

No. 743,142.

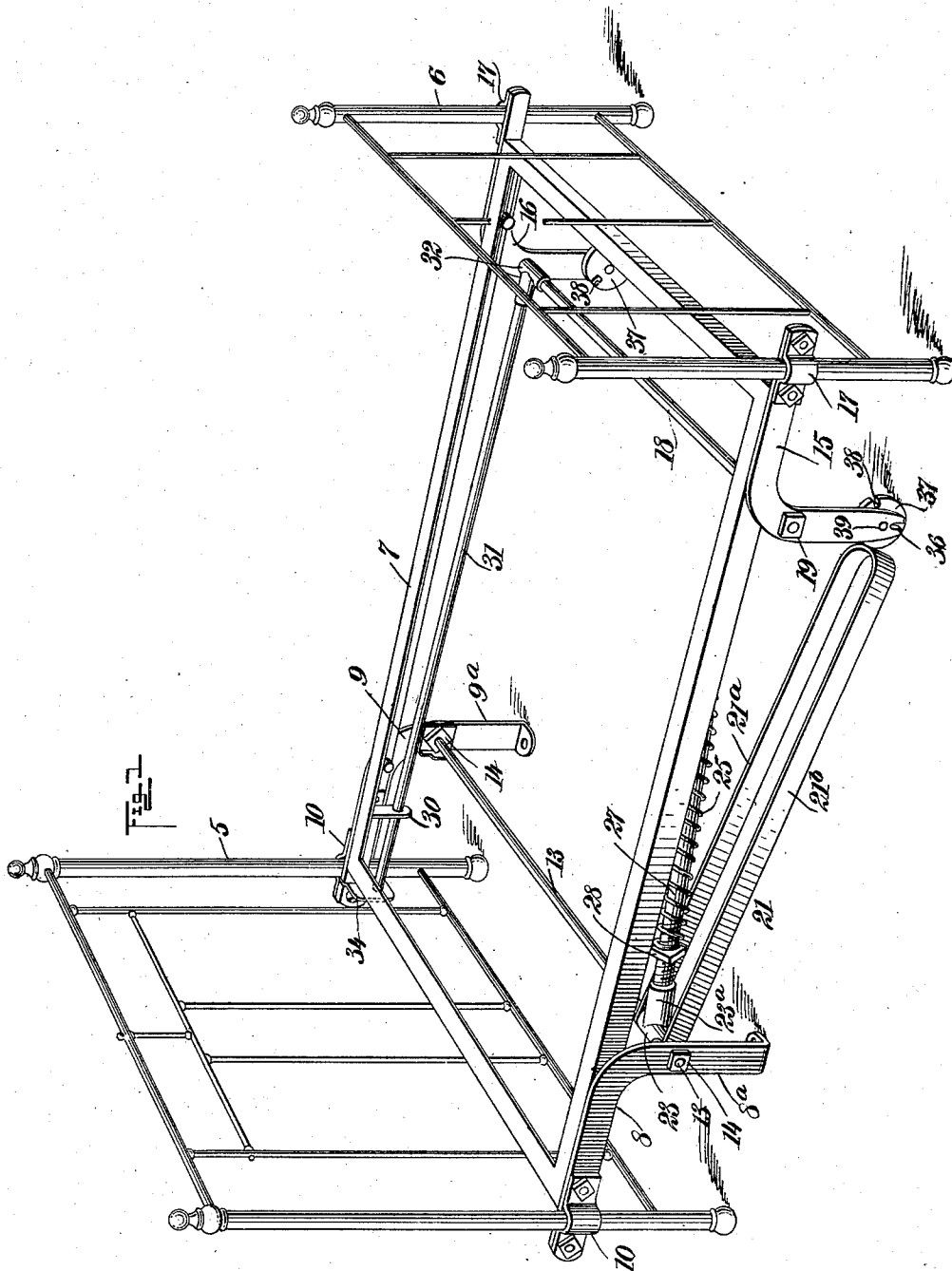
PATENTED NOV. 3, 1903.

C. P. BROWN.
FOLDING BED.

APPLICATION FILED NOV. 14, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

G. L. Cheney
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INVENTOR

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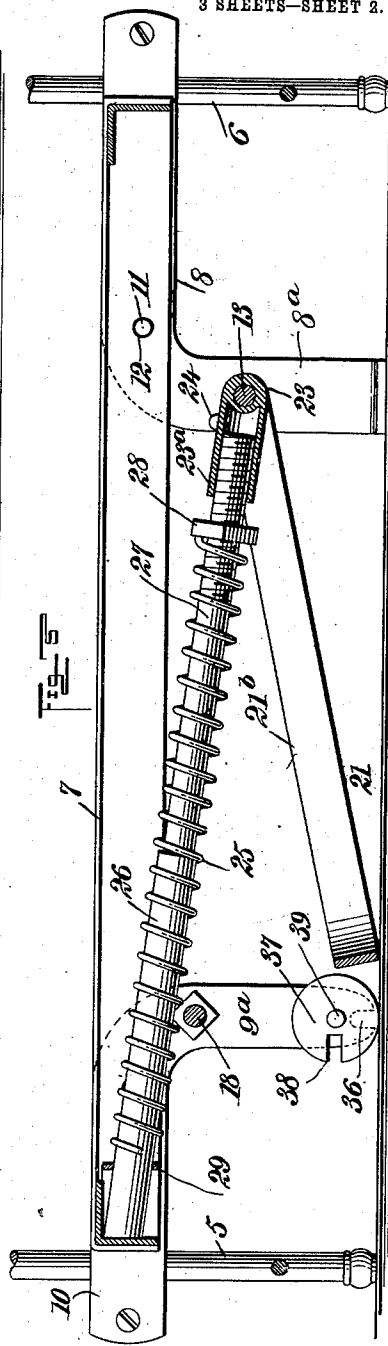
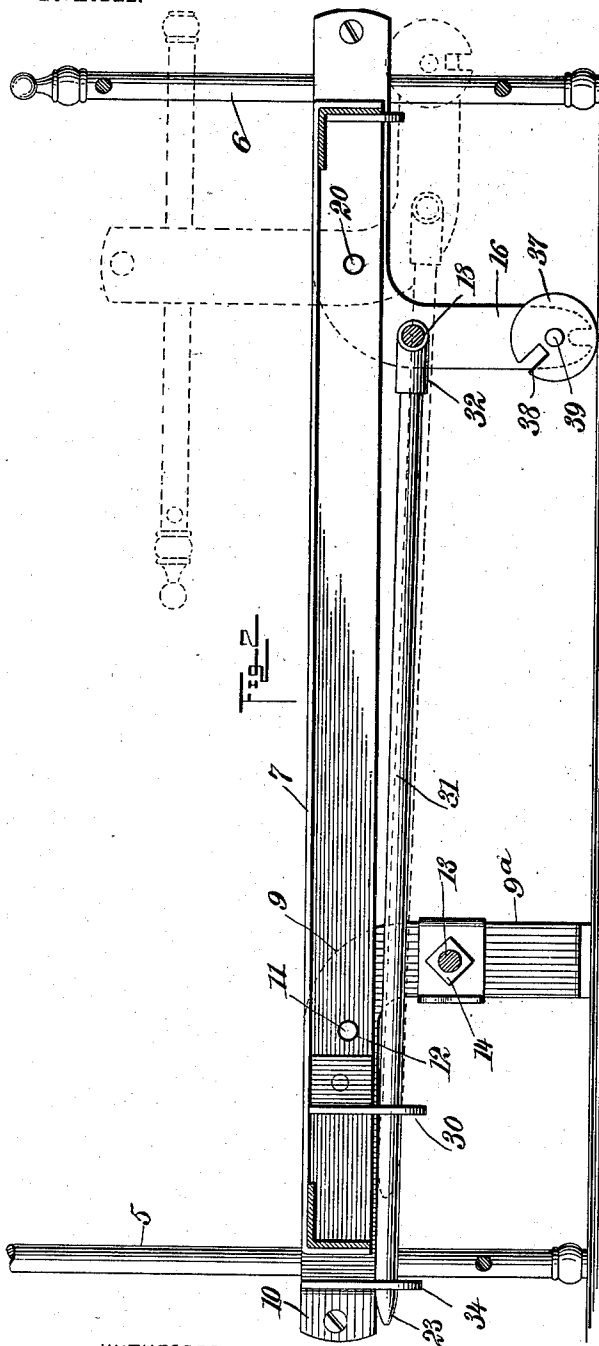
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NO MODEL.

3 SHEETS—SHEET 2.



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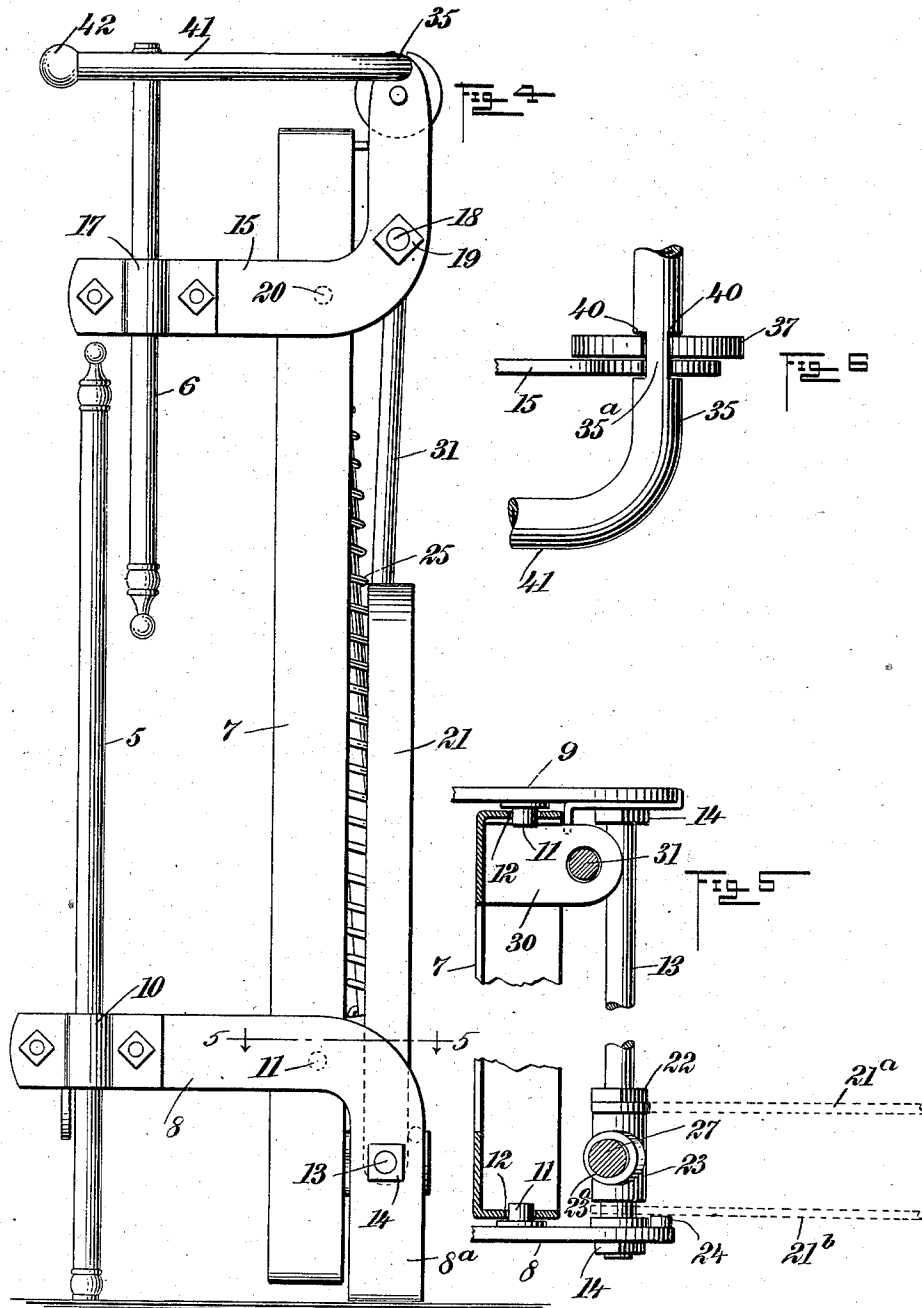
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NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CYRIL PECK BROWN, OF SPRINGLAKE, MICHIGAN.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 743,142, dated November 3, 1903.

Application filed November 14, 1902. Serial No. 131,322. (No model.)

To all whom it may concern:

Be it known that I, CYRIL PECK BROWN, a citizen of the United States, and a resident of Springlake, in the county of Ottawa and State of Michigan, have invented a new and Improved Folding Bed, of which the following is a full, clear, and exact description.

My invention relates to improvements in foldable bedsteads, the same being more especially applicable to metallic bedsteads, although the improvements may be used in connection with wooden bedsteads.

In my present invention I seek to provide means whereby metallic bedsteads of plain or ornamental design may be folded easily and quickly, such improvements being of a nature which enables me to fold or unfold the parts without modifying the factory or standard design of the head or foot sections of the bedstead or the angle-iron bed-frame or the spring.

Another feature of the improved bedstead is a foldable and extension base in connection with the head-section, said base serving in its extended position to lock the head-section steadily in place and in its folded position to secure the bed-frame and the foot-section against dropping, so that it is impossible to open the bed-frame or the foot-section until the extension-base is released and lowered.

I also contemplate the employment of means to assist in raising the bed-frame to an upright position, said means being in the form of a counterbalance-spring, which is placed under compression when the bed-frame is lowered.

My invention, furthermore, contemplates an automatic locking contrivance controllable by the adjustment of the foot-section in a way to positively lock all the parts when unfolded and effectually overcome collapsing of the bedstead when the same is in use.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my me-

tallic folding bed in its unfolded operative position. Fig. 2 is a longitudinal sectional view taken through the improved bed to show the operation of the locking mechanism, the foot-section being shown in its folded position by dotted lines. Fig. 3 is another longitudinal section taken in a plane which will illustrate more clearly the construction of the counterbalance. Fig. 4 is an elevation showing the parts in their folded positions. Fig. 5 is a detail sectional view in the plane of the dotted line 5 5 of Fig. 4; and Fig. 6 is a detail plan view of parts of the foot-section, showing the engagement of a drapery-rod therewith.

5 designates a head-section, 6 is a foot-section, and 7 is a bed-frame, said parts constituting the essential coöperating elements of a folding bed as contemplated in my invention. The head and foot sections 5 6 may be constructed in accordance with any design or pattern, it being unnecessary to modify the style or pattern of these parts to enable my improvements to be used in connection therewith. The bed-frame 7 may be constructed of metallic angle-bars to form the side and end rails; but, if desired, this bed-frame may be made of wood, although I prefer to employ metal. The head and foot sections are not connected directly with the bed-frame 7, and this last-mentioned frame is therefore complete in itself, consisting of side and cross rails, which are properly fastened together.

In connection with the head-section 5 I employ brackets 8 9, which are curved or fashioned to provide horizontal arms and vertical legs. The horizontal portions of the brackets 8 9 are disposed in overlapping relation to the corner-posts of the head-section, and the said brackets are secured firmly to the head-section by any suitable means—such, for example, as the clamps 10. The brackets 8 9 extend forwardly from the head-section and terminate in vertical portions, which constitute the legs 8^a 9^a, respectively, said legs being adapted to rest firmly on the floor or other surface and forming, in connection with the corner-posts, a wide base to properly support the head-section 5 in a stationary position when the bed is folded.

The bracket-legs 8 9 of the head-section are provided at points intermediate of their length with journals or trunnions 11, the same

extending inwardly or toward each other and fitting loosely in apertures 12, provided in the side rails of the bed-frame 7. (See Figs. 4 and 5.) The bed-frame is thus pivotally connected at a point intermediate of its length to the bracket-legs of the head-section, and this bed-frame is adapted to swing or turn on a horizontal axis afforded by the journals 11, whereby said bed-frame may be lowered to its horizontal position, as shown by Figs. 1, 2, and 3, or it may be folded to an upright position, as shown by Fig. 4. The depending leg portions of the brackets 8 9 are connected by a tie rod or tube 13, which has its end portions firmly secured to said depending portions of the brackets—as, for example, by means of the nuts 14. This tie-rod is attached to the legs of the brackets at a point to lie below the bed-frame 7 when the latter is adjusted to its horizontal position, and the tie-rod is thus disposed out of the path of the bed-frame and in eccentric relation thereto, as shown by Figs. 2 and 3.

The foot-section 6 of the bedstead is provided with bent or curved brackets 15 16, the same being similar to the brackets 8 9 of the head-section. Said brackets 15 16 have horizontal and vertical portions, and these horizontal portions are secured firmly to the corner-posts of the foot-section—as, for example, by means of the clamps 17. The depending portions of these brackets 15 16 are united by a tie rod or tube 18, which has its end portions passed through said brackets to receive the clamping-nuts 19. The foot-section 6 is connected pivotally with the outer or upper part of the bed-frame 7 by means of trunnions 20, which are fixed firmly to the inner opposing sides of the longitudinal rails forming a part of the bed-frame 7, said trunnions 20 fitting loosely in openings provided in the brackets 15 16. It will be noted that the brackets are fixed to the foot-section 6 and pivotally connected to the bed-frame near its outer end, and this foot-section is adapted as an entirety to fold over the bed-frame on the horizontal axis afforded by the trunnions 20. (See the dotted lines in Fig. 2 and the full-line illustration in Fig. 4.) The foot-section is thus foldable relatively to the bed-frame, and when said foot-section is in its unfolded position, as shown by Figs. 1, 2, and 3, the corner-posts and the leg portions of the brackets 15 16 are adapted to rest upon the floor, thus affording a wide base-surface for the foot-section.

21 designates an extension-base, which is in the form of a doubled or looped frame. The end portions of this looped frame are fitted loosely on the tie-rod 13, which connects the leg portions of the brackets 8 9 of the head-section. The arm 21^a of the looped frame is held against sliding movement on the tie-rod 13 by means of a nut 22 and the head 23 of a counterbalance device; but the other arm 21^b of this looped frame is free to have a limited slidable adjustment on the tie-rod 13 between

the bracket 8 and the head 23, as indicated by dotted lines in Fig. 5. This shiftable arm 21^b of the looped frame is adjustable relatively to a locking lug or stop 24, the latter being fixed on the leg-bracket 8 to lie in the path of the arm 21^b when the looped frame is lowered or raised. This looped frame is adapted to be lowered before unfolding the bed-frame 7 or the foot-section 6, said looped frame resting at its free end on the floor and having its arm 21^b engaged with the locking-stud 24 in a way to prevent the looped frame from lifting, whereby said frame is adapted to lock the head-section steadily in place and to prevent tipping or tilting of the structure as an entirety when the bed-frame is lowered to its horizontal operative position.

A counterbalance-spring 25 is associated with the tie-rod 13 and with the outer end portion of the hinged bed-frame 7. This counterbalance-spring is coiled loosely around the members 26 27 of an extension rod or tube. The member 27 of the extension-tube is screwed adjustably in a sleeve 23^a, which forms a part of the T-shaped head 23. The transverse portion 23 of this T-shaped head is fitted loosely on the tie-rod 13, so as lie between the arms 21^a and 21^b of the looped frame, and said head is free to turn on the tie-rod, thus having a pivotal movement thereon. The member 27 of the extensible spring-rod has fixed engagement with the sleeve 23^a of the T-shaped head, and on this member 27 is screwed a nut 28, the latter affording a bearing for one end of the counterbalance-spring 25. The member 26 of the extensible rod is in the form of a tube arranged to loosely or slidably receive the rod member 27, and the outer end of said rod member 26 is fitted in a bearing-loop 29, the latter being firmly secured at one corner of the bed-frame 7. The counterbalance-spring 25 is thus seated at one end on the nut 28 of the extension-rod and at its other end against the corner bearing-bracket 29, and this spring is adjustable with the bed-frame 7 in order that it may retain its operative relation to said frame when it is raised or lowered. It will be noted that the extension-rod of the counterbalance-spring swings on a pivot afforded by the rod 13, and this pivot is eccentric to the axis 11, on which the bed-frame swings, said pivot of the extension-rod being closer to the outer part of the bed-frame than the pivot 11. When the bed-frame is raised, the extensible rod 26 27 and the counterbalance-spring 25 swing upward therewith, and during this adjustment the member 27 of the rod is drawn out from the member 26, thus allowing the spring 25 to exert its tension on the bed-frame in a manner to assist the operator in raising or folding the bed-frame and the foot-section supported thereon. To lower the bed-frame from its vertical to its horizontal position, the operator exerts the necessary force to pull said frame beyond the proper inclined position, and during this adjustment the mem-

bers 26 27 of the rod are pressed together and the spring 25 is placed under compression, thus storing the required energy to assist in raising the bed-frame 7 when desired.

5 The bed-frame 7 is provided near its hinged point 11 with a guide-plate 30, which is secured firmly to one of the side rails and projects inwardly therefrom. Through this guide-plate loosely passes a locking-rod 31; 10 the same arranged longitudinally of the bed-frame and provided at its outer end with a head 32, which is loosely fitted on the tie-rod 18, that connects the leg-brackets 15 16 of the foot-section. The locking-rod 31 is pointed 15 at its free end, as indicated at 33, and this pointed end of the rod is adapted to fit in an aperture in a locking-plate 34. This locking-plate is secured firmly to the bracket 9 of the head-section 5, said locking-plate extending 20 inwardly from the bracket and having its eye disposed in the path of the pointed end of the locking-rod 31. Instead of providing the locking-plate with an eye or perforation said plate may have an inclined edge or face, 25 against which the locking-rod is adapted to ride.

It will be observed that the locking-rod 31 is connected pivotally with the brackets 15 16, which are attached to the foot-section and 30 are connected pivotally with the outer part of the bed-frame, and when this foot-section and its leg-brackets are adjusted the rod 31 is moved endwise through the guide-plate 30 in a manner to make it engage with the locking-plate 34 or to withdraw it from said locking-plate, according to the direction in which 35 the foot-section is turned. If the parts assume the position shown by Fig. 2, with the bed-frame lowered and the foot-section adjusted 40 to its operative position, the locking-rod is projected to a forward position and engages with the locking-plate 34. To fold the bed, the operator turns the foot-section 6 and the brackets 15 16 on the pivot 20, said foot-section 45 and its parts assuming the dotted-line position in Fig. 2. When the foot-section is turned, the rod 31 is pulled endwise to withdraw its pointed end from the locking-plate 34; but this withdrawal of the rod does not 50 disengage its free end from the guide-plate 30, the latter serving to keep the locking-rod in the proper position. If the bed is in the folded position shown by Fig. 4, the frame 7 and the foot-section should be lowered until the frame assumes a horizontal position, 55 so as to bring the guide-plate 30 into alinement with the locking-plate 34; but the rod 31 remains at rest until the foot-section is turned from its folded horizontal position 60 over into its upright operative position, at which time the tie-rod 18 gives the desired endwise movement to the rod 31, thereby moving the latter endwise and into engagement with the locking-plate. It will therefore 65 be understood that the locking device is adjustable with the frame and the foot-section and that said locking device is control-

lable entirely by the movement of the foot-section, whereby the locking device is automatically released when the foot-section is 70 folded and it is made to assume its operative position when the foot-section is unfolded. With the bed-frame and the foot-section in their lowered or unfolded positions the extension-base formed by the loop 21 occupies 75 the inclined position shown by Figs. 1 and 3, and in this position of said looped frame the arm 21^b thereof fits below the lug or stud 24, thus locking the frame 21 against elevation. The frame 7 and the foot-section may be folded 80 to the upright positions shown by Fig. 4 without disturbing the inclined position of the looped frame; but after the bed-frame shall have been folded, as described, the arm 21^b 85 of the looped frame may be pressed inwardly to clear the stud 24, and said looped frame may then be raised to the position shown by Fig. 4. Said looped frame is thus folded compactly into parallel relation to the bed-frame 7, and it is held in such raised position by 90 its arm 21^b engaging with the stud 24, the latter serving to confine the looped frame in its lower inclined position as well as in its raised position. The looped frame thus practically 95 locks the bed-frame 7 in its raised position, because the stud 24 holds the frame 21 against dropping, and this frame 21 lies in the path of the bed-frame, so that the latter cannot be lowered until the looped frame shall have been first moved by hand to its inclined position shown by Figs. 1 and 2. 100

When the foot-section 6 and the bed-frame 7 are folded, the leg portions of the brackets 15 16 extend upwardly and in parallel relation to the bed-frame 7, as shown by Fig. 4, 105 and these parts of the brackets 15 16 are utilized to support a drapery-rod 35. The leg portions of the brackets 15 16 are provided in their free ends with notches 36, and on these leg portions of said brackets are 110 mounted the rollers or casters 37, the latter having notches 38 and being free to turn on the stub-axles 39. These rollers 37 are adapted to ride on the floor when the brackets 15 16 are turned with the foot-section; but when 115 the parts are folded the notches 38 of the rollers are adapted to register with the notches 36 of the leg-brackets, as shown by Fig. 6, thus making provision for fitting narrow portions 35^a of the drapery-rod in the 120 notched ends of the brackets and in the notches of the rollers. The drapery-rod 35 is provided with notches 40 in opposite sides thereof, as shown by Fig. 6, to produce the contracted portions 35^a, thus assembling the 125 drapery-rod into interlocking engagement with the brackets and the rollers thereon in a way to firmly hold the drapery-rod in a steady horizontal position across the upper part of the bed-frame. The drapery-rod is 130 provided at its ends with arms 41, which may be equipped with knobs 42, and these arms are adapted to lie across the upper part of the foldable bedstead, thus making provision

for the support of a curtain at the sides and across the front of the bedstead, said curtain adapted to conceal the entire structure.

By folding the foot-section 6 over the bed-frame, as shown by dotted lines in Fig. 2, it is adapted to confine the mattress and bed-clothing between itself and the bed-frame, thus dispensing with cords or straps to hold the mattress and the bedclothing in place when the bedstead is folded.

It is evident that the nut 28 may be adjusted on the rod member 27 to vary the tension of the spring 25 in proportion to the load which it is required to lift. This spring 25 may be placed in any desired position on the extensible rod; but the arrangement shown by the drawings has been found in practice to secure good results.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a folding bed, the combination with a foldable bed-frame, of angular brackets connected pivotally to said bed-frame and having their inner arms arranged at an angle to said bed-frame, and a foot-section mounted on the outer arms of the brackets and foldable therewith, said foldable foot-section being movable into parallel clamping relation to the bed-frame, and the foldable legs of said foot-section together with the inner arms of the angular brackets being adapted to rest on the floor in the unfolded positions of the parts.

2. In a folding bed, the combination with a foldable bed-frame, of angular brackets pivotally connected to said bed-frame, and a foot-section having its legs or posts fastened to said brackets, the entire foot-section being foldable with the brackets.

3. In a folding bed, the combination with a foldable bed-frame, of angular brackets pivotally connected to said bed-frame, and a foot-section attached to the outer arms of said brackets and foldable bodily therewith, the inner arms of said pivoted brackets furnishing a support for a drapery-rod in the folded position of the parts.

4. In a folding bed, the combination with a bed-frame, of angular brackets pivoted thereto, a foot-section carried by said brackets at one end thereof, and drapery-rod supports on the other ends of said angular brackets.

5. In a folding bedstead, the combination of a head-section, a bed-frame pivotally connected with the head-section, and an extension-base having pivotal and interlocking connection with said head-section and adapted in its unfolded position to serve as a stay in holding the head-section against movement, said extension-base being connected to the head-section independently of the bed-frame and foldable into an upright position and in rear of the bed-frame to serve as a means for retaining the latter in its folded position.

6. In a folding bed, a head-section, brackets

fastened thereto, an extension-base having interlocking engagement in its folded and unfolded positions with said brackets and serving as a stay to the head-section, and a bed-frame connected pivotally with said brackets, said extension-base being connected to the head-section independently of the bed-frame and foldable into an upright position and in rear of the bed-frame to serve as a means for retaining the latter in its folded position.

7. In a folding bed, a head-section provided with leg-brackets, a bed-frame hinged to said brackets, and an extension-base having interlocking and foldable connection with said leg-brackets and adapted in its unfolded position to serve as a stay to the head-section and in its raised locked position as a retaining device to the bed-frame.

8. In a folding bed, a head-section provided with a locking-stud, a bed-frame hinged to said head-section, and a foldable extension-base connected with the head-section to have interlocking engagement with the stud thereon in its unfolded and folded positions, said extension-base lying in the path of the bed-frame and confining the latter in its folded position.

9. In a folding bedstead, the combination with a stationary part, and a bed-frame pivoted thereto, of a rod having its end portions fitted to the stationary part and the bed-frame respectively, a nut adjustable on the rod, and a spring acting against the nut and the bed-frame, said rod having a pivotal and extensible adjustment relative to said stationary part.

10. In a folding bed, the combination with a head-section and a pivoted bed-frame, of an extensible rod connected at one end to the bed-frame and turning on a pivot located at one side of the pivot of said bed-frame, and a counterbalance-spring held by said rod and acting against the bed-frame, said spring being placed under compression by the unfolding of the bed-frame.

11. In a folding bedstead, the combination with a stationary part, and a bed-frame pivoted thereto, of an extensible rod having a member fitted to the bed-frame and another member pivoted to the stationary part at one side of the pivot of the bed-frame, and a counterbalance-spring fitted to the respective members of the rod and adapted to be compressed by the contracting movement of the rod members when the bed-frame is lowered.

12. In a folding bed, the combination of a head-section, a bed-frame pivoted thereto, angular brackets pivoted to the bed-frame, a foot-section, a locking member fixed to the head-section, and a single locking-rod pivotally connected to the angular brackets and slidably fitted to the bed-frame for engagement with the fixed locking member on the unfolding of the angular brackets.

13. In a folding bed, the combination of a head-section, a pivoted bed-frame, angular

brackets, a tie-rod connecting said brackets and pivotally attaching them to the bed-frame, a foot-section supported by the brackets, a locking-plate fixed to the head-section, and a single locking-rod loosely connected to the tie-rod and slidably held on the bed-frame to engage with the locking-plate on the unfolding adjustment of the parts.

14. In a folding bed, the combination with a head-section, a pivoted bed-frame, and a foot-section pivoted to said bed-frame, of a locking-rod having a cranked connection with the foot-section, and a locking element fast with the head-section and disposed for engagement with said locking-rod.

15. In a folding bed, the combination with a head-section and a pivoted bed-frame, of a stud on said head-section, a tie-rod fixed to the head-section, an extension-rod having a head loosely fitted on said tie-rod and con-

nected with the bed-frame, a compression-spring seated at one end against the bed-frame and at its other end against the projection on the rod, and a looped frame-extension base loosely fitted on the tie-rod on opposite sides of the head of the extension-rod, one arm of said looped frame being slidable between the extension-rod and the stud of the head-section.

16. In a folding bed, a foot-section having brackets provided with rollers, and a drapery-rod fitted removably to said brackets and rollers.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CYRIL PECK BROWN.

Witnesses:

JOHN B. PRUIM,
ENNO J. PRUIM.