United States Patent [19]

Rogers, Jr. et al.

[11] **3,857,121**

[45] **Dec. 31, 1974**

[54] **SOFA BEDS**

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[22] Filed: **Apr. 2, 1973**

[21] Appl. No.: **347,310**

[52] **U.S. Cl.** ..... **5/29,** 5/37, 5/334 C

[51] **Int. Cl.** **A47c 17/14**

[58] **Field of Search** ..... 5/13, 17, 18, 29, 37, 322, 5/323, 334 R, 335 C, 345

[56] **References Cited**

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[57] **ABSTRACT**

In a sofa bed including a seat frame and a backrest frame including a seat mattress mounted on the seat frame and a backrest mattress mounted on the backrest frame, the provision of recesses between the side and front edge portions of the mattresses and the frames for receiving a contour sheet or other sheet or bedding in the recesses.

7 Claims, 4 Drawing Figures

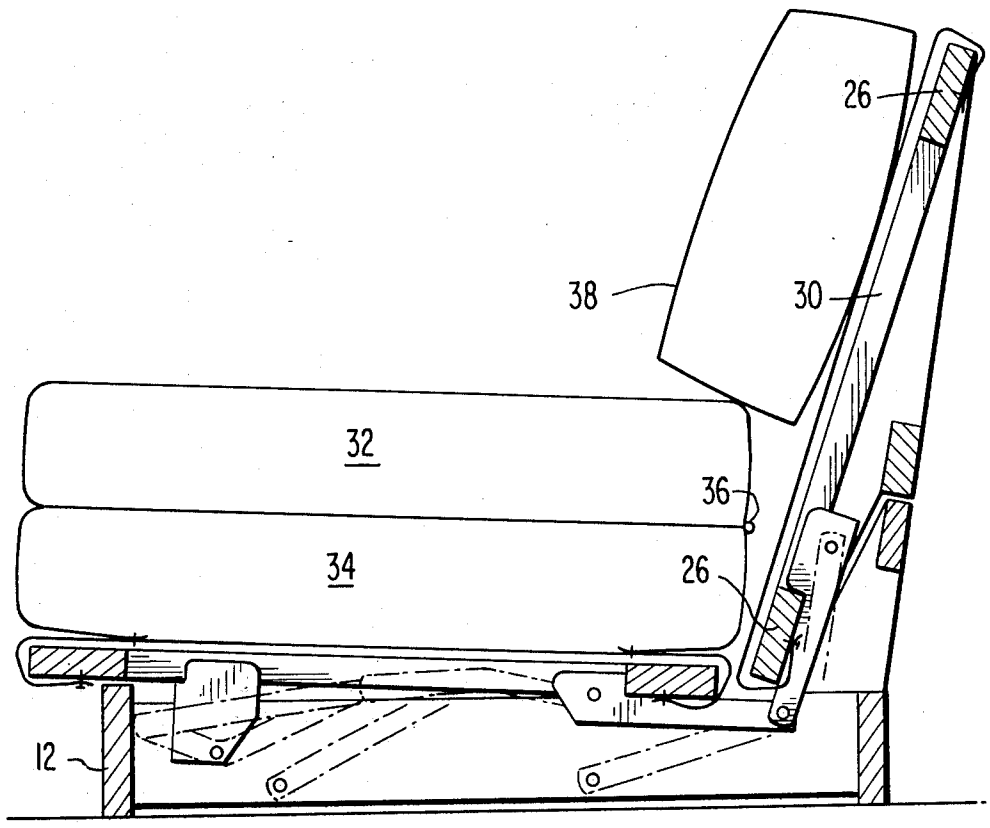
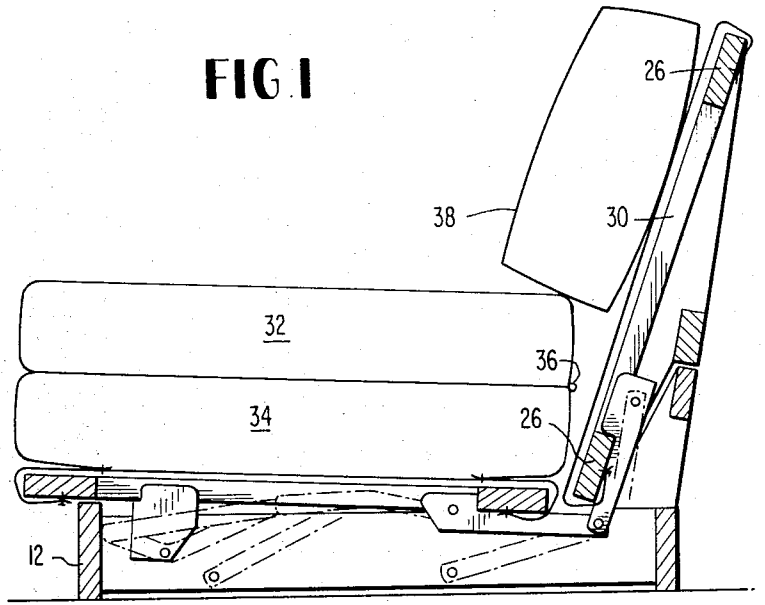


FIG. 1



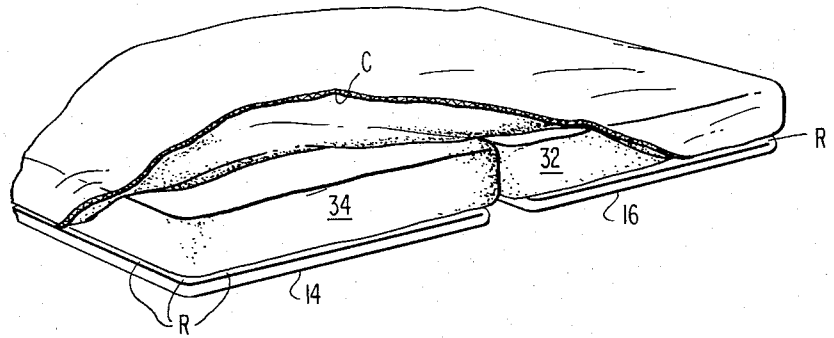


FIG. 3

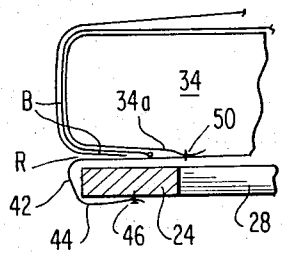
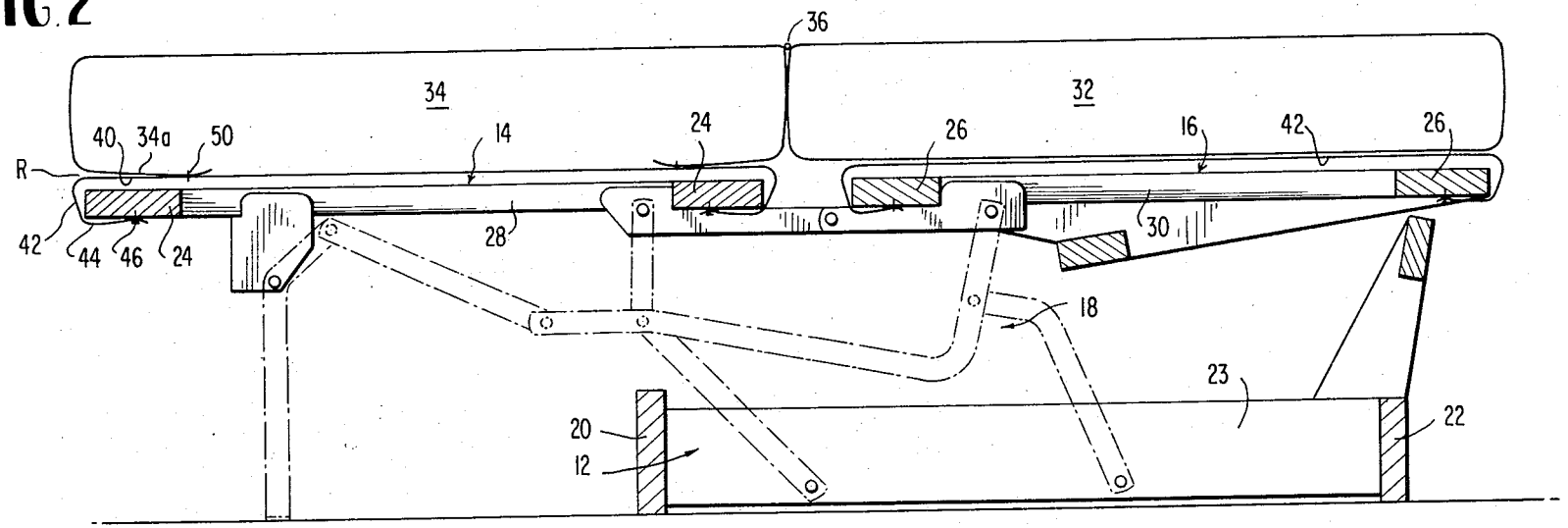


FIG. 4

FIG. 2



SOFA BEDS

OBJECTS OF INVENTION

The present invention generally relates to sofa beds of the type including a seat and a backrest movable between a sofa position where the backrest extends upright from the seat and a bed position wherein the backrest extends in a horizontal plane generally coplanar with the seat. More specifically, the present invention relates to improvements in the frames and mattresses of the backrest and the seat.

One of the objects of the present invention is to provide a sofa bed of the type aforedescribed which will enable a bedding sheet or blanket etc. to be tucked under the mattress sections thereof when used as a bed. Included herein is the provision of such a sofa bed which will also accommodate a contour bedding sheet to be slipped over the corners of the mattresses when in use as a bed.

A more specific object of the present invention is to provide a novel method and arrangement for attaching mattresses in a sofa bed to their respective frames to enable the use of contour bedding sheets and other sheets to be tucked under the lower outer edges of the mattresses. Included herein is a provision of such a novel method and arrangement which may be applied to new sofa beds or conventional sofa beds on the commercial market, or other sofa beds of the prior art, without extensive modification.

Another object of the present invention is the provision of such a sofa bed wherein the mattresses associated with the seat and backrest have the same depth dimensions at the corners thereof to enable a contour sheet to be employed thereon.

SUMMARY OF INVENTION

The above and other objects are achieved in one embodiment of the invention applied to a sofa bed of the type having a seat including a mattress secured on an underlying frame which in turn is supported on a base, and a backrest pivotally connected to the seat for movement between an upright position for use as a sofa and a horizontal position generally coplanar with the seat for use as a bed. The backrest includes a frame interconnected by a linkage mechanism to the seat frame, and a mattress adapted to overlie the backrest frame when in the horizontal bed position. In one specific embodiment of a sofa bed such as disclosed in our U.S. Pat. No. 3,657,747, the mattress associated with the backrest is not attached to the backrest but rather is hinged to the mattress associated with the seat so as to be movable between a position overlying the seat mattress when used as a sofa, and a horizontal position on the backrest frame and coplanar with the seat mattress when used as a bed.

In accordance with the present invention, the seat mattress is attached to its associated underlying frame at points spaced inwardly from the peripheral edge portions of the mattress and frame, the point of attachment being under the seat mattress. In this way, a recess is provided in the peripheral edges between the mattress and the frame for receiving a bedding sheet or blanket. Additionally, this permits the mattress associated with the seat to be dimensioned to have the same height as the mattress associated with the backrest so as to permit a contour sheet to be used over the both mattresses when used as a bed. In certain conventional sofa beds, where the backrest mattress is connected to the underlying backrest frame, the above described feature would be incorporated by connecting the backrest mattress to the frame at points spaced inwardly from the peripheral edges to provide a recess for tucking under bedding sheets or blankets.

DRAWINGS

Other objects and advantages will become apparent from the following more detailed description taken in conjunction with the drawings in which:

FIG. **1** is a side elevational view of a sofa bed embodying the invention with portions of the frame of the sofa bed being shown in cross section;

FIG. **2** is a view similar to FIG. **1** but showing the sofa bed in a bed position;

FIG. **3** is a perspective view showing portions of the mattresses and their underlying frames in a bed position for accommodating a contour sheet shown partly assembled on the mattresses; and

FIG. **4** is a fragmental cross-sectional view of a portion of the sofa bed frame and overlying mattress with bedding sheets tucked therebetween.

DETAILED DESCRIPTION

Referring now to the drawings in detail, there is shown for illustration purposes only a sofa bed generally designated **10** which may be converted from a sofa position illustrated in FIG. **1** to a bed position illustrated in FIG. **2** and vice versa. Sofa bed **10** disclosed is of the same type disclosed in our U.S. Pat. No. 3,657,747 entitled "Sofa Bed and Linkage Mechanism" issued Apr. 25, 1972. Although the present invention is disclosed and described herein in connection with one specific sofa bed of the type disclosed in our U.S. Pat. No. 3,657,747, it will be understood that the present invention may also be applied to other types of sofa beds as will be described in more detail below.

Illustrated sofa bed **10** basically includes a base **12**, a seat frame **14**, a backrest frame **16** pivotally connected to the seat frame, and a linkage mechanism **18** for supporting the seat and backrest frames on the base in and for movement between, the sofa and bed positions shown in FIGS. **1** and **2**. It should be understood that the linkage mechanism **18** forms no part of the present invention but a more detailed description thereof may be obtained by reference to our U.S. Pat. No. 3,657,747.

Base **12** may have any suitable construction such as, for example shown in the drawings wherein it includes front and rear side members **20** and **22** interconnected at their ends by end members **23** to form a generally rectangular structure. Similarly, seat and backrest frames **14** and **16** may also have a rectangular construction including side members **24** and **26** and end members **28** and **30**, respectively. The frames may be made from wood as in the shown embodiment or any other suitable material. For a more detailed description and illustration of the frame, reference is had to our U.S. Pat. No. 3,657,747 including FIG. **1** thereof, the disclosure of said patent being incorporated by reference herein.

The shown embodiment includes a double mattress, pad or cushion arrangement of rectangular shape consisting of upper and lower pad, mattress or cushion sections **32** and **34** hinged together at **36** along their adja-

cent sides. When the sofa bed is in the sofa position shown in FIG. **1**, upper mattresses **32** rests on lower mattress **34** which in turn rests on seat frame **14**. To complete the cushion arrangement in this position, one or more removable cushions **38** may be placed against the backrest as shown in FIG. **2**.

In use when as it is desired to convert the sofa bed from the sofa position shown in FIG. **1** to the bed position shown in FIG. **2**, backrest cushions **38** are removed and then seat frame **14** is raised and moved forwardly which will also cause backrest frame **16** to pivot clockwise as shown in the drawings relative to seat frame **14** until reaching a horizontal position coplanar with the seat frame as shown in FIG. **4**. Upper mattress section **32** may then be swung clockwise as shown in the drawings about hinge **36** to cover backrest frame **16** as shown in FIG. **2** thereby completing the conversion for bed use.

In certain mattress constructions prevalent the prior art such as shown in our U.S. Pat. No. 3,657,747, the front mattress **34** is fixed to the frame **14**. Moreover, front mattress **34** is fixed to its frame **14** in some prior art constructions by incorporating the frame **14** as the bottom of the front mattress **34**. One method of accomplishing the latter is shown in our Pat. No. 3,657,747 wherein the outer surface of front mattress **34** extends below the side edges of frame portions **24** and **28** and under the latter where it is fixed thereto in any suitable manner. This construction has the disadvantage that bedding sheets or blankets, etc. cannot be tucked in below the front mattress **34** between the latter and underlying frame **14**. Furthermore, this prior art construction often results in the disadvantage that the height or depth of front mattress **34** at the corners thereof is larger than that of the backrest mattress **32** at the corners thereof thus preventing the use of a contour sheet which is uniformly dimensioned to fit over uniform corners of a mattress.

In accordance with the present invention, the above disadvantage is obviated in one embodiment of the present invention by forming the front mattress **34** separate from frame **14** and by attaching the bottom surface of the front mattress **34** to the frame **14** at points spaced inwardly from the peripheral edges of the mattress **34** and frame **14**. This provides a recess R between the lower peripheral edge portions of mattress **34** and underlying frame **14** for receiving bedding sheets and/or blankets etc. generally designated B in FIG. **4**. Furthermore, this permits the height of the corners of front mattress **34** to have the same dimension as that of rear mattress **32** to enable a contour sheet C to be applied over both of the mattresses **32** and **34** when in the bed position as illustrated in FIG. **3**.

One preferred method and arrangement of constructing the front mattress **34** and its underlying seat frame **14** to provide the desired recesses R is shown in the drawings, however, several other methods may also be employed. In the specific construction shown, seat frame **14** is provided with an overlying layer of material or sheet **40** which at its periphery extends at **42** about the peripheral edge of frame **14** and under frame **14** at **44** where it it connected in any suitable manner such as by fasteners, staples, etc. **46** to frame portions **24** as shown in FIGS. **2** and **4**. Such a frame sheet **40** is similar to frame sheet **42** employed on the backrest frame **16**. The lower surface **34a** of seat mattress **34** is then connected to frame sheet **40** at a point spaced inwardly from the peripheral edges of mattress **34** and frame **14**. In one preferred embodiment, this connection may be provided through stitching material generally designated **50** received in frame sheet **40** and the lower surface sheet **34*a*** of front mattress **34**. It should also be understood that in the preferred embodiment, the peripheral edge portions **42** and **44** of frame sheet **40** extend about the side and end members **24, 28** of frame **14**, and the stitching **50** extends rectangularly throughout the peripheral dimensioning of the mattress **34** and frame **14** so that a rectangularly continuous recess R is provided below mattress **34**. Instead of employing stitching **50** it will be obvious that other attachment means may be employed such as by bonding, stapling, interweaving, etc. Also, and although not shown, bottom surface **34*a*** of mattress **34** may be incorporated integrally with frame sheet **40** with recesses R included therein.

Since in the specific embodiment shown, backrest mattress **32** is pivoted to front mattress **34** to be movable on top of the front mattress **34** when used as a sofa as shown in FIG. **1**, backrest mattress **32** is not positively connected to backrest frame **16** thereby permitting the rear portions of the bedding sheet, etc. to be tucked under backrest mattress **32** when used in bed position. However, it should be understood that in certain conventional or other prior art sofa beds, the backrest mattress corresponding to **32** is not mounted for movement on the front mattress **34** but instead is positively connected or attached to the backrest frame corresponding to frame **16** to remain on the backrest frame regardless of whether it is in the upright or horizontal position. In such instances, the mattress and frame construction providing the recesses R employed in connection with front mattress **34** and seat frame **14** shown and described above, will also be employed in connection with backrest mattress **32** and its underlying frame. Therefore the present invention need not be limited to the specific mattress arrangement shown and described herein where the back-rest mattress **32** is not connected to its associated frame but rather is free to move in overlying relationship with front mattress **34**.

What is claimed is:

1. In a sofa bed including, a seat, a backrest movably connected to the seat for movement between an upright position extending upwardly at an angle to the seat for use as a sofa and a generally horizontal position extending generally coplanar with the seat for use as a bed, said seat including a frame extending generally in a horizontal plane, a mattress overlying the frame, and connecting means interconnecting the mattress to the frame at a point under the mattress and spaced inwardly from the front edge portions of the mattress to define a recess between the mattress and the front edge portions of the frame for receiving a bedding sheet or the like covering the mattress and tucked into said recess, and wherein said connecting means extends continuously along the front and sides of the mattress and frame but spaced inwardly from the edges thereof to define a continuous recess along the front and sides thereof for receiving a sheet in the recess, and wherein said backrest includes a frame and a mattress loosely positioned on said backrest frame when the backrest is in horizontal position for use as a bed, said backrest mattress being removable from the backrest for placement on the seat mattress when the backrest is in the

upright position for use as a sofa, and wherein said seat and backrest mattresses have a generally rectangular shape with the depth of the mattresses at each of the corners thereof being of the same dimension.

2. The sofa bed defined in claim **1** wherein said connecting means includes a sheet overlying said frame and fixed to the frame, and attaching means attaching said sheet to an underportion of said mattress located inwardly from the front edge portions of the mattress.

3. The sofa bed defined in claim **2** wherein said attaching means are stitches.

4. A frame and mattress assembly for use in a sofa bed comprising in combination, a frame adapted to be placed in a horizontal position when in use as a sofa bed, a mattress overlying and generally coextensive with said frame, and connecting means interconnecting an underportion of said mattress and a portion of the frame at a location spaced inwardly from the edge portions thereof to define a recess between the edge portions of the mattress and frame for receiving a bedding sheet or the like to be tucked under the mattress, a second frame connected to said first frame for movement between an upright position and a horizontal position, a second mattress adapted to rest on the second frame in coplanar relationship with the first mattress for use as a bed, said second mattress adapted to be placed in overlying relationship on the second mattress for use as a sofa, said first and second mattresses having the same depth dimension throughout the peripheral portions thereof, and wherein said connecting means includes a frame sheet overlying the first frame and secured to said first frame below said first mattress, and attachment means engaging bottom portions of the first mattress and portions of said frame sheet.

5. The combination defined in claim **4** wherein said frame sheet extends over edge portions of said frame and under said frame and is attached under said frame to said frame.

6. The combination defined in claim **5** wherein said attachment means includes stitched material.

7. The combination defined in claim **4** wherein said frame and said mattress have a generally rectangular shape.

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