(No Model.)

B. F. FORTINER.

FOLDING BED.

No. 455,193. Patented June 30, 1891.

FIG. 1

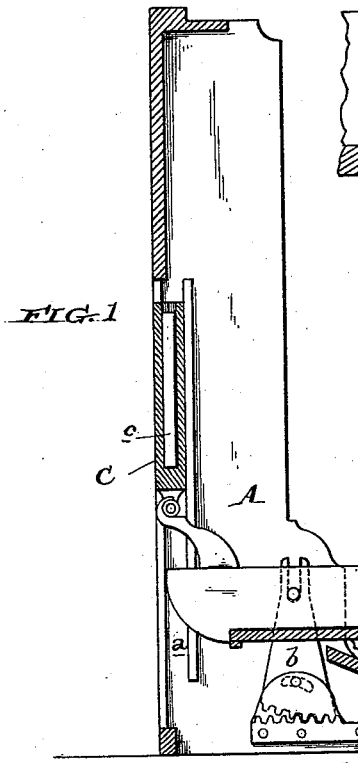
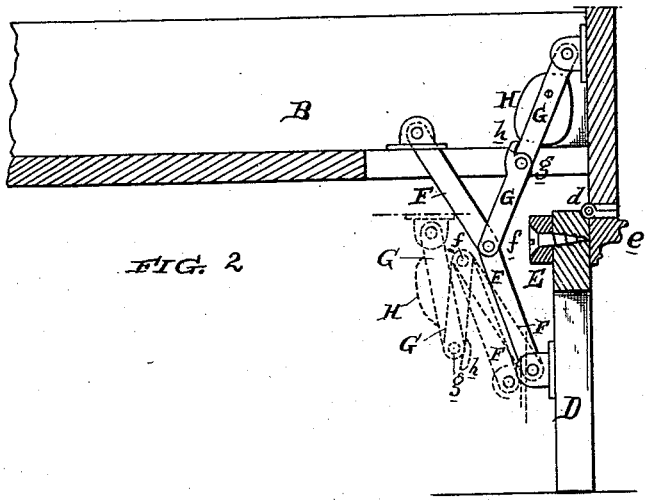


FIG. 2



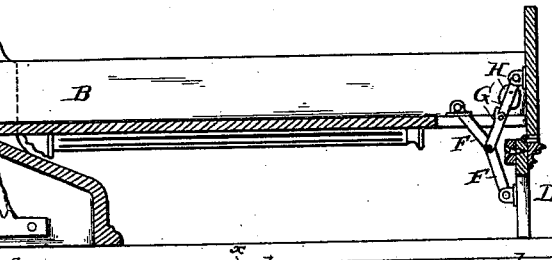


FIG. 3

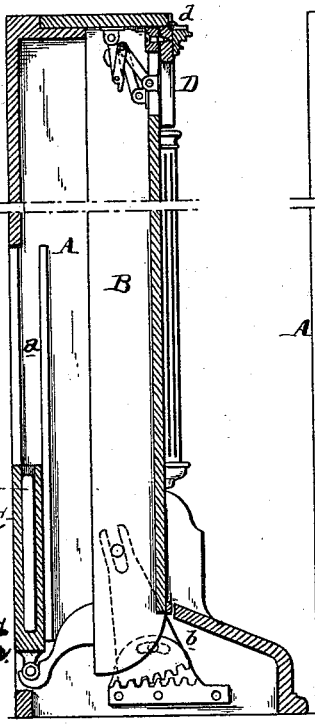
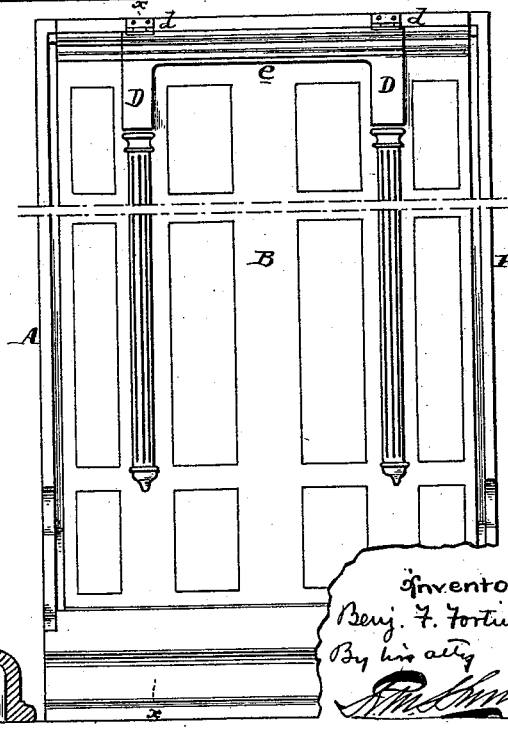


FIG. 4



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UNITED STATES PATENT OFFICE.

BENJAMIN F. FORTINER, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE HALE & KILBURN MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 455,193, dated June 30, 1891.

Application filed November 7, 1890. Serial No. 370,600. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. FORTINER, of the city and county of Camden and State of New Jersey, have invented an Improvement in Folding Beds, of which the following is a specification.

My invention has reference to folding beds; and it consists of certain improvements, which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

My invention comprehends certain improvements in the hinging of the legs to the footboard and the means for operating them automatically upon opening and closing the bed.

My object is to hinge the legs to the footboard or end of the movable frame of the bed, so that I may employ heavy molding or ornamentation thereof, and yet have the said legs balanced so as to hang vertically during the opening and closing of the bed. In carrying out this portion of my invention I apply a counter-weight to the portion of the leg on the opposite side of a vertical plane through the hinge to that occupied by the molding or ornamentation.

Another part of my invention relates to the means for locking the legs in their open position and for assisting them both in opening and closing during the operation of the bed. In carrying out this portion of my invention I connect the hinged leg part with the bed-frame by means of two links hinged together and respectively to the leg and the bed-frame, and at the juncture of these links I connect a third link, which in turn is hinged to a fourth link, and this fourth link is hinged to another portion of the bed-frame and is counterweighted. In operation this weight of the fourth link acts upon the third and fourth links in a manner to cause them to straighten out and then lock them in position against movement, the said links acting as a strut against the collapsing or doubling up of the first two-mentioned links.

Referring to the drawings, Figure 1 is a sectional elevation of a folding bed embodying my improvements, taken on line *x x* of Fig. 4. Fig. 2 is an enlarged view of the right-hand portion of Fig. 1, and shows the various links in dotted lines in the positions assumed when the bed is closed. Fig. 3 is a section similar to Fig. 4, but with the bed closed; and Fig. 4 is a front elevation of my improved bed.

A is the main frame and stands upright from the floor.

B is the hinged bed-frame, and is connected to the frame A by means of an intermediate movable casting *b*, the construction of which is not claimed in this application. The frame B is connected to a vertical slide-box C, which is weighted by weights *c*, so as to counterbalance the movable bed-frame B upon its pivot-frame *b*. The box-frame C may be guided in guideways *a* on the main frame A.

To the foot-board or adjacent thereto are hinged the legs D upon a hinge *d*, and these legs may be ornamented at the top by a molding *e* to correspond with the general molding or ornamentation upon the upper part of the bed-frame. The weight of the molding *e* when excessive may be counterweighted by a metallic weight E, secured to the back of the legs, as shown in Fig. 2, the molding *e* and the weights E being arranged upon opposite sides of a plane through the hinge *d*. The leg D, at some distance below the hinged point *d*, is connected with the movable bed-frame B by links F F, hinged together at the middle. The hinged point *f* of the links F is connected to one end of a link G, which is hinged at *g* to a second link G, the other end of which second link is hinged to the bed-frame on the footboard.

The stop *h* is employed in connection with two links G G to prevent them turning beyond a straight line in one direction, but not in the other direction.

H is a weight secured to the upper link G.

When the bed is lowered, the links F F G G assume the position shown in Fig. 2 in solid lines, and when the bed is raised the said parts assume the position indicated in dotted lines in Fig. 2 and in full lines in Fig. 3.

When the parts are in the position shown in Fig. 3 and we begin to lower the bed-frame B, the legs D hang in a vertical position, causing the links F F to open out. This is assisted by the weight H tending to force the hinged point *f* of the links F F downward and

outward, and also straighten the two links G G into the position shown in Fig. 2 in solid lines. When the bed is lowered, the stop *h* holds the links G G in a straight line. The legs are thus locked against movement. When closing the bed, the weight H causes the links G G to double, and this in turn permits links F F to fold and allow the legs D to assume a position adjacent to the bed-frame B.

I do not limit myself to the minor details of construction, as they may be modified in various ways without departing from the principles of my invention.

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

1. In a folding bed, the combination of the stationary part with a movable bed-bottom portion, a hinged or loosely-connected leg portion connected to the movable bed-bottom portion, the links F F between the leg portion and movable bed-bottom portion, and links G G between the movable bed portion and the joints of the links F F, substantially as herein set out and described.

2. In a folding bed, the combination of the stationary part with the movable bed-bottom portion, a hinged or loosely-connected leg portion connected to movable bed-bottom portion, links F F between the bed-bottom portion and leg, links G G between the joint of the links F F and the bed-bottom portion, and a weight H, carried by the upper link G, substantially as herein set out and described.

3. In a folding bed, the combination of a stationary part, a movable bed-bottom portion, a hinged leg portion, a jointed connection between the bed-bottom portion and leg portion, and a pivoted weight connected with said jointed connection between the bed-bottom portion and leg portion for automatically locking said jointed connection between the bed-bottom portion and leg portion when the bed is lowered and automatically unlocking said jointed connection by the action of gravity when the bed-bottom portion is raised.

4. In a folding bed, the combination of a stationary part, a movable bed-bottom portion, a hinged leg portion, a jointed connection between the bed-bottom portion and leg portion, a brace connected with said jointed connection, and a weight carried by said brace, substantially as and for the purpose described.

5. In a folding bed, the combination of the stationary part, a movable bed-bottom portion, a hinged leg portion carried at the free end of the bed-bottom portion, two links hinged together at one of their ends and having the other ends respectively connected with the leg portion and bed-bottom portion to lock the leg portion against movement when the bed is open, and a movable connection between the bed-bottom portion and jointed links, whereby the said links are prevented from arranging themselves in the same line when the bed is opened.

In testimony of which invention I have hereunto set my hand.

BENJAMIN F. FORTINER.

Witnesses:
HENRY S. HALE,
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