May 27, 1952 M. C. JENKINS 2,597,995

COMBINATION SOFA AND BED

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FIG. 1.

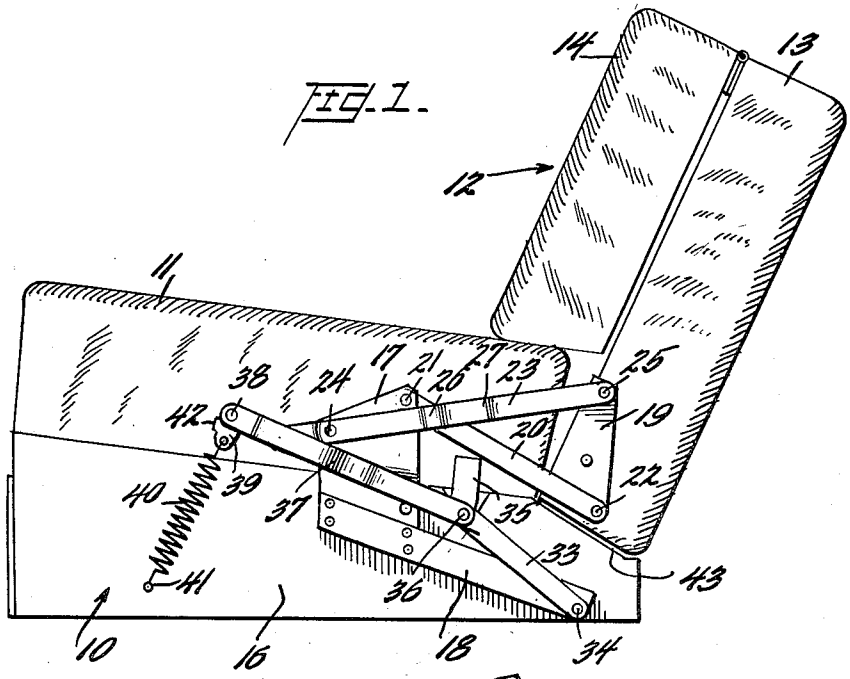
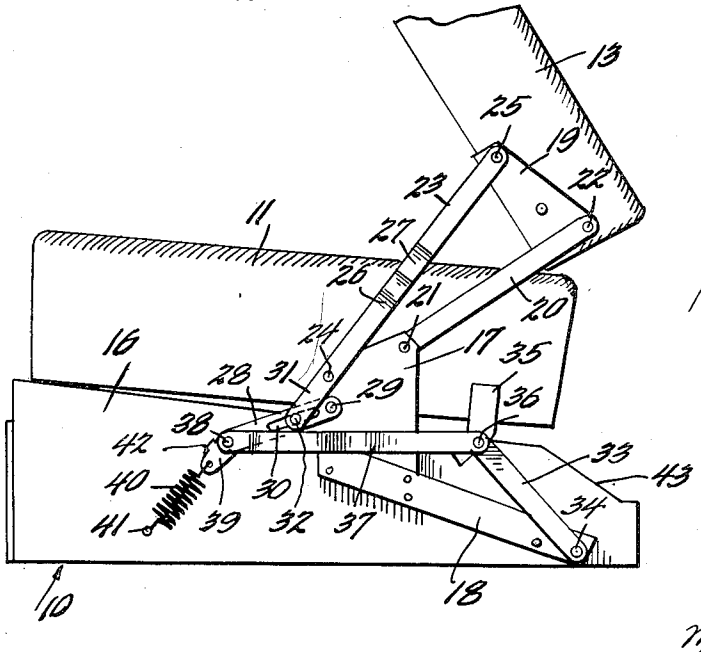


FIG. 2.



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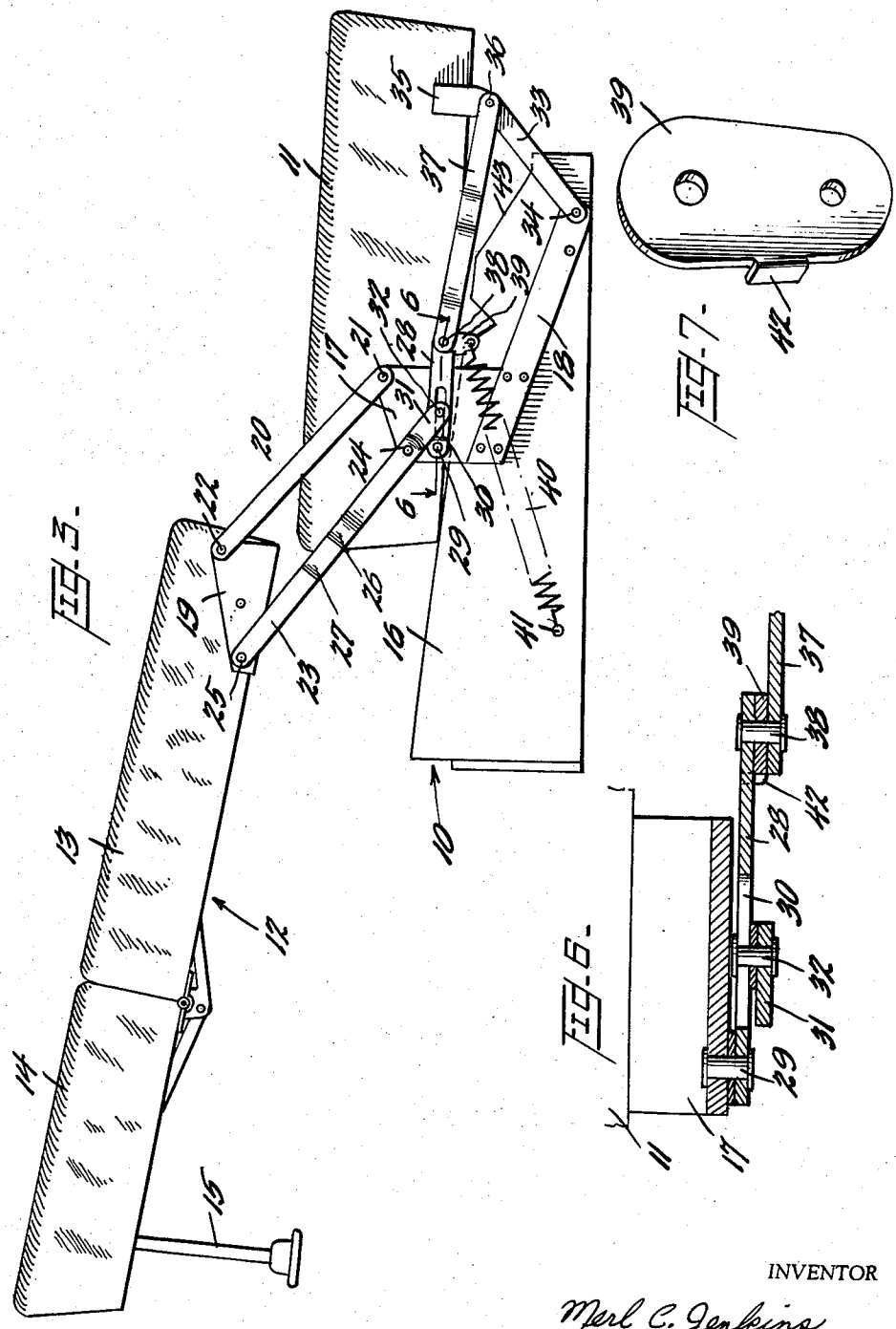


FIG. 5.

FIG. 7.

FIG. 6.

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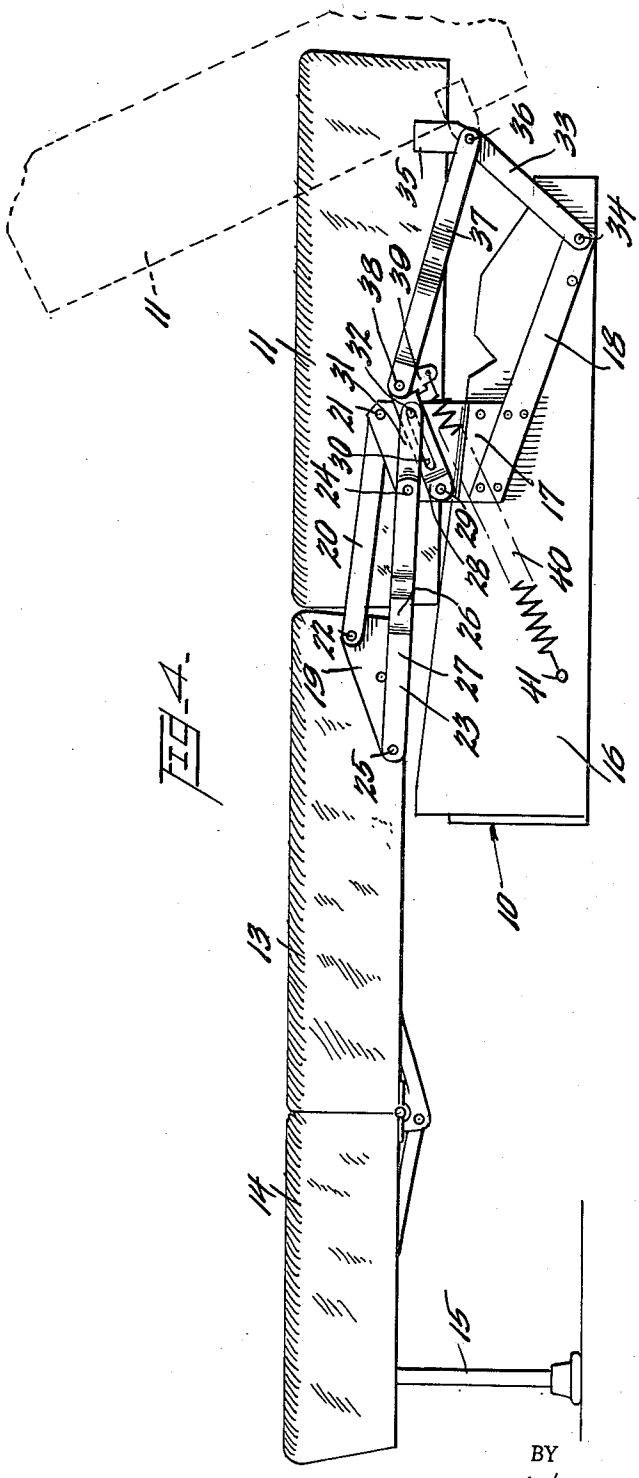


FIG. 4.

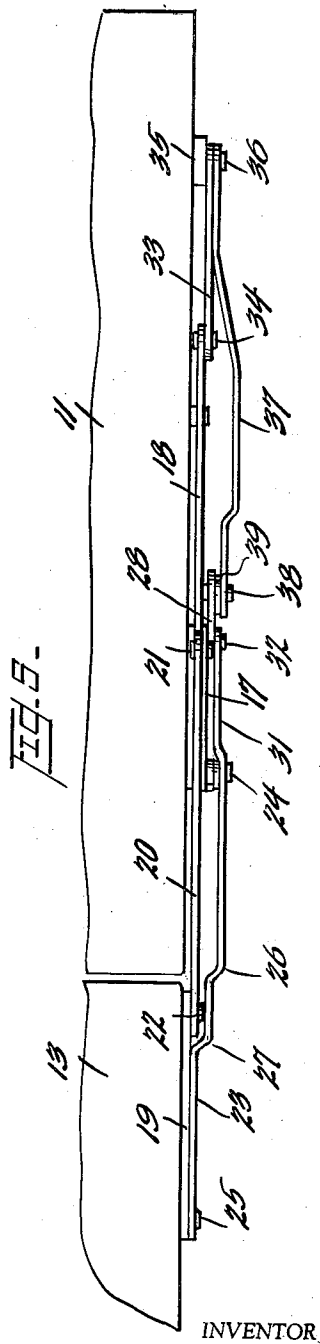


FIG. 5.

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COMBINATION SOFA AND BED

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Application November 2, 1949, Serial No. 125,059

7 Claims. (Cl. 5—45)

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This invention relates to double purpose furniture, and more particularly to a combination sectional bed adapted to be folded into position for daytime use as a chair or sofa, and constitutes an improvement over the sofa-bed or chair-bed described and claimed in my copending application Serial No. 88,470.

The general object of the invention is to provide a sofa-bed or chair-bed comprising, generally, three sections each consisting of a framework and upholstered cushion, so connected by hinges and linkages that two of the sections may be folded together, back to back, and adjusted to a generally vertical, somewhat inclined position adjacent one of the edges of the third section thereby constituting a sofa or chair. In the construction of the earlier filed application, the more rearwardly of the two sections comprising the back rest portion is the shorter of the two, by a slight amount, and the linkage connecting this section with the base portion of the apparatus necessarily projected above the level of the seat portion when the device is adjusted in sofa or chair position for daytime use. According to the present invention, the more rearward section of the two sections comprising the back rest portion is the longer of the two, by a considerable amount, and is adapted to project downwardly below the top of the seat portion and rearwardly thereof, whereby the operating linkage connected between the base of the device and the aforesaid back rest portion may be disposed entirely laterally of the seat portion. An object of the invention is the provision of an improved linkage having this advantage.

A further object is the provision of an improved linkage between the base, back rest portion and seat portion of the device whereby, when the back rest portion is moved forwardly and into horizontal position to form the forward part of a bed, the seat portion is not only tilted from a slightly inclined position to a horizontal position, but is moved translationally, first rearwardly to clear the path of the back rest portion and then forwardly to closely abut the rearward edge of the back rest portion in horizontal alignment therewith, with the result that a close junction between the several sections may be effected without the use of any specially shaped cushions and without any interference between the respective portions as the device is being adjusted into bed position.

A further object is the provision of a device of the character described, in which the movements of the respective portions are such that, when in

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bed position, the seat portion is not only in close abutment with the back rest portion which has been horizontally disposed, but at the same time projects rearwardly of the base of the device to an extent at least approximately equal to the rearward projection of the back rest portion when the device is in sofa or chair position. As a result of this arrangement, the sofa or chair may be arranged with the upper edge of its back substantially against a room wall, and yet may be adjusted into bed position with the head of the bed substantially in engagement with the room wall, without the necessity of shifting the base of the device relative to the wall.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings in which

Figure 1 is a side elevation of the device folded for daytime use;

Figure 2 is a view similar to Figure 1 but illustrating the initial stage of the unfolding movement;

Figure 3 is a view similar to Figures 1 and 2 showing the device in an intermediate position;

Figure 4 is a view similar to Figures 1–3, showing the device in bed position;

Figure 5 is a partial plan view of the device in the position shown in Figure 4;

Figure 6 is a horizontal section on line 6—6 of Figure 3; and

Figure 7 is a detailed view of the short link to which the counterbalancing spring is attached.

In order to facilitate an understanding of the invention, reference is made to the embodiment thereof shown in the accompanying drawings and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

The device comprises generally a base portion 10, seat portion 11 and back rest portion 12, the latter comprising, preferably, two sections 13 and 14 hingedly connected so as to be extensible in abutment and horizontal alignment as illustrated in Figure 4. The details of the connection between the sections 13 and 14, and the operation of legs 15, however, form no part of the present invention and will not be further described.

The base portion 10 comprises a framework 16, generally rectangular in plan, preferably of wood and adapted to rest upon a floor or other supporting surface, and a bracket 17 secured to

either lateral rail of the framework 16 and projecting some distance above the upper edge thereof. Preferably, the bracket 17 is provided with a downwardly inclined extension 18 carrying the pivot for one of the members of the linkages to be described. Preferably, the back rest section 13 is also provided, on either side, with a bracket 19 of metal or other suitably rigid material, for connection of the said linkage.

A link 20 is pivoted to the bracket 17 as at 21 and to the bracket 19 as at 22. A lever 23 is pivoted to the bracket 17 as at 24 and to the bracket 19 as at 25. The lever 23 is formed with offsets 26 and 27 to provide the necessary clearance for other members of the linkage during adjustment of the device.

A second lever 28 is pivoted to the bracket 17 as at 29 (Figure 2) and is formed with a longitudinal slot 30. The lever 23 is provided with an extension 31 which projects beyond the pivot point 24 and carries a laterally projecting pin 32 for engagement in the slot 30 of the lever 28.

The seat portion 11 is connected with the extension 18 of bracket 17 by means of a link 33 pivoted to the extension 18 as at 34 and pivoted as at 36 to a bracket 35 extending downwardly from the seat portion 11. The free end of the lever 28 is also connected to the pivot 36 by means of a link 37, the pivotal connection between the link 37 and the lever 28 being designated at 38.

A short link 39, best seen in Figure 7, is also pivoted at 38 and provides a connection for one end of a tension spring 40 the other end of which is secured to the base 10 as at 41. The link 39 carries an inwardly extending lug 42 for engagement with the lower edge of lever 28 in order to apply the force of the spring 40 thereto, in the proper direction for counterbalancing the weight of the sections 13 and 14 in a near forward position.

As will be seen, the rearward ends of the side rails of the base framework 16 are cut away as at 43 to permit the section 13 of the back rest portion to project downwardly below the seat portion 11, which in turn permits the back rest portion to assume an inclined position as illustrated in Figure 1, promoting the comfort of the user. The side rails of the base framework are likewise inclined downwardly and rearwardly throughout their length permitting seat portion 11 to assume a slight inclination, for the same purpose. When in chair or sofa position, the section 14 of the back rest abuts the upper rearward edge of the seat portion 11. Each of the sections 11, 13 and 14 is, of course, upholstered in a suitable manner for its intended use.

From the foregoing description the operation of the device will be readily understood. When it is desired to unfold the sofa or chair to bed position, the lower end of the section 14 is grasped and pulled forwardly bringing with it the section 13 which pivots simultaneously about the pivot points 21 and 24, resulting in both a swinging and a tilting movement of the section 13. Intermediate positions of the latter are seen in Figures 2 and 3, and its final position in Figure 4. During the aforesaid movement, the lever 28 is caused to swing about the pivot 29, due to the engagement between pin 32 and slot 30, and this movement causes pivot point 36 to move upwardly and rearwardly, bringing the seat portion 12 into horizontal position and moving it rearwardly out of the way of the forwardly and downwardly moving sections 13 and 14 of the back rest 12.

When the device has been adjusted into the position shown in Figure 3, it will be noted that lever 28 and link 37 are substantially in alignment, bringing about the rearwardmost position of the seat portion 11 and permitting sections 13 and 14 to move downwardly into horizontal position without interference. As seen in Figure 4, during the final downward travel of sections 13 and 14, lever 28 is forced to make a further counterclockwise movement with the result that the seat portion 11 is moved forwardly into close abutment with the rearward edge of section 13. When fully adjusted to its bed position, as seen in Figure 4, the rearward edge of the seat portion 11 is only a short distance forward of its rearmost position, hence, the device may be adjusted from sofa or chair position to bed position, or vice versa, without moving the base 10 and while permitting the back rest portion, or the rearward edge of the seat portion, as the case may be, to closely approach the room wall.

As illustrated in dotted lines in Figure 4, the seat portion may be swung upwardly about the pivots 36 to permit access to the storage space provided within the framework 16 of the base 10. In order to perform this movement, of course, the base must be positioned slightly further from the room wall than is otherwise the case.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In adjustable furniture of the type including a base portion and seat and back-rest portions operatively connected to said base portion and adapted to be adjusted into horizontal alignment to form a bed, a linkage connecting said base, seat and back-rest portions and comprising a link and a lever pivoted at separate locations on said base portion and on said back-rest portion, said lever extending beyond the point of pivoting thereof on said base portion, a second lever pivoted on said base portion, means slidably connecting said second lever and said extension, a second link connecting the free end of said second lever to said seat portion, and a third link pivoted on said base portion and on said seat portion.

2. In adjustable furniture of the type including a base portion and seat and back-rest portions operatively connected to said base portion and adapted to be adjusted into horizontal alignment to form a bed, a linkage connecting said base, seat and back-rest portions and comprising means connecting said back-rest portion to said base portion for forward swinging movement of the former relative to the latter and tilting of the former to a horizontal position, and means operatively connected to said first means for tilting said seat portion into horizontal position and moving the same translationally, first rearwardly to clear the path of said back-rest portion, then forwardly to abut said back-rest portion in horizontal alignment therewith.

3. The linkage defined in claim 2, said last means including a member pivotally connecting said base portion and said seat portion, a member pivoted on said base portion and having an operative connection with said first means, and a link connecting said last member and said seat portion.

4. The linkage defined in claim 3, said operative connection being of the lost-motion type.

5. The linkage defined in claim 4, said operative connection being of the pin-and-slot type.

6. The linkage defined in claim 1, including counter-balancing spring means acting between said base portion and said third lever.

7. The linkage defined in claim 2, said base portion including a framework adapted to rest upon a supporting surface and to support said seat portion, and a bracket secured to said framework and extending upwardly of the upper edge thereof, said linkage being pivoted to said bracket at spaced points above the upper edge of said framework.

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