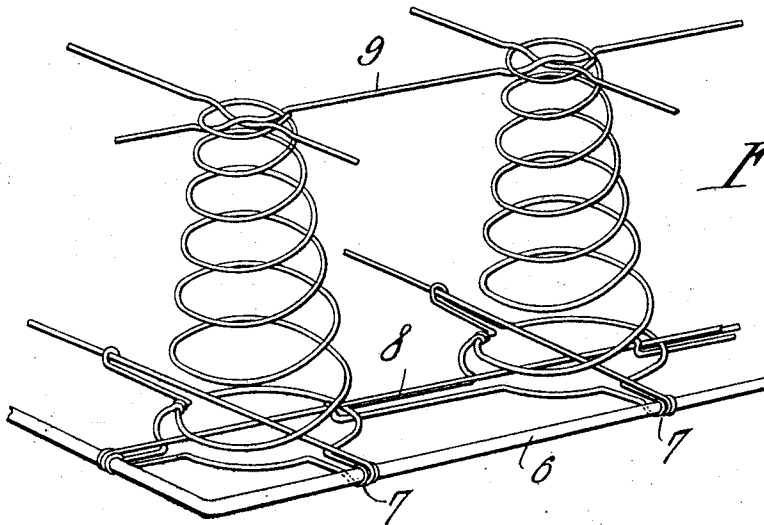
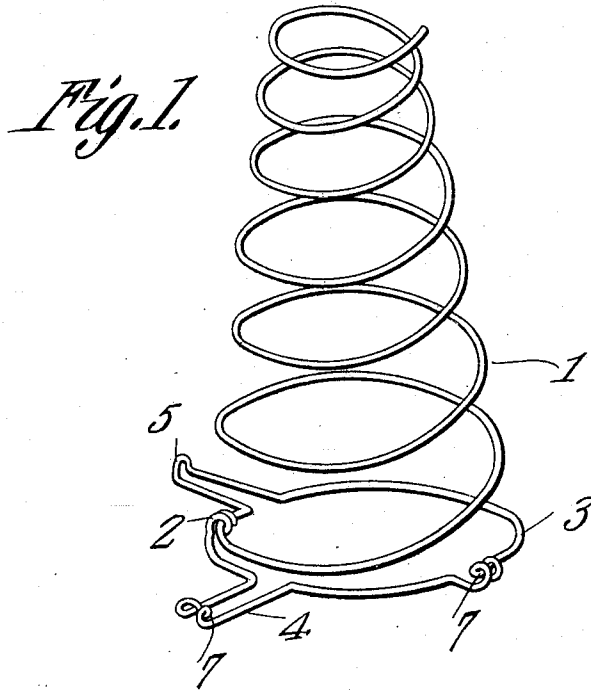


H. REIDENBACH.
SPRING STRUCTURE.
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939,090.

Patented Nov. 2, 1909.



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UNITED STATES PATENT OFFICE.

HERMAN REIDENBACH, OF MARION, INDIANA.

SPRING STRUCTURE.

939,090.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, HERMAN REIDENBACH, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Spring Structure, of which the following is a specification.

This invention relates to springs for use in spring mattresses, bed bottoms, chairs, couches, upholstered buggy and automobile seats, and the like and its object is to provide devices of this character which can be assembled without the necessity of using separate crimped tie wires, the crimps utilized for holding the springs together being carried by the springs and being so arranged as to enable the springs to be readily assembled in fixed relation.

With these and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a perspective view of a helix constructed in accordance with the present invention. Fig. 2 is a perspective view showing a portion of a bed bottom embodying the present improvements.

Referring to the figures by characters of reference 1 designates a spring helix having its lower or base terminal wrapped or coiled around the lower whirl of the spring as indicated at 2, so as to form a base ring 3. This ring is provided with one or more radial arms 4 each of which is in the form of an elongated wire loop integral with the base ring and provided with an upstanding arcuate lip 5 at its outer end. These arms may be of different lengths, according to the positions occupied by the helices within the spring structure. The number of arms upon the helices also varies according to the positions occupied by the springs. For example, those of the springs which are located along the sides of the spring structure are designed to engage the base frame 6 thereof. For this reason extra arms 4 are arranged upon such springs so as to extend under the frame 6, the lips thereon being coiled around the frame, as shown especially in Fig. 2, so as to form hooks or eyes 7.

In assembling the helices herein described they are placed with the hooks or eyes 7 in

engagement with the base frame 6, said arms extending under the base frame, and the remaining arms of the helices extend under the base rings 3 of the adjoining springs. The lips 5 extend through these rings and to points thereabove, and threaded through these upwardly extending lips are stay wires 8 which extend between the base rings and the lower whirls of the helices and have their ends coiled around opposite portions of the frame 6 and within the hooks or eyes 7, the end portions of these tie wires extending over the intermediate or crown portions of the hooks or eyes so as to prevent them bending upwardly and out of engagement with the frame 6. Obviously after the various helices and tie wires have been assembled in this manner it becomes impossible for the springs to become displaced in any direction with relation to the frame 6 and they are moreover held properly spaced apart at all times.

The upper ends of the helices can be tied together in the usual or any preferred manner, the preferred means consisting of interwoven tie wires 9 threaded through the upper whirls of the springs and crimped so as to receive those portions of the whirls extending there-across. This structure has been shown in Fig. 2.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

1. A spring structure comprising a plurality of helices having base rings constituting continuations of the whirls thereof, each ring having radial elongated loops having off-set terminal portions, and tie devices extending through the off-set portions and longitudinally of the loops, each ring being disposed between a tie device and a loop of an adjoining helix.

2. A spring structure including helices, each having a base ring constituting a continuation of the whirls of the helix, there being a radially extending loop integral with said ring and having a terminal offset portion, each loop being extended under the base ring of an adjoining helix and with said offset portion projecting through the ring and a tie device extending longitudinally of the loop and over the base rings and through the offset portions.

3. A spring structure including a plurality of helices each including a base ring constituting a continuation of the whirls of the helix, radially extending arms integral
5 with said base ring and each having an upstanding lip at the free end thereof, each loop extending under the base ring of an adjoining helix and the lip on said loop projecting through said ring, and tie devices
10 extending longitudinally of the loops and over the base rings and through the lips.

4. A spring structure comprising a plurality of helices having base rings constituting continuations of the whirls thereof,
15 each ring having radial elongated loops pro-

vided with off-set terminal portions, tie devices disposed at angles to each other and crossed at points within the base rings, said devices extending longitudinally within the loops and through the off-set terminal portions, each base ring being extended between one of the tie devices and a loop of an adjoining helix.

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

HERMAN REIDENBACH.

Witnesses:

G. CARLTON HARWOOD,

C. F. BROWN.