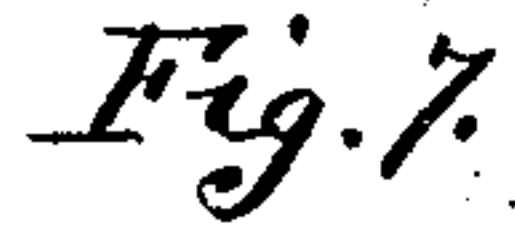
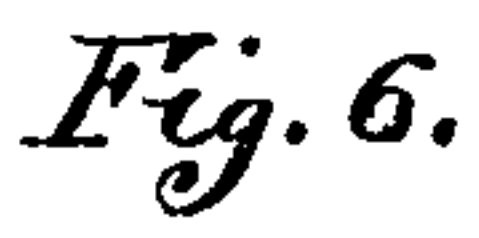
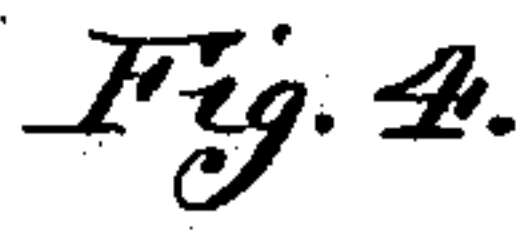
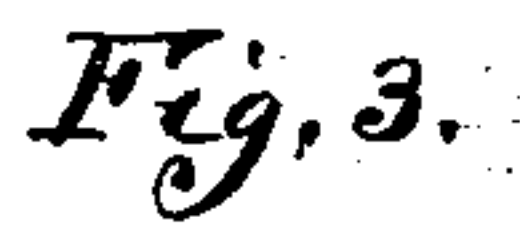


(No Model.)

J. F. WILMOT.
FOLDING BED.

No. 516,290.

Patented Mar. 13, 1894.



Witnesses: J

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UNITED STATES PATENT OFFICE.

JOHN F. WILMOT, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE A. H. ANDREWS
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FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 516,290, dated March 13, 1894.

Application filed March 6, 1893. Serial No. 464,842. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. WILMOT, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new
5 and useful Improvements in Folding Beds, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled
10 in the art to which it appertains to understand, make, and use the same.

This invention relates to folding beds wherein a stationary frame or base has pivotally attached thereto a bed-frame, such bed-
15 frame adapted to contain a mattress and other articles necessary to constitute a bed, and the folding bed having means whereby, as the bed frame is moved on its fulcrum from a closed or upright position to an open and
20 horizontal position it will be counter-balanced, or nearly so, by weights or springs.

Beds of the character named have been heretofore made wherein weights have been used to counter-balance the movable and ful-
25 crumed bed-frame, and, too, such folding-beds have been made wherein springs have been used as a counter-balance. As such beds have been heretofore made, when weights have been used to counter-balance the movable
30 part of the bed, such weights have been, so far as I am aware, attached in some manner to such movable part of the bed, and where springs have been employed, such springs have been attached at one end thereof to the
35 immovable part of the bed frame or base, and at the other end thereof to the movable part of the bed frame or to the rod forming the pivot or fulcrum on which such movable part of the bed frame is secured, and with which
40 it rotates or turns from a closed to an open position or back.

The object of this invention is to obtain a bed consisting of an immovable or stationary base and a movable bed frame fulcrumed in
45 such immovable base, with weights or weights and springs or springs connected to the immovable base and to the movable bed frame, in such manner that the bed frame will be counter-balanced thereby, whether weights
50 alone are used for the counter-balance, combined weights and springs, or springs alone.

To obtain a combined stationary frame or base and a movable bed frame fulcrumed therein as described, which can be readily taken therefrom and returned thereto. To
55 obtain a combined stationary frame or base and a movable bed-frame fulcrumed therein requiring but little weight to counterbalance the bed frame; or springs of light tension; in comparison with the weights and springs here-
60 tofore used in the construction of beds of this character. To obtain a combined stationary frame or base, a movable bed frame wherein the weights and springs or springs used as a counterbalance shall stand out from the bed
65 frame portion thereof in such manner that they may be readily cleansed and will not afford concealment for insects. To obtain a folding bed consisting of a stationary base and a movable bed frame fulcrumed therein,
70 wherein the counterbalance shall be so arranged that a practically uniform pressure or strain is required in the raising or lowering of the bed and wherein when the bed frame is suddenly raised, it will not be liable to slam
75 or crash violently into or against the stationary base part thereof.

I have illustrated my invention by the drawings hereinbefore referred to as accompanying and forming a part hereof, in which— 80

Figure 1, is a side elevation of a folding bed embodying my invention with the bed frame part thereof closed in relation to the stationary frame or base part thereof; Fig. 2, a side elevation of the folding bed illustrated in
85 Fig. 1, with the movable bed frame thereof in a horizontal or open position; Fig. 3, a side elevation on an enlarged scale of one end of the movable bed frame, showing the connection by which such bed frame is secured to
90 frame or base of the folding bed; Fig. 4, a cross-sectional view, on an enlarged scale showing a portion of the bed with the movable bed frame part in a vertical position; that is, closed in the stationary frame or base,
95 and showing the mechanism whereby both weights and springs are used as a counterbalance in a folding bed embodying this invention; Fig. 5, a sectional view of the parts illustrated in Fig. 4, with the movable bed
100 frame part thereof open, or in a horizontal position; Fig. 6, a front view of a pivotal arm

adapted to be fulcrumed to the stationary base of the folding bed, and the casting fitting thereover and adapted to be secured to the movable part of the folding bed, such pivotal arm and casting forming the connection by which the movable bed frame is attached to and fulcrumed in such stationary frame or base, and Fig. 7, the pivotal arm and casting illustrated in Fig. 6, viewed at right angles from the position in which they are viewed in such Fig. 6.

The same letter of reference is employed to indicate a given part where more than one view thereof is illustrated in the several figures of the drawings.

A, is the stationary frame or base part of a folding bed embodying this invention; B, the movable bed frame part thereof; B', a fly attached by hinges *b, b*, to movable bed frame B. The hinging of this fly B' to movable bed frame B, forms no essential part of this invention, although I prefer to so construct it.

C, is a casting secured, one on each side thereof, to movable bed frame B; and D, is a groove in casting C. Groove D might be made in the side of the bed frame, but if so placed the strain thereon would tend to split the bed frame, and hence, the casting is preferred.

E, is a lever fulcrumed, one on each side thereof, by pivot *e*, to stationary frame A.

e', (Fig. 7,) is the side or face of fulcrumed lever E which comes adjacent to the inner face of the stationary frame A when such fulcrumed lever E is suitably and pivotally secured to such frame.

E', is the part or portion of fulcrumed lever E, which is adapted to fit into groove D in casting C. When movable bed frame B is connected to stationary frame A by sliding groove D in casting C over part E' of fulcrumed lever E, (such lever E having been theretofore fulcrumed by pin *e*, to such stationary frame A,) the movable bed frame B, is in effect fulcrumed to the stationary frame A by pivot *e*, while at the same time such movable bed frame B can be readily removed from the stationary frame by drawing the groove or casting C off from the part E' of the fulcrumed lever E.

F, is an arm or lever fulcrumed to stationary frame A by pivot *f*.

G, is a bar extending from the arm F on one side of the stationary frame A to the like arm F fulcrumed in like manner on the other side of such stationary frame.

H, is a weight, (preferably consisting of parts *h, h*, secured together by bolts *h'*,) on bar G.

I, is a link pivotally attached at one end by pivot I' to fulcrumed lever E and at the other end by pivot I² to arm F.

When the movable bed frame B is fulcrumed as described by means of the levers E, E, in slots D, D, of the respective castings C, turned down from the vertical and closed position in which it is illustrated in Figs. 1 and 4 of the drawings into the horizontal and open po-

sition in which it is illustrated in Figs. 2 and 5 of the drawings, the levers E, E, are thereby turned on pivots *e, e*, respectively, and by such turning the free end of such levers E, E, (to which link I is attached, as described,) is moved from substantially the position in which such lever E is illustrated in said Figs. 1 and 4, into substantially the position in which such lever E is illustrated in Figs. 2 and 5, carrying therewith link I, levers F, F, bar G, connected thereto, and the weight H, on such bar G. The weight H, on the moving bar G tends to serve as a counter-balance to the bed frame B in the movement of such bed frame from the vertical to the horizontal position, as described, and if the weight H is heavy enough, such weight will serve as such counter-balance; and in fact, the bar G may be made sufficiently heavy to so counter-balance the movable bed frame. In practice, however, I prefer to employ a spring or springs to assist in counter-balancing the bed frame B.

J, is a spring attached at one end thereof to the bar G and at the other end thereof by pivot *j* to the stationary frame or base A.

J' is a spring also attached at one end to bar G, and at the other end to the stationary frame or base A, by means of pivot or pin *j'* in slot *k* of casting K. Casting K is rigidly secured to the stationary frame or base A; and the pin *j'* is secured to the spring J', as described, and such pin being movable in the slot *k*.

The operation of the springs will be readily understood by inspection of Figs. 4 and 5 of the drawings. When the movable bed frame B is closed, as in Fig. 4, spring J is substantially relieved of tension and spring J' is subjected to its greatest tension. The tendency therefore of spring J', when the movable bed frame B is in the position illustrated in Fig. 4, is to draw bar G toward point *j'* and by link I secured to arms F, F, and levers E, E, such tendency of such spring J' to so move bar G tends to move the movable bed frame B on pivot *e* from the vertical to a horizontal position; that is, to open the bed. The center of gravity of the movable bed frame B and contents when the bed is closed, is to one side of the pivotal point *e*, thereby tending to maintain the movable bed frame B close against the stationary frame A. Further, such pivotal point *e* being as described to one side of the center of gravity of movable bed frame B and its contents, when such bed frame is closed or nearly so, there is a tendency in such movable bed frame to slam or crash into the stationary part of the bed frame in the closing thereof, and the spring J' is placed so as to be brought under greatest tension after the center of gravity of bed frame and contents thereof has passed over the pivotal point *e*, to obviate such slam. It is not to be understood, however, that the spring J' is under tension only when the movable bed frame B is closed, as in Figs. 1 and 4, as, on the

contrary such spring is under tension when the movable bed frame B is open, as in Figs. 2 and 5. Spring J is under its greatest tension when the movable bed frame B is open, as in Fig. 5, and under its least tension when such movable bed frame is closed. The increase of tension of spring J is constant as the movable bed frame B is opened from its closed position in Fig. 4 to its open position in Fig. 5, while the tension of spring J', being greatest in the closed position of the movable bed frame B, becomes less as the movable bed frame is opened, until the point of least tension thereon is obtained when the pivotal point *f*, bar G and pivot *j'* are in line, and after the bar G passes through and beyond the line between pivotal points *f* and *j'*, the tension on such spring J' is increased. This increase of tension of spring J' is lessened by the pivot *j'* moving in the slot *k* of standard K, such being the purpose of the slot. By placing the weights H, H, on the bar G, actuated as described by the lever E in the movement of the movable bed frame B, the same effect is obtained as if, the weights being attached to such bed frame, the bed frame turned on a cam, rocker, or two pivotal points, (changing from one to the other,) as do many of the folding beds now and heretofore made, while the increase of leverage thereof obtained in this construction is without jar to the movable bed frame B; the pivotal point or fulcrum *e*, of such bed frame remaining unchanged in frame A. By using a sufficiently heavy bar G to keep the movable bed frame B from tipping the stationary frame A, in the turning down of such movable bed frame, or a bar G, which when combined with weights H, H, is sufficiently heavy to so keep the stationary frame A from tipping and using springs J, J', or either of them to assist in counter-balancing the movable bed frame, such springs being arranged and connected as described, I find that but little weight is required and no extension foot, as it is termed in the art, to stationary frame A, as required where springs alone are used.

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

1. The combination in a folding bed of levers pivoted to the stationary part of the bed, a counter-balance movably attached to such stationary frame, means connecting the levers and the counterbalance, with a movable bed frame having grooves on one end thereof adapted to fit over the pivoted levers and so movably fulcrum the movable frame to the stationary frame, whereby the movable frame can be separated from the stationary frame and from the counterbalance by drawing the grooves from off the pivoted levers; substantially as described.

2. The combination in a folding bed of arms fulcrumed to the stationary frame of the bed, a bar connecting such arms and swinging

thereon levers also fulcrumed to the stationary frame, links extending from the levers to the arms of the swinging bar, and a movable bed frame having a slot at the lower end thereof fitting over and thereby attaching such movable bed frame to the fulcrumed levers on the stationary frame of the bed, whereby movement of the movable frame actuates the swinging bar; substantially as described.

3. The combination in a folding bed of arms fulcrumed to the stationary frame of the bed, a bar connecting such arms and swinging thereon levers, also fulcrumed to the stationary frame of the bed, links extending from the levers to the arms of the swinging bar, springs extending from the swinging bar to the stationary bed frame, and a movable bed frame attached to the fulcrumed levers, whereby movement of the movable bed frame actuates the swinging bar and varies the tension of the springs; substantially as described.

4. The combination in a folding bed of arms fulcrumed to the stationary frame of the bed, a bar connecting such arms and swinging thereon weights on the swinging bar, levers, also fulcrumed to the stationary frame, links extending from the levers to the arms of the swinging bar, and a movable bed frame attached to the fulcrumed levers, whereby movement of the movable bed frame actuates the swinging bar and weights thereon; substantially as described.

5. The combination in a folding bed, of arms fulcrumed to the stationary frame of the bed, a bar connecting such arms and swinging thereon levers, also fulcrumed to the stationary frame of the bed, links extending from the levers to the arms of the swinging bar, springs extending from the swinging bar to near the back of the stationary bed frame, and a movable bed frame attached to the fulcrumed levers, whereby movement of the movable bed frame actuates the swinging bar and varies the tension of the springs; substantially as described.

6. The combination in a folding bed of arms fulcrumed to the stationary frame of the bed, a bar connecting such arms and swinging thereon a weight on the bar, levers, also fulcrumed to the stationary frame of the bed, links extending from the levers to the arms of the swinging bar, springs extending from the swinging bar to a sliding pivot secured to the stationary frame of the bed near the back thereof, and a movable bed frame attached to the fulcrumed levers, whereby movement of the movable bed frame actuates the swinging bar and weights thereon and varies the tension of the springs; substantially as described.

JOHN F. WILMOT.

Witnesses:

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