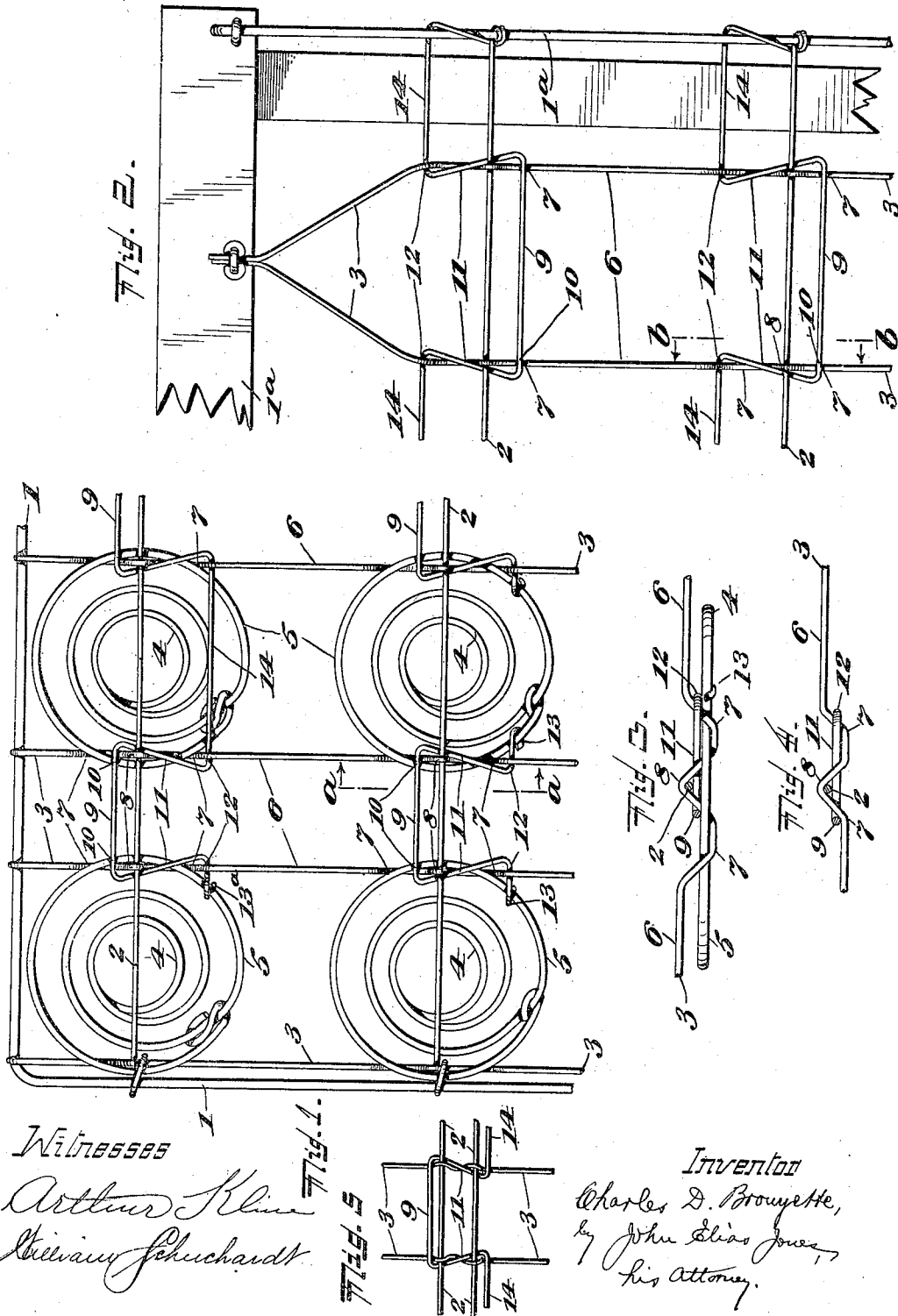


No. 820,091.

PATENTED MAY 8, 1906.

C. D. BROUYETTE.
SPRING BED BOTTOM.

APPLICATION FILED MAY 17, 1905.



Witnesses
Arthur Klein
Bernard Schuchardt

Inventor
Charles D. Brouette,
by John Elias Jones,
his Attorney.

UNITED STATES PATENT OFFICE.

CHARLES D. BROUYETTE, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF
TO M. A. HUNT & CO., OF CINCINNATI, OHIO, A FIRM.

SPRING BED-BOTTOM.

No. 820,091.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed May 17, 1905. Serial No. 260,809.

To all whom it may concern:

Be it known that I, CHARLES D. BROUYETTE, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Spring Bed-Bottoms, of which the following is a specification.

This invention relates to certain improvements in wire bed-bottoms, and particularly in that class of such devices which comprise a frame over which are extended intersecting wires for the support of the bedding; and the object of the invention is to provide a bed-bottom of this general character wherein is provided improved and simplified means for holding such intersecting wires in relation, whereby the device is stiffened and strengthened, so that the resultant structure is rendered lighter, more durable, and less expensive.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved bed-bottom whereby certain important advantages are attained and the device is rendered simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my improvements, Figure 1 is a partial plan view showing one corner portion of a bed-bottom embodying my invention, the bed-bottom being represented as of the construction wherein are provided coil-springs the end or surface coils of which are interlocked with the intersecting wires for elastically supporting the same. Fig. 2 is a fragmentary plan view somewhat similar to Fig. 1, but representing a different form of bed-bottom, wherein the coil-springs are omitted and wherein is employed a modified arrangement of the holding means for securing the intersecting wires in relation. Fig. 3 is an enlarged fragmentary sectional view taken through the structure shown in Fig. 1 in the plane indicated by line *a a* in said figure and showing certain features of construction to be hereinafter referred to. Fig. 4 is a sectional view similar to Fig. 3, but taken in the plane indicated by line *b b* in Fig. 2 and illustrating certain features of the modi-

fied arrangement shown in said figure. Fig. 5 is a fragmentary plan view similar to Figs. 1 and 2, but illustrating still another modified arrangement embodying my invention.

Referring first to Figs. 1 and 2, 1 represents a stout metal wire or rod extended along the edge of the bed-bottom in a well-known way to form a frame, and 2 2 represent lighter wires, which are extended across the frame thus formed in one direction parallel with each other, but suitably spaced apart, with ends connected in any desired way with opposite sides of said frame. 3 3 represent other wires, which are also extended transversely across the frame at right angles to the wires 2 2, so as to intersect the same at certain points upon the surface of the bed-bottom, said wires 3 3 being also spaced apart and being parallel with each other and having extremities secured in any desired way to opposite sides of the frame 1. 4 4 represent coiled wire springs of the ordinary hour-glass style with end coils 5 5, which are interlocked, as will be hereinafter described, with the intersecting wires 2 and 3 in such manner as to securely connect said coil-springs for supporting engagement with the fabric produced from said intersecting wires and whereon the bedding rests when the device is in use. The coil-springs 4 4 are arranged in parallel rows beneath the frame 1 of the bed-bottom, and the spacing of the wires 2 2 is such that one of said wires is extended centrally across the top coils of each spring 4 in each of the respective rows of springs, so that the tension of the springs is exerted evenly and uniformly beneath the centrally-arranged wires 2.

There are equal numbers of the coil-springs 4 4 in the several rows traversed by the wires 2 2, and the springs in such rows are evenly spaced in the structure, whereby it will be seen that said springs 4 4 are also grouped in other rows or series extended across the bed-bottom in a direction at right angles to the wires 2 2, and said last-named rows or series of springs 4 4 have their end or surface coils 5 traversed by the wires 3 3, which are extended at right angles to the wires 2 2, such wires 3 3 being so spaced apart that two of said wires are caused to extend along each of such last-named rows of springs, being arranged to extend across and intersect the opposite sides of each end coil 5 of the row traversed

by them and also to intersect each of the centrally-arranged wires 2 2, which are arranged at right angles to said wires 3 3.

The wires 2 2 are straight and without bends, as herein shown, and are extended above the end or surface coils 5 of the several springs 4 4, and between the springs each wire 3 3 has portions 6 6, which are extended in the same plane as the wires 2 2, as shown clearly in Fig. 3, said wires 3 3 being, however, provided with downward bends 7 7 at their points of intersection with the end coils 5 5 of the several springs, whereby the said wires 3 3 are caused to extend beneath such end coils, so that the intersected portions of the end coils 5 5 are securely clamped and held between said underlying bends 7 7 of the wires 3 3 and the overlying intersecting parts of the centrally-arranged wires 2 2, and midway between said downward bends 7 7 of wires 3 the said wires 3 are provided with upwardly-extended bends or bights 8 8, which are extended up through the end coils 5 of the springs and through which the centrally-arranged wires 2 are passed adjacent to their portions which intersect said end coils of the springs in such a way as to further securely clamp and hold the end coils in position between the intersecting wires 2 and 3. In this way the coil-springs 4 4 of the structure are securely held to the intersecting wires 2 and 3, and by the engagement of the end coils of said springs in the downward bends or bights 7 7 of the wires 3 3 it is evident that said springs are held against movement in the direction of the lengths of said wires 3 3, so that displacement of the springs in such direction is altogether avoided, the engagement of the straight wires 2 2 within the upward bends or bights 8 8 of the wires 3 3 also serving to effectively prevent displacement or movement of said wires 2 2 in the direction of the lengths of said wires 3 3, and in connection with the parts thus constructed I provide means for holding the said springs and also for holding the wires 3 3 against lateral movement or displacement in the direction of the lengths of the wires 2 2. Such holding means comprises links 9 9, formed from wire, which links are extended between the respective springs in the several rows traversed by the wires 2 2 and which have end portions engaged with the adjacent sides of the end coils 5 5 of adjacent springs in such rows and also engaged with the wires 3 3 which intersect such adjacent sides of said end coils in such a manner as to securely brace and tie the springs 4 and wires 3 3 together in the direction of the lengths of the wires 2 2, so that displacement of said parts in such direction is effectively prevented.

If desired, the links which brace and tie together the springs and wires 3 3 traversed by each wire 2 may all be formed from a single piece or length of wire, as clearly shown at

the upper part of Fig. 1 of the drawings; but I do not desire to be understood as limiting myself to this arrangement, since in some cases said links 9 may be formed of separate short lengths of wire, with ends engaged with the end coils 5 of adjacent springs 4 4 and also engaged with those wires 3 3 which traverse and intersect such end coils, and this arrangement I have also illustrated at the lower part of Fig. 1. If desired, both these constructions may be employed in the one bed-bottom.

As seen at 10 10 in Fig. 1, the links 9 9 have their end portions passed over and arranged to intersect the end coils 5 of adjacent springs 4 at points between the intersections of the wire 2 and of the corresponding wires 3 3 with said end coils, said portions 10 of the links being extended inwardly within each such end coil 5, so as to extend over and intersect the corresponding wire 3 at a point between its intersections with said end coil and with the wire 2. Beyond the portions 10 the end portions of the links 9 are bent at acute angles to produce the portions 11 11, which are inclined toward each other and which are passed beneath the overlying wires 2 at points adjacent to the intersections of said wires 2 with the upwardly-directed loops or bights 8 8 of the wires 3 3, said portions 11 11 beyond said wires 2 being also passed over the corresponding wires 3 and end coils 5, so as to intersect these parts at points between the intersections of the opposite bights or bends 7 7 of the corresponding wires 3 with said end coils and the intersections of said end coils with the corresponding wires 2 2. In this way it will be evident that the inclined portions 11 are extended from their connections with the parts 10 of the links within the end coils of the springs beneath the wires 2 and across and over the wires 3 and end coils 5 to the outsides of said end coils, whereby said inclined end portions 11 11 are effectively interlocked with the wires 2 3 and end coils 5 to hold the parts in relation against movement in the direction of the lengths of wires 2. Beyond the inclined portions 11 the end portions of the links are again bent outward in opposite directions from each other and are passed beneath the adjacent wires 3 3, and where said links are produced from short lengths of wire, as seen at the lower part of Fig. 1, the extremities of said short lengths may be bent around and interlocked with the end coils 5 5 of the springs between which the links are extended, as seen at 13 on the drawings; but if these links 9 9 be integrally connected and produced from longer pieces of wire it is evident that such attachment of said longer piece of wire with the end coils 5 need be effected only at the opposite ends of said piece of wire, as shown at 13^a at the upper part of Fig. 1, the integral connecting portions 14 between

the inclined parts 11 11 of adjacent links 9 9 being extended across over the upper or outer face of each end coil. The arrangement of these links 9 9 is such that the upward bends or bights 8 8 of wires 3 are interposed between the portions 10 and 12, which intersect, respectively, above and beneath said wires 3, whereby it will be evident that movement or displacement of the links in the direction of the lengths of the wires 3 3 is effectively prevented, and since said links have their end portions interlocked securely with each two adjacent springs 4 4 and wires 3 3 traversed by the respective wires 2 it will be apparent that movement or displacement of the parts in the direction of the lengths of said wires 2 2 is altogether avoided and increased strength and stability of the structure is attained without material increase either of cost or weight.

In Figs. 2 and 4 I have shown my improvements applied for use in connection with a bed-bottom of a well-known kind, having a frame 1^a, over which are extended intersecting wires 2 and 3, similar to the structure shown in Fig. 1 except that the coil-springs 4 4 are in this modified arrangement omitted as being unnecessary in bed-bottoms of light construction. In this construction the arrangement of the links is substantially the same as shown in the upper part of Fig. 1 except that the inclined ends of said links have engagement with the wires 2 and 3 only.

In Fig. 5 I have shown still another modified arrangement, wherein the coil-springs 4 4 are also omitted and wherein the wires 2 2 are duplicated, there being two such wires engaged with each end portion 11 of each link 9.

The improved bed-bottom constructed according to my invention is of an extremely simple and inexpensive structure and is especially well adapted for use by reason of the added stiffness and strength afforded by the improved tying or bracing means, and it will also be obvious from the above description that the device is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the exact formation and arrangement of the several parts herein shown and described in carrying out my invention in practice.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A spring structure of the character described comprising a series of parallel wires having bends extended in one direction, links extended between the wires of said series with end portions each of which intersects one wire in said series at two points at opposite sides of one of the bends therein and other wires in series at angles to the first-named series and intersecting the same and

at such intersections extended within the bends of the wires of the first-named series and between said wires and the end portions of the links at points between the intersections of such end portions of the links with each wire of the first-named series.

2. A spring structure of the character described comprising two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received and links extended at angles between the wires of one series with end portions each of which has engagement with a wire of such series at two points at opposite sides of the intersection of said wire with a wire of the other series and is, adjacent to such intersection, interlocked between the wires of the respective series.

3. A spring structure of the character described comprising two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received, the wires of one series being also provided with other bends arranged at opposite sides of their points of intersection with wires of the other series and links extended at angles between the wires wherein said last-named bends are produced with end portions each of which has engagement with the bends of such a wire at opposite sides of the intersection of such wire with a wire of the other series and is, between such bends and adjacent to such intersection, interlocked between the wires of the respective series.

4. A spring structure of the character described comprising a series of parallel wires having bends produced in them, a series of straight wires at angles to said first-named series and engaged with the bends thereof, springs in rows beneath said straight wires with end coils interlocked with the wires of the respective series and links extended between the first-named series of wires and parallel with said straight wires with end portions each of which has engagement with a wire of the first-named series at two points at opposite sides of the bend wherein is engaged a wire of the other series and has, between such points of engagement, a portion interlocked between the wires of the respective series.

5. A spring structure of the character described comprising two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received, the wires of one of the series being also provided with other bends arranged at opposite sides of their points of intersection with the wires of the other series, springs having end coils engaged with said oppositely-arranged bends with

intermediate portions interlocked between the wires of the respective series at points adjacent to their intersections and links extended between the wires of one series and parallel with the wires of the other series and having end portions each of which is engaged in the bends of a wire at opposite sides of the intersection of such wire with a wire of the other series and has, between such bends and adjacent to such intersection, a portion interlocked between the wires of the respective series.

6. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at two points on opposite faces of such wire, other wires in series at angles to the first-named wires and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and a connection for the extremity of each such end portion to hold said links in position.

7. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at two points on opposite faces of such wire, other wires in series at angles to

the first-named wires and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and connections between the extremities of the end portions of the links and extended in the direction of the wires of the last-named series.

8. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at three points two of which are on opposite faces of such wire, other wires in series at angles to the first-named series and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and connections between the extremities of the end portions of the links and extended in the direction of the wires of the last-named series.

Signed at Cincinnati, Ohio, this 13th day of May, 1905.

CHARLES D. BROUYETTE.

Witnesses:

ARTHUR STEDMAN,
JOHN ELIAS JONES.