

(No Model.)

M. K. ENGLISH.
FOLDING BED.

No. 476,876.

Patented June 14, 1892.

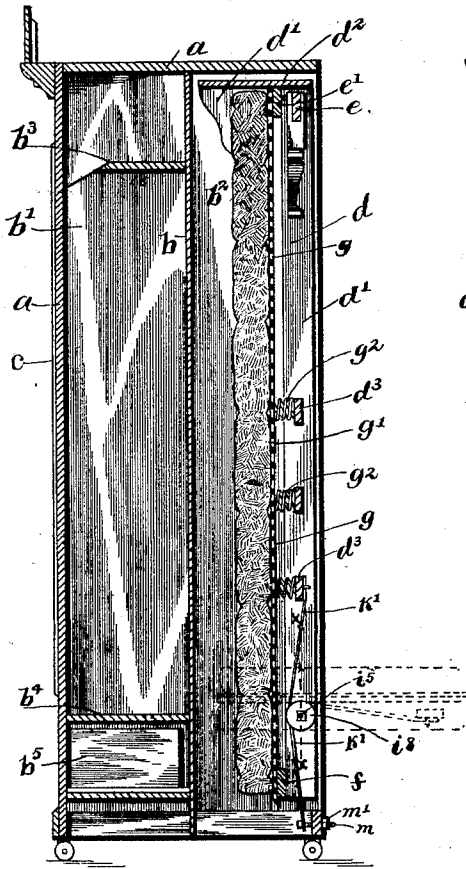


FIG. 1.

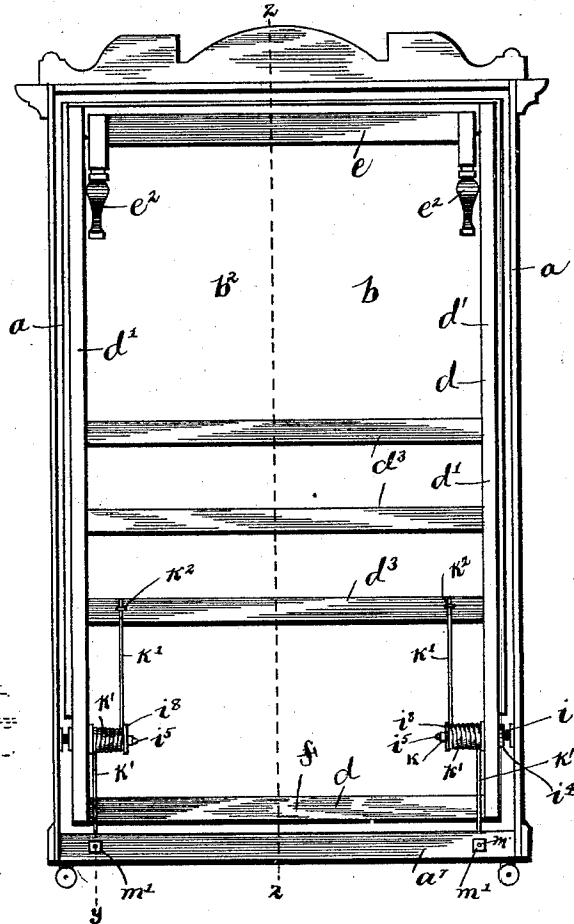


FIG. 2.

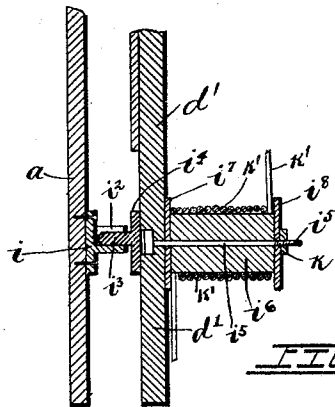


FIG. 3.

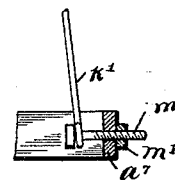


FIG. 4.

Witnesses
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MATTHEW K. ENGLISH, OF COLUMBUS, OHIO.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 476,876, dated June 14, 1892.

Application filed September 21, 1891. Serial No. 406,299. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW K. ENGLISH, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Folding Beds, of which the following is a specification.

My invention relates to the improvement of folding beds; and the objects of my invention are to provide a spring-support or counter-balance for a bed of this class of superior construction and arrangement; to produce said spring counter-balance in a simple, neat, and inexpensive form; to provide improved means for regulating the tension of said springs, and to produce other improvements which will be more specifically pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section of my improved bed, taken on line $z z$ of Fig. 2. Fig. 2 is a rear face view of the same, showing for the sake of clearness the mattress and mattress-springs removed from the background. Fig. 3 is a detail sectional view taken on line $x x$ of Fig. 1 and enlarged therefrom, and Fig. 4 is a detail sectional view taken on dotted line $y y$ of Fig. 2.

Similar letters refer to similar parts throughout the several views.

a represents the outer casing of my improved folding bed, which, as shown in the drawings, is provided with a central permanent partition b , which serves to separate said casing into a front and rear compartment b' b'' . The front compartment b' is preferably arranged and constructed to form a wardrobe, having, as shown in the drawings, one or more suitable shelves b^3 in the upper portion thereof and one or more drawer-ways and drawers b^4 b^5 in the lower portion thereof. This forward compartment is also provided with suitable doors c .

d represents a bed-frame, of which d' are the side pieces, d^2 the foot-piece, and d^3 the slats, which extend transversely between the side pieces d' .

e represents a transverse leg piece or board which extends between the bed-frame side pieces d' and which, as shown, is hinged to a cross-piece e' , which extends between said

side pieces d' and abuts against the foot-piece d^2 of the frame. This hinged leg-board is, as shown in the drawings, provided at each end thereof with a projecting leg e^2 .

f represents a cross-piece, which corresponds with the cross-piece e' and which connects the inner sides of the side frame-pieces d' at the head of the frame. Upon these cross-pieces e' and f are secured the ends of a suitable mattress-spring g' . Interposed between the slats d^3 and the mattress-springs are suitable coiled springs g^2 . The bed thus formed is normally supported in a vertical position with- in the compartment b^2 in the manner herein- after described.

The inner side of each of the vertical side pieces of the casing a is provided at a point in the lower portion thereof with an inwardly-projecting socket-piece i , which consists, as shown, of an attaching-plate, from the center of which projects inwardly a channeled or grooved stem i^2 , as shown. In the grooves or channels of these socket-piece stems are journaled the central outwardly-projecting journal-pins i^3 of plates i^4 , which are secured to the outer surfaces of the bed-frame sides at points opposite the socket-pieces i . By this means the bed-frame is afforded a journal-support in the outer casing. Projecting inwardly from each of the bed-frame sides d' , at points opposite the plates i^4 , is a bolt i^5 , the head of said bolt being preferably counter-sunk within the outer face of the frame-piece d' , as shown. Upon that portion of the bolt i^5 which projects inwardly from the bed-frame side is supported, as shown in the drawings, a tubular sleeve i^6 . Between the outer end of this sleeve and the bed-frame side piece d' is interposed a disk or washer i^7 of greater diameter than the sleeve, while a corresponding disk or washer i^8 is mounted against the inner end of the sleeve, where it is held by pressure of a suitable nut k upon the screw-threaded inner end of said bolt. Upon each of the sleeves or spools thus formed and between the projecting portions of the disks i^7 i^8 is coiled or wound the central portion of a suitable spring wire or rod k' . As shown in the drawings, one of the uncoiled portions of the wire is extended upward or outward from one end of the spool and has its end portion secured by a suitable staple or otherwise

as shown at k^2 , to the outer or under side of one of the slats d^3 . The remaining uncoiled portion of the wire k' extends, as shown in the drawings, from the spool or sleeve i^6 to a point in rear of the bottom cross-piece a^7 of the casing a . At this point said wire arm is connected with the inner end of an adjusting-bolt m , the latter extending approximately at right angles with said wire arm and passing outward through a suitable bolt-opening in the cross-piece a^7 . On the outer threaded end portion of this bolt m is mounted a tightening-nut m' , which normally abuts, as shown, against the outer face of the cross-piece a^7 .

From the construction shown and described it will be seen that in lowering my improved bed from its casing both the upper and lower spring-arms of the springs k' are submitted to such strain by being partially taken up by the sleeve as to impart an increased tension to said springs. Owing to the natural tendency of the springs to resume their normal position and the consequent pressure of said springs upon the under side of the bed-frame, it will readily be seen that in lifting the bed to its vertical position the operator will be greatly assisted by the pressure of said springs, the latter serving to counterbalance or compensate in a measure for the weight of the bed.

From the construction shown and described it is obvious that the means employed for

counterbalancing and supporting the weight of the bed are exceedingly simple and inexpensive and that the same may be produced at a reasonable cost of manufacture.

By turning the nut m' inward or outward it is evident that the tension of the spring-wire k' may be increased or decreased by thus increasing or decreasing the outward strain on the same.

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

In a folding bed, the combination, with the casing a , having a cross-piece a^7 , and a bed-frame provided with slats d^3 , journaled within said casing, of spools or sleeves i^6 , supported, as described, from the inner sides of said bed-frame, spring-wires k' , coiled about said spools, adjusting-bolt m , passing through said cross-piece a^7 , and a nut on the outer projecting end of said bolt, one end of each of the springs k' being secured to one of the bed-slats and the remaining end thereof secured to the inner end of one of said adjustable bolts, substantially as and for the purpose specified.

MATTHEW K. ENGLISH.

In presence of—

BARTON GRIFFITH,
C. C. SHEPHERD.