This invention relates to folding furniture and is more particularly directed to a frame for furniture that may be folded to form a bed, a contour chair or what folded for storage in a comparatively small space.

The primary objects of the invention is to provide a foldable frame for an article of furniture that may be used as a bed or a contour chair.

Another object of the invention is to provide a foldable furniture frame that is adjustable to various positions for use as a contour chair or as a bed.

A further object of the invention is to provide a foldable furniture frame usable as a contour chair or a bed and which may also be compactly folded for storing in a comparatively small space.

The invention consists in the provision of a multi-section frame pivotally connected in an end to end relationship having braces thereon that stiffen one end of the frame when unfolded to form a bed, the braces becoming arms when the frame is folded to form a chair.

The invention further consists in the provision of a brace for a part of the bed frame when it is folded into its several positions as a chair.

In the drawings:

Fig. 1 is a plan view of a foldable frame embodying the invention.

Fig. 2 is a side elevation view thereof.

Fig. 3 is a side elevation view of the frame folded to one position as a contour chair.

Fig. 4 is a side elevation view of the frame folded to another position as a contour chair.

Fig. 5 is a side elevation view of the frame folded for storage.

Fig. 6 is a plan view of the bed frame in a modified form of the invention.

Fig. 7 is a side elevation view of the structure shown in Fig. 6.

Fig. 8 is a sectional view taken along the line 8—8 of Fig. 7.

Fig. 9 is a sectional view taken along the line 9—9 of Fig. 7.

Fig. 10 is a sectional view taken along the line 10—10 of Fig. 7.

Fig. 11 is a sectional view taken along the line 11—11 of Fig. 7.

Fig. 12 is a side elevation view of the frame folded into one position as a contour chair.

Fig. 13 is a side elevation view of the frame folded into another position as a contour chair.

Fig. 14 is a side elevation view of the frame folded for storage; and

Fig. 15 is an enlarged view of a structural detail of the bed frame.

The article of furniture is embodied in the structure shown in several views of the drawings. Fig. 2, which discloses the side elevation of the article of furniture, comprises a head section 1, a seat section 2, a bracing section 3 and a foot section 4. The head section is pivoted to the seat section by means of pins 5 and the head section is pivoted to the bracing section by means of pins 6 and the bracing section is pivoted to the foot section by means of pins 7. The various sections are therefore connected together and each is pivoted relative to the other for folding the article of furniture into a mattress supporting frame or for a contour chair as will be subsequently described. The article of furniture is supported on a base structure 8 provided with a plurality of casters 9 and comprises a pair of side bars 10 on which the casters are supported. The side bars are connected by transverse bars 11 so as to form a rigid and unitary construction.

A pair of bars 12 has one end thereof secured to the base at each of the corners at one end thereof and a corner brace 13 is connected between the side bars 10 and the vertical bars 12 by a suitably fastening means. The other end of the base has bars 14 therein in which one end thereof is pivoted to the other end of the base structure and the opposite ends are pivoted to extensions 15 of the bars of the bracing section by means of pins 16. A reinforcing bar 17 is connected between the bars 12 thus producing a more rigid structure at that point of the furniture framework.

The head section 1 has a support 18 pivoted thereto on the flanges 18' secured to the side bars of the head section. The support 18 is preferably of a U-shape as shown in views for the modified form of the furniture frame and a bar 19 is connected between the bars 10 and the support 18. This bar 19 is also employed on the opposite side of the support 18. Bars 20, part of a U-shaped member, are pivoted to opposite sides of the support 18 and are provided with a plurality of notches 21 engageable with pins 22 secured in the side member of the head section 1. The bars constitute a brace for the head section when it is unfolded to a mattress receiving position and when the head section is folded to form the back of a contour chair, the bars 20 constitute the arms for the chair.

The seat section 2 has a post 22' secured to each of the side bars thereof that is stiffened by a corner brace 23 connected between the post and the side member of the seat section. The posts are connected by a bar 22 for making a rigid U-shaped frame. This post is engageable with the side bars 10 of the brace when the frame is folded to one form of a contour chair position, as is shown in Fig. 4, and stiffens the seat section for service as a chair.

The foot section 4 is provided with a pair of supports 24 and 25 pivoted to a flange 26 secured to the side bars of the foot section. The supports 24 and 25 are preferably of U-shape as is the support 18 for the head section. A bar 27 is connected between each of the supports 24 and each of the bars 14, there being a pivoting connection between the bar 27 and the support 24. The right hand end of the bar 27, as viewed in Fig. 2, has an upturned portion 28 that is engageable with the side bars of the bracing section 3. This upturned portion 28 engages in the side bars 10 of the frame and the relative motion of the bracing section and seat section when the frame has been folded into a contour chair formation. The support 25 is connected to a downturned portion 29 of the bars 10 of the bar 27 and the notches 30 thus completing the assembly of the contour chair. The downturned portion places the point of pivoting below the plane of the bars 10 for better performance of the folding operation. The various pivotal connections between the several bars or sections permits the parts to move relative to each other when the frame is adjusted from a mattress support structure to that of a contour chair.

Assuming that the frame is in the unfolded condition such as shown in Fig. 2 for supporting a mattress and is to be formed to a contour chair as shown in Fig. 3, the operator will engage the bars 20 and the notches 21 from the pins 22 and then tilt the head section 1 upwardly about the pin connecting it with the vertical bars 12. This action will drop the seat section to the position shown in Fig. 3 for one adjustment of the chair. Simultaneously the bar 14 will pivot about the pins 16 to place the foot section 4 in an angular relationship with respect to the bracing section 3 so that the upturned end 28 of the bar 27 will engage the side bars thereof, thus stiffening the seat section of the chair. The support 25 will pivot upwardly so that support 24 will hold the foot section 4 in desired position. When the bars 20 are adjusted to the Fig. 4 position, then the bracing section 3 and seat section 2 will conform to the position shown in Fig. 4 with the posts 22' in engagement with the bars 10 of the base.
In this manner the same frame structure can be used for two or any number of different contour chair positions as well as for a mattress supporting frame as shown in Fig. 2.

For storage purposes the foot section 4 is placed in a position substantially parallel to the head section 1 and the frame is then brought into engagement with pins on the foot section with suitable notches 21 in the bars such as illustrated in Fig. 5. The bar member 20 which constitutes a stiffener for the head section when the frame is employed as a chair structure now becomes a locking member for the furniture frame when it is folded to storage position. The downward portion 29 of the base bar 19 is provided to lower the pivotal point between the bars 19 and 20. This action cuts off the upwardly about the upper end of the bars 51. Simultaneously the seat section 32 will be lowered and the foot section 34 will be tilted about the end of the bars 61. This action will cause the ratchet levers 65 to engage different notches in the bars 49 to move them to the position shown in Fig. 12. Further upward movement of the head section 31 will cause the ratchet lever 65 to assume the position shown in Fig. 13 and the bars 56 then become the arms for the contour chair. Under certain conditions of operation the operator will have to release the ratchet lever 65 from its notch when the frame is being folded from the Fig. 12 to the Fig. 13 position. Posts 59 in Fig. 13 restrict downward movement of the frame and engaging the bar 56 with a pin in each of the bars in the foot section 34. Thus, the bars 56 assume another function, namely that of a locking member in the Fig. 14 position, arms for the contour chair in the Figs. 12 and 13 position and braces for the head section in the Fig. 6 position. A supplemental lever 65' (Fig. 15) pivoted to ratchet lever 65 may be employed for keeping the lever out of engagement with notches 66.

The applicant has thus provided a foldable frame for furniture that can be adjusted to two or more positions as a chaise longue or put up as a bed. The ratchet levers 65 that are cut in the bars 56, provided that corresponding notches 66 are provided for positioning the ratchet lever 65 therein. It is apparent that the ratchet lever 65 must rest in a notch to set the bar 49 to one of the positions. The frame can be quickly unfurled for converting it into a bed structure, and by folding it to the Fig. 14 position can be conveniently stored during periods of non-use.

What I claim is:

1. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section pivoted together in end to end relationship; a base structure for said sections; means for supporting the free end of the head section; means for supporting the free end of said base section; a ratchet frame pivoted to the head section and means for engaging notches 66; a ratchet lever 65; a lever 65' pivoted to said ratchet lever 65; and means for engaging the ratchet notches 66.

2. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section pivoted together in end to end relationship; a base structure for said sections; means for supporting the free end of the head section; means for supporting the free end of said base section; a ratchet frame pivoted to the head section and means for engaging said ratchet notches 66; a ratchet lever 65; a lever 65' pivoted to said ratchet lever 65; and means for engaging the ratchet notches 66.

3. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section pivoted together in end to end relationship; a base structure for said sections; means for supporting the free end of the head section; means for supporting the free end of said base section; a ratchet frame pivoted to the head section and means for engaging said ratchet notches 66; a ratchet lever 65; a lever 65' pivoted to said ratchet lever 65; and means for engaging the ratchet notches 66.

4. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section pivoted together in end to end relationship; a base structure for said sections; means for supporting the free end of the head section; means for supporting the free end of said base section; a ratchet frame pivoted to the head section and means for engaging said ratchet notches 66; a ratchet lever 65; a lever 65' pivoted to said ratchet lever 65; and means for engaging the ratchet notches 66.
5 section for supporting same; means connected between said foot section supporting legs and said pivoted mem. and said base for stiffening said same; and means on said second support; and bars connected between said second support and said pivoted base bar and including an upturned end engageable with said bracing section, the second support operable when the frame is folded as a chair, and wherein the underlyinguego thereto engage said bracing section for stiffening same.

6. A foldable furniture frame comprising a base structure; a head section pivotally supported; a base structure for said head section having one end thereof pivotally connected to said head section; a bracing section pivotally connected to the other end of said head section and pivotally supported on the other side of said base structure; a base structure pivotally secured to the other end of said base structure and to said bracing section; means pivotally connected between said head section and supporting means; means for stiffening the supporting means; means pivotally connected to said foot section and to said base structure for supporting the foot section; and means pivotally connected to said support and said base for stiffening the bracing section.

6. A foldable furniture frame comprising a base structure having rigid uprights at one end thereof and pivotally connected to said base structure; a seat section pivotally supported to said uprights; a seat section pivotally connected to the other end of said seat section and to the upper member of said base structure; said seat section pivotally connected to said seat section for supporting same; an arm pivotally connected to said legs and to said head section to adjust the chair forming position; means pivotally connected to said seat section for supporting same; and means connected between said seat section supporting legs and said pivoted members on said base for stiffening same.

7. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section, each of said sections pivotally connected to the other; a base structure; means for swingingly supporting said bracing section; means for supporting said head section; means connected between said base structure and the head support for supporting the head section in any one of a number of adjusted positions as a chair; means connected between said seat structure and the seat support for holding the latter in position; a first support for the foot section; a second support for the foot section; means connected between said seat structure and the first support; and means connected between the second support and the first mentioned means, and having a portion thereon engageable with the bracing section when said frame is folded as a chair, said support for holding the latter in position when the frame is unfolded as a bed and the second support holds the foot section when the frame is folded as a chair.

8. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section; means for pivotally connecting said sections serially; a base structure; members connected between said base and end of said bracing section; second bar members connected between said base and said head section; a support for said head section; means for adjusting and holding the head section in any one of a number of positions; a first support for said foot section; a second support for said foot section; means connected between said base structure and said first support; and means connected between each of said bar members and said second support and including means engageable with said bracing section, the first support holding the foot section when the frame is unfolded and the second support holding the foot section when the frame is folded as a chair.

9. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section; a portable base structure including longitudinal bars at each side thereof, one end of each of the bars turning downwardly; a set of bars pivotally connected to one end of said base structure; a set of bars secured to the other end of said base structure; a brace for said second set of bars; a support for said head section; a support between said support and said head section for holding the latter in any desired position of adjustment; a bar connected between each of said braces and said support; a first support for said foot section; a second support for said foot section; a foot section connected between the downturned end of said base bars and said first support; and bars connected between said second support and said pivoted base bar and including an upturned end engageable with said bracing section, the second support operable when the frame is folded as a chair, and wherein the underlying thereof engage said bracing section for stiffening same.

10. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section; a base structure; a support for said head section; a bar having one end rigidly secured to the other end of each of said base side bars, the other end of each bar pivotally connected to said head section; a support for said head section; a bar pivotally connected between each end of right hand bar; an adjustable bar connected between said support and said head section for holding the head section in a desired angle with respect to the horizontal; a pair of supports for said foot section connected to each corner with the downturned portion of base side bars; bars connecting the other foot section support with said bars pivotally connected to each side of the base and each having one end engageable with the bracing foot; means on said seat section engageable with said bar for stiffening the seat section in certain positions of adjustment; and means on said foot section engageable with the head section adjusting bars for locking the frame in folded condition.

11. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section serially connected; a base structure; a support for having one end thereof pivotally connected near the corner at one end of said base structure, and the other end thereof pivotally connected to said seat section; a second substantially vertical bar having one end rigidly secured to the opposite end of said base and the other end thereof pivotally connected to said head section; a support for said head section; a support for said seat section engaged between each of said substantially vertical bars and said head section support; adjustable bars pivotally connected to said seat section support and engageable with said head section for holding same in any selected position of adjustment; support means for said foot section; bars connecting said support means and said pivoted bars on said base; means on said seat section engageable with said base for stiffening said seat section when the frame is folded in one position for a chair; and means on said seat section engageable with the bars pivotally connected to said head section for holding same in adjusted position.

12. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section serially pivotally connected; a base structure provided with longitudinal bars; a substantially vertical bar having one end thereof rigidly secured to each corner of one end of said base structure, the other end of said rigid bar pivotally connected to said head section; a support for said foot section; a bar connected between each vertical bar and said support; a bar pivotally connected to said support and engageable with said head section for holding same in adjusted position; a bar having one end pivotally connected to said support on the opposite end of the base structure, the other end thereof pivotally connected to said bracing section; a support for said foot section; a bar connected between each pivoted bar on said base and said foot section support; means on said seat section for stiffening same when in engagement with said base; and a ratchet bar pivotally connected to said pivoted bars on said base structure and engageable with ratchet teeth in said base bars for aiding in holding said foot section in selected position of adjustment.

13. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section, connected in an end to end relation; a base structure having longitudinally extended bars at its sides provided with ratchet notches; a substantially vertical bar pivotally connected to said base structure bars; a bar pivotally connected to the other end of said base structure bars; a support for said head section; a bar having one end connected between said vertical bars and said support; a foot section connected between said second support and engageable with said head section; a support for said foot section; a bar connected between each pivoted bar on said base structure and said support; a
liver pivoted to each of said pivoted bars on said base and selectively engageable with said ratchet notches; means on said seat section engageable with said base for stiffening said seat section when the frame is folded for a chair frame; and means on said foot section engageable with said head section adjusting bars for locking the frame in its folded condition.

14. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section serially pivotally connected; a base structure provided with longitudinal side bars; a substantially vertical bar having one end thereof rigidly secured to each corner of one end of said base structure, the other end of said rigid bars pivotally connected to said head section; a support for said head section; a bar connected between each vertical bar and said support; a bar pivotally connected to said support and engageable with said head section for holding same in adjusted position; a bar having one end pivotally connected to each corner on the opposite end of the base structure, the other end thereof pivot to said bracing section; a support for said foot section; a bar connected between each pivoted bar on said base and said foot section support; and means on said seat section for stiffening same when in engagement with said base.

15. A foldable furniture frame comprising a head section, a seat section, a bracing section and a foot section, connected in an end to end relation; a base structure having longitudinally extended bars at its side provided with ratchet notches; a substantially vertical bar pivotally connected to one end of said base structure bars; a bar pivotally connected to the other end of said base structure bars; a support for said head section; a bar having one end connected between said vertical bars and said support; a bar pivot to each side of said support and engageable with said head section; a support for said foot section; a bar connected between each pivoted bar on said base structure and said support; a lever pivot to each of said pivoted bars on said base and selectively engageable with said ratchet notches; and means on said foot section engageable with said head section adjusting bars for locking the frame in its folded condition.

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