(No Model.)

W. M. DAVIS.

BED SPRING.

No. 277,121. Patented May 8, 1883.

Fig. 1.

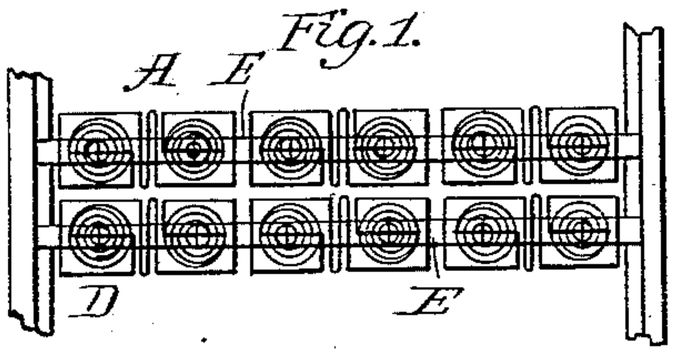


Fig. 2.

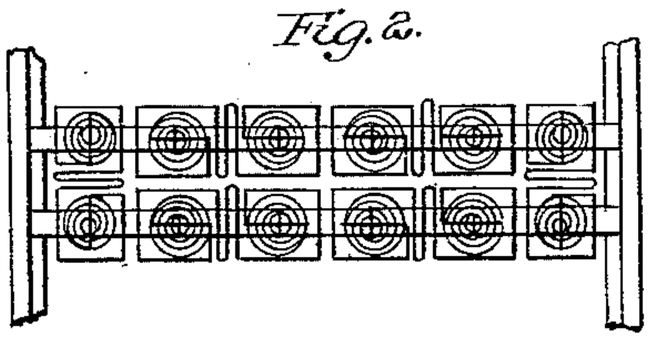


Fig. 3.

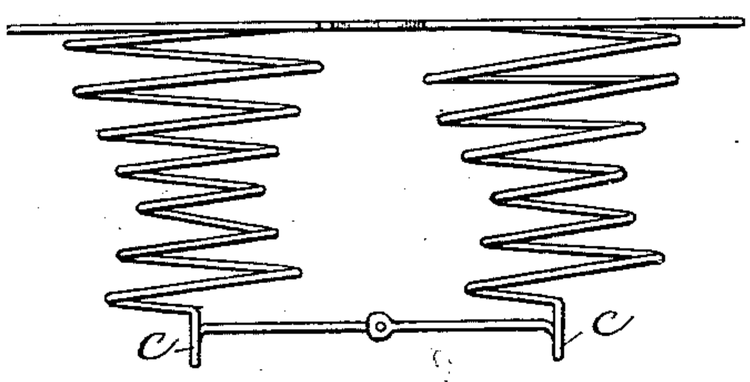


Fig. 4.

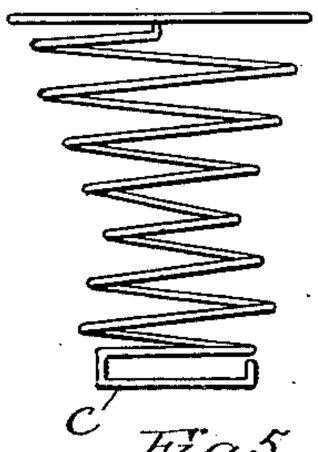


Fig. 5.

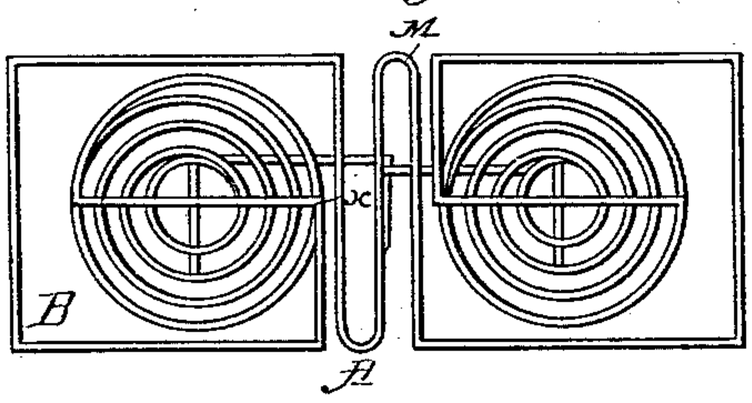


Fig. 6.

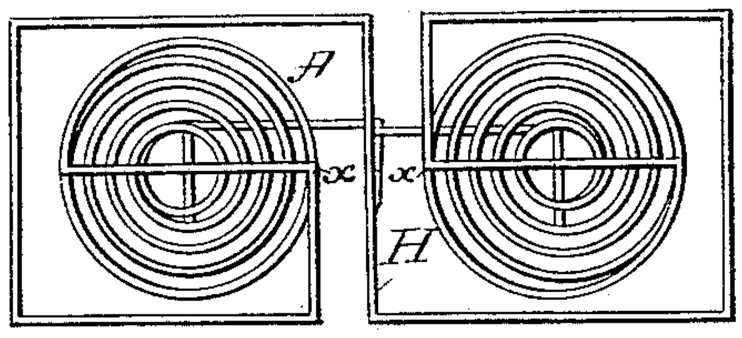


Fig. 7.

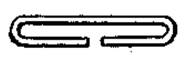


Fig. 8.

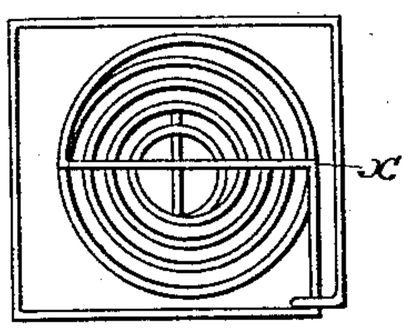


Fig. 9.

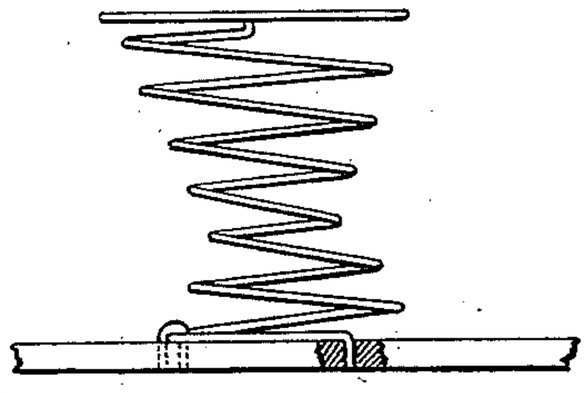
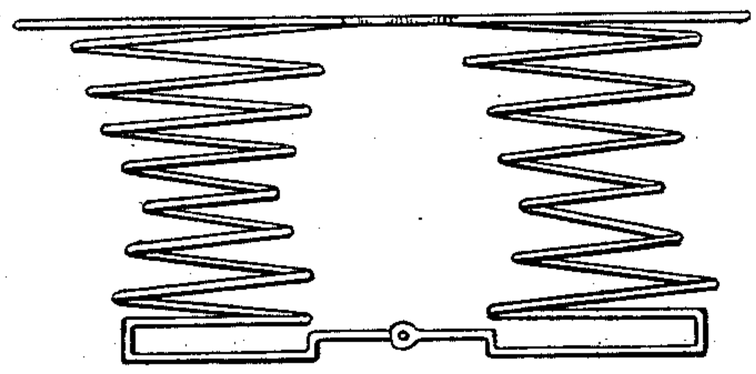


Fig. 10.



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Atty.

UNITED STATES PATENT OFFICE.

WILLSHIRE M. DAVIS, OF REMINGTON, INDIANA.

BED-SPRING.

SPECIFICATION forming part of Letters Patent No. 277,121, dated May 8, 1883.

Application filed September 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLSHIRE M. DAVIS, of Remington, in the county of Jasper and State of Indiana, have invented a new and useful Improvement in Bed-Springs; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to an improvement in bed-bottoms and in springs for the same; and it consists, first, in the improved construction of springs; and, second, in the manner of arranging such springs in connection with the cross-slats of a bed.

The invention is illustrated in the drawings, which show, in Figure 1, a plan view of a bed-bottom, showing one arrangement of springs; Fig. 2, a similar view, showing a different arrangement; and Fig. 3 is an elevation; Fig. 4, an end view of my improved spring; Figs. 5 and 6, top views. Figs. 7 and 8 represent details. Fig. 9 is a modification, and Fig. 10 is an elevation of the end springs shown in Fig. 2.

The springs are of the class commonly known as "twin springs." So far as I am aware, springs of this class have been universally constructed of spiral coils of wire, the tops being of round form connected together, and the bottoms being generally disconnected and secured to separate slats, or, if secured together, by an independent spring or other connecting device.

My improved bed-spring is entirely composed of a single piece of metal, nor is any separate fastening device employed in its construction. The spring is represented as a whole, A. It is composed of elastic wire formed into coils, the diameter of which is smallest at the center, gradually increasing downward, and to a greater extent upward. At the top the wire is bent into a series of squares or rectangular shapes, as shown at B, with one of the wires passing directly over the center of the coiled wire, forming the spring below, the outside square being of greater diameter than that of the upper and wider coil of the spiral. From the same end of the wire, and of the same width of the spring, a smaller parallel coil, M, is formed, and to this coil a square or rectangular top, similar to the top just described, is formed for the next spring, with its corresponding coils beneath.

It should be noted, referring to Figs. 5, 6, and 8, that the parallelogram forming the top, instead of being formed by wire bent in the same direction as that composing the coil, is really bent in a reverse direction from the point marked *x*. I have found in practice that this manner of bending the coil forming the top produces great advantages and renders the spring more stable and firm, permitting less depression of individual coils than where the wire is coiled continuously in the same direction.

The two squares or rectangles, when completed, make a regular surface, rectangular in form, with the spirals to fill up the intervening spaces beneath. The length of this rectangular spring is perhaps twice as great as its width. Instead of the parallel coil M, a single bend, H, may be made in the wire connecting them together, as shown in Fig. 6.

Each twin spring may be used independent of the others; but when it is desired that the springs shall have a strength in common with each other they may be tied diagonally, or otherwise by a twine or metallic link, as shown in detail in Fig. 7.

Should it be desired to use a single spring for any purpose, it is only necessary to divide it in any suitable manner, and bend the end of the divided portions to the corner of the spring already formed, where it may be secured by means of a hook, or in any other way, and by this means form a distinct spring, capable of being used in any situation. I have shown this in Fig. 8.

At the bottom of each coil the spring is bent into a loop, C, in a direction at right angles to the length of the parallelogram formed by the twin springs, which loop is adapted to encircle the slat when the spring is in place thereon, and this wire loop, being bent directly under the center of the coils, also serves as a central bearing for the spring. The end of one portion of the loop is extended and bent to form an eye, which engages with a pointed pin upon the other end at a point centrally between the two loops, C C, and this pin, when the springs are in place, may be driven firmly into the

slats, and tend to hold them steady and prevent rocking. The springs are thus connected above and below.

D represents a bed-bottom (reference being made to Fig. 1) having the ordinary side rails and cross-slats, E. The combined length of the twin spring is such (about sixteen inches) that ordinarily three of the springs are secured upon a single slat extending lengthwise across the bed, as shown.

It is evident that by the peculiar shape of the top of the spring a practically unbroken support is given the mattress and bed, since the spaces between the springs are exceedingly small compared to those found where round-top springs are used, which are necessarily much smaller in order to fit closely together, and even then leave large irregular spaces between.

Where the bed contains an odd number of slats, I prefer the arrangement of springs shown in Fig. 1; but should it have an even number I arrange the springs as shown in Fig. 2, where a section of these slats is illustrated. Here two springs are represented extending lengthwise of each slat in the center, while two adjoining slats are connected by springs placed lengthwise of the bed, as shown. In this case the loops C would of course be bent in the same direction as the length of the rectangular top. It is of course evident that instead of extending the springs lengthwise of the slats, as shown in Fig. 1, each spring may be secured to two slats in the same manner as the outside rows of Fig. 2, being connected between the slats by the eye and pin, as before described; and I do not limit myself to any particular arrangement of the springs in connection with the bed-slats.

The advantages of my device consist principally in the practically unbroken surface presented by the peculiar rectangular tops of the springs, in connection with their spirals beneath, made flaring to fill up the spaces between, and when in use affording a much firmer support for the bedding, and preventing that sinking or yielding in spots to which the round-top spring so generally used is subject. It will be seen that these springs are adapted to be used upon any number of slats, and consequently upon any size of bed, and can be readily taken off and replaced by others should any breakage occur.

In Fig. 9 I have shown a modification to take the place of the loop C under some circumstances. Here I have shown the wire turned down so as to pass through the slat about an inch from the edge thereof, and securely held above by a staple or other suitable device. In this case, in order to strengthen the whole structure, it is better to provide long slats running across the short slats at each side, and fastened thereto by means of screws.

It is obvious that the springs may be so arranged in relation to the bed as to make the head slightly higher than the other portions of the mattress, and I propose to accomplish this by providing slats of the proper height desired with inclined tops, the succeding slat from the head being slightly smaller than the first until it reaches the level. I then attach my springs, as described.

Having thus described my invention, what I claim is—

1. A bed-spring composed of coiled wire loops for direct attachment to the slats of a bed, and a rectangular top.

2. The twin springs formed of a single piece and composed of wire coils, the square tops united to form a parallelogram, such springs having extended ends connected at the bottom below the slats, substantially as described.

3. A bed-spring composed of coiled wire with the wire forming the loops extended and joined to support the springs, and adapted at the same time to secure the same to the slats, substantially as and for the purpose set forth.

4. In combination with the slats of a bed, a series of springs composed of coiled wire, and having rectangular tops connected directly to the said slats, and adapted to form a close and unbroken wire surface at the top, substantially as described.

5. A bed-spring composed of spirally-coiled wire, provided at its lower end with a device for attaching it directly to the slat, and having the rectangular top formed by continuing the wire at the upper termination of the spiral coil directly across the center of the said coil and then bending such wire at right angles and in a direction opposite to that of the coil, substantially as described.

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

WILLSHIRE M. DAVIS.

Witnesses:
JOHN G. MORRIS,
MOSES F. FRENCH.