Dec. 20, 1966 W. V. GERTH 3,292,188

CHESTERFIELD BED MECHANISMS AND LOCKING MEANS THEREFOR

Filed Nov. 30, 1964 3 Sheets-Sheet 1

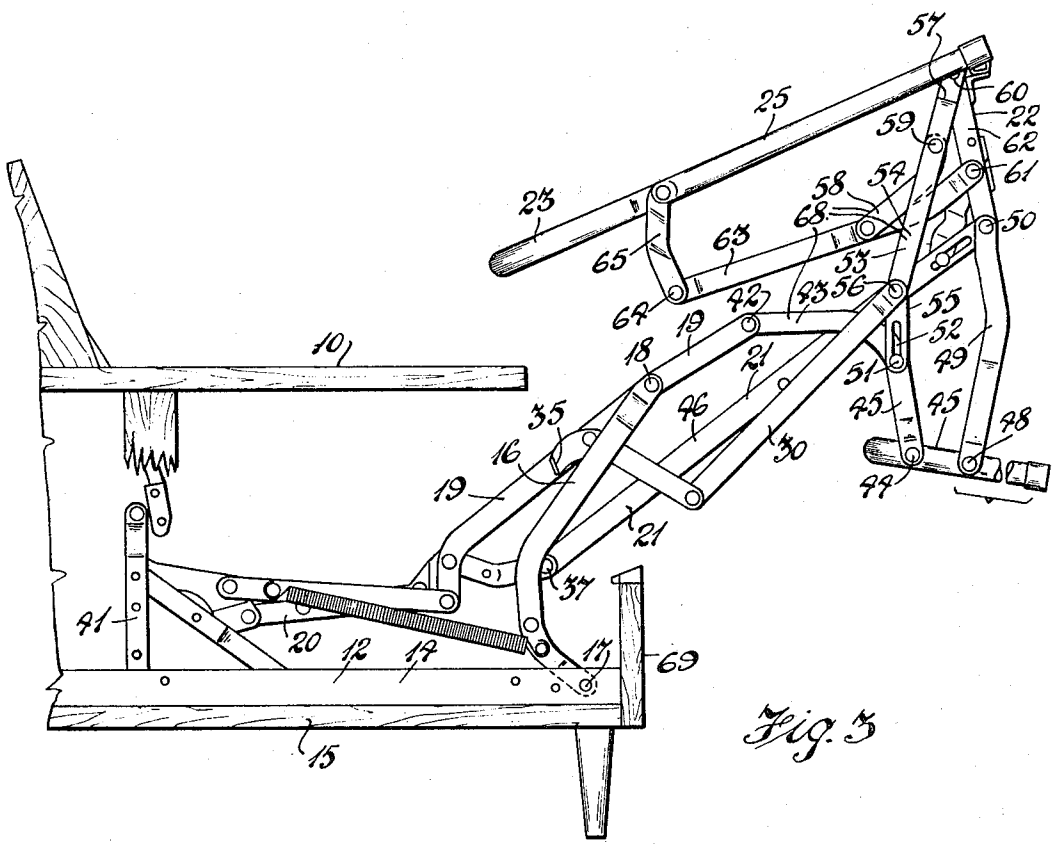


Fig. 3

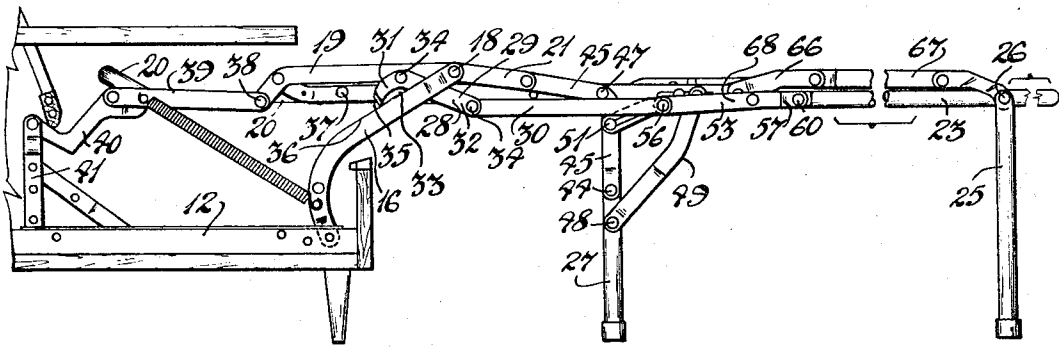


Fig. 1

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CHESTERFIELD BED MECHANISMS AND LOCKING MEANS THEREFOR

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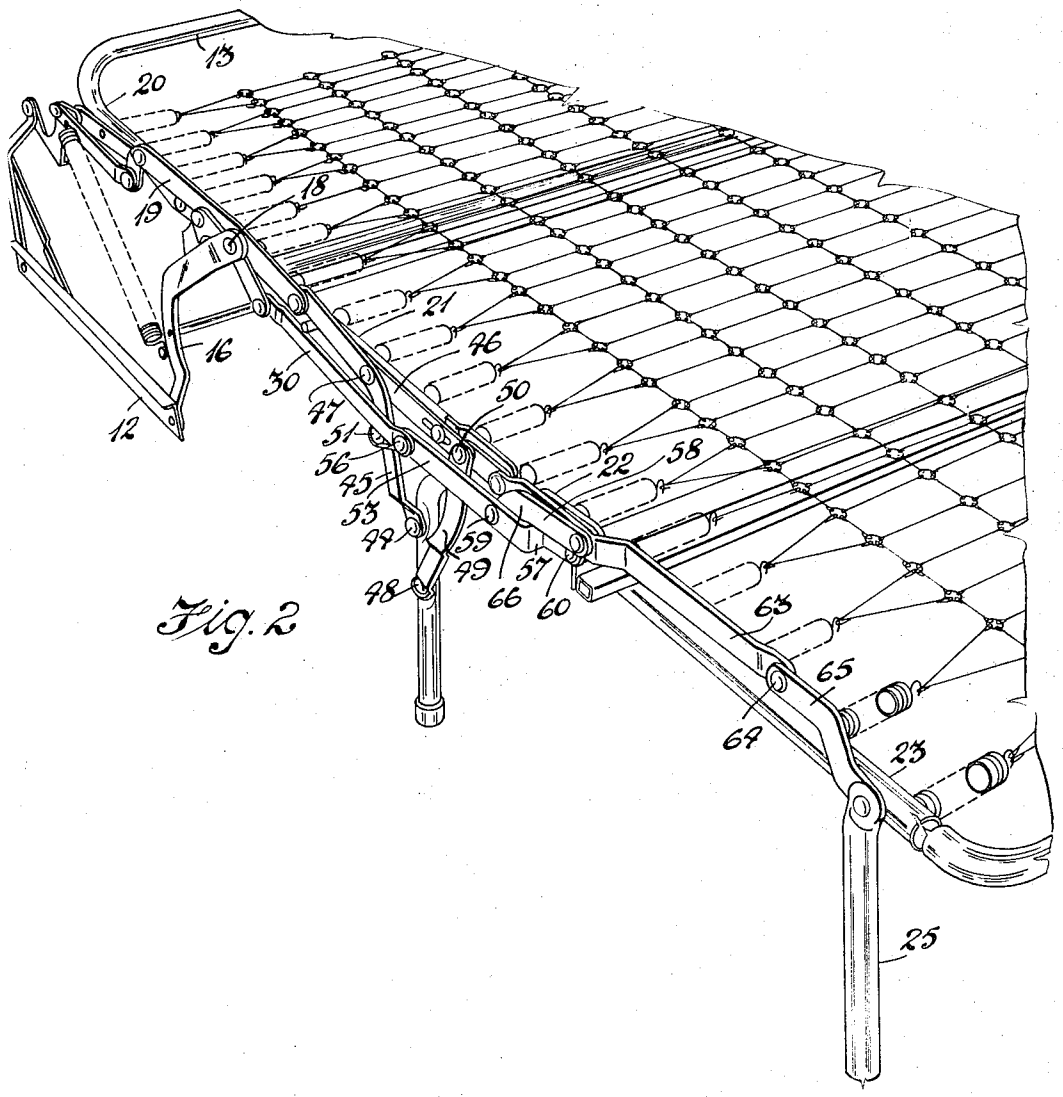


Fig. 2

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CHESTERFIELD BED MECHANISMS AND LOCKING MEANS THEREFOR

Filed Nov. 30, 1964 3 Sheets-Sheet 3

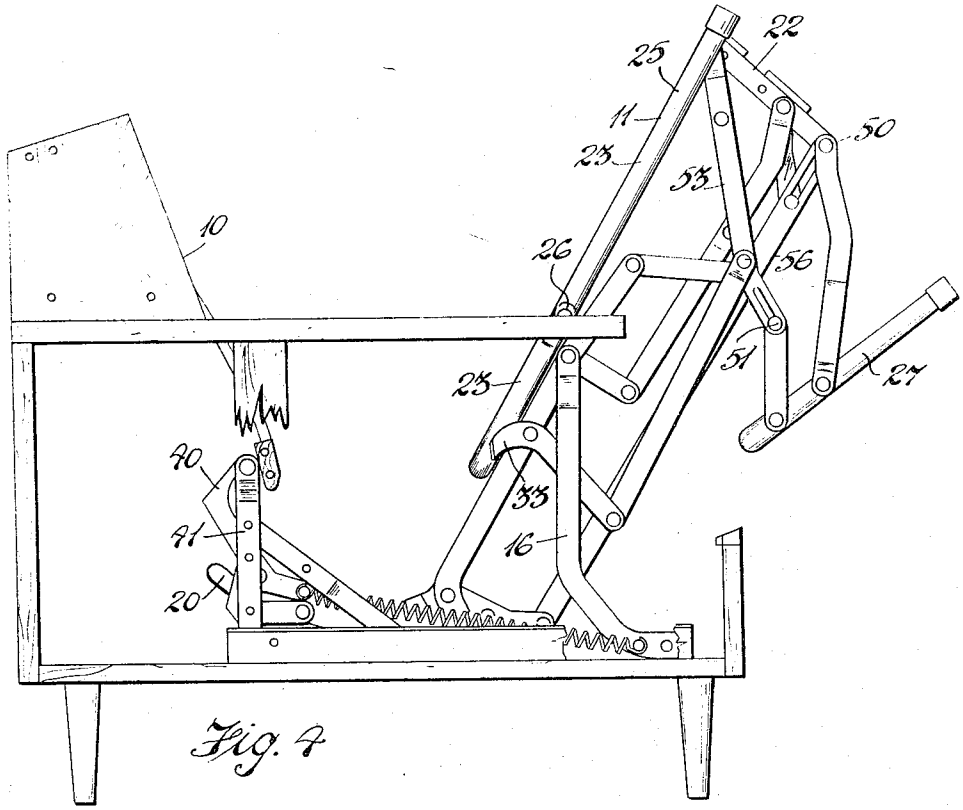


Fig. 4

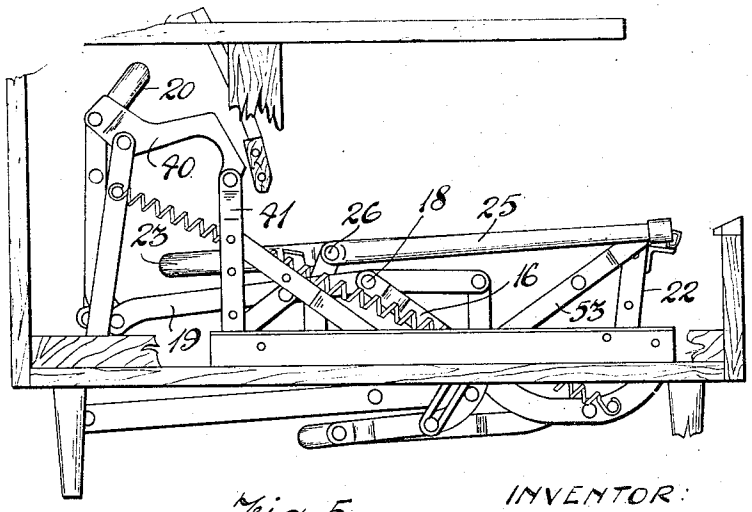


Fig. 5

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3,292,188

CHESTERFIELD BED MECHANISMS AND LOCKING MEANS THEREFOR

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Filed Nov. 30, 1964, Ser. No. 414,617
17 Claims. (Cl. 5—13)

The present invention relates to chesterfield bed mechanisms of the kind which include a serially connected, multi-section foldable frame designed, in its fully folded condition to be accommodated within a chesterfield sofa, and it is an object of the present invention to provide, in combination with such a mechanism a head lock, more specifically a head locking means or assembly, by which is meant one which will lock at the head end section of said frame against being rotated downwardly, and the opposite end legs lifted off the floor, when one or two people are sitting up upon the head end, as they might be if viewing TV or eating in bed or the like.

By the expressions "lock" and "locking" is meant means other than those specifically exemplified herein, but within the broad inventive concept hereinafter to be disclosed. Such inventive concept might for instance be modified to lock the head or head end section in the sense that it would be maintained in the horizontal in all but very exceptional circumstances but would permit yielding of the head section under a sufficiently heavy load. In the specific best exemplification of the present inventive concept, which is herein disclosed, the locking assembly produces a bound system as regards that portion of the folding frame when in bed position which is upon the head side of the upper pivot points of the pair of main supporting levers as will hereinafter be more clearly apparent. As a result, excessive loading on the head end could not cause rotation or downward movement of the head section without first resulting in fracture at some point.

Another improvement which is incorporated in the chesterfield bed mechanism about to be described resides in the provision of the combination of a conspicuously simple locking assembly (especially when the same is a positive or "bound-system" locking assembly) for the head section, and a folding frame which is of standard mattress height, by which expression of course is meant the height of a permanent bedroom type, non-convertible bedstead. In this connection it should be explained that the chesterfield bed buying public is particularly interested in a chesterfield bed mechanism which will open out to standard height rather than being low down. Hitherto, a chesterfield bed was provided with legs of ten to twelve inches in length. The end legs of the present folding frame are in the order of sixteen inches.

Another advantage which resides in the present invention consists of the achievement of the objects and advantages aforesaid in combination with a chesterfield which is of handsome appearance and highly comfortable, wherein no indication is apparent (except perhaps to those in the trade) that the chesterfield is a convertible piece of furniture. This includes the fact that the front rail and front show-wood need not be designed so that it will, of necessity, have to hinge downwardly upon the opening out and folding of the bed mechanism. By contrast such front rail or show-wood may be permanently fixed as a result of which decorative treatment may extend from one extremity of the front of the chesterfield to the other with no vertical break at the junction of the arms and seat which of course is necessary when the front rail has to hinge downwardly for the opening and folding of the bed mechanism as aforesaid.

A further, and most particular advantage however, of the herein described chesterfield bed mechanism resides in the combination of a locking assembly (and again, preferably a positive locking assembly as above defined), in a foldable frame of standard mattress height when in bed position, wherein, as a feature of the combination in this paragraph set forth. the mechanism is conspicuously easy to fold and open into bed position. Such ease is accomplished in a large measure by pivotally connecting the folding frame to the main support levers well forward, in other words well toward the foot end of the bed, and substantially further in this direction that has hitherto been practicable. As a result of this, together with the provision of an intermediate leg pair which is jointed to jack-knife and straighten out at appropriate points, a particularly easy, "auto-assisting" glide pattern is achieved in the folding and unfolding operation. This glide pattern is the result of ingeniously ordered movements and quantities of movement as between the various sections in the folding and unfolding operation, and all with reference to the main pivoting action of the folding frame with respect to the supporting chesterfield frame so that a very considerable measure of continuous dynamic balance is achieved throughout the whole range of movement. Due to this, the opening and closing of such a bed provides a kineasthetically satisfying operation—which is important in a convertible piece of furniture of this kind in the sense that one does not wish to feel a reluctance towards either opening it into bed position at night when one is tired or not feeling well for example, nor reluctant to fold it again at the time when that should be done for good housekeeping.

A still further advantage of the present invention resides in the economy of components employed having regard to the complexity of the operations involved when carried out so as to meet the standards of comfort and efficiency hereinabove suggested. Not only are such components fewer than those required in manufacturing practices presently obtaining; in addition they are conspicuously simple to fabricate and to assemble. As a result, a chesterfield bed mechanism has been achieved which it is possible to sell for an attractively reasonable price whereby a very definite improvement in living standards may be achieved in a very fundamental area of civilized existence.

With the foregoing in view, and all those objects, purposes or advantages which may become apparent from consideration of this disclosure and specification, the present invention consists of the inventive concept embodied in the method, process, construction, arrangement of parts, or new use of the same, as herein particularly exemplified in one or more specific embodiments of such concept, reference being had to the accompanying figures in which:

FIGURE 1 is a side elevation of the present chesterfield bed mechanism in open or bed position and relative to a chesterfield frame or carcass.

FIGURE 2 is a fragmentary perspective representation of the chesterfield bed mechanism according to the present invention.

FIGURE 3 is a side elevation of the present chesterfield bed mechanism partially folded.

FIGURE 4 is a view similar to FIGURE 3 but showing the bed mechanism in a more fully folded position.

FIGURE 5 is a side elevation similar to FIGURES 3 and 4 but showing the chesterfield bed mechanism of the present invention fully folded.

In the drawings like characters of reference designate similar parts in the several figures.

When the folding frame of a serially connected, multi-section folding frame of a chesterfield bed mechanism is to lie in a horizontal position of standard bed height

when open (herein also referred to as in "bed position") it is a problem which has not yet to applicant's knowledge been solved, to provide for an easy glide pattern as between open and folded positions without introducing a tendency for the bed to swing downwardly at the head end thereof, and for the end legs and foot section to lift off the ground if a heavy load is concentrated upon or near the head section. This is because an easy glide pattern means a low glide pattern, and a low glide pattern means that the folding frame (between which the spring mattress is stretched) of such a mechanism must be pivoted for rotation between bed position and folded position upon a pair of main supporting levers, the upper ends of which (in bed position) must be "well forward" or in other words well toward the foot end of the bed, at least to the extent of being well forward of the front limits of the piece of chesterfield furniture, herein generally referred to as the chesterfield frame.

To obtain such a low glide pattern without hinging or making removable, the front rail of the chesterfield frame, the intermediate legs must be hinged or knuckled so as to fold against the folding frame. Naturally the foot end legs also fold against the underside of the folding frame, but this is a standard procedure, and is not connected with the problem of securing the desired low glide pattern as herein discussed.

The applicant is aware that standard bed height foldable chesterfield frames are in use wherein the head section may be inclined at an angle of about forty-five degrees for the convenience of persons reclining thereon in viewing television. The head sections thus inclined are not under the same downward load as are head sections which are horizontal in the bed position. In the latter case, in order to view television or for any other purpose such as eating a meal in bed, substantially the whole weight or the person is on or in the vicinity of the head section. The applicant is aware of various patented locking devices employed in association with foldable chesterfield bed mechanisms, such as for locking same in the "home" or fully folded position (against the tendency to unfold, to the discomfort of persons sitting on the chesterfield when used as a chesterfield sofa). Also, United States Patent No. 2,991,484 to Willis of 1961 refers in the specification to a "locking arrangement" whereby the three sections "when folded are rigidly locked against movement in any direction." No prior use of means for locking the head section of a bed against downward upsetting under the circumstances herein described is however within the knowledge of the applicant.

Proceeding therefore to describe in a summary preliminary way, the locking assembly of the present invention, prior to describing it in greater detail and in association with the novel combination of which same forms a part, the following comprises such a description:

The chesterfield frame which constitutes the carcass of the piece of furniture known as a chesterfield sofa, or simply as a chesterfield, is collectively designated **10**. The chesterfield bed mechanism secured to the said frame is collectively designated **11**. It comprises supporting or mounting structure collectively designated **12**, and a foldable chesterfield frame collectively designated **13**, shown in bed position in the accompanying FIGURES 1 and 2, and in fully folded position in the accompanying FIGURE 5.

The supporting structure **12** need not be fully itemized in this disclosure for the purpose of understanding the invention thereof. It is sufficient to state that it includes a pair of foundation members **14** bolted to the base **15** of the chesterfield frame **10** and a pair of main support levers **16** on opposite sides of the frame **13**. These levers are pivotally connected at the lower ends **17** thereof to parts **12**, and at their upper ends **18** to a pair of elongated and obtusely slightly angulated rockers **19** which may indifferently be broadly considered as constituting either part of the folding frame **13** or the supporting structure **12**.

The folding frame **13** is composed of a plurality of sections serially connected, namely a head section **20**, a body section **21**, a transversely narrow connecting section **22**, and a foot section **23**. A pair of foot end-legs **25** is pivotally connected at **26** to foot section **23**. A pair of intermediate legs **27** is located on either side of the body section **21**. These legs may also indifferently be considered as part of the folding structure **13**, or the supporting structure **12**.

A set of pivotally interconnected, elongated members extend along both sides of the folding frame **13** when considered in the extended or bed position of the accompanying FIGURES 1 or 2 and certain of these members will be assigned specific names for greater particularity hereinafter. With the foregoing introduction, it may now therefore be initially stated that the locking means or locking assembly per se collectively designated **28**, and which is preferably located on both sides of folding frame **13**, consists of a bell-crank collectively designated **29**, and a tension arm **30**.

Bell-crank **29** in turn comprises a locking arm **31**, and an operating arm **32** in downturned obtuse angular relationship to provide the interior inferior angle **33**. The aforesaid bell-cranks are pivotally connected at **34** to rockers **19**. Tension arm **30** is pivotally connected at the head end **34** thereof to the distal end of operating arm **32**. The distal and head end of locking arm **31** is right angulated as at **35**. Hence it is adapted to bear against the upper edge **36** of each of the aforesaid main supporting levers **16**.

Having thus described the specific invention consisting of the locking means or locking device **28** per se, its novel combination with other novel features of the present chesterfield bed mechanism will now be explained in greater detail.

Head section **20** is secured to mid-section **21** at points **37**. The head ends of rockers **19** are downwardly angulated and connected at points **38**, pivotally to the links **39** which in turn are connected to the links **40** anchored to the braced posts **41**. The foot ends of rockers **19** are pivotally connected at **42** to the upper ends of boomerang links **43**. The lower ends of these boomerang links are pivotally connected at **44** to the intermediate leg pair **27** aforesaid, and in this connection the aforesaid boomerang links may conveniently be considered, at least as to the lower portions **45** thereof, as part of the intermediate leg pair **27**. In view of the function of these boomerang links however, they also may be considered as part of the break-joint control assembly to be hereinafter described.

The boomerang links **43** are pivotally connected to the side members **46** of body section **21**, at the points **47**. Also pivotally connected at **48** to intermediate leg pairs **27**, are the brace bars **49**, the upper ends of which are pivotally connected at **50** to the junction of body section **21** and connecting section **22** as will best be observed by consideration of the accompanying FIGURES 3 or 4.

Pivotally connected to the boomerang links **43**, at points **51**, for movement as provided by the slots **52**, are radius bars **53**. These are slightly obtusely angulated near the head ends thereof, and, at the locus of angulation **56** as between the portions **54** and **55** of the said bars **53**, the connecting rods **30** of locking assemblies **28** are connected

Each of the radius bars **53** are provided with a right angled offset or shoulder **57** near the foot end thereof, and adjacent such offsets, toward the head end, short angulated connecting links **58** are located, pivoted to radius bars **53** at the points **59**. The foot ends of the radius bars **53** are pivotally connected on either side of the folding frame **13** at points **60** which represent the transverse connecting or linking location between the foot end of connection section **22**, and the head end of foot section **23**.

Pivotally connected at points **61** to the sides **62** of con-

necting section **22** are connecting rods **63**, pivotally connected at the foot ends **64** thereof to the angle brackets **65**. The foot ends **26** at which the brackets **65** are joined to end legs **25** is a solid connection. In other words, the parts **25** and **65** move as a bell-crank moves, or as one unit. The parts **63** through **65** are conveniently referred to as end leg raising lever assemblies. The collectivity of parts **45**, **53** and **58** are called break-joint control assemblies as earlier herein referred to, and the braces **49** may also be conveniently included in this expression.

Operation

Having thus described the construction of the present invention, its operation will be explained. First and foremost it is to be understood that in the bed position of FIGURES 1 and 2, the verticality of legs **25** and the consequent rigidity of members **65** effectively snubs the connecting links **58** downwardly, at their loci of angulation **66** against the offsets **57**. In the bed position bearing portions **35** are in contact with the upper edges of levers **16**, and in fact, in the bed position these bear downwardly against the said levers with a certain pressure due to the existence of tensile effort in the tension arms **30**, causing the bell-crank **28** to be under counter-clockwise stress. The downward weight upon the head end section (and all downward weight upon the head side of pivot points **18**) tends to pull tension bars **30** to the left or head end. This pull is transmitted to pivot points **56**. No jack-knifing can occur at points **56** however due to the aforesaid snubbing-down effect of the links **58** assisted by the end leg raising lever assembly already referred to and for convenience collectively designated **67**.

As the folding frame **13** is moved into folded position, by lifting upon the foot end of section **23**, it will be apparent that legs **25** rotate clockwise about pivot points **26**. Hence the assembly **67** commences to move with the connecting rods **63** separating substantially in parallel to the sides of the foot section. It may be said that when the foot section is vertical, the break-joint control assembly (now for convenience collectively designated **68**) has ordered the sequence and quantity of movement, particularly as regards the sections **21**, **22**, and **23** such that the connecting section is at an angle of about 45°. Further stages toward the fully folded position of FIGURE 5 are progressively depicted in the accompanying FIGURES 3 and 4 and accordingly need not be explained in very much further detail.

For optimum practical dynamic balance, or the maintenance of as much equilibrium and economy of effort as is practical, the lowest possible glide pattern has been found desirable. To achieve this, the intermediate leg pair **27** must be caused to jack-knife as well illustrated in the accompanying FIGURES 3 and 4. In this connection it is again emphasized that the lower portions **45** of the boomerang links **43** may be considered as parts of the intermediate leg pair **27**. A low glide pattern without hinging or removing the chesterfield front rail **69** is only to be achieved by knuckling or jack-knifing the intermediate leg pair during closing and opening as clearly illustrated.

It will be particularly noted of course that in the positions between bed position and fully folded position, the bell-cranks **29** rotate about the pivot points **34** so that the bearing elements **35** are free of contact with the main support levers **16**. At this point also it will again be noted that the pivotal connecting points **18** of the said main support levers **16** and the rockers **19**, are well forward or in advance of the chesterfield, and the dynamic balancing and maintenance of substantial equilibrium due to this will, it is believed, be particularly noticeably by reference to the accompanying FIGURES 3 and 4 at this point in applicant's description. Finally, the significance of the arrangement by which bell-crank **29** cross-locks the rockers **19** and levers **16** in mutual stationary relationship will also be apparent. The bell-crank pivot points **34** are upon the head side of the support lever pivot points **18**. It is on account of this crossover—in the embodiment illustrated maintained under tension, which preserves the open bed against undesirable head end subsidence. Obviously however the aforesaid crossover between the bell-crank and levers could be maintained by means other than the tension bars **30**.

Since various modifications can be made to the invention herein described within the scope of the inventive concept disclosed, it is not intended that protection of the said invention should be interpreted as restricted to the modification or modifications or known parts of such concept as particularly described, defined or exemplified, since this discloseure is intended to explain the construction and operation of such concept and is not for the purpose of limiting protection to any specific embodiment or details thereof.

What I claim as my invention is:

1. In a chesterfield bed mechanism consisting of a multi-section foldable-frame and a frame supporting structure, a head locking assembly for use in combination with at least one of the pair of main support levers operatively and pivotally interconnecting said frame and an associated chesterfield frame, said locking assembly comprising a bell-crank and tension-arm, said tension-arm being pivotally connected to said bell-crank, said bell-crank comprising a locking arm and an operating arm, and being pivoted for rotation in a vertical plane on at least one side of said folding-frame with its interior angle inferior, said operating assembly, as considered in the bed position of said folding-frame intersecting said lever, said bell-crank being pivoted as aforesaid on the head side of the point at which said lever is operatively connected to said folding-frame, the said pivot points of said bell-crank and lever which are operatively connected with said folding-frame being in substantially the same vertical plane, said tension-arm lying substantially horizontal, and extending from its point of connection to said operating arm toward the foot of said folding-frame, the distal end of said locking arm being angulated, and bearing downwardly against said lever, and thereby creating a bound system as to that part of said folding-frame which is on the head side of the connecting points of said levers thereto against downward effort applied to said head side.

2. In a chesterfield bed mechanism, for use in association with a chesterfield frame, when in bed position, for use in association with a chesterfield frame, and embodying a foldable-frame composed of a plurality of sections pivotally connected in serial relationship and swingably connected to said chesterfield frame for movement from an aligned open-bed position to folded position within said chesterfield frame, said sections comprising head, body and foot sections and a connecting section between said body and foot sections, a pair of floor-engaging end-legs pivotally connected to said foot-section adapted selectively to support said foot-section when in bed position, and to pivot and fold against said foot-section when in folded position, a main support lever on each side of said body section pivotally connected at spaced points on its length to said chesterfield frame, and to foldable-frame supporting structure in the form of a pair of rockers; the combination with the foregoing of a locking assembly pivotally connected to at least one of said rockers, said locking assembly being operatively connected to said pair of legs, said locking assembly being adapted for abutting locking engagement against one of said main support levers when said pair of legs is in support position, said locking assembly thereby being adapted to support said body and head sections against downward displacement relative to said chesterfield frame responsive to excessive loading anywhere upon said head or body sections on the head side of the point at which said levers are pivotally connected to said rockers.

3. The locking assembly according to claim **1** which comprises a bell-crank at each side of said folding-frame,

each said bell-crank embodying an operating arm and a locking arm connected thereto in fixed angular relationship, said bell-crank being pivotally connected at the junction of said operating arm and said locking arm to one of said rockers adjacent to and on the head side of the point at which said levers are pivotally connected to said rockers, connecting means operatively extending between said operating arm and said pair of legs, said connecting means including means adapted to move said locking arms into locking engagement with said levers when said pair of legs is in bed supporting position.

4. In a chesterfield bed mechanism of standard mattress-height when in bed position, for use in association with a chesterfield frame, and embodying a folding-frame comprised of a head section, a body section, a connecting section and a foot section foldable upon said body section, said sections being pivotally connected in serial relationship, a pair of end legs pivotally connected to said foot section and adapted selectively to support said foot section when in bed position and to swing and fold against said foot section when said bed is in folded position, a pair of intermediate legs pivotally connected to said foldable-frame between said end legs and said chesterfield frame, said intermediate legs being also adapted selectively to support said foldable-frame when in bed position and to swing against said body section when in folded position, a main support lever at each side of said body section pivotally connected at spaced points on the length thereof to said chesterfield frame and said body section between the ends of said body section; the combination with the foregoing of a locking assembly pivotally connected at least on one side of said body section, said locking assembly being operatively connected to said end legs for abutting engagement with said lever when said end legs are in support position, said locking assembly thereby being adapted to support said body and head sections against downward displacement relative to said chesterfield frame responsive to excessive loading anywhere upon said head or body section on the head side of the point at which said lever is connected to said body section, said locking assembly including a substantially horizontal tension bar extending on the head and foot side of said intermediate legs.

5. The locking assembly according to claim **4** which comprises a locking bell-crank at each side of said body section, said bell-crank comprising an operating arm and a locking arm connected together in fixed angular relationship, said bell-crank being pivotally connected at the junction of said operating arm and said locking arm to said body section adjacent to and on the head side of the point at which said levers are pivotally connected to said body section, and means including said tension bar extending between said operating arm and said end legs, adapted to move said locking arm into abutting engagement with said main support member when said end legs are in support position.

6. The invention according to claim **3** wherein said locking assembly includes a tension bar having a foot end and a head end, said head end being pivotally connected to said bell-crank, and in combination with said locking assembly an end-leg raising lever-assembly, and a break-joint control assembly pivotally connected to said end-leg raising lever-assembly, said tension bar being pivotally connected at the head end thereof to said bell-crank.

7. The invention according to claim **5** wherein said locking assembly includes a tension bar having a foot end and a head end, said head end being pivotally connected to said bell-crank, and in combination with said locking assembly an end-leg raising lever-assembly, and a break-joint control assembly pivotally connected to said end-leg raising lever-assembly, said tension bar being pivotally connected at the head end thereof to said bell-crank.

8. Means for locking a chesterfield bed mechanism of the class which is of standard mattress-height when in bed position, and which embodies a serially connected, multi-section foldable-frame and foldable-frame supporting structure including a pair of main support levers attached to a chesterfield frame, comprising, in combination a locking assembly for securing the head end of said foldable-frame against unwanted downward rotation, and a break-joint control assembly for governing the order and amount of movement of at least two of said sections situated toward the foot end of said folding-frame, in folding same, said locking assembly comprising a bell-crank and a tension bar, said bell-crank being pivotally connected to said mechanism and consisting of a locking arm and an operating arm, said tension bar being pivotally connected at the head end thereof to said operating arm, and extending toward the foot end of said folding-frame when in bed position, said levers extending upwardly toward said foot end in such position of said folding-frame, said locking arm intersecting one of said levers, said bell-crank inclining downwardly and bearing against the upper side of said lever, said break-joint control assembly comprising at least a radius arm and a connecting link extending on the foot side of said locking assembly and substantially horizontally in said bed position, said tension bar being pivotally connected to said radius arm near the head end thereof, the foot end of said radius arm being pivotally connected to said foldable frame.

9. The invention according to claim **8** in which said supporting structure includes a pair of end legs, in which said connecting link is obtusely angulated between its ends, and in which said radius arm is double-angulated near the foot end thereof to provide an offset, said link bearing downwardly against said offset in bed position with said legs vertical.

10. The break-joint control assembly according to claim **8** which includes a boomerang link, said boomerang link, when said folding-frame is in bed position, being pivotally connected to said mechanism at the head end thereof, and downturned at the foot end thereof, said radius arm being pivotally connected to said boomerang link, said mechanism including a pair of intermediate legs, said boomerang link being also pivotally connected to said intermediate legs.

11. In a chesterfield bed mechanism comprising essentially a foldable-frame embodying linked head, body, connecting and foot sections, and supporting structure including a pair of longitudinally extending main folding-frame-supporting rockers and a pair of main support levers pivotally connected to an associated chesterfield frame and to said rockers, a pair of end and intermediate legs, and end-leg-raising lever assemblies; means co-acting when said folding-frame is in bed position for (a) sustaining said folding-frame at standard mattress-height, (b) locking said head section against swinging downwardly under excessive load about said main support levers, and (c) facilitating a low glide pattern of said folding-frame between bed and fully-folded positions, said means comprising in combination a break-joint control assembly for determining the order and quantity of movement of said body, connecting, and foot sections, and said intermediate legs, in the folding and unfolding of said folding-frame and said intermediate legs, said break-joint control assembly being pivotally connected to said rockers, said intermediate legs and said end-leg raising lever assemblies, said locking means consisting of a locking assembly comprised of a bell-crank and a tension bar, said tension-bar being pivotally connected to said bell-crank, said bell-crank being pivotally connected to at least one of said rockers on the head side of the point at which said main support levers are pivotally connected to said rockers, said tension-bar being also pivotally connected to said break-joint control assembly, said bell-crank intersecting the associated main support lever to bear downwardly against the upper side thereof, and thereby cross-lock the associated rocker downwardly in bed position under tension from said tension bar, said main support levers being pivotally connected to said rockers substantially nearer the foot ends thereof than to the head ends.

12. The invention according to claim **11** in which said

break-joint control assembly includes a radius arm and connecting link, said tension bar being pivotally connected to said radius arm, said radius arm being also operatively connected to said end-leg raising assembly via said connecting link.

13. The invention according to claim 12 in which said break-joint control assembly includes a pair of boomerang links pivotally connected to said rockers in the vicinity of the foot ends of said rockers, said boomerang links being also mounted for intermediate pivotal rotation on either side of said body section on the foot side of said pivotal connection to said rockers, said radius arms also being pivotally connected to said boomerang links, said intermediate legs being pivotally connected to said boomerang links, said break-joint control assembly also including brace bars pivotally connected at the lower ends thereof to said intermediate legs below the points of connection of said boomerang links thereto as considered in bed position, the upper ends of said brace bars being pivotally connected to said folding-frame on the foot side of said intermediate legs.

14. The locking assembly according to claim 2 in which the operating arm of said bell-crank intersects said main support lever when considered in bed position, and in which said connecting means includes a tension bar pivotally connected to said operating arm, said bell-crank being thereby caused to cross-lock the adjacent rocker downwardly under tension from said tension bar, with said locking arm bearing downwardly against the upper side of said lever.

15. In a chesterfield bed mechanism consisting of a multi-section foldable-frame, and a frame supporting structure, a head-locking assembly for use in combination with at least one of the pair of main support levers operatively and pivotally inter-connecting said frame and associated chesterfield frame, said locking assembly comprising a bell-crank and tension-bar, said tension-bar being pivotally connected to said bell-crank, said bell-crank comprising a locking arm and an operating arm, and being pivoted for rotation in a vertical plane on at least one side of said folding frame, with its interior angle inferior, said operating assembly, as considered in the bed position of said frame, intersecting said lever, said bell-crank being pivoted as aforesaid on the head side of the point which said lever is operatively connected to said folding-frame, the said pivot points of said bell-crank and lever, in operable connection with said folding-frame being in a substantially common vertical plane, said tension-bar lying substantially horizontally and extending from its point of connection to said operating arm toward the foot of said folding-frame, the distal end of said locking arm being angulated and bearing downwardly against said lever thereby to create a bound system as to that part of said folding-frame which is on the head side of the connecting points of said levers thereto against downward effort applied to said head side.

16. A chesterfield bed mechanism comprising in combination (a) means for opening to standard bed height, the serially connected, multi-section folded-frame thereof when the same comprises links, end-legs, intermediate jointed legs, and a pair of main support levers for supporting said folding frame at such height, (b) means for achieving an easy and low glide pattern during such opening, said both means including said levers when in bed position and spring biased to incline forwardly and upwardly from pivot points near the front base of the associated chesterfield frame to upper pivotal points on either side of said folding frame well in front of the anterior limits of said chesterfield frame, (c) a locking assembly operatively connected with said mechanism for preventing said head end, in open position, from yielding downwardly under load, and (d) a pair of interconnected elongated members on each side of said folding frame coacting with said levers in the folding of said folding-frame upon the application of an upward effort upon said foot section, to (i) fold said end legs against said foot section, (ii) fold said end and connecting sections with respect to said body section such that the padded mattress is snugly folded therebetween while said end, connecting, and body sections are being rotated to the apex of their travel, and, simultaneously with the foregoing, (iii) fold said intermediate legs against the under side of said body section prior to lowering said foot section, connecting sections, body sections, and said legs into the accommodating cavity of said chesterfield frame.

17. The levers according to claim 16 which, when viewed in bed position are seen to be angulated so as to avoid the front rail of said chesterfield frame, the lower portions of said levers being located closely behind said rail, and the upper portions inclining upwardly over and substantially beyond and to the front of said rail.

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