

June 19, 1951

M. FOX

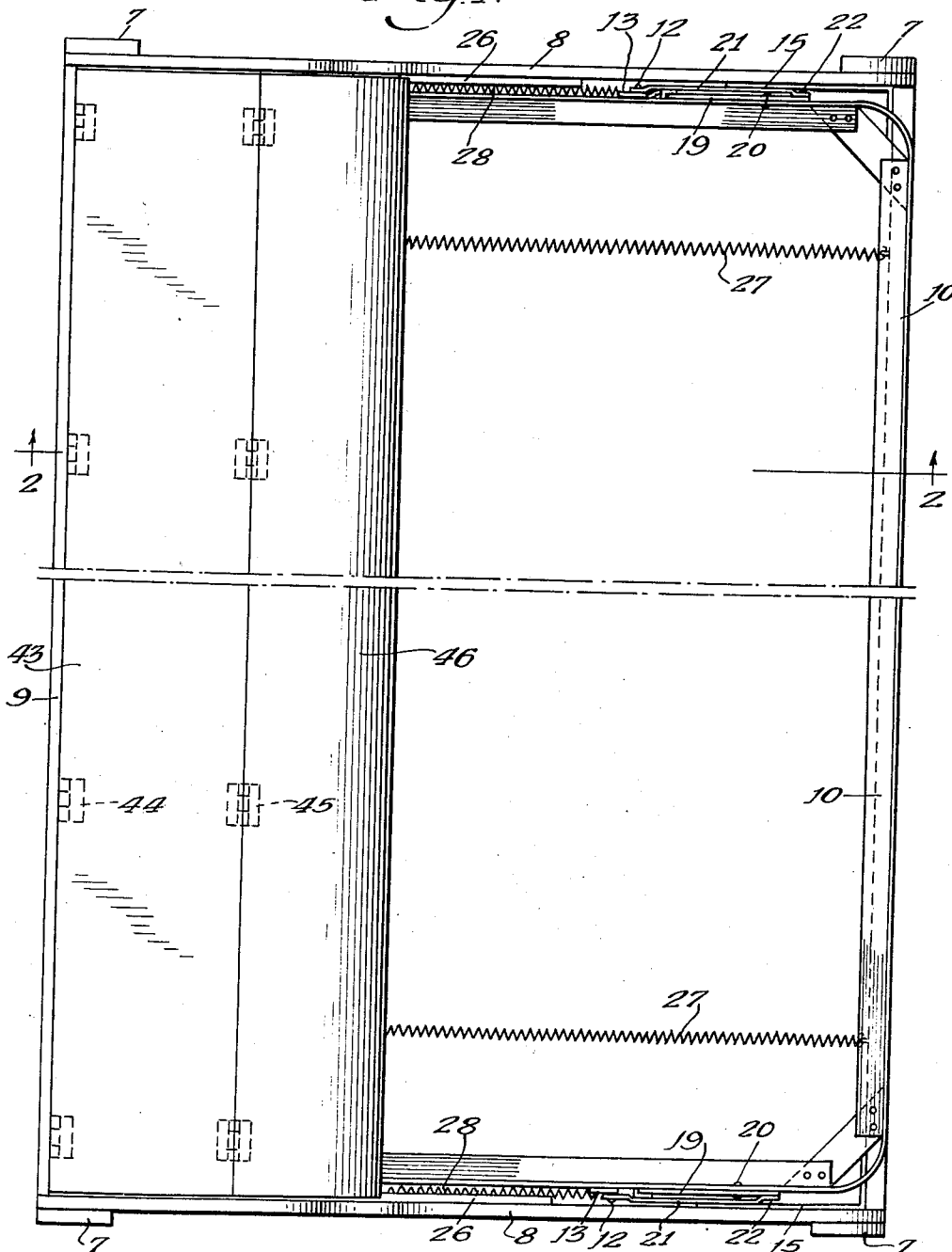
2,557,734

CONVERTIBLE DOUBLE BED

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4 Sheets-Sheet 1

Fig. 1.



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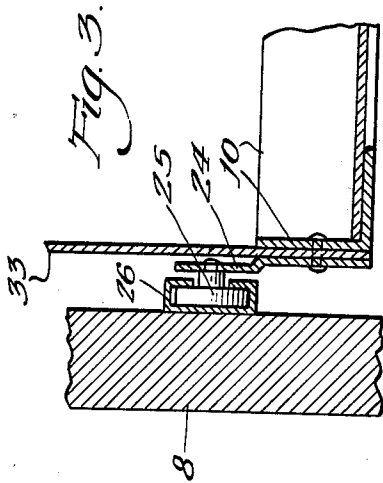
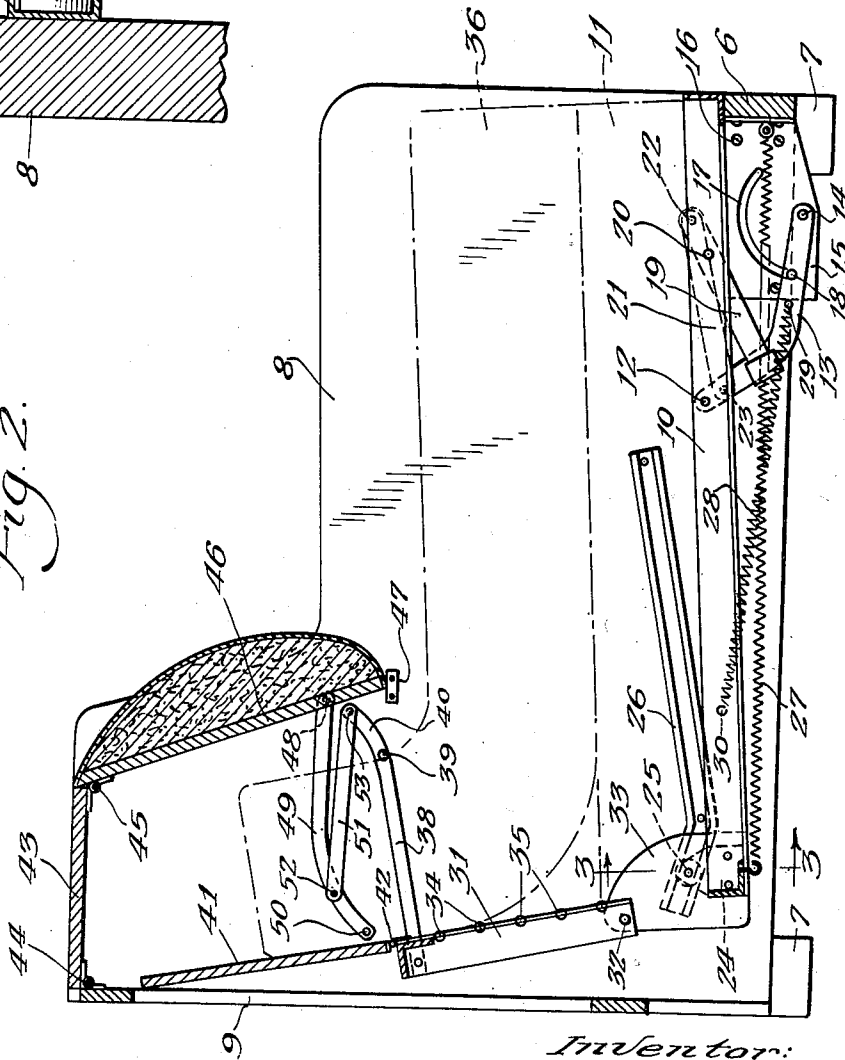


Fig. 2.



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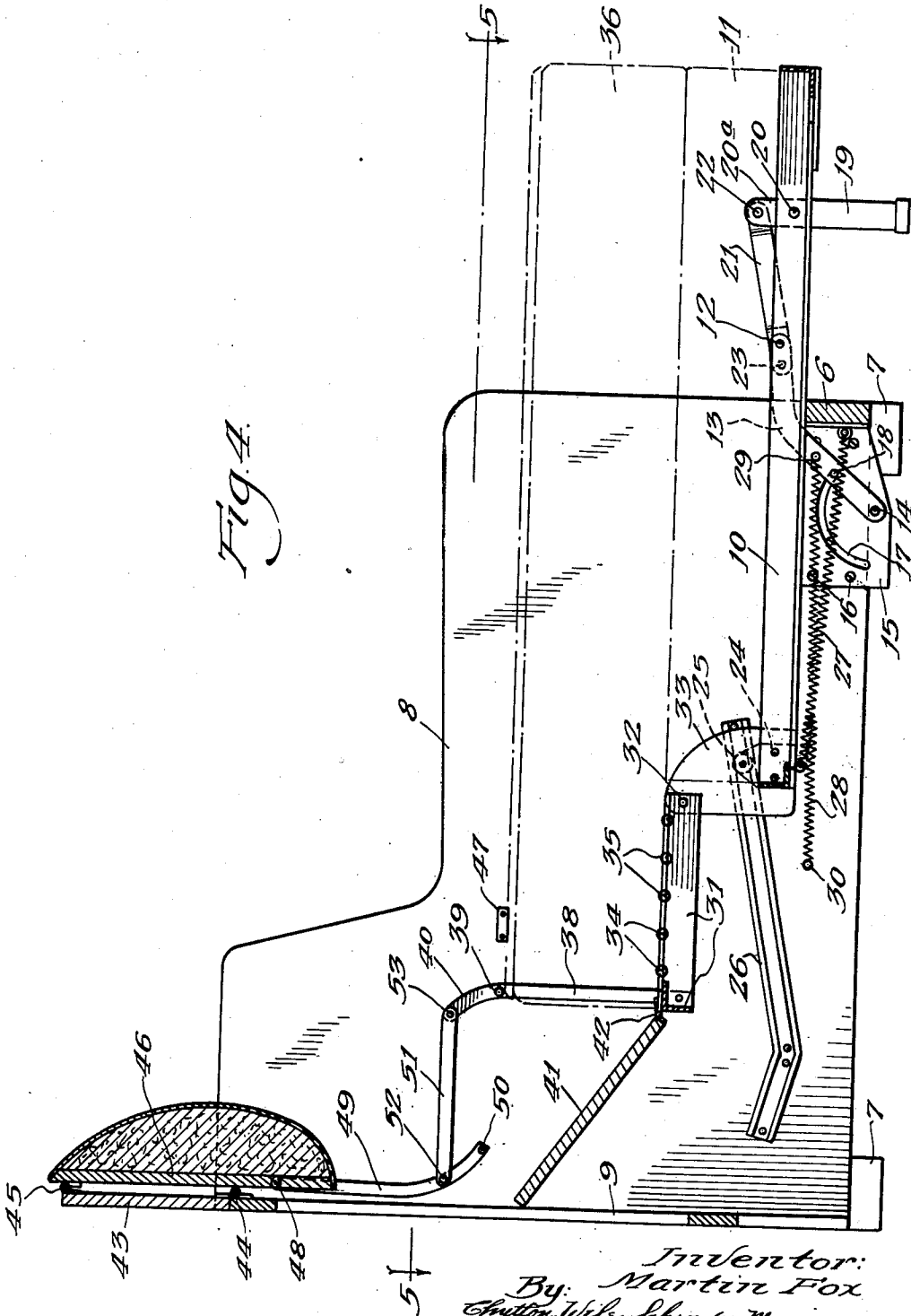
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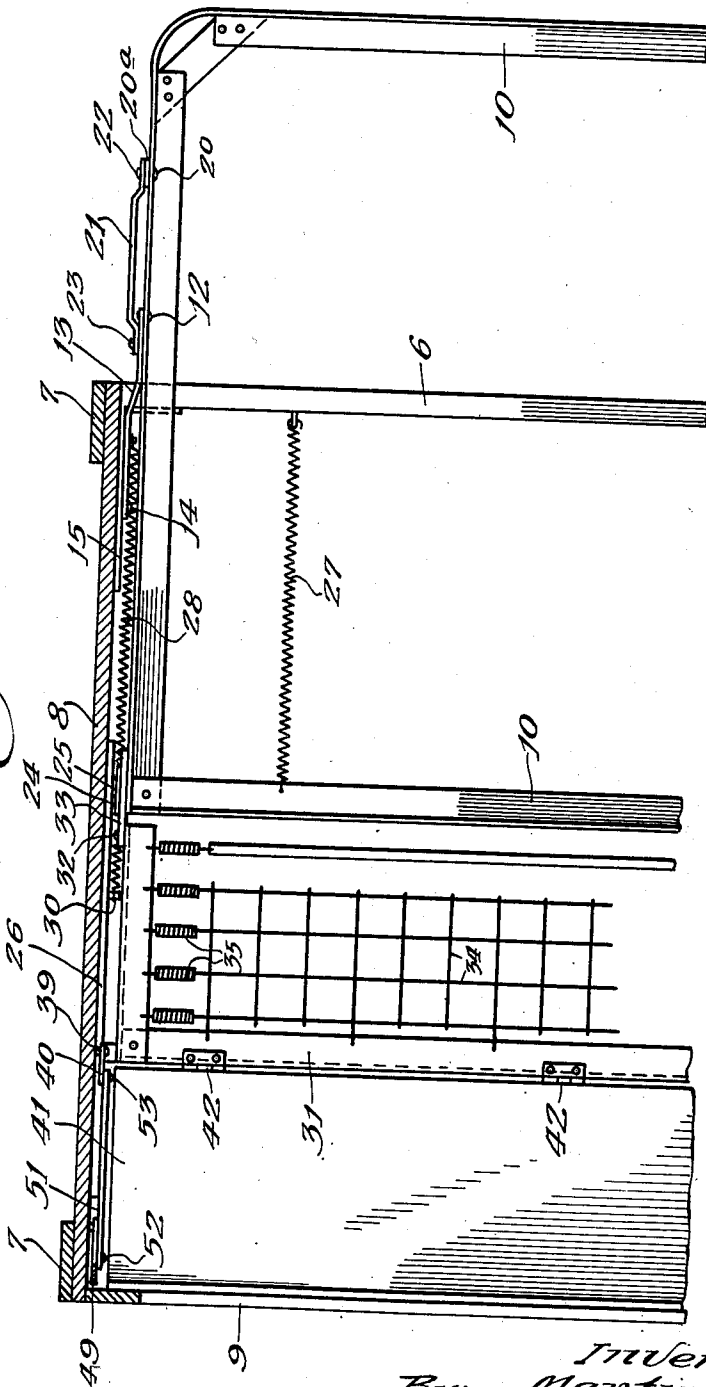
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Fig. 5.



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UNITED STATES PATENT OFFICE

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CONVERTIBLE DOUBLE BED

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5 Claims. (Cl. 5—21)

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This invention relates to convertible sofa beds and more particularly to a couch which may be converted into a bed of full width.

The primary object of the invention is to provide an attractive piece of furniture which will serve as a convertible sofa and may be converted into a full width bed by merely swinging a front bed-section outwardly.

Another object of the invention is to provide a convertible bed with a comfortable back-rest, which will automatically be raised and retracted when the sofa is converted into a bed. When reconverted into a sofa, the back-rest automatically swings forwardly and downwardly and forms a compartment into which part of the cushion or mattress is received.

Still another object of the invention is to provide a pair of hinged bed-sections, wherein one of the sections may be provided with a spring structure, and the other one uses an elastic webbing, so that it may be rolled up out of the way when the device is being used as a sofa.

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

Figure 1 is a broken plan view of the device in sofa-position; Fig. 2, a vertical sectional view, taken as indicated at line 2—2 of Fig. 1, with the spring and mattress indicated by a dotted line; Fig. 3, a fragmentary sectional view, taken as indicated at line 3—3 of Fig. 2; Fig. 4, a vertical sectional view similar to Fig. 2, but showing the device in bed-position; and Fig. 5, a fragmentary plan sectional view, taken as indicated at line 5—5 of Fig. 4.

In the embodiment illustrated, a main supporting frame 6 is mounted on legs 7 and has end members 8 and a fixed back 9.

A front bed-section 10 is in the form of a rectangular frame adapted to receive a suitable box spring, indicated by dotted lines in Figs. 3 and 4 at 11. The front portion of the bed-section 10 makes a connection at 12 with curved links 13, which are pivoted at 14 to plates 15, secured to the main supporting frame 6 by screws 16. The plates are provided with arcuate slots 17 to receive studs 18 on the links 13, so as to limit the forward and rearward travel of the same. As best shown in Figs. 2 and 4, the front bed-section is provided with folding legs 19, which are pivoted to the front bed frame at 20 and have upward extensions 20a. Pitmans 21 are pivotally connected to the extensions 20a, as indicated at 22, and are also pivotally connected to the links 13, as indicated at 23, so that when the front bed-section is swung back to the posi-

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tion illustrated in Fig. 2, the legs will automatically be folded up out of the way.

The rear end portions of the front bed-section are preferably provided with brackets 24, on which are journaled rollers 25, which travel in curved tracks 26 secured to the end members 8 of the supporting frame. The tracks are so positioned that when the device is in extended position the front bed-section will be horizontal, as shown in Fig. 4, and when retracted to sofa-position will be inclined backwardly and rearwardly, as indicated in Fig. 2. A pair of tension springs 27 extend between the front of the frame 6 and the rear of the front bed-section 10, so as to urge the bed section forwardly. This action is opposed to some extent by another pair of tension springs 28, extending from pins 29 on the links 13 to studs 30 on the end members 8. These springs facilitate movement of the bed-section and help to cushion its movement to extended position. The upward inclination of the tracks 26 serves to cushion the final movement of the seat-section into sofa-position.

A rear bed-section 31 is in the form of a forwardly open U-shaped frame, which makes pivotal connections at 32 with upwardly extending brackets 33 provided on the rear of the front bed-section. There is not sufficient room for a box spring of the type used in the front bed-section, so that wire webbing 34 is used and tensioned by means of springs 35. The webbing 34 lies in substantially the same plane as the top of the front bed-spring, indicated by dotted lines at 11. This enables a full size mattress, indicated by dotted lines at 36, to be supported by the two sections when the device is in bed-position. The rear portion of the frame 31 is provided with a pair of fixed arms 38, which are pivoted to the end members 8 at 39 and have extensions 40.

A guide panel 41 is hinged to the rear of the rear bed-section 31, as indicated at 42. In bed-position, shown in Fig. 4, it is inclined upwardly and its free end rests against the back 9 of the supporting structure. When the device is transformed into a sofa, the panel directs the mattress 36 upwardly into a compartment formed in back of the structure, as indicated in Fig. 2. A shelf member 43 is hinged to the back of the supporting frame, as indicated at 44, and its front end is hinged at 45 to a cushioned back-rest 46. The lower end of the back rest, in sofa-position, is adapted to engage stops 47 on the end members. The lower portion of the back rest 46 makes a pivotal connection 48 with curved links 49 which are pivoted to the end members, as indicated at

50. A pair of pitmans 51 are pivotally connected to the links 49, as indicated at 52, and are also pivoted to the extensions 40, as indicated at 53, so that when the bed-sections are swung forwardly into extended position, the back-rest will be raised upwardly and rearwardly to the position shown in Fig. 4. In reversing the movement, the back-rest forms a compartment to receive the rear end portion of the mattress 36.

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

I claim:

1. A convertible sofa-bed comprising: a supporting frame provided with end members and a back; a front bed-section; means mounting said front bed-section in said supporting frame for movement from retracted sofa-position to a forwardly extended bed-position, said means including front carrying means on said frame for supporting the front of said front bed-section in extended position and rear-carrying means for supporting the rear of the front bed-section when in extended or retracted position; a rear bed-section having its front portion hinged to the rear of said front bed-section; a pair of arms pivoted to said supporting frame and connected to the rear of said rear bed-section; a shelf hinged to the back of the supporting frame; a back-rest which has its top portion hinged to said shelf and its lower portion connected to said frame by a pair of links; an extension on each of the arms on the back of the rear bed-section; and a pair of pitmans connecting said extensions to said links, so that movement of the bed-sections to extended bed-position will cause said back-rest to be raised and retracted from sofa-position.

2. A convertible sofa-bed comprising: a supporting frame provided with end members and a back; a front bed-section; means mounting said front bed-section in said supporting frame for movement from retracted sofa-position to a forwardly extended bed-position, said means including front carrying means on said frame for supporting the front of said front bed-section in extended position and rear-carrying means for supporting the rear of the front bed-section when in extended or retracted position; a rear bed-section having its front portion hinged to the rear of said front bed-section; a pair of arms pivoted to said supporting frame and connected to the rear of said rear bed-section; and a panel having its lower front edge hinged to the rear of the rear bed-section and its upper free end resting against the back of the supporting frame, so as to direct the rear edge portion of a cushion resting on the bed-sections upwardly when said bed-sections are pushed from bed-position to sofa-position.

3. A convertible sofa-bed, comprising: a supporting frame provided with end members and a back; a front bed-section, said front bed-section having a deep rectangular frame to receive a bed spring; means mounting said front bed-section in said supporting frame for movement from retracted sofa-position to a forwardly extended bed-position, said means including front carrying means on said frame for supporting the front of said bed-section in extended position and rear-carrying means for supporting the rear of the front bed-section when in extended or retracted position; a rear bed-section having its front portion hinged to the rear of said front bed-section, said rear-section having a forwardly open U-

shaped frame provided with elastic webbing in a plane above the frame of said front bed-section; and a pair of arms pivoted to said supporting frame and connected to the rear of said rear bed-section.

4. A convertible sofa-bed comprising: a supporting frame provided with end members and a back; a front bed-section which is a bed-frame member in bed-position and a seat-frame member in sofa-position; means mounting said front bed section in said supporting frame for movement from a retracted sofa-position in which it is a seat-frame member to a forwardly extended bed-position in which it is a bed-frame member, said means including a pair of carrying links pivotally connecting the front of the supporting frame to the front bed-section, a pair of rollers on the rear of said front bed-section, and a pair of curved tracks on the end members of said supporting frame to receive said rollers and support the front bed-section horizontally when in bed-position and inclined backwardly and downwardly when in seat-forming sofa-position; a rear bed-section having its front portion hinged to the rear of said front bed-section and its rear portion suspended on arms pivoted to the supporting frame; a pair of tension springs connecting the front of the supporting frame to the rear of the front bed-section; and a second pair of tension springs connecting said carrying links to said supporting frame so as to urge the carrying links rearwardly.

5. A convertible sofa-bed comprising: a supporting frame provided with end members and a back; a front bed-section which is a bed-frame member in bed-position and a seat-frame member in sofa-position; means mounting said front bed section in said supporting frame for movement from a retracted sofa-position in which it is a seat-frame member to a forwardly extended bed-position in which it is a bed-frame member, said means including a pair of carrying links pivotally connecting the front of the supporting frame to the front bed-section, a pair of rollers on the rear of said front bed-section, and a pair of curved tracks on the end members of said supporting frame to receive said rollers and support the front bed-section horizontally when in bed-position and inclined backwardly and downwardly when in seat-forming sofa-position; a rear bed-section having its front portion hinged to the rear of said front bed-section and its rear portion suspended on arms pivoted to the supporting frame, said arms having extensions; a shelf hinged to the back of the supporting frame; a backrest hinged at its top portion to said shelf; a pair of links connecting the lower portion of said backrest to said frame; and a pair of pitmans connecting the extensions on said arms to said links so that movement of the bed-sections to extended bed-position will cause said backrest to be raised and retracted from sofa position.

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