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Hill

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[54] **CONVERTIBLE BUNK BED AND LOUNGE CHAIR ASSEMBLY**

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[52] **U.S. Cl.** **297/377**, 5/112, 297/354

[51] **Int. Cl.** **A47c 4/02**, A47c 1/024

[58] **Field of Search** 297/377, 130, 353-356; 5/110, 111, 112

[56] **References Cited**

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603,896	5/1898	Dixon	297/377
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[57] **ABSTRACT**

In a convertible bed and lounge chair having a generally horizontal bed portion with an adjustable head-rest connected thereto, an improved headrest support assembly which comprises a U-shaped member adapted to be slidably received between the rearward pair of legs of the bed portion, the cross-piece of the member abutting each of the rearward legs to hold them in a spaced-apart relation, each arm of the U-shaped member extending upwardly to support the backrest and to selectively pivot it to desired angles relative to bed portion as the U-shaped member is vertically adjusted.

3 Claims, 4 Drawing Figures

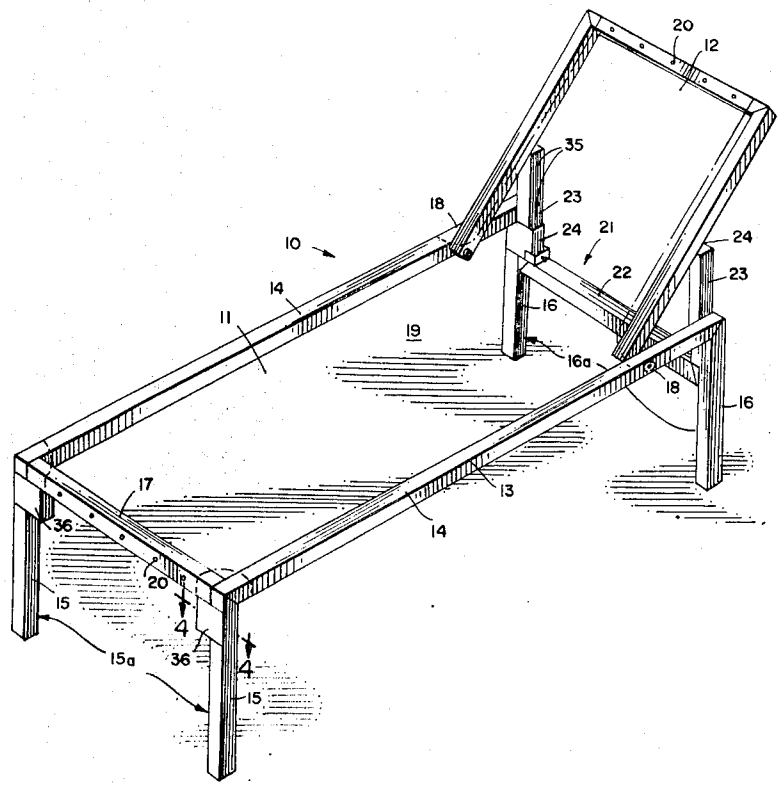


FIG. 1

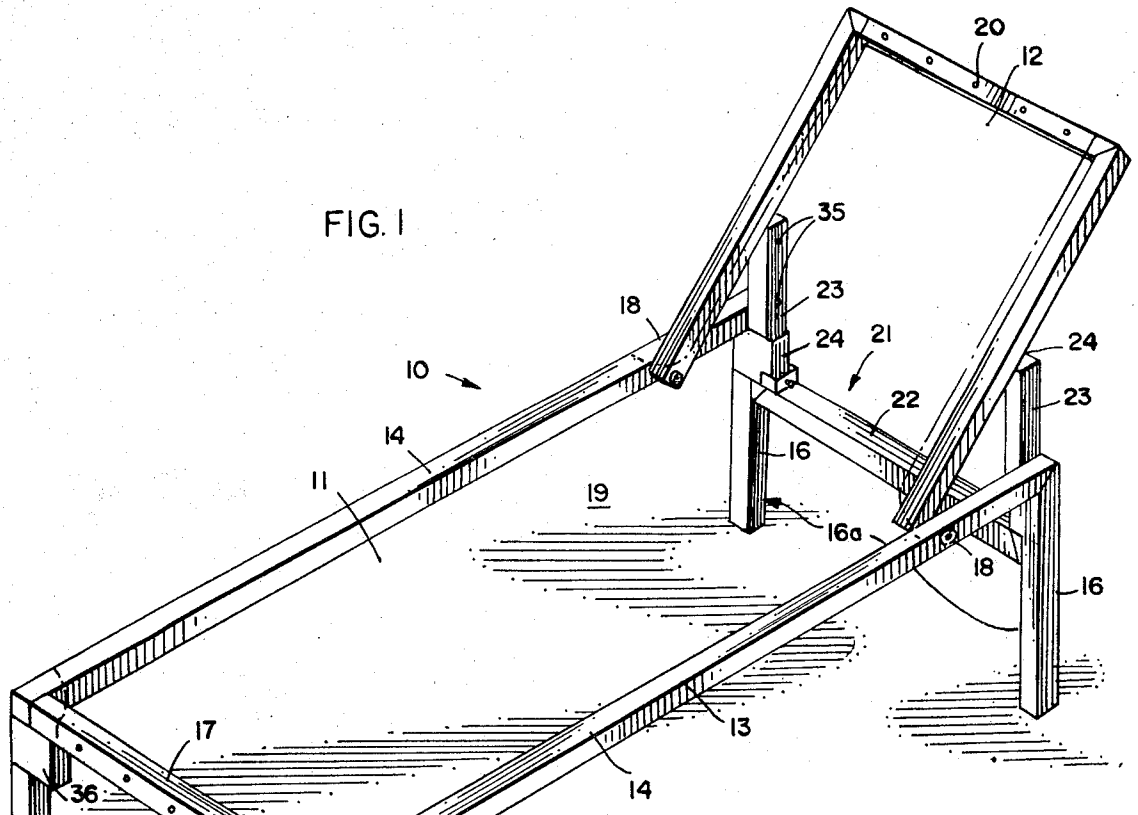


FIG. 2

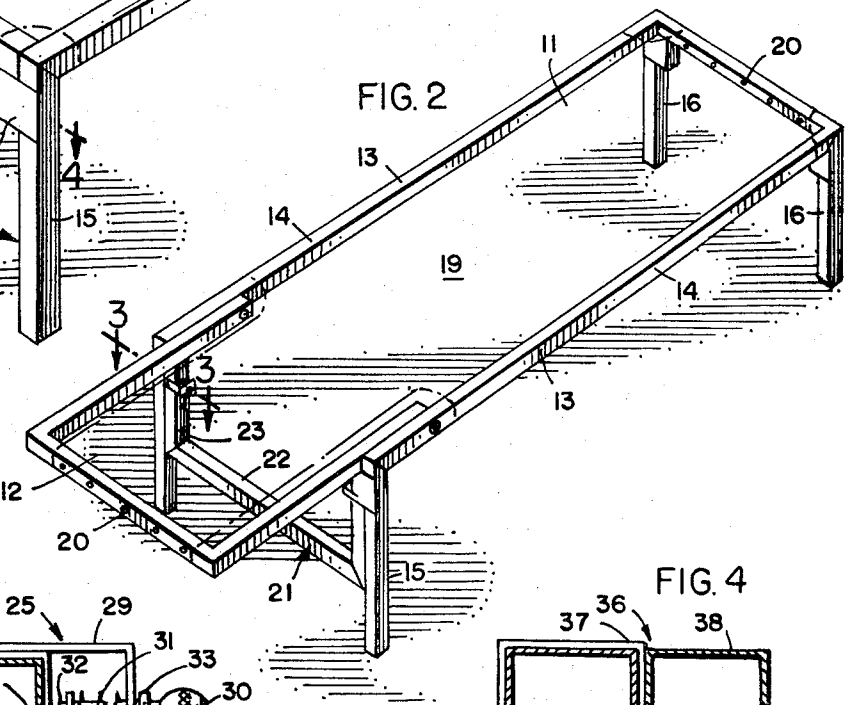


FIG. 3

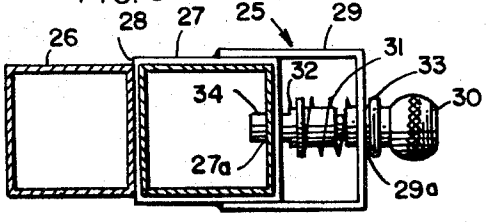


FIG. 4

CONVERTIBLE BUNK BED AND LOUNGE CHAIR ASSEMBLY

BACKGROUND AND SUMMARY

The present invention relates to a convertible bunk bed and lounge chair; more particularly, it is concerned with such a bed that is completely demountable for ease of handling and storage and having an improved headrest support assembly. In general this improved headrest support assembly comprises a U-shaped member constructed and arranged to be slidably received between a pair of rearward legs of a conventional bunk bed and lounge chair. The cross-piece of this member abuts each of the rearward legs to hold them in a secure, spaced-apart relation while each arm of the member extends upwardly to support the backrest and to selectively pivot same to desired angles relative to the bed portion. This is accomplished when the U-shaped member is vertically adjusted to desired heights.

The convertible bunk bed and lounge chairs of the prior art are exemplified by the U.S. Pat. Nos. of Wright, 446,243 and Dixon 603,896. These as well as other such chairs normally employ a U-shaped support member which is pivotally connected to the backrest, the cross-piece of this member being selectively engageable in notches or recesses on the rear legs below the headrests. While this type of mechanism provided a convertible bunk bed and lounge chair, the construction of the headrest support assembly in particular was deficient in several important respects. First of all, due to the structural arrangement of this support assembly it was impossible to provide a stable chair that was easily demountable. This resulted from the fact that added cross-bracing was required to hold the legs in a fixed, spaced-apart relation, particularly the rear legs which were notched or recessed as previously described. As can be appreciated, the use of such cross or bracing members normally detracted from the ease of assembly and disassembly of the lounge chair. When it was attempted to utilize these conventional headrest support mechanisms without additional cross-bracing, it was often found that the resultant chair was wobbly and insecure in use.

Additionally, because the U-shaped member was pivotally connected to the back rest portion of the chair and not in any way fixedly secured to the rear legs, it was often found during storage, carrying and adjustment that the member swung completely out of position to be of use. This was a particularly annoying problem that was impossible to solve using the constructions of the prior art.

The present invention avoids these and other difficulties by providing a headrest support assembly which is adjustably secured between the rearward pair of legs of a convertible bunk bed and lounge chair. In this way the problem associated with a free-swinging pivotally connected U-shaped member are avoided. Further, such a construction simultaneously provides needed bracing between the rearward legs which support the headrest itself. As explained previously, this removes the need for additional bracing and provides a rugged, secure and easily adjustable bed.

THE DRAWINGS

FIG. 1 is a perspective view of the convertible bunk bed and lounge chair of the present invention, assembled and with the headrest in an upright position;

FIG. 2 is a perspective view as in FIG. 1 with the headrest lowered to form a bed;

FIG. 3 is a top elevational view taken along sight line 3—3 of FIG. 2 showing a mechanism for selectively engaging the arms of the U-shaped support member of the headrest support assembly;

FIG. 4 is a top elevational view taken along sight line 4-4 of FIG. 1 showing the slip joint employed to demountably hold a cross-brace between the forward pair of legs of the bed portion of the convertible bed and lounge chair of the present invention.

DETAILED DESCRIPTION

Referring now to FIGS. 1 and 2, there is shown a convertible bunk bed and lounge chair generally designated by the numeral **10** having a generally horizontal bed portion **11** with an adjustable headrest **12** connected thereto. Such a bed includes a pair of aligned bed frame elements **13**, each having a relatively elongated support segment **14** with a forward leg **15** and a rearward leg **16** fixedly attached in a generally normal relation. As can be seen, when the two elements **13** are aligned, two pairs of aligned legs, a forward pair **15**a and a rearward pair **16***a*, are formed. The bed also includes a cross-brace **17** which is demountably attached at the forward end of the bed frame elements **13** to securely hold them in a fixed, spaced-apart relation.

At the rearward end of the bed portion the backrest **12** is pivotally connected by removable means such as the bolt and wing nut assembly **18** to the elongated support segments **14** of the bed frame elements **13.** More specifically, this connection is placed at a point where the headrest **12** lies above the rearward pair of legs **16***a*. Connected to the backrest **12,** the support members **14** and the cross-brace **17** is a continuous bedding surface **19.** This surface is normally of canvas or other flexible, strong material, and is removably connected to the frame members as by the snaps **20.**

Turning now to the improved support assembly of the present invention, it comprises a U-shaped member generally designated **21** made up of a cross-piece **22** and a pair of upwardly extending arms **23.** As shown, the U-shaped member **21** is constructed and arranged to be slidably received between the rearward pair of legs **16***a* such that the cross-piece **22** abuts each of the rearward legs **16** to brace and hold them in a spaced-apart relation. Each arm **23** of the U-shaped member extends upwardly to support the back rest **12** along its frame as at **24.** Because the member **21** is inserted between the rearward pair of legs **16***a* as described, it is not necessary that the arms **23** be connected to the backrest **12.**

As the U-shaped member **21** is vertically adjusted the backrest **12** is selectively pivoted to desired angles relative to the bed portion, thereby producing a flat bed as in FIG. **2** or a lounge chair as in FIG. **1.**

Referring now to FIG. **3,** the preferred means for selectively securing the U-shaped member **21** between the rearward pair of legs **16***a* will be discussed. Such a means is a bracket generally referred to by the numeral **25** and includes two sleeve portions **26** and **27** which are permanently connected in a side-by-side relation as by welds **28.** The outer sleeve **27,** which is adapted to slidably receive an upwardly extending arm **23** of the U-shaped member **21,** is apertured as at **27***a*. Connected to the sleeve **27** is a channel member **29** which is apertured at **29***a;* the apertures **27***a* and **29***a*

are arranged to cooperatively hold the pin or dowel **30** which is inserted through the channel **29** and partially into the sleeve **27.** In preferred forms the pin **30** is spring-loaded and permanently held by the apertures **27***a* and **29***a*. As shown, the spring **31** is about the pin **30** in the space defined by the interior of the channel member **29** and the outer face of the sleeve **27.** By means of the shoulder **32** and the ridge **33** on the pin it is permanently held therein, capable of being moved only to the extent of pulling the engagement portion **34** out of contact with the interior of the sleeve **27.**

In practice, the means **25** is affixed to each rearward leg **16** of the bed frame elements **13,** the leg **16** being permanently encased within the sleeve member **26.** When the frame elements **13** are aligned, the U-shaped support member **21** is inserted into the inwardly facing channel members **27** and adjusted to a desired position. As explained, this member **27** is apertured along its face to allow the entry portion **34** of the securing pin or dowel **30** to be inserted into the sleeve. Each of the upwardly extending arms of the U-shaped member **21** are further provided with a series of corresponding parallel bores **35** (shown in FIG. **1**) such that as the member is vertically adjusted within the sleeves **27** the bores **35** in each arm simultaneously align with the corresponding apertures **27***a* and **29***a* which hold the pin **30.** When this occurs the pins **30** can be inserted through sleeve **27** into the bores **35** of the upwardly extending arms **23.** In this way a demountable, level and secure support with a headrest is provided which is adjustable to varying positions exemplified by FIGS. **1** and **2.**

As can be seen from the foregoing discussion, the convertible bunk bed and lounge chair of the present invention is demountable into six components: that is, the two bed frame elements **13,** the forward cross-brace **17,** the headrest **12,** the U-shaped support member **21** and the bedding surface **19.** These elements are fully demountable to provide for ease of storage and handling.

In assembly procedures, the bed frame elements **13** are aligned and the cross-piece **17** is attached at their forward end. This is preferably accomplished by means of the slip joint **36** shown in FIG. **4.** It comprises a pair of sleeves **37** and **38** permanently attached in a side-by-side manner. The sleeves **37** permanently hold the forward legs **15** and the attached sleeves **38** extend inwardly therefrom. When it is desired to attach the cross-piece **17,** two depending portions (not shown) which are permanently affixed to the cross-piece **17** are inserted within the sleeves **38** to provide the necessary forward bracing.

Thereafter the U-shaped member **21** is inserted between the rear legs **16a** and a secure, stable bed portion results. The backrest **12** is next attached by means of bolt and nut assembly **18,** and the bedding surface **19** is snapped into place. In this way a stable and rugged convertible bunk bed and lounge chair is provided that is easy to disassemble as desired.

While particular embodiments of the instant invention have been shown in considerable detail, it is apparent that many substitutions and equivalents can be made without departing from the invention disclosed; and it is, therefore, meant that all such substitutions and equivalents be encompassed within the spirit and scope of the invention.

I claim:

1. In a convertible bunk bed and lounge chair having a generally horizontal bed portion with an adjustable headrest connected thereto, including a pair of aligned bed frame elements, each having a relatively elongated support segment with a leg attached at each end thereof, thereby forming two pairs of aligned legs, a forward pair and a rearward pair, a cross-brace demountably attached at the forward end of said bed frame elements to hold them in a spaced-apart relation, a backrest pivotally connected to said elongated support segments at a point where said headrest lies above said rearward pair of legs, and a continuous bedding surface attached to said bed frame elements and said headrest, an improved headrest support assembly which comprises a U-shaped member constructed and arranged to be slidably received between said rearward pair of legs, the cross-piece of said member abutting each of said rearward legs to hold them in a spaced-apart relation, each arm of said U-shaped member extending upwardly to support said backrest and to selectively pivot said backrest to desired angles relative to said bed portion as said U-shaped member is vertically adjusted, and means for selectively securing said member between said rearward pair of legs.

2. The support assembly of claim **1** wherein said means for selectively securing said U-shaped member within said rearward pair of legs comprises a bracket attached to each of said rear legs, said brackets having a two sleeve portions connected in a side-by-side relation, one of said sleeves encasing said rear legs with the second said sleeves slidably receiving said upwardly extending arms of said U-shaped member, each of said second sleeves being apertured on its outer face and having an apertured channel member connected thereto covering said outer face and defining a space between the interior of said channel and said outer face, the apertures in said outer face and channel member being aligned and adapted to hold a pin means inserted through the corresponding apertures, the upwardly extending arms of said U-shaped member having a series of corresponding bores therein such that as said arms are vertically adjusted within said second sleeves said bores will simultaneously align with the apertures in said second sleeves, and said pin can be inserted through said aperture and be received in said bore to thereby selectively secure said U-shaped member at a desired height to support said backrest at a desired angle relative to said bed portion.

3. The support assembly of claim **2** wherein said pin is spring loaded and permanently held by the aligned apertures in said second sleeve and said channel members.

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