(Model.)

F. J. MAIER.

SPRING BED BOTTOM.

No. 303,393. Patented Aug. 12, 1884.

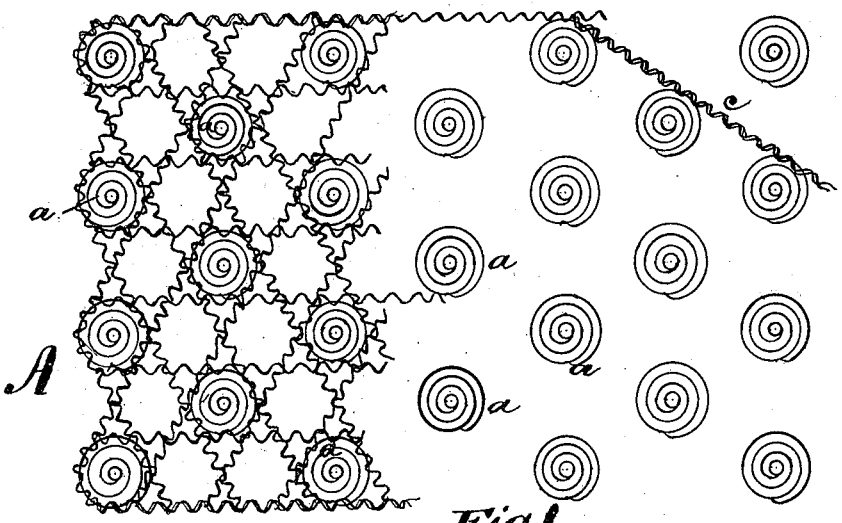


Fig. 1.

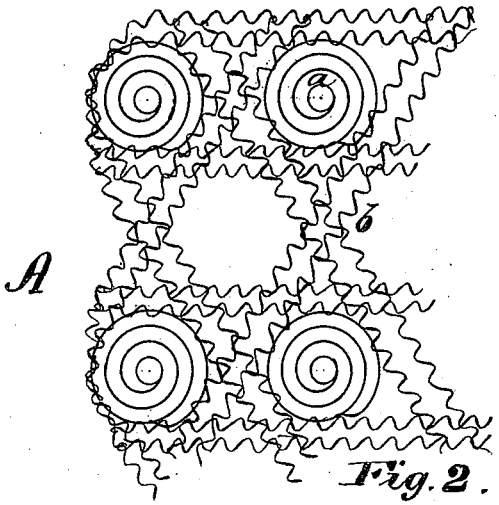


Fig. 2.

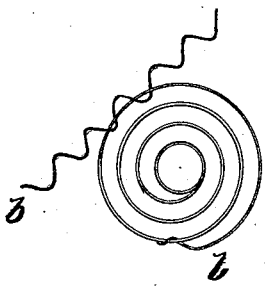
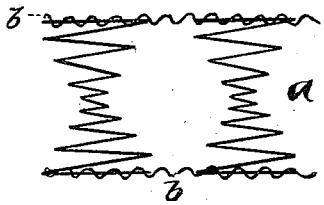


Fig. 4.

Fig 3



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANZ J. MAIER, OF NEWARK, NEW JERSEY.

SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 303,393, dated August 12, 1884.

Application filed February 15, 1883. (Model.)

To all whom it may concern:

Be it known that I, FRANZ J. MAIER, a citizen of the United States, residing in Newark, Essex county, New Jersey, have invented a new and useful Improvement in Spring Bed-Bottoms, of which the following is a specification.

This invention relates to that class of bed-bottoms composed of upright spiral springs and spiral connecting-springs, which unite said upright springs and form an upper elastic bearing-surface, the object of the invention being to provide a more uniform surface in such bed-bottoms, and to more perfectly equalize the strain on the upright springs, whereby the said bottom is rendered more serviceable and durable. In the bottoms of this class heretofore in use of which I am aware the upright springs have been connected by connecting-springs irregularly arranged, so that the tendency of the said connecting-springs has been to draw a large portion of the upright springs to one side, whereby the top spirals of the said upright springs have been drawn or tilted out of a horizontal plane and the bottom has thus been rendered rough, and therefore unpleasant to rest upon. In my improved device these defects have been overcome.

The invention consists in the arrangement and combination of parts, substantially as will be hereinafter set forth, and finally embodied in the claims.

Referring to the drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a plan view of my device or a portion thereof; Fig. 2, a plan, a modified form thereof; and Fig. 3 a side elevation showing two upright springs connected by horizontal springs. Fig. 4 represents a top plan of a single helical spring, and illustrating on larger scale the manner of passage therethrough of the elastic connecting-springs.

In said drawings, *a a a* are upright springs, arranged at intervals throughout the bed-bottom A, and *b b b* are horizontal coiled wires, capable of an elastic spring action under longitudinal tension, which connect and are intertwined by two or more turns with and around the end coils or rings of each of the upright springs, whereby the said upright springs are directly and firmly united to the longitudinal coiled wires without other or extraneous fastenings, and form a complete bottom, A.

The connecting-springs are arranged in two or more series, as shown, the springs of one series being parallel, running from side to side of the bottom in a direct line, or approximately so, and intertwined with each top spiral in its course at opposite sides of said spiral, so that the strain will be equalized. The springs in the co-operating series are also parallel, approximately straight, run from side to side of the bed-bottom, and engage with the same said top spirals at opposite sides, which opposite sides are not the ones before mentioned, as will be understood, but lie adjacent thereto, as shown, so that the strain on each of the top spirals is uniformly balanced from four or more different and opposite directions, and that depression on the bottom has no tendency to draw one top spiral to any extent out of a plane with those lying adjacent, whereby unpleasant results are occasioned by the tilting of said top spiral. The said connecting-springs *b* may be arranged singly, as in Fig. 1, in pairs, as in Fig. 2, or doubled, as at *c* in Fig. 1.

If I desire, I can dispense with the connecting-wires of one side of the bed-bottom, and connect the ends thus left free to slats or other devices, doing the same without departing from the spirit of my invention; but when the springs are connected at both ends by the spiral wires a bottom is formed of greater lightness, and is better adapted to be handled. I therefore prefer the first-described mode of construction.

In claim 2, I use the word "transverse" in its generic sense, including connecting-wires running in either diagonal direction with respect to the longitudinal wires or at right angles thereto.

I am aware that upright coiled springs and horizontal coiled wires have been used together in bed-bottoms prior to my invention, and I do not, therefore, claim the combination of the two, broadly; but,

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

1. In a spring bed-bottom, the vertical springs *a*, the spirals of which gradually en-

large toward each end, in combination with single continuous coiled wires running in longitudinal, transverse, and diagonal directions over both surfaces of said upright springs, and connecting with the outer spirals thereof, whereby is formed on both sides a continuous elastic bearing-surface, substantially as shown.

2. In a spring bed-bottom, the combination of a series of spiral springs tapering in opposite directions from their centers, with continuous coiled wires connecting the outer spirals of said springs in longitudinal and transverse directions on the upper and lower faces thereof, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of January, 1883.

FRANZ J. MAIER.

In presence of—
CHARLES H. PELL,
F. F. CAMPBELL.