofas.

A typical housewife desiring to purchase a sofa or lounge chair has heretofore gone to a furniture or department store and chosen the product from a small choice of upholstery fabrics, placed an order, and waited for much later delivery to her home by a large truck. Occasionally, the store has had one on hand that pleased her, but even then she has had to wait for the delivery, which was often delayed and usually required the labor of two men. Once the sofa or chair has been delivered, it was difficult for her and her husband to move it around. Also, after she had used it a while, it being to get dirty. The cushions sometimes had removable covers so that cleaning of them was possible, but the actual upholstery on the body was generally tacked on and could only be properly cleaned by complete removal, for, while shampoo cleaning was possible on an installed sofa, it was usually difficult and unpleasant to do, and the product itself was, of course, not usable until the shampoo dried, which usually took several hours. Once wear occurred, reupholstery required the tedious job of removing the old fabric, then sewing and tacking on of new fabric.

The present invention is addressed to these problems and presents useful solutions. When furniture made by this invention is to be purchased and the housewife visits the furniture or department store, she can pick out the products, choose one or more of any of a very large number of available packaged upholstery fabrics and can carry the upholstery fabric and a compact package containing a partly disassembled sofa or chair out to her car by herself and take it home with her in an ordinary sized car. She may not even need help in carrying the package or lifting it into the car, although this help can be easily supplied by service personnel at the store. When she has the package at home, she is able to carry it into the house, unwrap it, slip the removable upholstery on it, and assemble the chair or sofa together

2

without employing tools; it is then ready for use. When it needs to be cleaned, the upholstery is readily removed and readily replaced.

One feature of the invention is its utilization of stretch fabrics in connection with zippers. Up to now it has generally not been practical to incorporate zippers on stretch fabrics such as slip upholstery covers, since the use of the zippers, which certainly do not stretch, defeats the purpose of utilizing stretch fabrics, which are used only so that they can be stretched wider than the object while putting them on. When a zipper is placed in its customary position along the opening, it opens and closes, but the non-stretch tape on each side of the zipper prevents the opening from stretching, and this is the very point where an opening should be able to be widened in order to use the stretchable fabric. The present invention also overcomes this difficulty and provides useful arrangements.

Many other objects, features, and advantages of the invention will appear from, and many are explained in detail in, the following description of some preferred forms thereof.

In the drawings:

FIG. 1 is a view in perspective of a three-seat upholstered sofa embodying the principles of this invention.

FIG. 2 is a similar view of an upholstered lounge chair having the same basic structure as the sofa of FIG. 1.

FIG. 3 is a rear view in perspective of a chair like the chair of FIG. 2, except that its rear frame and side panels are not upholstered.

FIG. 4 is a rear view in perspective of a chair with a high back with its side panels and back frame upholstered.

FIG. 5 is a view in perspective of an upholstered cushion assembly according to the principles of this invention, shown flattened out.

FIG. 6 is a similar view of the inner cover and contents of the assembly of FIG. 5 with the upholstery fabric outer cover removed.

FIG. 7 is a view in side elevation and in vertical section of a sofa or chair of the invention, showing how the cushions and springs act when sat on by a relatively heavy man, his outline being shown in broken lines.

FIG. 8 is a similar view showing how the sofa or chair acts when sat upon by a lighter women, her outline being shown in broken lines.

FIG. 9 is a cutaway view in perspective of the inner case of a seat-back cushion assembly, partially broken away and shown in section.

FIG. 10 is a view in perspective of a back-stiffening insert used in the cushion of FIG. 9.

FIG. 11 is a view in perspective of the sofa of FIG. 1 disassembled and stacked for shipping, the upholstery covers being omitted and part of the arm portion of one side panel being broken away to show what lies behind.

The sofa 100 shown in FIG. 1 is a typical example of a fully upholstered sofa embodying the present invention. It comprises a basic frame structure 101 supporting the upholstery and a series of seat cushions members 102. The basic frame structure 101 comprises a pair of side panel members 103 and 104 (FIGS. 3 and 4), which may be identical and serve as the "legs" for the sofa 100; they comprise vertical sheet-like members of strong plywood or plastic or metal, all of sufficient thickness and strength to support the sofa and its load. Each side panel member 103, 104 has a vertical

portion 105 having a lower edge 106 and preferably has an upper horizontal arm portion 107 serving as arms for the sofa 100; for some designs the arm portion 107 may be omitted. There is a front edge 108 and a rear edge 109.

The side panel members 103 and 104 are joined together by and support, a seat frame 110 and a back frame 111, so that these four members comprise the basic frame structure 101, so that these four members comprise the basic frame structure 101. The seat frame 110 is a generally rectangular open frame and is preferably hinged to the back frame 111 by a series of hinges. Thus the seat frame 110 and back frame 111 preferably comprise a single foldable sub-assembly. The back frame 110 may be folded over on top of the seat frame (FIG. 11) or, in a modified structure, may be folded beneath the seat frame by means of somewhat different hinges. When erected, the seat frame 110 is horizontal, and the back frame 111 vertical, at substantially a right angle.

The seat frame 110 may have a rear bar 113, two side bars 114 and 115, and an up-raised front member 116; it may be constructed from wood with some metal reinforcements or attachments. The higher front member 116 adds to the comfort by inherently providing a down slop from the front to the rear and also helps hold the cushions 102 from sliding forward. One (or more) wood or metal stretcher member, preferably bowed, joins the front member 116 to the rear bar 113 in between the side bars 114 and 115 for sofas; for chairs no stretcher is needed.

Suitable cushion-supporting springs 118 may be provided. Other types of springs may be used instead of what is shown. While the springs may be of nearly any type, flat springs are preferably, because they make a compact package and their whole top surface is a supporting platform, whereas coil springs extend far below the top ring, so that the top ring is not a supporting surface, and webbing and wire insulators would be required to hide the feel of those springs. While arcuate springs also work well, the flat bar-like rubber springs 118 can be installed by staples and hence are often preferred. The stretcher helps to enable the frame 110 to withstand the tension which the installation of the springs 118 brings about.

The hinge connections between the seat frame 110 and the back frame or panel 111 also imparts an important strength feature. The thin rear seat frame beam or bar 113 could not alone carry the weight of a heavy person; it would only take the horizontal tension of the springs 118. However, in erected position, the hinges make the back structure into a right angle between the bar 113 and the back frame or panel 111. This imparts adequate strength to the bar 113 to carry the load of people. This novel combination provides the needed strength with a desirable lightness of weight and aids also in providing both of these with a folding structure, all cooperating in providing the take-home feature. If the bar 113 were to be hefty enough to be able to take by itself both the horizontal rear-to-front pull of the springs 118 and the vertically downward force of the people sitting, it would have to be very heavy, as are prior-art sofas. With the hinging, strength, light weight, and portability are all achieved.

The back frame 111 basically comprises a member shaped generally like the side panel members 103 and 104, though none of it rests on the floor; there is an up-

right back portion 120 and there may be a horizontal top portion 121, which is normally level with the arms 107. There is a bottom edge 122, a rear edge 123, and two side edges 124 and 125.

The sofa 110 may, if desired, be used in a non-covered version in which the back 111, seat 110, and sides 103 and 104 are all made principally out of materials with a satisfactory surface for this purpose, such as a high quality wood or a suitable plastic or suitably decorated metal members, or a combination thereof. If they are to be used in that form, they do not need to be provided with any fabric covering, but otherwise they are provided with fabric covering in accordance with this invention in a manner which is described below.

FIG. 2 shows an upholstered lounge chair 132 and FIG. 3 shows a lounge chair 133 whose panels 103 and 104 and back frame 134 are not upholstered. Both of them are very much like the sofa 100 except for the length of the seat frame and back frame, and both of them include the cushions 102. No stretcher 117 is required for the chair 132 or 133.

FIG. 12 illustrates a similar line of sofas and chairs having a high back instead of the low back of the sofa 100.

FIG. 12 shows a chair 139 with a high back structure, curved at its upper end, but with its frame unupholstered, though employing a cushion assembly 102. Obviously, love seats, four-seaters and many other variants are possible.

In all instances the side panels 103 and 104 are attached to the seat frame 110 and back frame 111 by readily releasable and readily securable fasteners.

Important as is the structure so far discussed it is certainly of no greater importance than the removable upholstery feature now to be discussed or than the cushion structure to be discussed later. While the panels 103 and 104 and the frame members 110 and 111 can be made without upholstery to look very good, the panels 103, 104 and 111 are usually upholstered, and the present invention makes it possible to remove the upholstery and quickly to put it back or to put on new upholstery, as explained in the introduction.

A close fitting upholstery cover 200 for either side panel 103 or 104 both sides of both the vertical portion 105 with a portion 201, covers the arm 107 with an arm portion 202 and covers all the edges, 108 and 109, and nearly all of the edge 106.

The seat-and-back cushions 102 are fully reversible, and each comprises a seat portion 270 and a back portion 271 joined together, as by cloth hinges 272. Each portion 270, 271 has an outer case 273 or 274, usually of upholstery fabric, containing a muslin inner case 275 or 276 (FIGS. 7 and 9). The inner case 275 or 276 may contain filler such as feathers, down, polyester, other synthetic fibre, or cotton batting 277 and foam rubber or foam plastic 278. The inner cases 275 and 276 are sewed together along lines 280 and 281 connecting them to the cloth hinges 272. A stiffening insert 282 (see FIGS. 9 and 10) for the back cushion 271, made of plywood, fiberglass, paper fiber, steel, aluminum or something of that nature, is inside the foam member 278 for the back and is secured to the seat portion 270 by the fabric hinges 272, to which it is riveted. This stiffener 282 supports the thorax region of a person's back (see FIGS. 7 and 8) and extends higher than the sofa back portion 121, so that the sofa 100 is still comfortable even though the back 121 and the arms 107

are at the same level. The stiffener 282 is preferably made to be flexible enough to provide a curvature that gives contouring support to the lumbar region of the back. The fabric hinges on tabs 272 on the stiffener panel 282 are sewn through as the cushion is sewn through, that is, from the top surface to the bottom surface. The stiffener panel 282 is used to prevent the back of the panel from moving forward at its bottom and thus decreasing the effectiveness of the thorax support. Zippers 283 and 284 may be used for closing the cases 273 and 274, and are separable, as in a coat-type zipper, so that both pieces of upholstery separate and come off. As in the arm panels, this separation gives a little loose length of fabric near each end which is not bound by the non-stretchable zipper tape.

The seat cushions 102 comprise the interconnected seat 270 and back 271, and the interconnection helps to keep the back 271 from falling over backwards on a low-back sofa 100. The interconnection is not necessary on high-back sofas, but has advantages. However, the cushions 270 and 271 even if not interconnected are still made substantially as shown, except that the high back model needs no stiffener panel 282. On all models, the seat cushions 271 are preferably cantilevered beyond the fronts of the seat frame 110. This, of course, is not essential, but when done adds to the comfort of the sitter by imparting a variability in the distance from the front edge 285 to the back cushion 271, so that both short and tall people find that it adjust properly to thigh length.

Somewhat of the functions of the seat cushions 102 are shown in FIGS. 7 and 8. Note that the cushions 270 and 271 of the heavier man may depress more than those of the lighter woman, because of the size and weight differences. This action makes the cushions automatically comfort-adjustable to each person. Also note that the seat cushion 270 compresses back from its front edge 285. The back insert 282 is necessary only for the low-back models, though it can be used in all types.

FIG. 11 shows the sofa 100 folded for shipment, ready for its carton. The back frame 111 folds over or under the seat frame 110, which is then placed over the panels 103 and 104. The cushions 102 are placed around as padding. It can be appreciated that the pack-

age is much smaller than the sofa. The upholstery covers 200 etc., can be included in the same package or can make up a different package. The covers 200, 220, 273 and 274 are usually identical in fabric but they can be different if desired.

To those skilled in the art to which this invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. The disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

I claim:

1. A fully reversible cushion assembly providing back support on low-back seating members, comprising a seat portion, a back portion, each said portion comprising an inner cover, resilient stuffing filling said inner cover, and an upholstery fabric outer cover, enclosing said inner cover and inside said back portion only, a stiffening member centered inside said stuffing and centered inside said covers, said stiffening member having a plurality of cloth tabs secured thereto and to said inner covers of both said seat portion and said back portion by being sewn to them by seams whose threads pass through said tabs, said tabs thereby serving not only to keep said stiffening member in place but also as cloth hinges joining said seat portion to said back portion and enabling full reversal of the assembly.

2. The seating unit of claim 1 wherein said stuffing comprises a pair of outer layers of foamed material, centered between which is said stiffening member, surrounded by inner layers of fibrous stuffing material.

The seating unit of claim 1 wherein said outer covers are secured around said inner covers by zippers so that they are removable.

4. The seating unit of claim 1 wherein said stiffening member is a sheet-like member of generally rigid material flexible enough to provide for curvature that gives contouring support to the lumbar region of the sitter's back.

\* \* \* \* \*

50

55

60

65

UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,747,977 Dated July 24, 1973

Inventor(s) David L. Rowland

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 46, "women" should read --woman--;

Column 2, line 60, "seat cushions" should read --seat cushion--.

Column 3, line 35, "preferably" should read --preferable--.

Column 4, line 44, "104 both sides" should read  
--104 covers both sides--.

Column 5, line 29, "adjust" should read --adjusts--.

Column 6, line 37, at the beginning of this paragraph, which  
is claim 3, insert --3.--.

Signed and sealed this 26th day of March 1974.

(SEAL)

Attest:

EDWARD M. FLETCHER, JR.  
Attesting Officer

C. MARSHALL DANN  
Commissioner of Patents