W. S. MORRIS.

COUCH BED.

APPLICATION FILED APR. 24, 1912.

1,095,466.

Patented May 5, 1914.

4 SHEETS—SHEET 1.

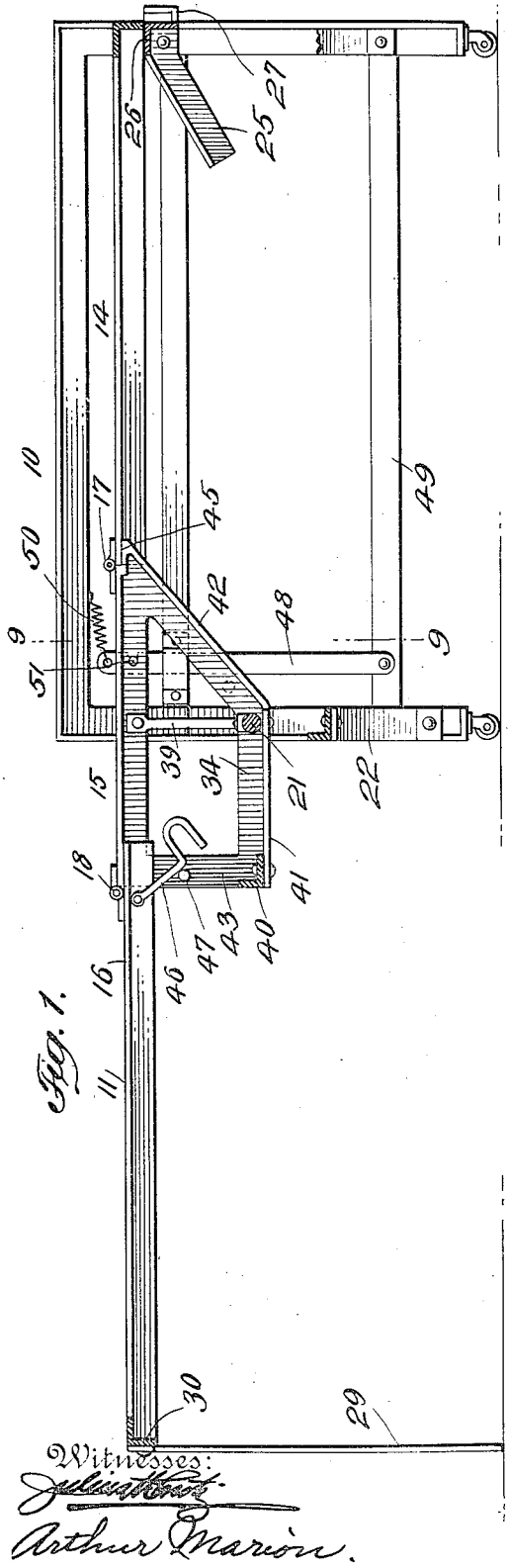


Fig. 1.

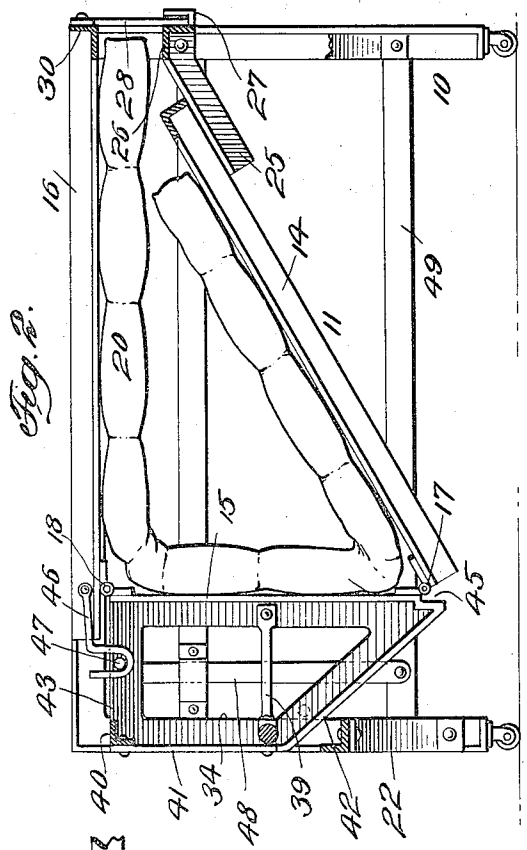


Fig. 2.

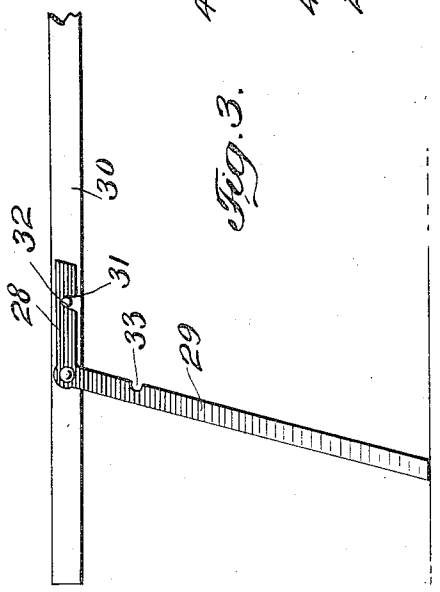


Fig. 3.

Witnesses:

Julia Stuart.

Arthur Marion.

Inventor

Winfield S. Morris

By his Attorney Chas. C. Gill

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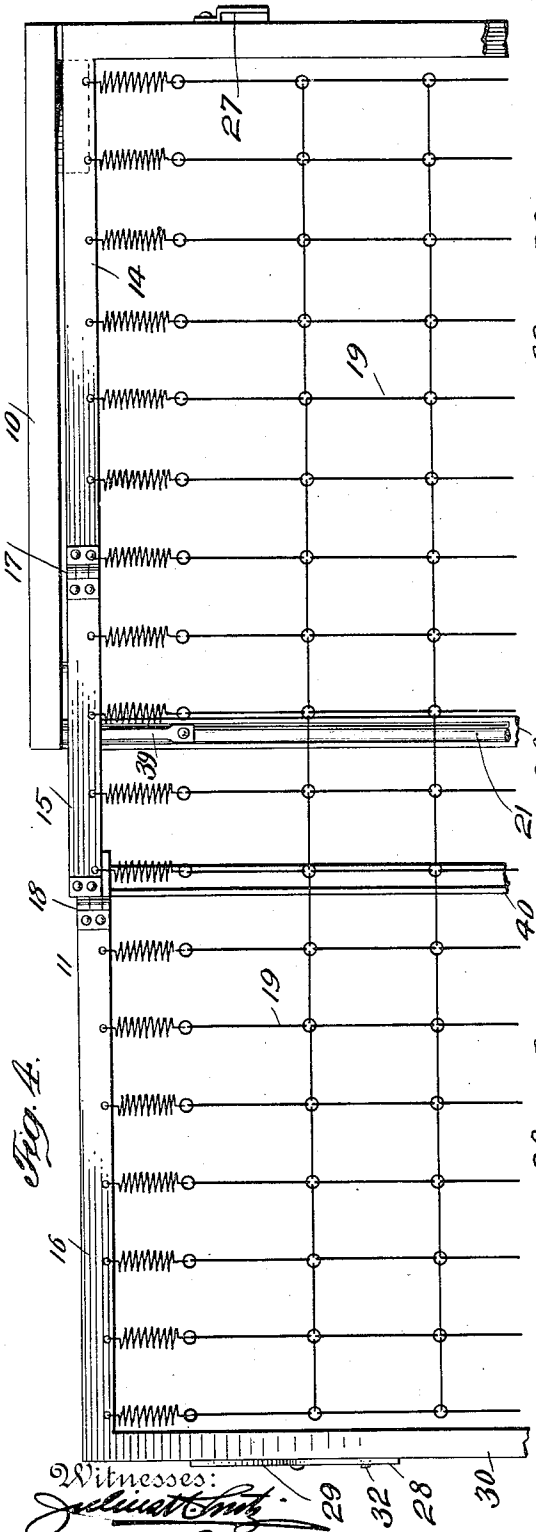


Fig. 4.

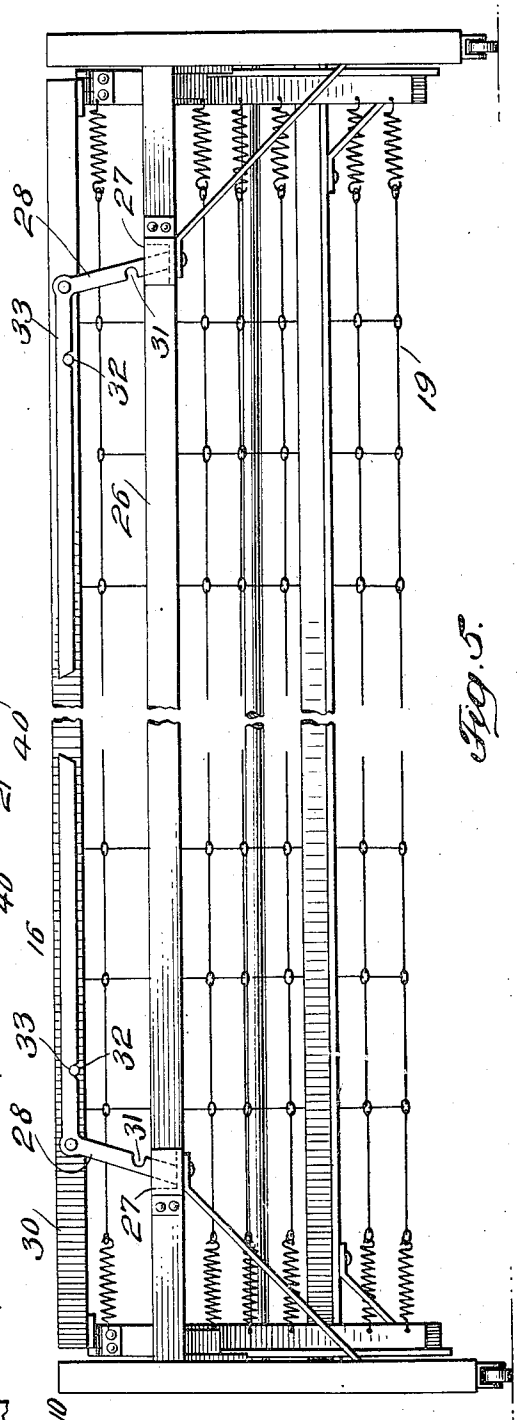


Fig. 5.

Witnesses:

Julius A. Mathews.

Arthur Marion.

Inventor

Winfield S. Morris

By his Attorney

Chas. C. Gill

W. S. MORRIS.

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4 SHEETS—SHEET 3.

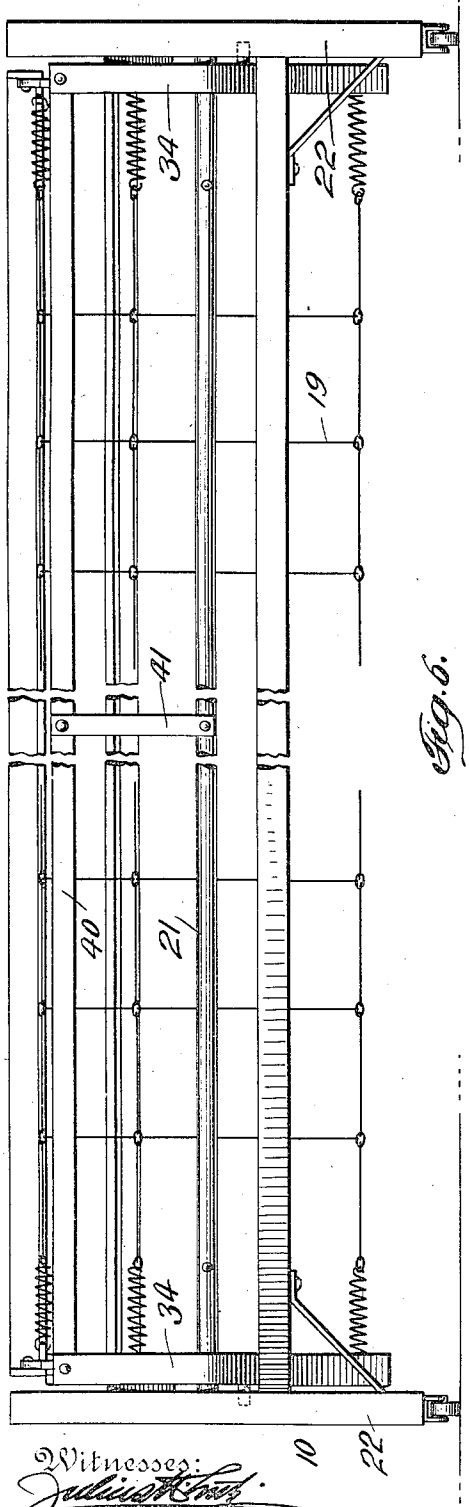


Fig. 6.

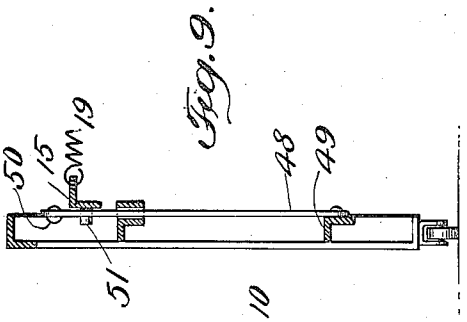


Fig. 9.

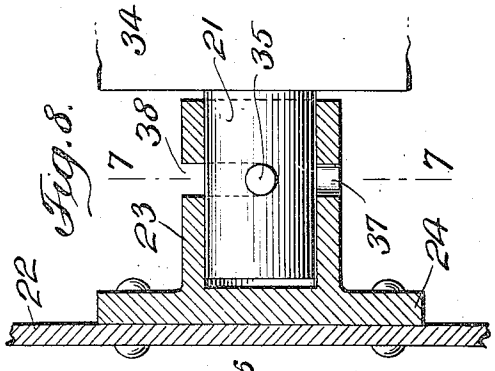


Fig. 8.

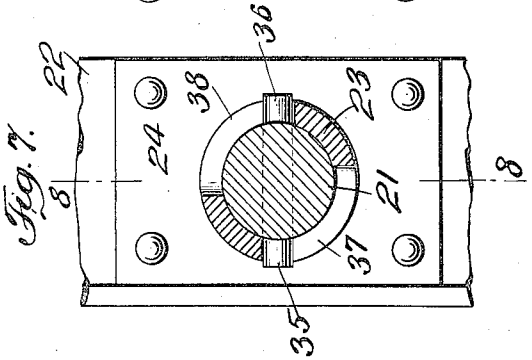


Fig. 7.

Witnesses:
Julius K. Grant.
Arthur Marion.

Inventor
Winfield S. Morris,
By his Attorney
Chas. O'Gill

W. S. MORRIS.

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4 SHEETS—SHEET 4.

Fig. 11.

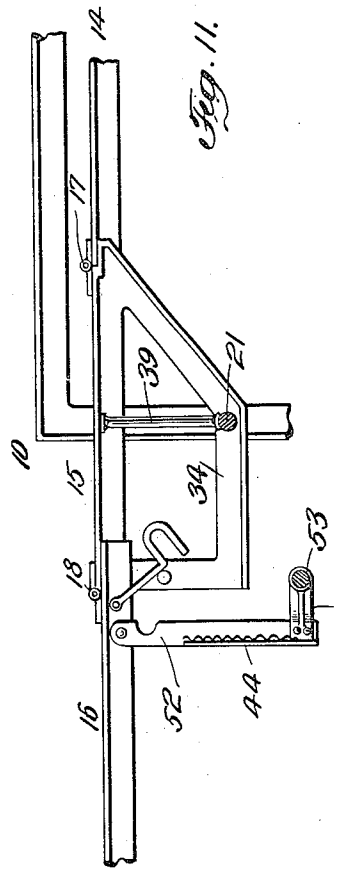
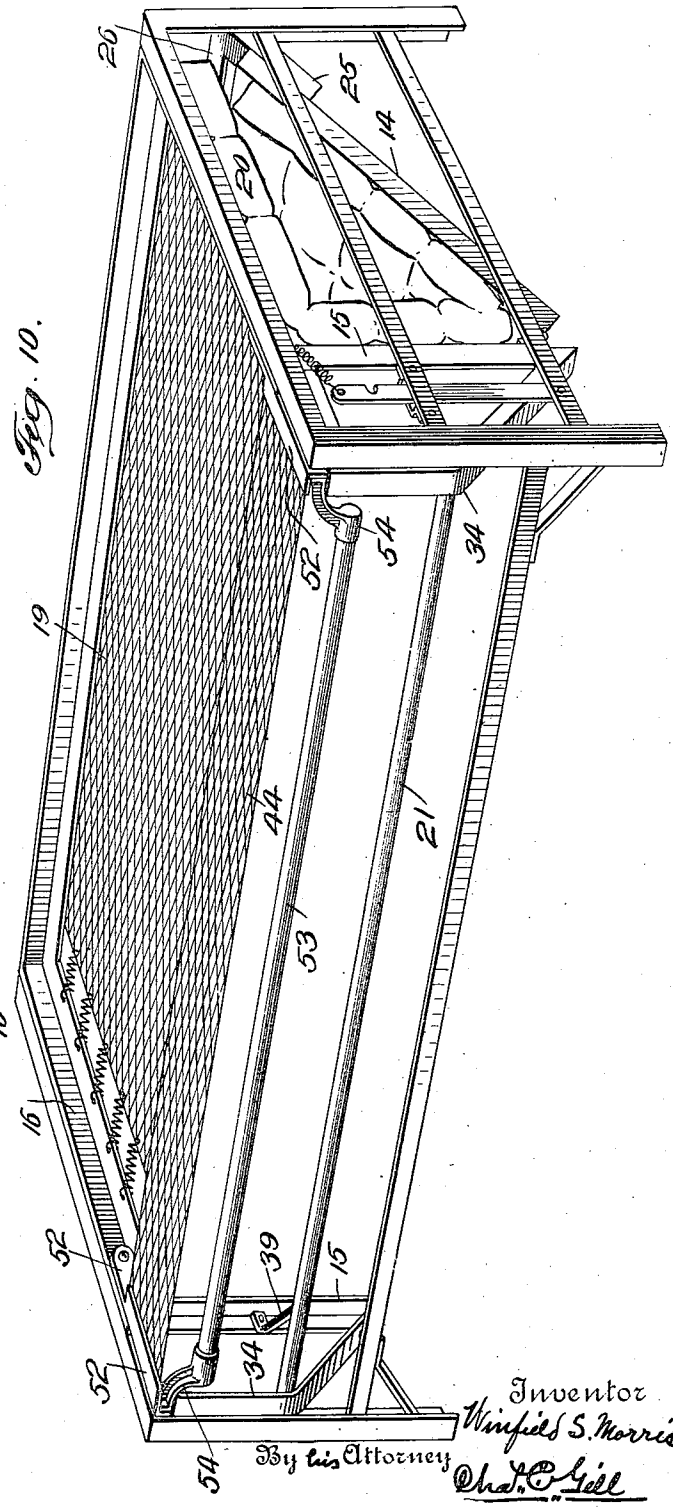


Fig. 10.



Witnesses:

Julius Kantz

Arthur Marion.

Inventor

Winfield S. Morris

By his Attorney

Chas. C. Gill

UNITED STATES PATENT OFFICE.

WINFIELD S. MORRIS, OF NEW YORK, N. Y.

COUCH-BED.

1,095,466. Specification of Letters Patent. Patented May 5, 1914.

Application filed April 24, 1912. Serial No. 692,846.

To all whom it may concern:

Be it known that I, WINFIELD S. MORRIS, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Couch-Beds, of which the following is a specification.

The invention relates to improvements in couch and other beds; and it consists in the novel features, structure and combinations of parts hereinafter described, and particularly pointed out in the claims.

The object of the invention is to provide a novel and efficient bed construction which may be made to produce a bed of any required length and width and conveniently fold with the mattress in position on the spring or bed sections, into the space afforded by the couch or other main frame.

A special object of the invention is to produce a convertible or foldable bed of very durable and simple construction and composed of few parts and capable of ready manipulation in unfolding the same to constitute a bed or folding the same within the main frame to create a couch or the like.

The bed of my invention comprises a main supporting and, when the bed is not in use as a bed, concealing frame of a character affording a suitable article of furniture, such as a couch, chair or the like, and a foldable bed member capable of being confined within said frame or opened outwardly therefrom at will and comprising three sections hinged to one another in series and having the spring for the mattress secured thereto, the middle section having rigid side members projecting therefrom and pivotally secured to fixed portions of said main frame to allow said middle section to stand vertically at a distance inwardly from the front of said frame when the bed member is folded and to extend horizontally when said member is unfolded, whereby one section hinged to said middle section may, in the folded condition of the bed, lie horizontally to form a seat and the other section at the other edge of said middle section may be caused to extend upwardly and rearwardly from the lower edge of said middle section and have its free edge suitably supported on rests secured to the rear upper part of the main frame. The middle bed section by reason of its arrangement and operation enables the compact confinement of the bed member within the outer or couch frame and at the same time results in creating a commodious space between the folded-in end sections of said member to hold the mattress on the spring and receive between the folded portions of the mattress bed clothing, pillows and the like. In carrying out my invention I also provide suitable auxiliary features of construction and arrangement adding materially to the desirability of the bed.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a vertical longitudinal section, through a couch bed constructed in accordance with and embodying my invention, the bed member being shown in its unfolded condition for use as a bed; Fig. 2 is a sectional view corresponding with Fig. 1, but showing the bed member with the mattress thereon and folded within the main outer or couch frame; Fig. 3 is a detached front elevation of a portion of the front rail, looking at Fig. 1, of the bed member and showing one of the supporting legs pivotally carried thereby; Fig. 4 is a top view, partly broken away, of the bed shown in its unfolded or open condition; Fig. 5 is an enlarged rear end view, partly broken away, of the bed shown in its folded condition represented in Fig. 2; Fig. 6 is an enlarged front elevation, partly broken away, of the same taken from the left hand side of Fig. 2; Fig. 7 is a detached side elevation of a portion of the inner side of one of the vertical front corner bars of the main frame and illustrates in vertical section, taken on the dotted line 7—7 of Fig. 8; Fig. 8 is a vertical section of the same on the dotted line 8—8 of Fig. 7; Fig. 9 is a vertical transverse section through a portion of the bed frame taken about on the dotted line 9—9 of Fig. 1; Fig. 10 is a perspective view of a couch-bed embodying my invention having in addition to the parts represented in Figs. 1 and 2, an auxiliary frame to cover the gap left between the upper edge of the middle section of the bed-member when said section is in its vertical or folded-in position and the front of the main couch frame, said auxiliary frame serving to aid in supporting a cushion which may be placed on the then

folded bed-member to afford a suitable seat, and Fig. 11 is a sectional view, partly broken away, through the same in the unfolded condition of its bed-member and illustrates the disposition of the aforesaid auxiliary frame, while the couch is in use as a bed.

In the drawings, referring to Figs. 1 to 9 inclusive, 10 designates an exterior main supporting frame, and 11 the bed member, said frame being capable of varying construction but shown as composed of iron and consisting of two outer frames suitably connected together and provided with casters. The special construction of the supporting frame 10 is unimportant so long as it may be utilized to properly support and conceal the bed-member and afford an unobjectionable article of furniture. The bed-member comprises three pivotally connected sections numbered, respectively, 14, 15, 16, and the inner end of the section 14 is hinged to the adjacent end of the section 15 by any suitable hinges 17, and the inner portion of the section 16 is secured by any suitable hinges 18 to the other end of said member 15. The sections 14, 15, 16 will preferably present an open iron frame receiving the spring 19 for the mattress 20, said spring preferably being continuous from one end to the other of the bed-member and secured to the side bars or rails of the sections of said member.

The section 15 is secured upon a transverse pivotally mounted rod 21 extending between the front vertical bars 22 of the main supporting frame 10, the ends of said rod 21 being, as more clearly shown in Figs. 7 and 8, held in tubular bearing sleeves 23 constituting portions of brackets 24 which are directly riveted to said bars 22. The details of the bearing sleeves 23 will be hereinafter described. The section 15 is adapted, when the bed is extended, to lie horizontally, as shown in Fig. 1, supported by the rod 21 and bars 22. When the bed member is in its folded condition, as shown in Fig. 2, the middle section 15 thereof will stand vertically inwardly from the front end of the main frame 10, and at this time the section 16 of the bed member will lie horizontally and be suitably supported, as hereinafter explained, while the section 14 of the bed-member will extend upwardly and rearwardly from the then lower end of the section 15 and be supported at its upper portion upon upwardly and rearwardly inclined bars 25 supported from the vertical rear bars of the frame 10. Adjacent to the upper ends of the bars 25 a transverse bar 26 extends between the ends of the frame 10 and connects said ends and also aids in supporting the section 14 when the bed-member is in its extended position, as shown in Fig. 1. Upon the rear face of the bar 26 are secured two pockets 27 which are open at their upper ends and inner or facing edges and closed at their bottoms and outer edges, as more clearly indicated in Fig. 5, and said pockets 27 are provided to receive the extensions 28 on the front legs 29 when the bed member is in its folded condition and coöperate with said extensions in supporting the bed-section 16 in a horizontal position to receive a suitable seat or cushion, not shown. The legs 29 are pivotally secured to the outer rail 30 of the section 16 and have extending angularly from their upper ends the aforesaid extensions 28, which when the bed-member is extended for use as a bed engage at their recesses 31 with pins 32 on the rail 30 and hold the legs 29 in their unfolded supporting position, said legs then standing downwardly and outwardly from the inner ends of the extensions 28 instead of at right angles to the rail 30 and being held from folding upwardly in one direction by reason of their inclination and in the other direction by the engagement of the extensions 28 with the pins 32. When the bed-member is in its folded condition, the legs 29 lie along the rail 30 with the recesses 33 therein in engagement with the pins 32, as shown in Fig. 5, and the extensions or auxiliary legs 28 in the pockets 27 and supporting the adjacent portion of the section 16, and at this time the legs 29 are prevented from folding or turning downwardly by reason of their engagement with the said pins. In the folded condition of the bed-member the section 16 thereof is supported in its horizontal position by the middle section 15 and leg extensions 28.

The pockets 27 are left open at one vertical side and at the top so that the extensions 28 may be readily swung into and from them when the legs are turned to effect that action.

The section 15 comprises the outer rails to which the spring 19 is secured, and members 34 extending at right-angles from said rails and in the same plane therewith, and said members 34 may be formed integrally with said rails as by a casting, as shown. The members 34 are secured on the aforesaid rod 21 and in the folded position of the bed enable the middle section to stand vertically inwardly from the front of the main frame 10, as shown in Fig. 2, and to lie horizontally above the rod 21 when the bed member is unfolded, as shown in Fig. 1, for use as a bed. The rod 21 at its outer ends is mounted in bearing sleeves 23 and provided at said ends with projecting studs or pins 35, 36, respectively are confined in slots 37, 38, respectively, formed in the sleeves 23. The slots 37, 38 extend through about one quarter of the circle of the sleeves 23 and are opposite to each other, and the ends of said

slots coöperating with the pins 35, 36, serve as stops to arrest the middle section 15 in its two positions.

Figs. 7 and 8 illustrate the pins and slots as arresting the middle section 15 in its folded or vertical position, represented in Fig. 2, while when said middle section is turned to its horizontal position the pin 36 will reach the upper end of the slot 38 and the pin 35 the lower end of the slot 37, thereby serving to arrest said section in its horizontal position. The middle section 15 may be braced and strengthened by brace rods 39 extending from the rails of said section to the rod 21 and by an angle bar 40 connecting the lower portions of the side members 34 and by a rod 41 connecting the middle portion of said angle bar 40 with the rod 21. The invention is not, however, limited to these brace bars, angle bar and connecting rod 41, nor to the precise shape illustrated of the members 34, since the main function of said members, regardless of their outline, is to support the rails of the section 15 suitably above the rod 21 when the device is in use as a bed and hold the same inwardly within the frame 10 when the bed member is folded and the device is to be used as a couch or chair. The rod 21 is about in line with the vertical center of the section 15 when the latter is in its horizontal position, and hence when the section 15 is turned into its vertical position, shown in Fig. 2, about one-half of the section extends below and the other half above the horizontal plane of said rod. I form the middle section 15 of considerable length so as to not only secure a commodious bed but when said section is in its vertical position an adequate space between the folded sections of the bed member to enable the use on the spring of a thick mattress 20 and provide accommodations between the folded portions of said mattress for bedding, pillows and the like. I shall preferably incline one edge of the side members 34, as at 42, and have the other edge of said members straight, as at 43, so that in the folded position of the section 15 the inclined edge of the side members may extend inwardly within the front end of the main frame 10 while the straight edge 43 of said side members will lie horizontally substantially parallel with the spring on the section 16 and afford a frame on which a seat-cushion, not shown, may be partly supported. The seat-cushion if having a rigid frame, would extend entirely over the section 16 and out to the outer edge of the folded middle section 15. In cases in which the seat-cushion should not have a rigid frame at its lower side but be simply a soft cushion, it would be desirable to close the gap left in the folded condition of the bed between the side members of the section 15, and in such case I would employ the auxiliary spring 44, shown in Figs. 10 and 11 and hereinafter more fully referred to.

In the preferred construction of the bed member the rear ends of the side bars or rails of the section 15 are sufficiently recessed to pass below the adjacent front ends of the side bars or rails of the section 14 so that a bed member having a uniform upper surface may be produced and the rear ends of the side bars of the section 15 be enabled to properly support the front ends of the side bars or rails in the section 14. The recesses at the rear ends of the side bars or rails of the section 15 are numbered 45 in Figs. 1 and 2.

The side bars or rails of the section 16 extend below the front portions of the side bars or rails of the section 15, as clearly represented in Fig. 1, and those portions of said bars or rails of the section 16 which extend below the adjacent parts of the section 15 serve, during the unfolding of the bed member, as levers for turning the section 15 to its horizontal position. The side bars or rails of the section 16 are, adjacent to the middle section 15, provided with hooks 46, which are adapted to engage pins 47 provided on the side members 34 of the middle section. For illustration, when the section 16 is turned upwardly from its horizontal position shown in Fig. 1, it will, after having been moved upwardly a proper distance carry the hooks 46 into engagement with the pins 47, and thereupon during the further folding movement of the section 16 said hooks acting against said pins will turn the middle section 15 in a direction toward its vertical position shown in Fig. 1, the sections 16, 15 then moving along to their folded condition and the section 16 acting as a long lever to aid the operator in conveniently folding the bed member. The hooks 46 will retain their engagement with the pins 47 when the bed is in its folded condition, said hooks then being supported and held against dropping from the pins 47 on the lateral flanges of the angle bar side rails of the section 16, as shown in Fig. 2. When the bed member is unfolded the hooks 46 will drop from the pins 47 and assume the relation thereto illustrated in Fig. 1. The hooks 46 and pins 47 are so proportioned and related to each other that in the folded condition of the bed the sections 15, 16 may stand at right angles to each other, as shown in Fig. 2, and in this condition of the bed the hooks aid in maintaining stability in the bed member. The fact that the extensions 28 on the legs 29 enter the pockets 27 in the folded condition of the bed also aids in imparting stability to the bed member or in keeping said parts from having a sliding movement or looseness of play. The stops formed by the pins 35, 36 and slots 37, 38 also aid in imparting sta-

bility to the bed structure both in its folded and unfolded conditions. I may also provide a spring latch to assist in maintaining the middle section 15 in a horizontal position, although I do not regard said latch as important. When the said latch is made use of it will preferably comprise at each side of the middle section 15 a bar 48 pivoted at its lower end to a rail 49 of the main frame 10 and connected by a spring 50 with the upper portion of said frame, the springs 50 tending to draw the bars 48 rearwardly of the frame 10. Each of the bars 48 is formed with a notch near its upper end and at its rear edge to engage a laterally projecting pin 51 on the section 15. During the unfolding of the bed the pins 51 will ride against the bars 48 and enter the notches thereof, said bars being held against said pins by the springs 50. During the folding of the bed member a somewhat quick action, like a jerk, on the foot section 16 after the hooks 46 engage the pins 47, will cause the pins 51 to leave the notches in the latch bars 48.

The manner of unfolding and folding the bed member will be understood from the foregoing description, taken in connection with the drawings, without further detailed explanations.

With reference to the auxiliary spring fabric 44, shown in Figs. 10 and 11 and which I use to close the gap at the outer end of the section 16 and between the side members 34 of the middle section, when a soft cushion is to be placed upon the folded bed, I employ the same construction of outer frame and bed member together with the hooks 46 and pins 47, but add to the section 16 a frame comprising two side bars 52 pivoted to the side rails of the section 16 near the hooks 46 and connected by the auxiliary spring fabric 44 and an outer depressed rod 53. When the bed member is in its unfolded position the bars 52, spring 44 and rod 53 will hang loosely and idly downwardly below the section 16, as shown in Fig 11, but when the bed member is turned to its folded condition, the bars 52 will be turned upwardly and be supported upon the then upper straight edges of the side members 34 of the middle section 15, as shown in Fig. 10. The rod 53 is secured to castings 54, which, in the folded condition of the bed, extend upwardly and outwardly and rest upon the upper edges of the side members 34. The rod 53 is depressed below the auxiliary spring 44 so that in sitting on a cushion placed on the spring 44 and the bed spring, a person will not bear upon the unyielding rod 53. It will be seen on reference to Fig. 10 that the auxiliary spring 44 is only employed to fill the gap left at the front of the frame 10 between the side members 34 of the middle section 15, and that said spring automatically takes its place during the folding of the bed member. When a seat-cushion having a rigid base frame is employed, the auxiliary spring 44 will not be used, since the front portion of the seat frame may rest directly upon the then upper ends of the side members 34, but when a soft-cushion is used for a seat, the spring 44 will be made use of to aid in supporting the same.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its extended or folded positions comprising pivoted legs carried by the outer end of said section and having angular extensions at their upper ends, stops on the end of said outer section to arrest said legs and extensions, and means on the main frame to support said extensions in the folded-in position of said section when said legs are folded along the end of the same.

2. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its extended or folded positions comprising pivoted legs carried by the outer end of said section and having angular extensions at their upper ends, stops on the end of said outer section to arrest said legs and extensions, and pockets on the main frame to support the outer ends of said extensions in the folded-in position of said section when said legs are folded along the end of the same.

3. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its extended or folded positions comprising pivoted legs carried by the outer end of said section and having angular extensions at their upper ends, stops on the end of said outer section to arrest said legs and extensions, and means on the main frame to engage said extensions in

the folded-in position of said section when said legs are folded along the end of the same, said legs and extensions thereof having recesses to pass upon said stops in the two positions of the legs.

4. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its extended or folded positions comprising pivoted legs carried by the outer end of said section and having angular extensions at their upper ends, stops on the end of said outer section to arrest said legs and extensions, and pockets on the main frame open at their tops and facing edges to receive the outer ends of said extensions in the folded-in position of said section when said legs are folded along the end of the same.

5. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, means for supporting the outer section of said bed-member in its horizontal positions, and supplemental means for connecting the outer rails of said outer section near their inner ends with said middle section below the top and at opposite sides thereof after the outer section has been turned upwardly in the folding of the bed-member, to enable the outer section to turn the middle section over into the main frame.

6. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its horizontal positions, said depending members at their outer edges presenting straight bars to lie horizontally and aid in serving as a seat-support in the folded condition of the bed-member.

7. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its horizontal positions, said depending members at their outer edges presenting straight bars to lie horizontally and aid in serving as a seat-support in the folded condition of the bed-member, combined with a supplemental frame comprising side rails, an auxiliary spring fabric extending between the same and a depressed rod connecting said rails, pivotally connected with said outer section and adapted on the folding of the bed-member to rest on said bars of said depending members and span the gap between said members and between the folded outer section and the front of the main frame.

8. In a bed, a main-frame, a foldable bed-member adapted thereto comprising three sections pivotally connected in series, the middle section having depending members pivotally mounted in said main frame so that said section may be supported horizontally or turned over into said frame, and means for supporting the outer section of said bed-member in its horizontal positions, the means pivotally mounting the depending members of said middle section comprising pivots extending outwardly beyond the sides of said members and having transverse stops (35, 36), and bearing sleeves secured to the main frame and receiving said pivots and having segmental transverse slots (37, 38) receiving and at their ends coöperating with said stops to arrest said middle section at the ends of its movements.

Signed at New York city, in the county of New York and State of New York, this 23rd day of April, A. D. 1912.

WINFIELD S. MORRIS.

Witnesses:
ARTHUR MARION,
CHAS. C. GILL.