April 8, 1958 A. M. BANK ET AL 2,829,382

PULL OUT BEDS

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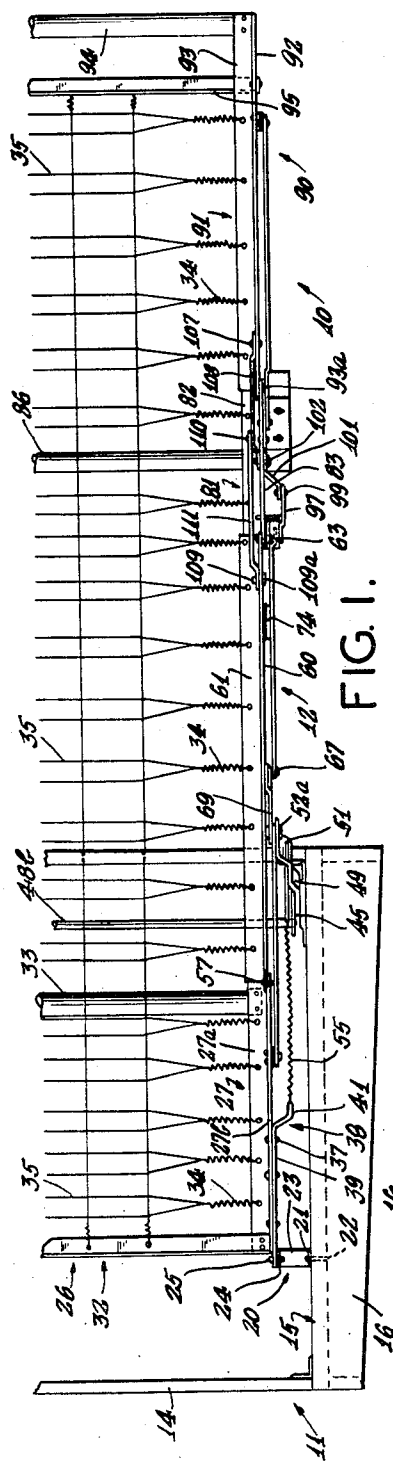

FIG. 1.

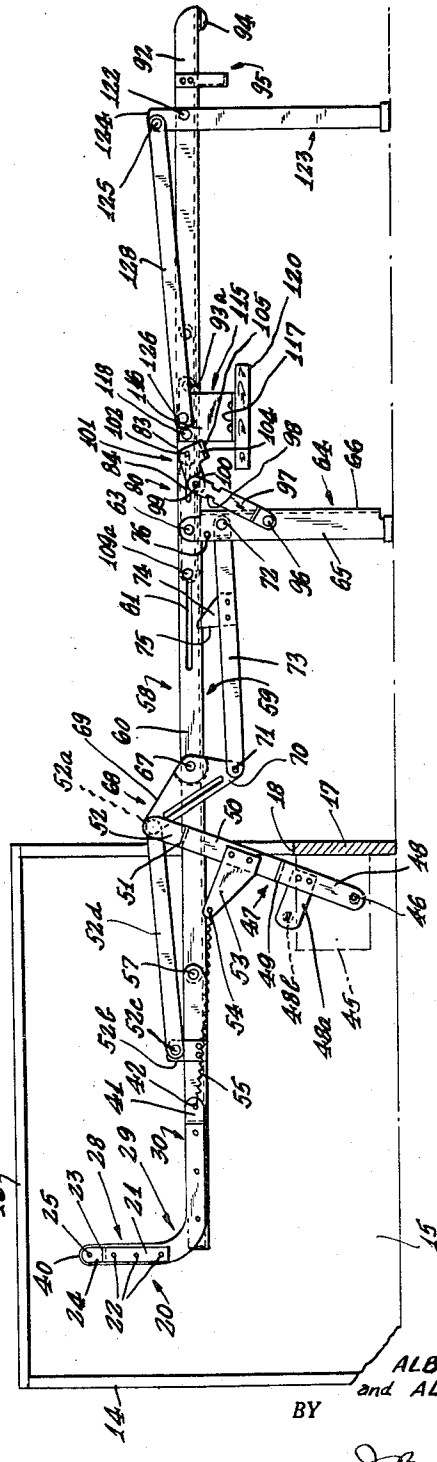

FIG. 2.

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FIG. 3.

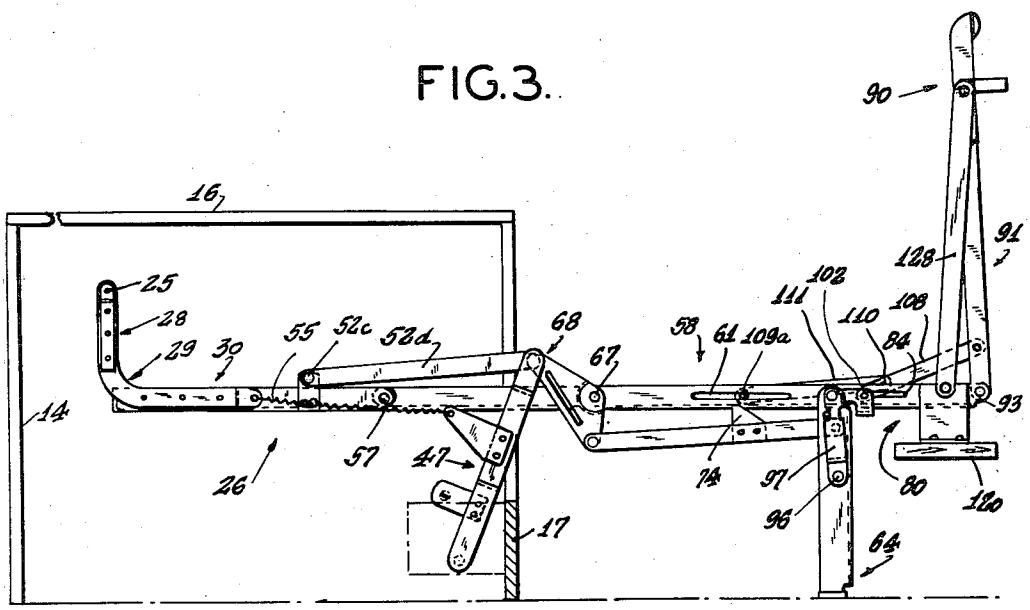


FIG. 4.

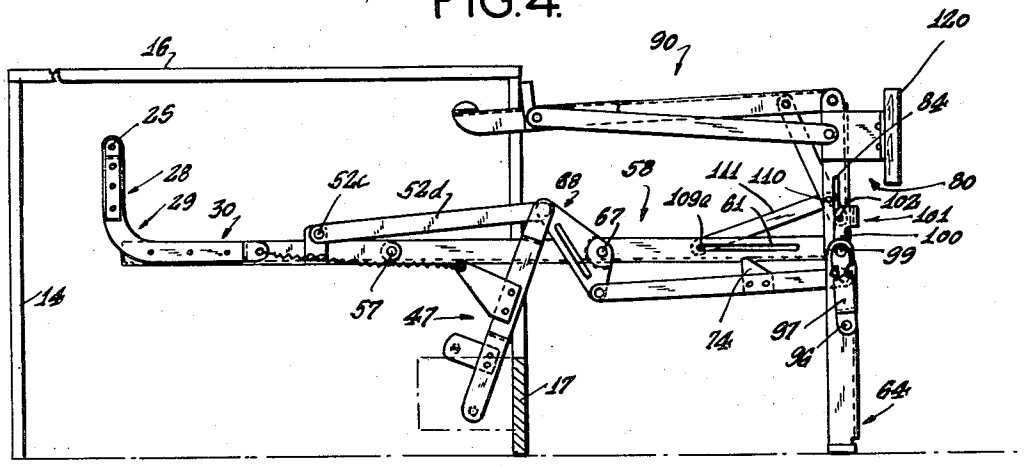


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FIG. 5.

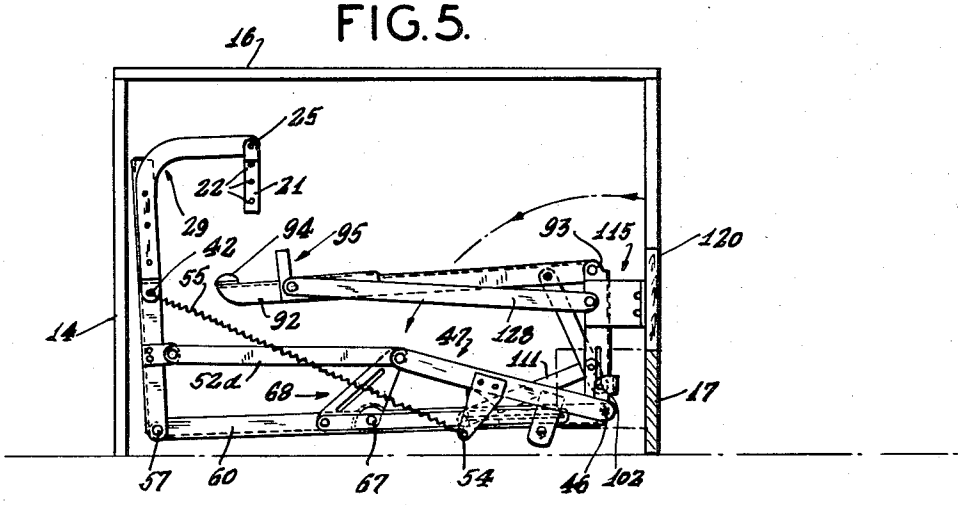
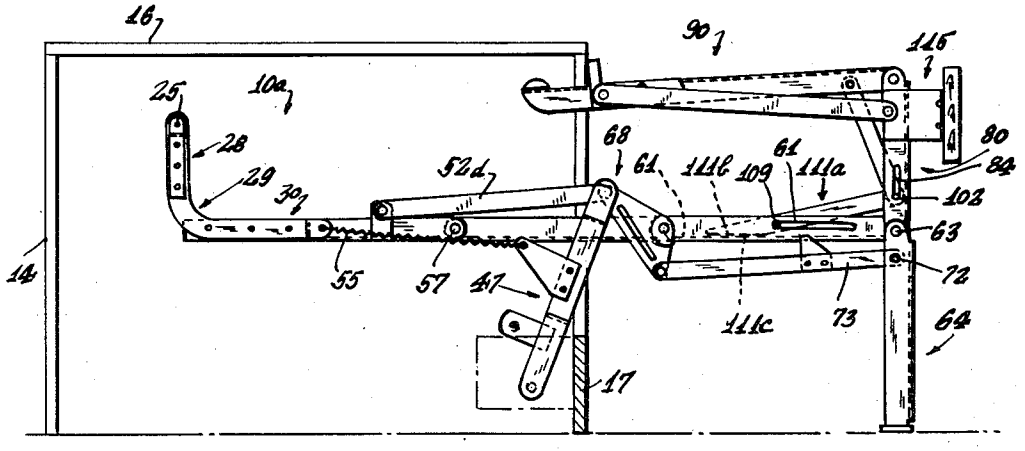



FIG. 6.

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2,829,382

# PULL OUT BEDS

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Application June 15, 1954, Serial No. 436,793

7 Claims. (Cl. 5—13)

This invention relates to pull out beds. It is particularly directed to a pull out bed which comprises a head section pivoted to a bed, couch or sofa frame, an intermediate or main section pivoted to the forward end of the head section, a fold section pivoted to the intermediate section, and a foot section pivoted to the fold section, said sections being foldable or fully collapsed into said frame.

One problem with pull out beds of this type has been that the mattress has to be folded with the folding sections when the bed is folded, and the folded mattress has a tendency to open up the folded bed. According to the present invention there is provided a highly improved means to lock the folded foot and fold sections relative to the intermediate or main section, so as to prevent the folded mattress from opening up the folded bed.

An object of this invention is to provide a bed in which there is no obstruction over the sitting surface of the bed, the sitting surface of the bed being the portion of the bed in front of the sofa or couch frame into which the bed is to be folded.

Another object of this invention is to provide a pull out bed which is so constructed that when the foot section is swung upwardly it will pivot about the front end of the fold section, means being provided to prevent the fold section from swinging upwardly relative to the front end of the intermediate or main section until the foot section is at a predetermined angle relative to the fold section (preferably somewhat tilted upward and rearward). At such time both the foot section and the fold section can be swung together relative to the front end of the intermediate or main section to a position where the fold section is at right angles to said intermediate or main section, said foot section then being above the main or intermediate section and pitched somewhat downwardly to provide a correct angle for a seat pillow which is placed on said foot section after the bed is fully folded into the couch or sofa frame.

Another object of this invention is to provide in a bed of the character described, means to prevent said downwardly pitched foot from being swung upwardly relative to the fold section in an unfolding direction, the construction being such that said downwardly pitched foot section and the fold section must be unfolded together swinging about the lower end of the fold section (forward end of the main or intermediate section).

A further object of this invention is to provide in a bed of the character described, means to permit the head section to be swung downwardly about its pivot point to the couch or sofa frame thereby moving the main or intermediate section with the folded fold and foot sections over the foot board at the front of the sofa or couch frame and into said frame, highly improved locking means being provided to lock the folded fold and foot sections to the intermediate or main section during such movement into the sofa or couch frame.

Still another object of this invention is to provide a highly improved pull out sofa or couch bed which shall



have great ease of operation and positive locking action to lock the folded foot and fold sections to the main or intermediate section as the bed is being fully collapsed into the couch or sofa frame.

Still another object of this invention is to provide in a collapsing or folding bed of the character described, means to fold a foot leg against the foot section as the foot section is swung upwardly relative to the fold section, and means to swing an intermediate leg against the intermediate or main section as the bed is being fully collapsed into the couch or sofa frame, and lock means controlled by the intermediate leg as the bed is fully collapsed to prevent the foot and fold sections from unfolding without first pulling the intermediate section out of the frame.

Yet a further object of this invention is to provide a couch or sofa bed of the character described, which shall be inexpensive to manufacture, easy to manipulate, and which shall yet be practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the appended claims.

In the accompanying drawings in which is shown various illustrative embodiments of this invention;

Fig. 1 is a partial top plan view of a pull out bed embodying the invention and showing the same in fully extended or unfolded position;

Fig. 2 is a side elevational view of the structure shown in Fig. 1;

Fig. 3 is a view similar to Fig. 2 but showing the foot section in raised position;

Fig. 4 is a view similar to Fig. 3 but showing the fold section and folded foot section folded relative to the intermediate or main section;

Fig. 5 is a view similar to Fig. 4 and showing the bed fully collapsed or folded, and

Fig. 6 is a view similar to Fig. 4 and illustrating a modified construction.

Referring now in detail to the drawing, **10** designates a pull out or sofa bed embodying the invention. The same comprises a sofa or couch frame **11** and a collapsible or foldable bed **12** mounted thereon and collapsible or foldable thereinto. The couch or sofa frame **11** may be made of wood or any other suitable material.

The same comprises a rear wall **14**, side walls **15**, and it may be provided with top arm bars **16**. The front ends of the side walls **15** are interconnected by a front base board **17**, having an upper edge **18**, which may be about six or seven inches in height.

Fixed to the insides of the side walls **15** are brackets **20**. Each bracket **20** is Z-shaped and has a flange **21** attached as by bolts **22** to wall **15**. Extending from flange **21** is a web **23** from which extends upwardly a flange **24** parallel to wall **15** and spaced inwardly therefrom. Said flange **24** carries a pivot pin **25**. Pivoted on the pivot pin **25** is the head section **26**.

It will be noted that only one side of the bed is shown it being understood that the sides of the bed are symmetrical.

The head section **26** comprises a pair of similar symmetrical side members **27** of angle iron, each comprising a flange **27***a* and a flange **27***b* at right angles thereto and in a vertical plane. Each member **27** has a rear vertical portion **28** (when the bed is unfolded) from which extends downwardly and forwardly a curved portion **29**, and extending forwardly from said curved portion is a horizontal portion **30**, that is, it is horizontal when the

bed is fully unfolded or extended. The upper end of portions 28 are interconnected by a transverse member 32 of angle shaped cross section riveted thereto. The forward ends of portion 30 are interconnected by a transverse tube 33 flattened at its ends and riveted to the flange portion 27*a* at the front ends of members 27. The flanges 27*a* are formed with openings in which are hooked, ends of coil tension springs 34 connected by wires 35 in the usual manner to form a floor or base for the bed.

Riveted to the outer side of each flange 27*b* as by rivets 37 is a bar 38 having a portion 39 contacting the vertical, curved and horizontal portions of flange 27*b*. Extending from the upper end of said portion 39 is a portion 40 pivoted on the pivot pin 25. At the front end of each portion 39 is an outwardly and forwardly bent portion 41 formed at its outer end with an opening 42 for the purpose hereinafter appearing.

Attached to the inner side of the front lower portion of each side wall 15 is a plate 45. Pivoted to each plate 45 as at 46 is an elongated bar 47. Bar 47 inclines upwardly and forwardly when the bed is extended. The bar 47 has a lower portion 48 contacting plate 45. At the upper end of portion 48 is an inwardly offset portion 49 from which extends a portion 50 parallel to and spaced inwardly of portion 48. At the upper end of each portion 50 is an inwardly offset portion 51 from which extends upwardly a portion 52 offset inwardly from portion 50. Attached to portion 48 is a bracket 48*a*. The brackets 48*a* are connected by a transverse rod 48*b*. Attached to portion 50 and extending rearwardly thereof is a bracket 53 formed with an opening 54.

Interconnecting bracket 53 with portion 41 of member 38 is a coil tension spring 55 having hooked ends received in openings 42 and 54, respectively.

At the upper end of each bar 47 is a pivot 52*a*. Fixed to each member 27 is a lug 52*b* projecting thereabove and carrying a pivot 52*c*. Connecting pivots 52*c* and 52*a* at each side of the bed is a link 52*d*.

Pivoted to the front ends of members 27 as at 57, are the rear ends of an intermediate section 58. The intermediate section 58 comprises angular side members 59 having vertical flanges 60 and horizontal flanges 61. Flanges 61 of the side members 59 are likewise interconnected by coil tension springs 34 and wires 35 to form the base or floor of the bed. The flanges 60 are formed with elongated slots 61 near their front ends for the purpose hereinafter appearing.

At the forward end of each member 59 is a pivot 63. Pivoted thereto and extending down therefrom is an intermediate leg 64. The leg 64 may be of angle transverse cross section and it has an outer flange 65 and a transverse flange 66. Flange 60 of each member 59 carries a pivot pin 67 located forwardly of the upper end of bar 47 when the bed is extended. Pivoted on said pivot pin 67 is a lever 68. Said lever 68 has an arm 69 projecting upwardly and rearwardly and pivoted to the pivot pin 52*a*. Said lever 68 has a downwardly and forwardly projecting arm 70 carrying a pivot pin 71 at its lower end.

The outer flange 65 of leg 64 carries pivot pin 72 below the pivot pin 63. Interconnecting the pivot pins 71 and 72 on each side of the bed, is a link 73. Fixed to said link and projecting upwardly therefrom is a lock lug 74 having a straight rear edge 75. When the bed is extended the lock lug is disposed below and substantially centrally located with respect to the slot 61.

Fixed to the outer flange 65 of leg 64 and projecting outwardly therefrom is a stop pin 76. Stop pin 76 is located below the pivot 63 and above the pivot 72.

At the front end of the intermediate or main section 58 is a short fold section 80. Section 80 comprises a pair of angle shaped members 81 one on each side of the bed. Each member 81 has a horizontal flange 82 from which extends upwardly a vertical flange 83. The rear end of each flange 83 is pivoted to the pivot pin 63. Each flange 83 is furthermore formed with a short slot 84, for the purpose hereinafter appearing. Connected to the flanges 82 are coil tension springs 34 interconnected by wires 35 forming part of the base or floor of the bed. The flanges 82 of members 81 at opposite sides of the bed are interconnected by a cross brace bar 86.

At the front end of the short fold section 80 is the foot section 90. Said foot section 90 comprises a pair of similar symmetrical angle shaped members 91 one at each side of the bed. Each member 91 has a vertical flange 92 and a horizontal flange 93. The rear end of each flange 93 is pivoted to the front end of flange 83 of member 81 by pivot pin 93*a*. The front ends of flanges 93 are interconnected by a transverse interconnecting member 94. Said flanges are further interconnected by a transverse member 95 disposed somewhat rearwardly of the transverse member 94. Member 95 projects below the flange 93.

Pivoted to the outer flange 65 of each leg 64 as at 96 is a stop arm 97 projecting upwardly and inclined forwardly when the bed is extended. The arm 97 may have a notch 98 on one side edge thereof (or on both side edges so that the left and right bars may be interchanged). The purpose for the notch 98 will be explained hereinafter.

At the upper end of arm 97 is a pivot pin 99. Pivoted to the pivot pin 99 is one arm 100 of a bell crank 101. Carried by the intermediate portion of the bell crank 101 is a pivot pin 102 which passes through the slot 84. Said bell crank 101 further comprises a downwardly and forwardly projecting arm 104 formed at its underside with an upwardly turned flange 105 disposed below the flange 82 of member 81. The pivot pin 102 is at the forward end of slot 84 when the bed is fully extended.

Flange 92 of member 91 carries a pivot pin 107 located forwardly of the pivot pin 93*a*. Pivot pin 102 is connected to said pivot 107 by link 108 located at the inside of flange 92. Slidable in the slot 61 is a pivot pin 109. Carried by the link 108 adjacent to but spaced from the pivot pin 102 is a pivot pin 110. Interconnecting the pivot pins 109 and 110 is a link 111 located at the inside of the flanges 60 and 83 and said link 108. Attached to the outer side of flange 83 and adjacent the pivot pin 93*a* is an angle shaped bracket 115 comprising a vertical wall 116 from which extends outwardly a horizontal flange 117. Flange 116 is fixed to said flange 83 by rivets 118. The flanges 117 of members 115 at opposite sides of the bed are interconnected by a board 120 adapted to rest edgewise on the top edge 18 of the board 17 when the bed is fully collapsed, as will be explained hereinafter.

Connected to the flange 93 are also a plurality of members 34 interconnected by wires 35 and forming a continuation of the base or floor of the bed. Pivoted to the flanges 92 of members 91 rearwardly of the cross brace 95 as on pivot 122, is a foot leg 123. Said foot leg has a portion 124 extending above member 91 and carrying a pivot pin 125. Fixed to the flange 83 and wall 116 of member 115 is a pivot pin 126. Pivot pins 126 and 125 are interconnected by link 128 which inclines somewhat forwardly and upwardly when the bed is fully extended.

It will be understood that a mattress (not shown) is placed on the wires 35 and over the cross springs 34. When the bed is collapsed in the manner hereinafter explained, the mattress is folded with the bed. It will be noted that the portions of the bed forwardly of the bell crank or lever 69 and extending to the links 128 have no obstructions or projections extending above the side members 58. This portion of the bed is generally referred to as the sitting portion of the bed and the fact that there are no obstructions at that location is an advantage, as it allows people to sit on the bed in comfort before getting on the bed.

It will be further noted that each pivot 109 is provided with an outwardly projecting lock lug or pin 109*a* which serves as a locking pin engaged and locked in place by the lug 74 when the bed is in fully collapsed condition.

It will be further noted that when the bed is fully extended, an upward lift at the foot of the bed will not cause the short fold section 80 to fold upwardly relative to the front end of the main or intermediate section because of the engagement of the flanges 105 of bell crank 101 with the undersides of the flanges 82 of members 81 of said short fold section. The reason for this is when the bed is fully extended the flanges 105 contact the undersides of flanges 81. In fully extended position the arms 97 are inclined forwardly and upwardly, but the angle which these arms makes with a vertical line passing through the pivot 96 is less than the angle formed by a line passing through the pivot pins 83 and 99 and a vertical line passing through the pivot pins 83 and 99 and a vertical line passing through pivot pin 96. For this reason if the short fold section was to swing upwardly about the pivot pin 63 from the fully extended position of the bed, arms 97 would have to move in a clockwise direction, whereas the bell crank 101 would have to move in a counterclockwise direction. But the bell crank cannot move in a counterclockwise direction because of the engagement of the flanges 105 with the underside of the flanges 82. For this reason an upward pull on the front end of the foot section would result in only the foot section moving upwardly from the position shown in Fig. 2 to the position shown in Fig. 3, and during such movement the short fold section remains in horizontal position.

As the foot section 90 is swung upwardly, members 91 pivot upwardly about the pivot pin 93*a*. During such action the foot leg 123 swings in a clockwise direction against the underside of the foot section. Such action is caused by the link 128. Furthermore as said foot section is swung upwardly, the pivot pin 102 on which bell crank 101 rotates and which is connected also to the link 108, slides to the left in slot 84. At the same time arm 97 swings in a counterclockwise direction until the notch edge of said arm contacts the stop pin 76 and brings the pivot pin 99 in direct axial alignment with the pivot 63. Thus the distance of the center of pivot pin 96 from the center of pivot pin 99 is exactly equal to the distance between the pivot pin 96 and the pivot pin 63. As the foot section is swung upwardly, furthermore, links 108 will swing upwardly about pivot pins 102. When the pivot pin 102 is at the left end of the slot 84 members 91 of the foot section 90 will have swung past the vertical and will be tilted slightly in a rearward and upward direction as shown in Fig. 3 of the drawing. Since the link 108 swings in a counterclockwise direction about the pivot pin 102, the pivot pin 110 will be raised and the pivot pin 109 together with lock pin 109*a* will travel to the left in slot 61, but only about half way through said slot. At this time, further swinging movement of the foot section will cause the short fold section 80 to swing upwardly therewith about the co-aligned pivot pins 63, 99. Now the short fold section can swing upwardly about pivot pin 63 because the bell crank 101 can swing about the axis of the pivot pin 63. Thus the foot section 90 of the short fold section 80 can be swung from the position shown in Fig. 3 to the position shown in Fig. 4.

It will be noted that when the foot section has been swung upwardly and the bell crank 101 has slidably moved to the left to bring the pivot pin 102 from the right end of slot 84 to the left end of said slot, said bell crank will swing in a clockwise direction, thus moving the flange 105 away from the underside of the flange 82 of member 81.

When the foot section 90 of the short fold section 80 is swung from the position of Fig. 3 to the position of Fig. 4 the bell crank 101 will swing upwardly about the pivot pins 99 to bring the arms 100 of said bell cranks substantially in alignment with the arms 97. During such motion, furthermore, the pivot pin 110 moves upwardly while the pivot pin 109 slides to the left end of slot 61 and the link 111 rotates in a counterclockwise direction. Such movement brings the lock pin 109*a* forwardly of the locking lug 74. The fact that the pivot pin 102 is at the left end of the slot 84 prevents the foot section from further rotating relative to the short fold section in a counterclockwise direction and hence said foot section in the position of Fig. 4 has a downward and rearward predetermined pitch so that when a seat cushion is placed thereon, the seat will be pitched for comfortable sitting.

It will be noted, furthermore, that in the position of Fig. 4 the foot section 90 cannot be raised relative to the short fold section 80 because to do so pivot pin 102 would have to ride up in the slot 84. But that cannot be done, because arm 100 of bell crank 101 is in alignment with the arm 97 and said arms cannot be extended. It will be noted that a mattress placed on the extended bed will have its foot end folded upwardly with the foot section of the bed and then said foot end of the mattress will be folded over the intermediate portion of the mattress as the bed is folded from the position of Fig. 3 to the position of Fig. 4, so that two layers of mattress are then between sections 58 and 90 of the bed.

To now complete the final phase of the full collapsing of the bed, the board 120 may be grasped and the front end of the bed pulled up somewhat and then pushed rearwardly, causing the bed to move from the position of Fig. 4 to the fully collapsed position of Fig. 5. During such movement the head section 26 will swing in a clockwise direction about the pivot pins 25. Said head section will swing through an angle of 90° bringing portion 28 from vertical to horizontal position extending rearwardly of the pivot pin 25 and bringing the portion 30 of the head section to a vertical position extending downwardly from the curved portion 29 and bringing the pivot pin 57 which connects the head section with the intermediate or main section down to the lower rear end of the frame 11. During such action the links 52*d* which interconnect the pivot pins 52*c* with the pivot pins 52*a* at the upper ends of the arms 47 will cause said arms to swing in a counterclockwise direction from the position of Fig. 4 to the position of Fig. 5. Such rotation of the arms 47 will cause rotation of the lever 68 about pivot pin 67. Actually the levers 68 rotate in a clock wise direction about pivot pin 67. Members 59 of the intermediate section 58 move to a substantial horizontal position aligned with the pivot pin 57 so as to lie rearwardly of the baseboard 17. Swinging movement of the bell crank 67 causes the links 73 to be pulled to the left thereby causing the intermediate leg 64 to rotate in a clockwise direction about the pivot pins 63. During such movement the links 73 will be moved rearwardly and toward the level of members 58. During such action the forward edges 75 of the lug 74 moving upwardly and rearwardly with the links 73, will engage lock pins 109*a*, and press them towards the front of the slot 61 thereby compressing the folded portions of the mattress which lie between the intermediate or main section 58 and the foot section 90, and preventing, furthermore, the opening up of the bed in its collapsed condition. Thus, when the lugs 74 engage the lock pins 109*a* it is not possible to swing the short fold section relative to the intermediate or main section, nor is it possible to swing the foot section upwardly relative to the short fold section. Swinging of the short fold section clockwise relative to the main or intermediate section in the position of Fig. 5, is prevented by reason of the fact that to do so would require the pivot pin 109 to slide to the right in the slot 61, and this is not possible because of engagement of the lug 74 with the lock pin 109*a*. The foot section cannot be swung upwardly, furthermore, because to do so would require the pivot pin 102 to ride up in the slot 84 and that is not possible because said pivot pin is connected by

the bell crank **101** with the pivot pin **99** disposed directly therebelow.

The springs **55** are stretched during the full collapsing of the bed so as to aid in extending the bed or moving the bed back from the position of Fig. 5 to the position of Fig. 4. In the fully collapsed position the board **120** comes down on the top edge of the board **17.**

During the movement of the bed from the position of Fig. 4 to the position of Fig. 5, the intermediate or main section **58** first tilts downwardly and rearwardly as the leg **64** moves up against the underside of said main section, and it is during this movement of the said main section together with the fold section **80** and the foot section **90** down into the frame **11**, that the lug **74** gradually moves upwardly in back of the lock pin **109***a* and forwardly to lock said pin against the forward end of the slot **61**.

In Fig. 6 there is shown a bed **10***a* which is a modified construction of the bed **10**. The two beds are identical except that in the bed **10***a*, the arm **97** and the bell crank **101** are omitted. The link **111** is replaced by a link **111***a* interconnecting the pins **109** and **102**. Thus the pivot pin **110** is also omitted. Said link **111***a* has a rearward extension **111***b* formed with an inclinded under edge **111***c* adapted to contact the upper surface of the flange **61** when the short fold section **80** is in upright position in alignment with the leg **64**. In such construction the foot section **90** cannot be raised because it would require the pin **102** to ride up in the slot **84**, and that cannot occur because it would require the lever **111***a* to rotate in a counterclockwise direction about the pin **109**. Such counterclockwise rotation is not permitted because of contact with the end edge **111***c* of the extension **111***b* with the flange **61**. Furthermore, the foot section **90** is held in its pitched relationship shown in Fig. 6 and cannot go down further because pin **102** is at the bottom of the slot **84**. However, the foot section together with the short fold section **80** can swing together in a clockwise direction about pivot pin **63**, such action being permitted because the pin **109** can ride forwardly in the slot **61**, and during such movement link **111***a* will rotate in a clockwise direction about pin **109**.

The locking of pin **109***a* by lug **74** in bed **10***a* is the same as in bed **10**.

It will be noted that if the foot and fold sections are swung up together from horizontal position, the fold section can swing up only for a small angle before the extension **111***b* on link **111***a* will contact flange **61** to stop further upward movement of the short fold section, unless the foot section is swung up further alone, in which case the fold section will follow. However, as the foot section is raised the link pivoted thereto and to link **111** tends to hol dthe fold section down.

One of the advantages of the present construction is that the pin **109***a* is locked by the lug **74** before the bed is fully collapsed. The reason this is an advantage is that the fold and foot sections are locked to the intermediate section before the bed is fully collapsed into the frame so as to prevent the bed from striking or damaging the upholstery at the back of the seat or at the lower end of the back of the frame. It is understood, of course, that these frames are upholstered and provided with an upholstered back and an upholstered seat. The mattress is locked firmly between the main section **58** and the foot section **90** before the bed is fully inserted into the frame. As the intermediate leg **64** comes up and the link **73** moves to the left, the lug **74** is moving up without any further movement to the left. At that time the link **73** and the lug **74** are substantially in alignment. Further movement completing the collapsing of the bed into the frame will only result in the lug **74** moving up but no further to the left. If anything, the lug might recede slightly but this construction at any rate permits the full locking of the pin **109***a* before the parts reach the position of Fig. 5 and continued movement of the bed into the frame is permitted as the lug **74** during such continued movement will not move any further to the left but will only move up and perhaps recede a little to the right.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth, or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described our invention in some detail, what we claim as new and desire to protect by Letters Patent of the United States, is:

1. A pull out bed comprising a bed frame, a head section pivoted to the bed frame, an intermediate section hinged to the front end of the head section and formed with a slot, a fold section pivoted to the front end of the intermediate section, a foot section pivoted to the front end of the fold section, a bar pivoted to the frame, a link connecting said bar with the head section, a lever pivoted to the intermediate section and having one arm pivoted to said bar and link at the pivot point for said bar and link, an intermediate leg pivoted to the intermediate section, said lever having a second arm, a second link interconnecting the second arm of the lever with said intermediate leg, said fold section being formed with a longitudinal slot, a third link pivoted to said foot section, a pin on the third link slidable in the slot in the fold section, and a fourth link pivoted at one end to the third link, a pin on the fourth link slidable in the slot in the intermediate section, a locking lug on the second link, and said locking pin on said fourth link adapted to be engaged by the locking lug when the bed is fully collapsed.

2. A pull out bed comprising a frame, a head section pivoted thereto, an intermediate section pivoted to the head section, a fold section pivoted to the intermediate section, a foot section pivoted to said fold section, a bar pivoted to the frame and projecting upwardly and forwardly to a point above the intermediate section when the bed is extended, a first link connecting the upper end of the bar with the head section, a lever pivoted to said intermediate section and having an arm extending upwardly and rearwardly and pivoted to the pivotal connection between said bar and link, said lever having a downwardly and forwardly inclined arm, an intermediate leg pivoted to the pivotal connecton between said intermediate and fold sections, a second link connecting said downwardly and forwardly inclined arm of the lever with said intermediate leg at a point below its pivotal connection to said intermediate and fold sections, said intermediate section being formed with a longitudinal slot, said fold section being formed with a longitudinal slot, a front leg pivoted to the foot section, and extending upwardly to a point above said foot section, a third link pivoted to the fold section at one end and at its other end to the upper end of the front foot, a second bar pivoted to the intermediate leg at its lower end and carrying a pivot at its upper end adapted to be aligned with the pivotal connection between said intermediate leg and said intermediate and fold sections in one position thereof, a bell crank having one arm pivoted to the upper end of the second bar, a pivot pin on the bell crank passing through the slot in the fold section, said bell crank having a downwardly extending arm formed with a flange disposed below said fold section, a fourth link pivoted at one end of the pivot on the bell crank which passes through the slot in the fold section, the other end of said fourth link being pivoted to the foot section, and a fifth link pivoted at one end to the fourth link and at its other end being provided with a pin passing through the slot in the intermediate sec-

tion, and a lock on the second link adapted to engage said last mentioned pin when the bed is moved into fully collapsed condition.

3. A pull out bed comprising a frame, a head section pivoted thereto, an intermediate section pivoted to the head section, a fold section pivoted to said intermediate section, a foot section pivoted to the fold section, a bar pivoted to the frame, a first link connecting the bar with the head section, a lever pivoted to said intermediate section, means to pivotally connect the lever to said bar, an intermediate leg pivoted to said intermediate section, a second link connecting said lever with said intermediate leg, a first pin, means to mount said first pin for sliding movement on said fold section, a third link connecting said first pin with said foot section, a second pin, means to mount said second pin for sliding movement on said intermediate section, a fourth link connecting said second pin with said third link, said foot section being swingable upwardly relative to the fold section, and said fold and foot sections then being swingable together about the front end of the intermediate section to bring the fold section to a posiiton extending upwardly from the front end of the intermediate section and to bring the foot section above said intermediate section, means controlled by said third link to prevent the foot section from being swung upwardly about the fold section when said fold section is in said upward position and to limit the swinging of the foot section relative to the fold section as said foot section is swung upwardly relative to the fold section when the fold section is in horizontal position, and to limit the swinging movement of the fold section about the front end of the intermediate section as said fold section is swung upwardly relative to said intermediate section.

4. A pull out bed comprising a frame, a head section pivoted thereto, an intermediate section pivoted to the head section, a fold section pivoted to said intermediate section, a foot section pivoted to the fold section, a bar pivoted to the frame, a first link connecting the bar with the head section, a lever pivoted to said intermediate section, means to pivotally connect the lever to said bar, an intermediate leg pivoted to said intermediate section, a second link connecting said lever with said intermediate leg, a first pin, means to mount said first pin for sliding movement on said fold section, a third link connecting said first pin with said foot section, a second pin, means to mount said second pin for sliding movement on said intermediate section, a fourth link connecting said second pin with said third link, said foot section being swingable upwardly relative to the fold section, and said fold and foot sections then being swingable together about the front end of the intermediate section to bring the fold section to a position extending upwardly from the front end of the intermediate section and to bring the foot section above said intermediate section, means controlled by said third link to prevent the foot section from being swung upwardly about the fold section when said fold section is in said upward position and to limit the swinging of the foot section relative to the fold section as said foot section is swung upwardly relative to the fold section when the fold section is in horizontal position, and to limit the swinging movement of the fold section about the front end of the intermediate section as said fold section is swung upwardly relative to said intermediate section, and said means including means to limit upward swinging movement of the fold section to right angle position relative to the intermediate section unless the foot section is first swung upwardly relative to the fold section.

5. A pull out bed comprising a frame, a head section pivoted thereto, an intermediate section pivoted to the head section, a fold section pivoted to said intermediate section, a foot section pivoted to the fold section, a bar pivoted to the frame, a first link connecting the bar with the head section, a lever pivoted to said intermediate section, means to pivotally connect the lever to said bar, an intermediate leg pivoted to said intermediate section, a second link connecting said lever with said intermediate leg, a first pin, means to mount said first pin for sliding movement on said fold section, a third link connecting said first pin with said foot section, a second pin, means to mount said second pin for sliding movement on said intermediate section, a fourth link connecting said second pin with said third link, said foot section being swingable upwardly relative to the fold section, and said fold and foot sections then being swingable together about the front end of the intermediate section to bring the fold section to a position extending upwardly from the front end of the intermediate section and to bring the foot section above said intermediate section, means controlled by said third link to prevent the foot section from being swung upwardly about the fold section when said fold section is in said upward position and to limit the swinging of the foot section relative to the fold section as said foot section is swung upwardly relative to the fold section when the fold section is in horizontal position, and to limit the swinging movement of the fold section about the front end of the intermediate section as said fold section is swung upwardly relative to said intermediate section, and means on the second link interengageable with means on the second pin when the bed is fully collapsed to prevent the fold section from being swung away from said intermediate section, and back to alignment with the intermediate section.

6. A pull out bed comprising a frame, a head section pivoted to the frame, an intermediate section hinged to the front end of the head section, a fold section pivoted to the front end of the intermediate section, a foot section pivoted to the front end of the fold section, a bar pivoted to the frame, a first link connecting the bar with the head section, a lever pivoted to the intermediate section, means to pivotally connect the lever to the bar, an intermediate leg pivoted to the intermediate section, a second link connecting said lever with said intermediate leg, said intermediate section being formed with a slot, said fold section being formed with a slot, a first pin slidable in the slot in the fold section, a third link connecting said first pin with said foot section, a second pin slidably mounted in the slot in the intermediate section, a fourth link connecting the second pin with the third link, said fourth link being formed with an extension adapted to contact said intermediate section when the fold section is swung upwardly to a position at right angles to the intermediate section.

7. The combination of claim 6 in combination with a locking lug on the second link, and means on the second pin engageable by said locking lug when the bed is fully collapsed.

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