(No Model.) 2 Sheets—Sheet 1.

M. F. KOCH.

FOLDING BED.

No. 393,708. Patented Nov. 27, 1888.

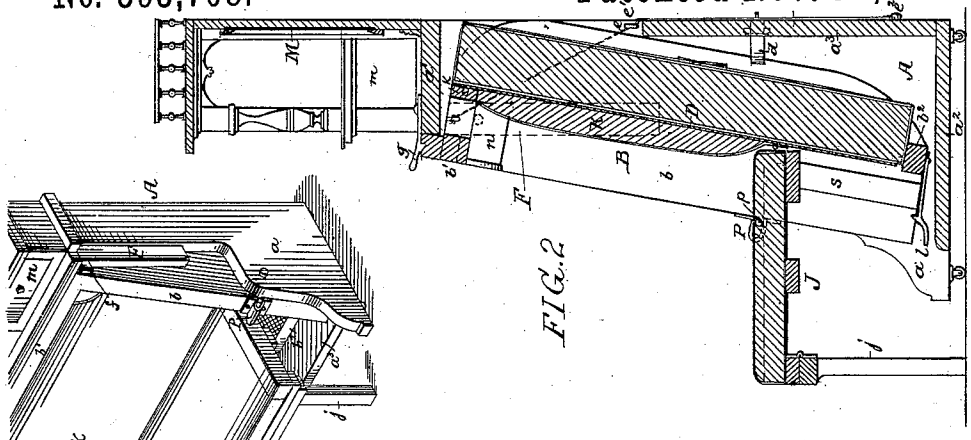


FIG. 2.

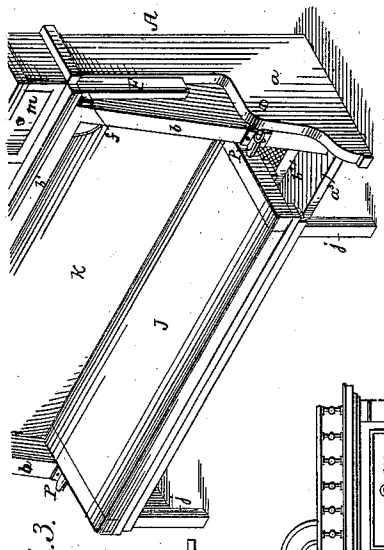


FIG. 3.

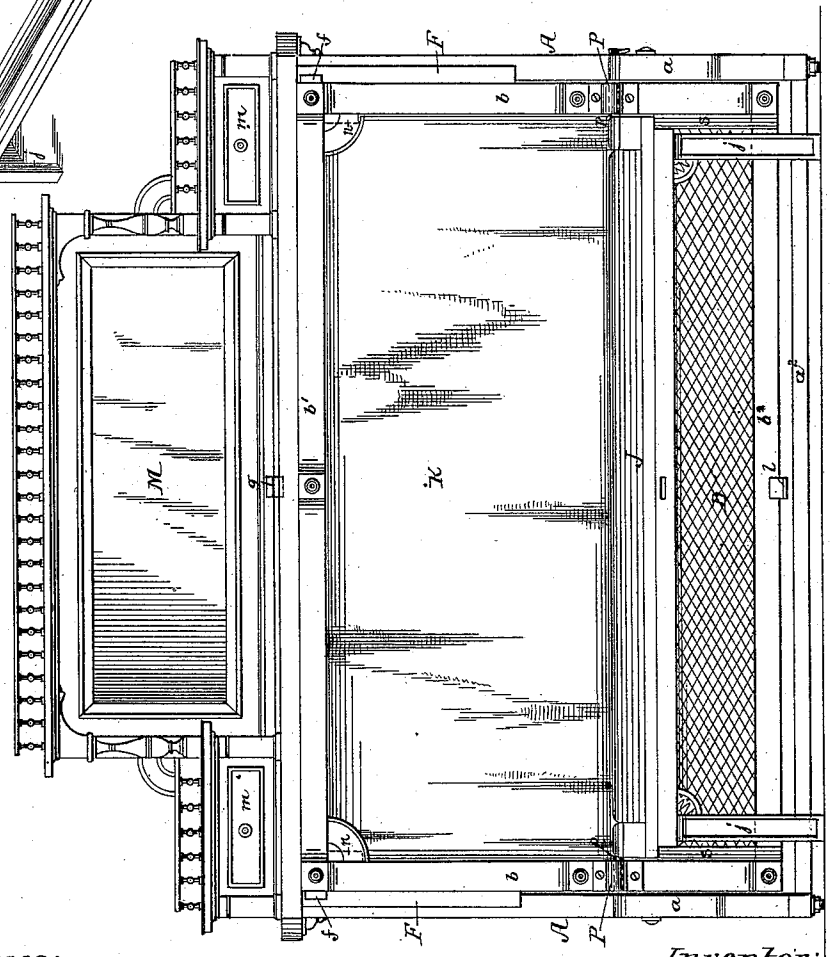


FIG. 1.

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(No Model.) 2 Sheets—Sheet 2.

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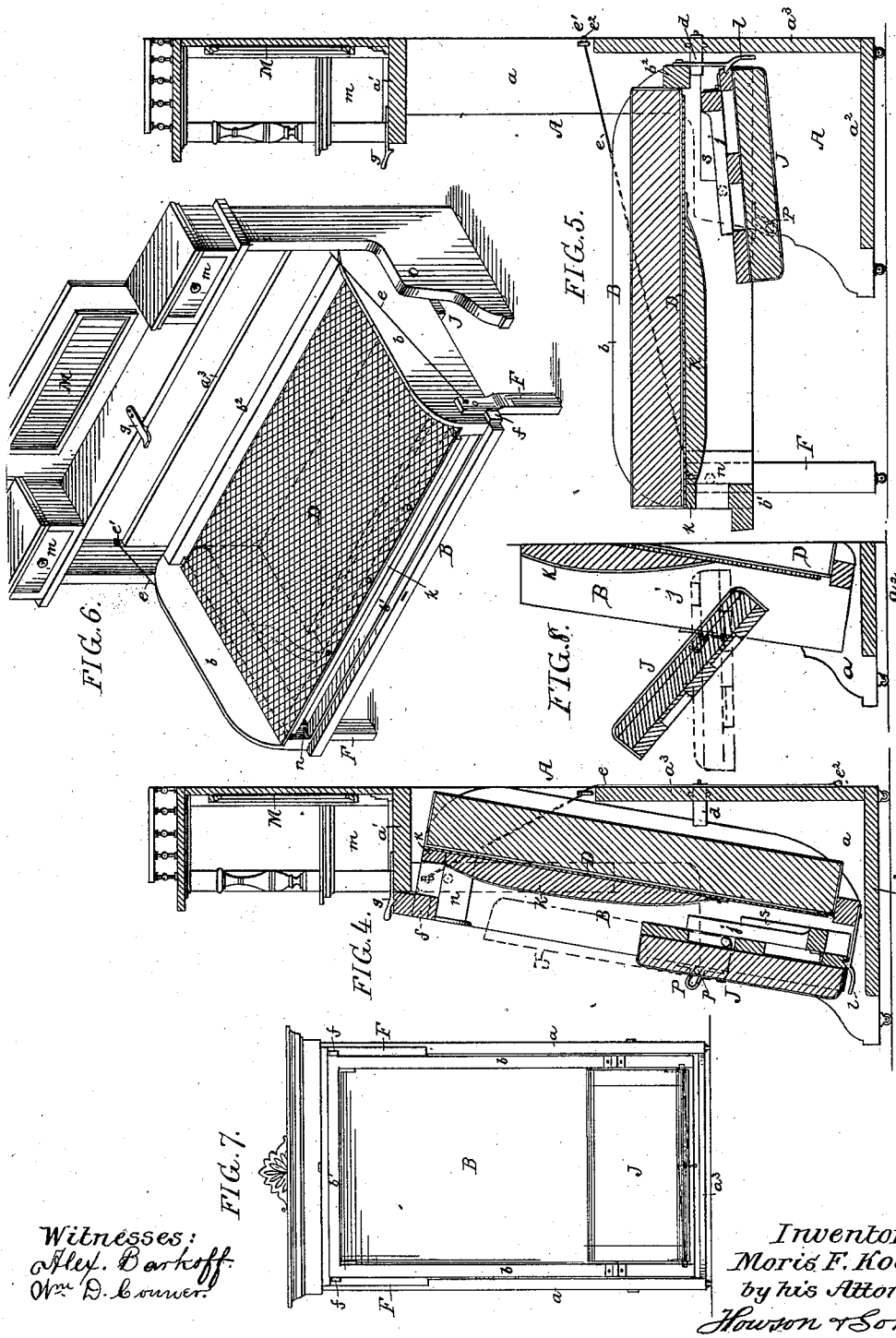


FIG. 5.

FIG. 6.

FIG. 8.

FIG. 4.

FIG. 7.

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UNITED STATES PATENT OFFICE.

MORIS F. KOCH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOSEPH KOCH, OF SAME PLACE.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 393,708, dated November 27, 1888.

Application filed September 21, 1886. Serial No. 214,142. (No model.)

To all whom it may concern:

Be it known that I, MORIS F. KOCH, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Folding Beds, of which the following is a specification.

My invention consists of certain improvements in that class of folding beds which can be turned into position for use as a bed or as a sofa, or closed up entirely to serve simply as an ornamental piece of furniture.

In the accompanying drawings, Figure 1 is a front elevation of my improved folding bed when the parts are in position for use as a sofa or seat. Fig. 2 is a transverse section of the same with the parts in the same positions. Fig. 3 is a partial perspective view with the parts also in the same positions. Fig. 4 is a transverse section showing the parts entirely closed up. Fig. 5 is a transverse section with the parts in position for use as a bed. Fig. 6 is a perspective view with the parts in the same positions, but with the ornamental portions omitted; and Fig. 7 is a view of my improvement applied to an upright or wardrobe bed, the parts being in the closed position corresponding with Fig. 4. Fig. 8 is a view of a modification.

The outer frame, A, of the structure consists of suitable end or side boards, *a a*, and the top and bottom boards, *a' a²*, connecting the end boards. I may also use a back board, *a³*, as shown in Figs. 2, 4, and 5. The side boards, *a a*, are preferably widened at the bottom to give a firm support to the bedstead.

The top of the frame may be suitably ornamented and provided with drawers and mirrors and other attachments, as found desirable or convenient. In the construction shown in Figs. 1 to 6, inclusive, I have illustrated the bed as provided at the top with a central mirror, M, and drawers *m m* on each side.

In applying my invention to an upright or wardrobe bed, as illustrated in Fig. 7, such an arrangement of mirrors and drawers is of course inapplicable.

The bed proper, B, consists of a frame comprising side rails, *b' b²*, and end rails carrying head and foot boards, *b b*. In the construction shown in Figs. 1 to 6 the side rail, *b'*, at the front edge is at the lower part of the head and foot boards or end rails, while the rail *b²* is arranged at the upper part of these end rails or boards, in order to permit the hinged seat, hereinafter referred to, to be folded up into a small compass close to the under side of the bed.

To the end rails, or to the bars secured thereto, I connect the opposite ends of a wire mattress, D, which is to support the ordinary hair or other mattress, D', and bedclothing. Other forms of spring-mattress or spring bed-bottom may be used, if desired. The bed B thus constructed is pivoted to the side boards, *a a*, of the frame A, as illustrated in the drawings. In the construction shown in Figs. 1 to 6 this pivoting of the bed proper to the frame is at the end rails of the bed, while in the upright bed, Fig. 7, it is at the side rails of the bed. In each case the pivoting-points are so much nearer one end or side than the other that when the bed is turned down, as illustrated in Figs. 5 and 6, the bed will remain in that position until it is turned up again. In order, however, to prevent accidental tipping up, should the person lying on the bed get onto the part near the rear of the frame, I provide a sliding bolt or other suitable form of catch, *d*, to engage with the under side of the rear rail, *b²*, or other convenient part of the bed, to lock the latter in the open position, as shown in Fig. 5.

The bed is provided at its opposite sides or ends and near its front edge with pivoted legs F, which are so pivoted as to normally maintain a vertical position, no matter in what position the bed may be turned, so that when the latter is folded outward, as illustrated in Figs. 5 and 6, the legs will rest on the floor and support the outer edge of the bed.

Stops *f* are provided in juxtaposition to the pivoting-points of the legs, to insure that the latter shall occupy a position at right angles to the plane of the bed when the latter is turned down.

In order to make sure that the legs shall unfold or open out when the bed is turned down, I connect to the upper ends of these legs, above their pivoting-points, cords *e*, wires, or other suitable devices, which pass

through openings or eyelets c' on the frame A, and are provided at their ends with buttons or enlargements c^2, which come into contact with the openings or eyelets as the bed is turned out to the horizontal position, so that the legs will be thereby turned to the vertical position, if they should not assume it of their own accord.

The rail b' at the front of the bed may project outward beyond the head and foot boards, as shown in Figs. 5 and 6, so that when the bed is folded to the upright position, as illustrated in Figs. 2 and 4, it will come into contact with the top board, a', and rest against the latter. If preferred, other stops may be provided, and the edge of the bed may be so constructed as to lie within the inclosing-top a' when turned up. A spring catch or latch or other suitable locking device, g, is combined with the folding bed so as to lock it in the upright position, Figs. 2 and 4.

To the under side of the bed I pivot a folding seat, J, which may be upholstered in any desired manner, and which is provided with folding legs j hinged to its front under side.

It will be seen that by providing the under side of the folding bed with a folding seat, as described, I can make such seat of full width without bringing the bed itself too high for convenient use.

I pivot the seat somewhat in advance of its rear edge, so that it shall not be too high when in use, and yet be capable of being folded up within the limits of the width of the bed and be itself of sufficient width.

The whole seat is free to be folded up against the under side of the bed, as illustrated in Fig. 4, so that the bed can be turned down without being then of an inconvenient height.

In order to facilitate the turning out of the seat on its pivots from the closed position, Figs. 4 and 5, to the open position, Figs. 2 and 3, without coming into contact with the bed-bottom, I prefer to make use of pin-and-slot pivots; and in the present instance I have illustrated the slots as being in brackets P, secured to the under side of the frame of the bed, while the pins p are on the seat. This arrangement may be reversed, of course. The slots may even be dispensed with if the seat is made of a less width. I prefer to use the slots, however, and to arrange them at an angle, as shown. I so pivot the seat to the under side of the bed that when it is to be put out of use it will be turned folded up out of the way, preferably by being downward, as shown in the drawings, and there retained by a suitable spring catch or lock, l, Fig. 4, or spring-latches at the ends of the seat with a central operating-handle may be employed, as indicated by dotted lines in Fig. 7. I also form on the frame of the bed stops s, to support the rear side of the seat when the latter is in use, and relieve the pivot-pins p from strain. If desired, however, the seat may be so constructed and so pivoted to the under side of the bed that when out of use it is turned upward, as indicated by the dotted lines in Fig. 4; but I prefer the construction before described, because the turning up of the seat would bring too much strain upon the pivot-pins, especially if the seat were a long one, as in the construction, Figs. 1 to 6. In any case the seat should be so pivoted that when folded the main part of the seat will be at the under or rear side of the pivoting-point of the bed itself, so that the weight of the seat will assist in counterbalancing the bed, as shown in Figs. 4 and 5, and thereby facilitate its manipulation. When the seat is arranged to be folded upward, instead of downward, I prefer to mount the pivot-pins on the bed-frame to work in slots in the seat, so that the latter can, when folded, be slid downward to the desired position to form a counter-balance.

The folding or hinged legs j of the seat may in some cases be dispensed with, and catches or stops j', as shown in Fig. 8, provided on the bed-bottom adjacent to the pivoting-points, as in opera-chairs. In such case the seat will be folded upward instead of downward.

In connection with this seat, and to form a back for the sofa, I provide an upholstering, K, carried by the wire mattress. I prefer to make this upholstering in the form of a cushion, as illustrated in the drawings, and it may be secured at its edges to the wire mattress, either directly or through the medium of a strip, k, which, as illustrated in Fig. 6, is secured to the edge of the mattress, but in such a way as not to interfere with the free yielding of the mattress. I provide guides or slots n for the ends of the strip k, allowing it to move with the yielding of the mattress when the bed is turned down. I prefer to make this upholstering K in the form of a cushion and removable, the wire mattress forming a soft yielding back to the sofa.

The frame A may be mounted upon suitable casters, and the legs F of the bed may also be provided with casters.

I claim as my invention—

1. A folding bed having a seat pivoted to its under side, the seat being provided with folding legs, substantially as set forth.

2. A folding bed having pivoted to its under side by a pin-and-slot connection a seat, substantially as described.

3. A folding bed having pivoted to its under side a seat provided with front supporting-legs, and stops s, to support the rear side of the seat when the latter is in use, substantially as set forth.

4. A folding bed having a seat pivoted to its under side and provided with a catch to lock the seat to the bed, to move with the latter, substantially as described.

5. A folding bed having on its under side upholstering, with a strip, k, to which the upholstering is secured, and guides for the strip, substantially as described.

6. The combination of the folding bed having a wire mattress with a seat carried by the under side of the bed, and a strip, k, secured

to the edge of said mattress and carrying upholstering to form the back for the seat, as described.

7. The combination of the folding bed having a wire mattress, with a seat carried by the under side of the bed, a strip, *k*, secured to the edge of the mattress and carrying upholstering, and guides *n* for the said strip, as and for the purpose specified.

8. The frame and the folding bed having one bar or rail, b^2, secured to the upper side, in combination with a seat hinged to the under side of the bed and adapted to fold up, substantially as set forth.

9. A folding bed having on its under side a pivoted seat adapted to be folded up against the bottom of the bed, and extending, when folded, to the rear of the pivoting-point of the bed, whereby the seat forms a counter-balance when folded up, substantially as set forth.

10. The combination of the frame and folding bed pivoted thereto, with a seat pivoted to the bed forward of the rear edge of the seat, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MORIS F. KOCH.

Witnesses:
WILLIAM D. CONNER,
HARRY SMITH.