F. A. UPTEGROVE.

FOLDING BED.

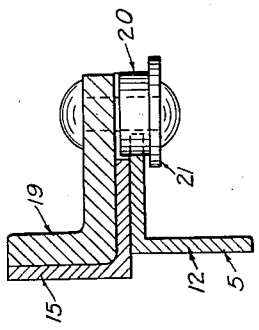
APPLICATION FILED AUG. 12, 1919.

1,325,218.

Patented Dec. 16, 1919.

2 SHEETS—SHEET 1.

FIG. V



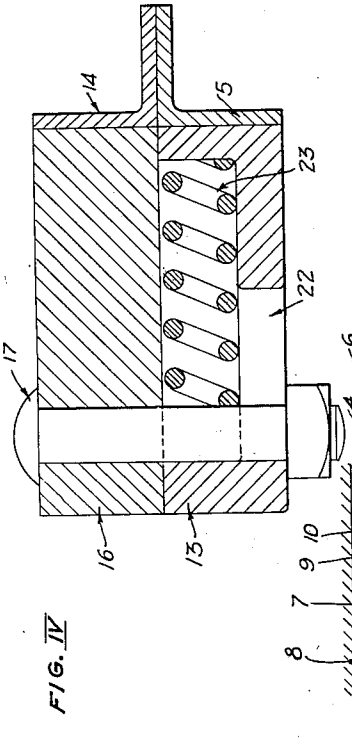


FIG. IV

FIG. I

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2 SHEETS—SHEET 2.

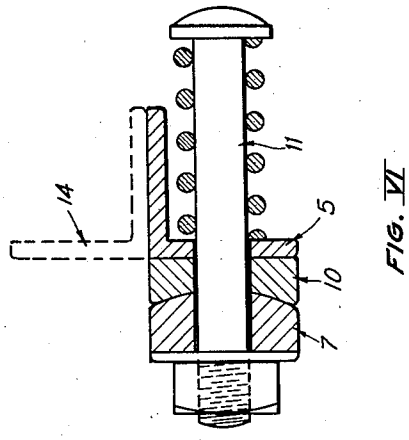


FIG. VII

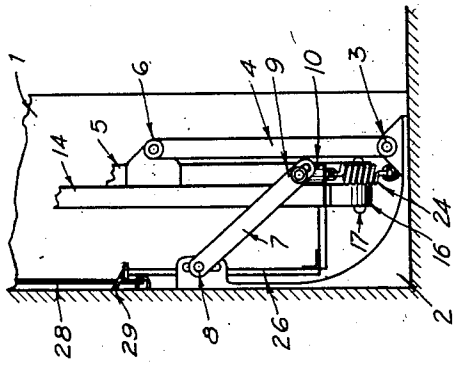


FIG. III

FIG. II

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UNITED STATES PATENT OFFICE.

FRANK A. UPTEGROVE, OF PORTLAND, OREGON.

FOLDING BED.

1,325,218. Specification of Letters Patent. Patented Dec. 16, 1919.

Application filed August 12, 1919. Serial No. 316,975.

To all whom it may concern:

Be it known that I, FRANK A. UPTEGROVE, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Folding Bed, of which the following is a specification.

My invention relates to beds which can be tilted into a wall recess.

Besides other objects and advantages as will appear hereafter from the specification, I desire to furnish a bed which not only combines rigidity with great ease of operation, but also permits a certain amount of lateral swing to the foot end, so that access to both sides of the bed may be gained though the recess in the wall should be close to one corner of the room—an inestimable advantage in any bed room, but especially in smaller apartments where husbanding of space is imperative.

I attain these objects with the mechanism illustrated in the accompanying drawings in which—

Figure I is a plan view of the entire mechanism; Fig. II, a side elevation of Fig. I; Fig. III, a partial view of Fig. II, illustrating the appearance of the head end in folded position; Fig. IV, a section through the pivotal point at the line *a*—*a* in Fig. I; Fig. V, a section along the line *b*—*b* in Fig. I; and finally Fig. VI, a section along the line *c*—*c* in Fig. II, showing the manner of locking the link to the underframe.

Similar numerals refer to similar parts throughout the several views.

When opened for occupancy the appearance of my folding bed is illustrated by Figs. I and II and, referring at present especially to the last-named figure, we have within the wall recess 1 two brackets 2, one on each side of the bed. These brackets have one leg bolted to the floor and the other to the wall. Pivotally secured to the floor leg at 3 is a strut 4 which, at the upper end, supports an angle iron frame, hereafter referred to as underframe 5. The connection 6 between strut and underframe may be accomplished by any suitable pivotal means. To balance the underframe on the strut, there is a tension member or link 7 pivoted at 8 to the wall leg and with the other end 9 attached to the underframe 5 in the manner detailed in Fig. VI. Here the casting 10 is riveted to the angle iron of the underframe 5 and has a groove to seat the rounded side of link 7. A spring bolt 11, by pressing the link into the groove, holds the former in alinement with the underframe, but permits pivotal motion when sufficient bending force is applied, in which case the rounded side of the link will be forced out of the groove and will ride on the high edges of said groove.

The underframe 5 is bent of angle iron and has, in plan view, three straight sides at right angles to each other, but the fourth side 12 is curved circularly with its central point in the lug 13 attached to the head end of the underframe.

This underframe 5 supports the head end of an ordinary bed frame 14, while the foot end of the bed is supported on hinged posts 15^a which can be folded inward when the bed is tilted into the recess 1.

Attached to the bed frame 14 is a curved piece of angle iron 15 which glides on the side 12 of the underframe. The center for this angle iron 15 is located in a lug 16 riveted to the head end of the bed frame 14; and, by connecting both centers with a bolt 17, we obtain a pivotal point which permits the foot end of the bed to be shifted laterally as indicated by the dotted lines 18 in Fig. I.

To lift the underframe 5 with the bed frame 14 there is, by means of casting 19, a flanged roller 20 attached to the angle iron 15. (See Fig. V). This roller rides on the edge of the angle iron 12 and permits lateral displacement of the bed frame 14, but a separation of the two angle irons 12 and 15 is prevented by the flange 21 of the roller 20. However, to prevent an accidental shifting of the bed during the process of tilting it into the recess 1, the angle iron 12 of the underframe is slotted at the center line of the bed and, by permitting the roller 20 to drop into the slot, the bed frame will be securely locked to the underframe. Yet no such locking could take place without varying the location of the pivotal point in the lugs 13 and 16, and for this purpose I employ the mechanism detailed in Fig. IV.

The pivotal bolt 17 remains stationary in regard to its own lug 16 but slides within the slot 22 of the lug 13 whenever the bed frame 14 is pulled in the direction of that slot. The spring 23, housed within the lug 13, will automatically insure a return of bolt

17 to normal position when the roller 20 drops into the slot of the angle iron 12.

To assist in raising the foot end of the bed, a tension spring 24 is attached to the underframe on each side of the bed. The lower end of said tension spring may be secured by a chain or cord 25 to the floor leg. The vertical frame 26 at the head end of the bed is hinged at 27, but prevented from folding inward by a rod 28 which engages slidably an eye 29 at the top of the vertical frame. The upper end of the rod is held in position by a chain or cord 30 reaching from the wall to the rod, while the lower end is hinged to the wall directly.

If the pivotal point 8 of the link 7 were unchangeable, and the floor at the foot end of the bed should happen to be uneven, it might prevent a true alinement and sufficient lock between casting 10 and link 7, the consequence would be a disagreeable noise and vibration of the bed whenever the occupant should stir in his bed. For this reason the pivot 8 of the link 7 moves within a slot in the wall leg, and a sufficient lock between link and underframe is always assured.

In Fig. III the essential parts of the mechanism are shown in their folded position. Strut 4, underframe 5 and bedframe 14 have assumed a vertical position; the tension spring 24 has contracted and depends freely from the underframe; the link 7 has been forced from a horizontal to an inclined position, riding with its end 9 on the high edges of the grooved casting 10; the vertical frame 26 has folded inward, which permits the rod 28 to assume a position parallel with the wall and to leave room for the bedding. The bed posts at the foot end have, of course, also folded, and the recess may be closed by a door or otherwise.

An additional advantage of this invention is the fact that it can be attached without much difficulty to most of the existing bed frames.

Having thus described my invention, it will be seen that my objects have been accomplished and, though I have shown the preferred form of construction, I reserve to myself the right to make minor changes, providing I do not violate the spirit and principle of my invention.

I claim:

1. In a folding bed, the combination of a bed frame pivotally mounted at the head end for oscillation within the plane of its frame and also for oscillation at right angles to said plane, with an auxiliary frame attached to the head end of the bed frame, said auxiliary frame following the oscillation of the bed frame at right angles to its plane, and having suitable supporting means attached to the sides of said auxiliary frame.

2. In a folding bed, the combination of a horizontal bed frame pivotally mounted at the head end for horizontal oscillation and also for vertical oscillation, with an auxiliary frame supporting the head end of the bed frame and having means for connecting said auxiliary frame to floor and wall, said connecting means being adapted to accommodate themselves to the varying positions of bed frame and auxiliary frame during the vertical oscillation.

3. In a folding bed, the combination of an oscillating horizontal bed frame, a horizontal underframe movably attached to the head end of the bed frame, corner brackets attached to wall and floor, connecting means between said brackets and the underframe capable of following the oscillation of the bed frame from a horizontal to a vertical position and vice versa.

4. In a folding bed, the combination of a bed frame, an underframe at one end of the bed frame, stationary brackets at both sides of the underframe, strut connection from the brackets to the underframe, link connection between brackets and underframe, said strut and link connection enabling bedframe and underframe to swing from a horizontal to a vertical position or vice versa, said brackets supporting all the load during the vertical position and one-half the load during the horizontal position.

5. In a folding bed, the combination of stationary brackets within a wall recess, a swinging frame supported on the brackets, said swinging frame having three straight sides and one curved side, the center to the curved side located in a lug attached to the straight side opposite the curved side, a slot within said lug, a coil spring housed within the lug, a pin slidably secured within the slot and exerting pressure on the pin, a bed frame superimposed on the swinging frame, having a curved angle iron extending across the frame, the center to said curved angle iron located in aforesaid pin and permitting sliding as well as pivotal motion to the bed frame, said bed frame being capable of assuming a vertical as well as horizontal position within the brackets.

6. In a folding bed, the combination of a swinging frame adapted to support one end of a bed frame, struts from the floor to the swinging frame supporting the latter at two adjacent corners, links from the wall to the swinging frame interlocking with grooved castings at the two remaining corners of the swinging frame to balance the latter rigidly in its horizontal position, but releasing the lock when the frame is swung into vertical position.

7. In a folding bed, the combination of a bed frame having a curved member across the width intermediate the two ends, having a flanged roller attached to the middle of the curved member, having a pivot at the

end of the bed frame centrally to the curved member, with an underframe having one side curved to serve as track for the corresponding member of the bed frame and its flanged roller, having a slot in the middle of the curved side to seat the flanged roller and to lock the bedframe against lateral movement, and having a pivot at the end of the underframe centrally to the curved side and permitting the bed frame to oscillate laterally when released from the lock.

Signed by me at Portland, Oregon, this 6th day of August, 1919.

FRANK A. UPTEGROVE.