

J. F. BROWN.
 SPRING BED BOTTOM.
 APPLICATION FILED APR. 24, 1905.

FIG. 1

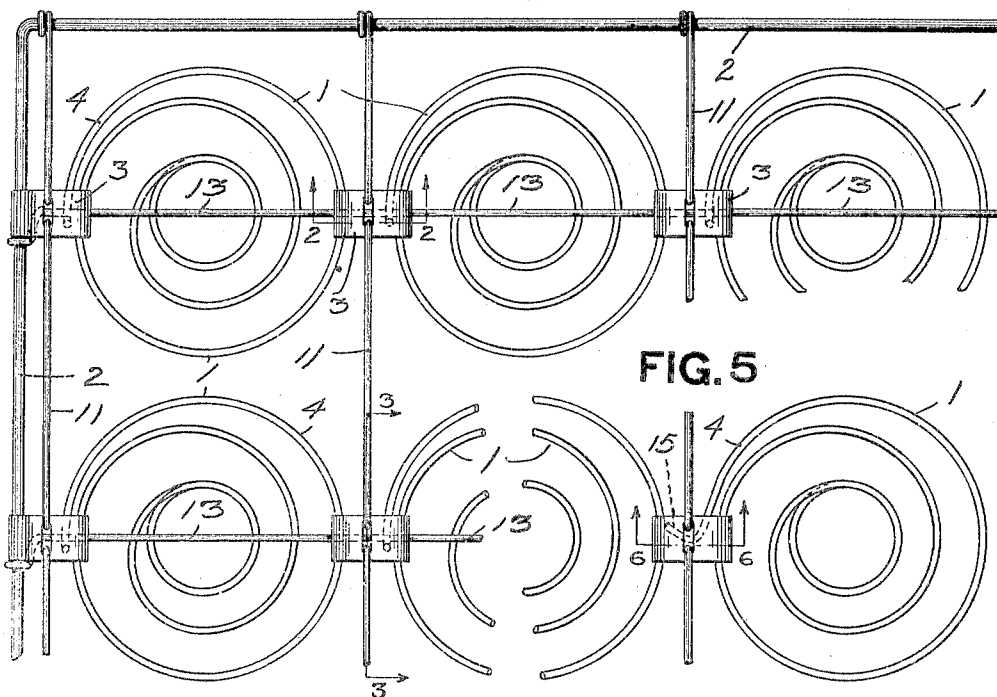


FIG. 5

FIG. 2

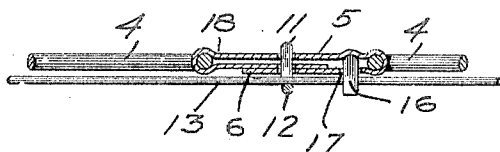


FIG. 6

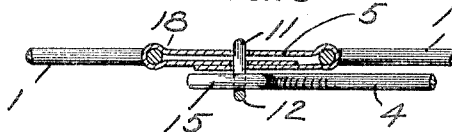


FIG. 3

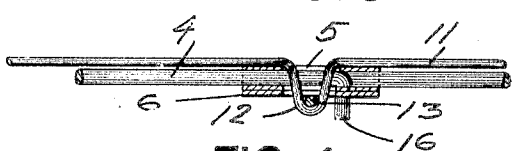


FIG. 7

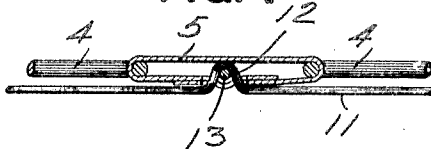
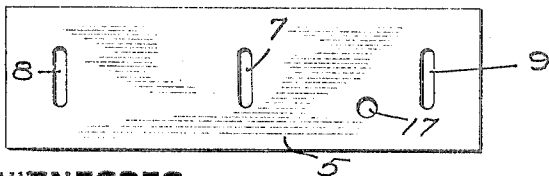


FIG. 4



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN FRANKLIN BROWN, OF KNOXVILLE, PENNSYLVANIA.

SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 793,818, dated July 4, 1905.

Application filed April 24, 1905. Serial No. 257,130.

To all whom it may concern:

Be it known that I, JOHN FRANKLIN BROWN, a resident of Knoxville, State of Pennsylvania, have invented a new and useful Improvement in Spring Bed-Bottoms; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to spring-bottoms for beds, couches, and the like, and more especially to that type having a plurality of helical, conical, or double-conical springs set on end and arranged in rows.

My invention relates especially to a clip for fastening together the end coils of adjacent springs, together with a connecting-rod co-operating therewith.

The object of the invention is to provide connecting means for springs of the character described which are simple and cheap to make, easily applied, which do not require the knotting of the springs, which give a perfectly smooth surface to the spring-bottom, thus preventing the catching and tearing of mattresses, cushions, and clothing, and which are self-adjusting, so as to accommodate themselves to springs slightly out of true or of slightly-different diameters.

To the accomplishment of the foregoing objects my invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a portion of a bed-bottom constructed according to my invention. Fig. 2 is a vertical section on the line 2 2, Fig. 1. Fig. 3 is a similar view on the line 3 3, Fig. 1. Fig. 4 is a plan view of the blank for the clip. Fig. 5 is a plan view showing a modification. Fig. 6 is a vertical section taken on the line 6 6, Fig. 5, and Fig. 7 is a vertical section showing still another modification.

My invention may be applied to either a single or double faced bed-bottom. The drawings show only the upper face of the bed-bottom; but any bed-bottom having the springs at one or both ends connected in the manner described and claimed comes within the scope of my invention.

My invention is adapted to any form of helical, conical, or double-cone springs. In

the drawings I have illustrated cone-springs 1, but this is a matter of choice. These springs are arranged in rows, as is common, and united by my improved means. The whole is surrounded by a strong border wire or rod 2.

The special feature of my invention is the clip 3, which is formed from a flat band of metal, Fig. 4, which is bent into the form of an open link, with the ends thereof overlapped, and embraces the end coils of adjacent springs, as shown in Fig. 2, in which the end coils of the springs are designated by 4, the body of the clip by 5, and the overlapped ends by 6. These clips or links are provided with openings (preferably slots) extending transversely of said clips, an opening 7 being formed substantially at the middle of the clip and corresponding openings 8 and 9 near the ends thereof, the whole being arranged so that when the clip is bent to link form these several openings will register. These clips are used for uniting the adjacent springs in rows, but not for uniting the springs of different rows, as shown in Fig. 1. The connection of row to row is obtained by my transverse connecting member 11, which is formed from wire or a small rod and provided at intervals with crimps or loops 12, which project down through the registering openings in the clips and are suitably keyed therein. These connecting members have their ends secured to the border wire 2, and as the loops or crimps thereon project down through the clips they prevent movement of the rows of springs laterally. These connecting-rods will be secured to the clips in some suitable manner. In Fig. 1 I have shown for this purpose key rods or wires 13, which extend at right angles to the connecting members 11 and are arranged on that face of the clip opposite to that on which said connecting members 11 lie and are threaded through the projecting ends of the loops or crimps of said connecting members. At their ends they are connected to the border wire or rod. The rods or wires 13 lock or key the connecting-wires to the clips, and the parts are thereby held against disengagement. These key rods or wires 13 are desirable for spring-bottoms which must be crated for shipment,

the practice being to crush the bottoms down as flat as possible. These key-wires extend across the springs at or near the centers thereof and prevent the intermediate coils of the
 5 springs from pushing up through the end coils, and thus prevent the several bottoms from becoming locked together in the crate. For bed-bottoms, however, which need not be crated for shipment and in which this danger of locking
 10 together when severely compressed does not exist these key-wires may be dispensed with and in place thereof the end of the end coil of the spring will be bent at right angles to form a key member 15, as shown in Figs. 5 and 6,
 15 which will project through the loop or crimp of the connecting member 11, thus serving to lock the connecting member to the clip.

In all forms of my invention the ends of the coiled springs are not knotted—that is, the
 20 extreme ends are not coiled around the end coil, as is the usual practice. With the modification shown in Figs. 5 and 6 the end of the spring is secured in the loop or crimp of the connecting member, whereas in the form
 25 shown in Figs. 1 to 4 the ends of the spring are bent downwardly, as at 16, and project through a hole 17, formed in the clip. This does away with all the labor necessary for knotting the ends of the springs and also dispenses with the roughness caused by such
 30 knots.

The connecting-clip shown is very simple and cheap of construction. It can be made from ordinary sheet or band metal under a
 35 press which will cut it out to shape and simultaneously punch therein the slots 7, 8, and 9, as well as the hole 17. This operation may also partially bend the clip to link shape. These clips are made of sufficiently soft metal
 40 so that they can be bent to link shape around the end coils of adjacent springs by hand, so as to bring the several slots thereof into alignment. The connecting and key rods can be readily assembled therewith. The resultant
 45 structure is one having a smooth outer surface, there being no knots on the springs and no inequalities worth mentioning in either the springs, clips, or connecting-rods. As a consequence there is no danger of the bedclothing, mattresses, or cushions becoming cut or
 50 torn. These link-shaped clips are practically open from their ends to the middle, so that the springs can adjust themselves in case they should be slightly over or under size or not true circles. In practice the clips will preferably be pinched together, as shown at 18,
 55 so as to embrace the end coils of the springs, and in case of an oversize spring the end of the clip will be squeezed together, thus holding the spring in place.
 60

It will be observed that the clips described are used merely for uniting the springs in rows, but are not used for uniting the springs of adjacent rows. This transverse connection is
 65 gotten entirely by the connecting members 11,

whose loops engage the clips in such a manner as to prevent movement of the rows of springs laterally. By this construction only about half as many clips are needed as with the clips ordinarily used for connecting similar bed-
 70 springs. The connecting-rods 11, furthermore, extend transversely of the clips and lie in the space between adjacent springs, thus filling up that space and preventing the sagging down of the mattresses or cushions in the
 75 openings between each group of four of the springs. By reason of this connecting-rod extending across said space and bridging the same it is possible to place the springs farther apart than would otherwise be the case. The
 80 clips can be made of any length, so as to allow for this.

Various modifications may be made in my invention without departing from the spirit thereof. For instance, the slots 7, 8, and 9
 85 instead of extending transversely of the clips may extend longitudinally thereof, and in that case the connecting-rods 11 would lie parallel with the clips, while the key-rods 13 would extend transversely thereof. Furthermore,
 90 the central opening 7 may be entirely dispensed with, if desired, the clip being provided only with the registering openings 8 and 9. This is shown in Fig. 7. In this modification the loop 12 on the connecting
 95 member 11 is comparatively short and the key-rod 13 lies between the body and overlapped end portions of the clip and engages the loops of the connecting member 11 in the manner illustrated.
 100

Various other modifications will suggest themselves to persons skilled in the art.

What I claim is—

1. A spring bed-bottom or the like, comprising a series of coiled springs, clips uniting
 105 the end coils of adjacent springs and comprising open links embracing the top coils of adjacent springs and having overlapped end portions provided with registering openings, and connecting-rods provided with loops or
 110 crimps extending through said registering openings and secured therein.

2. A spring bed-bottom or the like, comprising a series of coiled springs, connecting-clips comprising open links embracing the
 115 top coils of adjacent springs and having overlapped ends provided with registering openings, connecting-rods provided with loops or crimps projecting through said registering openings, and key members extending through
 120 the projecting ends of said loops.

3. A spring bed-bottom or the like, comprising a series of coiled springs, connecting-clips comprising open links embracing the
 125 top coils of adjacent springs and having overlapped ends provided with registering openings, connecting-rods provided with loops or crimps projecting through said registering openings, and a key-rod threaded through the
 130 projecting ends of said loops.

4. A spring bed-bottom or the like, comprising a series of coiled springs, clips uniting the end coils of adjacent springs and comprising open links lapped around the coils and having overlapped ends and provided with registering openings in said overlapped ends and in the body portion thereof, and connecting-rods provided with loops or crimps extending through said registering openings, and key members extending through the projecting ends of said loops.

5. A spring bed-bottom or the like, comprising a series of coiled springs, connecting-clips comprising bands lapped around the top coils with the ends thereof overlapped and provided with registering openings in said overlapped ends and body thereof, a connecting-rod provided with loops or crimps projecting through said registering openings of the clips, and a key-rod threaded through the projecting ends of said loops.

6. A spring bed-bottom or the like, comprising a series of coiled springs, connecting-clips therefor comprising open links embracing the top coils of adjacent springs and having end portions overlapped and provided with registering openings, connecting-rods provided with loops projecting through said registering openings, and key members ex-

tending through the projecting ends of said loops, the ends of said springs being bent and projecting through a hole in the clips.

7. A clip for connecting coiled springs, comprising a band having an opening near each end and one near the middle, said band being bent on transverse lines intermediate the end and middle openings thereby bringing all of said openings into register.

8. A clip for connecting coiled springs, comprising a band having an opening near each end and one near the middle, and a hole intermediate the middle and one of the end openings, said band being bent on transverse lines intermediate the end and middle openings thereby bringing the three openings into register.

9. A clip for connecting coiled springs, comprising a band having a transverse slot near each end and one at the middle thereof, said band being bent on transverse lines intermediate the end and middle slots thereby bringing said slots into register.

In testimony whereof I, the said JOHN FRANKLIN BROWN, have hereunto set my hand.

JOHN FRANKLIN BROWN.

Witnesses:

ROBERT C. TOTTEN,
G. C. RAYMOND.