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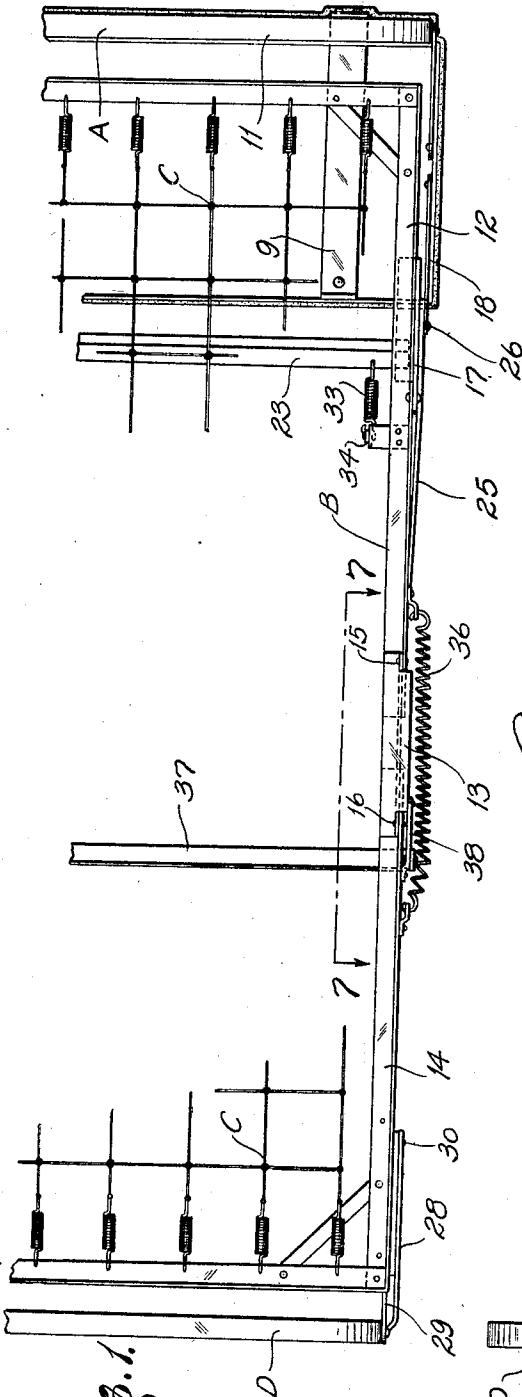
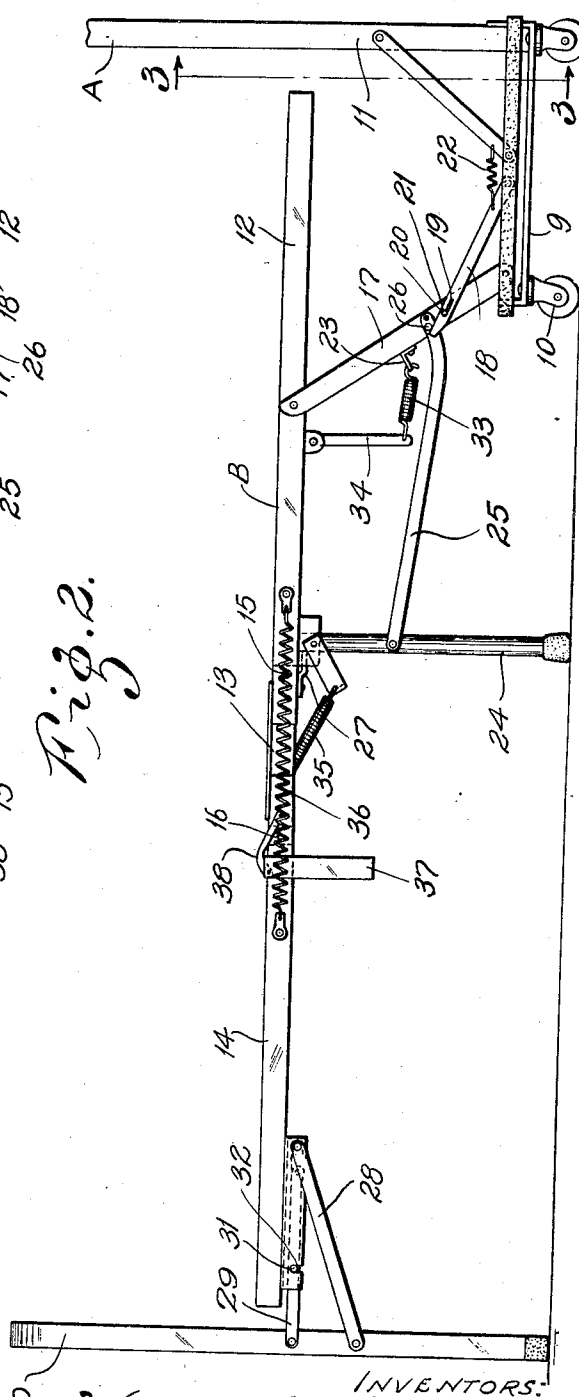
W. CHACKES ET AL

1,814,828

FOLDING BED

Filed Jan. 23, 1928

3 Sheets-Sheet 1



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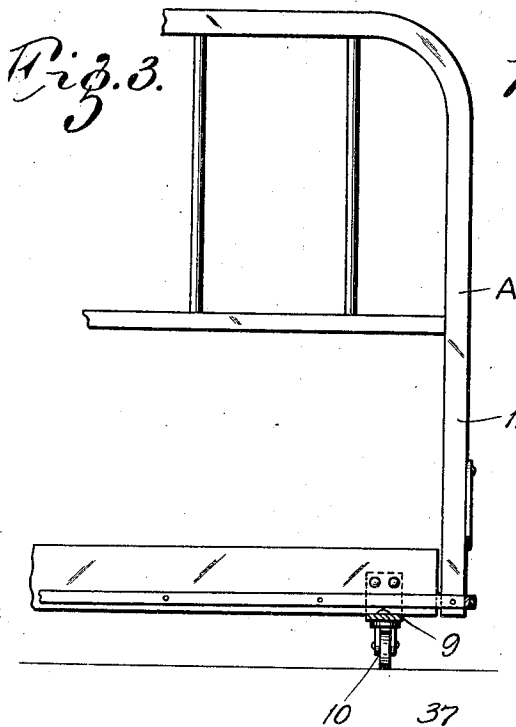
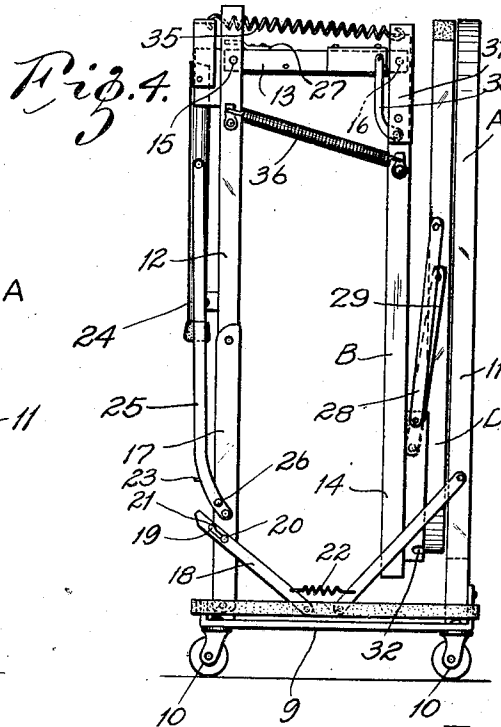
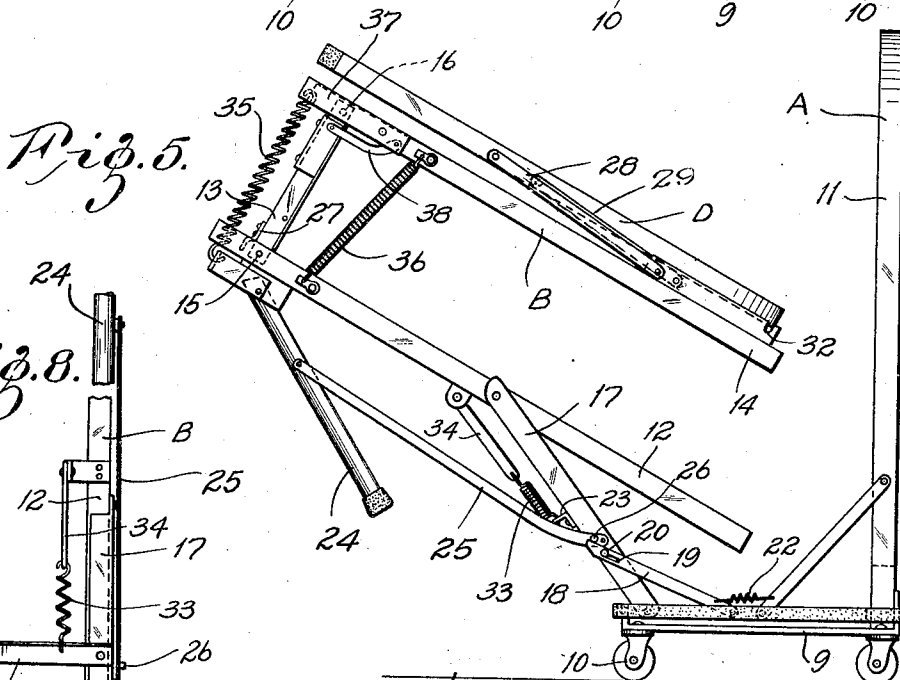
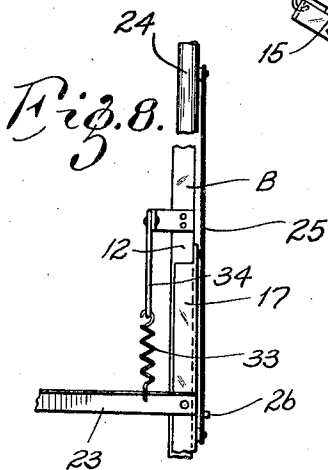
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FOLDING BED

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3 Sheets-Sheet 2



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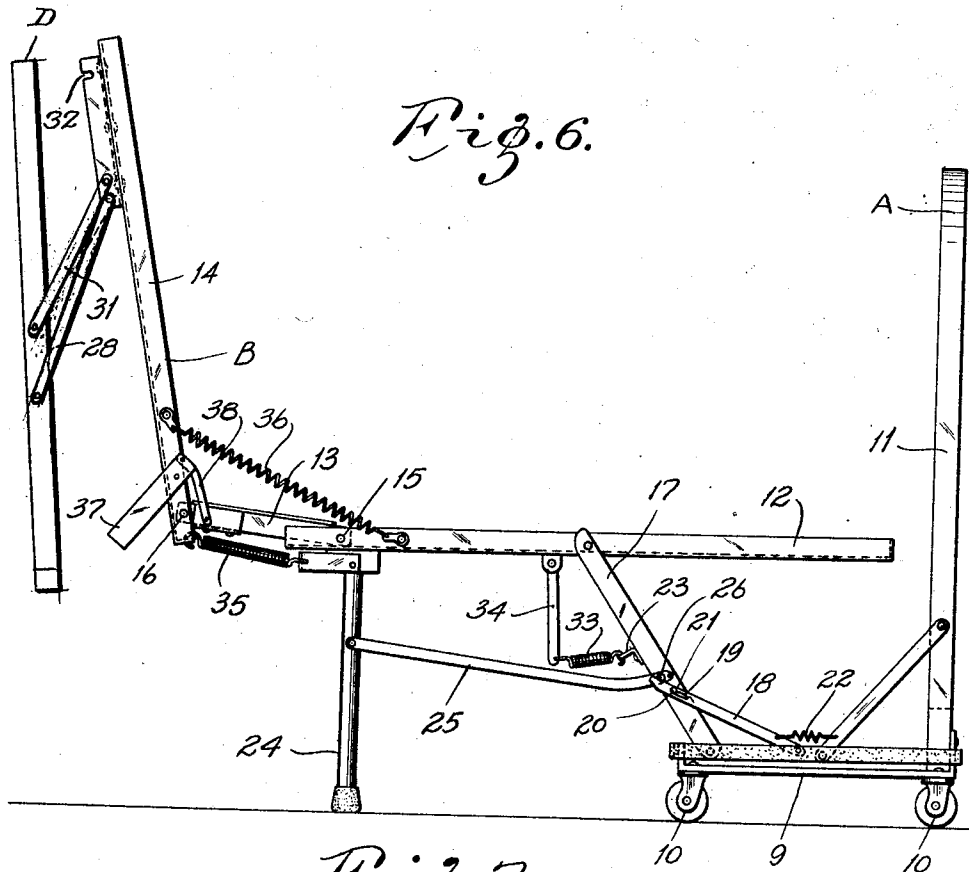
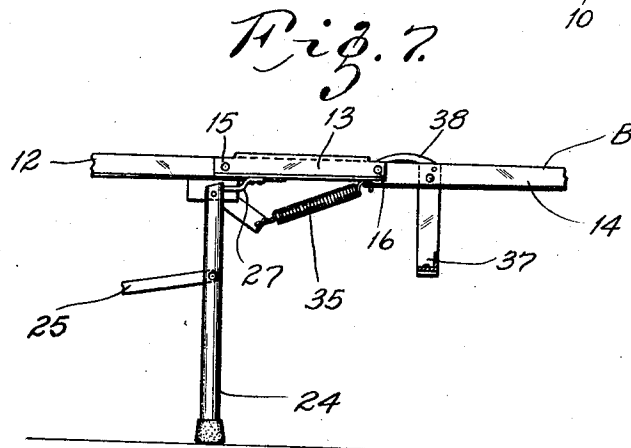
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1,814,828

FOLDING BED

Filed Jan. 23, 1928

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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FOLDING BED

Application filed January 23, 1928. Serial No. 248,651.

This invention relates to folding beds and has for its principal objects to devise a folding bed that is simple, compact and easily operated, that is not likely to get out of repair, that has great strength and rigidity when opened as a bed and that will embody other advantages hereinafter appearing. The invention consists in the folding bed and in the parts and in the combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a plan view of one side portion of a folding bed embodying our invention, the bed being shown unfolded,

Fig. 2 is a side elevation of the unfolded bed,

Fig. 3 is a vertical section through the stationary bed supporting end frame on the line 3—3 in Fig. 2,

Fig. 4 is a side view of the folded bed,

Fig. 5 is a side view, showing the folding bed frame swung out of the stationary supporting end frame therefor,

Fig. 6 is a similar view, showing the head section unfolded and the intermediate and foot sections partly unfolded,

Fig. 7 is a horizontal section on the line 7—7 in Fig. 1, and

Fig. 8 is a fragmentary front elevation of one side of the folding bed showing the spring connection between the head section of the bed frame and the supporting link therefor.

The folding bed frame shown in the accompanying drawings comprises a stationary bed supporting end frame A, a folding sectional bed frame B supported on the end frame A and provided with a flexible wire mattress C, and a folding bed supporting end frame D. The stationary bed supporting end frame A comprises a heavy horizontal base portion 9 mounted on casters 10 and supporting an upright bed end 11 of any desired design. The stationary end frame A constitutes the sole support for the bed frame B in the folded position thereof

and is made stable enough to prevent tilting thereof during the folding and unfolding movements of said bed frame. If desired, the stationary bed supporting end frame A may be enclosed within a casing to give it the appearance of an article of furniture.

The folding bed frame B comprises three folding hinged sections 12, 13 and 14 preferably constructed of angle iron. In the unfolded or bed position of the folding bed frame B, as shown in Fig. 2, the three folding sections 12, 13 and 14 thereof are disposed in substantially the same horizontal plane and cooperate to form the bed bottom. In the folded or closed position of the folding bed frame, as shown in Fig. 4, said bed frame, together with the folding end frame D thereof, is disposed immediately above and entirely within the side lines of the base portion 9 of the stationary bed supporting end frame A, with the folding end frame D, the head section 12 and foot section 14 disposed vertically and with the intermediate section 13 disposed horizontally at the top of the folded bed frame.

The outer ends of the side rails of the head section 12 of the folding bed frame B are pivotally connected, as at 15, to the inner ends of the side rails of the intermediate section 13; and the inner ends of the side rails of the foot section 14 are pivotally connected, as at 16, to the outer ends of the side rails of said intermediate section. The folding bed frame B is connected at each side thereof to the bed supporting end frame A by means of a link 17, which is pivoted at its lower end to the base portion 9 of the end frame A and at its upper end to the side rail of the head section 12 of the bed frame at points substantially midway of the length of said side rail, whereby the folded bed frame may be swung forwardly out of the end frame.

The forward swinging or unfolding movement of the link 17 is limited by means of a link 18, whose lower end is pivoted to the base 9 of the stationary end supporting frame A rearwardly of the link 17 and whose upper end has a slot-and-pin connection with the link 17. As shown in the

drawings, the slot-and-pin connection between the links 17 and 18 comprises a longitudinal slot 19 in the outer end of the link 18 and a pin 20 on the link 17. The outer end portion of the slot 19 in the link 18 is provided with a notch 21 adapted to straddle the pin 20 on the supporting link 17 when said pin reaches the outer end of said slot, thereby preventing accidental folding movement of the supporting link 17 in the bed position of the folding bed frame. A spring 22 has one end attached to the base 9 of the stationary bed end A and its other end attached to the link 18 and is positioned so as to exert an upward pull on the link 18 so as to assist in disengaging said link from the pin 20 at the beginning of the folding movement of the bed frame. The supporting links 17 on opposite sides of the bed frame are connected together preferably by means of a horizontally disposed cross or tie bar 23.

The head section 12 of the folding bed frame B is also provided at each side thereof with a folding leg 24, which is pivotally secured at its upper end to the side rail of said head section adjacent to its point of connection with the intermediate section 13 of said bed frame and serves to support the unfolded bed frame intermediate its ends. The leg 24 is automatically folded and unfolded during the folding and unfolding movements of the bed frame by means of a link 25, which is pivotally connected at one end to said leg and at its other end to the supporting link 17. The link 25 operates to fold or draw up the leg 24 against the head section 12 during the folding movement thereof. During the unfolding movement of the head section 12, the folding leg 24 is swung out at right angles to the side rails of said section and thus constitutes a support for the outer end thereof. As shown in the drawings, the link 25 is pivotally connected to the supporting link 17 immediately above the outer end of the link 18 and is provided with an outstanding lock pin 26 adapted, to bear against the upper edge of the link 18 in the unfolded position of the head section and thus prevent the notch 21 in the slot 19 from lifting off the pin 20. During the folding movement of the head section 12, the locking pin 26 swings away from the link 18 and thus permits the notch 21 in said link to be disengaged from the pin 20 on the supporting link 17. Accidental folding movement of the leg 24 in the bed position of the folding bed frame is further prevented by means of a stop member 27, which is riveted to the underside of the intermediate section 13 of said frame and moves into a position in front of said leg above the pivotal center thereof in the bed position of the bed frame.

The folding bed supporting end frame D

is pivotally connected to the outer end portion of the folding foot section 14 of the folding bed frame at each side thereof by means of a pair of links 28 and 29 that are pivotally connected at one end to said foot section and at the other end to the side rail of the folding bed end. The short link 29 is provided with a locking pin 31 adapted to cooperate with a notch 32 provided therefor in the side rail of the foot section, whereby when the folding bed end D is unfolded said pin is adapted to enter said notch and thereby prevent accidental folding movement of the folding bed end in the bed position of the folding bed frame.

One end of a coil spring 33 is secured to the angle iron cross bar 23 adjacent to each supporting link 17; and the other end of said spring is connected to the free outer end of an arm 34 whose inner end is pivotally connected to the side rail of the head section 12 at a point located adjacent to and spaced outwardly from the point of connection between said rail and said supporting link. This spring is placed under tension when the head section 12 is folded against the supporting link 17 and thus serves to assist in the operation of swinging the head section to bed position after the supporting link has reached the limit of its unfolding or outward swinging movement. Said spring also serves to cushion or check the folding or closing movement of the head section.

The foot and head sections of the folding bed frame are also connected by means of coil springs 35 and 36 adapted to assist the folding and unfolding movements of the head and intermediate sections. As shown in the drawings, the spring 35 is placed under tension when the foot section is folded and thus serves to check or cushion the folding movement of said section and assist the opening movement thereof; and the spring 36 is placed under tension in the unfolded or bed position of the foot section and thus serves to check or cushion the unfolding movement of said section and to assist in the closing or folding movement thereof. The foot section 14 is provided adjacent to its point of connection with the intermediate section with a bail-shaped cross brace 37 which extends from side rail to side rail of said section with its end pivotally connected thereto. The cross brace 37 has a link connection 38 with the intermediate section 13, whereby said brace is adapted to fold or draw alongside the side rail of the foot section 14 when the latter is folded, as shown in Figs. 4 and 5.

Assuming the bed to be in a folded or closed position as shown in Fig. 4, the folded bed frame is swung outwardly and downwardly by means of the supporting links 17 until said links reach the limit of their outward swinging movement; whereupon a

continued outward pull on the folded bed frame causes the head section 12 to pivot on the outer ends of the supporting links 17 and swing to bed position and the legs 24 to unfold and support the outer end of said head section. The folding bed end D is then drawn forward, which action causes the intermediate, and foot sections 13 and 14, respectively, to unfold, during which movement said folding bed end unfolds and serves to support the outer end of the unfolded bed frame. With the parts unfolded, as shown in Fig. 2, the supporting link 17, the legs 24, and the folding bed end D are locked against accidental folding in the manner above described.

Obviously, the hereinbefore folding bed construction admits of considerable modification without departing from the invention; therefore we do not wish to be limited to the precise details shown and described.

What we claim is:

1. In a folding bed, a main supporting frame, a folding bed frame, links pivotally connected to the main supporting frame and to the folding bed frame and adapted to support the latter in folded and unfolded positions and to swing the folded bed frame into and out of the main supporting frame, means connected to said supporting links and to said main frame for limiting the outward swinging movement of said supporting links, said means comprising links pivotally secured to said main supporting frame and having pin and slot connections with said supporting links, and means carried by the folding bed frame and cooperating with the links that limit the outwardly swinging of said supporting links for locking the latter against inward swinging movement in the unfolded position of said bed frame.

2. In a folding bed, a main supporting frame, a folding bed frame, links pivotally connected to the main supporting frame and to the folding bed frame and adapted to support the latter in folded and unfolded positions and to swing the folded bed frame into and out of the main supporting frame, means connected to said supporting links and to said main frame for limiting the outward swinging movement of said supporting links, said means comprising links pivotally secured to said main supporting frame and having slot and pin connections with said supporting links, and means carried by the folding bed frame and releasable by the folding movement thereof for engaging the links that prevent outward swinging movement of said supporting links to lock the latter against inward swinging movement in the bed position of said bed frame.

3. In a folding bed, a main supporting frame, a folding bed frame, links pivotally

connected to the main supporting frame and to the folding bed frame and adapted to support the latter in folded and unfolded positions and to swing the folded bed frame into and out of the main supporting frame, means connected to said supporting links and to said main frame for limiting the outward swinging movement of said supporting links, said means comprising links pivotally secured to said main supporting frame and having slot and pin connections with said supporting links, folding legs secured to said pivotally supported bed frame, link connections between said legs and said supporting links for unfolding said legs during the movement of said bed frame to said bed position, and means whereby said links are adapted to cooperate with the link connections between said supporting frame and said supporting links for preventing folding movement of the latter in the bed position of said bed frame.

4. In a folding bed, a main supporting frame, a folding bed frame, links pivotally connected to the main supporting frame and to the folding bed frame and adapted to support the latter in folded and unfolded positions and to swing the folded bed frame into and out of the main supporting frame, means connected to said supporting links and to said main frame for limiting the outward swinging movement of said supporting links, said means comprising links pivotally secured to said main supporting frame and having slot and pin connections with said supporting links, folding legs secured to said pivotally supported bed frame, link connections between said legs and said supporting links for unfolding said legs during the movement of said bed frame to bed position, means whereby said links are adapted to cooperate with the link connections between said supporting frame and said supporting links in the bed position of said bed frame, to prevent folding movement of the latter, and a stop rigidly secured to said bed frame and adapted to cooperate with said folding legs in the bed position of said bed frame to prevent folding movement of said legs in said position.

Signed at St. Louis, Missouri, this 20th day of January, 1928.

WOOLF CHACKES.
THEODORE J. BOSSERT.

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