

Dec. 29, 1970

H. D. BENNETT
WALL BED STRUCTURE

3,550,167

Filed Feb. 28, 1969

4 Sheets-Sheet 1

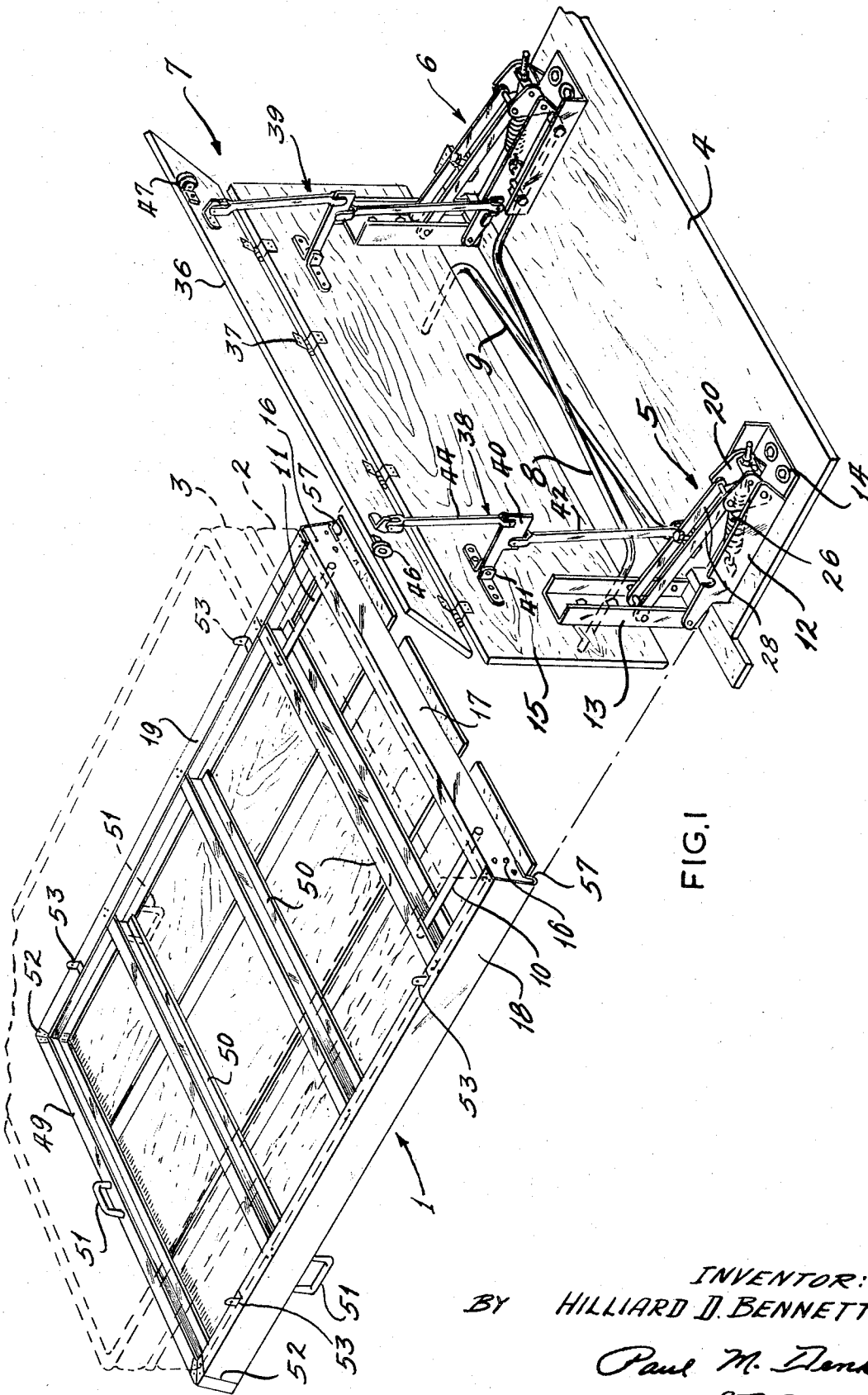


FIG. 1

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4 Sheets-Sheet 2

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WALL BED STRUCTURE

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4 Sheets-Sheet 3

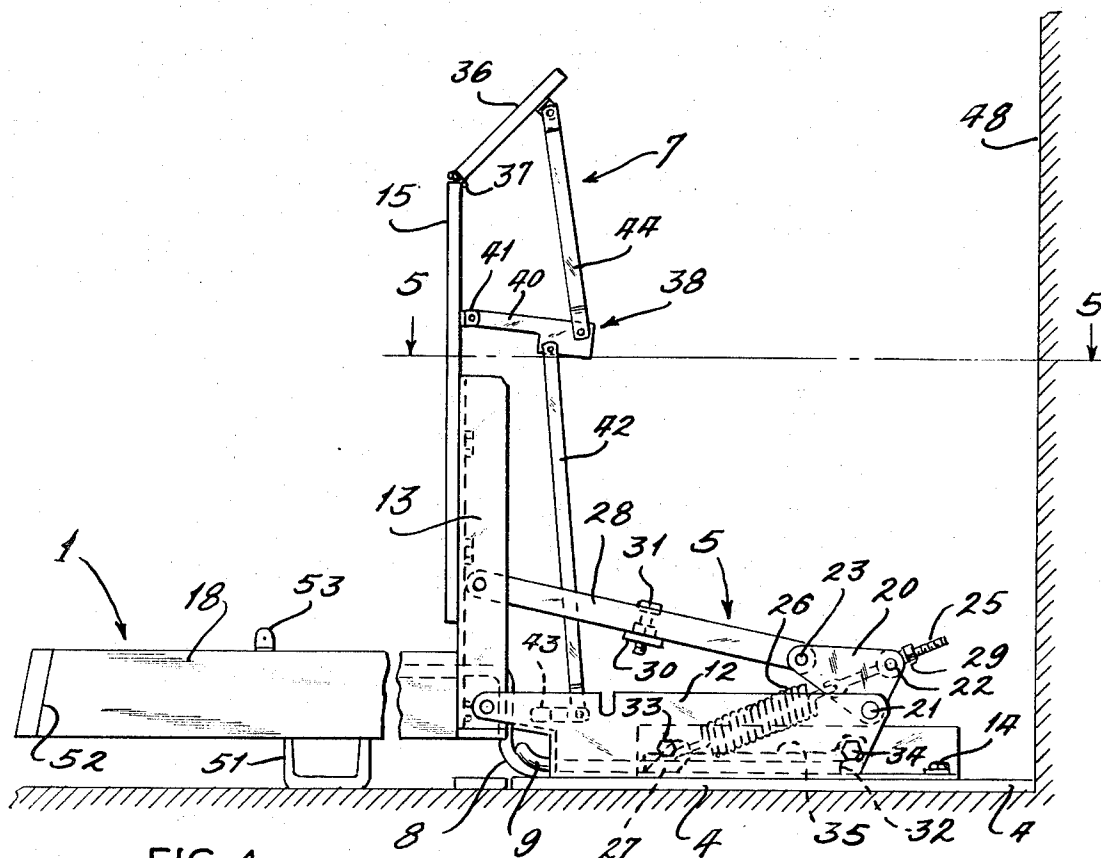


FIG. 4

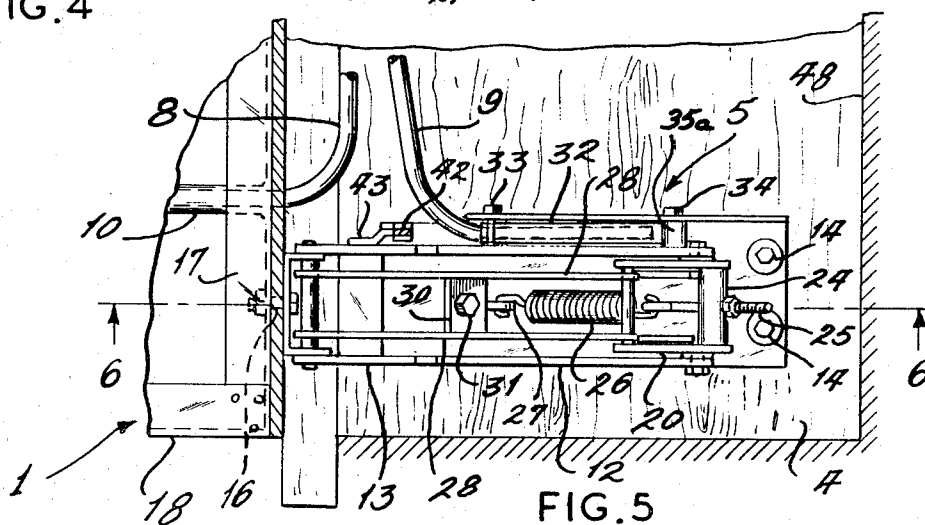


FIG. 5

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4 Sheets-Sheet 4

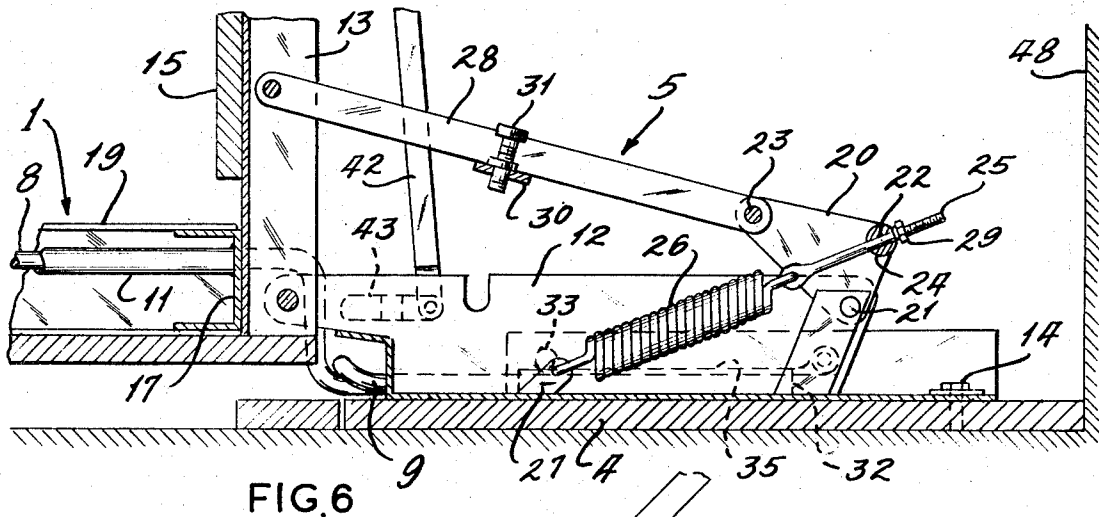


FIG. 6

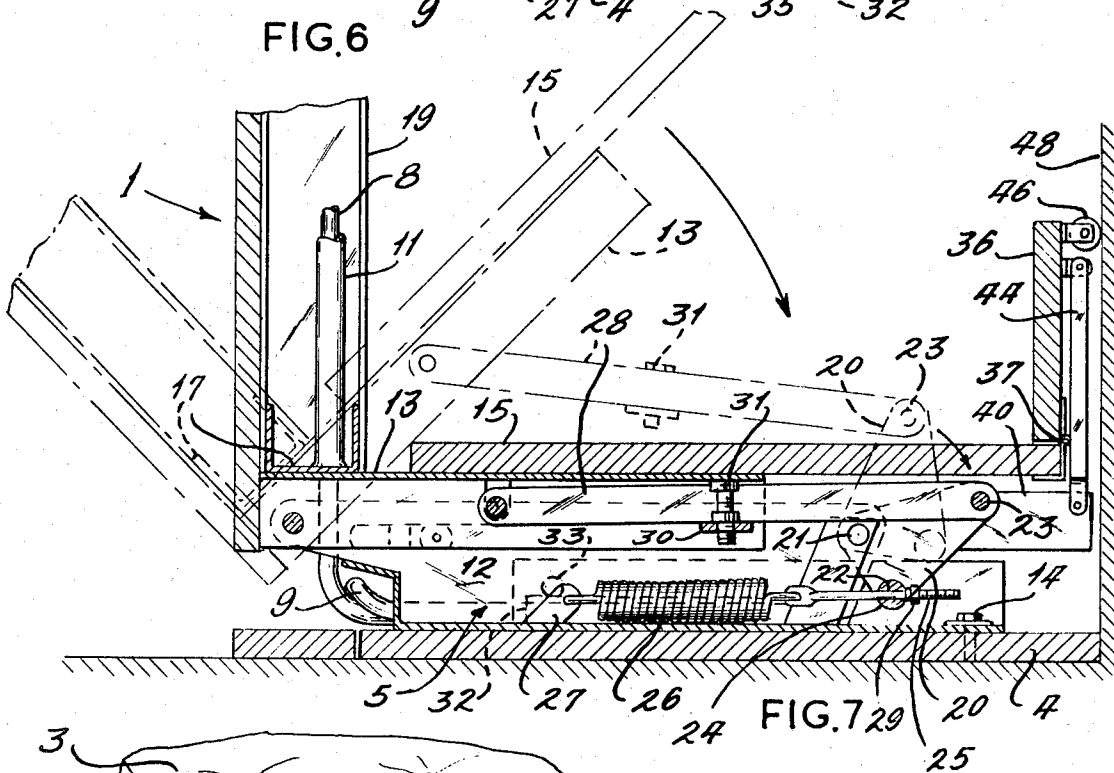


FIG. 7

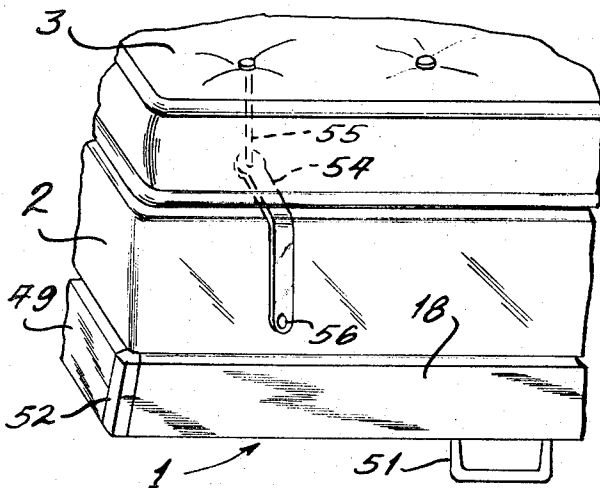


FIG. 8

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2

3,550,167
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U.S. Cl. 5—136

17 Claims

ABSTRACT OF THE DISCLOSURE

In a wall bed structure including a frame structurally connecting to the floor through a pair of hinge means, said frame adaptable for disposition in either a horizontal, functional position, or in an erect, nonoperative position, the frame includes handle means that further function as spacers for the frame upwardly from the floor when in the functional position, and further includes means for mounting the bedding fixedly to the frame. Each hinge means includes a pivotal member which when turned in one direction urges the frame into the functional position, but when turned in the opposite direction assists in moving the frame into the nonoperative position; and a linkage interconnected between the hinge means and the headboard of the frame providing for a simultaneous pivoting of an upper board member upon the first board member of the headboard while the frame moves between functional and nonoperative positions.

CROSS REFERENCE TO RELATED PATENTS

The subject matter of this application relates to the inventions disclosed in my earlier patents upon Wall Bed Structures contained within U.S. Patents, Nos. 3,116,494 and 3,179,956.

BACKGROUND OF THE INVENTION

This invention relates generally to pivotal wall bed structures, and more specifically, relates to a wall bed structure containing hinge means that co-operate with the headboard and the bed frame to facilitate and control the pivoting of the frame between functional and nonoperative positions.

Bed structures including frame portions that can be alternately disposed horizontally for resting upon the floor, or when not in use, pivoted upwardly and against the proximate wall, have long been utilized in residences or other establishments where little space is available but where room can be acquired through shifting of the bed during nonuse. These foldable beds, commonly referred to as the Murphy Bed, and descriptively as a recess type wall bed, usually were constructed including little more than a bed frame structure which pivotally mounted to a brace connecting to the proximate wall.

The inventions disclosed in my previous patents, as aforesaid, improved upon these earlier structures in wall beds, and attempted to simplify the handling process as when the bed was motivated between the functional position as when resting upon the floor, and the nonoperative position when pivoted against the wall. These earlier embodiments provided anchor frames including locking means which interconnected between the floor and the bed frame to provide for controlled pivotal movement of said frame between operating and nonoperating positions. These anchor frames or acceptable in usage, and provide adequate means for mounting a bed frame pivotally to the floor, but minor problems are encountered especially when the bed frame is overpivoted when achieving either horizontal or vertical dispositions, in that the locking means portion of the anchor frames would exceed their usefulness and bind the bed frame fixedly into position so that any attempt to repivot the bed in an opposite direction would encounter obstruction. To over-

come his problem, the present invention incorporates a pivotal member in each hinge means which when properly mounted in conjunction with the accompanying bed frame effectively regulates the pivoting of the frame between functional and nonoperative positions, and effectively precludes the inconvenience of becoming undesirably locked in place during usage. This modification in the hinge structure for pivotally connecting the bed frame to the floor, along with other modifications that enhance the working quality of the entire bed structure will be hereinafter reviewed in the summary of the invention.

It is, therefore, the principal object of this invention to provide a wall bed structure incorporating hinge means which effectively regulate and have a tendency to bias the pivoting of the accompanying bed frame between the non-operating and functional positions.

It is another object of this invention to provide a wall bed structure incorporating hinge means which are continuously under the bias of a tension spring to assist or resist the forces of the major biasing means, such as torsional bars, in raising or lowering the wall bed structure during its manipulation.

It is a further object of this invention to provide a wall bed structure incorporating a headboard comprising two board members which co-operate to furnish an attractively appearing and convenient back rest as when the bed is functionally disposed, but when the bed is erected upright and nonoperative functions to embrace any pillows or other bedding confining the same conveniently in place.

It is an additional object of this invention to provide a wall bed structure including a bed frame useful for mounting a mattress and spring, which is constructed in such a manner as to enhance the appearance of the frame as when it is horizontally disposed, or which will coact to snugly embrace the contiguous wall as when the bed frame is pivoted upwardly when not in use.

These and other objects of this invention will become apparent to those skilled in the art in the light of the following description and accompanying drawings.

SUMMARY OF THE INVENTION

The construction of the wall bed structure of this invention may be summarized as including a frame member useful for mounting bedding such as a mattress, spring, and the like, which frame pivotally mounts through the medium of a pair of hinge means connecting to said frame, or more specifically, also with its headboard, and which hinge means additional mount usually to the floor or ground. The bed frame, since when it is elevated or pivoted upright contiguous with the wall can be inset within an alcove or recess provided in the wall, in appearance is viewed as actually comprising part of the wall due to the continuity of appearance achieved through the insertion of panelling neatly upon the underside of said bed frame, which portion is so grossly exposed when the wall bed structure is pivoted upwardly. The side and end structures of the frame are conveniently canted so as to allow for the snug engagement and close tolerance fitting of the frame within the wall alcove. To further add to the convenience of handling of the bed frame when manipulated between either functional or nonoperative positions, handle means attach to the downward edges and the upper surfaces of the side and end structures, are conveniently disposed for grasping, and generally ease the process of manually pivoting the bed structure. Furthermore, the handle means attached to the underside of the side structures additionally act in the capacity of spacers so as to maintain the bed structure slightly displaced above the floor when maintained in the functional position.

3

Each of the hinge means that is provided for controlling the pivotal movement of the frame is comprised of a stationary member that mounts to the floor, and a movable member pivotally connected to the stationary member, and which also attaches to the upper end of the frame that joins with the headboard to accurately regulate the degree of pivot of the entire wall bed structure. The hinge means further incorporates a pivotal member which is constructed to act theoretically in the nature of a cell crank, having three distinct areas of connection that provide for attachment of the various components of the hinge that regulate the pivoting operation. The pivotal member connects with the stationary member, and additionally has attached thereto a link which further connects to the movable member, and a spring or other biasing member attaches to the precisely located third area of connection the pivotal member attaching at its other end to the stationary member. In function, the bed frame is normally biased into a vertical and nonoperative position by means of any biasing method, such as through the use of normally contorted torsion bars, but that through the combination of the added weight of the bed mattress and spring upon the frame, in addition to the biasing of the spring connecting to the pivotal member as associated with each hinge means, significantly counteracts the unidirectional forces of the torsional bars, and provides a unique equilibrium such that an individual of average size or strength can easily pivot the entire bed structure into its horizontal or vertical positions.

A further attribute of this invention includes a headboard which comprises part of the bed frame structure, and which is actually constructed in two parts having a first board member which is fixedly secured to the movable member of the hinge means, and including an upper board member which pivotally mounts upon the upper marginal edge of the first board member. A linkage interconnects between each of the hinge means and the headboard so that as the bed frame shifts between functional and nonoperative positions, the linkage induces distinct but simultaneous pivoting of the upper board member upon said first board member. The reasons for acquiring the various dispositions of the upper board member as achieved through its individual pivoting with respect to the remaining headboard is that as the bed structure and frame is disposed horizontally and in a functional position, the upper board member will slightly slant rearwardly, providing an inclined surface which may be used as a back rest for any person sitting upon the adjacent bed. Furthermore, as the bed frame is pivoted upwardly into the nonoperative position, this upper board member will pivot forwardly upon the fixed board member and will eventually come into contact and embrace any pillow or other bedding setting upon the proximate bed frame. In this manner, the aforesaid pillows, mattress, or the like, are embraced fixed in place, and will not become loose or dropped upon the floor during the substantial manipulation of the wall bed structure.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, FIG. 1 discloses a slightly exploded partial perspective view of the wall bed structure showing the hinge means and headboard separate from the bed frame and its mounted bedding (shown in phantom line);

FIG. 2 is a side view of the wall bed structure shown disposed vertically and in the nonoperative position;

FIG. 3 is a partial sectional view taken along the line 3—3 of FIG. 2, but with the bedding removed;

FIG. 4 is a side view of the left hinge means fully extended providing for functional disposition of the bed frame and headboard;

FIG. 5 is a partial top sectional view taken along the line 5—5 of FIG. 4;

FIG. 6 is a longitudinal sectional view of the left hinge means taken along the line 6—6 of FIG. 5;

FIG. 7 is a sectional view of the left hinge means simi-

4

larly as disclosed in FIG. 6, and also showing the hinge means including its connecting headboard and bed frame being pivoted clockwise into the nonoperative position; and

FIG. 8 is a fragmentary view of one corner of the bed frame and also showing its mounted bedding, including the means for securing the mattress to the box spring.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, for one illustrative embodiment of the wall bed structure of this invention, reference numeral 1 generally depicts the bed frame of this invention, usually being horizontally and functionally disposed for mounting the bedding, such as a box spring 2 and a mattress 3 (phantom lines), and providing for comforting of the individual making use of this wall bed structure. Furnishing the secure mounting of this wall bed structure to the ground, or other foundation, as at 4, are a pair of left and right disposed hinge means, 5 and 6, which are rigidly secured to the headboard 7, and also to the proximate end of the bed frame 1, providing an integral assembly in a wall bed structure that may be pivoted between a horizontally aligned and functional position, or pivoted upwardly into a vertical location and nonoperative position; the functional arrangement of this wall bed structure being more aptly shown in the FIG. 1.

Interconnecting between the bed frame 1 and the hinge means 5 and 6 are a pair of torsion bars 8 and 9, which each mount at one end respectively to the proximate hinge means, while at their other ends insert within and are confined by the pair of support sleeves 10 and 11 that are located structurally permanent within the framework of said bed frame. These torsion bars furnish the desired continuous biasing that sustains the urging of the bed frame into the vertical position so that when it is necessary for one to raise the wall bed structure out of the way after usage, the combined forces of these torsion bars greatly facilitates and eases this process. Although torsion bars are herein shown as the means for biasing the wall bed structure into the nonoperative position, it is just as likely that other type of spring or prestressed resilient device arrangement could be incorporated into this wall bed structure so as to provide this desired continuous force for urging the bed frame vertical.

Each of the hinge means 5 and 6 of this invention are identical in structure, with the exception that each hinge means is constructed as a side mirror image of the other. For this reason, only one of the hinge means, namely hinge means 5, will be described in detail in its form of construction and principle of operation, it being understood that the remaining hinge means functions similarly in its use in this invention. Hinge means 5, which is also shown in its various adjusted positions in FIGS. 4 through 7, comprises a stationary member 12 which has pivotally connected to it a movable member 13. The stationary member 12, as shown, is permanently affixed by means of a plurality of bolts, as at 14, to the foundation 4, and the movable member 13 is rigidly affixed as at its upper end to a first board member 15 of the headboard assembly 7, while proximate its pivotal connection to the stationary member, it attaches by means of a series of bolts tightened through apertures, as at 16, to the bracket 17 interconnecting between and attaching to the side structures 18 and 19 of the bed frame 1.

Each hinge means has pivotally mounted proximate its back end a pivotal member 20 which has integrally formed three connecting portions 21, 22 and 23, with the connecting portion 21 providing the point of pivotal connection of said member to the stationary member. A pin 24 pivotally connects to the connecting portion 22 of the pivotal member, and adjustably attaching to said pin is one end 25 of a tension spring 26, while said spring at its other end is secured to an eyelet 27 which is welded permanently to the base of the stationary member. The

5

remaining connecting portion 23 has pivotally connecting to it a link 28, which also connects at its other end pivotally to approximately the mid-point of the movable member 13. This pivotal member functions somewhat in comparison to the operation of a bell crank, wherein one portion of the crank pivotally mounts substantially stationary, while a force is directed upon another portion of the crank to effect movement of a remote member that pivotally connects to a third part of said crank.

By referring to FIGS. 6 and 7, the various stages of operation of the hinge means can be observed. As the wall bed structure, and particularly its bed frame 1, is disposed in the functional position, the longitudinal alignment of the tension spring 26 will be substantially above the pivotal connecting portion 21 of the pivotal member 20, and therefore, the spring being under tension has the tendency to counteract adverse to the forces of the torsional bars normally urging the bed into the nonoperative position, and thereby assists in retaining the movable member 13 through the agency of the link 28 in holding the bed frame in this horizontal and functional position. Accordingly, it can be said that the spring tends to continuously urge the movable member into counterclockwise movement. On the other hand, by referring specifically to FIG. 7, it can be seen that as the bed frame 1 pivots upwardly into the vertical and nonoperative position, the longitudinal alignment of the tension spring 26 passes below the point of pivotal connection 21, and in so doing commences to urge the pivotal member 20 to rotate in an opposite or clockwise direction therein in effect pulling upon the link 28 for effecting a pivoting of its connecting movable member 13 eventually into close proximity lying upon the stationary member 12 thereby retaining the bed frame 1 in a vertical and nonoperative position. It should be remarked that the tension spring 26, by itself, does not necessarily impart sufficient force to overcome the bias of the much stronger torsion bars, as when the said frame is maintained in the functional position, but with the added weight provided upon the bed frame due to the addition of the bedding such as the box spring and mattress, as aforesaid, this combination of weight and spring force is just slightly sufficient to over-equalize the force of the torsion bars. In any event, the tension on the spring 26 may be increased or decreased, as desired, so that this equalization of forces may be readily achieved, and adjustment may be made by regulating the nut 29 provided upon the threaded end 25 of the spring. Significantly, if when the bed frame including all of its bedding is rotated into the functional position, and the force of the torsion bars yet slightly elevates or pivots the foot portion of the bed slightly above the ground, the nut 29 on tension spring 26 may be slightly adjusted and tightened so as to create a slightly additional tension and force the necessary to urge the bed back down to remain flush with the ground, thereby overcoming this slightly excessive force exerted by the torsion bars upon said bed frame.

One of the drawbacks associated with the hinge or pivotal members of the prior wall bed structures was the encountering of the problem of its becoming locked or fixed in place particularly when the wall bed structure had been pivoted too far vertically or horizontally. The same problem could be inherent in the operation of the hinge means of this invention if when the wall bed structure was fully pivoted into, for example, the nonoperative position, the connecting portion 23 of the pivotal member mounting the link 28 should ever pivot to far rearwardly and below the pivotal connecting portion 21. If such ever occurred, when the wall bed structure was grasped and attempted to be pulled or pivoted towards a horizontal position, the link 28 and the pivotal member 20 would become locked in place, and be precluded from rotating in the required counterclockwise direction. To rectify this problem, the link 28 of each hinge means has attached thereto a bracket 30, and a projecting member such as the adjustment nut 31 threadedly engages to this bracket.

6

Thus, by adjusting of this nut 31, preferably by elevating it with respect to the link, as the movable member 13 pivots into closeness towards and upon the stationary member 12, the head of the nut 31 will eventually contact the base of said movable member and prevent a further pivoting. Desirably, this occurs when the wall bed structure has been pivoted fully vertically and flush with the wall, but before the member 20 pivots too far rearwardly. The desirable position for the member 20 to maintain when the wall bed structure is fully elevated is as shown in the solid line drawing in FIG. 7.

Another feature of the hinge means of this invention is the provision of the means for retention of the proximate ends of the torsion bars. Formed laterally to the inner side of each stationary member is an inverted channel-like portion 32 (see FIG. 5) into which the end of the associated torsion bar rests. A pair of pins 33 and 34 are located through the upper marginal edges of the channel and hold the torsion bar end down. To assist in this process a plate 35 is disposed for placement also within this channel, and pivotally mounts integrally with a sleeve 35a that is pivotally secured upon the pin 34. Since the end of the torsion bar is clear of the pin 34, its insertion into the channel is simplified by removal of the pin 33, a pivoting upward of the plate 35, and then the placement of the bar end. Subsequently, the plate may be pivoted downward upon the bar, and the pin 33 tightened above, thereby fixing the torsion bar in place. This greatly eases the handling of the torsion bars, especially during their installation when they must be forced under pressure into engagement with the hinge means.

The headboard assembly 7, and more specifically, its first board member 15, has been previously described as being rigidly fixed to the movable members of each hinge means. Pivotally mounted to the upper marginal edge of the first board member is an upper board member 36 being fastened by means of the plurality of hinges, as at 37. This upper board member is disposed for further pivoting with respect to the first board member, while said first board member itself pivots during movement of the wall bed structure between functional and nonoperative positions. To achieve such, linkage 38 and 39 interconnects between the respective hinge members and the headboard assembly. Each linkage comprises a lever 40 which is pivotally connected to the bracket 41 secured to the first board member, while the other end of said lever pivotally mounts with a first link 42 which pivotally connects at its other end to a mount 43 formed on the inner side of the stationary member. A second link 44 pivotally connects with said lever at one end, and pivotally mounts at its other end to the upward portion of the upper board member 36. Thus, in viewing this aspect of the invention in FIG. 4, as the wall bed structure is maintained functional, the first board member 15 is substantially vertically disposed, while the upper board member 36 remains slightly rearwardly inclined, and therein may be used as a back rest or the like by an occupant of the bed. On the other hand, as the wall bed structure pivots from the functional to the non-operative position, this upper board member 36 is urged by means of the linkages 38 and 39 to pivot counterclockwise, and as the bed frame achieves its desired vertical disposition, the upper board member itself will have become substantially oriented perpendicular with respect to the first board member, and in that manner act as a means for confining any of the bedding, such as the pillows 45 retaining them in place. See also FIG. 2. To provide adequate clearance for the operation of the linkages 38 and 39 during pivoting of the wall bed structure from the functional to the nonoperative positions, a pair of wheels 46 and 47 are rotatably mounted proximate the upward marginal edges of the upper board member 36, and in this manner are disposed for eventual rolling engagement with the contiguous wall 48 as when the bed achieves its vertical orientation.

The bed frame 1, as previously described, comprises a pair of side structures 18 and 19, which are interconnected at one end by means of the bracket 17, but are also joined at their opposite ends by means of the end structure 49. It is to be particularly noted that both the side and end structures are formed slightly canted along their side surfaces so that as the wall bed structure, and more particularly, the bed frame, is pivoted upwardly into the nonoperative position, the frame will have a tendency to properly seat within the wall recess as when the wall bed structure is the type which disappears flush into the wall when not in use. A series of stringers 50 are provided for reinforcing the bed frame 1, and interconnected between the front stringer 50 and the bracket 17 are the support sleeves 10 and 11 into which one end of the torsion bars are inserted during assembly and use of the wall bed structure. Connecting to the upper and lower edges of the side and end structures are a plurality of handles 51, with the handle connecting to the end structure being convenient for grasping as when it is desired to shift the bed frame from the horizontal to the vertical level; the remaining handles mounting to the underside of the side structures 18 and 19 being conveniently disposed for providing the means for spacing the bed frame from the floor as when the wall bed structure is maintained in the functional position, or when the wall bed structure is in a nonoperative position and flush with the wall, these handles 51 will project slightly outwardly, and may be conveniently grasped for pivoting the bed downwardly into the usable position. It is to be noted that the adjoining ends of the end and side structures are provided with cover plates 52 which are provided flush upon and overlap the sharp edges of these structures. Not only does this add to the safety of the bed frame, but it also enhances its decorative appearance. Mounted to the upper edge of the side structures are a series of brackets 53 which are useful for holding a fastener, screw, or the like, which may be permanently affixed to the sides of the box spring 2, thereby retaining it in place. To further assist in the retention of the bedding to the bed frame, and by further referring to FIG. 8, a strap 54 is permanently affixed to the downward button of the mattress tuft 55, with said strap disclosed for overlapping the side of the box spring 2, and being connected by means of a clasp or snap 56 to sides of said spring. Through the use of a plurality of these straps 54, the mattress 3 may be conveniently secured to the box spring, and not shift or come loose during the frequent pivoting of the wall bed structure between functional and nonoperative positions.

It is further noted, as previously described, that when the wall bed structure is maintained in the nonoperative position, in many instances, it may be disposed flush with the adjacent wall being inserted within a recess. To add to the appearance of the entire assembly, it may be desirable to utilize the same type of panelling upon the downward side of the bed frame 1 as is used in panelling the said wall. Furthermore, to make the bed frame blend with the adjacent wall, the panelling may be inset and secured upon ledges, as shown at 57, provided integrally upon the downward edges of the side and end structure of bed frame. In this manner, the panelling may be raised slightly upwardly from the extreme downward edge of the side structures, or at least maintain flush alignment with the same, so that when the wall bed structure is pivoted vertically and into the wall, the panelling will maintain the same plane or alignment with the panelling of the abutting or adjacent wall.

Numerous variations in the construction of the wall bed structure of this invention, within the scope of the appended claims, will occur to those skilled in the art in light of the foregoing disclosure. The basic description provided herein is merely illustrative.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. In combination with a wall bed structure of the type

including a frame adaptable for disposition in a horizontally aligned and functional position, or capable of pivoting upwardly from the floor and into an erect and nonoperative position contiguous with the surface with the proximate wall, the frame of said structure provided for mounting of bedding, and including a headboard, means cooperating with said frame for continuously urging it into the nonoperative position, the improvement which comprises, hinge means interconnecting between said frame and the floor and providing for the controlled pivotal movement of said frame, said hinge means including a stationary member and a movable member, said stationary member disposed for mounting permanently to the floor or the like, and said movable member pivotally connecting to said stationary member and fixed to said frame regulating the pivotal movement of said frame, bell crank means pivotally connecting with said stationary member, a link pivotally connecting at one end to said movable member and pivotally attaching at its other end to said bell crank means, and means biasing said bell crank means wherein the select pivoting of said bell crank means in one direction urges said movable member to pivot the frame into the functional position, and upon pivoting of said bell crank means in the opposite direction said biasing means urging said frame into an erect and nonoperative position.

2. The invention of claim 1 including a projecting member connecting to said link and extending substantially perpendicular with respect to its length thereof, said projecting member being disposed for contacting with the movable member to thereby check further upward pivoting of said frame as when it achieves the erect and nonoperative position.

3. The invention of claim 1 wherein the headboard of the frame comprises a pair of board members, the first board member being fixedly secured to the movable member of the hinge means and disposed for simultaneous pivotal movement therewith, an upper board member being pivotally mounted to the upward edge of said first board member, and a linkage interconnecting between the hinge means and the headboard and inducing select pivoting of said upper board member separate from but simultaneously with the controlled pivotal movement of said frame between functional and nonoperative positions.

4. The invention of claim 1 wherein the biasing means comprises a tension spring, said spring connecting between the bell crank means and the stationary member and normally urging said bell crank means to pivot in forward or rearward movement with respect to the connecting stationary member.

5. The invention of claim 2 wherein the projecting member is adjustable thereby providing for a fine regulating of the limit of the upward pivoting of said frame.

6. The invention of claim 4 wherein the linkage comprises a lever pivotally mounted at an end to the first board member, a first link pivotally attaching at one end to the lever and pivotally connecting at the other end to the stationary member, a second link pivotally attaching at one end to the lever and pivotally connecting at the other end to the upper board member, whereby through the cooperation of said lever and links the upper board member selectively pivots upon the first board member as the frame and integral first board member moves between functional and nonoperative positions.

7. The invention of claim 4 including a wheel attaching proximate the top marginal edge of said upper board member and disposed for rolling engagement with the surface of the proximate wall as when the frame pivots upwardly towards an erect and nonoperative position.

8. The invention of claim 7 wherein said tension spring is adjustable so as to provide for regulating the degree of tension exerted by said spring upon the connecting bell crank means.

9. A wall bed structure including a frame for use in combination with the hinge means providing for pivoting

of said frame into horizontal alignment and functional positioning, or capable of pivoting upwardly from the floor and into an erect and nonoperative position contiguous with the surface of the proximate wall, the frame of said structure provided for mounting of bedding, and including a headboard, the improvement which comprises, the frame including a pair of side structures and an end structure, said end structure extending the full width of the frame and mating with the contiguous ends of the side structures, a bracket interconnecting between and attaching to the opposite ends of said side structures, said headboard fixed with said bracket, said hinge means including a stationary member and a movable member, said stationary member disposed for mounting permanently to the floor, and said movable member pivotally connecting to said stationary member and being fixed to said frame and integral headboard thereby controlling the pivotal movement of said frame, said side and end structures canted downwardly and outwardly as when said frame is disposed in the functional position, said canted structures providing for snug engagement of the frame in conjunction with the contiguous wall when said frame is disposed in the nonoperative position.

10. The invention of claim 9 wherein the side and end structures are provided with marginal ledges raised slightly above and being disposed upwardly of the downward edges of said side and end structures when the frame is disposed in a functional position, panelling having dimensions providing for a close fitting and securement within said frame seated upon said marginal ledges and furnishing continuity of appearance between the wall bed structure and the proximate wall when the frame is disposed erect and in the nonoperative position.

11. The invention of claim 9 including cover plates incasing the mating and contiguous ends of the side structures at the location of their connection with the end structure.

12. The invention of claim 9 including handle means connecting to the downward edges of the side structures, said handle means disposed for ease of grasping to facilitate the downward pivoting of the frame into a functional position, said handle means disposed for supporting the frame spacedly upwardly from the floor when it is aligned in the functional position.

13. The invention of claim 9 including a plurality of clips projecting upwardly from the side structures of the frame, said clips disposed for engagement securely to the spring of the bedding, a plurality of straps attaching to an underside of the mattress of the bedding, said straps being disposed for partially embracing the sides of said spring of the bedding and being removably attached thereto fixing the said bedding securely to the frame.

14. In combination with a wall bed structure of the type including a frame adaptable for disposition in a horizontally aligned and functional position, or capable of pivoting upwardly from the floor and into an erect and nonoperative position contiguous with the surface of a proximate wall, the frame of said structure provided for mounting bedding, and including a headboard, means cooperating with said frame for continuously urging it into the nonoperative position, the improvement which comprises, hinge means interconnecting between said frame and the floor and providing for the controlled pivotal movement of said frame, said hinge means including a stationary member and a movable member, said stationary member disposed for mounting permanently to the floor, and said movable member pivotally connecting proximate the end of said stationary member and

fixed to said frame controlling the pivotal movement of said frame, a pivotal member having a plurality of spaced apart connecting portions pivotally attaching at a first connecting portion proximate to the other end of said stationary member, a link pivotally connecting at one end to said movable member and pivotally attaching at its other end to another of the connecting portions of said pivotal member, a tension spring connecting at one end to the stationary member and attaching at its other end to the remaining connecting portion of the pivotal member, said pivotal member disposed for limited forward or rearward movement with respect to the stationary member when subjected to the bias of said tension spring, whereby when the longitudinal alignment of said tension spring is located upwardly of the connection of said pivotal member to the stationary member the movable member and frame are urged into the horizontally aligned and functional position, and when the longitudinal alignment of said tension spring is located downwardly of the connection of said pivotal member to the stationary member, the movable member and frame are urged into the erect and nonoperative position.

15. The invention of claim 14 including a retainer formed integral laterally with each of the stationary members and providing for securing the proximate ends of the means continuously urging the frame into the nonoperative position.

16. The invention of claim 15 wherein the retainer of each stationary member is formed as an inverted channel like portion, a pair of retention pins disposed across and proximate the upper marginal edges of the channel like portions, a sleeve pivotally mounted upon one of said pins, the other pin being removable, a plate integrally secured for pivotal movement in conjunction with said sleeve and disposed for insertion within the channel, said removable pin disposed for confining said plate within said channel, and said plate and pins provided for retaining the proximate end of the means continuously urging the frame into the nonoperative position.

17. In combination with a wall bed structure of the type including a frame pivotally mounted for movements from a horizontally aligned, functional position to an erect, non-operative position, and means cooperating with said frame and a fixed base for continuously urging said frame into the non-operative position, the improvement which comprises a bell crank pivotally connected to a link, said bell crank and link being pivotally connected between said frame and said fixed base, and biasing means connected between said bell crank and said fixed base, said biasing means being positioned relative to said bell crank to urge said frame into the functional position upon the pivoting of said bell crank in one direction and to urge said frame into the non-operative position upon the pivoting of said bell crank in an opposite direction.

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5-164