L. Spooner,

Bed

No. 15,021. Patented June 3, 1856.

Fig. 1

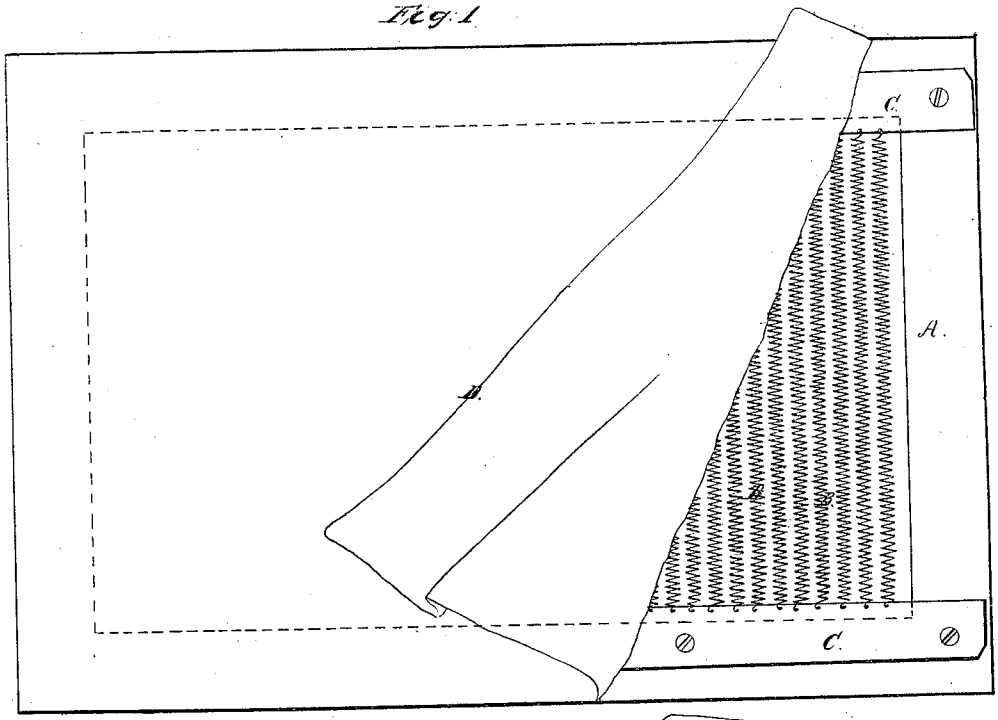


Fig. 2.

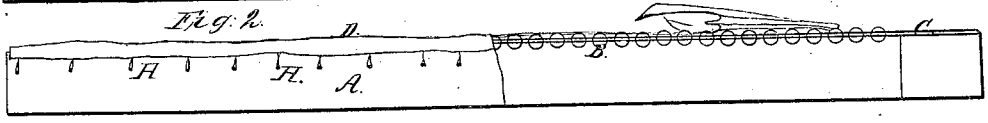


Fig. 3.

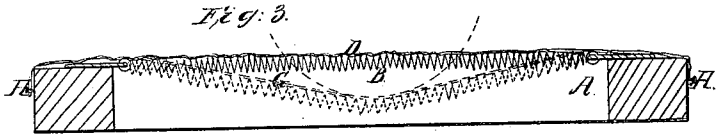
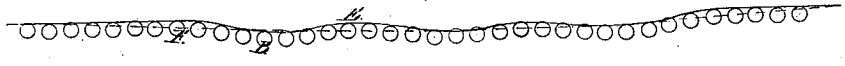


Fig. 4



Witnesses:
Bela Marsh
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UNITED STATES PATENT OFFICE.

LYSANDER SPOONER, OF BOSTON, MASSACHUSETTS.

ELASTIC BOTTOM FOR CHAIRS AND OTHER ARTICLES.

Specification of Letters Patent No. 15,021, dated June 3, 1856.

To all whom it may concern:

Be it known that I, LYSANDER SPOONER, of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved mode of making an elastic rest or support suitable to be used for beds, seats, chair-backs, saddles, and other analogous purposes; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The "elastic rest or support," which I have invented consists of a frame of sufficient strength, and of any desired form, with a series of elastic coils drawn parallel to each other, from one side of the frame to the other, and their ends fastened to it. These elastic bands I make of wires coiled in the form of helices. They must be sufficiently numerous and strong, and drawn to such a tensity, that, either with or without the aid of the sacking, they will sustain the body that is to rest upon them, and also sustain it in the particular position in which it is desired to sustain it. The sacking, or other covering, spread over the wires, must be sufficiently slack or loose, to allow either the whole weight of the body, or such part thereof as may be desired, to rest upon the wires underneath, instead of being sustained by the sacking. In other words, the sacking must the just so slack or loose as to sag to the point, at which it is desired to arrest the further distention of the wires. The objects of this sacking, or other covering, are first, to prevent the discomfort of the body's coming in too close contact with the wires; secondly, to protect the wires from accidental injuries; thirdly, to sustain any excess of weight, either contingent or constant, which may be too great for the wires to sustain, without injury to their elasticity; and, fourthly, to prevent the body, which rests upon the wires, from falling through between them.

By reason of the continuous elasticity of the coils or bands, and by reason of their being all drawn substantially parallel, without being connected to, or crossing, each other; and by reason also of the slackness of the sacking, each coil or band acts independently of all the rest of the series, and finds its own point of bearing, thereby causing the surface of the rest or support to conform to the sinuosities of the body resting upon it, and thus to give a nearly equal support to every part. The larger the portion of weight that is suffered to rest upon the wires, and the smaller the portion that is sustained by the sacking above, the softer or easier will be the bed, chair, or other elastic rest or support. If the entire weight of the body be suffered to rest upon the wires instead of any part of it being sustained by the sacking, the bed will be easier than it can otherwise be.

To make the bed easy, the wires should be drawn to such a tensity as to give a substantial support to the hollow or least exposed parts of the body—such as the sides and small of the back—and at the same time to admit of their yielding sufficiently to accommodate the more prominent parts of the body, such as the shoulders and hips.

Figure 1, of the drawings, represents, in plan, the application of my invention to a bed, with a part of the sacking turned back, to show the elastic bands, or coils of wire. Fig. 2, represents a longitudinal section of the same; Fig. 3, a transverse section of the same; and Fig. 4, is a diagram showing the nature of its action.

A is the frame of the bed.

B, B are the series of elastic bands or coils of wire, which are fastened, at either end, to the iron plates C, C. These plates are screwed to the frame A, A, and are made sufficiently strong to resist the tension of the entire series of elastic bands or coils B, B, and are provided with holes near the inner edges to receive them. The sacking D, is spread slackly or loosely over the coils or bands B, B, and is fastened, at two of its sides, to the frame A, A, either by being nailed to it, or by loops and pins H, H, as is seen in Figs. 2 and 3, or in any other convenient manner. The slackness of the sacking permits the body, that is laid upon it, to sink down until the weight is entirely sustained by the elastic bands or coils B, B, or until it is arrested by the sacking becoming tense, and preventing any further depression. In Fig. 3, the red line G, shows the position of the sacking and coils, when depressed to the lowest point. In diagram 4, the line E represents the outline of a body resting upon the slack sacking or covering, and supported, through its entire length, by the bands stretched transversely beneath

it. The red line F, shows the form the supporting surface would assume, if the tension were to be exerted longitudinally, as well as laterally, of the body to be supported; in which case only the prominent parts of the body would come in contact with the sacking, as may be seen by inspection of the drawing.

If it be desired, the side beams of the frame or bedstead may be made to revolve, in the manner of a windlass bedstead, so called, and thus admit of the wires being strained or relaxed at discretion.

It may sometimes be desirable to divide a bed into two compartments, by a middle rail, properly cushioned, running longitudinally of the bed; the wires being drawn only from this middle rail to either side beam. This arrangement will prevent any tendency in the occupants to roll together. It will also prevent the movements of either from disturbing the rest of the other, inasmuch as each will lie on a separate set of wires. It may also be desirable to divide the seats and backs of sofas, and other similar articles, into compartments, by rails at proper intervals.

If a convex seat is desired, the object may be attained by making the two sides of the frame, to which the wires are attached, curve upward.

In making the backs of chairs, sofas, &c., the wires should be drawn laterally, instead of up and down, inasmuch as wires drawn laterally will better adjust themselves to the back of the person resting against them, and wires running up and down. In the cases of the backs of chairs, sofas, &c., it will be expedient to cover the wires, both on the front and back sides, with a cloth or other covering, to protect them from injuries by accidents. And these two coverings may be advantageously stitched together between the wires, or stitched to the wires, at intervals, and thus made to retain their places and their smoothness better than they otherwise would.

The foregoing illustrations of the application of my invention, are believed to explain the nature of its operation sufficiently without further description.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

In the construction of an elastic rest or support, I claim, the employment of a series of elastic coils B, B, substantially in the manner and for the purposes described.

Boston, February 11, 1856.

LYSANDER SPOONER.

Witnesses:

BELA MARSH,

WM. P. SPEAR.