

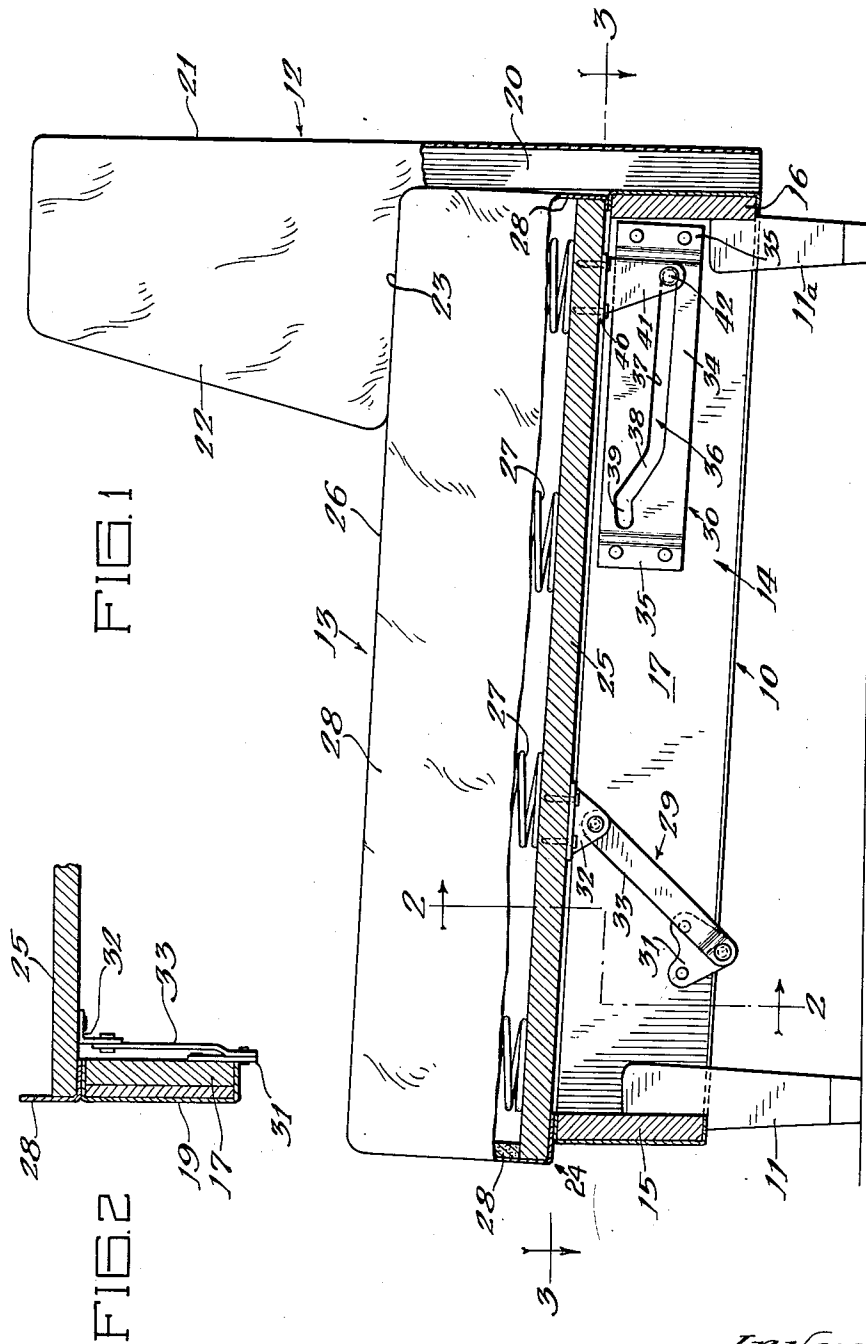
Oct. 31, 1961

M. FOX
SOFA BEDS

3,005,997

Filed March 28, 1957

3 Sheets-Sheet 1



Inventor:
Martin Fox
By: Schroeder, Hoffman,
Brady & Wegner
Attorneys

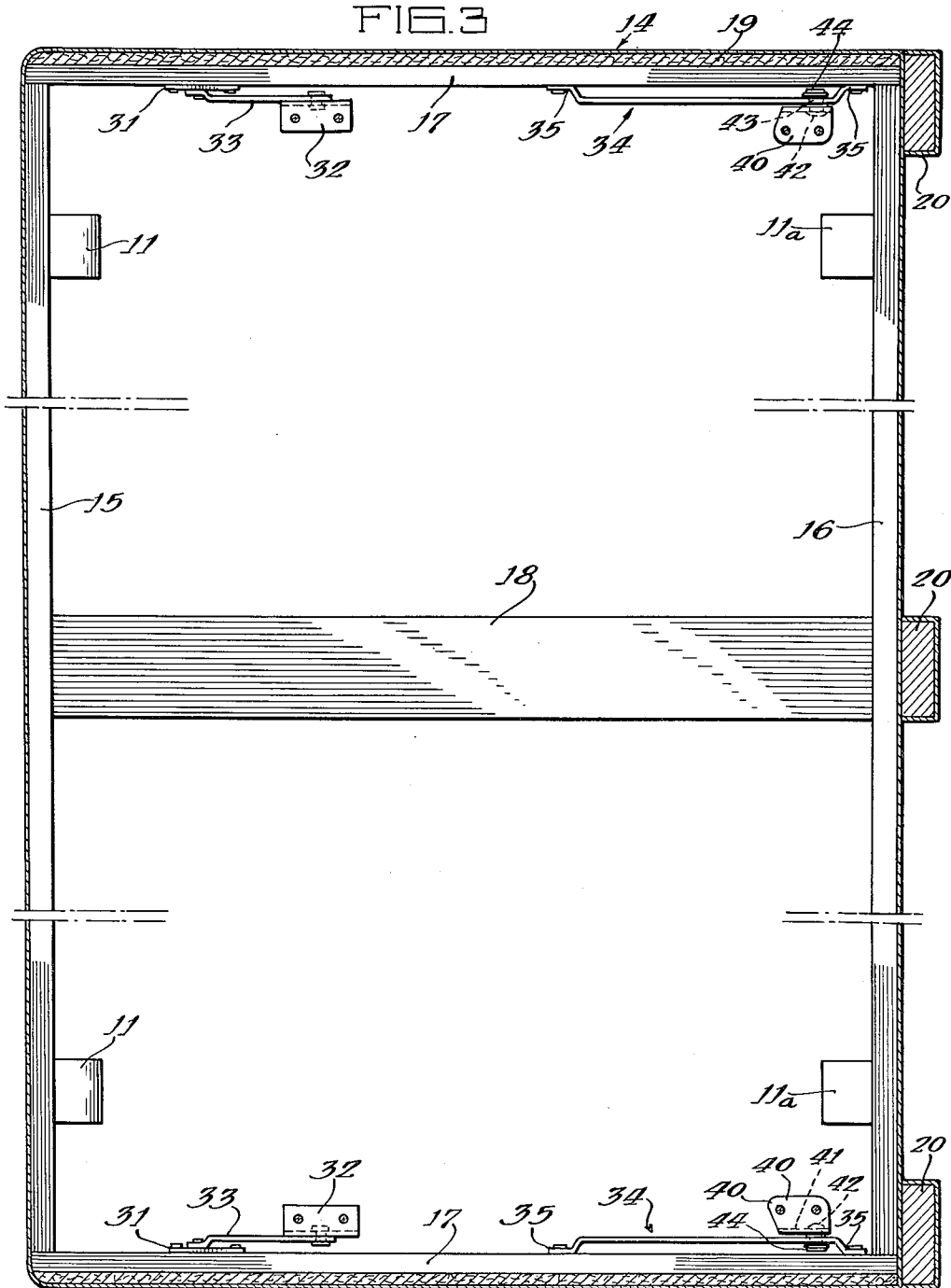
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By: Schroder, Hoffman,
Brady & Wegner
Attorneys

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Martin Fox, Chicago, Ill., assignor to The Seng Company,
a corporation of Illinois
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4 Claims. (Cl. 5—17)

This invention relates to a convertible sofa bed and in particular it relates to a sofa bed in which the seat frame with its upholstery may move from a rearwardly inclined position with its rear portion beneath a back cushion to a horizontal position forward of the back cushion, without the necessity of shifting the position of the back.

This application is a continuation-in-part of applicant's copending application 450,949, filed August 19, 1954, now abandoned.

The principal object of the present invention is to provide an improved sofa bed construction.

A further object is to provide a sofa bed in which the seat may be shifted from sofa position to bed position without moving the back of the sofa and without shifting the entire unit out from a wall against which it may be positioned.

A further object is to provide a sofa bed in which the upholstered seat frame is in a rearwardly inclined position in sofa position with the rear portion of the upholstered seat beneath a forwardly projecting, fixed, cushioned back, and the seat frame occupies a horizontal bed position wholly forward of the upholstered back.

Yet another object of the invention is to provide a sofa bed in which the top of the upholstered seat is substantially in contact with the underside of the overhanging cushioned back in sofa position, so that there is no gap between the back and the seat in that position.

Yet another object of the invention is to provide a guide mechanism which first guides the rear of the upholstered seat out from under the overhanging back, and then elevates it quickly to locate the upholstered seat in a horizontal bed position with its upper rear edge substantially in contact with the most forward portion of the back.

The invention is illustrated in a preferred embodiment in the accompanying drawings in which:

FIG. 1 is a side elevational view, partly in section, of a sofa bed constructed in accordance with the invention with the parts in sofa position;

FIG. 2 is a section taken as illustrated along the line 2—2 of FIG. 1;

FIG. 3 is a section taken as indicated along the line 3—3 of FIG. 1;

FIG. 4 is a view similar to FIG. 1 with the parts of the device in bed position;

FIG. 5 is a fragmentary side elevation on an enlarged scale of the guide trackway mechanism for the rear of the sofa seat; and

FIG. 6 is a section taken as indicated along the line 6—6 of FIG. 5.

Referring to the drawings in greater detail, and referring first to FIGS. 1 to 4, a sofa bed has a base indicated generally at 10 having front legs 11 and back legs 11a, a back indicated generally at 12, and an upholstered seat indicated generally at 13. As best seen in FIGS. 1 and 3, the base 10 has a rectangular wooden frame indicated generally at 14 which includes front and rear rails 15 and 16, respectively, to which the legs 11 and 11a are respectively secured, end rails 17, and a center brace member 18 which extends between the front and rear rails. The base frame is suitably upholstered as indicated at 19. As seen in FIG. 1, the front legs 11 are somewhat longer than the back legs 11a, so that the top of the base frame 14 is rearwardly inclined and supports the upholstered seat 12 in a rearwardly inclined sofa position.

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As seen in FIGS. 1 and 3, the back 12 has three upright support members 20 by means of which it is secured to the base frame 14, and an upright back panel 21 from which a cushioned and upholstered back member 22 extends forwardly with its lower face 23 overhanging and in spaced relationship to the rear portion of the base frame 14.

As seen in FIGS. 1 and 4, the upholstered seat 13 has a seat frame 24 which includes end rails 25, and a seat 26 which includes inner springs 27 and upholstery 28. As seen in FIGS. 1 and 4, the upholstered seat 13 is carried on the base frame 14, and the weight of the forward portions of the seat frame is carried directly upon the top of the base frame both in sofa position and in bed position. In sofa position the rear portion of the upholstered seat 13 extends beneath the overhanging upholstered back 22 with its upper surface substantially in contact with the underside 23 of the upholstered back, while in bed position the upholstered seat 13 is horizontal and is entirely forward of the back member 22 with its rear upper edge substantially in contact with the most forward part of the back.

Referring now particularly to FIGS. 1 to 4, the linkage by means of which the seat 13 is moved and guided between the sofa position of FIG. 1 and the bed position of FIG. 4 includes link means indicated generally at 29 and trackway means indicated generally at 30. The link means 29 includes a pair of pivot plates 31 which are secured to the forward portions of the end rails 17 of the base frame 14, a pair of depending pivot brackets 32 secured to the undersides of the end rails 25 of the seat frame, and links 33 pivotally connected to said pivot plates and pivot brackets. The links 33 are somewhat longer than the over-all height of the base frame 14 so as to swing in an arc in relatively long radius, and thus in a relatively flat arc, in their movement between sofa position and bed position. This reduces the up and down travel of the forward portions of the seat frame during the movement between its two positions, as compared with such a movement using short links. Since the seat frame is supported directly on the base frame in both positions, the movement of the seat frame between its sofa position and its bed position is limited by abutment of the seat frame upon the base frame.

The trackway means 30 comprises a pair of trackway plates 34 having offset end portions 35 by means of which they are secured to the end rails 17 of the base frame near the back legs 11a, the bodies of the plates 34 being thus spaced from the end rails 17 as seen in FIGS. 3 and 6. In the plates 34 are track guide slots, indicated generally at 36, which are made up of three distinct portions. Each guide slot 36 has a rearward guide portion 37, which is parallel to the top of the frame 14, and extends throughout the area beneath the overhanging back 22. The forward portions of the guide slots 36 are sharply upwardly inclined and terminate at their forward ends in downwardly inclined slot detent portions 39.

Mounted at the extreme rear of the end rails 25 of the seat frame 24 are angle brackets 40 having depending arms 41 at the lower ends of which are headed studs 42 on which nylon rollers 43 are retained by flanges 44. As best seen in FIG. 6, the studs 42 extend through the guide slots 36, and the flanges 44 are positioned adjacent the outer faces of the trackway plates 34 so that the nylon rollers 43 travel and are retained in the guide slots 36.

In the movement of the upholstered seat 13 from sofa position to bed position, the more rearward portions 37 of the guide slots 36 guide the upholstered seat along the underside of the upholstered back 22, and as soon as the rear upper edge of upholstered seat 13 is in a posi-

tion to clear the forward edge of the bottom face 23 of the back the sharply inclined guide portions 38 of the slots act to elevate the rear of the upholstered seat so as to bring the seat approximately to the horizontal. As the forward portion of the seat frame 24 settles onto the front of the base frame 14 the rollers 42 drop into the slot detent portions 39, and in this position of the parts the upholstered seat 13 is horizontal as seen in FIG. 4.

The shape of the guide slots 36 permits the device to be constructed with no appreciable space between the upholstered seat 13 and the upholstered back 22 in sofa position, and also permits the rear edge of the seat to move around the most forward edge of the back and into a horizontal bed position in which there is no appreciable space between the rear edge of the upholstered seat and the most forward edge of the back.

The foregoing detailed description is given for clearness of understanding only and no unnecessary limitations are to be understood therefrom, as some modifications will be obvious to those skilled in the art.

I claim:

1. A convertible sofa bed comprising: a rectangular base frame; an upright back on the rear of said base frame which has a fixed, forwardly extending upholstered portion the bottom of which overhangs and is substantially parallel to the top of said base frame; an upholstered seat having a rectangular frame; means supporting the front of the seat frame on the base frame for movement between a retracted sofa position and an extended bed position in both of which the front portion of the seat frame is supported directly on the base frame, movement of the seat frame to both said positions being limited by abutment with the base frame; a pair of guide track members on the ends of the base frame having a rearward guide track beneath and generally parallel to the bottom of the upholstered back portion, said rearward guide track terminating at its forward end substantially in the same vertical plane as the most forward part of the back and merging into a sharply upwardly inclined short forward guide track which terminates a short distance forward of said vertical plane; and depending brackets on the ends of the seat frame, each bracket having means interengaged with and traveling in one of said guide track members between a rearward sofa position and a bed position adjacent the forward extremities of

said guide tracks, the height and position of said brackets and guide tracks being such that the upholstered seat in sofa position is inclined and has its rear portion beneath and substantially in contact with the bottom of the overhanging back portion and in bed position is horizontal and has its rear upper edge substantially in contact with only the most forward part of the back.

2. The device of claim 1 in which the means supporting the front of the seat frame consists of a pair of links connecting the ends of the seat frame to the base frame for swinging movement from front to rear.

3. The device of claim 1 in which each guide track member is a bracket having mounting flanges at its two ends secured to the base frame, each bracket having an inwardly offset central guide portion parallel to the end of the base frame on which the bracket is mounted, the rearward and forward guide tracks being a continuous slot in said guide portion.

4. The device of claim 1 in which the means on each depending bracket which is interengaged with one of the guide track members is a roller traveling in the slot which forms the guide tracks and having a retaining flange between the bracket and the adjacent end of the base frame.

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