(No Model.)

M. B. CHURCH.

FOLDING SPRING COT.

No. 259,486. Patented June 13, 1882.

Fig. 1.

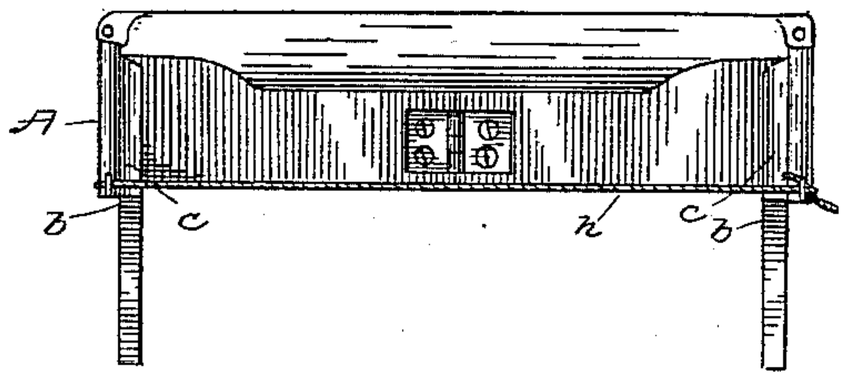


Fig. 2.

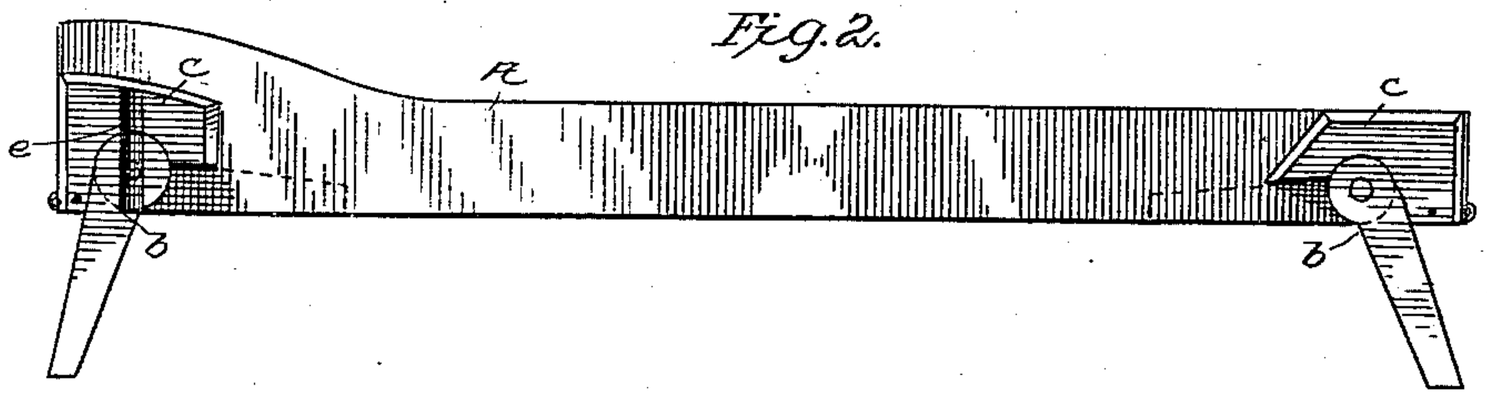


Fig. 3.

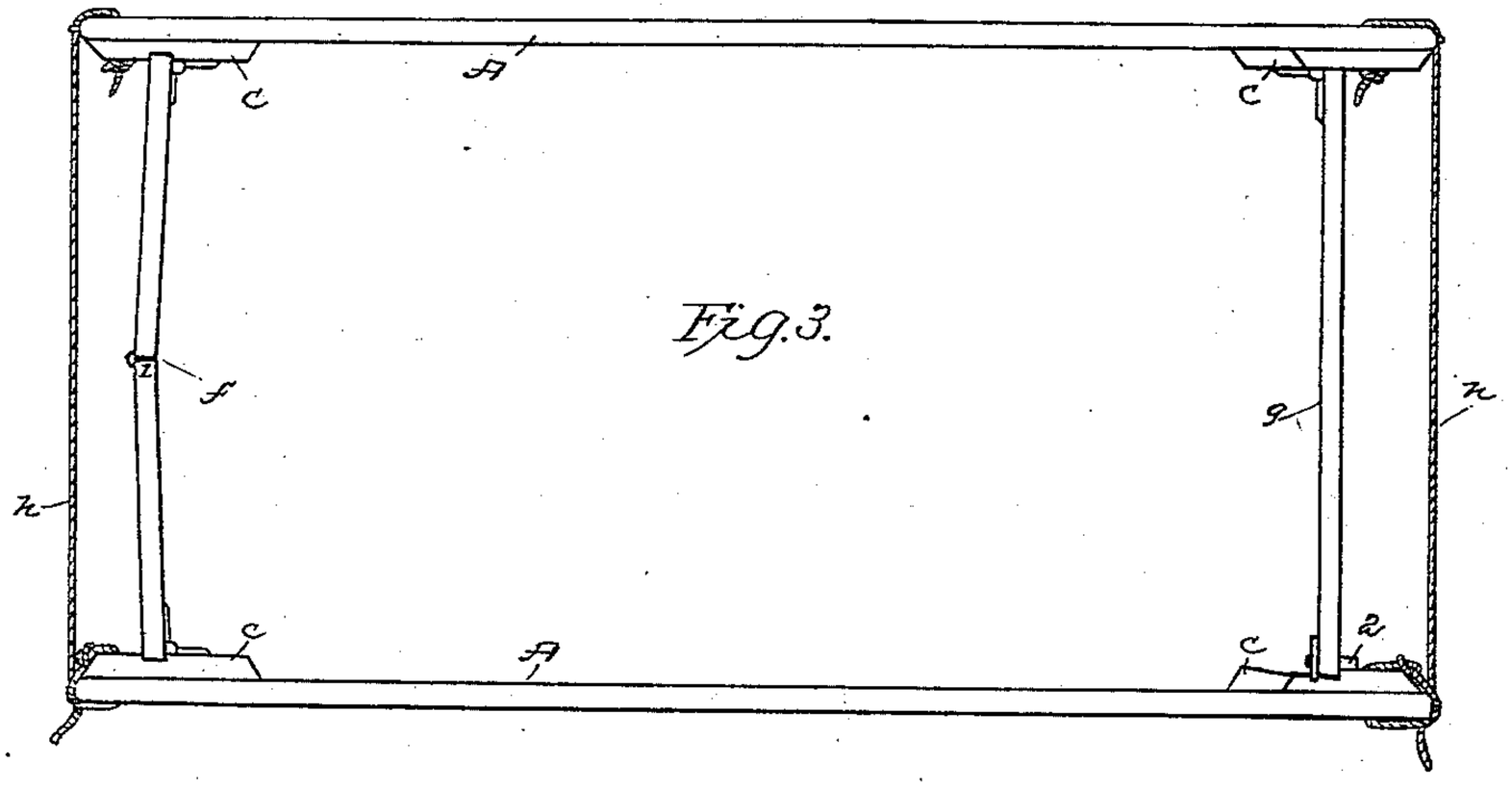


Fig. 5

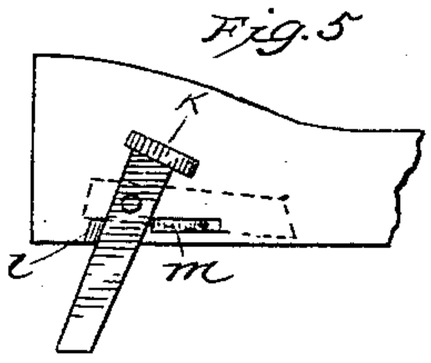
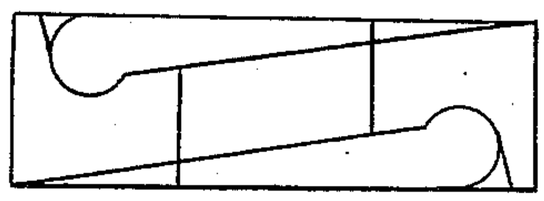


Fig. 4.



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UNITED STATES PATENT OFFICE.

MELVIN B. CHURCH, OF GRAND RAPIDS, MICHIGAN.

FOLDING SPRING-COT.

SPECIFICATION forming part of Letters Patent No. 259,486, dated June 13, 1882.

Application filed January 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, MELVIN B. CHURCH, of Grand Rapids, county of Kent, State of Michigan, have invented a new and useful Improvement in Folding Cots; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention is an improvement in cot-beds, the same being also applicable to tables, benches, and like structures which require to be folded in small compass.

It consists, first, in an improved manner of constructing and connecting the folding legs; secondly, of an improvement in the arrangement of the cross-piece of the structure, whereby it is made to stretch the covering and to lock the legs; and, thirdly, in a transverse straining-cord, by means of which the sides are held together and the spring thereof made more effective.

In the accompanying drawings, Figure 1 represents an end view; Fig. 2, an elevation of the inner surface of one of the side pieces with the leg attached; Fig. 3, a top view of my improvements. Fig. 4 shows some details. Fig. 5 shows a modification of the leg.

The structure shown in the first three figures represents a cot-bed which includes the general principle represented in my application filed on the 6th day of October, 1881.

It will be understood that the sides A are of thin material, like ordinary board, preferably about seven-eighths of an inch in thickness and five or six inches in depth, these sides being set vertically, or approximately so, and the canvas, cloth, or straps across the top are to be tacked or otherwise secured to the upper edge, and when the structure is extended stretched tightly.

I proceed first to describe the legs. They are shown at *b*, Fig. 2, and are made of material preferably of about the same thickness as the sides, being cut very broad, with a partly-circular end, having a hole in the center of the curved part, through which a screw is inserted to attach the leg to the side. It will be observed that the leg is cut with the circular part starting from the outer edge, extending round, and terminating at an angle with the inner edge, the curve being somewhat more than a half-circle. The cut may be made inclined throughout the circular part, and at a little distance on the straight parts adjoining the circular, so that the inner face is larger than the outer. This rounded head of the legs fits accurately into a corresponding cavity in the block *c*, securely attached to the inner face of the side at the end, and when the leg is extended its upper edge bears against the downwardly-extending part of the block *c*, by means of which its movement is limited. When the leg is folded its inner face bears against the inner extension of said block, whereby its movement is limited in that direction, and the bevel of the block and leg holds the parts together in every position. It will be observed in Fig. 2 that the parts are so constructed that the leg is braced outward slightly. The screw is simply to hold the leg to the side, the weight being borne by the block. The legs are therefore held securely in place in an inexpensive way, and when folded lie snugly against the sides. The position of the leg when extended is shown in full lines in Fig. 2, and in dotted lines as folded.

It will be understood that the upper edges of the side pieces are held together when extended by the covering, whether it be cloth or simply straps tacked to the upper edges. I have so arranged the cross-pieces that they shall serve both as means to extend the sides and stretch the canvas and form part of the frame-work, and at the same time firmly brace and support the legs. This may be accomplished by different details of construction.

I have shown the circular part of the leg as traversed by a groove, which is vertical when the leg is extended, and registers with a groove cut in the upper part of the block *c*, the groove being upon the inner face both of the leg and block. This groove is shown at *e*. It is fitted to receive the end of the cross-piece, and when the end of the cross-piece is in place in said groove the leg is securely locked in place and cannot be folded, and is also braced against any side movement. Various means may be used for holding the cross-pieces in place. They may be made in two equal sections, hinged by a countersunk butt-hinge in the middle, as shown at *f*, and may be sprung into place, the joints being formed so as to lock when the piece is in place. This may be accomplished by cut-

ting the ends slightly beveled, as shown at 11. Instead of being removable, this bisected cross-piece may be hinged to the blocks by a butt-hinge secured to the block and cross-piece on the inside, just above the leg. When the cross-pieces are so connected to the side pieces the grooves may be omitted. There are other ways of applying these cross-pieces, as is shown, for example, at the opposite end, where the cross-piece marked *g* is made in one piece, and is hinged to the block *c* at one end, and is made to spring against a shoulder, 2, at the other end, formed by a slight chamfer to admit the end, and a small button may be used to hold the end in place. Under all circumstances the cross-piece should be so proportioned to the width as to give the covering or cross-straps on the top considerable tension.

In order to hold the lower edges of the sides and put them under proper strain, as well as to regulate the strain upon the cloth or straps upon the top, I have placed at each end a cord or piece of flexible wire cable, *h*. This is arranged to pass through holes in the lower corners. This may be secured at one end by a knot and at the other by a slip-knot, or in any convenient way, by means of which it may be adjusted to different positions. By these the lower edges are bound together; but it will be observed that the cross-pieces in the construction shown are at a little distance from the ends. Therefore when strain is put upon the cords the ends of the said pieces are brought in, and the sides act upon the ends of the cross-pieces, as upon fulcra, tending to throw out the upper edge at the middle and to put increased strain upon the cloth. If, therefore, it be desired to increase the tension of the cloth, it is only necessary to shorten slightly these cords at the ends, and in this way the cords tend to increase the resistance of the sides, whereby the sides may be made thinner and their yielding adjusted to the weight of the person occupying the cot.

Although I have shown a cot in which the legs may be folded upward and the sides collapsed together when the cross-pieces are removed or folded inward, it will be plain that the same construction of the legs and cross-pieces is applicable to the analogous structures of a table or bench. It is especially useful in connection with benches such as those used by undertakers, paper-hangers, and the like, where it is desirable to have a bench to be folded in small compass for storage or transportation, and at the same time be, when extended, firm and strong to support a weight. When applied to a bench of considerable length, such as those used by undertakers, the sides may be cut midway of their length and provided with hinges, whereby one half may be folded upon the other, so as to reduce the structure in length when folded. Under such conditions it will be desirable to increase the number of legs, and a pair precisely like those heretofore described may be arranged on each side of the hinge in the side pieces, these being adapted to fold in reverse direction, and cross-pieces similar to those described may be applied to these legs.

For sewing-tables, or tables required for any such purpose, only four legs will be necessary, and a detachable board top may be used, if desired. For these benches and tables, instead of the cloth top, I may use rubber, or, instead of a continuous top, transverse straps may be used, of any suitable material.

In Fig. 5 I have shown a modification of the block and leg; but this is a modification in form only, as the principle is the same. The block is made in two parts, *k* and *l*, which are adapted in shape and location to the changed form of the upper end of the leg. They may be cut under, and *k* fits the end, while *l* braces the side. A catch, *m*, may be used to hold the leg in place when extended.

Having thus described my invention, what I claim is—

1. In combination with the side piece of a cot-bed, bench, or light structure, the folding leg formed with a partly-rounded end, and the block *c*, fitted thereto, adapted to bear against the leg and limit its movement, substantially as described.

2. The combination of the side pieces, the partly-rounded leg, and block fitted thereto, and the cross-pieces adapted to brace against the legs, substantially as described.

3. The combination of the spring-sides, folding transverse cross-pieces uniting said side pieces near the ends thereof, and the transverse cords adjustably attached to the lower corners, substantially as described.

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

MELVIN B. CHURCH.

Witnesses:

L. W. SEELY,

F. L. MIDDLETON.