(No Model.) 2 Sheets—Sheet 1.

D. J. POWERS.

FOLDING BED.

No. 276,464. Patented Apr. 24, 1883.

Fig. 1.

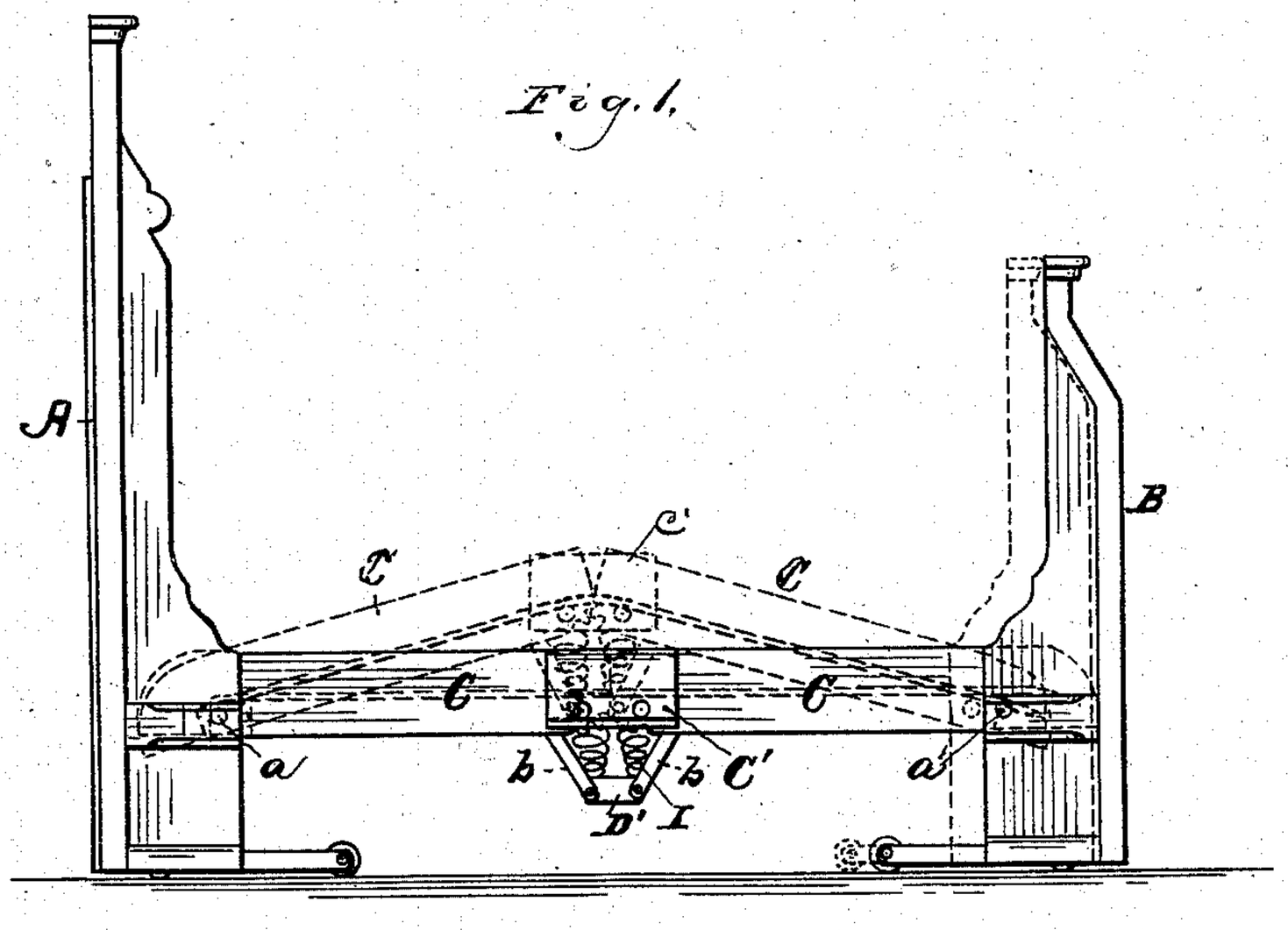
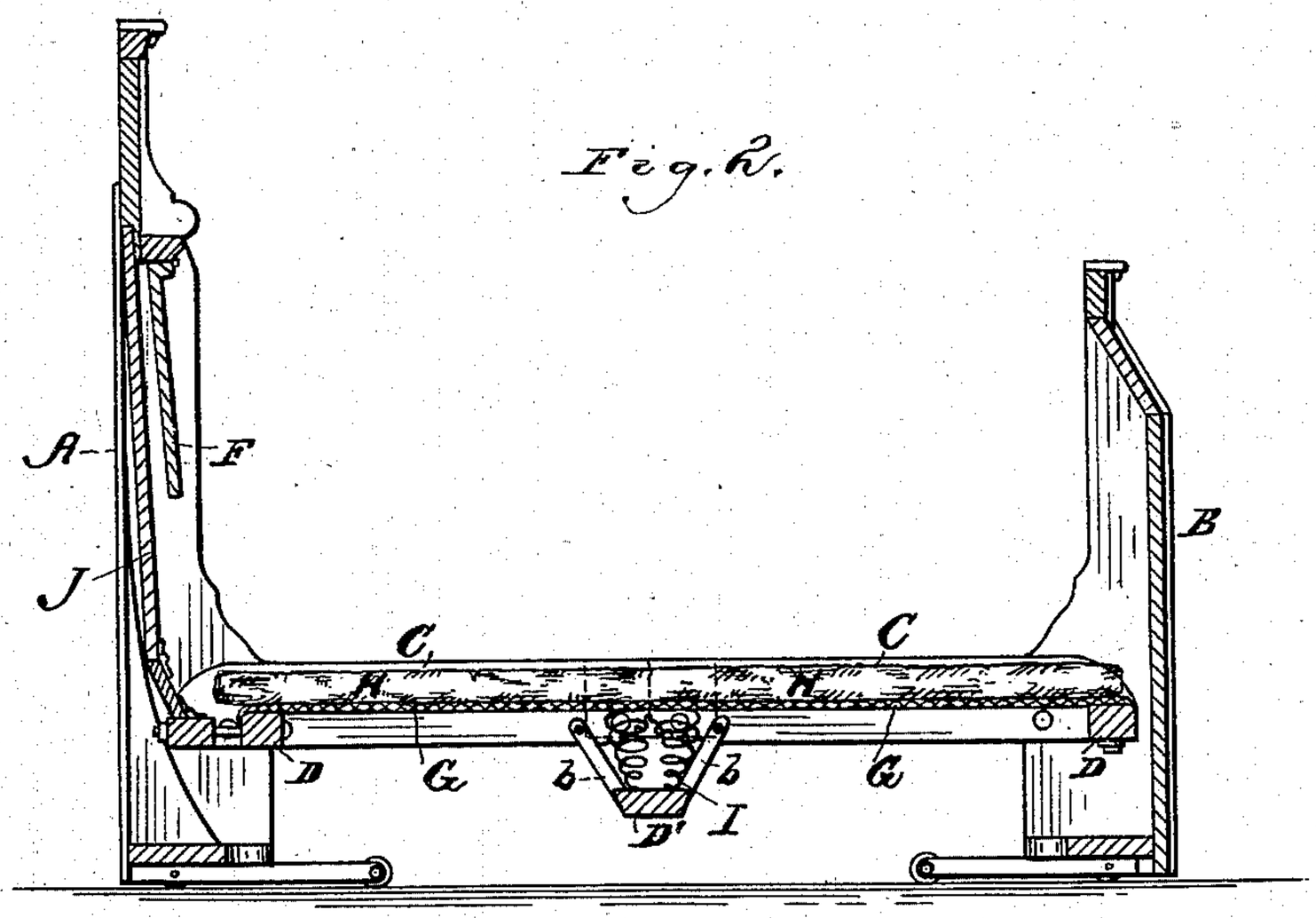


Fig. 2.



Witnesses,
Geo. Bancroft,
William Keddley

Inventor,
David J. Powers

(No Model.)

2 Sheets—Sheet 2.

D. J. POWERS.

FOLDING BED.

No. 276,464. Patented Apr. 24, 1883.

Fig. 3.

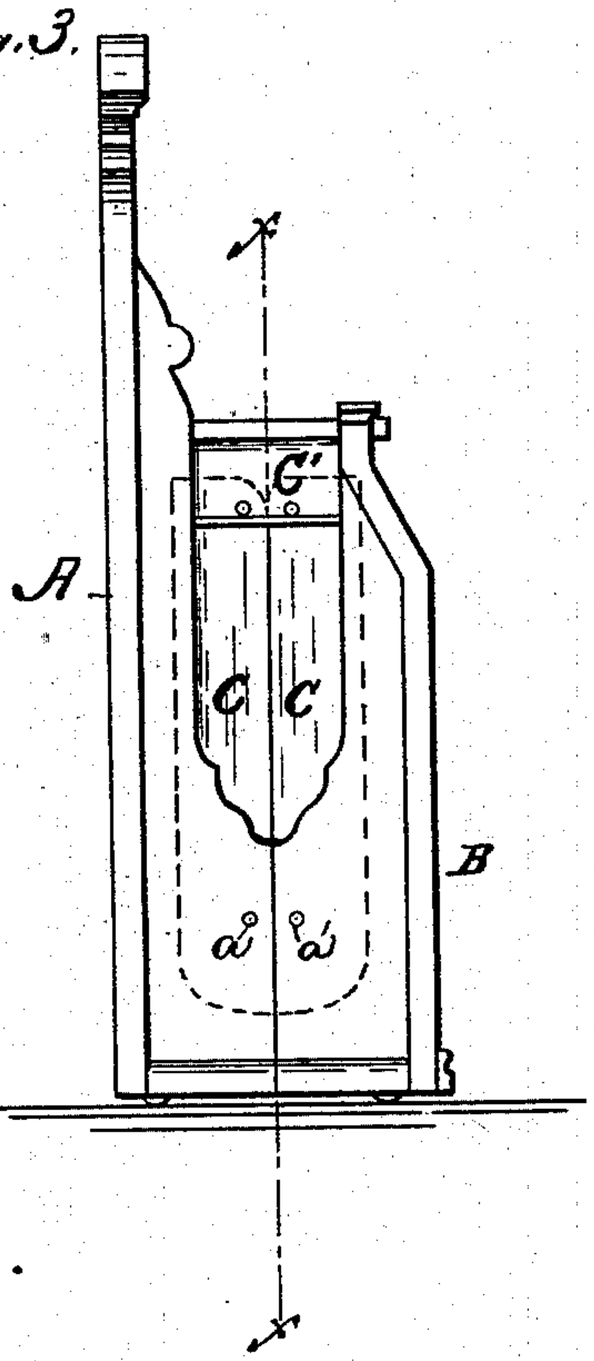


Fig. 4.

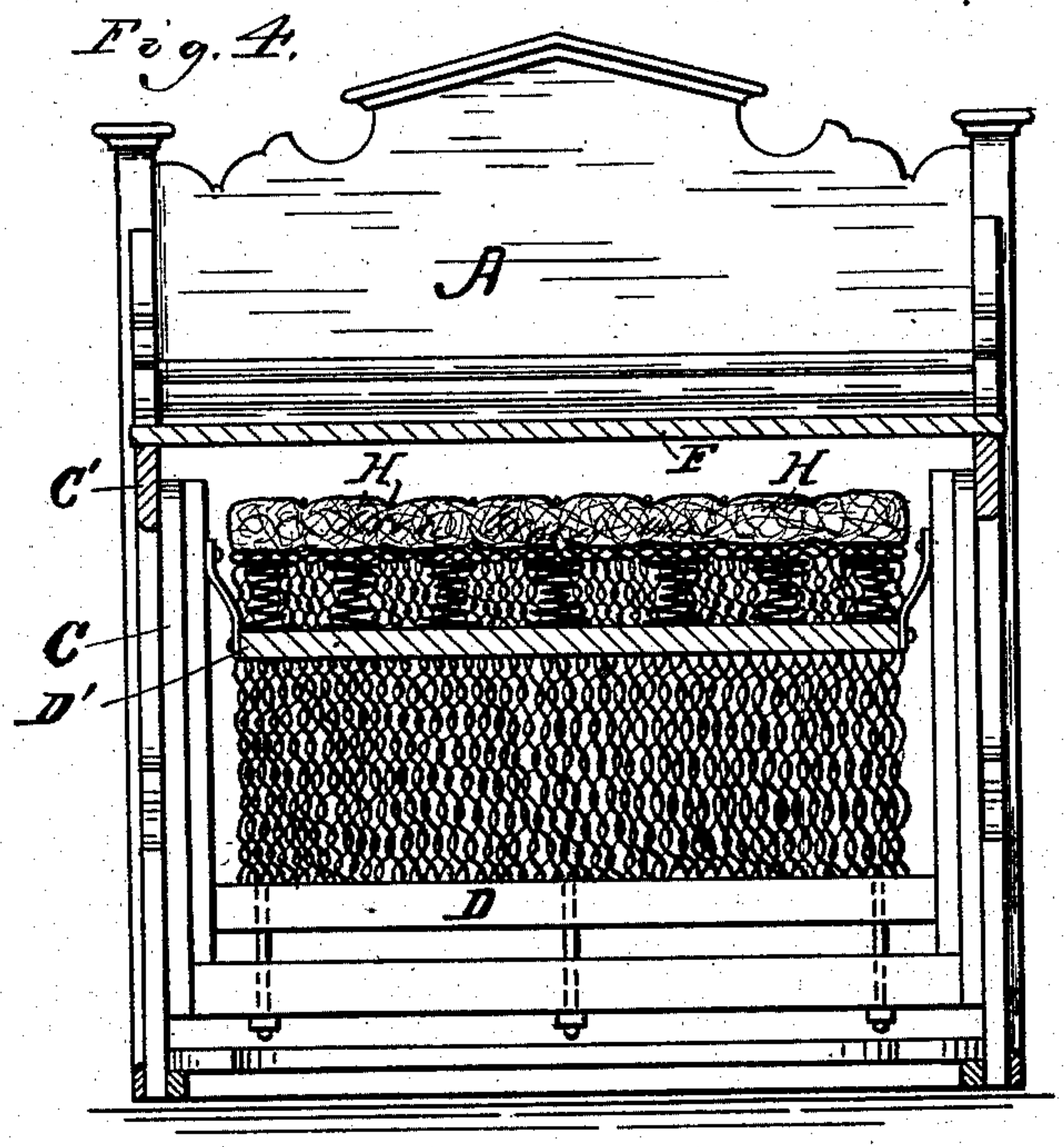


Fig. 5.

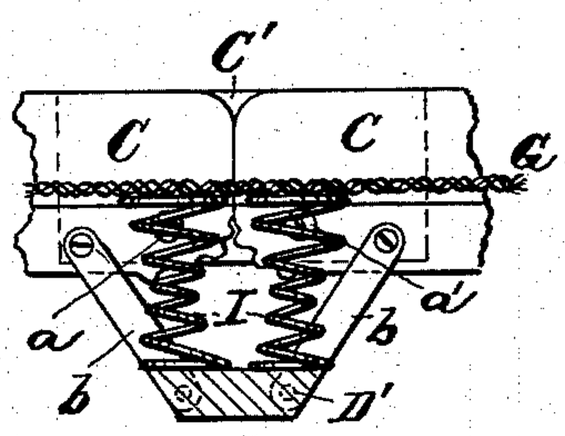
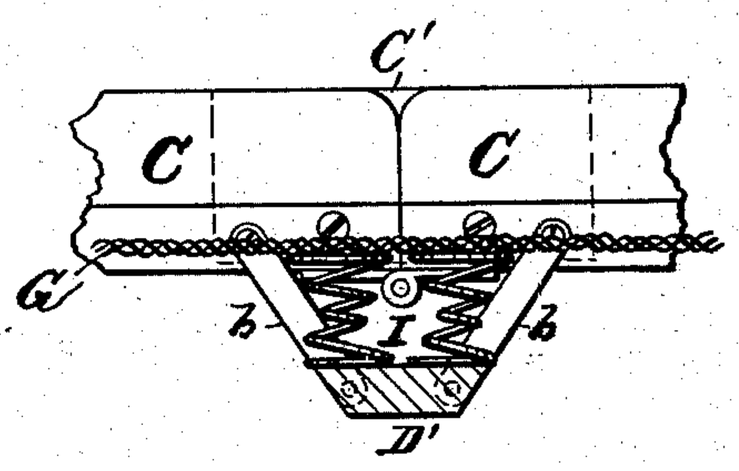


Fig. 6.



Witnesses.

Henry Faulkner,

William Headley

Inventor.

David J Powers

UNITED STATES PATENT OFFICE.

DAVID J. POWERS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE UNION WIRE MATTRESS COMPANY, OF SAME PLACE.

FOLDING BED.

SPECIFICATION forming part of Letters Patent No. 276,464, dated April 24, 1883.

Application filed March 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. POWERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Folding Beds, of which the following is a specification.

My invention relates to improvements in folding beds; and it consists, first, in an adaptation to the head and foot ends of the bed of connecting side rails that fold upward from their middle, and an elastic metallic fabric arranged and operating as hereinafter described; second, in such a combination of side rails, cross-rails, and fabric arranged to open and close easily, as described; third, in a peculiarly-applied side-rail clamp and top rail for the case; fourth, in an automatic head-board; fifth, in an adaptation of a central cross-rail, so as to afford increased room for the bedding when the same is folded.

Figure 1 of the drawings is a side view of my bed when unfolded, ready for use, with dotted lines showing the position of the fabric and bedding under certain conditions, also of the side rails. Fig. 2 is a longitudinal central section of same. Fig. 3 shows the bed closed. Fig. 4 is a transverse sectional view on line *f*. Fig. 5 is a section showing the clamp and side-rail joint. Fig. 6 is a section showing the manner of attaching rail D′ to the side rails, also a modification of the rail-joint.

A is the head end of the bed, and B is the foot end, made as shown, or in any form desired.

C C are the side rails, pivoted at *a a′* to the head and foot ends, said side rails being divided and hinged at or near their middle, so that they will fold upward from their middle—rule fashion—edgewise, but not downward materially below a horizontal, said rails and ends being so adapted to each other that they will entirely inclose the sides of the case when the bed is folded.

To the side rails, at their outer ends, are secured cross-rails D D, to which are attached the opposite ends of an elastic metallic fabric of woven-wire coils, G, or of other equivalent character. This fabric is of a proper length to secure the right tension for a bed-bottom when the side rails are fully extended. The fabric must be attached very nearly in line with the hinges of the rails, but a little above them, so as to give the utmost purchase to the elbow-joint of the rails for stretching the fabric suitably for use, and also so as to more easily admit of the unlocking of the rails upward when the bed is to be folded.

A center cross-rail, D′, is secured to the side rails at the joint and underneath the fabric by means of four pivoted clips, *b b b b*, one being attached to each section of the side rails at such a distance back from the hinges as to cause the rail D′, to which the other ends of the clips are attached, (two to each end,) to occupy a different relative position when the bed is unfolded, and vice versa when folded. Upon the top rail, D′, may be secured a series of elastic coil or other springs, I, so placed as to support the fabric when the bed is unfolded, as shown in Fig. 1.

The object of thus pivoting rail D′ to the side rails back from the hinges is to cause it to drop lower down when the bed is folded together with the fabric, so as to leave more space near the top of the case for the bedding between the fabric and cover F, which is hinged to the head end of the case, near its top, and adapted to fully cover and close up the top of the bed-case when folded, and to swing down out of the way when the bed is unfolded.

An important function of rail D′ is the supporting of the metallic fabric and bedding above the horizontal line of the side rail attachment to the ends, as shown by dotted lines in Fig. 1, and thus contributing their weight to aid in closing down the side rails, and stretching the fabric sufficiently tight for a bed-bottom. Without this supporting cross-rail the fabric and bedding when slackened would fall to the point below the horizontal, the reverse of what is indicated by the dotted lines in Fig. 1, and thus require to be lifted to a straight line when closing down the side rails, and instead of aiding materially hindering the said closing, and this difference of helping or hindering is found sufficient to render the one means a success and the other a failure in practice, for the reason that such beds are usually handled by women, who, as a rule, are not very strong; but with the ele-

vated fabric and bedding H to help, a woman can close down the rails and extend the fabric with ease, while without rail D′ and with the fabric and bedding hanging below, an ordinarily stout man can hardly do it. Thus with rail D′ as applied the bed is practical, and without it it is not. The stretching of the fabric is also largely aided by the firm support of the hinged rails at both ends, as shown in my bed, as compared with the older bed structures, which usually fold outward from the wall upon a single head-end support, and have the bedding and fabric not only to stretch, but to lift up first to the stretching-line.

My double end support for the side rails and central elevated support for the fabric and bedding when about to be stretched are of vital importance in a bed in which the fabric is to be stretched as often as used, and, withal, needs to be sufficiently stretched to make a good bottom for a bed.

The clasp-rails C′ are of about the same width as the side rails, and the right length to fill the space between the upright standards of the head and foot ends of the closed bed against which they abut, thus making a proper top rail for the ends of the case when the bed is folded, and a supporting-clasp and cover for the joints of the side rails when the bed is unfolded. They may be wrought in any style preferred. They are secured in position parallel to the rails unfolded, one screw in each section of the rail at an equal distance from the joint, the attachment being so adapted as to cause the clasp-rail to at all times preserve a horizontal position. Fig. 6 shows a modification of rail-hinge.

In the back of the head end of the bed from about the middle upward I have an opening for ventilation when the case is closed, and to this opening I adapt a head-board, J, to slide automatically in grooves or otherwise, and connected at its ends with the outer ends of the side or end rails, so that when the rails are folded and the bed closed the head-board is withdrawn from the opening, so as to leave free ventilation, and so that when the bed is opened and extended for use the head-board closes the opening, and thus makes a continuous wall to the head of the bed, the advantages of which are obvious.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a folding bed adapted to have its elastic bottom stretched by the elbow-leverage of the side rails, the combination, with jointed side rails that fold upward at their middle, of cross end rails having an elastic metal fabric attached endwise to each, and base-supports at each end of the rails, substantially as and for the purpose specified.

2. A folding bed with side rails that fold upward at their middle, and with an elastic fabric applied as specified, in combination with rail D′, substantially as and for the purposes specified.

3. In a folding bed with jointed side rails that fold upward at their middle, the combination, with said rails, of the clasp-rails C′, substantially as and for the purposes specified.

4. The head-board arranged to move automatically, in combination with the sides and head end of the bed, as and for the purpose specified.

5. The cross-rail D′, adapted to fall out of the way to make more room for the bedding when the bed is folded, arranged substantially as described.

DAVID J. POWERS.

Witnesses:
FRANK A. POWERS,
WILLIAM HENDLEY.