H. OGBORN & T. T. KENDRICK.

SPRING BED-BOTTOMS.

No. 188,478. Patented March 20, 1877.

Fig. 1.

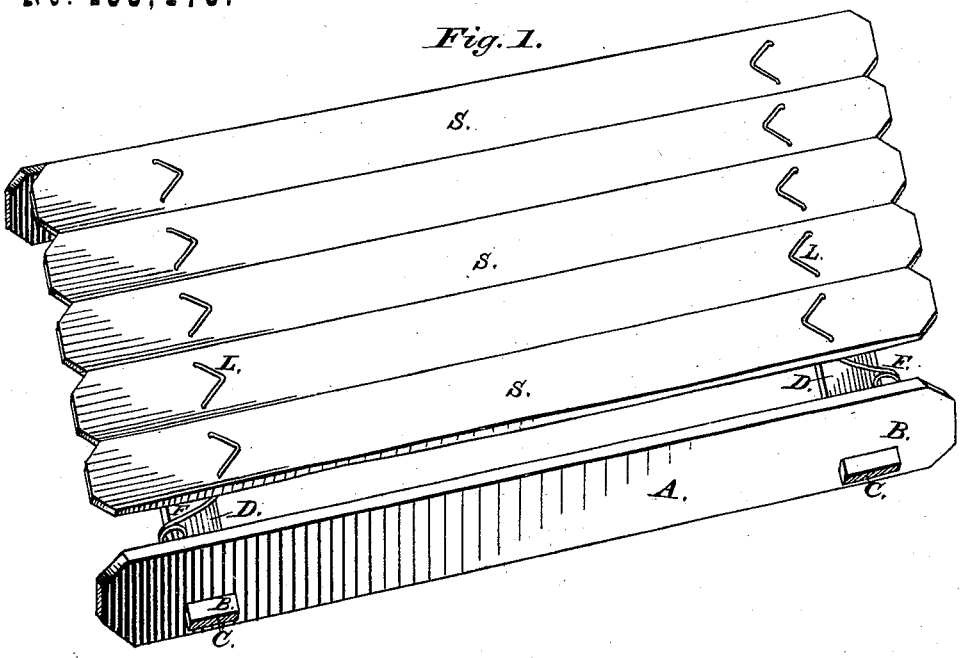


Fig. 2.

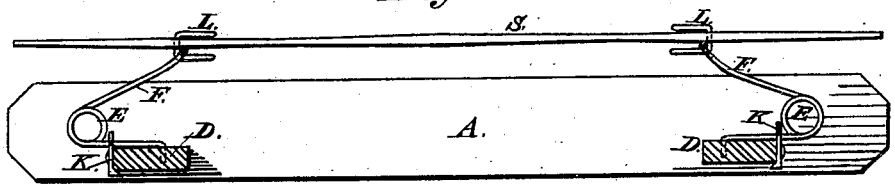


Fig. 3.

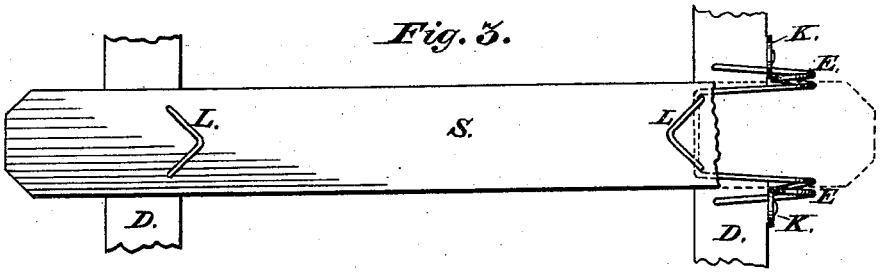


Fig. 4.

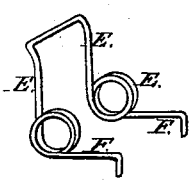


Fig. 5.

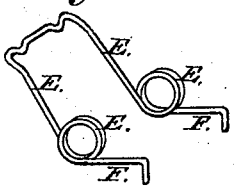


Fig. 6.

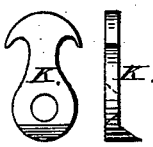
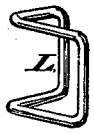


Fig. 7.



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UNITED STATES PATENT OFFICE.

HARRISON OGBORN, OF RICHMOND, INDIANA, AND TUNIS T. KENDRICK, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING BED-BOTTOMS.

Specification forming part of Letters Patent No. **188,478**, dated March 20, 1877; application filed January 5, 1877.

To all whom it may concern:

Be it known that we, HARRISON OGBORN, of the city of Richmond, Indiana, and TUNIS T. KENDRICK, of the city and State of New York, have invented certain new, useful, and valuable Improvements in Spring Bed-Bottoms; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of our invention. Fig. 2 is a longitudinal sectional elevation of the same, showing one of our slats, also a spring and hook and the manner of attaching them together. Fig. 3 is a detailed view of our devices for attaching the slats to the springs. Fig. 4 is a perspective view of our lever-spring when not in use. Fig. 5 is a modification of the same; Fig. 6, an edge and top view of our T-hook, for holding the springs in position; and Fig. 7 is a perspective view of our slat-hook.

Our invention relates to improvements in spring bed-bottoms; and consists, first, in a bed-bottom slat made thicker in the middle and at the points of attachment to the springs, and thinner at the intermediate points and at the ends, giving them additional strength to resist the pressure in the middle of them, and also where they rest on the springs, thus supporting them where the greatest strain is on them, and causing them to yield to the weight equally at all points; second, in a lever-spring, the upper or wide part of which is bent upward and outward, avoiding the crook or bend usually made at the end of the spring, and the feet bent downward, for the purpose of forming a bed-spring to which wide slats may be detachably connected, the spring remaining at all times below the surface of the slats, and holding the slats firmly in their proper position; third, of wires passing through the slats and bent so as to form a right angled, or nearly right angled, slat-hook on each side of the slat, the widest outside part being about equal to the inside of the lever-spring, for the purpose of holding the slat and hook firmly together, and the slat in exactly the right position; fourth, in a series of T-hooks, K K, for holding the springs in position, and to prevent their being bent and drawn out of shape by the tension on the springs, or the weight of the occupant when the bed is in use; fifth, in the combination and arrangement of the foregoing devices, whereby a soft, yielding, elastic spring bed-bottom is obtained, and the wide open space, so objectionable, usually found between the slats in this class of beds, closed up, and very superior results thereby obtained.

In the accompanying drawings, the side pieces A is the frame of a bed-bottom, having mortises B B therein for the admission of tenons C C on the ends of the cross-bars D D. Attached to the top side of these bars D D are the springs E E, which are made as shown in Figs. 2 and 4 of the drawings. The lower ends of these springs are bent downward and driven into the upper sides of the cross-bars D D. They are further supported and held in position by T-hooks K K, which may be made of cast-iron, with hooks on each side, as shown in Fig. 6, which engage with the straight part of the springs, close to the coils thereof, and prevent them from being drawn forward and out of shape. These hooks K have holes through them in their lower part, through which screws or nails are inserted, by which they are firmly attached to the bars D D. These hooks may be further held in position by a barb or point on the inside, which penetrates the wood to steady the hook. The stirrup ends of the springs are slightly curved upward, thus avoiding the bend usually made downward at the wide end of the spring. We are thus enabled to keep all its parts at all times beneath the broad slats S S, and prevent the end of the spring binding between the hook and the slat. These springs are detachably connected to the slats S S by hooks L, formed of bent wires, as shown in the drawings. These hooks are formed of a single piece of wire, bent nearly in the shape of the letter V, which lies parallel with the surface of the slat, the ends being carried down through the slat, and bent parallel with its lower face and united together, making the hook below exactly like the upper one, and with its end pointing in the same direc-

tion, thus forming slat-hooks on both sides of the slat alike, and far enough from the slat to allow the upper end of the spring to pass between the hook and the slat when the hook is pushed against the slat on the upper side, as shown in the drawings, thus permitting the hook to be used on either side of the slat, so that the slat may be reversed as often as it may sag downward by long use. The slats are made thickest in the middle, and grow thinner gradually from their central part to within a short distance of where the slats rest on the springs, from where they gradually grow thicker to the point where the hooks are attached, from where they taper gradually in thickness, growing thinner to the ends, thus forming a graduated slat that yields to the pressure at all points equally and gradually, and which, by reason of its great width and the tension on it produced by the springs, may be made very thin, thereby becoming soft, yielding, and elastic, producing a bed combining the elements of cheapness, convenience, and comfort, and, at the same time, noiseless.

The operation of our invention is as follows: The springs E being attached to the bar D by the short bent part, which is driven into the top of the bar, and the back part being held firmly in position by the T-hooks, as shown, and the slat-hooks attached to the slat S, one of the hooks is slipped under the wide part of one of the springs, and drawn forward toward the other spring by pressing on the slat over the spring. The other spring being drawn toward it with sufficient force to bring it to the right position, the other slat-hook is slipped under it, thereby producing the desired tension and support to the slat to make it strong, yielding, and elastic. The slat, being wide and comparatively thin, yet thicker in its central part, and also where it rests on the springs, in the manner described, resists about equally the unequal pressure placed upon it. Should it be desired to turn the slat over on account of its becoming sagged downward by long use, the slats are unhooked from the springs and turned over, the slat-hooks pressed down so as to bring them against the upper surface of the slat, and thus form hooks on the under side of the slat, and the springs fastened on the under side of the slat, as before, by which the springs and slats are held firmly together, as described. The wide part of the slat-hooks being about equal to the inside of the upper part of the springs, the slats are held firmly in place, not only vertically, but laterally, thus enabling us to use slats of sufficient width to cover the entire surface, only leaving room between the slats to allow them to move vertically without touching each other, and without in any way interfering with the other parts of our invention.

Having thus described the nature, construction, and operation of our invention, what we claim therein as new and useful, and desire to secure by Letters Patent, is—

1. The bed-slat S, made thicker at the middle and at the points of attachment to the springs, and thinned at the intermediate points and at the ends, as shown and described.

2. The lever-spring E, having its stirrup end curved slightly upward, to adapt said spring to lie entirely under the slat and engage with the connecting-hook, substantially as shown and described.

3. The double reversible slat-hook L, constructed substantially in the manner and for the purposes set forth.

4. The double-pointed hooks K K, in combination with the bar D and spring E, the whole constructed and arranged substantially in the manner and for the purposes described.

5. The combination of the slat S, the double slat-hook L, the lever-spring E, and the hook K, substantially in the manner and for the purpose herein set forth.

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