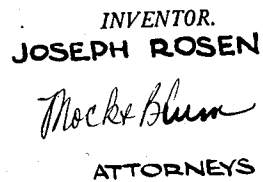


Filed June 16, 1949

COMBINATION ARTICLE OF FURNITURE AND BED

2 Sheets-Sheet 1



UNITED STATES PATENT OFFICE

2,568,366

COMBINATION ARTICLE OF FURNITURE
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Application June 16, 1949, Serial No. 99,470

2 Claims. (Cl. 5-18)

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This invention relates to convertible furniture and, more especially, to an improved convertible combination chair-bed.

A primary object of the invention is the provision of a compact article of furniture constructed and arranged in such a manner as to be readily extended from a compacted condition wherein it serves as a chair or sofa to an alternative condition of elongation wherein it serves effectively as a bed.

Another object of the invention is the provision of an article of furniture of the character indicated wherein the extensible and retractable elements thereof may be caused to assume their alternative positions of extension and retraction simply by pushing or pulling action in a longitudinal direction requiring the exertion of comparatively little effort in contradistinction to the lifting and folding action required in prior art constructions.

An additional object of the invention is the provision of a convertible chair-bed of the character indicated embodying a novel flexible spring suspension adapted to be guided in arcuate guideways or channels in order to allow effortless and unobtrusive retraction of a substantial portion of the bedspring structure into a fixed and recessed portion of the chair-bed, thereby greatly conserving space.

Another object of the invention is the provision of an article of furniture which is constructed and arranged in such a manner that a substantial cushion or mattress section may be extended and retracted simultaneously with the movement of the extensible frame elements in order to obviate the inconvenience of lifting and removal of mattress sections necessitated in prior art constructions.

The foregoing objects as well as additional objects and advantages of the invention will be readily apparent in the course of the following detailed description taken in connection with the accompanying drawings which illustrate a preferred embodiment of the invention and wherein.

Fig. 1 is a view, partly in section and partly in elevation of a convertible chair-bed embodying the features of the invention; the chair-bed being shown in extended condition;

Fig. 2 is a view similar to Fig. 1, but illustrating the compacted alternative condition of the chair-bed;

Fig. 3 is a sectional view taken on line 3-3 of Fig. 1;

Fig. 4 is a sectional view taken on line 4-4 of Fig. 3;

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Fig. 5 is a sectional view taken on line 5-5 of Fig. 3;

Fig. 6 is an enlarged detail in side elevation of the novel flexible bedspring suspension embodied in the chair-bed; and

Fig. 7 is an enlarged detail in front elevation of one of the transverse elements of the bedspring suspension illustrated in Fig. 6.

Referring now to the drawings in greater detail, the article of furniture is illustrated in the form of a convertible chair-bed, generally designated by reference numeral 10, including the sides 11 and a back portion 12. For simplicity and convenience the frame elements which give support to the fixed sides, back and bottom of the chair-bed 10 are designated by reference character F.

Back portion 12 includes a front wall 12a which is spaced from the rear wall 12b to provide a compartment 13 therebetween for the reception of a portion of the bedspring structure and mattress section as will be more fully described hereinafter. Rigidly mounted on the inner side of walls 11 and extending rearwardly into compartment 13 are disposed parallel guide members 14 defining a channel 15. It will be noted that the anterior portion of channel 15 lies in a horizontal plane, the posterior portion extending somewhat obliquely within compartment 13 and adjacent rear wall 12b, and said anterior and posterior portions are interconnected by an intermediate arcuate portion.

The first movable frame section 16 of chair-bed 10 comprises a pair of channel members 16a fixedly spaced apart by means of forward and rear transverse supports 17 which are preferably angle irons, as illustrated in the drawings. Corner braces 18 may be provided between channel members 16a and transverse supports 17, as best shown in Fig. 4. Frame section 16 is movably supported on rear legs 19 which carry rollers or casters 19a and on front legs 20 which carry rollers or casters 20a.

As shown clearly in Figs. 1, 2 and 4 rear legs 19 and rollers 19a are supported on a pair of lower frame members or flat rails 21 secured to respective portions of side walls 11 of the chair-bed. Rails 21 may form part of a bottom frame member 22 closing off the bottom of the chair-bed, as best shown in Figs. 1, 2 and 3. The forward extension of frame section 16 may be limited by the provision of stop members in the form of catches or angle irons 23 secured to bottom member 22, said angle irons abutting rollers 19a in the position of forward extension

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of movable frame section 16, as shown in Fig. 1.

A second or outer movable frame section 24 is associated with first frame section 16 for extension from and retraction within said first frame section. Said second frame section comprises a pair of side members 24a and a pair of end members 24b which are preferably integral with said side members, said side and end members being also preferably of angle cross-section. The entire frame section 24 is retractable within the frame section 16, side members 24a being received within the channel members 16a of frame section 16, as clearly shown in Fig. 2. In order to facilitate the retraction and extension of frame section 24, rollers 25 are secured rearwardly to said frame section in any suitable manner as by means of brackets 25a. Depending stop members 26 are adapted to abut the forward and rear transverse supports 17 of first frame section 16 in order to limit the extension and retraction of second frame section 24. A pair of front legs 27 carrying rollers 27a is secured in any suitable manner to front end member 24b in order to movably support the front end of second frame section 24. Each of said legs 27 carried rearwardly extending locking members 28 provided with notches or recesses 29. As best shown in Fig. 2, notches 29 engage the stop members or catches 23 in the fully retracted position of the frame sections 16 and 24 and prevent inadvertent extension of the movable frame sections. A skirt board 30 is fixedly connected to the forward end member 24b of frame section 24 in order to give a finished appearance to the front of the chair-bed in the compacted condition thereof, as shown in Fig. 2.

Bedsprings 31 of any suitable design are secured between the side members 24a of frame section 24 in order to support a cushion or mattress section 32 thereupon. Similar bedsprings are mounted between channel members 16a of frame section 16 in order to partially support the main mattress section 33.

An important feature of the invention resides in the provision of a novel flexible bedspring construction adapted to conform to the shape and curvature of the channels 15 defined between the fixed guide members 14 and allowing retraction within the compartment 13 of a substantial portion of main mattress section 33 in the position illustrated in Fig. 2, as will now be described.

The flexible retractable and extensible bedspring element is generally designated by reference numeral 35 and as clearly shown in the drawings is hingedly connected to the rearward end of channel members 16a of movable frame section 16 as by means of hinge plates 36. A plurality of parallel transverse supports preferably in the form of rods 37 are spaced in pairs by having their end portions 37a received within suitable end openings formed in a plurality of holding elements or plates 38. The outer extremities of rods 37 extend a predetermined distance beyond plates 38, as shown in Fig. 7, and carry anti-friction rollers 39 which are received in the channels 15 defined between the guide members 14 on the inner side walls 11 of the chair-bed. In order to provide the desired flexibility for the bedspring element 35 and adapt it to conform to the shape and curvature of the channels 15, links 40 are provided pivotally interconnecting the ends of adjacent plates 38. As shown in Figs. 6 and 7 said links are preferably slotted at their ends to receive the respective ends of plates 38 and may be secured to respective portions of

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rods 37 as by means of welding. The foremost plate 38 is hingedly connected to the rearward end of channel members 16a of movable frame section 16 as by means of hinge plates 36, as best shown in Figs. 2 and 3. It will be noted that each of the transverse rods 37 is formed with an offset or recessed central portion 37b (shown fragmentarily in Fig. 7) extending between the end portions 37a in order to resiliently receive and support the bedspring structure therebetween. Furthermore each transverse supporting rod 37 is formed with a suitable opening 41 for the reception of the hooked end of a spring 42, each opening preferably being disposed adjacent the juncture between the end portion 37a and the angularly inclined portion 37c thereof. Suitable supporting elements such as the wire or cable network 43 interconnect the inner ends of springs 42 and serve to support the head portion of main mattress section 33, as clearly shown in Figs. 1 and 2. In order to facilitate retraction of the head portion of mattress section 33 within compartment 13 as movable frame sections 16 and 24 are retracted to the position illustrated in Fig. 2, the undersurface of said mattress section is preferably secured in any suitable manner to the transverse rods 37.

In actual operation it is comparatively simple to convert the device from the compacted condition of Fig. 2 wherein it serves as a chair or sofa to its extended condition of Fig. 1 wherein it serves as a bed. This is readily accomplished by grasping skirt board 30 and raising it slightly to disengage the notches 29 of locking members 28 from the catches 23 whereupon movable frame sections 16 and 24 may be pulled forwardly to their limiting positions of extension. Thus the outer frame section 24 will initially move forwardly until the depending stop members 26 abut the forward transverse end member 17 of first frame section 16, whereupon both frame members 16 and 24 will move forwardly in unison until the rear casters 19a abut the catches or stop members 23, as shown in Fig. 1. Simultaneously with the extension of frame member 16 the flexible bedspring element 35 will move forwardly on its rollers 39 within the channels 15 and outwardly of compartment 13 to assume the substantially horizontal position illustrated in Figs. 1 and 3. It will be noted that the auxiliary cushion of mattress section 32, which serves as a seat cushion in the compacted condition of Fig. 2, need not be first lifted or removed from the main mattress section 33 in order to extend the movable frame sections 16 and 24 but may be slid off said main mattress section following the complete extension of the frame sections.

Since certain modifications may be made in the device of the present invention without departing from the scope thereof, it is intended that all matter contained in the foregoing description and shown in the accompanying drawings be interpreted merely as illustrative and not in a limiting sense.

What is claimed is:

1. In a convertible chair-bed, a stationary section including a compartment having opposed guide members defining channels therebetween, a portion of said channels extending outwardly of said compartment and into substantially horizontal position, an intermediate movable section and an outer movable section extensible and retractable with respect to said intermediate section, the side members of said intermediate section being channel-shaped for

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slidable reception of the side members of said outer section, a flexible, extensible and retractable bedspring assembly associated with said intermediate section, said assembly being adapted to conform to the contour of said channels, said assembly comprising transverse supporting elements, holding members rigidly spacing apart adjacent transverse elements, links pivotally interconnecting the adjacent ends of each pair of holding members, said links being slotted to receive the ends of said holding members and being fixedly secured to respective transverse elements, and rollers carried at the ends of said transverse elements, said rollers being retained in respective channels of said stationary section.

2. In a convertible chair-bed, a stationary section including a compartment having opposed guide members defining channels therebetween, a portion of said channels extending outwardly of said compartment and into substantially horizontal position, an intermediate movable section and an outer movable section extensible and retractable with respect to said intermediate section, the side members of said intermediate section being channel-shaped for slidable reception of the side members of said outer section, a flexible, extensible and retractable bedspring assembly associated with said intermediate section, said assembly being adapted to conform to the

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contour of said channels, said assembly comprising transverse supporting elements, holding members rigidly spacing apart adjacent transverse elements, links pivotally interconnecting the adjacent ends of each pair of holding members, said links being slotted to receive the ends of said holding members and being fixedly secured to respective transverse elements, and rollers carried at the ends of said transverse elements, said rollers being retained in respective channels of said stationary section, each of said transverse elements having an offset central portion and spring elements suspended between the end portions of said transverse elements and overlying said offset central portions.

JOSEPH ROSEN.

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