

(No Model.)

E. E. HERRINTON.  
FOLDING BED.

No. 380,258.

Patented Mar. 27, 1888.

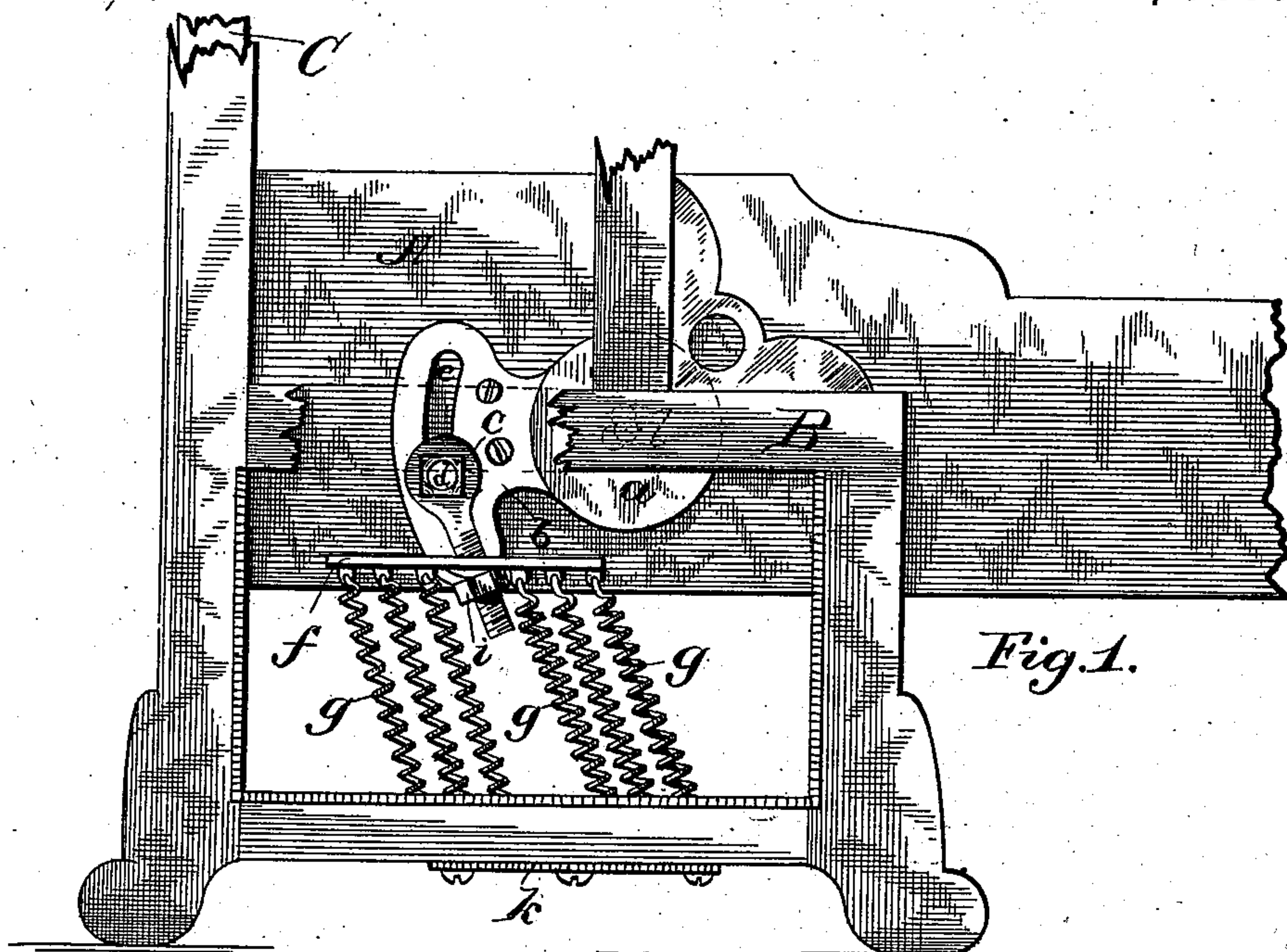


Fig. 1.

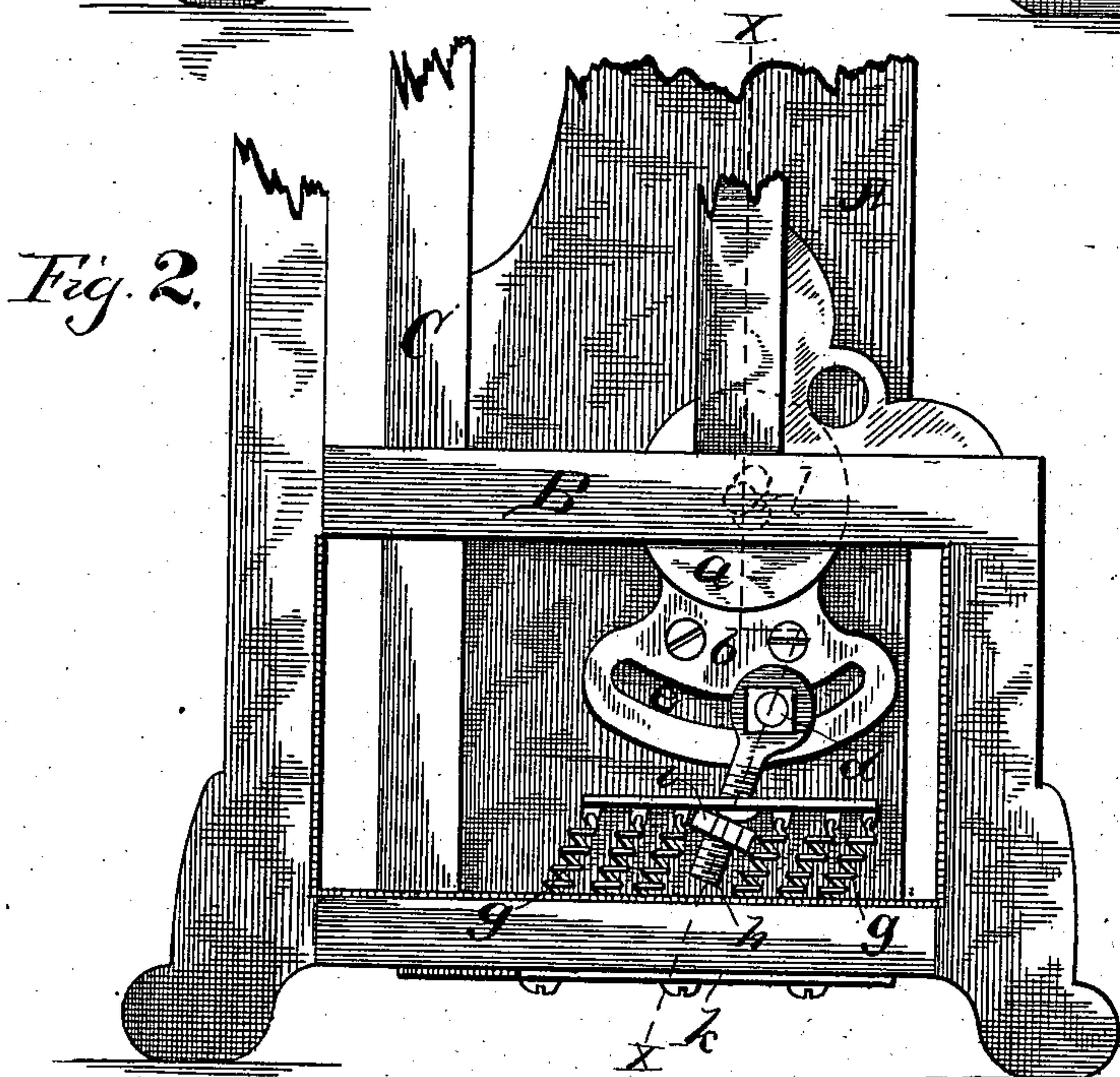


Fig. 2.

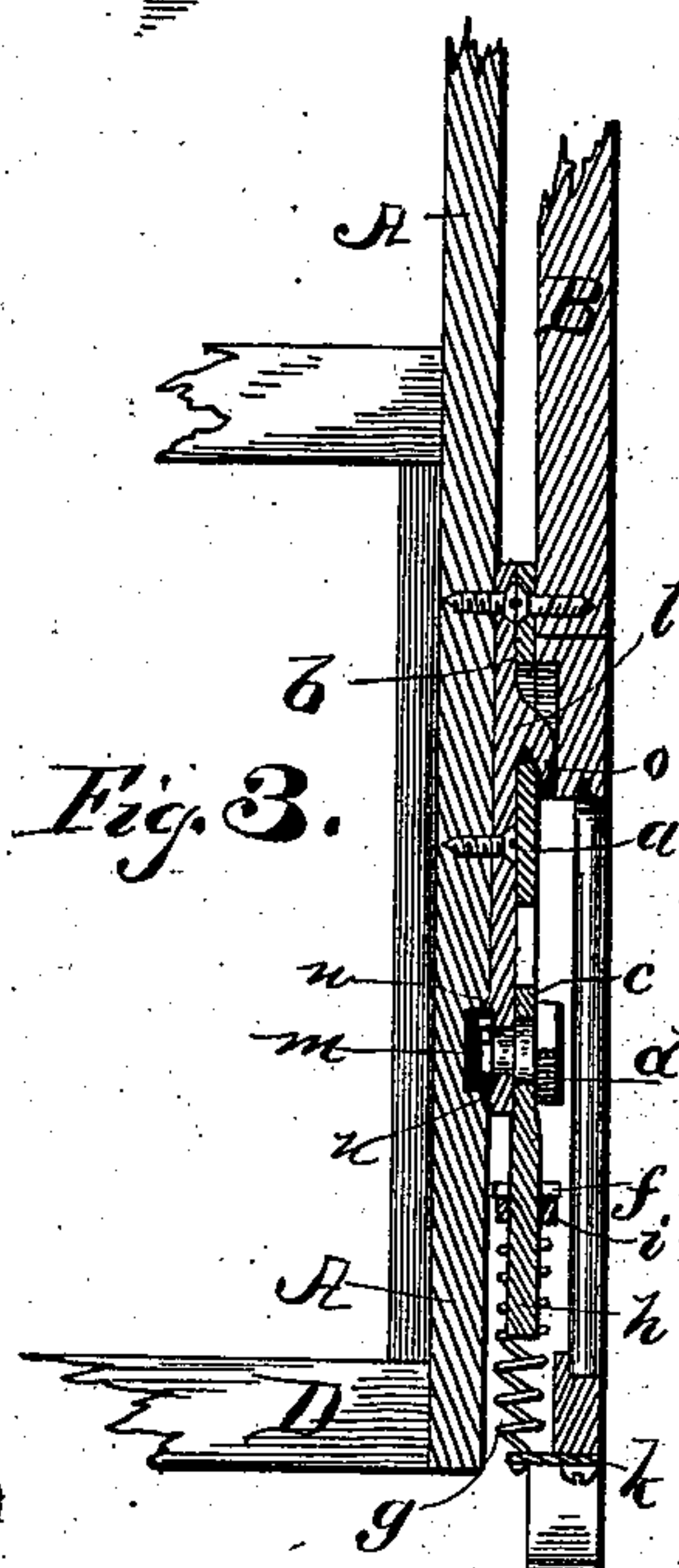


Fig. 3.

Witnesses:

J. B. McGirr.  
Edward Sturtevant.

Inventor:

Edward E. Herrinton,  
L. V. Moulton, atty  
by H. N. Low assoc. atty.



# UNITED STATES PATENT OFFICE.

EDWARD E. HERRINTON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO ISRAEL C. SMITH, OF SAME PLACE.

## FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 380,258, dated March 27, 1888.

Application filed June 23, 1887. Serial No. 242,336. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD E. HERRINTON, a citizen 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 I 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.

My invention relates to improvements in that class of folding beds which are provided with a frame adapted to sustain the bed, said frame being pivoted to side frames balanced upon said pivots, and adapted to turn into a vertical position upon the same. Heretofore the side frames have been connected to each other in some manner to support them in position, and the bed has been balanced upon the pivots by weights attached to the movable frame, which weights are increased or decreased to conform to the changes in weight of the bedding. This is objectionable because both expensive and heavy, and also because of the necessity of keeping on hand detachable weights to correspond with probable changes in weight of the bedding.

The objects of my invention are to so connect the side frames and the movable frame that said side frames need not be attached to each other, to provide an adjustable balance for said bed without detached parts, and generally to reduce the weight and cost of the structure. I accomplish these results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a folding bed embodying my invention, showing the bed open; Fig. 2, the same, showing the bed closed; and Fig. 3, a section on the line X X of Fig. 2.

Like letters refer to like parts in all the figures.

A is the side rail of the folding section supporting the bed; D, the end piece of the same, to which the head-board C is attached.

B is the stationary section, upon which is mounted the folding section A by pivot-plates *a* and *b*. The plate *a* is attached to the frame B, and is provided with an opening, *o*, near

the middle, within which rotates the pivot *l*, which has the form of a hook projecting from the side of the plate *b*, which plate is attached to the rail A. The inner side of said hook is inclined to the surface of the plate *b*, and, engaging with the edge of the opening in the plate *a*, crowds the plates *a* and *b* and their respective sections toward each other, thus pressing their adjacent surfaces firmly together, thereby maintaining the surfaces of the folding and stationary sections in the same vertical plane, and the structure is thus rendered practically rigid without the necessity of connecting the frame B to the corresponding frame at the other side of the bed by a back, bottom, or other transverse piece. The plate *b* is extended in the direction of the head of the bed, and provided with a slot, *e*, through which passes an adjustable stud, *d*, which passes through the eye *c* on the end of the screw *h*, which screw passes through an opening in the bar *f*, and is provided with a nut, *i*, below said bar. Said opening in the bar *f* is enlarged in the direction of the length of the said bar to permit a rocking movement of said screw in the opening. To the bar *f* are attached a suitable number of springs, *g*, the other ends of said springs being attached to the lower part of the frame B by means of a plate, *k*, or other suitable fastenings.

The operation of my device is as follows: As the folding section A turns upon the pivot *l* and assumes a horizontal position, the stud *d* moves through the corresponding arc of a circle, first moving nearly horizontal and later on more nearly vertically. This movement increases the tension on the springs *g* in exact proportion as the center of gravity is removed from directly over the pivot *i*, so that at all times the bed will be balanced upon said pivot. As weight is added to or taken from the bed, the tension of the springs *g* is correspondingly adjusted by means of the nut *i*. The bolt *h* being attached to the bar *f* at the middle, and having a free rocking movement in the same, the said bar remains parallel to the plate *k* and the tension upon the springs is thus equalized. When the bed is in a vertical position, the center of gravity of the same is at the rear of the pivot *l* more or less, according



to the weight of bedding in use. To counteract any excess of this backward tendency and to adjust the same, the stud *d* is adjusted in the slot *e* to be more or less to the front of the pivot 5 *l*, so that the springs *g* will act against this overbalance of the bed.

What I claim and wish to secure is—

1. In a folding bed, the combination, with the folding section, of the loose and independent side portions, B, of the stationary section, 10 having their inner faces in close contact with the outer sides of the folding section, and plates *a*, and hooks *l*, having beveled inner faces for engaging said plates, the plates and hooks being 15 respectively secured to the stationary and folding sections, as described, whereby said sections are drawn together and kept in close contact by the gravity of the folding section acting through said hooks, substantially as 20 described.

2. In a folding bed, the combination, with the stationary section and the folding section pivoted thereon, of a series of springs arranged side by side in a plane parallel with the side of 25 the bed, secured to the stationary section, a cross-bar connected with the free ends of the springs, and a rod or equivalent connection pivotally secured to said bar and to the folding section, whereby said rod may oscillate

relative to the bar and springs and equalize 30 the strain upon the latter when the folding section is moved, substantially as set forth.

3. In a folding bed, the stationary section and the folding section, pivoted thereto at *l*, in combination with a plate attached to the 35 side frame, having a slot, *e*, a stud adjustable in said slot relative to the pivot of the section, a screw hung on said stud, a bar carried by the screw, and springs connected with the bar and with the stationary section, substantially as 40 described.

4. In a folding bed, the combination, with the folding section, of the independent side portions, B, of the stationary section, having their inner faces in close contact with the outer 45 sides of the folding section, the plates *a*, and hooks *l*, having beveled inner faces for engaging said plates, the plates and hooks being secured to the stationary and folding sections, and the series of parallel springs *g* and their 50 cross-bar *f*, connected with said sections for drawing down the end of the folding section.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD E. HERRINTON.

Witnesses:

WM. A. REED,

LUTHER V. MOULTON.