Feb. 19, 1963 J. G. SEVCIK 3,077,612

COLLAPSIBLE BED AND ENCLOSURE THEREFOR

Filed May 22, 1961 3 Sheets-Sheet 1

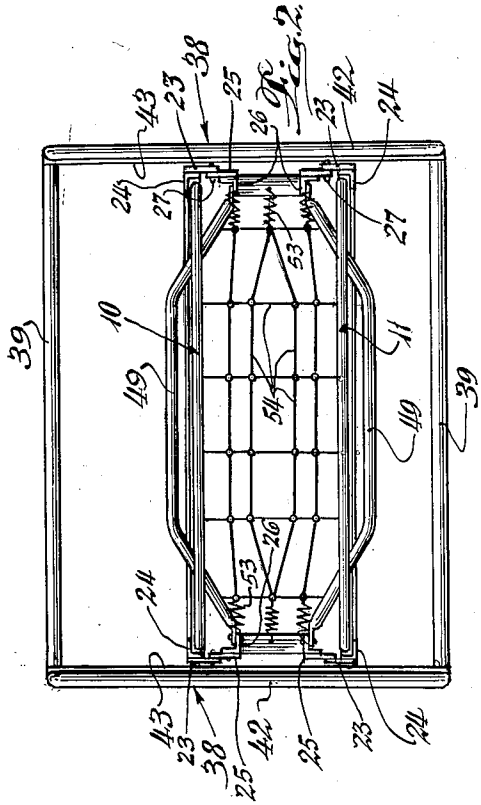


Fig. 2.

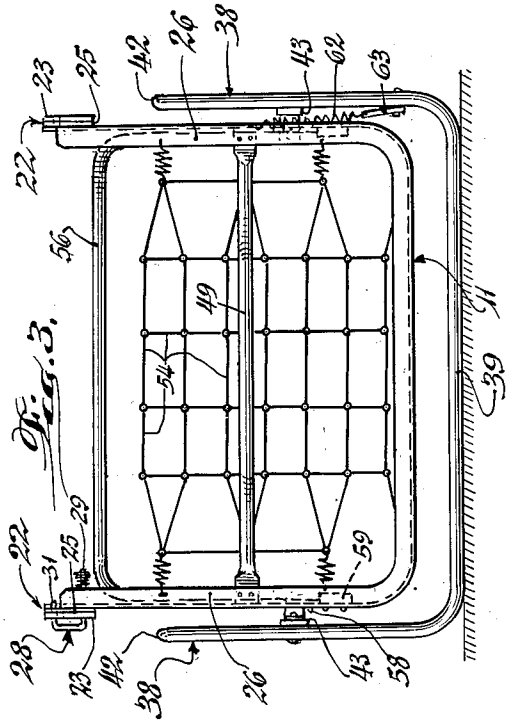


Fig. 3.

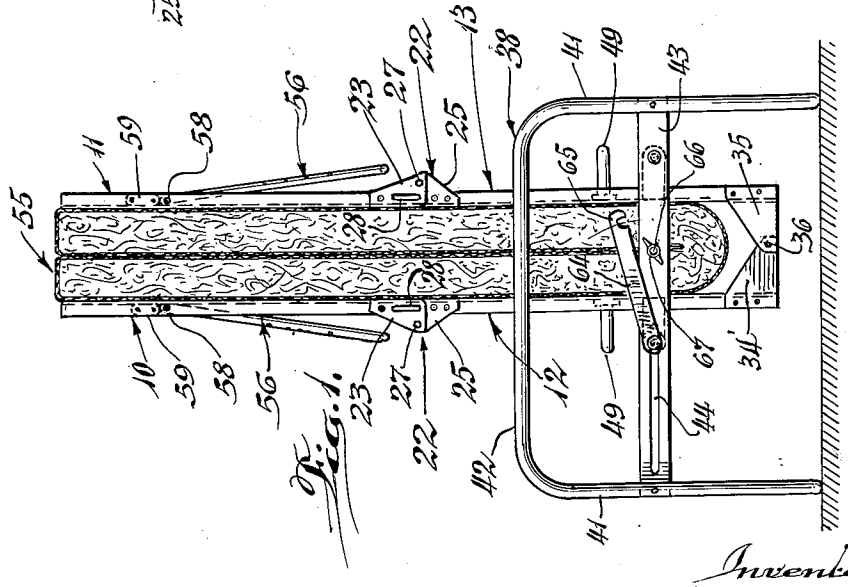


Fig. 1.

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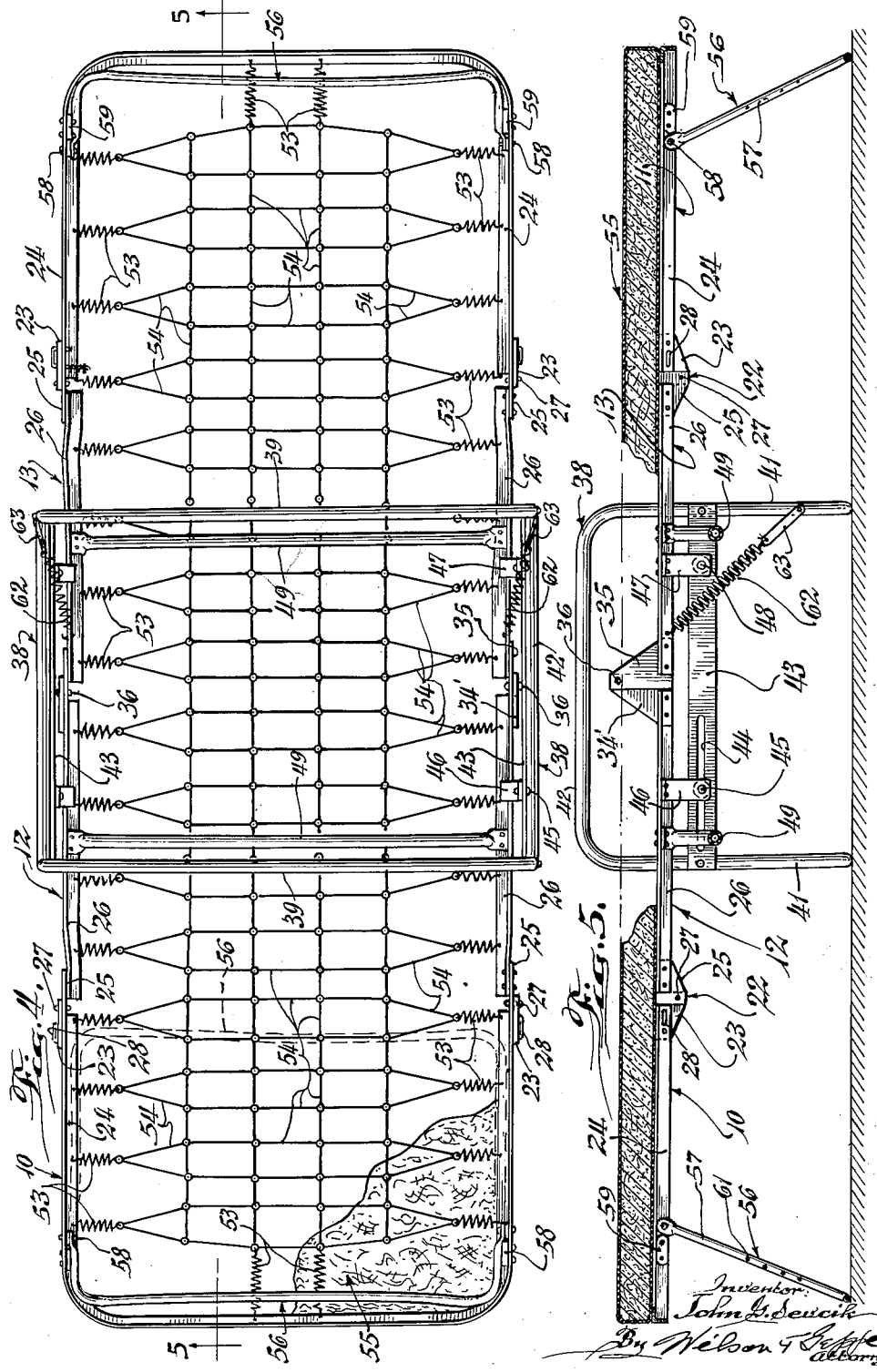


Fig. 4.

Fig. 5.

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COLLAPSIBLE BED AND ENCLOSURE THEREFOR

Filed May 22, 1961 3 Sheets-Sheet 3

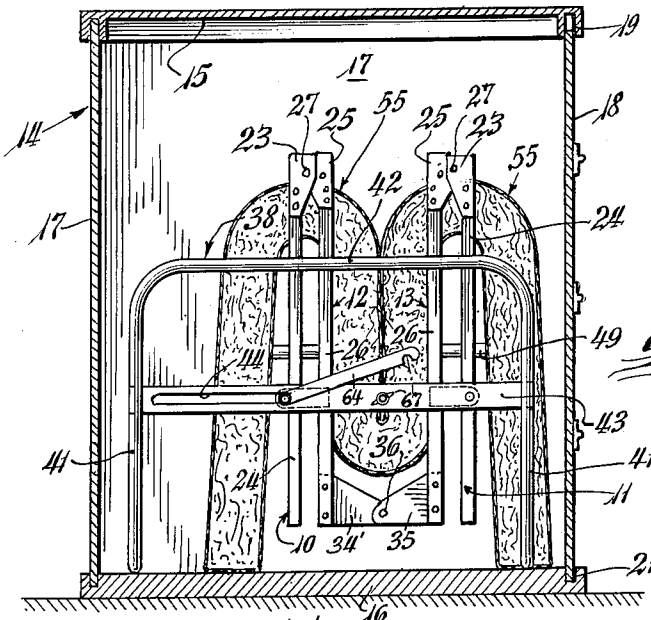


Fig. 6.

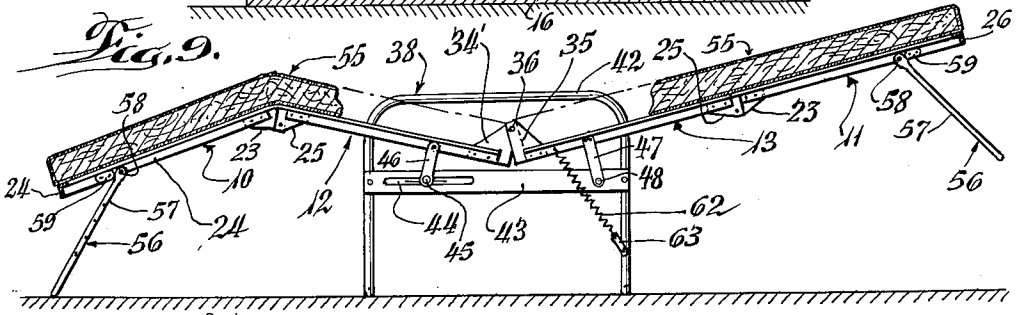


Fig. 9.

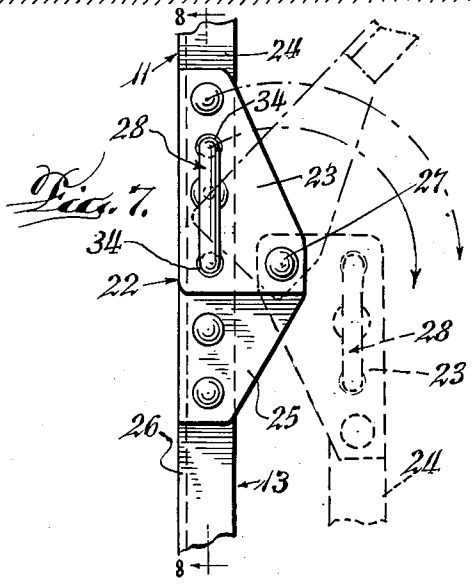


Fig. 7.

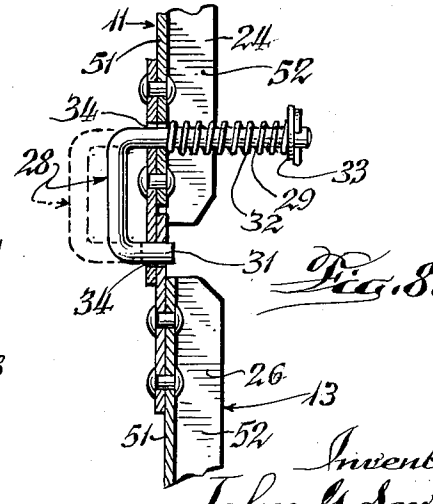


Fig. 8.

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United States Patent Office 3,077,612 Patented Feb. 19, 1963

3,077,612

COLLAPSIBLE BED AND ENCLOSURE THEREFOR

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Filed May 22, 1961, Ser. No. 111,644
4 Claims. (Cl. 5—66)

The present invention relates to a novel bed assembly capable of being collapsed or folded into a compact unit and stored in a small enclosure such as an end table, and when extended to open position providing a bed or readily converted into a contour lounge or hospital bed, as desired.

It is an important object of the present invention to provide a novel bed assembly formed of articulated end sections and intermediate sections which, together with its mattress, may be readily and fully collapsed and, when not in use, compactly stored in a relatively small table or cabinet enclosure.

The present invention further comprehends a novel bed frame assembly including a rigid support and collapsible end and center or intermediate sections hinged together and foldable within the confines of the rigid support with the collapsed bed assembly completely received and stored within an enclosure of a table or cabinet.

A further object of the present invention is the provision of a novel combination bed and table assembly consisting of a bed construction having a supporting frame and a sectional bed frame and mattress readily collapsed or folded into a compact unit which together with the supporting frame is so designed and constructed as to be enclosed and stored in a small table or enclosure.

The present invention further comprehends a novel collapsible bed frame consisting of four articulated sections capable of being folded into four adjoining and vertically disposed sections having novel means for locking these sections together in fully extended position to provide a bed, or with the sections further adjusted and retained in adjusted position to provide an inclined contour chair or hospital bed for a patient.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawings:

FIGURE 1 is a view in side elevation of the novel collapsible bed assembly with its two pivoted or articulated end sections moved from their collapsed depending position to their upright position preparatory to opening of the bed.

FIG. 2 is a top plan view of the partially collapsed or folded bed assembly of FIG. 1 but with the mattress removed.

FIG. 3 is a view in end elevation of the bed assembly of FIG. 2 but with its end and intermediate or center sections completely folded into a compact space ready for reception and storage in the enclosure of a table or cabinet.

FIG. 4 is a bottom plan view of the frame sections fully extended to form a bed, the mattress having been removed to show the details of the frame assembly.

FIG. 5 is a cross-sectional view of the extended bed

taken on line 5—5 of FIG. 4, but including the collapsible mattress.

FIG. 6 is a view in side elevation of the completely collapsed and folded bed assembly and showing in vertical cross section the table or storage cabinet housing and enclosing the collapsed bed.

FIG. 7 is a fragmentary enlarged view in front elevation of the hinged connected between an end section and a center section, the view showing the end section extended to a vertical position preparatory to fully extending the sections in opening the bed, and in dotted outline showing the end section folded downwardly to its collapsed position for storage.

FIG. 8 is a view in vertical cross section of the articulated sections of the bed shown in FIG. 7 and the manner of locking these sections in extended position, the view being taken on the line 8—8 of FIG. 7.

FIG. 9 is a cross-sectional view of the open bed assembly similar to FIG. 5, but with the bed converted into a contour lounge or hospital bed.

Referring in detail to the drawings wherein is disclosed an illustrative embodiment of the present invention, the novel collapsible bed assembly comprising two end sections 10 and 11, and center or intermediate sections 12 and 13 all articulated or hinged together whereby these sections may be readily and conveniently collapsed for enclosure and storage in a relatively small table or cabinet 14. This table or cabinet is shown provided with a top 15, base 16 and sides 17 including a removable closure 18 at the front for access to the interior of the table or cabinet for insertion or removal of the complete bed assembly when folded. This front closure 18 has its upper end received in a slot 19 in the top 15 and its lower end in a slot 21 in the base 16, the slot 19 being sufficiently deep to permit the closure to be raised or lifted out of the slot 21 and removed for access to the interior.

The end section 10 and its adjoining intermediate section 12 and the other end section 11 and its adjoining intermediate section 13 are connected together by a butt hinge 22 consisting of a hinge plate 23 riveted or rigidly joined to the side rail 24 of the end sections 10 and 11, and a cooperating hinge plate 25 riveted or rigidly joined to the side rail 26 of the intermediate sections 12 and 13. These hinge plates (FIGS. 7 and 8) are pivotally connected by a pivot pin or rivet 27 and the hinge plate 23 carries a locking pin 28 having a relatively long leg 29 and a relatively short leg 31. The longer leg 29 is encompassed by a coil spring 32 abutting at one end the interior of the inturned flange of the side rail 24 and at its other end a stop or washer 33 retained upon the inner end of the leg 29 by a suitable pin or the like.

The butt hinge plates 23 and 25 are provided with openings 34 adapted to be aligned for freely receiving the end of the short latching or locking leg 31 of the locking pin 28, and the hinge plate 23 and the side rail 24 are each provided with an aligned opening 34 to freely receive the longer leg 29 projecting therethrough. As shown in FIG. 8, the locking pin 28 in the position shown in full lines locks the hinge plates 23 and 25 and their connected frame sections 11 and 13 in longitudinal alignment, and when the short leg 31 of the locking pin 28 is withdrawn as shown in dotted lines, these hinge plates and the connected frame sections 11 and 13 are free to pivot toward each other in one direction to the

collapsed or folded parallel position shown in FIG. 6 and in dotted outline in FIG. 7. The end frame section 10 and the intermediate frame section 12 are similarly joined together by similar hinge plates and a locking pin all given the same reference characters.

The intermediate frame sections 12 and 13 are pivotally joined together by butt hinge plates 34' and 35 pivotally connected by a hinge pivot or rivet 36 with each plate 34' and 35 riveted or affixed to the side rails 26 of its intermediate frame section.

The intermediate frame sections 12 and 13 are disposed between inverted U-shaped tubular supports 38 one at each side and at the exterior of the collapsible bed frame connected by spaced transversely extending floor engaging connecting members 39 extending across or transverse at the bottom of the supports. The U-shaped tubular frame supports 38 at each side have spaced depending legs 41 joined at the top by the cross member 42 extending longitudinally of the bed frame and intermediate the height of these legs by a connecting brace 43 rigidly joined at its ends to these legs. Each connecting brace 43 is longitudinally slotted at 44 adjacent one end in which is received a pin 45 extending through and slidable in the slot, the pin being carried at one end of an arm 46 with the other end of the arm riveted or secured to the interior of the depending flange of the side rail 26 of the intermediate section 12. A similar arm 47 riveted at one end to the depending flange of the side rail 26 of the intermediate section 13 is pivotally connected at its other end by a pivot pin 48 to the connecting brace 43 and pivots about this pin as the hinged intermediate frame section is elevated from its lowered or extended position shown in FIG. 5 to that shown in FIGS. 1, 2, and 3.

Adjacent each of the depending arms 46 and 47 is a transverse substantially U-shaped reinforcing brace or bar 49 spanning each of the intermediate frame sections 12 and 13 and riveted at their ends to the side rails 26 of these sections.

Each of the side rails 24 of the articulated end bed frame sections 10 and 11 and the side rails 26 of the intermediate bed frame sections 12 and 13 is an angle member having an inturned flange or leg 51 and a depending outer flange or leg 52 to which the arms 43 and brace 49 are attached, the flange 51 of each having spaced openings receiving one end of suitably spaced conventional coil springs 53 (FIG. 4) with the other end of these springs attached to and carrying conventional wire link fabric 54 for yieldably supporting a mattress 55. As shown in FIGS. 1 and 6, the mattress is capable of being folded upon the wire link fabric 54 when the frame assembly is collapsed or folded for storage.

Adjacent the outer end of each end section 10 and 11 there is provided a substantially U-shaped collapsible support 56 extending transversely of the bed with its spaced depending legs 57 pivotally mounted at 58 on the opposed side rails 26 of these end sections. Adjacent the pivotal mounting of each leg is provided a stop 59 against which these legs 57 abut when the supports 57 are opened whereby to maintain the supports against collapse. Either or both sets of legs are extensible so that when the bed is positioned for use as a hospital bed or with the frame sections disposed in contour position in which one or both supports 56 may be extended to contact the floor. This is accomplished by constructing the legs 57 of telescoping tubular members retained in adjusted position by a locking pin 61 projecting through aligned openings in the telescoped members.

To the side rail 26 at one or both sides of the intermediate section 13 (FIG. 3) is affixed one end of a contractile spring 62, with the other end of the spring affixed to the adjacent depending leg 41 of the support 38 by a link 63 for facilitating collapse of the bed frame when the sections are to be folded into inoperative position.

When the bed frame is to be opened to a contour position such as shown in FIG. 9, the bed is first completely opened to horizontal position and then to the position shown in FIG. 9. In this position the locking pin 28 connecting the end and adjoining intermediate frame sections 10 and 12 is disposed in other aligned openings retaining these sections at the desired angularity. Also in the desired contour position, the intermediate frame section is anchored in adjusted position by means of a pivoted latch bar 64 with its hook end 65 engaging a latch pin 66 and retained by a wing nut 67. Such a latch bar 64 is preferably located on each side of the bed frame on the braces 43.

Having thus disclosed the invention, I claim:

1. A collapsible bed assembly comprising a stationary frame providing a longitudinal support at each side of the frame and each support having depending legs the lower ends of which are connected by transverse floor engaging parts for support said frame and a cross brace connecting the legs of each support, a collapsible bed frame pivotally connected to said cross brace of the stationary frame and consisting of articulated end and intermediate sections hingedly connected at the adjoining ends of said end and intermediate sections and between said intermediate sections for extending the bed frame longitudinally into open position between the supports at the opposite sides of the bed frame, the individual sections being readily folded about the pivotal connections of the end and intermediate sections, said hinged connections between the end and intermediate sections and between the intermediate sections consisting of butt hinges having hinge plates connecting the adjoining ends of said end and intermediate sections and the adjoining ends of the intermediate sections, a spring-actuated substantially L-shaped locking pin carried on one of the hinge plates of each butt hinge between an end and an intermediate section and having one end received in aligned openings of adjoining hinge plates when the bed is opened for use for locking the articulated end and intermediate frame sections in extended position, and spaced arms each secured at one end to an intermediate section and at its other end pivotally connected to the cross brace for free pivotal movement of said intermediate sections on said cross brace.

2. A collapsible bed assembly having extended and contour positions, comprising a stationary frame providing a longitudinal support at each side of the frame and each support having depending legs the lower ends of which are connected by transverse floor engaging parts for supporting said frame and a cross brace, a collapsible bed frame pivotally connected to said stationary frame and consisting of articulated end and intermediate sections, butt hinges having hinge plates connecting the adjoining ends of said end and intermediate sections and the adjoining ends of the intermediate sections for extending the bed frame longitudinally into open position between the supports at the opposite sides of the bed frame, the articulated sections being readily folded about the pivotal connections of the end and intermediate sections, said cross brace connecting the legs and having a longitudinal slot adjacent one end, an arm secured at one end to each intermediate section at a point spaced from the central butt hinge joining the intermediate sections and carrying a pin at its other end, the pin of one arm being pivotally connected to said cross brace and the pin of the other arm being mounted and freely movable in said slot for pivotally mounting said intermediate sections upon said cross brace.

3. A collapsible bed assembly having extended and contour positions as set forth in claim 2, including a latch bar pivotally mounted on the pin of the last mentioned arm movable in the slot and a latch pin on said cross brace cooperating with said latch bar for retaining

the intermediate sections in a partially extended contour position.

4. A collapsible bed assembly having extended and contour positions as set forth in claim 3 including a spring-actuated substantially L-shaped locking pin carried on one of the hinge plates of each butt hinge between the intermediate and end sections and having one end received in aligned openings of adjoining hinge plates when the bed is opened for use for locking the articulated end and intermediate frame sections in extended position, and a substantially U-shaped collapsible support pivotally mounted adjacent the free end of each end section.

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