(No Model.)

G. F. SMITH & W. H. BACHMAN.

FOLDING BED.

No. 437,053. Patented Sept. 23, 1890.

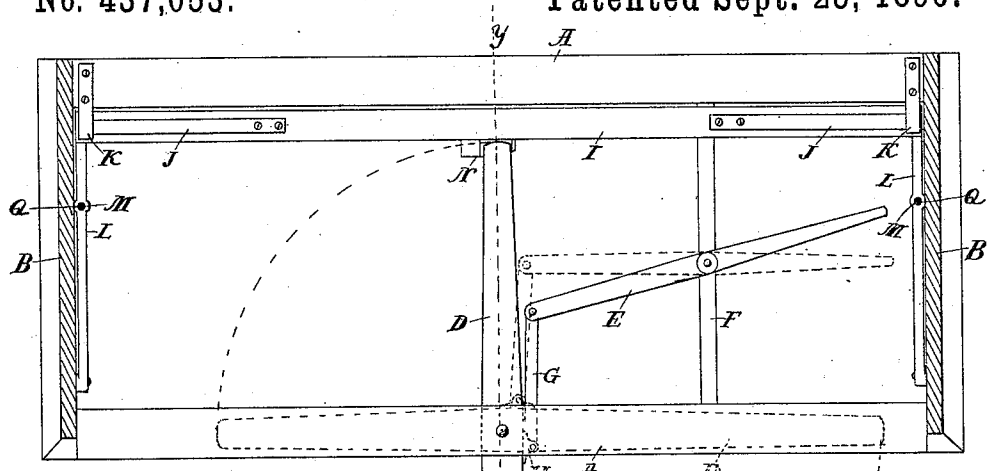


FIG. 1.

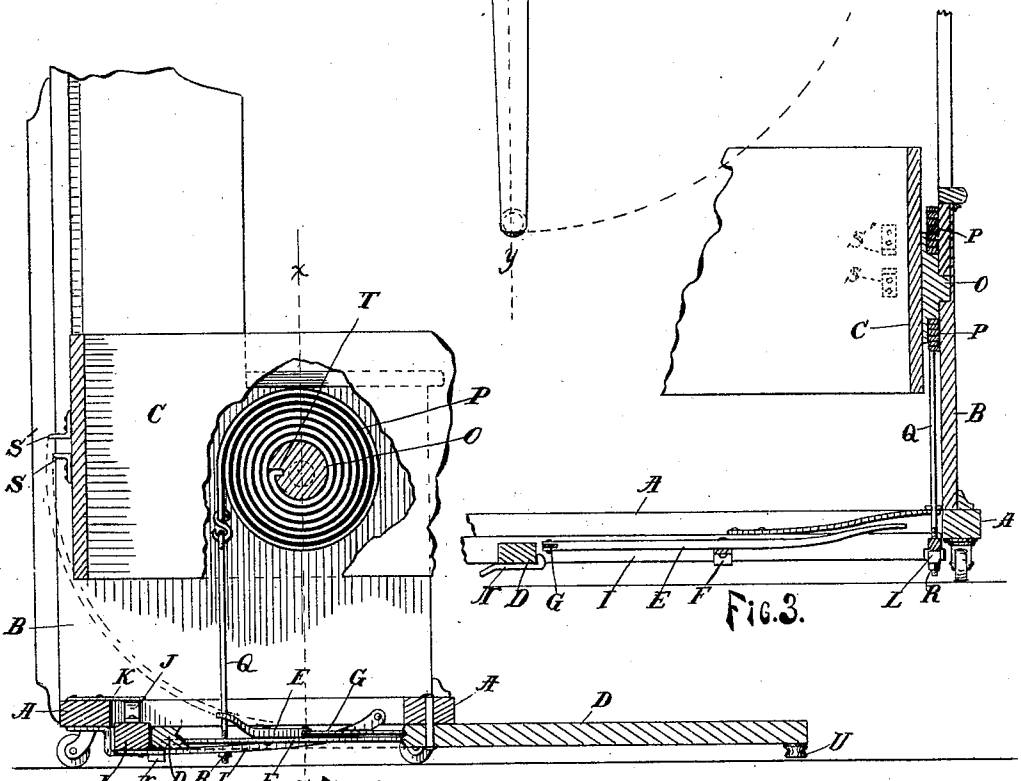


FIG. 2.

FIG. 3.

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FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 437,053, dated September 23, 1890.

Application filed December 21, 1889. Serial No. 334,529. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. SMITH and WILLIAM H. BACHMAN, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Folding Beds; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to folding beds; and the object of our invention is to provide a folding bed and an automatically-acting attachment for such beds for bracing the stationary section thereof firmly in an upright position and prevent it from tipping forward when the bed is opened; and it consists in certain peculiarities in the construction, arrangement, and combination of the various parts, substantially as hereinafter described, and particularly set forth in the subjoined claims, reference being made to the accompanying drawings, wherein—

Figure 1 is a plan of the lower part of the stationary case, with the folding section removed for showing the parts in detail; Fig. 2, a broken-off vertical section on the line *y* of Fig. 1, with part of the side of the folding section removed to show the spring. Fig. 3 is a vertical section on the line *x x* of Fig. 2.

Like letters of reference indicate like parts throughout the drawings.

A is a rectangular frame, forming the bottom of the stationary case, and B the vertical sides of said case.

C represents one of the side rails of the folding section, which is pivoted to B.

D is a bar pivoted to A, adapted to swing horizontally, and is provided with a foot U for engaging the floor, secured to its outer end, and a lug H, to which is attached the rod G, which is attached to the lever E, which is pivoted to the bar F, arranged across the bottom of the frame. The inner end of the bar D is adapted to engage with a plate N, which is secured to a vertically-movable bar I, arranged across the back of the stationary case and provided with springs J, adapted to engage with stops K, which are secured to the frame A. The bar I is secured to levers L, which are pivoted to the sides B of the stationary casing at their front ends, the rear ends being attached to the bar I, and are provided with holes M, through which pass the rods Q, having adjusting-nuts R and connecting the coiled spring P with said levers L.

O is a pivot-plate, having two outwardly-projecting hubs, and is secured to the sides of the folding section. The springs P are coiled around the inside hub of the pivot-plate O and are attached at T. The outer hub engages with a corresponding socket in B for pivoting the folding to the upright section.

S S′ are lugs of unequal length, secured to the head of the folding section for engaging the lever E to operate the lever D.

The device operates substantially as follows: When the bed is folded, the bar D is at rest underneath and parallel to the front bar of the frame A, being moved into that position by the rod G, actuated by lever E, and the stud S′, which engages the lever E when the foot is lifted to bring the folding section into its vertical position, and when so placed it is supported on its pivot, having bearings upon opposite sides in the sides B of the vertical section, and is retained in its vertical position by the tension of springs P. When the foot of the folding section is moved outward toward the floor to open the bed, the stud S engages the free end of the lever E and throws it backward from the position shown in dotted line in Fig. 1 to the position shown in the same figure, pushing on the lug H through the rod G, and causing the bar D to swing upon its pivot to the position shown in Fig. 1, at right angles to its former position. The stud S is of such length that, having thrown the lever E around, as described, it disengages from the lever by being carried upward out of reach of the same, as shown in Fig. 2. As the foot of the folding section approaches the floor, the increased tension of the springs P, lifting upon the rod Q, raises the ends of levers L, lifting the bar I, and bringing the upper surface of the plate N in contact with the under surface of the inner end

of the bar D, tipping the forward end toward and causing the foot U to engage with and press upon the floor. When the foot of the folding section is lifted from the floor for closing the bed, the tension on the springs P being relaxed the springs J, crowding against the stops K, push the bar I toward the floor, releasing the end of the bar D, and as the folding section continues to approach the vertical position the stud S′ engages the end of the lever E, pushing it forward and drawing the bar D back to its former position. The tension of the coiled springs P may be regulated by the nut R to counterbalance the weight of the bedding inclosing the bed. Thus it will be seen that when the bed is opened the bar D is thrown at once to its transverse position for bracing the bed, and as soon as the bed is closed it is drawn back underneath the casing out of sight.

Having thus described our invention, what we claim, and wish to secure by Letters Patent of the United States, is—

1. In a folding bed, the combination, with a stationary case and a folding section pivoted thereto, of a bracing-bar, as D, pivoted centrally on a vertical pivot directly to said stationary section and adapted to swing horizontally from a position parallel with to a position at right angles to the front of said stationary section and engage the floor at its front end, a lever, as E, pivoted to said stationary case and connected to said bar, and a stud, as S, secured to said folding section, substantially as and for the purpose herein set forth.

2. The combination, with the stationary case and the folding section pivoted thereto, of a frame, as A, secured to the bottom of the stationary case, a bar, as D, pivoted centrally on a vertical pivot directly to said frame, adapted to swing horizontally from a position parallel with to a position at right angles to the front of said frame and engage the floor at its front end, a bar, as F, a lever, as E, pivoted to said bar F and connected to said bar D, and a stud, as S, secured to the end of the folding section and adapted to engage the end of the bar D when the bed is opened, substantially as described.

3. The combination, with the stationary case and the folding section pivoted thereto, of a bar, as D, pivoted centrally on a vertical pivot directly to the bottom of the stationary case, provided with a foot, as U, adapted to swing horizontally from a position parallel with to a position at right angles to the front of said case and engage the floor at its front end, a lever, as E, pivoted to said case, connected to said bar D, and a stud, as S, secured to the folding case, adapted to engage said lever E, substantially as and for the purpose set forth.

4. The combination, with the stationary case and the folding section pivoted thereto, of a bar, as D, pivoted near its center to the bottom of said case, adapted to swing horizontally and engage the floor, a lever, as E, pivoted to said case, connected to said bar, and arranged to swing said bar horizontally, a stud, as S, secured to one end of said folding section and adapted to engage said bar E, a bar, as I, arranged across the back of said case, having a plate, as N, adapted to engage the inner end of bar D, levers, as L, attached to the bar I and pivoted to said case, and springs, as P, around the pivot of the folding section, connected to said levers L, substantially as and for the purposes herein set forth.

5. The combination, with the stationary case and the folding section pivoted thereto, of a bar, as D, pivoted to the bottom of said case, adapted to swing horizontally and engage the floor, a bar, as I, arranged across the back of the case, having a plate, as N, adapted to engage the inner end of bar D, springs J, secured to bar I, stops K, arranged substantially as described, levers L, connected to the bar I, springs P around the pivot of the folding section, and rods Q, connecting said springs and levers, arranged substantially as and for the purposes herein set forth.

6. The combination of the stationary case and the folding section pivoted thereto, a pivot-plate, as O, arranged between the folding section and the sides of the stationary case and journaled in the stationary case, a coiled spring, as P, arranged, as described, around said plate O, a rod, as Q, connecting the spring P with the levers L, and a nut R for adjusting the tension of said springs, pivoted levers L, bar I, connected therewith, stops K, engaging the ends of springs, springs J, secured to the bars I, plate N on said bar, and bar D, pivoted centrally to the case, and catches on one end of the folding section, arranged substantially as described, and for the purposes set forth.

7. The combination of the stationary case, a folding section, a pivot-plate secured to the folding section having a shoulder, a coiled spring around the shoulder, and a projecting hub adapted to a corresponding recess in the vertical sides of the stationary case, levers pivoted to the stationary case connected with the springs and attached to a bar arranged across the back of the stationary case, springs, as J, and stops, as K, arranged, as described, for depressing the bar, a plate, as N, secured to the bar, a bar, as D, centrally pivoted to the case, engaging with said plate and adapted to swing horizontally and provided with a foot, as U, for engaging the floor, a lever, as E, pivoted to the stationary case, and studs S and S′ on the folding section for engaging said bar E, arranged substantially as described, and for the purposes set forth.

8. The combination of the stationary case, the folding section, the pivot-plate, the coiled spring around said plate, the rod Q, provided with adjusting-nut R, the pivoted levers L on the case and connected with the rod Q, the bar I, connected to the levers L and having the springs J and stops K, the plate N on the

case, the bar D, pivoted to the bottom of the case, the bar F, lever E, pivoted to the bar F, rod G, pivoted to the bar D, lug H, and the studs S S′ on the folding section, arranged substantially as described, and for the purposes set forth.

9. In a folding bed, and in combination, a stationary case, a folding section pivoted thereto, a coiled spring coiled around the pivotal connection rigidly secured to the pivot at one end, a rod attached to the free end provided with a nut for adjusting the tension of said springs engaging with levers, as L, pivoted to the opposite sides of the stationary section, a bar, as I, having a plate, as N, springs, as J, and stops, as K, arranged as described, a horizontally centrally-pivoted bar, as D, engaging with the plate, as N, provided with a lug, as H, and a pivoted lever, as E, connected with said lug for operating said bar, and stops, as S S′, on the end of the case for actuating said lever E, arranged substantially as described, and for the purposes herein set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE F. SMITH.
WILLIAM H. BACHMAN.

Witnesses:
DENNIS L. ROGERS,
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