

W. H. MACY & B. E. WILBUR.
BED SPRING.

APPLICATION FILED OCT. 15, 1910.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.

999,816.

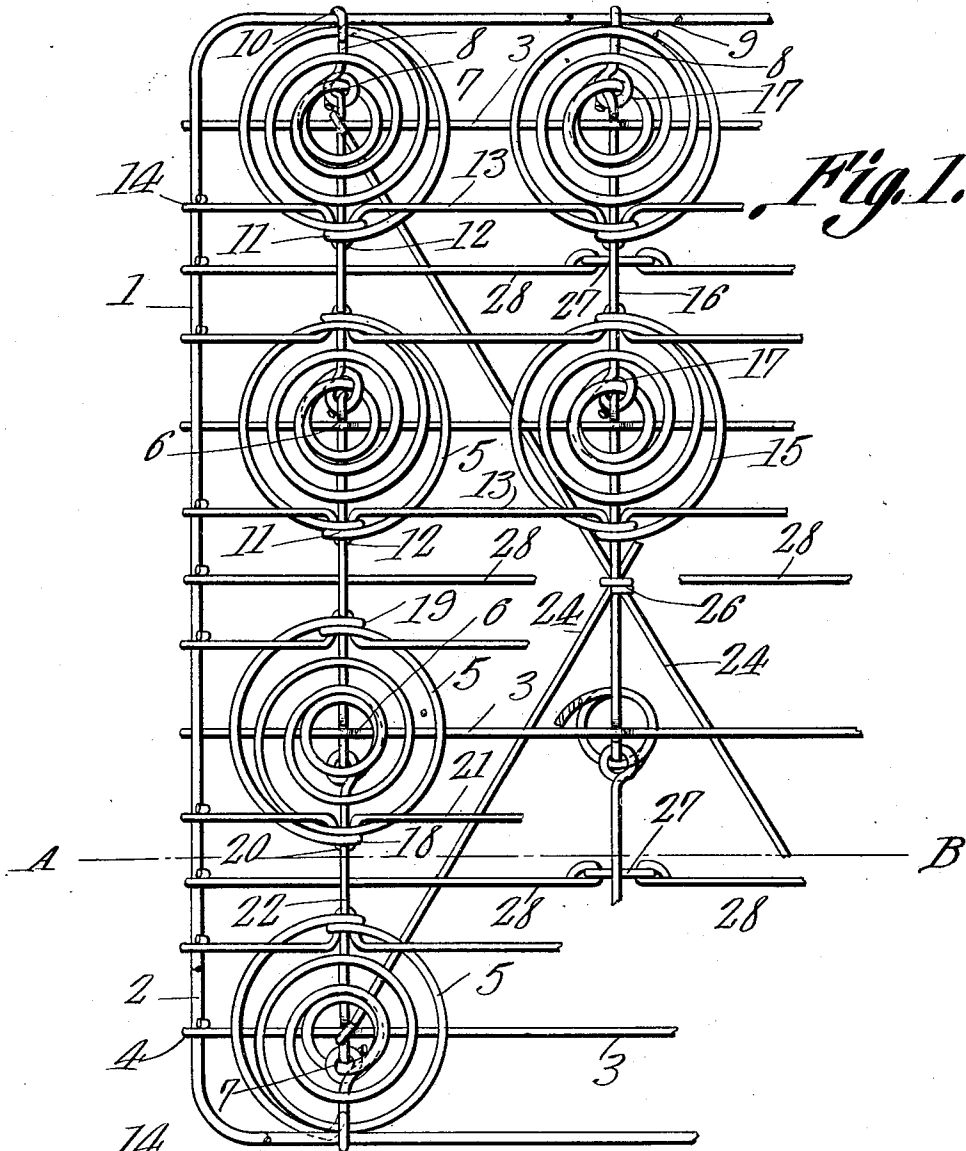


Fig. 1.

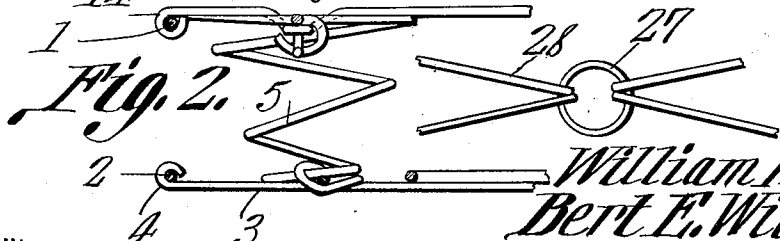


Fig. 2.

William H. Macy
Bert E. Wilbur, AND
Inventor

Witnesses
J. J. Donnell
Robert D. Lawson.

by *Cashow & Co.*
Attorneys

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Fig. 3.

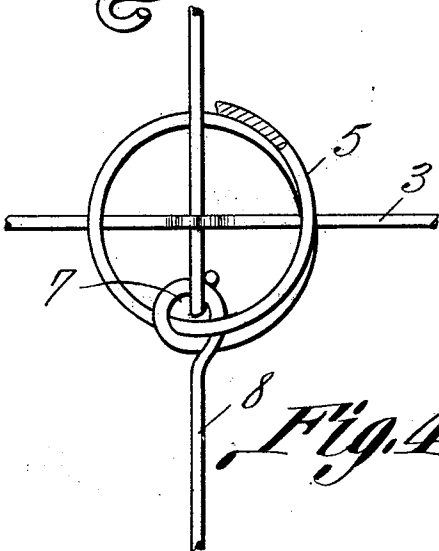
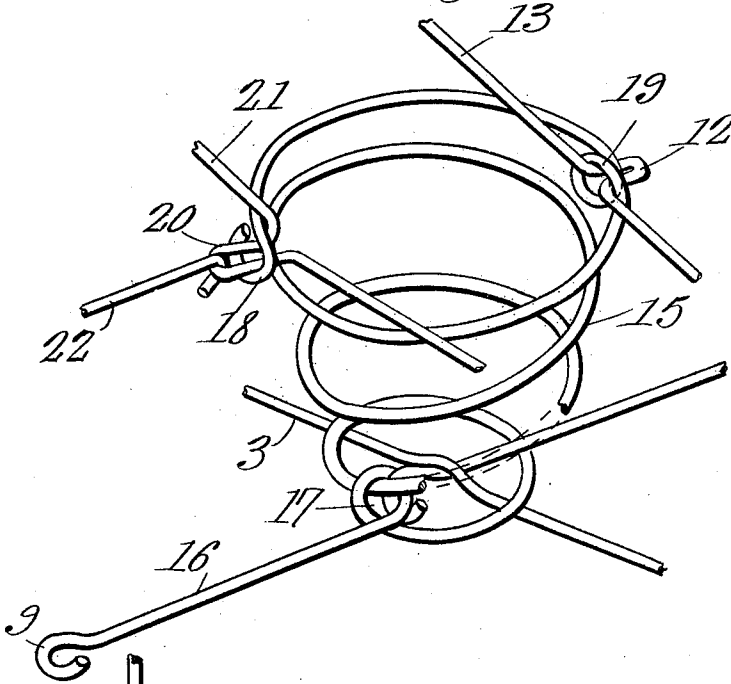


Fig. 4.

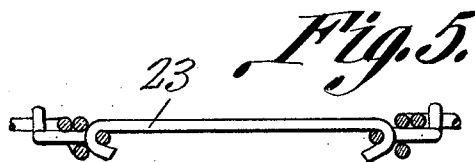


Fig. 5.

Witnesses

J. J. Conley
Herbert D. Lawson

William H. Macy AND
Bert E. Wilbur,
Inventor

by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM H. MACY AND BERT E. WILBUR, OF MIAMI, OKLAHOMA.

BED-SPRING.

999,816.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed October 15, 1910. Serial No. 537,337.

To all whom it may concern:

Be it known that we, WILLIAM H. MACY and BERT E. WILBUR, citizens of the United States, residing at Miami, in the county of Ottawa, State of Oklahoma, have invented a new and useful Bed-Spring, of which the following is a specification.

This invention relates to bed springs, its object being to provide a structure of this character made up of series of helical springs locked together in a novel manner, the connections between the various springs being such as to permit the springs at one side of the bed to be depressed to a greater or less extent than the springs at the other side and without causing the upper surface of the structure to incline to an undesirable extent.

A further object is to provide a bed spring having a rigid bottom structure constituting a firm support for the various springs.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

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

In said drawings: Figure 1 is a plan view of a portion of a bed spring constructed in accordance with the present invention. Fig. 2 is a section on the line A—B Fig. 1. Fig. 3 is a perspective view of one of the springs and adjacent parts. Fig. 4 is a horizontal section through one of the springs and showing the lower convolution and adjacent parts in plan. Fig. 5 is a side elevation of one of the connecting links, adjacent portions of the bed spring being shown in section.

Referring to the figures by characters of reference 1 and 2 designate top and bottom frames respectively, said frames being of the same proportion and size and being preferably substantially rectangular. The bottom frame 2 is provided at regular intervals with longitudinally extending stringers 3 the ends of which are looped about the ends of the frame 2 as indicated at 4. Each stringer 3 extends under the lower convolution of each of a series of inverted helical springs 5. Those portions of the stringers

arranged below the centers of the springs are preferably crimped as indicated at 6.

The series of springs 5 located along each side of the structure is made up of springs each of which has its lower or smallest convolution merged into an eye 7 through which the next convolution extends and from which projects a radial arm 8 terminating in a hook 9 engaging the side of the frame 2.

The upper or large convolution of each spring in each side series, terminates in an eye 10 engaging the next convolution of the same spring and also extending around the sides of the upper frame 1. Another eye 11 is formed by each of the upper convolutions at a point diametrically opposite the eye 10 and these eyes receive U-shaped loops or extensions 12 formed at regular intervals by crimping stringers 13 arranged longitudinally within the top frame and having their ends looped about the end portions of the frame 1, as indicated at 14. These stringers extend over the upper convolutions of the springs and project downwardly thereinto so as to enable the crimps or extensions 12 to project through the eyes 11. It will thus be seen that each of the side series of springs is connected at the bottom to the bottom frame 2 by means of the arms 8 and eyes 9 and at the top to the frame 1 by means of the eyes 10. Moreover the springs of each of said series are connected together by the bottom stringers 3 and by the top stringers 13.

The series of springs next adjoining each side series, is made up of springs similar, in most respects, to the springs 5 hereinbefore described. Each of these springs 15 of the second series, however, has an arm 16 of much greater length than the arms 8 but which extends from an eye 17 similar to the eyes 7. These arms 16 are arranged substantially in alinement with the arms 8 and project over the lower convolutions of the corresponding springs of the side series and thence under the crimped portions 6 surrounded by said convolutions. Each arm 16 terminates in a hook 18 which engages the eye 7.

The upper convolution of each spring of the second series has eyes 18 and 19 similar to the eyes 10 and 11 of the springs 5, the only difference being that the eyes 18 are so arranged as to receive the crimps or U-shaped portions 20 of the adjacent stringers 21 which correspond with the stringers 13 hereinbefore described. Two stringers are

provided for the springs of each of the second series. Links 22 connect the crimps 12 with the crimps 20 of the adjacent stringers. It is to be understood that any desired number of series of springs may be provided within the spring structure, the arms 16 of the series at one side of the center of said structure being extended toward one side of the frame 2 while the arms of the springs at the other side of the longitudinal center of the structure are extended toward the opposite side of the frame 2. The two innermost series of springs are connected by links 23 similar to the links 22.

Diagonally disposed brace wires 24 may be arranged within the bottom frame 2, the ends of these wires being extended into the lower convolutions of the corner springs and being provided with hooks 25 for engaging the crossed portions of the arms 16 and stringers 3 located within said convolutions. This has been clearly illustrated in Fig. 1. These braces 24 may be tied together where they cross, as shown at 26 and, if preferred, can also be fastened, at this point, to the adjacent arm 16.

For the purpose of preventing the top frame 1 from shifting longitudinally relative to the bottom frame, braces are interposed between said frames and also between the series of springs. Each of these braces preferably consists of a ring 27 connected to the two ends of each frame by means of wires 28.

It will be apparent that, by connecting the series of springs in the manner disclosed, the depression of some of the springs will not result in the depression of all of them, and, consequently, the objectionable tilting of the mattress. Moreover each of the bottom stringers is positively connected to the springs of one series by means of arms extending from the springs of the next adjoining series, these arms, stringers, and the lower convolutions of the springs, forming a rigid base. The links 22 and 23 not only serve to connect the series of springs in such a manner as to form a flexible jointed top or mattress supporting surface, but also constitute means for securely tying the upper stringers and the springs of adjoining series together.

What is claimed is:—

1. A bed spring including a frame, and parallel series of springs mounted within the frame, each spring of each series having an eye formed by the lower convolution thereof and extending around the next convolution, said eye merging into a connecting arm engaging the eye of a spring of another series.

2. A bed spring including spaced series of springs, each spring having its lower

convolution merging into an eye from which extends an arm engaging the eye of a spring of another series, each eye extending around the next convolution of its spring, and a stringer extending under the lower convolution of each spring of each series and engaging the arm attached to said convolution.

3. A bed spring including spaced series of springs, the lower convolution of each spring of one series merging into an eye surrounding the next convolution of said spring, there being an arm extending from the eye and engaging the corresponding eye of a spring of the other series, said arm intersecting the lower convolution of the engaged spring, and a stringer intersecting said convolution and engaging the arm, said stringer and arm being crimped at their engaging portions.

4. A bed spring including spaced series of springs, each spring having diametrically opposed eyes in the upper convolution thereof and extending around an axis common to both of them, stringers having laterally extended crimps extending through the eyes, and links connecting the crimps of adjoining stringers to tie adjoining series of springs together.

5. A bed spring including spaced series of springs, the upper convolution of each spring having diametrically opposed eyes extending around an axis common to both of them, parallel stringers having laterally extended crimps extending through the eyes, a stringer being provided for each series of springs, and links engaging the stringers of the two series to tie said series together.

6. A bed spring including spaced series of springs, the upper convolution of each spring having diametrically opposed eyes extending around an axis common to both of them, stringers resting upon the upper convolutions of the springs of each series and having laterally extended crimps extending outwardly through the eyes, and links connecting the crimps of adjacent stringers.

7. In a structure of the class described, a helical spring having an eye formed with one end convolution and engaging the next adjoining convolution, said eye merging into an arm having a hooked terminal, the other end convolution of the spring being formed with diametrically opposed eyes, one of said eyes constituting the terminal of the helix.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM H. MACY.
BERT E. WILBUR.

Witnesses:

M. R. TIDWELL,
OLAF BAKER.