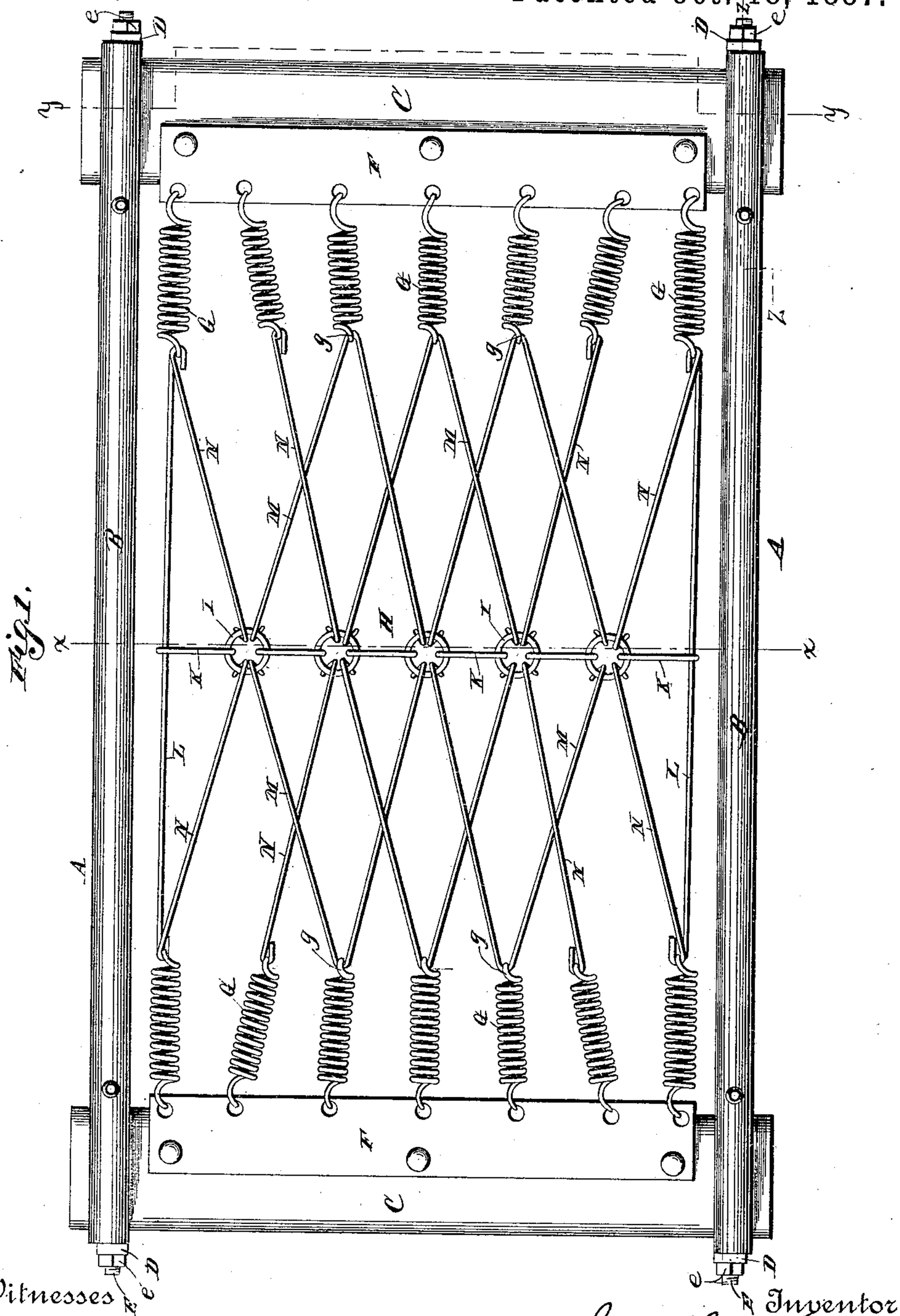
(No Model.)

2 Sheets—Sheet 1.

G. H. KING.

SPRING BED.

No. 371,591. Patented Oct. 18, 1887.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

G. H. KING.

SPRING BED.

No. 371,591. Patented Oct. 18, 1887.

Fig. 2.

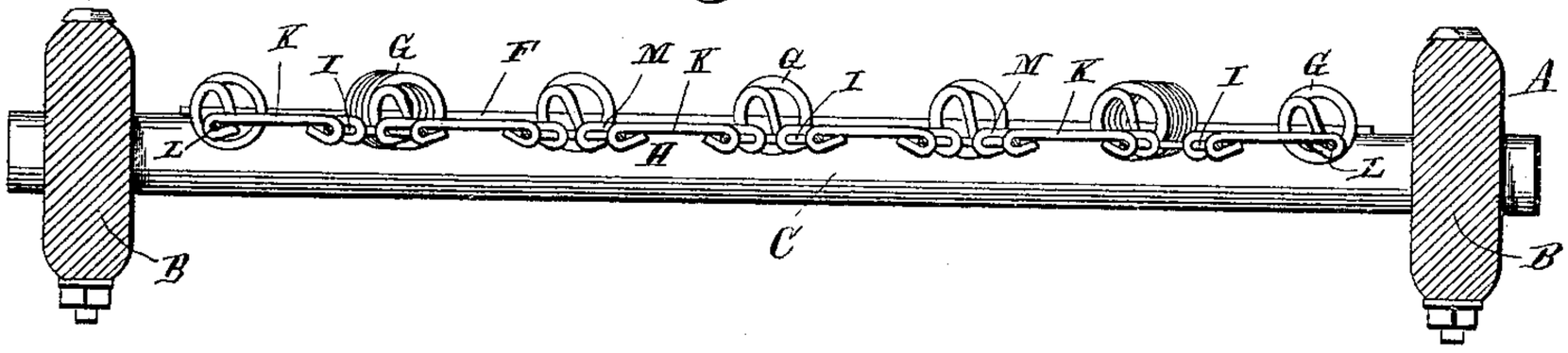


Fig. 3.

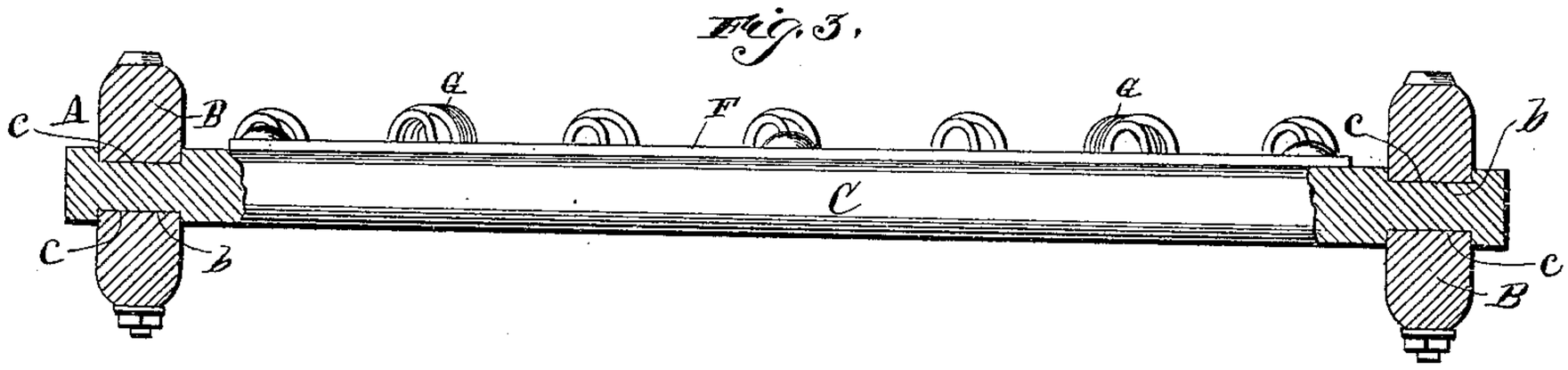
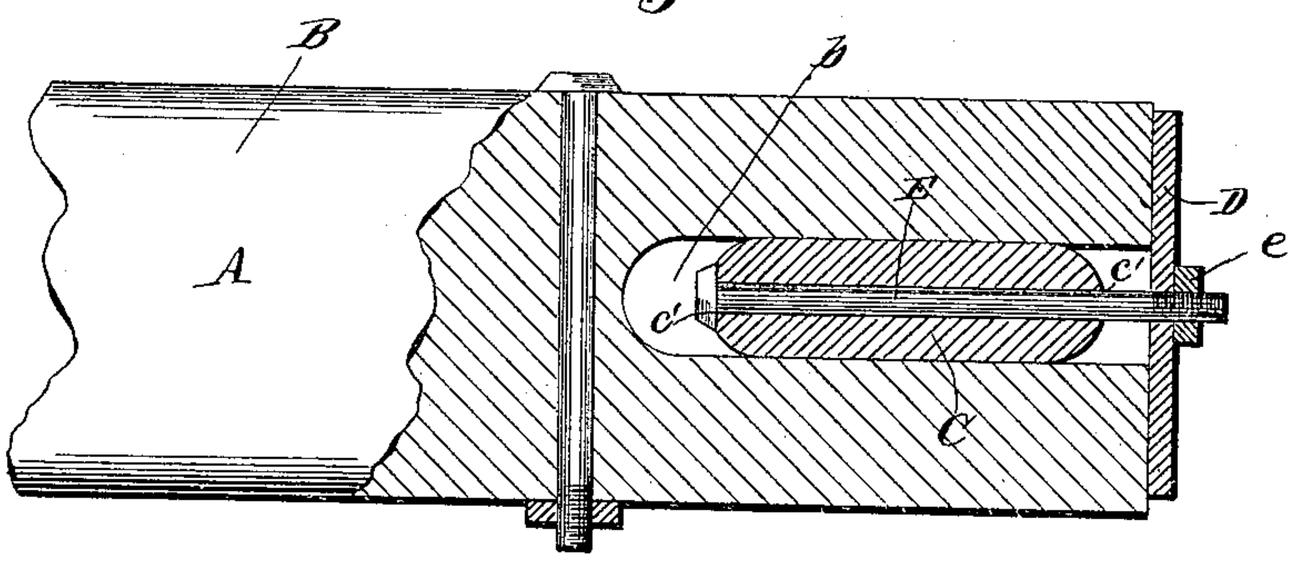


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE H. KING, OF NEW YORK, N. Y.

SPRING-BED.

SPECIFICATION forming part of Letters Patent No. 371,591, dated October 18, 1887.

Application filed February 2, 1887. Serial No. 226,257. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. KING, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Spring-Beds, of which the following is a specification.

My invention relates to improvements in spring-beds; and it consists in a certain novel construction and arrangement of parts for service, fully described hereinafter, and specifically pointed out in the claim.

In the accompanying drawings, Figure 1 is a top plan view of the bed. Fig. 2 is a transverse section on the line *x x* of Fig. 1. Fig. 3 is a detail section of the joint between the side and end pieces of the frame on the line *y y* of Fig. 1. Fig. 4 is a similar view on the line *z z* of Fig. 1.

Referring to the drawings, in which similar letters denote corresponding parts in all the figures, A designates the frame of my improved bed, comprising the side bars, B, and the transverse or end bars, C. said side bars having the recess or slot *b* at each end, in which slide the ends of the transverse bars C. As the bars C are thicker than said slots *b*, the ends of the said side bars are grooved on each side, as seen at *c*, the shoulders on each side of said grooves *c* being adapted to pass on either side of the bars B and hold said bars from lateral play.

The slots *b* in the side bars are made much longer than the width of the end bars, and a plate, D, having an opening in the center, is placed over the end of the side bar.

It will be seen that, although the side bars are held from lateral play by the grooves *c* in the end bars, said end bar is movable in the slot *b* in the ends of the side bars.

Through an opening, *c'*, in the end bar, between the grooves *c* therein, is placed a bolt, E, having the head thereof on the inner side of the said bar, said bolt passing at the upper end through the opening in the plate D, and having a nut, *e*, screwed on said end on the outer side of the plate D.

Secured to the upper side of the end bars, C, are plates F F, to which are attached the outer ends of the spiral spring G, and between the said springs is the net-work of my improved bed, comprising mainly the central transverse belt, H, and the wires extending therefrom to the inner ends of the said spring. Said belt H comprises the rings I, (two less in number than the coiled springs G at the ends of the frame,) and placed, respectively, opposite the said springs, omitting the outside ones, as seen in Fig. 1, and the links K, adapted to engage in the rings I and join them to form a continuous belt. Said links K serve also to connect the last ring on each side with the straight side wires, L, which extend the entire length of the bed between the said outside springs therein, thus forming a straight side to the network, which is unconnected with the frame, except at the ends through the medium of the springs.

M are the V-shaped wires forming the network, the apex of each of which is engaged in a ring or hook, *g*, formed on the inner end of each of the springs G, while the inner divergent ends of the said wires are engaged in the rings I on either side of that ring which is opposite to the spring to which the apex of the wire is attached. It will be seen, therefore, that each leg of the V-shaped wire crosses one of the legs of the wire on each side, and as one of the said legs is caused to pass over and the other under the leg of the wire adjacent on each side, respectively, as is clearly shown in Fig. 1, it will be evident that pressure upon any one of the said wires will be communicated to the adjoining wires and be thus distributed. This overlapping of the wires forms an important feature in my bed-bottom.

The two wires N on each side of the bed next to the side wires, L, are not made double or V-shaped, as the others, as there is obviously no ring to attach the outside leg to. Said wires N are therefore made single, as shown, attached at one end to a ring, I, and at the other to one of the springs.

The function of the flexible band or belt H is to give firmness and strength to that part of the bed which most needs it—namely, the center—and also to brace or sustain the wires in their proper positions. The said band or belt, being formed in small links, is made yielding to every pressure.

The object in providing the sliding end bars, C, will be readily understood. By means

of the nuts *e* the said end bars may be drawn apart to render the tension of the bed stronger; or said bars may be allowed to approach each other to render the said tension weaker. In this way the sustaining power of the bed may be regulated to suit the weight which it is designed to bear, and also to take up the slack caused by the springs stretching after years of use.

The above-mentioned manner of joining the parts of the frame braces it, keeps it square when joined for use, and also makes it easier to take apart and put together in repairing and in transporting.

My improved bed possesses an advantage over similar articles now in general use in that the flexible central band gives strength to that part of the bed on which the greatest strain comes. Further, the V-shaped wires enable the weight to be distributed by the contact between the legs of the said wires and prevent the individual wires from dropping out of place. A complete net-work is thus formed. Further, the joints between the wires being mainly on the central band, the construction is simpler, and there is no interlacing of the wires to creak at the joints and cause annoyance to the occupant of the bed; also, the joints, being mainly congregated on the central band, are more easily reached to lubricate when necessary. Further, the manner described of uniting the parts of the frame makes it more easily taken apart and put together, and enables the tension of the bed to be changed and regulated at will by very simple means; and a still further advantage is that the entire device is constructed in the simplest and strongest manner possible to attain the desired result, and may be manufactured very cheaply.

It will be understood that I do not limit myself strictly to the precise construction herein described.

I do not claim, broadly, the V-shaped wires herein described, as I am aware that they have been used heretofore; but I am not aware that they have been used in the same manner—namely, to distribute the superincumbent weight—or that they have been used entirely as the net-work of the bed-bottom.

I also do not claim, broadly, the precise construction of the transverse central band herein described, as I am aware that the said construction is old.

I am aware that prior to my invention it has been proposed to provide a spring bed-bottom consisting of an open frame, a series of coiled springs secured to one of the end bars of the frame, and a series of V-shaped wires arranged longitudinally of the frame, the free ends of the arms of each wire at one end of the frame being connected to the coiled springs, while the corresponding ends of the wires at the other ends of the frame are fixed to the latter by staples, the apices of the adjacent V-shaped wires being connected by intermediate loops or rings. My invention differs from a bed-bottom of this construction in the following particulars. I employ a transverse flexible belt, H, which is constructed of a series of rings and links and arranged centrally of the bed-bottom, where the most and heaviest strain comes, and in connecting said belt with coiled springs at opposite ends of the bed-bottom by the use of two series of V-shaped wires, whereby an easy and resilient bed-bottom is provided, one side of which properly supports the person reclining thereon without affecting the other side of the bottom. I arrange these V-shaped wires in a peculiar manner to attain a maximum strength and a large surface for the proper support of the bedding, one leg of each V-shaped wire crossing or overlapping a corresponding leg of an adjacent wire, and the free ends of the legs of the wires being connected to the links and the apices thereof to the springs.

I am further aware that it is common to provide adjusting-bolts for bed-bottoms; but I have devised peculiar means for this purpose, in which the side rails are grooved to receive the end rails and the adjusting-bolts pass through the end rails and have nuts on their ends, which nuts bear against plates spanning the grooves in the side rails.

What I do claim, and desire to secure by Letters Patent of the United States, is—

In a bed-bottom, the combination, with a supporting-frame, of a series of coiled springs connected to the end bars of the frame, a transverse continuous flexible belt, H, arranged in the middle of the bottom and comprising a series of separate rings, I, and connecting-links K, connecting the adjacent rings, and two series of V-shaped wires, one series of wires being arranged on one side of the flexible belt and the other series on the opposite side of the belt, the said V shaped wires being connected at their apices or centers to the free ends of the coiled springs, and having their opposite or free ends connected to two different rings of the belt, one leg of each wire crossing a leg of an adjoining wire, as and for the purpose set forth.

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

GEORGE H. KING.

Witnesses:

C. L. CHADEAYNE,

J. F. WILLIAMS.