

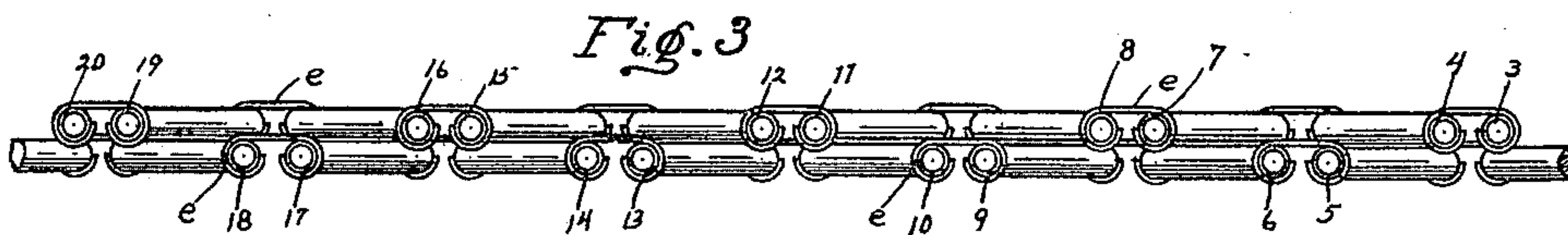
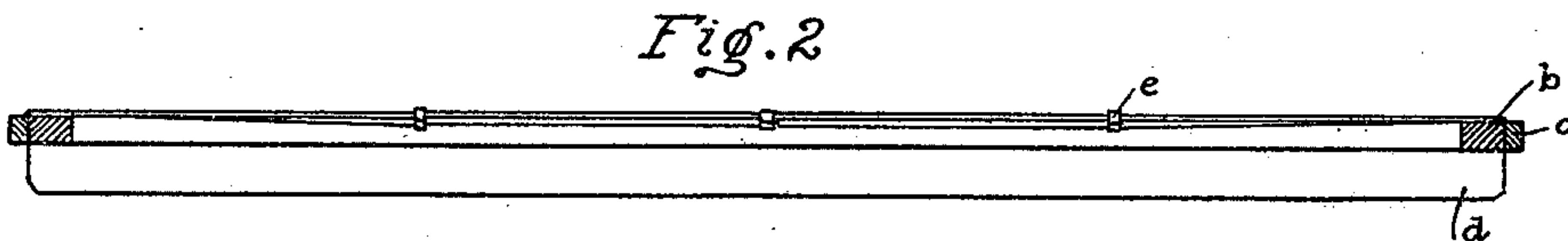
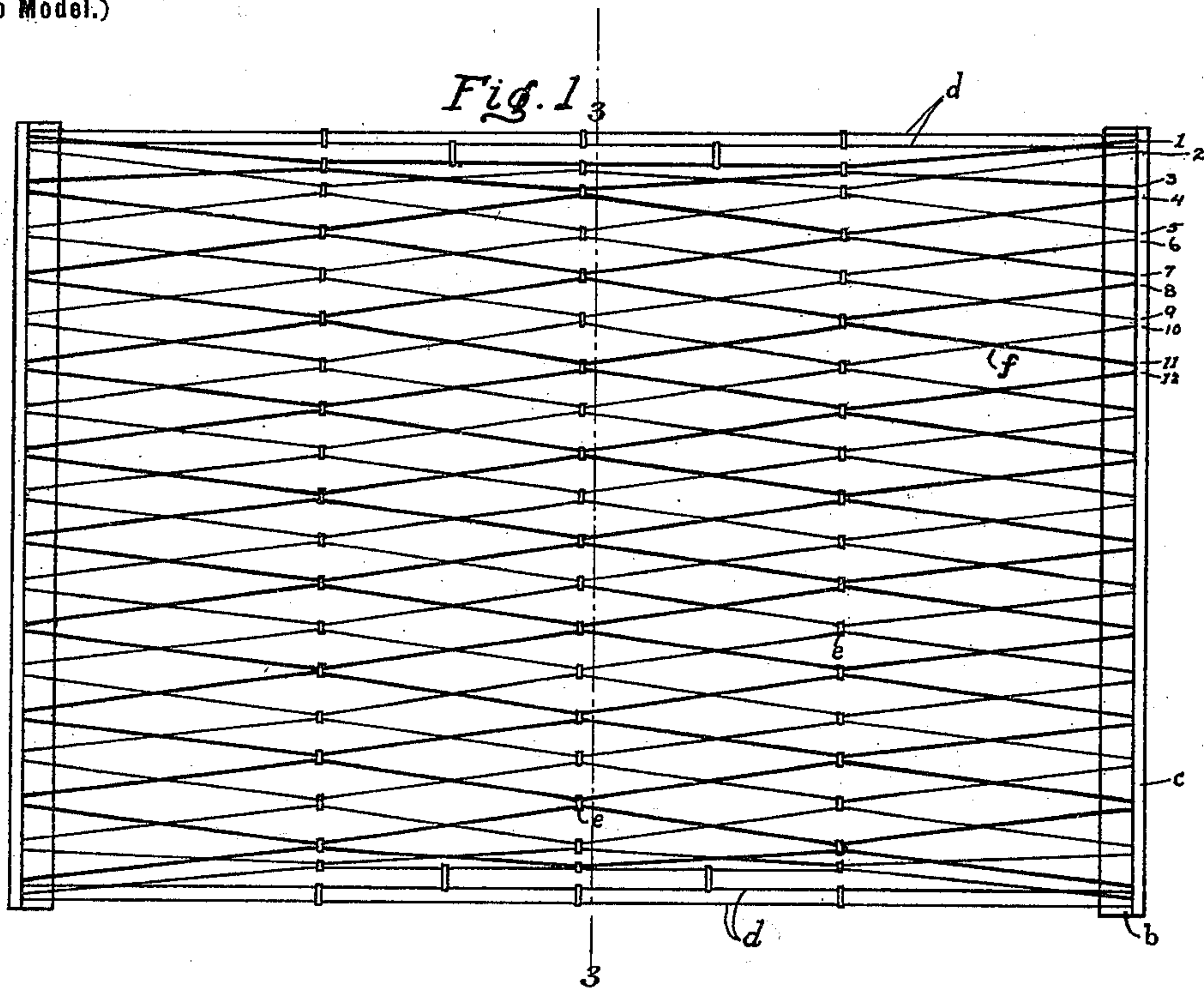
No. 683,905.

Patented Oct. 8, 1901.

J. F. BROWN.  
SPRING BED.

(Application filed Mar. 6, 1901.)

(No Model.)



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JOHN FRANKLIN BROWN, OF PITTSBURG, PENNSYLVANIA.

## SPRING-BED.

SPECIFICATION forming part of Letters Patent No. 683,905, dated October 8, 1901.

Application filed March 6, 1901. Serial No. 50,099. (No model.)

*To all whom it may concern:*

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

My invention relates to an improvement in  
10 spring-beds, its object being to provide a strong and durable form of spring-bed which will reduce the tendency to sag which exists in most constructions of this kind and which  
15 is perfectly elastic and will return to its normal condition when the weight to which it has been subjected has been removed.

To these ends my invention comprises, generally stated, a spring-bed composed of a series of normally parallel metal cables or  
20 cords extending from one end of the frame to the other, each of said cables being then deflected alternately to opposite sides, carried over one or more adjacent cables without being connected thereto, and connected at intervals to other cables alternately at opposite  
25 sides, thereby forming a double diamond fabric in which there are an upper and a lower fabric separate from each other, the upper fabric consisting of one set of diamonds and  
30 the lower fabric consisting of the other set of diamonds.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying  
35 drawings, in which—

Figure 1 is a plan view of my improved spring-bed. Fig. 2 is a side view thereof, partly in section. Fig. 3 is an enlarged detail showing the cords or cables composing  
40 one set of diamonds lying above those composing the other set of diamonds.

Like letters and numerals indicate like parts in each of the figures.

In the drawings the letter *a* indicates the  
45 ordinary side bars, while the letter *b* indicates the end bars, of the customary spring-bed frame. Secured to the end bars *b* and extending between the same are the cords or cables 1, 2, 3, 4, 5, 6, &c., said cords being  
50 normally parallel and preferably arranged in pairs and being secured to the end bars *b* by means of the securing-strips *c*. While these

cords or cables may be formed of any suitable material, I prefer to use elastic cables formed of spirally-coiled wire interwoven in  
55 the ordinary manner; but before applying these cables to the bed in the manner indicated I subject said cables to a stretching operation which takes out the stretching quality of the cables, but still leaves them elastic, so that  
60 when they are stretched on the bed-frame the tendency of the cables to sag is greatly reduced, and at the same time the strain on the frame when the cables are stretched thereon is lessened. After the cables have been treated  
65 in the manner described and have been stretched between the end bars *b* of the frame in parallel lines I proceed to connect the different cables, so as to produce the result sought for. For convenience of description  
70 I have numbered the cables successively, no number, however, being used to designate the outside or border cables *d* at both sides of the frame. In the first place I connect cables 2 and 5, 6 and 9, 10 and 13, 14 and 17,  
75 and 18 and 21, and so on throughout the series across the frame, said cables being deflected sidewise, carried over one or more intermediate cables, and connected by suitable clips *e*. I now connect cables 1 and 3, 4 and  
80 7, 8 and 11, 12 and 15, 16 and 19, and so on throughout the series across the frame, said coils being likewise deflected sidewise, carried under one or more cables of the other series, and connected by clips in the same manner  
85 as before. In this manner the cables 2 5 6 9 10 13 14 17 18 21, &c., are above and cross-cables 1 3 4 7 8 11 12 15 16 19 20, &c., as at *f*. Having completed the first line of connections between the cables, I form at a suitable  
90 distance from the same a second line of connections, which consists, as before, in deflecting the cables of the first series sidewise, but to the opposite side to which they were first deflected, again carrying them over one or  
95 more cables of the second series and connecting them by clips, as before, after which the cables of the second series are likewise deflected sidewise, but to the opposite side to which they were first deflected, and, as before,  
100 carried under one or more cables of the first series and connected together, the cables being thus connected in such a way as to form a second row of diamonds. Having



completed this row, I then form another row of connections, which in the construction of a bed of the length illustrated completes the structure, although it is apparent that the number of lines of the connections may be increased, so as to decrease the size of the diamonds, without departing from the spirit of my invention.

It will be observed that when the wires or cables have been connected so as to form a spring-bed of the nature illustrated the cables will have a zigzag course from end to end, and one series of cables, which are indicated in deeper lines and which are designated by the numerals 1 3 4 7 8 11 12, &c., will be above and entirely independent and separate from the cables 2 5 6 9 10 13 14, &c., as shown more clearly in Fig. 3. By this construction I obtain separate upper and lower fabrics, as it will be found in the actual construction of the bed that it is possible to lift or separate the upper fabric from the lower when any of the wires of the upper fabric are seized and lifted.

My invention, either in the form illustrated or with a reduced number of wires, may be employed to support a suitable woven fabric.

It is apparent that instead of connecting the cables by means of the clips, as illustrated, the wires themselves may be crossed and interwoven; but in such case only one end of the wires would be secured to one of the end bars *b*, as the other end would have to be free until the interweaving of the different cables had been accomplished for the length of the bed, when the free ends would then be secured to the other piece in the ordinary manner. In this case although the cables are not connected at one end of the bed until the fabric has been completed, yet before the cables are connected up to each other they hang in parallel lines with reference to each other in the same case as above, where both ends of the wires were secured to the frame before they were connected together to form the double diamond fabric.

By the above construction I obtain a very stiff and rigid but elastic fabric in which the mattress may be placed directly thereon without the necessity of employing another fabric or of springs for supporting the fabric, while at the same time I obtain a bed-bottom in which the tendency to sag is practically

eliminated owing to the construction employed as well as the fact that the cables are stretched before they are used in the bed construction.

I do not wish to limit my invention particularly to spring-beds, as it may be applied to couch-bottoms, chair-seats, and sleeping-car and boat berths.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a spring-bed, a suitable frame, a series of normally parallel cables extending from one end of said frame to the other, each of said cables being deflected alternately to opposite sides, carried over one or more adjacent cables without being connected thereto and connected at intervals to other cables alternately at opposite sides, whereby each cable has a zigzag course from end to end and a double diamond fabric is formed.

2. In a spring-bed, a suitable frame, two series of normally parallel cables extending from one end of said frame to the other, each cable of one series being deflected alternately to opposite sides, carried over one or more cables of the other series and connected at intervals to cables of its own series alternately at opposite ends, and each cable of the other series being likewise deflected alternately to opposite sides, carried under one or more cables of the first series and connected at intervals to cables of its own series alternately at opposite ends, whereby each cable has a zigzag course from end to end and a double diamond fabric is formed.

3. In a spring-bed, a suitable frame, a series of normally parallel elastic cables formed of spirally-coiled wire and extending from one end of said frame to the other, each of said cables being deflected alternately to opposite sides, carried over one or more adjacent cables without being connected thereto and connected at intervals to other cables alternately at opposite sides, whereby each cable has a zigzag course from end to end and a double diamond fabric is formed.

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

JOHN FRANKLIN BROWN.

Witnesses:

ROBT. D. TOTTEN,  
ROBERT C. TOTTEN.