G. F. SISBOWER.

COUCH BED.

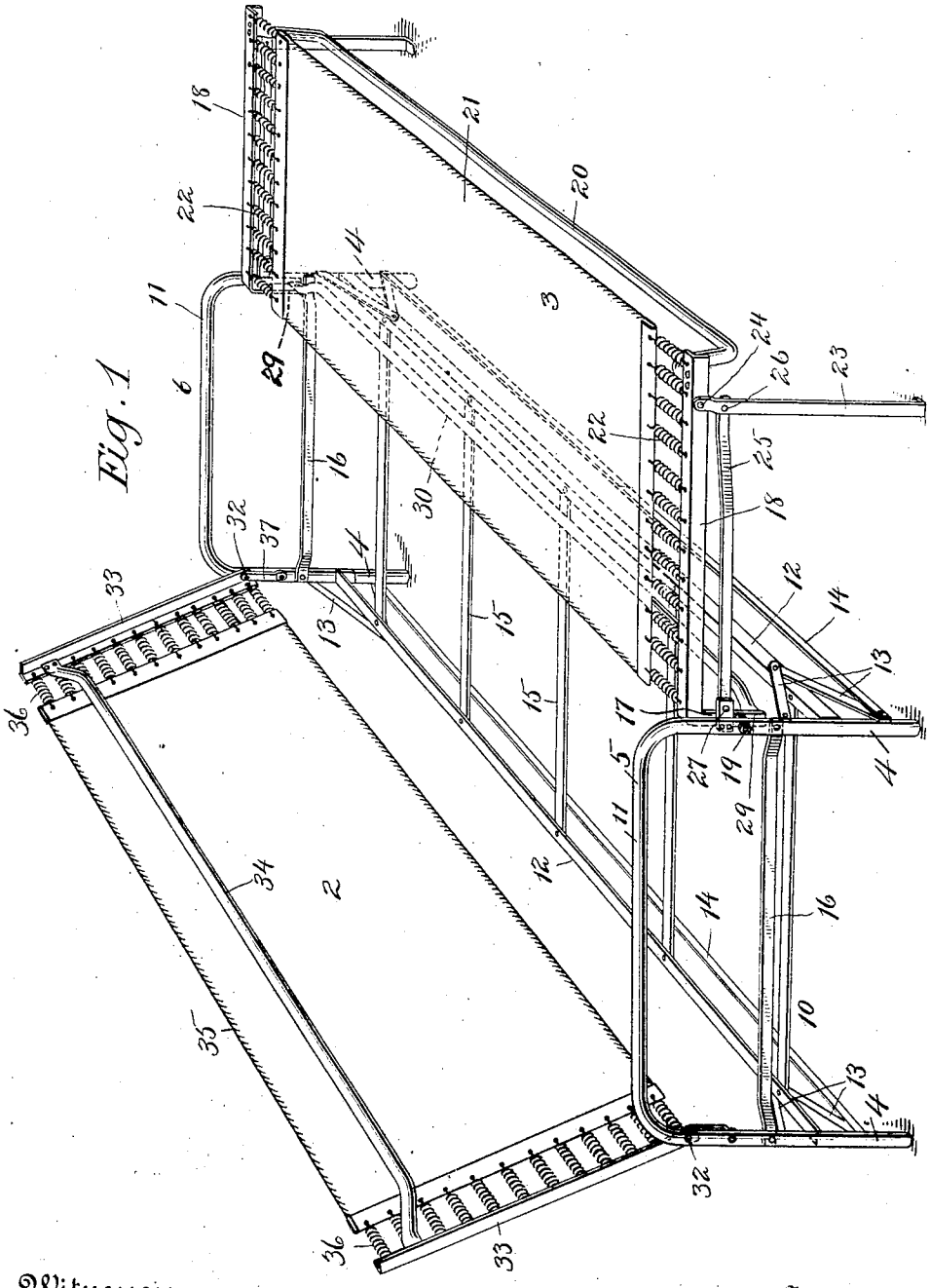
APPLICATION FILED DEC. 17, 1908.

923,305.

Patented June 1, 1909.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses:
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G. Blake

Inventor:
G. F. Sisbower,
By his Attorney, F. H. Richards.

G. F. SISBOWER.

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3 SHEETS—SHEET 2.

Fig. 5

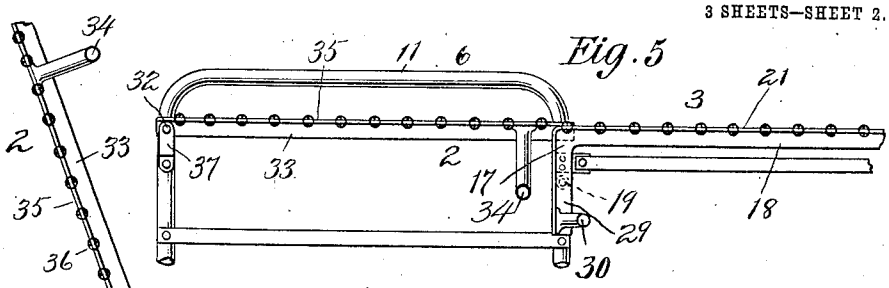


Fig. 2

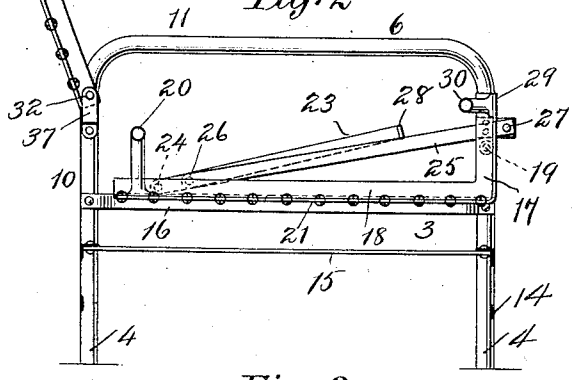


Fig. 6

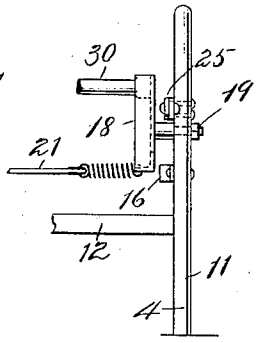


Fig. 3

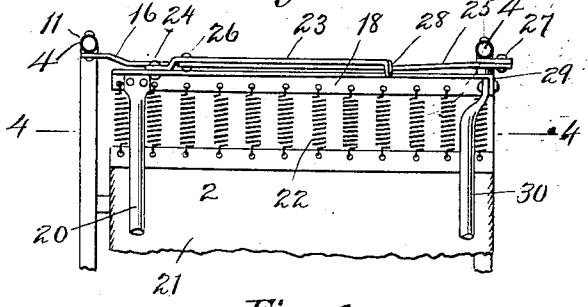


Fig. 7

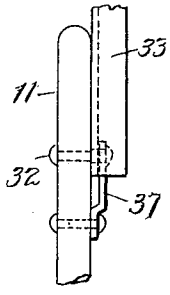
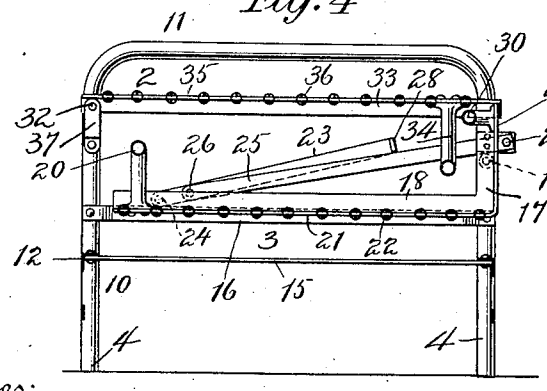


Fig. 4



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3 SHEETS—SHEET 3

Fig. 8

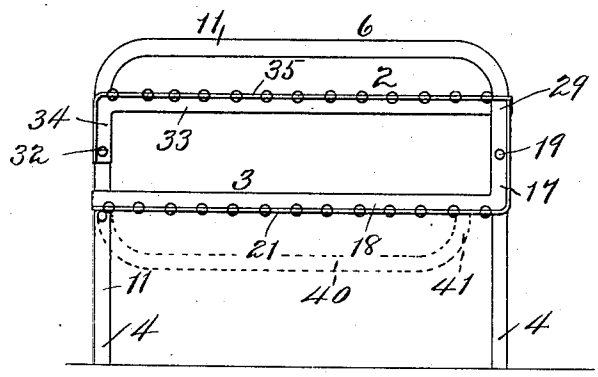
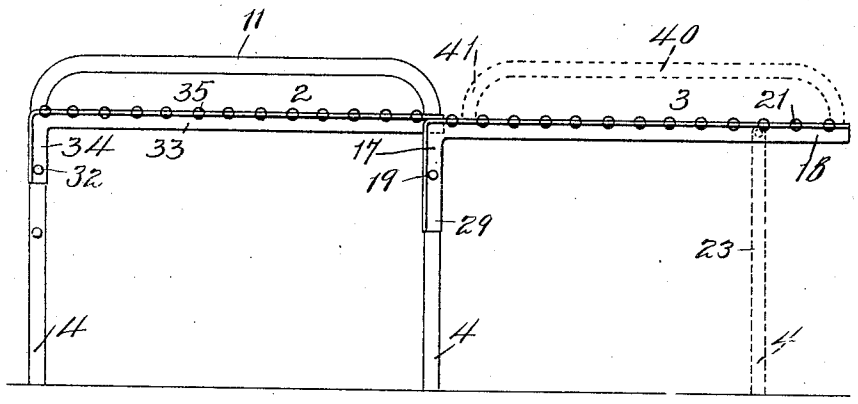


Fig. 9



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By his Attorney F. W. Richards.

UNITED STATES PATENT OFFICE.

GEORGE F. SISBOWER, OF NEW YORK, N. Y., ASSIGNOR TO NEW YORK COUCH-BED COMPANY, OF ROME, NEW YORK, A CORPORATION OF NEW YORK.

COUCH-BED.

No. 923,305. Specification of Letters Patent. Patented June 1, 1909.

Application filed December 17, 1908. Serial No. 467,964.

To all whom it may concern:

Be it known that I, GEORGE F. SISBOWER, a citizen of the United States, residing in New York, 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.

This invention relates to couch beds, and more particularly to folding couch beds, the object of the invention being to provide an improved metal formed structure of the class described made up of a pair of swinging bed members or sections each having a metallic fabric or yielding mattress supporting means, which swinging sections may be folded to form a couch or couch bed with room between the folded metallic fabrics to support the bed clothing in such a way that it may be freely ventilated, or to form a double bed with the metallic fabrics so positioned relatively to each other that they are to all intents and purposes level with each other, whereby the necessity of having one stuffed mattress of appreciably greater height than the other is avoided.

A further object of the invention is the provision of an improved bed of the character described, in which the swinging bed sections or members are so formed that the necessity of providing lengthwise extending side bars in juxtaposition to the metallic fabrics for the purpose of bracing the end bars to which the metallic fabrics are attached is avoided.

A further object of the invention is the provision of an improved folding couch bed comprising a pair of swinging sections one having feet automatically shifted into position to support the bed section when the same is opened to form a double bed and automatically folded when the section is swung into position to form a couch.

A further object of the invention is the provision of an improved bed of this class so formed that the swinging sections, whether in the form of a double bed or a couch, will be below the tops of the end frames thereby to permit the bed clothing to be properly tucked in at the foot.

A further object of the invention is the provision of an improved bed of this character which may be entirely constructed of metal, either of angle iron or of tubing, whereby it will be light and strong, and so provide a commercially practicable structure easy of manipulation, comparatively inexpensive to construct so that it may be sold at a low price, and at the same time so constructed that it will be comfortable in use while also permitting the storage of the bed clothing within the structure when used as a couch and insuring excellent ventilation thereof.

To produce a commercially practicable folding couch bed it is not only desirable to so construct the bed that the bed clothing may be stored away within the structure itself and in such a manner that such bed clothing can be properly ventilated when stored away, but several things are essential. One, that the two metallic fabrics which support the stuffed mattresses shall be to all intents and purposes level, thereby obviating the necessity of making one stuffed mattress thicker than the other, since this but increases the expense of production without any real advantage. Another, the frames which support the metallic fabrics must be so formed that they will be sufficiently strong to properly support the metallic fabrics, which are usually under considerable tension, without the necessity of locating side bars or braces in juxtaposition to such metallic fabrics, since when located adjacent thereto the sleeper in moving or tossing about the bed will, on the yielding of the fabric, come in contact with these braces or side bars in a most uncomfortable manner. Another, the structure should be so made that when the sections are either opened or closed they will be entirely below the tops of the end frames and thus enable the bed clothing to be tucked in at the ends,—a very desirable feature in beds of this class. Another, that the structure not only be light in weight and durable, but so organized that when the swinging sections are manipulated the means for supporting the extensible section will be automatically positioned, whereby both swinging sections may be readily manipulated by one person at one and the same time.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view of this improved couch bed, with the rear bed member or section in an upright position and the front bed member or section swung into position to form a part of a double bed; Fig. 2 is a cross sec-

tional view showing the rear bed section in an upright position and the front bed section folded within the end frames; Fig. 3 is a horizontal sectional view looking down on the front bed section, with the rear bed section omitted; Fig. 4 is a cross sectional view similar to Fig. 2, showing both sections folded to form a couch; Fig. 5 is a fragmentary cross sectional view showing the relation of the rear and front bed sections when in position to form a double bed; Fig. 6 is a detail view showing a part of one of the end frames and a part of the front bed section when the latter is in its folded position; Fig. 7 is a detail view showing one form of means for limiting the rear swinging movement of the rear bed section; and Figs. 8 and 9 are cross sectional views respectively in folded and extended positions of a slight modification, Fig. 9 particularly illustrating, as does also Fig. 5, the position of the metallic fabric of the rear bed section with relation to the metallic fabric of the front bed section, these Figs. 8 and 9, being incomplete as to all the details making up the structure.

Similar characters of reference designate corresponding parts in the several figures of the drawings.

In the embodiment of the present improvement the swinging members or bed sections, comprising a rear section or member 2 and a front section or member 3, are pivotally connected to what may be designated as the main or stationary frame of the couch 10. This frame comprises a pair of end frames 5 and 6 each of which, while it may be made in various ways, is shown as an inverted U-shaped structure, thus forming a pair of legs 4 and a cross bar 11, which in the present instance are formed of tubing and therefore may be readily made as an integral structure of metal, as are also all the other elements of this improved couch bed, being largely made up of angle iron. These end frames 5 and 6 are suitably connected and braced, as by means of side bars 12 and tension strips 14 located therebelow, suitable diagonal braces 13 being used to connect these brace members 12 and 14 with each other and with the end frames.

In the present embodiment the side bars 12 are shown connected by transverse flat bars 15, thereby forming a suitable skeleton bottom for the main frame, this bottom, however, being so located that it will be below the front swinging section when the same is folded within the end frames, and in some forms this bottom may itself constitute a means for receiving the bed clothing, especially when the transverse bars 15 are located sufficiently close together so that the bed clothing can be removed and replaced by throwing it on to or off of the front bed section before the latter is folded, thus obviating the necessity of twice lifting such bed clothing and placing it on a chair or other support while the bed sections are being manipulated. The legs of each end frame 4 in the present instance are connected by a cross brace 16, these braces 16 being shown as offset or extending inwardly to form a suitable rest for the front swinging section when the latter is folded between the end frames.

The front bed section 3 is pivotally connected to the front legs of the end frames so as to swing between such end frames. This front swinging section comprises a pair of end bars 18, each having at its inner end a depending portion 17 to facilitate the pivoting thereof, as at 19, to the forward legs of the end frames. This depending portion 17 of the end bars also projects below the pivots 19, as at 29, for the purpose hereinafter set forth. It will be observed that the end bars 18 are located below the cross bars 11 of the end frames 5 and 6. Supported by the end bars 18 is a suitable yielding mattress support, which may be of any suitable form adapted for the purpose, it usually consisting of a metallic fabric stretched between the end frames, and this expression "a stretched metallic fabric" as used herein is intended to include any well known and generally used form of yielding support for the mattress. In the present instance this metallic fabric 21 is shown as provided with coil springs 22 for connection with the end bars 18. Obviously, in view of the tension of the fabric, which is considerable in the form thereof shown, and also in view of the weight of the sleeper, these end bars 18 must be suitably braced to prevent them from being pulled toward each other when the fabric is stretched therebetween and when the section is in use. If, however, these braces were connected to the end bars 18 in such a way as to lie in substantially the same plane as the fabric 21, or immediately adjacent thereto, they would prove very uncomfortable for the sleeper, as the body of the sleeper would come in contact therewith on the yielding of the fabric when in use. Therefore, in the present embodiment the end bars 18 are connected at their outer ends by a side bar 20 which is of drop formation, whereby that part thereof which extends in parallelism with the fabric is spaced apart from such fabric a considerable and a sufficient distance to permit the fabric to properly yield without bringing the body of the sleeper into contact therewith. A suitable side bar 30 is provided to connect the depending ends of the end bars 18, and as it is connected to the depending portions of the bars 18 it is thus spaced a considerable distance from the metallic fabric.

For supporting the outer side of the front bed section when swung into position for

use, suitable legs or supports 23 are provided, these in the present instance being merely in the form of bars each pivoted, as at 24, to its end bar 18 and having bent feet 28. Since in manipulating the swinging sections of this bed one section would be grasped with the left hand and the other with the right to thereby swing them simultaneously, it is essential to a practicable construction that as the front swinging section is swung downwardly into position for use the legs shall automatically position themselves, as otherwise it would be necessary, after the swinging of the sections into position, to then adjust the legs. For this purpose each leg has pivoted thereto, as at 26, a link 25, the opposite end of which is pivotally connected, as at 27, to a bracket secured to the forward leg of an end frame above the pivot 19. When the front swinging bed section is folded between the end frames each leg pivot 24 moves on a longer radius than its link pivot 26, and consequently the links 25 will draw the legs 23 into a position substantially parallel with such links and thus fold them out of the way, see Figs. 2 and 4. When the bed section 3 is swung between the end frames the pivoted ends of the legs, or the outer ends of the links, will rest on the supporting cross bars 16 of the end frame and sustain the swinging bed section 3 in its horizontal folded position, at which time the pivots 26 are then slightly above a straight line running through the pivots 24 and 27, so that when the swinging bed section is lifted and turned outwardly toward its extended position the links 25 will automatically unfold and swing the legs into a position at right angles to the bed section to support the same. When the front bed section 3 is in its folded position and supported by the cross bars 16 of the end frames the bed clothing may be placed thereon, the underside of the metallic fabric 21 when the swinging section is in its normal position to form a part of a double bed, constituting an efficient bottom for the storage part of the structure and upon which to rest the bed clothing.

The rear bed section 2 is made in substantially the same manner as the front bed section 3, it comprising end bars 33 between which is stretched a similar metallic fabric 35 tensioned by suitable coil springs 36 and braced by a side bar 34 spaced in a similar manner from the metallic fabric as is the side bar 20. This rear bed section is pivotally connected, as at 32, to the rear legs 4 of the end frames 5 and 6 so as to also swing between the end frames, the pivots 32 being so located with relation to the cross bars 11 of the end frames that when the rear section is swung into a level position to form either a double bed or a couch, the metallic fabric will be an appreciable distance below the cross bars 11, thereby to permit the bed clothing to be tucked in between the top of the end bars 33 and the cross bars 11. This same result may be accomplished on the front bed section by tucking the bed clothing in between the end bars 18 and the links 25 when the sections are swung into position to form a double bed, or the front swinging section could be provided with end members 40 connected to the end bars 18, as shown for instance in dotted lines in Figs. 8 and 9, the inner ends being sufficiently removed, as at 41, from the rear ends of the end bars 18 so as not to prevent the front of the rear section 2 overlapping the rear of the front section 3 a short distance.

In the form shown in Figs. 1 to 5 the pivotal point 32 of the rear section is in a plane above that of the pivotal point 19 of the front section, this enabling the rear bed bottom to be substantially in the plane of its pivot and obviating the necessity of longitudinally bracing the rear section at its pivoted edge. But in some forms of couch bed the pivots 32 may be located in the same, or substantially the same, plane as the pivots 19, see Figs. 8 and 9, this being obtained by forming the end bars 33 of the fabric frame with depending portions 34 somewhat similar to the depending portions 17 of the front section. Thus the metallic fabrics of both sections would still be maintained level one with the other and without interfering in any material manner with the space formed between the same, see Fig. 8, when folded for the storage of the bed clothing. In this form, however, a side bar similar to the side bar 30 connecting the depending parts 34 would be necessary.

For preventing the rear bed section from being swung too far back beyond a perpendicular position suitable stops, as 37, are provided, secured to the rear legs of the end frames with their ends in position to engage the pivoted ends of the end bars 33, see Figs. 1 and 7. In practice the end bars 18 and 33 of the front and rear sections respectively will be formed of L-shaped angle irons, so that the front ends of the end bars 33 may overlap the bars 18 a short distance at the rear of the front swinging section 3, see Figs. 5 and 9, the end bars 18 of the front section being spaced slightly away from the inner sides of the legs of the end frames to permit this, whereby the front edge of the rear section will be supported along its entire length by the rear edge of the front section and the two fabrics thus be to all intents and purposes level, since the rear fabric will be above the front fabric only to the extent of the thickness of the horizontal portion or web of the L-shaped bars 33, which in practice is hardly appreciable. Thus the two fabrics under the weight of the sleeper will move in unison.

From the foregoing it will be seen that whether the structure is in the form of a couch or in the form of a double bed the rear member or bed section 2 lies horizontally over the space into and out of which the front member or bed section folds, and when the front bed section 3 is swung into position between the end frames 5 and 6 it will be observed that the depending portions 29 of the bars 18 form rests upon which the front ends of the angle bars 33 of the rear bed section 2 rest, see Figs. 4 and 8, so that the metallic fabrics 21 and 35 are spaced apart a sufficient distance for the accommodation of the bed clothes therebetween and, owing to the open skeleton-like formation of the main frame, can be well ventilated when the couch is not in use as a double bed.

When the front section is swung into position between the end frames and the rear section swung downwardly also into position between the end frames, the structure may be used as a couch. When, however, it is desired to transform the same into a double bed the rear section is swung into position shown in Fig. 1 and the front section overturned into the position shown in said figure. Then the rear section is swung downwardly into position with its front edge resting upon the rear edge of the front section, whereby the two metallic fabrics, are substantially level and in position to receive the bed clothing.

The front section is usually provided with a stuffed mattress, which may be fixed or tied thereto on the upper side thereof in the position shown in Fig. 1, and this stuffed mattress will in practice be of slightly less width than the metallic fabric 21, so that the rear edge of such metallic fabric will be free to form a rest for the forward edge of the metallic fabric of the rear section. This rear section is also provided with a similar stuffed mattress, which is also secured to the upper side thereof when the bed is in the form of a double bed or a couch. Thus this latter stuffed mattress, the top of which may be provided with a suitable fancy cover, will form the cushion for the couch when the front section is folded, or the mattress when the structure is in the form of a double bed, and it may be in practice of slightly greater width than the metallic fabric 35 supporting it so as to fill in the space left by reason of the decreased width of the mattress of the front swinging section.

From the foregoing it will be observed that by the present improvement I am able to swing the two bed sections within the end frames so that the front edge of the rear bed section will rest upon the rear edge of the front bed section when the bed is in the form of a double bed, and this throughout the entire length of the front bed section, so that the metallic fabrics will, as hereinbefore stated, move in unison,—a very material advantage in a structure of this character,—and to also support the front edge of the rear bed section by a part of the front bed section when the latter is folded. Furthermore, by means of the present organization, in which the two folding sections swing within the end frames, I am not only able to provide head rests for pillows when the structure is in the form of a couch and for at least one section thereof when the structure is in the form of a double bed, but am able to insure the proper tucking in of the bed clothes, which is by no means an inconsiderable advantage. Moreover, in the present improvement, by having the feet for the swinging section automatically position themselves, both sections of the bed can be readily manipulated at one and the same time.

I claim as my invention:

1. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected metal formed end frames, and a pair of metal formed swinging members each comprising a pair of end bars having a yielding mattress supporting means therebetween, each of said members pivotally connected at its ends to and between said end frames one at one side and the other at the other side thereof so as to swing between such end frames toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, the pivotal connections of one swinging member being below the other to such an extent that a storage space is formed between the two members when the structure is in the form of a couch.

2. In a metal formed couch bed foldable to form either a couch or a double bed, the combination of a pair of connected metal formed end frames, and a pair of metal formed swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends to and between said end frames one at one side and the other at the other side thereof so as to swing between such end frames toward each other and one under the other to form a couch and one overturning from under the other to form a double bed and having between them when folded a free space to receive the bed clothing.

3. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames each comprising a pair of legs and a cross bar, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween and one or more side bars connected to said end bars and spaced a distance below the metallic fabric, each of

said members being pivotally connected at its ends to and between said end frames one at one side and the other at the other side thereof so as to swing between such end frames toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, the pivot connections of one of such swinging members being below the metallic fabric thereof so that said swinging members will have between them when folded a free space to receive the bed clothing, said members being so located relatively to each other that the forward edge of one fabric rests upon the rear edge of the other fabric when the structure forms a double bed so that the two fabrics will yield in unison, supporting legs pivotally connected to the overturning member and links pivotally connected to said legs and to said end frames for automatically shifting said legs on the swinging of said member.

4. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends between such end frames one at one side and the other at the other side thereof so as to swing therebetween toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, each end bar of the overturning member having at its pivoted end a depending portion extending below the pivot thereof to form a rest for the companion swinging member when the bed is in the form of a couch.

5. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends between such end frames one at one side and the other at the other side thereof so as to swing therebetween toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, each end bar of the overturning member having at its pivoted end a depending portion extending below the pivot thereof to form a rest for the companion swinging member when the bed is in the form of a couch, the rear edge of said overturning member forming a rest for the forward edge of its companion member when the structure is in the form of a double bed.

6. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends between such end frames one at one side and the other at the other side thereof so as to swing therebetween toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, each end bar of the overturning member having at its pivoted end a depending portion extending below the pivot thereof to form a rest for the companion swinging member when the bed is in the form of a couch, legs pivotally connected to said overturning member, and means pivotally connected to said legs and to said end frames for automatically shifting such legs on the swinging of such member.

7. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends between such end frames one at one side and the other at the other side thereof so as to swing therebetween toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, each end bar of the overturning member having at its pivoted end a depending portion extending below the pivot thereof to form a rest for the companion swinging member when the bed is in the form of a couch, the rear edge of said overturning member forming a rest for the forward edge of its companion member when the structure is in the form of a double bed, legs pivotally connected to said overturning member, and means pivotally connected to said legs and to said end frames for automatically shifting such legs on the swinging of such member.

8. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, a pair of swinging members each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends between such end frames one at one side and the other at the other side thereof so as to swing therebetween toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, each end bar of the overturning member having at its pivoted end a depending portion extending below the pivot thereof to form a rest for the companion swinging member when the bed is in the form of a couch, the rear edge of said overturning member forming a rest for the forward edge of its companion member when the structure is in the form of a double bed, legs pivotally

connected to said overturning member, means pivotally connected to said legs and to said end frames for automatically shifting such legs on the swinging of such member, and means carried by the end frames for limiting the swinging movement of the companion member.

9. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames each comprising a pair of legs and a cross bar, a pair of swinging members each comprising a pair of L-shaped end bars having a metallic fabric stretched therebetween and one or more side bars connected to said end bars and spaced a distance below said metallic fabric, each of said swinging members being pivotally connected at its ends to and between said end frames one at one side and the other at the other side thereof so as to swing between such end frames toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, said swinging members being so pivoted with relation to the end frames that the fabrics thereof will be below the cross bars of the end frames when the structure is in the form of a couch or a double bed with the L-shaped end bars of one member overlapping the L-shaped end bars of the other, whereby the forward edge of one member rests upon the rear edge of the other member when the structure is in the form of a double bed, and also so located with relation to each other as to form a space between said members when the structure is in the form of a couch for the storage of bed clothing, the L-shaped end bars of the overturning member having depending portions extending below the pivotal connections thereof to form rests for the free edge of its companion member when the structure is in the form of a couch, legs pivoted to the end bars of the overturning member, links pivotally connected to said legs and to said end frames for automatically shifting said legs on the swinging of said overturning member, and stops secured to said end frames for engaging the companion swinging member and limiting its swinging movement.

10. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames each comprising a pair of legs and a cross bar, a pair of swinging members each comprising a pair of L-shaped end bars having a metallic fabric stretched therebetween and one or more side bars connected to said end bars and spaced a distance below said metallic fabric, each of said swinging members being pivotally connected at its ends to and between said end frames one at one side and the other at the other side thereof so as to swing between such end frames toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, said swinging members being so pivoted with relation to the end frames that the fabrics thereof will be below the cross bars of the end frames when the structure is in the form of a couch or a double bed with the L-shaped end bars of one member overlapping the L-shaped end bars of the other, whereby the forward edge of one member rests upon the rear edge of the other member when the structure is in the form of a double bed, and also so located with relation to each other as to form a space between said members when the structure is in the form of a couch for the storage of bed clothing, the L-shaped end bars of the overturning member having depending portions extending below the pivotal connections thereof to form rests for the free edge of its companion member when the structure is in the form of a couch, legs pivoted to the end bars of the overturning member, links pivotally connected to said legs and to said end frames for automatically shifting said legs on the swinging of said overturning member, and stops secured to said end frames for engaging the companion swinging member and limiting its swinging movement, the connection between said end frames comprising a skeleton frame work.

11. In a couch bed foldable to form either a couch or a double bed, the combination of a pair of connected end frames, and a pair of swinging members, one a rear swinging member and the other a front swinging member, each comprising a pair of end bars having a metallic fabric stretched therebetween, each of said members being pivotally connected at its ends to said end frames one at one side and the other at the other side thereof so as to swing toward each other and one under the other to form a couch and one overturning from under the other to form a double bed, the swinging members being so located with relation to each other that the rear edge of the front swinging member forms a support for the front edge of the rear swinging member when they are swung into position to form a double bed, said front swinging member carrying means on its underside for also supporting the rear swinging member at the front thereof when the members are swung into position to form a couch.

GEORGE F. SISBOWER.

Witnesses:
C. L. WEED,
W. A. REED.