Nov. 26, 1957 P. P. BEBRY 2,814,050

SOFA BED CONSTRUCTION

Original Filed Aug. 12, 1953 4 Sheets-Sheet 1

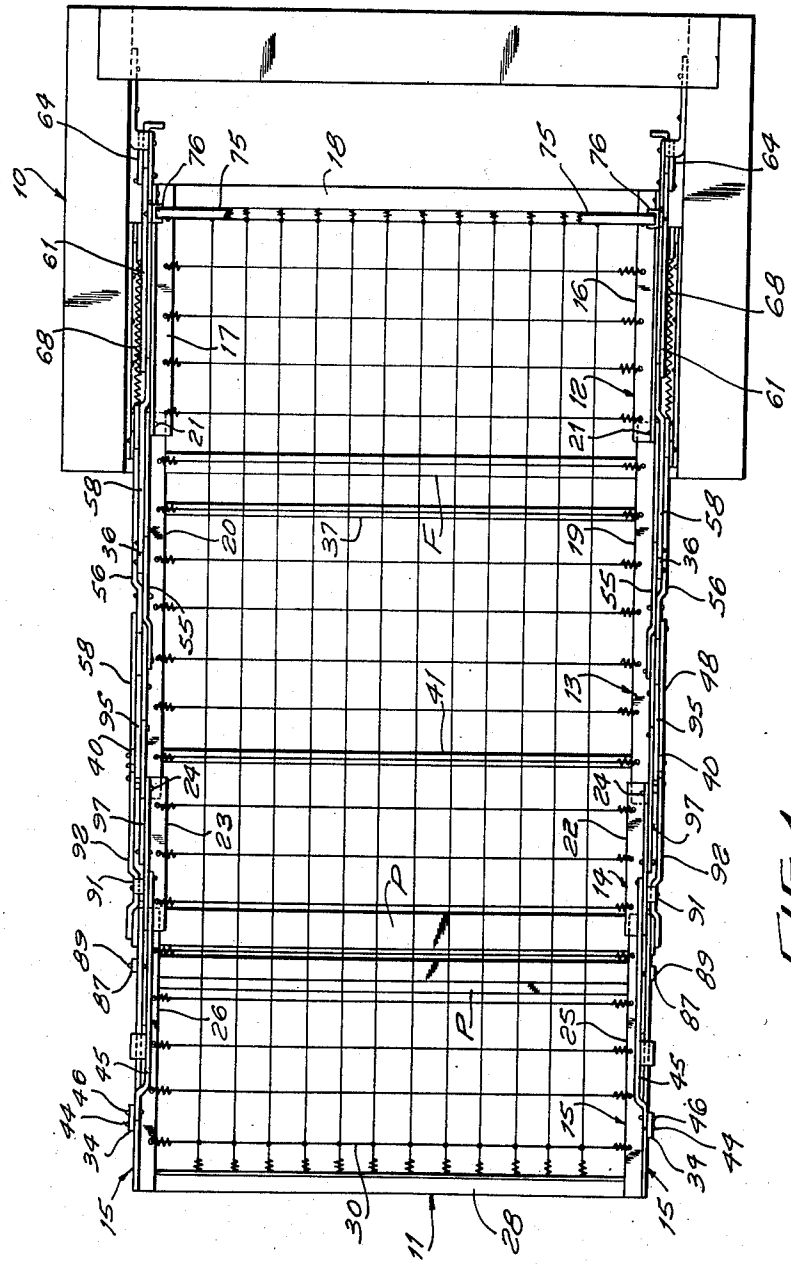


FIG. 1.

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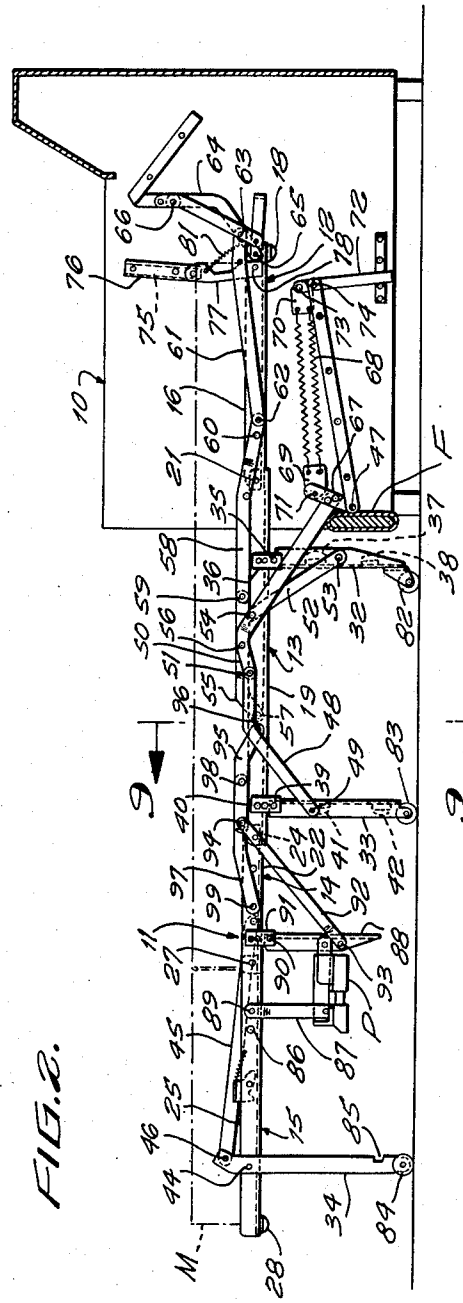


FIG. 2.

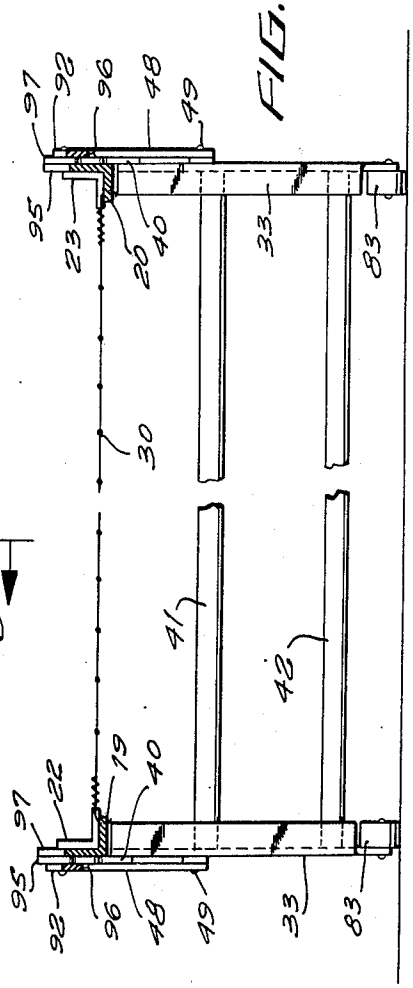


FIG. 9.

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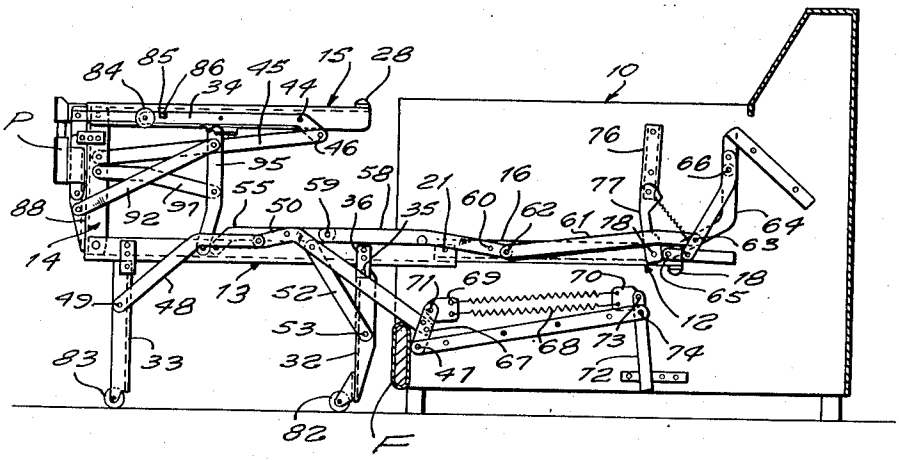


FIG. 3.

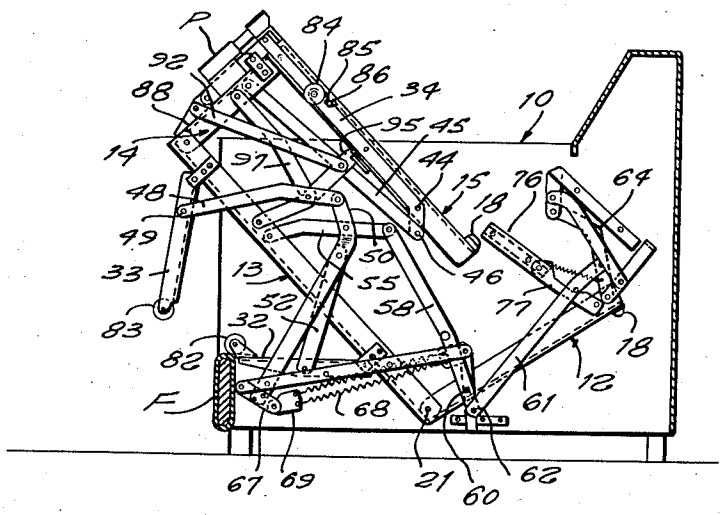


FIG. 4.

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FIG. 5.

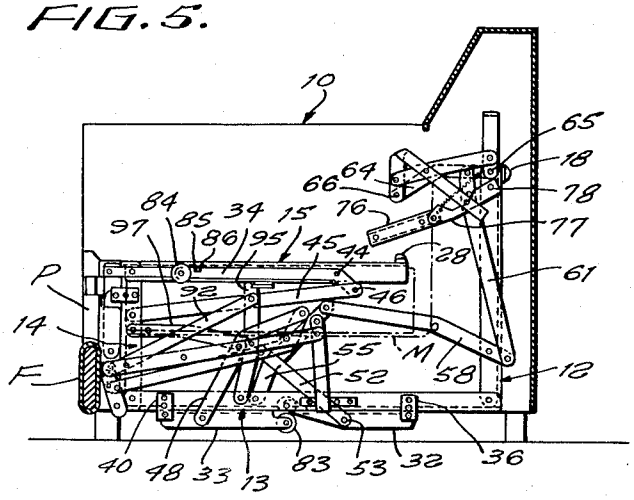
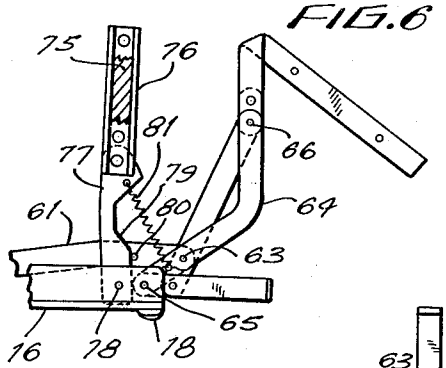


FIG. 6



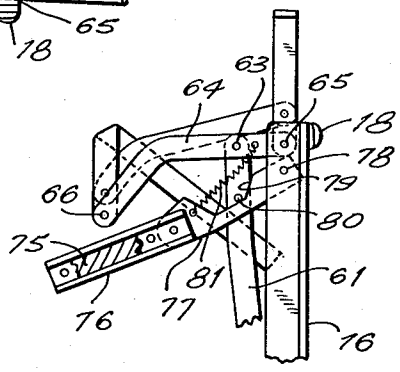


FIG. 8.

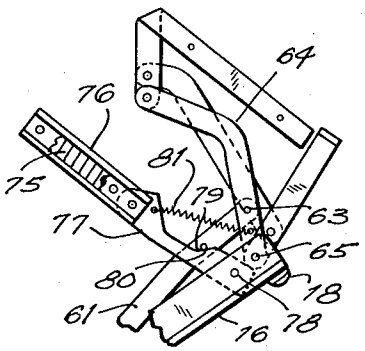


FIG. 7.

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2,814,050

SOFA BED CONSTRUCTION

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Original application August 12, 1953, Serial No. 373,872, now Patent No. 2,734,201, dated February 14, 1956. Divided and this application May 13, 1955, Serial No. 508,257

6 Claims. (Cl. 5—13)

This invention relates to a sofa bed construction of the type which includes a furniture frame and a foldable metal frame having a wire mesh spring for supporting a mattress thereon and which spring, together with the mattress is foldable with the foldable frame from an extended bed forming relation to a collapsed relation within the furniture frame to provide a support for seat cushions and the application is a division of applicant's co-pending application Serial No. 373,872, filed August 12, 1953, now Patent No. 2,734,201, granted February 14, 1956.

An object of the invention is to provide an improved structure of foldable frame by which undue sagging of the spring is prevented so as to provide a more comfortable bed.

Still another object of the invention is to provide a foldable frame which is constructed to eliminate inward flexing of the opposite sides thereof when weight is imposed on the wire mesh spring so as to prevent undue sagging of the spring.

Another object of the invention is to provide improved means for supporting and stabilizing the foldable frame intermediate the ends thereof, which means include two pairs of legs hingedly connected with one of the intermediate sections of the frame and which are swingable into close relation therewith when in collapsed condition within the furniture frame.

Still another object of the invention is to provide a foldable frame of said character having a pillow rest which is disposed above the mattress at the inner end of the foldable frame so as to prevent the pillows from falling off the end of the mattress when the article of furniture is used as a bed and which is movable from an upstanding relation to an out-of-the-way position with the movement of the foldable frame into collapsed relation within the furniture frame.

With the foregoing and other objects in view, reference is now made to the following specification and accompanying drawings in which the preferred embodiment of the invention is illustrated.

In the drawings:

Fig. 1 is a top plan view of an article of furniture provided with a foldable frame constructed in accordance with the invention.

Fig. 2 is a view showing the foldable frame in elevation and the furniture frame in vertical section.

Fig. 3 is a side view of the foldable frame shown in partially collapsed relation and the furniture frame in vertical section.

Fig. 4 is a similar view showing the foldable frame being inserted in the furniture frame.

Fig. 5 is a similar view showing the foldable frame in fully collapsed relation within the furniture frame.

Fig. 6 is an enlarged fragmentary side view of the inner end of the foldable frame showing the pillow rest.

Fig. 7 is a similar view showing the pillow rest in partially collapsed relation.

Fig. 8 is a view thereof showing the inner end of the foldable frame and the pillow rest in fully collapsed relation.

Fig. 9 is a vertical sectional view taken approximately on line 9—9 of Fig. 2.

The article of furniture is of the type which provides a couch, sofa, love seat and the like in one position and a full-sized bed in another position thereof. For this purpose the article of furniture includes a furniture frame **10** and a foldable metallic frame **11** consisting of a plurality of hingedly connected sections arranged in end to end relation and movable from an aligned relation for supporting a mattress so as to provide a full-sized bed to a collapsed folded relation within the furniture frame for supporting one or more seat cushions so as to serve as a couch, sofa, love seat and the like.

The foldable metallic frame is composed of four sections, an inner section **12** which is swingably connected with the furniture frame, a relatively long intermediate section **13**, a short intermediate section **14**, and an outer end section **15**. The sections are arranged for swinging movement to dispose the inner section in upright relation within the furniture frame adjacent the rear thereof and with the short intermediate section in upright relation adjacent the front of the furniture frame. This disposes the long intermediate section and outer end section in substantially horizontal relation with the outer end section arranged uppermost for supporting one or more seat cushions thereon.

Each of the sections are of angle iron construction, the inner section **12** including spaced side rails **16** and **17** which are connected together at their inner ends by a cross bar **18**. The long intermediate section **13** consists of side rails **19** and **20**, which are pivotally connected to the side rails **16** and **17** by pivot pins **21** extending through the vertical flanges thereof. The short intermediate section **14** is composed of side rails **22** and **23** which are pivotally connected to the side rails **19** and **20** of the long intermediate section **13** by pivot pins **24** extending through the vertical flanges thereof, and the outer end section **15** consists of side rails **25** and **26** which are pivotally connected to the side rails **22** and **23** of the short intermediate section **14** by pivot pins **27**. The side rails **25** and **26** are connected together at their outer ends by a cross bar **28**. A wire mesh spring **30** of any desired construction is connected with and stretched between the side rails and cross bars of the foldable frame for supporting a mattress M thereon and the spring and mattress are adapted to fold with the foldable frame into collapsed relation within the furniture frame and to retain the mattress in folded relation between the sections thereof.

A feature of the foldable frame is the arrangement of legs which in addition to supporting the frame, function to maintain the side rails of the sections in fixed spaced apart relation so as to maintain the spring in taut condition and prevent sagging thereof. For this purpose the foldable frame is provided with three pairs of legs **32**, **33** and **34**. The legs **32** are pivoted at their upper ends on pivot pins **35** to depending lugs **36** riveted or otherwise affixed to the vertical flanges of the side rails of the long intermediate section **13**, adjacent the inner end thereof so as to dispose the said legs close to the front of the furniture frame when the foldable frame is in extended bed forming relation. This arrangement of the legs **32** renders it possible to reduce the depth of the furniture frame or the distance from the front to rear thereof in order that the article of furniture is comfortable when used as a couch, sofa, love seat and the like. The said legs **32** are rigidly connected together so as to prevent outward spreading or inward flexing thereof by upper and lower cross bars **37** and **38**.

The legs **33** are pivoted at their upper ends on pivot pins **39** to depending lugs **40** riveted or otherwise affixed

to the vertical flanges of the side rails of the long intermediate section 13 adjacent the outer end thereof. The legs 33 are rigidly connected together so as to prevent outward spreading or inward flexing thereof by upper and lower cross bars 41 and 42.

The legs 34 are pivoted on pivot pins 44 to the vertical flanges of the side rails of the outer end section 15 adjacent the outer end thereof.

The legs 32 and 33 are swingable into substantially parallel relation with the long intermediate section 13 and the legs 34 are foldable into substantially parallel relation with the outer end section 15 by the folding of the foldable frame. For this purpose, the upper ends of the legs 34 project above the outer end section and are pivotally connected to links 45 on pivot pins 46 respectively with the inner ends of the links pivotally connected against the inner faces of the vertical flanges of the side rails of the short intermediate section 14.

One of the legs of each pair of legs 32 and 33 is pivotally connected with a linkage structure at each side which has swinging movement about a pivotal point 47 at each side of the furniture frame. Each linkage structure includes a bent link 48 pivoted at its lower end to one of the legs 33 on a pivot pin 49 and at its upper end the said link is pivoted to the upper end of a bent link 50 on a pivot pin 51. A straight link 52 is pivoted at its lower end on a pivot pin 53 to one of the legs 32 and at its upper end the said link is pivoted on a pivot pin 54 to the bent link 50. The link 50 is pivoted to a bent link 55 on a pivot pin 56, the pivotal connection on the pivot pin 56 being located substantially midway between the pivotal connections on the pivot pins 51 and 54. The bent link 55 is pivoted at its outer end to the inner face of the vertical flange of one of the side rails of the long intermediate section 13 on a pivot pin 57 and at its inner end the said link is pivoted to a bent link 58 on a pivot pin 59, the latter link being pivoted on a pivot pin 60 to the vertical flange of one of the side rails of the inner section 12. The link 58 projects beyond the pivot pin 60 and is pivoted at its outer end to a link 61 on a pivot pin 62 and at its inner end the said link is pivoted on a pivot pin 63 to an angulated link 64 which is pivoted to the inner section and to the furniture frame for swinging movement about pivot pins 65 and 66 respectively for disposing the inner section in substantially vertical relation and for effecting movement of the link structure for swinging one of the legs of each of the pairs of legs 32 and 33 with the folding of the foldable frame. The lower end of the bent link 50 is rigidly affixed to a short bar 67 which is pivoted to the furniture frame on one of the pivot pins 47. The bar 67 is tensioned by springs 68 connected at their ends to brackets 69 and 70 which are pivoted respectively to the upper ends of the bar 67 on a pivot pin 71 and to a manually adjustable hand lever 72 on a pivot pin 73. The hand lever 72 is pivoted to the furniture frame on a pivot pin 74 and is adjustable for varying the tension on the springs.

Another feature of the foldable frame is the provision of a pillow rest under which the inner end of the mattress projects and which is adapted to constitute an abutment for preventing the pillows from falling off the end of the foldable frame when the same is used as a bed. The pillow rest includes a panel 75 extending across the inner section 12 adjacent the inner end thereof and which is of a width to constitute an abutment against which the pillow may be disposed. The said panel is affixed at its ends to side brackets 76 which are secured to side members 77 pivoted to the vertical flanges of the side rails of the inner section 12 on pivot pins 78. The side members 77 are disposed in upright relation when the foldable frame is in bed forming relation and are provided with cam edges 79 respectively which are engaged by lugs 80 projecting inwardly from the links 61. Springs 81 secured to the upper ends of the side members 77 and to the links 64 retain the said members in tensioned engagement against the lugs. When the foldable frame is moved from the extended bed forming relation to a collapsed relation within the furniture frame, the lugs 80 move over the cam edges 79 to swing the side members 77 together with the panel 75 from the upstanding relation shown in Figs. 2 and 6 of the drawings, to the inclined relation shown in Figs. 5 and 8.

The legs 32, 33 and 34 are provided with rollers 82, 83 and 84 respectively for facilitating movement of the foldable frame. The legs 34 are formed with notches 85 for engagement with lugs 86 projecting outwardly from the side rails 25 and 26 when the said legs are folded in collapsed relation with the outer end section. The furniture frame 10 includes a movable front panel P which is pivotally connected with links 87 and 88 to dispose the same in horizontal relation when the foldable frame is in bed forming relation. The links 87 are pivotally connected on pivot pins 89 with the vertical flanges of the side rails 25 and 26 of the outer end section and the links 88 are pivotally connected on pivot pins 90 to depending lugs 91 riveted or otherwise affixed to the side rails 22 and 23 of the short intermediate section 14. Links 92 are pivotally connected at their lower ends to the links 88 on pivot pins 93 and at their upper ends the said links are pivotally connected on pivot pins 94 to the outer ends of links 95. The links 95 are pivotally connected at their inner ends on pivot pins 96 to the vertical flanges of the side rails 19 and 20 of the long intermediate section and links 97 are pivotally connected at their inner ends to the links 95 on pivot pins 98 respectively and at their outer ends the said links are pivotally connected on pivot pins 99 to the vertical flanges of the side rails 22 and 23 of the short intermediate section 14.

Constructed in this manner, the foldable frame 11 is movable from the extended bed forming relation shown in Figs. 1 and 2 of the drawings, to the collapsed folded relation shown in Fig. 5. In moving the foldable frame from the extended bed forming relation to the collapsed relation within the furniture frame 10, the outer end section 15 is swung upwardly and into overlying substantially parallel relation with the long intermediate section 13 and with the short intermediate section disposed vertically therebetween as shown in Fig. 3. By this movement the legs 34 are swung into parallel relation with the outer end section and the panel P is swung into adjacent parallel relation with the short intermediate section 14. The long intermediate section is then raised to tilt the same into inclined relation which is then moved inwardly and downwardly in the furniture frame 10 as shown in Fig. 4. Further downward swinging movement disposes the foldable frame in completely collapsed relation within the furniture frame as shown in Fig. 5. By the aforesaid swinging movement the legs 32 and 33 are moved toward each other into parallel relation beneath the long intermediate section 13 as illustrated in Fig. 5 of the drawings. This folding of the legs 32 and 33 towards the long intermediate section 13 allows the legs to clear the fixed front panel F. With the aforesaid movement of the inner section 12 into upright relation, the lugs 80 engage the cam faces 79 of the side members 77 for swinging the panel 75 into the out-of-the-way inclined position shown in Figs. 5 and 8 of the drawings.

I claim:

1. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation and swingably connected with the furniture frame for movement from aligned bed forming relation to a folded relation within the furniture frame, said foldable frame including an inner section movable from horizontal relation to upright relation when in folded condition, a pillow rest panel pivotally connected with said inner section, a linkage structure pivotally connected with two of said sections and with said furniture frame for swinging said inner section from said horizontal relation to said upright

relation with the folding of said foldable frame, said pillow rest panel having a cam face, and means tensioning said pillow rest panel to dispose said cam face in engagement with means carried by one of the links of said linkage structure for moving said pillow rest from upright relation to an out-of-the-way position with the movement of the foldable frame to folded relation.

2. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation, links swingably connecting one of said sections with the furniture frame, a pillow rest panel pivotally connected with said last mentioned section, a linkage structure pivotally connected with two or said sections and with one of said links for swinging said last mentioned section from horizontal relation to upright relation within the furniture frame with the folding of said foldable frame, said pillow rest panel having a cam face, and means tensioning said pillow rest panel to dispose said cam face in engagement with means carried by one of said links of said linkage structure for moving said pillow rest panel from upright relation to an out-of-the-way position with the movement of said last mentioned section to said upright relation.

3. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation, links swingably connecting one of said sections with the furniture frame, a pillow rest panel pivotally connected with said last mentioned section, a linkage structure pivotally connected with two or said sections and with one of said links for swinging said last mentioned section from horizontal relation to an upright relation within the furniture frame with the folding of said foldable frame, and said pillow rest panel and one of the links of said linkage structure having cam and cam engaging means for moving said pillow rest panel from upright relation to an out-of-the-way position with the movement of said last mentioned section to said upright relation.

4. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation, links swingably connecting one of said sections with the furniture frame, a pillow rest panel pivotally connected with said last mentioned section, a linkage structure pivotally connected with two or said sections and with one of said links for swinging said last mentioned section from horizontal relation to an upright relation within the furniture frame with the folding of said foldable frame,

said pillow rest panel and one of the links of said linkage structure having cam and cam engaging means for moving said pillow rest panel from upright relation to an out-of-the-way position with the movement of said last mentioned section to said upright relation, and means tensioning said pillow rest panel to dispose said cam and cam engaging means in engagement.

5. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation, links swingably connecting one of said sections with the furniture frame, a pillow rest panel pivotally connected with said last mentioned section, a linkage structure at each side of the foldable frame pivotally connected with two of said sections and with said links respectively for swinging said last mentioned sections from horizontal relation to an upright relation within the furniture frame with the folding of said foldable frame, said pillow rest panel having a cam face at each side thereof, and lugs projecting from one of the links of each of said linkage structure arranged in engagement with said cam faces for moving said pillow rest panel from upright relation to an out-of-the-way position with the movement of said last mentioned section to said upright relation.

6. In an article of the character described, a furniture frame, a foldable frame composed of a plurality of sections pivotally connected together in end to end relation, links swingably connecting one of said sections with the furniture frame, a pillow rest panel pivotally connected with said last mentioned section, a linkage structure at each side of the foldable frame pivotally connected with two of said sections and with said links respectively for swinging said last mentioned section from horizontal relation to an upright relation within the furniture frame with the folding of said foldable frame, said pillow rest panel having a cam face at each side thereof, lugs projecting from one of the links of each of said linkage structure arranged in engagement with said cam faces for moving said pillow rest panel from upright relation to an out-of-the-way position with the movement of said last mentioned section to said upright relation, and spring means tensioning said pillow rest panel to dispose said cam faces in engagement with said lugs respectively.

References Cited in the file of this patent

UNITED STATES PATENTS

2,624,888	Bebry	Jan. 13, 1953
2,642,583	Bank et al.	June 23, 1953