

(No Model.)

2 Sheets—Sheet 1.

C. W. VOGEL.  
LOUNGE BED.

No. 523,608.

Patented July 24, 1894.

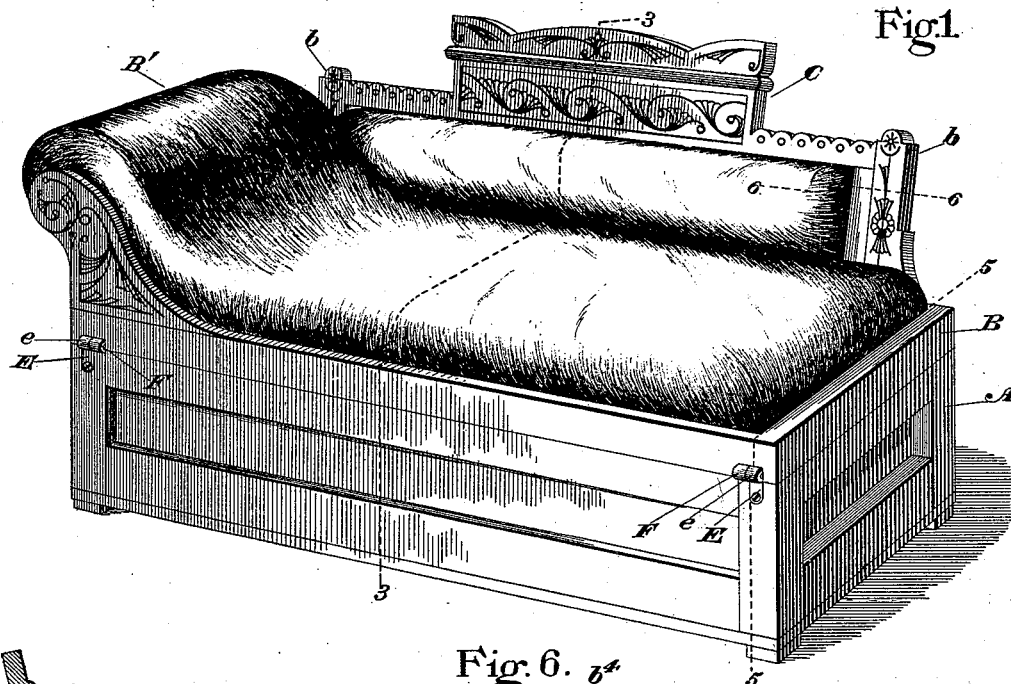


Fig. 1.

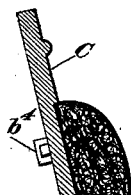


Fig. 3.

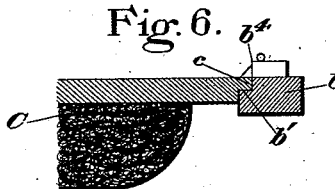


Fig. 6.

Fig. 5.

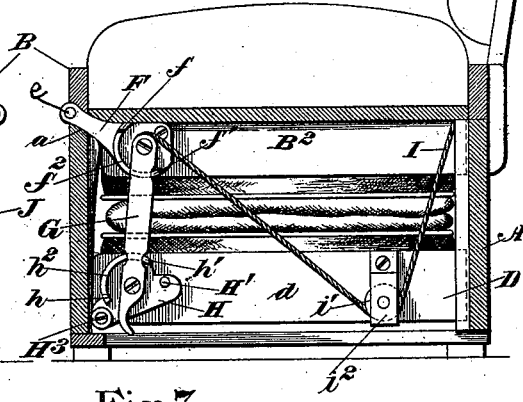
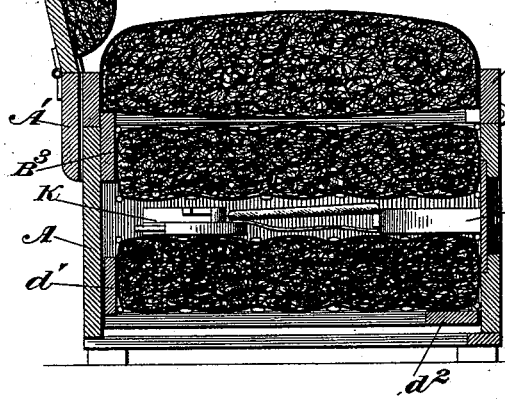
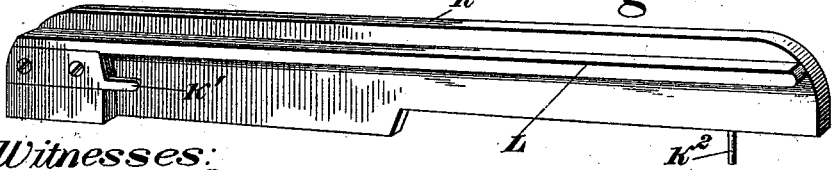


Fig. 7.



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By his Attorneys,

Inventor:

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*Alexander & Dowell.*

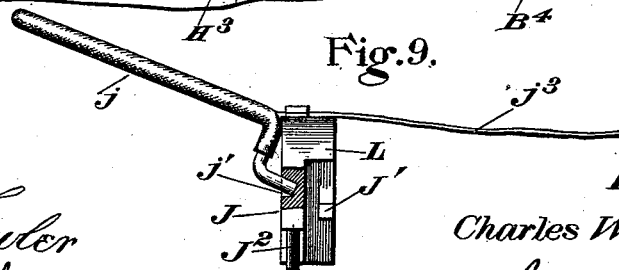
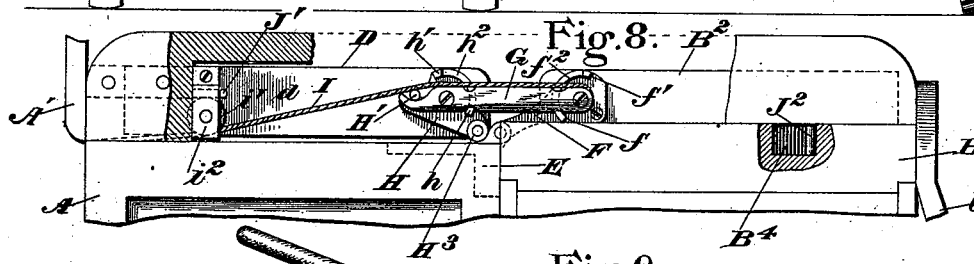
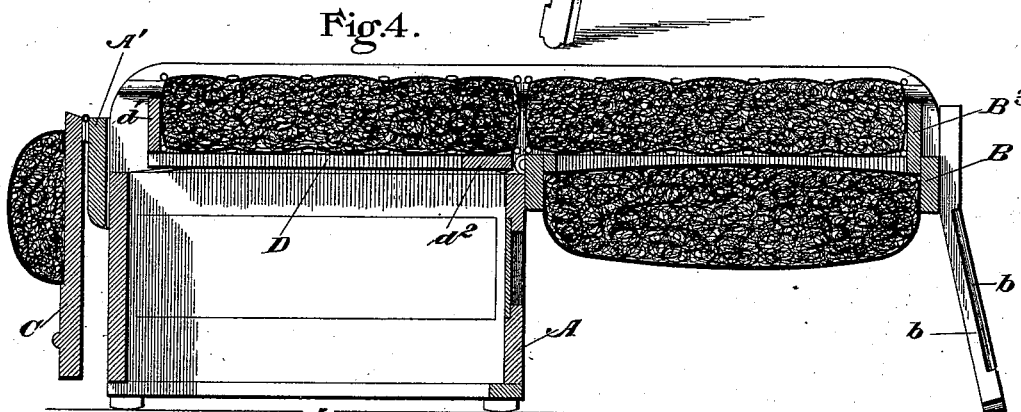
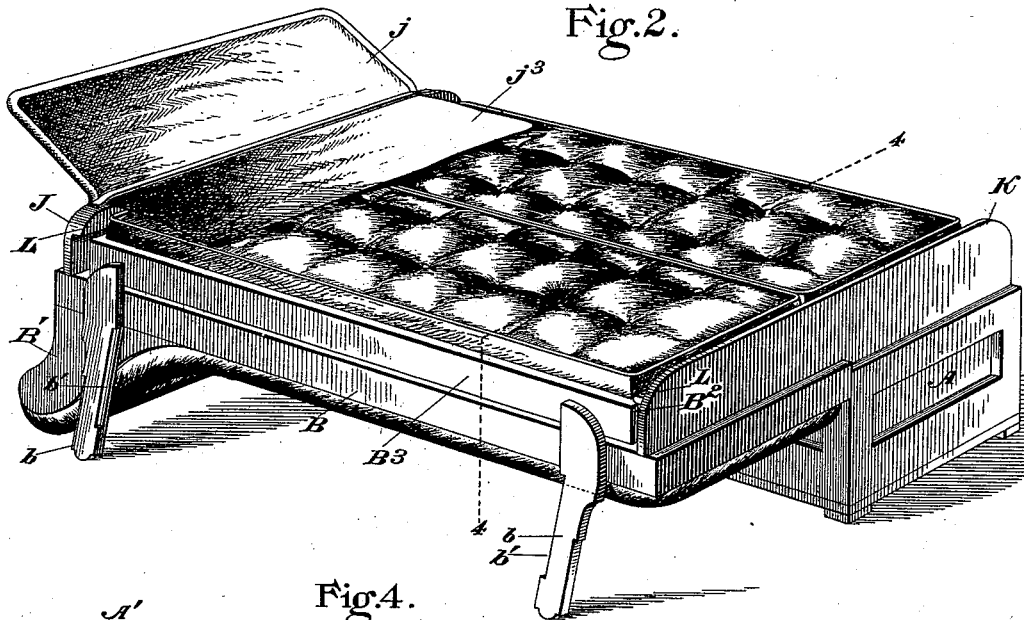
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2 Sheets—Sheet 2

C. W. VOGEL.  
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Witnesses:  
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Inventor:  
*Charles W. Vogel*

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# UNITED STATES PATENT OFFICE.

CHARLES WM. VOGEL, OF LIMA, OHIO.

## LOUNGE-BED.

SPECIFICATION forming part of Letters Patent No. 523,608, dated July 24, 1894.

Application filed October 13, 1893. Serial No. 488,067. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES WM. VOGEL, of Lima, in the county of Allen and State of Ohio, have invented certain new and useful  
5 Improvements in Lounge-Beds; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,  
10 which form part of this specification.

The present invention is an improved folding bed lounge or sofa-bed, and it consists in the novel constructions, and combinations, of parts hereinafter described and claimed, and  
15 illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the folding bed lounge, folded, as a sofa. Fig. 2 is a similar view showing it arranged as a sofa  
20 bed. Fig. 3 is a transverse sectional view on line 3—3 Fig. 1. Fig. 4 is a similar view on line 4—4 Fig. 2. Fig. 5 is a transverse sectional view on line 5—5 Fig. 1. Fig. 6 is a detail sectional view on line 6—6 Fig. 1. Fig.  
25 7 is a detail perspective view of the foot board. Fig. 8 is a detail end elevation of the device arranged as a bed, the head board being partly broken away. Fig. 9 is a detail sectional view on the head board.

30 Referring to the drawings by letter,—A represents the main body of the sofa which is rectangular and of any desired construction and finish, being however hollow inside and open at top.

35 B is a rectangular frame shallower than the body, but of corresponding contour, and hinged at one side thereto so that it can be turned over upon the body as indicated in Fig. 1, or turned outward parallel with body as indicated in Fig. 2. This frame B is also of  
40 any suitable construction and may be provided with a slatted or spring bottom, or upholstered in any desired manner, provided its under side is adapted to sustain part of a  
45 mattress or bed tick when the frame is opened. Or both top and bottom of frame B may be upholstered if desired as in ordinary sofa beds.

On the upper side and to one end of frame  
50 B is fastened the head roll B' as in ordinary

lounges, and to the back rail of frame B are secured near its opposite ends, two substantially upright pieces *b, b*. (When referring above to the location of parts on frame B I presume it is to be folded upon part A as indicated in Fig. 1, which is its correct normal  
55 position.) These pieces *b, b*, project slightly below the side of frame B, and assist in preventing lateral movement thereof on body A.

To the rear side of body A is secured a 60 piece A' which projects above the body as high as the side of frame B, and as shown is just long enough to fit between the pieces *b, b*.

To the upper rear edge of piece A' is hinged 65 the lower edge of a back C the ends of which are rabbeted as at *c*, and when the back is raised to proper position as indicated in Fig. 1, these rabbets *c*, engage recesses *b'* in the rear inner corners of pieces *b*. The back can be locked in upright position by spring  
70 catches *b'* or other devices on pieces *b*, or vice versa, and when thus secured, the pieces *b* constitute part of the back of the sofa, and the rabbeted portions *c* of the back projecting into recesses *b'* will prevent the frame B  
75 from being turned outward so long as the back C is in upright position. When the parts are therefore adjusted as indicated in Fig. 1 they are so locked and secured as to constitute practically an ordinary sofa, and can be lifted  
80 bodily by grasping the frame B, the back, or the body, without opening or separation of parts.

When it is desired to convert the sofa into a bed, the back C is lowered, and frame B is  
85 turned over parallel with the body A as indicated in Fig. 2; the pieces *b* then constitute legs and uphold one side of frame B, while the other side is upheld by the hinges. When the frame is thus adjusted it will be seen that  
90 boards B<sup>2</sup> set edgewise, are secured to its ends, and a similar board B<sup>3</sup> to its outer side, together constituting a shallow flange which serves to retain the mattress in position. These boards, when frame B is folded over  
95 body A, depend into the body and are not visible.

D designates a frame adapted to fit easily within body A and of any suitable construction. Its ends *d*, rear and side pieces *d'* are,  
100

as shown, formed of boards set edgewise, corresponding to the boards  $B^2$ ,  $B^3$ , on frame B, and its front side piece  $d^2$  is flat. The inner ends of pieces  $d$  of frame D are connected by peculiar hinge-joints to the inner ends of the end board  $B^2$  on frame B, so that when frame B is turned outward, as indicated in Fig. 2, the frame C will be raised in body A to a position parallel with and beside frame B, and the frames together constitute a good bedstead. Frame D may be upholstered also if frame B is on its under side, so that the surface of the bed will be uniform on both frames.

The hinge joints between frames B, D, are most clearly shown in Figs. 5 and 8 both joints being constructed alike, except that they are necessarily rights and lefts, as they are at opposite ends of the frames, but a description of one applies equally to both.

E represents an angle iron secured to the upper corner of body A at the front side thereof as shown, and formed with an eye  $e$  at its bend to which is pivoted the end of the movable member F of the hinges which is of the shape shown in Fig. 5.

The member F of the casting is secured to the outer side and inner end of board  $B^2$  as shown in Fig. 5 thus hinging frame B onto body A. The end of casting F attached to board  $B^2$  is flattened and enlarged and centrally thereto is pivoted one end of a link G, the other end of which is similarly pivoted on a plate casting H attached to the adjoining end of the adjoining end board  $d$  of frame B. This link therefore forms a swinging hinge connection between frames B and D, and consequently when frame B is turned onto body A the frame D is lowered into body A, and when frame B is turned off of body A, frame D is raised in the body to a level with frame B.

The enlarged head of member F is provided with stop lugs  $f$ ,  $f'$  so located that undue movement or swing of link G thereon is prevented, and the casting H is likewise provided with stop lugs  $h$ ,  $h'$  by which unwanted movement of the link G is prevented, and the proper raising and lowering of the frame D, synchronously with the turning of frame B insured. In order to prevent friction of the links against castings F or H, segmental bearing flanges  $f^2$ ,  $h^2$ , may be formed on the castings, respectively, concentric to the pivots of the links thereon.

The ends of the links G project beyond their pivots on castings H, and are adapted to catch under lugs  $H'$  on the castings and thereby bring the frame D to a perfectly horizontal position when frame B is turned down. The castings H are further provided with forwardly inclined portions on which are journaled friction rollers  $H^3$  which aid in the raising and lowering of frame D by preventing binding thereof against the front pieces of the body; and near the top of the body these rollers enter raceways or grooves  $a$  by which they are guided so as to bring the edge of side

piece  $d^2$  directly over the edge of the front side of body A as indicated in Fig. 8 so that when used as a bed the frame D will have one side directly supported on the body A.

In order to relieve the hinge joints and especially links G of part of the strain or load, in lifting frame D, auxiliary lifting cords or chains I, I, are employed, one at each end of the frame. Each of these cords is fixed at one end to the top of body A, at rear thereof, and then passes down, under a sheave-pulley  $i'$  on the end of frame D, near the rear side thereof, thence it is led up and fastened to the front end of link G near its pivot on casting F, or to any other suitable point on the casting or frame B. As thus arranged, when the frame B is turned off of body A, the rear side of frame D is raised by the tensioning of chains I, simultaneously with the raising of the front side thereof by links G, G.

J, K, are head and foot boards, which are placed in position after the bedstead is opened as indicated in Fig. 2. These boards are long enough to extend across the head and foot of the bed, i. e.—the adjoining ends of frame B and body A, when the former is opened, and are each provided with an inner longitudinal strip L which fits close to end boards of the frames and protects the hinge joints.

The boards are provided with metallic tongues  $J'K'$  respectively on their inner faces which are adapted to catch under pins or other devices on the end boards of frame D near the back side of the bed. As shown, these tongues engage under the brackets  $i^2$  in which pulleys  $i'$  are journaled, and therefore positively support the rear side of frame D, and relieve the strain on chains I and links G. The boards are also provided with pins  $J^2$ ,  $K^2$ , depending from their lower edges at the ends opposite the tongues  $J'K'$  adapted to enter slots  $B^4$  in the end pieces of frame B and in connection with the tongues hold the boards in position.

On the head board J is a pillow supporting frame  $j$  formed of a single rod, the ends of which can be fitted into holes  $j'$  in the board as indicated in Fig. 2. The rod is covered with stout canvas or ticking, which is tacked to the upper edge of the board, and has a flap portion  $j^3$  which can be turned down over the ends of the mattress on the frames B, D, when the bed is to be used, as indicated in the drawings.

When not used as a bed, the head and foot boards, can be removed, and together with the bedding, placed upon frame D lowered into body A and covered by the frame B, so that simply a comfortable looking sofa can be seen.

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

1. In a sofa-bed the combination of the body, the top frame hinged thereon at one side, the pieces  $b$ ,  $b$  attached to the opposite side of the frame recessed on their rear inner edges, and

adapted to form alternately supports for the frame, or part of the sofa back; and the back board hinged to the body adapted to fit between said pieces when raised, having rabbeted ends to engage the recesses in said pieces and thereby lock the frame when folded, and devices for securing the back when raised to said pieces, substantially as described.

2. In a folding bed the combination of the body, the vertically movable frame therein, and the frame hinged to the body, mechanism substantially as described whereby when the latter frame is opened or closed, the former frame is raised or lowered, and the detachable head and foot boards provided with devices whereby the former frame is rigidly upheld when the bed is extended and the said boards adjusted in position, substantially as described.

3. In a folding bed the combination of the body, the vertically movable frame therein, the frame hinged to the body, and the pivoted hinge-link connections between the hinged and movable frame whereby when the former is opened the latter is raised and vice versa; with the detachable head and foot boards, provided with devices for upholding the movable frame when it is raised, substantially as and for the purpose set forth.

4. In a folding bed the combination of the body, the vertically movable frame therein, the frame hinged to the body, and the pivoted hinge-link connections between the hinged and movable frame, whereby when the former is opened the latter is raised and vice versa; with the cords or chains attached to the rear side of the body, running under pulleys or guides near the rear side of the movable frame and connected by their front ends to the hinged frame, all constructed and arranged substantially as and for the purpose described.

5. The combination with the body A, the interior frame D, and the hinged frame B; of the lock hinge connections between said frames consisting of the castings F and H, provided with stops *f*, *f'* and *h*, *h'*, respectively, and pivoted link G, substantially as described, and for the purpose specified.

6. The herein described lock hinge for folding bed frames consisting of the casting F adapted to be attached to one frame, the castings H having a stop H' adapted to be attached to the opposite frame, and the link G pivoted to the adjoining castings and having one end projecting beyond its pivot and adapted to engage the stop H', all constructed and arranged to operate substantially as described.

7. The combination of the body, the vertically movable frame therein, and the top frame hinged to the body, with the links G, G, pivotally connecting the ends of said hinged and movable frames, and the stop lugs *f* and H' for limiting the movement of said links relatively to the frames, and the friction rollers attached to the movable frame, substantially as described.

8. In a folding bed the combination of the body, the vertically movable frame therein, the frame hinged to the body, and the pivoted hinge-link connections between the hinged and movable frame, whereby when the former is opened the latter is raised and vice versa; with the cords or chains attached to the body running under pulleys or guides near the rear side of the movable frame and connected by their front ends to the hinged frame, and the detachable head and foot boards, all substantially as described.

9. In a sofa-bed the combination of the body, the top frame hinged thereon at one side, the pieces attached to the opposite side of the frame recessed on their faces and adapted to form either supports for the frame, or part of the sofa back, and the back board hinged to the body adapted to fit between said pieces when raised, having rabbeted ends to engage the recesses in said pieces, and devices for securing the back when raised; with the vertically movable frame in the body, and the pivoted hinge-link connections F, G, H, between the hinged and movable frames, and the detachable head and foot boards, all constructed and arranged to operate substantially as and for the purpose set forth.

10. The combination of the body, the top frame hinged thereto at one side, the pieces attached to the rear side of the top frame adapted to form supports for said frame when it is opened, and to constitute part of the sofa back when said frame is folded; with a vertically movable frame within said body, and the link hinges, and cords and pulleys, whereby the movable frame is raised as the top frame is opened, substantially as set forth.

11. The combination of the body, the frame hinged to one side thereof, the pieces attached to the rear side of said frame adapted to form part of the back when said frame is closed, and legs for said frame when it is opened, and the back board hinged to the body and adapted to fit between said pieces and hold the frame closed and devices for fastening the back to said pieces; with a vertically movable frame within said body, and the link hinges and cords substantially as described whereby when the top frame is opened or closed the movable frame is raised or lowered, substantially as set forth.

12. In a sofa bed, the combination of a body, a top frame, and a vertically movable frame in the body, with the pieces F, hinging the top frame to one side of the body, the pieces H connected to the vertically movable frame, and the pieces G pivotally connected to and connecting adjoining pieces F and H, having extensions at their inner edges adapted to engage stops H' on pieces H, and the cords and pulleys for raising the rear side of the movable frame, substantially as described.

13. In a sofa bed, the combination of the body, the top frame hinged to one side thereof, and the pieces attached to the rear side of said frame, with the vertically movable frame

in the body, the pivoted stop hinge link connections between the hinged and movable frames, consisting of the pieces F, pieces H having stop H', and link G having extensions  
5 at their rear ends adapted to engage stops H', and the cords I connected to the hinged frame and body adapted to raise the rear side of the movable frame, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES WM. VOGEL.

Witnesses:

R. B. TOLAN,  
W. F. MARTIN.