No. 849,195. PATENTED APR. 2, 1907.

G. E. BIGELOW.

SPRING BED.

APPLICATION FILED OCT. 15, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

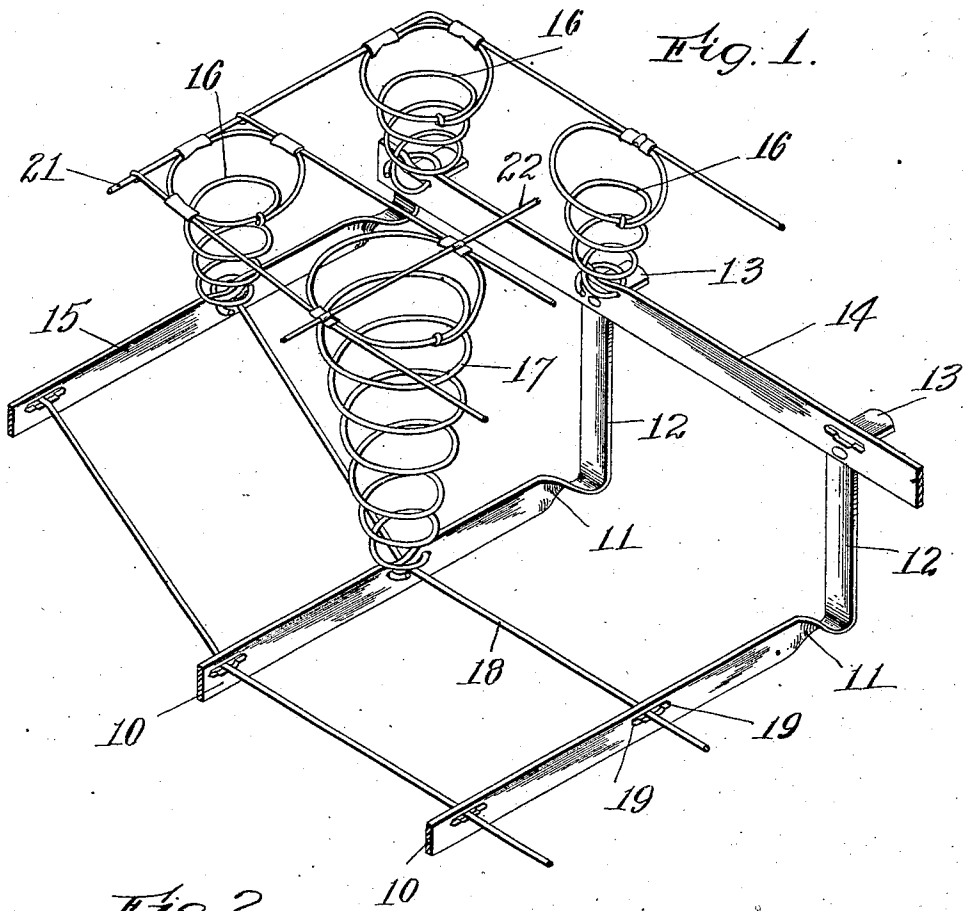


Fig. 2.

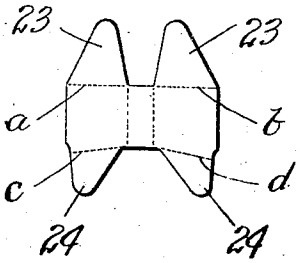


Fig. 3.

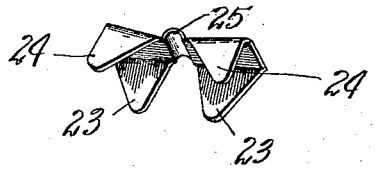
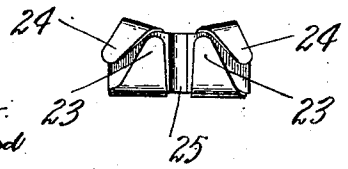


Fig. 4.



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2 SHEETS—SHEET 2.

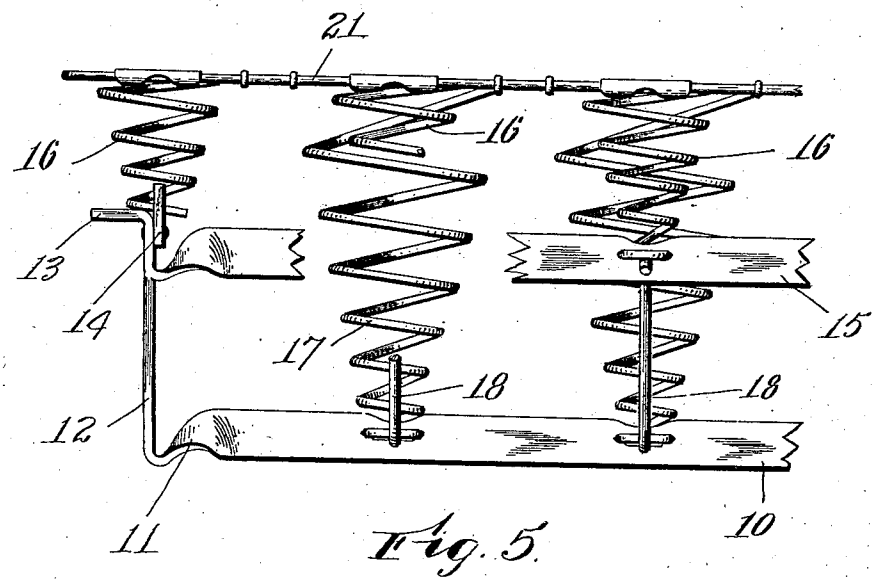

Fig. 5.

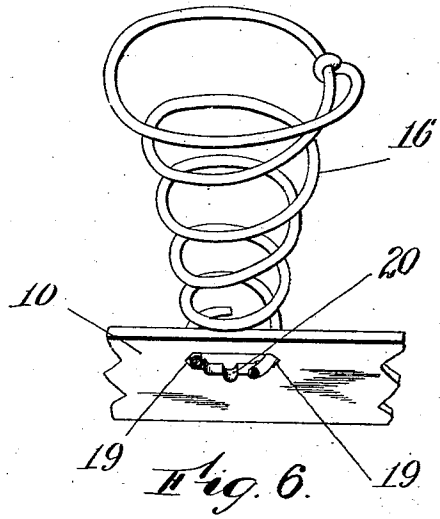

Fig. 6.

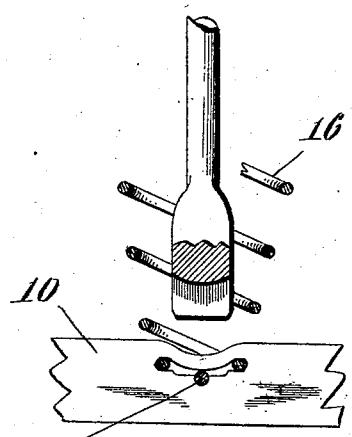

Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE E. BIGELOW, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MORGAN SPRING CO., OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

SPRING-BED.

No. 849,195. Specification of Letters Patent. Patented April 2, 1907.

Application filed October 15, 1903. Serial No. 177,167.

To all whom it may concern:

Be it known that I, GEORGE E. BIGELOW, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Spring-Bed, of which the following is a specification.

This invention relates to that class of spring bed-bottoms which are preferably constructed entirely of metal.

The especial objects of this invention are to provide a strong, simple, efficient, and inexpensive bed-bottom of what is known as the "rabbeted" or projecting-edge type in which two different sizes of springs are combined so as to prevent the swaying or sidewise motion of a mattress supported thereon, to provide for fastening the lower ends of the springs and the stay-wires to sheet-metal cross-strips in a simple and direct manner, and to fasten the tops of the springs together by means of binding-wires fastened in place by a novel form of sheet-metal clip.

To these ends this invention consists of the spring bed-bottom and of the parts and combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying two sheets of drawings, Figure 1 is a perspective view of sufficient parts of a spring bed-bottom to illustrate the application of my invention thereto. Fig. 2 is a plan view of the blank from which one of my binding-wire clips is made. Fig. 3 is a perspective view of a binding-wire clip constructed according to this invention. Fig. 4 is a bottom view thereof, showing the relation of the tongues when the clip is fastened. Fig. 5 is a side view, partially broken away, of the bed-spring bottom. Fig. 6 is an enlarged perspective view showing the manner of assembling one of the springs and the cross-strip therefor; and Fig. 7 is a fragmentary view, partly in section, showing the operation of the tool for fastening a cross-strip spring and stay-wire together.

A spring bed-bottom constructed according to this invention comprises a support or bottom frame, the springs which are mounted upon the support, and the wires which fasten the tops of the springs together. The support for the springs comprises a number of sheet-metal cross-strips which are set up edgewise, so as to stand in vertical planes. Each of these cross-strips has a quarter-turn and a bent-up portion at each end, which is bent outwardly to form the foot or support by means of which the spring bed-bottom may be hung in a bedstead-frame. Riveted to the bent-up portions of the cross-strips are the edge strips, which also stand in vertical planes above the cross-strips. The edge strips are connected at their ends by end strips, and mounted in the edge strips and these end strips are short coiled springs, while mounted on the cross-strips are the full-length coiled springs or body-springs, which are larger than the springs around the edge of the construction. This combination of the ordinary springs with smaller marginal springs is regarded as a desirable feature of construction, because when the tops of the springs are bound together by the ordinary tie-wires the difference in the lengths of the springs will prevent the swaying or sidewise motion of a mattress supported on top of the bed-spring bottom.

The tie-wires which connect the tops of the springs are preferably fastened in place by a novel form of sheet-metal clip, and the stay-wires which form part of the support are preferably connected to the cross-strips at the same operation which is required for fastening the furniture-springs in place—that is to say, the cross-strips are provided with perforations or recesses, each of which is adapted to receive one of the stay-wires as well as the supporting-coil of a spring, so that by bending down the metal above the perforation so as to close the same a rigid fastening will be secured both for the spring and the stay-wires.

Referring to the accompanying drawings for a detail description of a spring bed-bottom constructed according to this invention, as shown in Fig. 1, the support comprises the sheet-metal strips 10, which are set up edgewise to stand in vertical planes. Each of the sheet-metal strips 10 is bent with a quarter-turn 11 and is provided with an upwardly-extending section 12, having the outwardly-bent foot 13. These feet 13 are employed for hanging the spring bed-bottom in a bedstead-frame. Riveted to the upwardly-bent portions 12 of the cross-strips 10 are sheet-metal edge strips 14, which are also set up on

edge to stand in vertical planes. Connecting the ends of the edge strips 14 are the end strips 15. Mounted on the edge strips 14 and end strips 15 are short or small coiled springs 16, and mounted in the body portion of the cross-strips 10 are the full-length bed-springs 17.

The cross-strips 10 and end strips 15 are connected by stay-wires 18. The same joints which fasten the springs in place in the cross-strips also serve to fasten these stay-wires. The construction which I employ for this purpose is most clearly illustrated in Figs. 6 and 7. As shown in these figures, each of the strips 10 is provided near its upper edge with specially-shaped recesses or slots for receiving both the attaching-coils of the spring and the tie-wires. As shown in Fig. 6, each of these slots is preferably provided at its ends with pinching sections or recesses 19 and at its center with a tie-wire-receiving recess 20. In assembling the parts, as shown in Fig. 7, the lower coil or other attaching-coil of a spring is inserted into the recess. The tie-wire 18 is threaded into place below the same, and the parts are rigidly fastened together by driving down the metal forming the upper side of the recess, this preferably being done by means of an upsetting or peoning tool, as shown in Fig. 7. In a prior patent, granted to me January 30, 1906, No. 810,902, I have shown a similar joint for securing a spring in its supporting-strip, with the exception that the joint shown in said case is not also designed to secure a stay-wire in place. In this application for patent I do not wish, therefore, to claim this form of joint broadly, the claims of this application for patent so far as this feature is concerned being intended to be limited to the use of a single joint of this form for fastening both a spring and a stay-wire.

The upper ends of the springs 16 and 17 are connected together by marginal wires 21 and binding-wires 22.

Figs. 2 to 4, inclusive, illustrate a form of clip which I preferably employ for fastening the binding-wires in place. As shown in Fig. 2, the blank from which each of these clips is formed consists of a body portion having upon one side converging or relatively inwardly-inclined clamping-tongues 23, which are bent at right angles with respect to the body portion upon dotted lines *a* and *b*. At its opposite side the body portion of the blank is provided with diverging or outwardly-inclined tongues 24, which are folded at right angles to the body portion of the blank upon the oblique or inclined dotted lines *c d*. The central part of the blank is provided with a curve or arch 25 for receiving the binding-wire. By providing the clip on one side with converging tongues which are bent up on the straight lines *a b*, while the other side of the clip is provided with diverging tongues bent up on the oblique lines *c d*, I have provided a form of clip in which the fastening-tongues may be left long enough to lap past each other, as shown in Fig. 4—that is to say, when the ends of the fastening-tongues are bent over or clamped into position they will intermesh, the converging tongues 23 lying between the diverging tongues 24, which fold outwardly.

The clips which are employed for fastening the springs to the marginal wires 21 may be of substantially the same construction as illustrated in Fig. 3, except that the central arch or curve 25 between the clamping-tongues may be omitted.

I am aware that numerous changes may be made in the construction of spring bed-bottoms by those who are skilled in the art without departing from the scope of my invention as expressed in the claims and that special features of this invention may be applied and used in the construction of bed-bottoms or similar articles of widely-different type from that herein shown. I do not wish, therefore, to be limited to the construction I have herein shown and described; but

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

1. In a construction of the class described, the combination of a sheet-metal supporting-strip having a slot or recess near its upper edge, a spring having a coil thereof inserted in the socket, and a stay-wire also threaded through said socket, said parts fastened together by bending down the material above the slot or recess.

2. In a construction of the class described, the combination of a sheet-metal strip having a slot or recess near its upper edge with tapering pinching-sections at its end, and a stay-wire socket between them, a spring having one coil inserted through the slot or recess with a stay-wire threaded through the recess below the coil, said parts fastened together by bending down the material above the slot or recess to fasten the coil in the pinching-sections at the ends of the slot and the wire in the socket between said pinching-sections.

3. In a bed-spring, the combination of a framework comprising sheet-metal cross-strips set up edgewise in vertical planes, each cross-strip having a quarter-turn and bent-up section at each end, side strips connected to the bent-up sections of the cross-strips, short coiled springs, each having a coil inserted through a socket in a side strip and fastened by bending down the material above the slot or recess, longer coiled springs, and stay-wires fastened to the cross-strips by the insertion of the stay-wires and the coils of said longer coiled springs through sockets in the cross-strips, and held in place by bending down the material above the slot or recess.

4. In a bed-spring, the combination of a

framework comprising sheet-metal cross-strips set up edgewise in vertical planes each cross-strip having a quarter-turn and bent-up section at each end, side strips connected to the bent-up sections of the cross-strips and standing in vertical planes, short coiled springs each having a coil inserted through a socket in the side strips and fastened down by bending the material above the slot or recess down onto the same, longer coiled springs and stay-wires fastened to the cross-strips by the insertion of the stay-wires and the coils of said longer coiled springs in sockets in the cross-strips and held in place by bending down the material above the slot or recess, and marginal wires and binding-wires connecting the upper ends of the springs together.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE E. BIGELOW.

Witnesses:
LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.