

Aug. 4, 1942.

A. M. BANK

2,291,677

FURNITURE

Filed June 14, 1940

3 Sheets-Sheet 1

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Aug. 4, 1942.

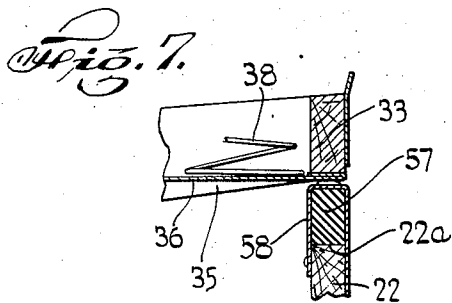
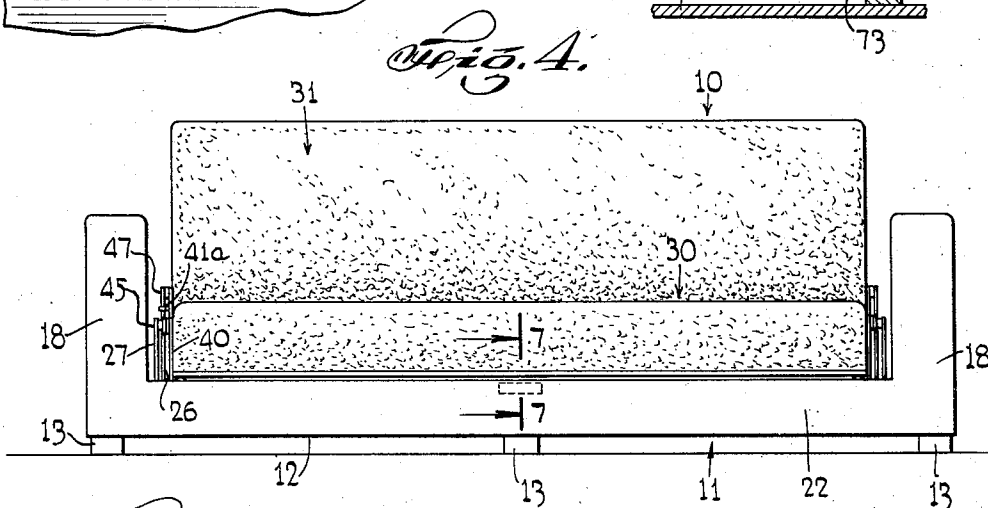
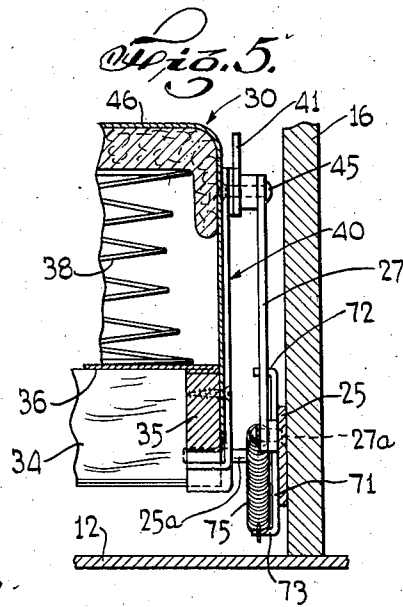
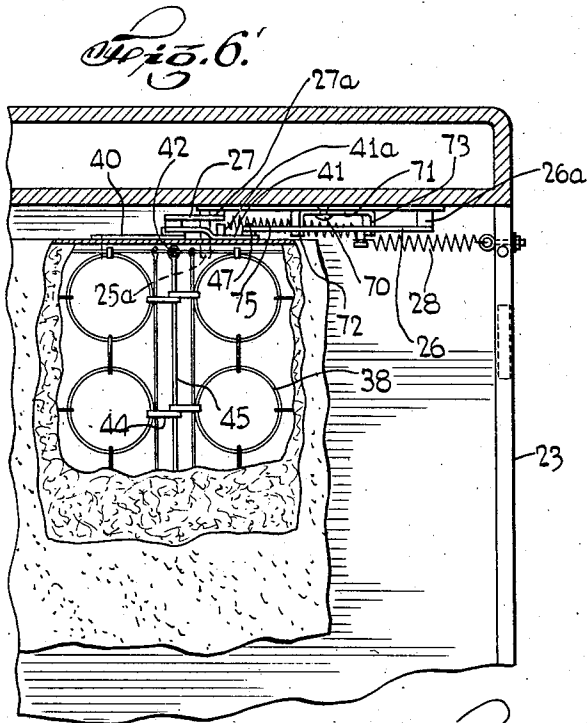
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3.

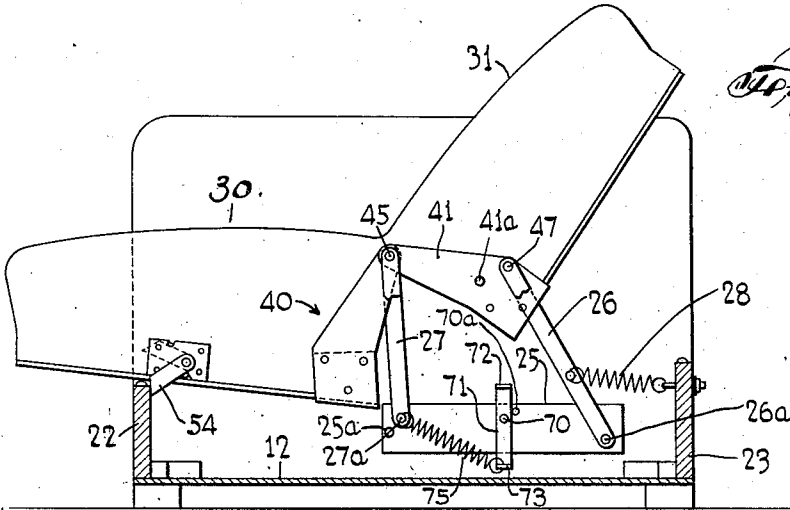


Fig. 8.

Fig. 9.

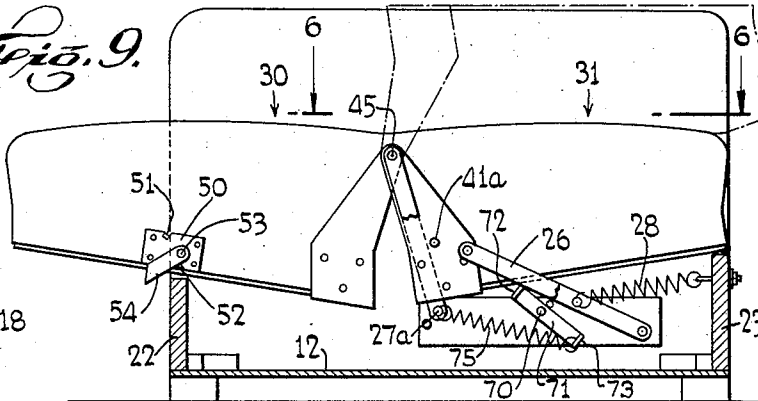


Fig. 12.

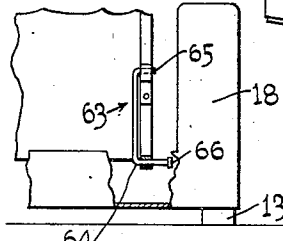


Fig. 10.

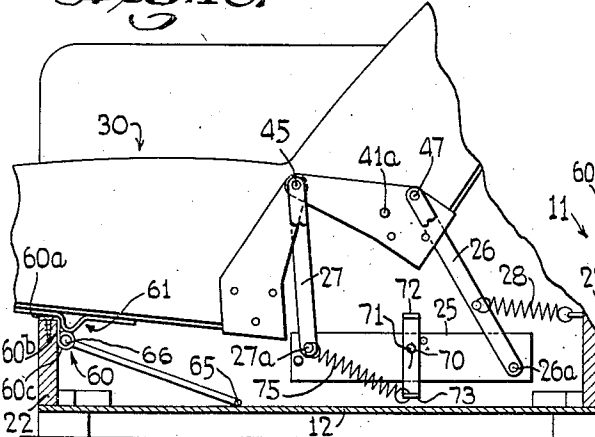
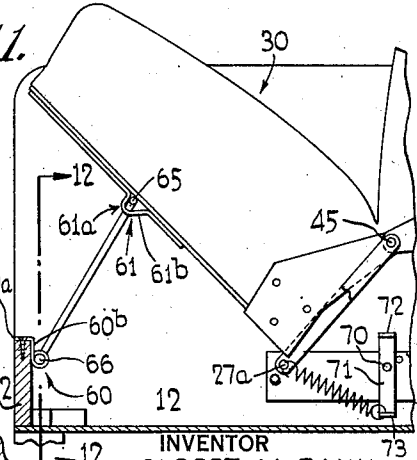


Fig. 11.



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Application June 14, 1940, Serial No. 340,531

9 Claims. (Cl. 5—47)

This invention relates to furniture. It is particularly directed to a combination couch and bed.

An object of this invention is to provide an article of furniture of the character described which may be readily changed from a couch position to a lounging position, and from a lounging position to a bed position, and vice versa.

A further object of this invention is to provide a combination article of furniture of the character described, which may be changed from a couch position to a bed position without necessity for moving the article away from the wall against which it is standing, and which may be again changed from a bed position to a couch position without moving the article away from the wall, only sufficient room being necessary to put a hand in between said article of furniture and the wall to make the change.

Another object of this invention is to provide an article of the character described, having a seat portion and a back portion hinged together, and in which the seat portion may be swung over on top of the back portion, when the back portion has been moved to horizontal position, whereby both the seat and the back portions are substantially disposed within the confines of the supporting frame, thereby making for compactness for shipping.

Still another object of this invention is to provide in an article of the character described, means to hold the seat section in upwardly swung position to facilitate removal of bedding from the supporting box or frame.

Yet another object of this invention is to provide in an article of the character described, a supporting frame adapted to contain bedding, and mechanisms at the opposite ends of the frames to support a pair of interpivotated upholstered sections which may be easily moved to bed position, lounging position, couch position and shipping position with one section swung onto the top of the other section, counter springs being provided to facilitate movement of the sections from bed position to lounging and couch positions, means being further provided to retard dropping of the back section to horizontal position, and said means aiding in lifting the back section when changing from bed position to longitudinal couch positions.

A still further object of this invention is to provide a strong, compact and durable article of furniture of the character described, which shall be relatively inexpensive to manufacture, com-

fortable to use, easy to manipulate, and yet practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which are shown various possible illustrative embodiments of this invention,

Fig. 1 is a transverse, elevational, cross-sectional view of the combination article of furniture embodying the invention, taken on line 1—1 of Fig. 2, and showing the same in couch position;

Fig. 2 is a top plan view thereof;

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

Fig. 4 is a front elevational view of the article of furniture embodying the invention;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 1;

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 9;

Fig. 7 is a cross-sectional view taken on line 7—7 of Fig. 4;

Fig. 8 is an elevational, cross-sectional view of the device embodying the invention, showing the same in lounging position;

Fig. 9 is a view similar to Fig. 8, but showing the same in bed position, and also showing the seat section on top of the back section, for shipping purpose, in dot, dash lines;

Fig. 10 is a view similar to Fig. 8, but illustrating a modified construction;

Fig. 11 is a view similar to Fig. 10, but showing the front seat lifted and held up by a supporting link; and

Fig. 12 is a cross-sectional view taken on line 12—12 of Fig. 11.

Referring now in detail to the drawings, 10 designates an article of furniture embodying the invention. The same comprises a supporting bottom box or frame 11 having a bottom wall 12 supported on corner legs 13. At the ends of the bottom wall 12 are hollow vertical arms 15. The arms 15 may comprise inner walls 16, outer walls 17, front walls 18, rear walls 19 and top walls 20. The arms 15 also serve as the head and foot of a bed, when the device is in bed position, as will be seen hereinafter.

Extending upwardly from the bottom wall 12,

and disposed between the arms 15, is a front wall 22 and a rear wall 23. Walls 22 and 23 do not extend to the height of the arms 15 but are of considerably less height, as shown in Fig. 1.

Fixed to the inner surfaces of the inner walls 16, are a pair of similar, aligned metal plates 25, located below the upper edges of the front and rear walls 22, 23, and disposed closer to the rear wall than to the front wall.

Pivoted to the rear end of each plate, 25, as at 26a, is a link 26, and pivoted to the front end of each plate, as at 27a, is a link 27. The pivotal point 27a for the link 27 is somewhat higher than the pivotal point 26a for the link 26, but the latter link is of greater length than the former. Each link 26 is interconnected to the rear wall 23 by coil tension springs 28, for the purpose hereinafter appearing.

Mounted on the support 11, and between the arms 15, are upholstered seat and back sections 30 and 31, supported on the links 26 and 27, in the manner hereinafter appearing.

Section 30 comprises a frame 32 having a front wall 33, a rear wall 34 and end walls 35. The rear wall 34 is of somewhat greater height than the front wall 33. Interconnecting the lower edge of the front wall 33 with the upper edge of the rear wall 34, is a one piece webbing 36 which may be made of burlap or other suitable webbing material. Mounted on the webbing 36 are the foundation springs 38 interconnected and tied down, in accordance with usual upholstery practice.

Fixed to the outer surfaces of the end walls 35, adjacent the rear ends thereof, are similar, upstanding plates 40 extending somewhat rearwardly of the rear wall of the frame.

The back section 31 has a frame 32a, similar and symmetrically disposed with respect to frame 32, with the exception that the frame 32 is of greater depth from front to rear. The frame 32a is provided with the same kind of webbing and springs as in section 30. Attached to the end walls of the frame 32a, are plates 41 similar and symmetrically disposed with respect to the plates 40.

The upper ends of the plates 40 and 41 are hinged together and to the upper ends of the links 27, on pins 45, thus hinging together the sections 30 and 31. Pins 45 are located adjacent the upper levels of sections 30, 31. The springs 38 may be interconnected by links 44 to a longitudinally-extending rod 45a, having end loops 42 aligned with pins 45, as shown in Figs. 1 and 6 of the drawings. The springs 38 of sections 30 and 31 are covered by usual upholstery covering 46. The upper ends of links 26 are pivoted to the lower portions of plates 41, as at 47. The sections 30 and 31 are thus supported on the links 26, 27 and on the support 11.

In Fig. 1, the article is shown in couch position. In such position, the links 26 are substantially upright, and section 31 is a back section, whereas, section 30 constitutes a seat section. The back section is substantially upright, being supported in such position by the links 26. The front end of section 30 rests on top of the front wall 22. The junction of sections 30, 31 is supported by links 27. The springs 28 pulling backward on links 26, serve to prevent accidental change of the positions of the sections 30 and 31.

Fixed to plates 41 are stop pins 41a contacting the links 26 when the back section 31 is in upright or couch position.

Means is provided to support sections 30, 31

in lounging position, with the back section 31 inclined upwardly and rearwardly. To this end, there is fixed to the outer sides of the end walls 35 of frame 32, plates 50 having outwardly bent stop fingers 51 and 52, at the upper and lower ends thereof. Pivoted to the plates 50, as at 53, are dogs 54. Plates 50 are located substantially at the mid portions of said end walls 35, between the front and rear ends thereof.

When the section 30 is in the position shown in Fig. 1, the dogs 54 contact the lower stops 52 and project below the lower edges of the frame end walls 35. The upper edge of front wall 22, preferably at the middle thereof, is formed with a cutway 22a which may be filled by a block 57 of soft rubber and covered by a flexible covering 58. A hand may thus be inserted between the frame 32 and front wall 22, by depressing the soft rubber block 57. The front section 30 may thus be pulled forwardly against the tension of springs 28 causing the counterclockwise movement of the links 26 and 27, bringing the sections 30 and 31 from the couch position shown in Fig. 1, to the lounging position shown in Fig. 8. The dogs 54 contact the rear surface of the front wall 22 to stop movement of section 30 when the back section 31 is inclined.

To move the sections 30, 31 from lounging position shown in Fig. 8 to the bed position shown in Fig. 9, it is merely necessary to lift the front section 30 upwardly, sufficient for the dogs 54 to clear the front wall 22. The front section 30 may then be pulled forwardly until the sections 30 and 31 are in the bed or horizontal position shown in Fig. 9, and in such position, the rear or upper end of section 31 contacts the rear wall 23.

It will be noted that the rear wall 23 is somewhat higher than the front wall 22, the reason being that when sections 30 and 31 are in bed position, front wall 22 contacts an intermediate portion of section 30, whereas, the rear wall 23 contacts the rear end of section 31 which is at a higher level. Thus, sections 30 and 31 are substantially horizontal.

For shipping purpose, front section 30 may be swung upwardly on top of the section 31, as shown in dot, dash lines in Fig. 9. In such position, only a small portion of section 30 projects beyond the rear of the supporting frame and the article may be conveniently shipped.

It will be noted that linen and bedding may be placed in the compartment formed by the support 11, and by lifting the front section 30 somewhat, access may be obtained to the bedding, linen and other articles within the supporting frame.

To facilitate movement of the sections 30 and 31 from the position shown in Fig. 9, back to lounging and couch positions, the rear wall 23 is formed with cut-outs 23a adjacent the ends thereof and at the upper edges thereof to receive soft rubber blocks, similar to the blocks 57. Thus, a person may place his hand around the back of the article 10 and through one of the cut-outs in the rear wall 23 and lift the rear section 31, causing the links 26 and 27 to swing in a clockwise direction aided by the tension of the springs 28, causing the section 31 to swing upwardly in a counterclockwise direction, and section 30 to slide rearwardly. As section 30 slides rearwardly, the dogs 54 swing upwardly to pass the front wall 22. After the dogs 54 are past the wall 22, the sections may be allowed to remain in lounging position, or section 31 may be continued to be

pulled upwardly until the couch position of Fig. 1 is obtained.

It will be noted that the links 27 are substantially vertical in the lounging position, are inclined to one side in the couch position, and to the other side in bed position. The links 27 thus serve to support the sections 30 and 31 in the couch, lounging and bed positions, whereas, the links 26 serve to support the rear section 31 in the lounging and couch positions. When the section 30 is swung over on top of the section 31, stops 51 serve to hold the dogs 54.

It will be noted that when changing from the lounging to bed positions, the back section 31 swings rearwardly onto the upper edge of the rear wall 23, and as it does so, the effective force of the springs 28 on the links 26 decreases to a point where the force is substantially ineffective to retard the last portion of the downward swinging movement of said back section. Means is therefore provided to retard the last portion of the swinging movement of the back section 31 to horizontal position.

To this end, there is pivoted to each of the plates 25, as at 70, a lever 71 having feet 72 and 73 at the upper and lower ends thereof. The pivotal point 70 for the lever 71 is preferably located substantially mid-way between the pivotal points 26a and 27a. The foot 73 is formed with an opening to which is connected one end of a coil tension spring 75. The other end of the spring 75 is connected to a pin at the pivotal point 27a. Normally, springs 75 are not tensioned and levers 71 are vertical.

When the back section 31 moves from the couch position in Fig. 8 to the horizontal position of Fig. 9, links 26 will contact the feet 72 of lever 71 to rotate said levers against the tension of the springs 75, thus retarding downward swinging of the back section and preventing the back section from striking hard against the upper edge of the rear wall 23.

As the back section is raised, the spring 75 aids in the initial lifting movement of the back section, at least to a point where the springs 28 become effective to aid in raising said back section. Thus, the lever 71 and spring 75 not only retard the back section when it moves downwardly, but also facilitate raising of the back section when changing from bed position to lounging position.

In Figs. 10, 11 and 12, there is shown a modified construction, in which plates 50 and dogs 54 are replaced by abutment members 60 on the front wall 22, and combination rail and stop members 61 on the underside of section 30. Each member 61 comprises a strip of metal attached to the under-edge of frame end wall 35 and formed with a humped portion 61a, the rear side of which is inclined, as at 61b. Stop member 60 comprises a plate having a portion 60a contacting the top edge of front wall 22, a portion 60b contacting the inner surface of said front wall and a loop 60c disposed below the upper edge of front wall 22, and on the inner side of said front wall.

In lounging position, the humped portions 61a of members 61 contact portions 60b of stop members 60. To change from lounging to bed position, section 30 has to be lifted sufficiently for the humped portion of stop member 61 to clear the front wall. As section 30 moves forwardly, rail portions of member 60 ride on portions 60a of member 60.

Means is further provided to retain the front

section 30 in upwardly inclined position, to permit removal of the bedding. To this end, there is pivoted to loop 60c of one of the stop members 60, a supporting link or bracket 63 having an arm 64 slidably received in said loop portion, and a foot or arm 65 slidably received in the loop portion of the stop member 61.

The arm 64 is longer than arm 65, and has a collar 66 at its outer end. The link 63 may be moved sufficiently for the arm 65 to clear the stop member 61, permitting the link to be swung against the bottom wall of the frame. However, upon lifting the section 30, arm 65 may be engaged within the loop portion of stop member 61, to hold said section up for facilitating removal of articles from the supporting frame 11.

The plates 25 may be provided with stop pins 70a to retain the levers 71 in vertical position when said levers are not engaged by the links 26.

Furthermore, stop pins 25a may be mounted on the plates 25 to engage the under-edges of the frames 32 of sections 30 to support said sections in couch position, as shown in Fig. 1 of the drawings. Thus, stop pins 25a, as well as the pins 41a, serve to limit rearward movement of section 30 and swinging movement of section 31 in couch position.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. An article of the character described comprising a supporting frame, a pair of links pivoted to said supporting frame, a seat section and a back section pivoted together, said sections being of substantially similar width, one of the links being pivoted to the pivoted points of said sections, the other link being pivoted to the back section, a spring interconnecting the second link with the rear of the frame, and stop means on the seat section adapted to engage the supporting frame to hold the sections in lounging position with the back section inclined upwardly and rearwardly, and the seat section substantially in horizontal position, said seat section having portions inclined downwardly and rearwardly and resting upon the forward portion of said supporting frame effective to raise the front end of said seat section commensurate with the upward movement of said first mentioned link, said sections being movable to a horizontal position, and both sections being adapted to be supported wholly by the frame in said position, and in said position one of said sections projecting forwardly of the frame and the rear of the other section being substantially flush with the rear of the frame, the combined width of said sections being greater than the width of said frame.

2. In combination, a support, a seat section and a back section, plates on said sections, means to pivot said plates together, a link pivoted at one end to the support and at the other end to the pivotal point between said plates, a second link interconnecting said support with the back section, and releasable stop means on the seat section to engage a portion of the supporting

frame to hold the sections against forward movement in lounging position, with the back frame section inclined upwardly and rearwardly, said seat section having portions inclined downwardly and rearwardly and resting upon the forward portion of said supporting frame effective to raise the front end of said seat section commensurate with the upward movement of said first mentioned link, and said sections being movable from lounging position to bed position with both sections substantially horizontal, upon release of said stop means, said sections being wholly supported by the frame in horizontal position and in such position the rear of the back section being substantially flush with the rear of the frame, and the front end of the seat section projecting forwardly beyond the front of the frame, the combined width of said sections being greater than the width of said frame.

3. In combination, a support, a seat section and a back section, plates on said sections, means to pivot said plates together, a link pivoted at one end to the support and at the other end to the pivotal point between said plates, a second link interconnecting said support with the back section, and stop means on the seat section to engage a portion of the supporting frame to hold the sections inclined upwardly and rearwardly, and said sections being movable to bed position with both sections substantially horizontal, said second link being substantially upright in couch position with the back section substantially upright, and the first link being inclined upwardly and rearwardly in couch position, said first link being substantially upright in lounging position when the back section is inclined upwardly and rearwardly, and being inclined somewhat forwardly and upwardly in bed position, said sections being wholly supported by the frame in horizontal position, and in such position the rear of the back section being substantially flush with the rear of the frame, and the front end of the seat section projecting forwardly beyond the front of the frame, the combined width of said sections being greater than the width of said frame.

4. In combination, a support, a seat section and a back section, plates on said sections, means to pivot said plates together, a link pivoted at one end to the support and at the other end to the pivotal point between said plates, a second link interconnecting said support with the back section, and stop means on the seat section to engage a portion of the supporting frame to hold the sections in lounging position with the back frame section inclined upwardly and rearwardly, and said sections being movable to bed position with both sections substantially horizontal, said second link being substantially upright in couch position with the back section substantially upright, and the first link being inclined upwardly and rearwardly in couch position, said first link being substantially upright in lounging position, and being inclined somewhat forwardly and upwardly in bed position, said second link being of greater length than the first link and being pivoted to the frame at a lower level than the first link.

5. In an article of furniture of the character described, a supporting frame, an upholstered seat section, and an upholstered back section pivoted thereto about an axis disposed substantially at the upper level of said sections and spaced above the bottoms of said sections, a link pivoted at its lower end to said supporting frame and at

its upper end to the pivotal connection between said sections, a second link pivoted at its lower end to said frame, and at its upper end to the back section at a point closer to its bottom than to its top, and stop means on the seat section adapted to disengageably engage a portion of the frame to hold said sections against forward movement in lounging position with the back section in upwardly and rearwardly inclined position, said seat section having portions inclined downwardly and rearwardly and resting upon the forward portion of said supporting frame effective to raise the front end of said seat section commensurate with the upward movement of said first mentioned link, said seat section being movable forwardly, and said back section being movable from inclined to horizontal position upon disengaging said stop means, said sections being wholly supported by the frame in horizontal position, and in such position the rear of the back section being substantially flush with the rear of the frame, and the front end of the seat section projecting forwardly beyond the front of the frame, the combined width of said sections being greater than the width of said frame.

6. In an article of furniture of the character described, a supporting frame, an upholstered seat section, and an upholstered back section pivoted thereto about an axis disposed substantially at the upper level of said sections and spaced above the bottoms of said sections, a link pivoted at its lower end to said supporting frame and at its upper end to the pivotal connection between said sections, a second link pivoted at its lower end to said frame, and at its upper end to the back section at a point closer to its bottom than to its top, means on the seat section adapted to engage a portion of the frame to prevent forward movement of the seat section relative to the frame to retain the back section in upwardly and rearwardly inclined position, said seat section being adapted to be lifted to disengage the stop means from the frame and to permit the seat section to be pulled forwardly, and said back section being adapted to swing downwardly to horizontal position, upon pulling said seat section forwardly, and spring means adapted to be tensioned upon said back section swinging down to horizontal position, said sections being wholly supported by the frame in horizontal position, and in such position the rear of the back section being substantially flush with the rear of the frame, and the front end of the seat section projecting forwardly beyond the front of the frame, the combined width of said sections being greater than the width of said frame.

7. In an article of furniture of the character described, a supporting frame, an upholstered seat section, and an upholstered back section pivoted thereto about an axis disposed substantially at the upper level of said sections and spaced above the bottoms of said sections, a link pivoted at its lower end to said supporting frame and at its upper end to the pivotal connection between said sections, a second link pivoted at its lower end to said frame, and at its upper end to the back section at a point closer to its bottom than to its top, means on the seat section adapted to engage a portion of the frame to prevent forward movement of the seat section relative to the frame to retain the back section in upwardly and rearwardly inclined position, said section being adapted to be lifted to disengage the stop means from the frame and to permit the seat section to be pulled forwardly, and said back

section being adapted to swing downwardly to horizontal position, upon pulling said seat section forwardly, spring means adapted to be tensioned upon said back section swinging down to horizontal position, said seat section being adapted to be swung upwardly about its pivotal connection, and additional spring means adapted to retard the last portion only of the downward swinging movement of the back section toward horizontal position.

8. In an article of furniture of the character described, a supporting frame, an upholstered seat section, and an upholstered back section pivoted thereto about an axis disposed substantially at the upper level of said sections and spaced above the bottoms of said sections, a link pivoted at its lower end to said supporting frame and at its upper end to the pivotal connection between said sections, a second link pivoted at its lower end to said frame, and at its upper end to the back section at a point closer to its bottom than to its top, means on the seat section adapted to engage a portion of the frame to prevent forward movement of the seat section relative to the frame to retain the back section in upwardly and rearwardly inclined position, said seat section being adapted to be lifted to disengage the stop means from the frame and to permit the seat section to be pulled forwardly, and said back section being adapted to swing downwardly to horizontal position, upon pulling said seat section forwardly, spring means adapted to be tensioned upon said back section swinging down to horizontal position, and additional spring means adapted to retard the last portion only of the downward swinging movement of the back

section toward horizontal position, the rear end of said back section being substantially flush with the rear of said frame, and the front end of said seat section projecting forwardly of the front end of said frame when said sections are in horizontal position.

9. An article of the character described, comprising a supporting frame, a pair of upholstered sections, means to interpivot said sections, a link interconnecting one of said sections with the supporting frame, a second link interconnecting the interpivoted portions of said sections with said supporting frame, spring means interconnecting the first link with the rear of the supporting frame, said sections being adapted to be swung from bed position with both sections horizontal to a couch position with the first section upright and the second section horizontal, said first link being inclined forwardly and upwardly when said sections are horizontal, and being substantially in vertical position when said first section is upright, stop means to limit movement of said sections from bed position to couch position, said means including a stop pin on said first section spaced from the pivotal connection between said sections and adapted to move toward said first link when said first section moves from horizontal to upright position, and away from said first link when said first section moves from upright to horizontal position and to engage said first link in couch position to limit movement of said first link as it moves from inclined to vertical position, and means on the frame to engage the underside of the second section in said couch position.

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