N. SINCLAIR.

EXTENSIBLE BED.

APPLICATION FILED NOV. 1, 1920.

1,380,502.

Patented June 7, 1921.

2 SHEETS—SHEET 1.

FIG. 1

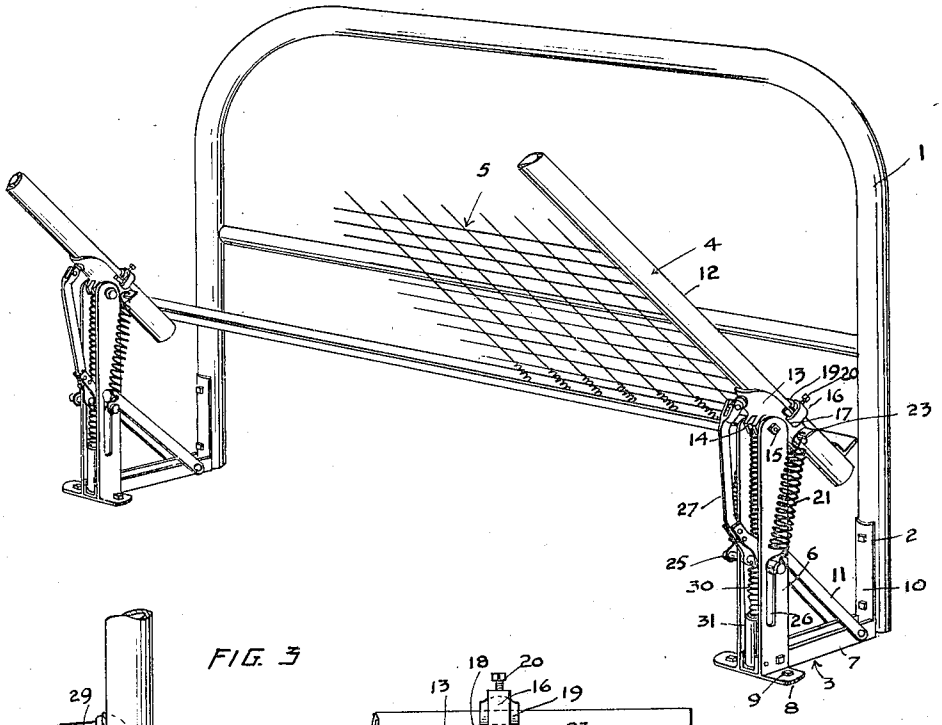
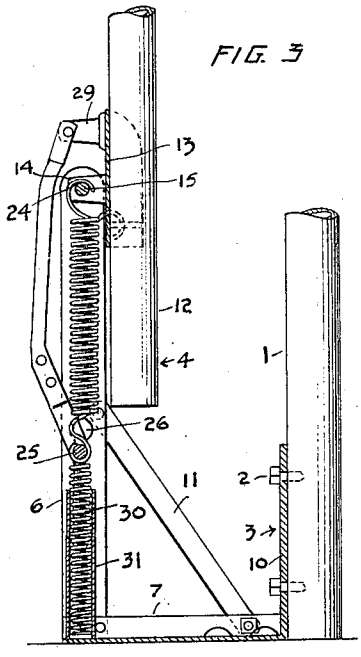


FIG. 3



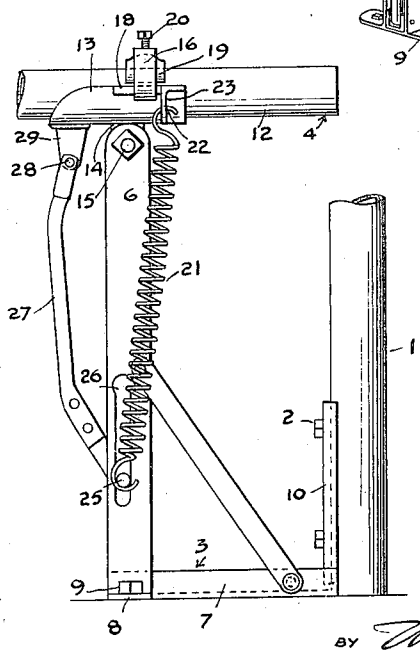


FIG. 2

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2 SHEETS—SHEET 2.

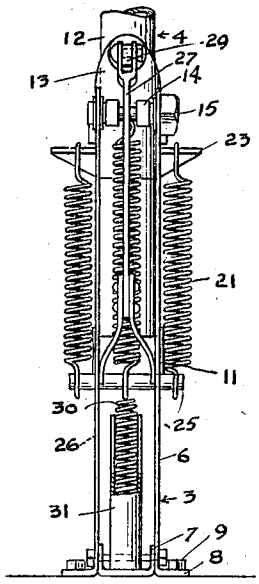


FIG. 4

FIG. 5

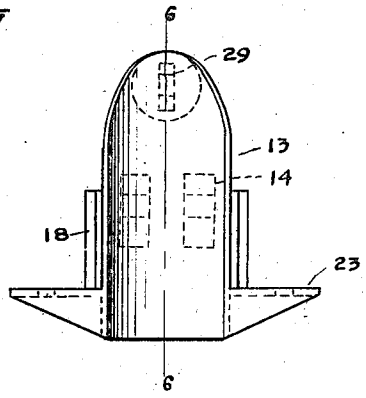
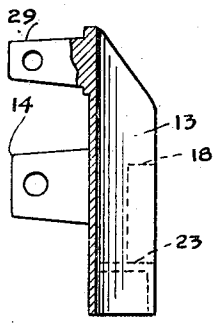


FIG. 6



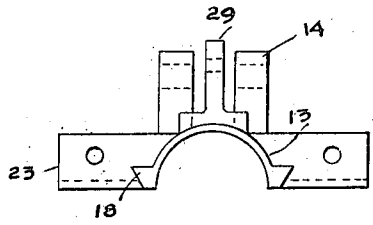


FIG. 7

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UNITED STATES PATENT OFFICE.

NEIL SINCLAIR, OF OAKLAND, CALIFORNIA, ASSIGNOR TO THE RIP VAN WINKLE WALL BED COMPANY, OF OAKLAND, CALIFORNIA.

EXTENSIBLE BED.

1,380,502. Specification of Letters Patent. Patented June 7, 1921.

Application filed November 1, 1920. Serial No. 421,015.

To all whom it may concern:

Be it known that I, NEIL SINCLAIR, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Extensible Beds, of which the following is a specification.

This invention relates to improvements in that class of extensible or "wall" beds which are pivoted or hinged at or adjacent to a floor, wall, or door carried support and which swing from a vertical to a horizontal position, or in a reverse direction so as to be disposed in positions of use and non-use.

The invention has particular reference to certain improvements in hinged or pivotal bed mountings and novel means for balancing the weight of a bed so as to provide for a safe and easy swing thereof into and out of position of use.

An object of the invention is to provide a simple and inexpensive mounting by means of which bed spring or mattress supporting frames of various kinds and sizes may be readily and easily mounted so as to be swung into horizontal and upright position, without the necessity of employment of skilled labor or special tools.

Another of the objects of the invention is to provide counter-balancing means of the character described, which means principally embodies retractile springs so arranged relative to the mountings, bed frame, and other elements of the counterbalancing means that maximum resisting or counterbalancing action is provided with a comparatively short stretching of said springs, whereby the life and effectiveness of the springs will be increased.

A further object of the invention is to provide means of the character described which will be compact, consist of few parts, and for these reasons facilitate a rigid and secure mounting of the bed.

The invention possesses other advantages and features some of which, with the foregoing will be set forth at length in the following description where I shall outline in full that form of the invention which I have selected for illustration in the drawings accompanying and forming a part of the present specification. In said drawings I have shown one form of the construction of my invention, but it is to be understood that I do not limit myself to such form since the invention as expressed in the claims may be embodied in a plurality of forms.

Referring to the drawings:

Figure 1 is a fragmentary perspective view of a bed constructed in accordance with my invention.

Fig. 2 is a fragmentary side elevation of the bed showing it in horizontal position.

Fig. 3 is a side elevation partly in vertical section showing the bed as it will appear when in upright position.

Fig. 4 is a fragmentary side elevation, partly broken away, of the bed and mounting as they will appear when in upright position.

Fig. 5 is a top plan view of the clamp for securing the bed frame members to the mounting.

Fig. 6 is a longitudinal sectional view of said clamp taken on the line 6—6 of Fig. 5.

Fig. 7 is an end elevation of the clamp.

In the embodiment of my invention illustrated in the accompanying drawing, there is provided the usual head 1 for the bed, which head is secured as at 2 to a mounting or bracket 3, to which latter the bed frame or mattress supporting frame 4, carrying the springs 5, is pivoted or hinged. In this form of the invention, I have shown the mounting 3 as consisting of spaced upright standards 6 provided at their lower ends with rearwardly extending portions 7 and with ears 8. The ears 8 are secured to the floor by fastenings 9 and the portions 7 carry upright members 10 to which the head 1 is bolted as at 2. Suitable braces 11 are provided for the mounting and connect the members 6 and 7 of said mounting. In this form of mounting, the head 1 is adapted to lie against the wall, not shown. In the case of attachment of the bed to a door, the mounting 3 will be fastened to the door instead of the floor, after a well known manner, which it is not believed necessary to illustrate.

In the form of mattress or bed frame shown in the drawings, the side bars 12 are of tubular form and engage in elongated semi-circular reception members 13. Apertured ears 14 depend from the central portions of the members 13 and extend between the standards 6 with the apertures therein registering with similar apertures in said standards. Bolts or other members 15 serve as pivot pins and are inserted through said

standards and ears so as to pivotally connect the reception members 13 with the upper ends of the standards. Coöperating with the members 13 are adjustable arcuate clamp members 16, the free ends of which are inwardly turned as at 17 and adapted to engage under lateral flanges 18 formed on opposite sides of the members 13. A jaw member 19 is adjustably carried by each member 16 and is caused to be moved into and out of clamping position on the side bars 12 by screws 20. It will thus be seen that the bed frame 4 may be quickly and securely clamped upon the pivotal mounting therefor and as quickly and easily removed when desired.

The means for counter-balancing the bed frame comprises a plurality of retractile helical springs 21, there preferably being three of such springs, two located on opposite sides of the standards 6 of each mounting and one between said standards. The upper ends of the outer springs 21 are secured as at 22 to lateral extensions 23 upon the rear or inner ends of the reception members 13. These springs are therefore connected with the bed frame at a point rearwardly of the bed frame pivot point, but close to said pivot point. The upper ends of the inner springs are hooked over the pivot pins 15 as at 24. The lower ends of the outer springs are secured to vertically slidable members 25 mounted in slots 26 formed in the standards 6 adjacent to their lower ends. The slots 26 and members 25 are in line with the pivot pins 15. The lower ends of the inner springs are likewise secured to the pins 25. To provide for the retracting of the springs downwardly from their lower ends, that is, a pulling of the springs from the lower ends as well as from the upper ends when the bed is moved from vertical to horizontal extended position, I employ preferably angular levers 27, the lower ends of which are secured to the pins 25, whereas the upper ends are pivoted as at 28 to depending ears 29 formed on the forward ends of the reception members 13. These levers are connected with the members 13 forwardly of the pivot for the bed frame and effect action of the levers from these points downwardly so as to push the pins 25 downwardly and retract the springs when the bed is moved from vertical to horizontal position.

When the bed is moved from vertical position shown in Fig. 3 to horizontal position shown in Fig. 2, the springs 21 are stretched in both directions from the center and counter-balance the weight of the bed while the same is being lowered. Therefore, the springs assist in the raising of the bed to its upright position. Since the springs are stretched in both directions, it is only necessary that they be stretched a comparatively short distance in order to provide the requisite tension to effect the counter-balancing action. As a matter of fact, springs stretched in this manner provide a greater counter-balancing action with less stretching movement than those springs which are fastened at one end and stretched in one direction only. By reason of the short stretching action, the life of the springs is increased, and the possibility of breakage or derangement of the springs is avoided. By having two of the springs for each mounting pulled from points on opposite sides of the pivot of the bed frame, it is possible to arrange the springs and mountings in a compact, simple manner whereby great strength and facility of assemblage and disassemblage are provided.

Furthermore, by the application of the stretching force from points on opposite sides of the pivot point of the bed frame, the moving of the bed into and out of position for use is made comparatively easy, inasmuch as a maximum leverage or stretching action is provided by this arrangement.

To assist in the counter-balancing of the bed frame, I may provide a compression spring 30 for each mounting, arranged between the standards 6 in a slotted casing 31 supported by said standards. The springs 30 are adapted to be engaged by the sliding members 25 upon downward movement of said members whereby said springs will compress. The slots in said casing 31 receive the sliding members 25.

Another of the important features of this invention is the provision of the elongated reception member and clamping means therefor both of which provide for the mounting of any kind of spring or mattress supporting frame upon the stationary mountings so that the said frame may be operated as a wall or extensible bed. It is only necessary with this means to fit the side bars of the bed frame in the reception member and clamp the side bars to said member, the member itself being arranged so that it may be easily pivoted to a mounting or support.

I claim:—

1. An extensible bed embodying in its construction a mounting, a mattress supporting frame pivoted upon the mounting, retractile springs secured at certain ends to the frame rearwardly of the pivot point thereof, means slidable upon said mounting with which the other ends of said springs are connected and a lever connected with said frame forwardly of the pivot point and at one end and at its other end secured to said means.

2. An extensible bed embodying in its construction mountings, a mattress supporting frame pivoted upon said mountings, retractile springs connected at certain ends to said

frame, members movable upon the mountings and to which the other ends of the springs are secured, and levers connected at their lower ends to said members and at their upper ends to said frame.

3. An extensible bed embodying in its construction mountings, a mattress supporting frame pivoted upon said mountings, retractile springs connected at certain ends to said frame at a point to one side of the pivot, members movable upon the mountings and to which the other ends of the springs are secured, levers connected at their lower ends to said members and at their upper ends to said frame, and other retractile springs secured at their upper ends to the pivots for the mattress frame and at their lower ends to said movable members.

4. In a bed of the character described, embodying in its construction mountings, reception members pivoted to said mountings and adapted to receive the side members of a bed frame, means for clamping said side members to said reception members, members slidable upon said mountings, springs attached at certain ends to said last-named members and at other ends to the reception members at points to one side of the pivot and rods connected with said reception members and said slidable members.

NEIL SINCLAIR.