

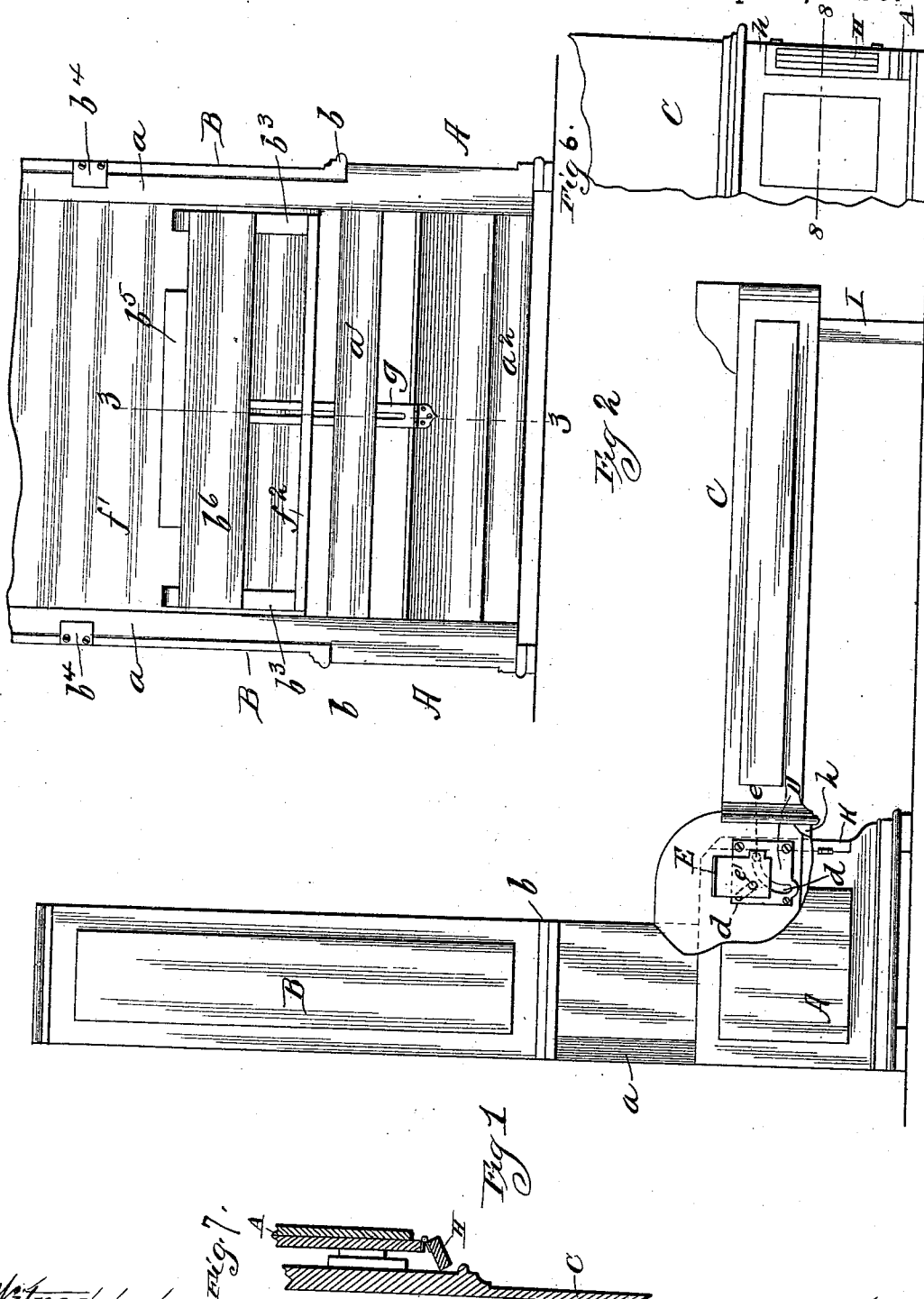
(No Model.)

2 Sheets—Sheet 1.

M. J. HAFGAR.
FOLDING BED.

No. 494,563.

Patented Apr. 4, 1893.



Witnessed by
John E. Junison
W. C. Corlies

Inventor
Magnus J. Hafgar
By Louis K. Gibson
Att.

(No Model.)

2 Sheets—Sheet 2.

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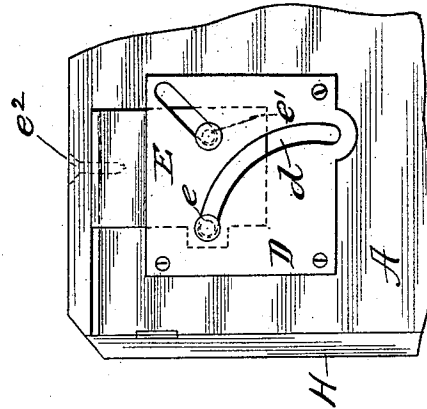


Fig. 5.

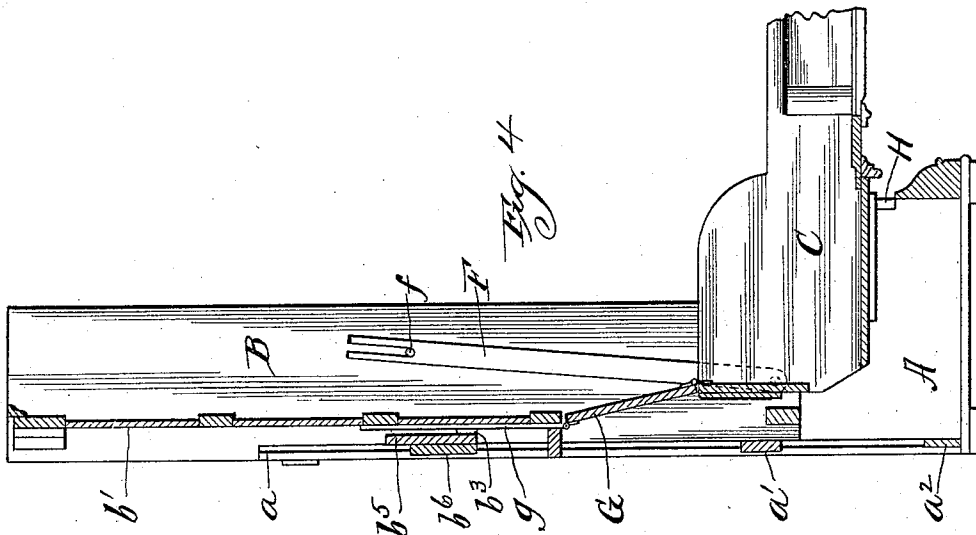


Fig. 4.

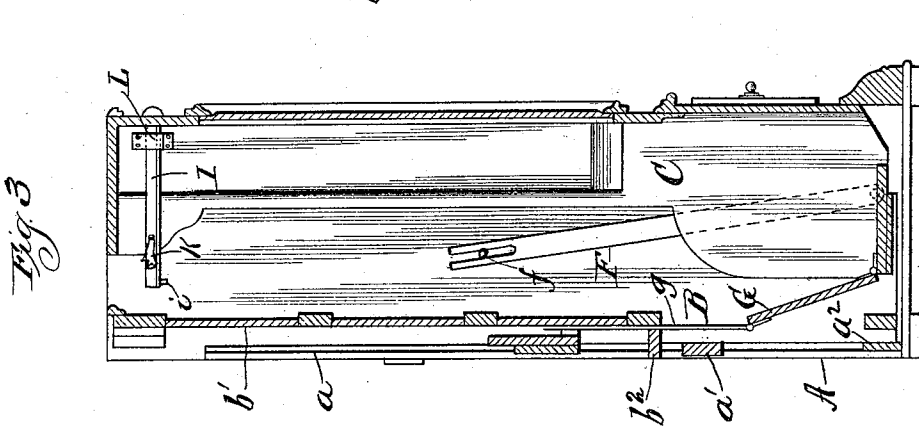


Fig. 3.

Witnessed
John L. Tunison
W. C. Corlies

Inventor:
Magnus J. Hafgar
By Louis Killam
att'y.

UNITED STATES PATENT OFFICE.

MAGNUS J. HAFGAR, OF CHICAGO, ILLINOIS.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 494,563, dated April 4, 1893.

Application filed September 5, 1892. Serial No. 445,111. (No model.)

To all whom it may concern:

Be it known that I, MAGNUS J. HAFGAR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding Beds; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to folding beds, and consists principally in the construction of the case or standard in such manner that a portion of the same is vertically movable and is pivotally connected with the bed frame in such manner as to serve the purpose of a counterweight; and in a peculiar form of hinge used in connecting the bed frame with the standard; and in certain minor details of construction as hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the bed, open, a portion being broken away to show the hinge. Fig. 2 is a rear elevation of the bed. Fig. 3 is a longitudinal vertical section on the line 3, 3, of Fig. 2, the bed being closed. Fig. 4 is the same view, the bed being open. Fig. 5 is a detail of the hinge. Fig. 6 is a detail of a portion of the front of the bed when closed; and Fig. 7 is a sectional detail on the line 8, 8, of Fig. 6.

The bed consists of three major parts, the fixed standard A, a vertically movable case B, which serves the purpose of a counterweight, and the swinging frame C.

The standard A, is rectangular in form, and necessarily of sufficient strength to support the movable portions. The rear corner posts, a , a , of the standard project upwardly to serve as guides for the case B. The main portion of the standard is but slightly higher than the top of the side rails of the frame C. At a' , a^2 , are shown, respectively, an upper and lower cross bar at the rear of the standard A.

The casing B, is a rectangular vertical frame the lower end of which fits within the standard A, and when the bed is closed, the transverse cleats b , on the sides of the casing B,

rest upon the top of the side of the standard A. These cleats are made in the form of ornamental molding. The back of the case, b' , is of light boards or it may be left open, if desired, cross-bars being used to secure the necessary rigidity. At b^2 , is shown a backwardly projecting cross-bar substantially on the level with the cleat b . Extending upwardly from the cross-bar b^2 , are two blocks b^3 , fixed to the back b' , of the case and near its sides. A bar b^6 , is mounted upon the blocks b^3 , and should it be found necessary to use any additional counter-weight as b^5 , it may be fixed to the bar b^6 .

The bed frame C, is of the usual rectangular form. The hinges by which the frame is secured to the standard A, comprise the slot-plates D, fixed to the side rails of the frame, and the pintle plate E, fixed to the inner sides of the ends of the standard. The plate D, is provided with a curved slot d , on the arc of a circle whose center is near the outer lower corner of the plate, and a straight slot d' , on the line of an extended radius of this circle, the end of the slot d' , adjacent to the slot d , being midway of the ends of the latter. The length of the slot d' , is one-half that of the slot d .

The plate E, is provided with two inwardly projecting pintles e , e' , in horizontal alignment adapted to engage in the slots d , d' , the distance between the pintles being such that when one is at either end of the slot d , the other is at the inner end of the slot d' . The relative position of the slots is such that when the pintle e , is at the middle of the slot d , pintle e' , is at the outer end of the slot d' . When the bed is closed, the pintle e , is at the lower end of the slot d , and when it is open, this pintle is at the upper end of said slot. Rigid links F, are pivotally attached to the lower or head end of the side rails of the frame C, and are intended to project upwardly and engage pintles f , set in the sides of the case B. For this purpose the upper ends of the links F, are forked. When the frame C, is lowered, its pivotal point being somewhat removed from its head rail, the links are elevated, thereby lifting the case B. The case B, is maintained in its upright position by means of the guide plates b^4 , fixed upon the rearward edge of its sides and overlapping the

posts *a, a*. Lateral movement is prevented by the engagement of the side of the case with said posts. The bifurcation of the upper ends of the links *F*, is of such extent that when the bed-frame is vertical the position of the pin *f*, is above the inner end of the slot. By this construction the elevation of the case *B*, does not commence until the bed-frame *C*, has moved a considerable distance from the perpendicular and consequently the extreme elevation of the case is not so great as it would otherwise be. This construction is made possible by the use of the peculiar form of hinge described as the movement of the hinge *D*, upon the pintle *e*, shifts the center upon which the bed-frame turns so that the center of gravity is substantially over it until the movement has extended through several degrees from the perpendicular. The depth of the slot in the link *F*, should be such that as soon as the bed-frame has passed the limit at which it balances, the case comes into action as a counterweight. A board *G*, is hinged to the head rail of the frame *C*, so as to project upwardly. A bar *g*, is pivotally attached to the upper edge of the board *G*, and projects upwardly through aperture in the cross-bar *b*², and between the cross-bar *b*⁶, and the back *b*⁷ of the case, and serves to maintain the board *G*, in an upright position, so that when the frame *C*, is elevated it falls against this board. The function of the board is to hold the bed clothing in place when the bed is closed, and to close the space above the head of the frame when the bed is open. Horizontally swinging cleats *H*, are hinged to the front edges of the end of the standard *A*, for the purpose of covering the hinge plates, and giving the corners a proper finish. These cleats are made of sufficient width to slightly overlap the frame *C*, and are hinged so as to swing outwardly when the frame is lowered. The upper ends of the cleats *H*, are chamfered, and chamfered blocks *h*, are fixed upon the front of the frame so as to engage them and prevent them from opening when the bed is closed. The frame is provided with two legs *I*, located respectively at its upper or outer corners and adapted to slide in when the bed is closed, a metal loop *L*, being placed upon the inner side of the rail of the frame *C*, to guide the leg, and the latter being provided at its upper end with a slight projection or pin *i*, to strike against the loop *L*, and prevent the leg from falling out of place. Each of the legs is provided with a pivoted latch or dog *K*, its free end being toward the upper end of the leg, the dog being adapted, when the leg is in a vertical posi-

tion to swing outwardly by its own weight so as to engage under the lower side of the loop *L*, and lock the leg in its withdrawn position. When the frame *C*, is raised, the dog *K*, falls inwardly so as to disengage the loop *L*, and allow the leg to be pushed in.

The bed may be made in imitation of many articles of furniture, such as a wardrobe, its front being, if desired, provided with a mirror. The height and position of the case *B*, are such that when the bed is closed the outer end of the frame *C*, and the top of the case *B*, are of the same height, as shown in Fig. 3.

By the use of a movable case in lieu of the counter-weight, the bed may be made very much lighter than when a counter-weight is depended upon to balance the swinging frame. In moving the bed, the three major parts may be readily separated. There is nothing to prevent the case *B*, from being lifted out of its position and the frame *C*, is readily disengaged from the standard *A*, by removing the screws *e*², which secure the hinged plates *E*, to the standard.

I claim—

1. In a folding bed the combination with a stationary standard of a case adapted to slide vertically in the standard, a vertically swinging bed frame, mechanical connection between the moving case and the bed frame whereby the one counterbalances the other, and hinges for the bed frame comprising slotted plates fixed to the sides of the bed frame and pintles fixed to the sides of the stationary standard for engaging the slots, one of said slots being curved to describe the arc of a circle and the other being straight and located without and radial to the circle, substantially as described and for the purpose set forth.

2. In a folding bed the combination with a stationary standard and with a vertically swinging bed-frame hinged within the standard of vertical cleats hinged to the forward edges of the standard sides and adapted to cover the cracks or joints between the bed frame and the standard sides, said cleats having their upper ends chamfered or beveled outwardly, and blocks on the bed-frame having correspondingly beveled faces and adapted to engage the cleats and close them when the bed is closed, substantially as described and for the purpose set forth.

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

MAGNUS J. HAFGAR.

Witnesses:

L. K. GILSON,
J. H. DORIAN.