

W. A. MOONEY.

SPRING BED BOTTOM.

No. 382,486.

Patented May 8, 1888.

FIG. 1.

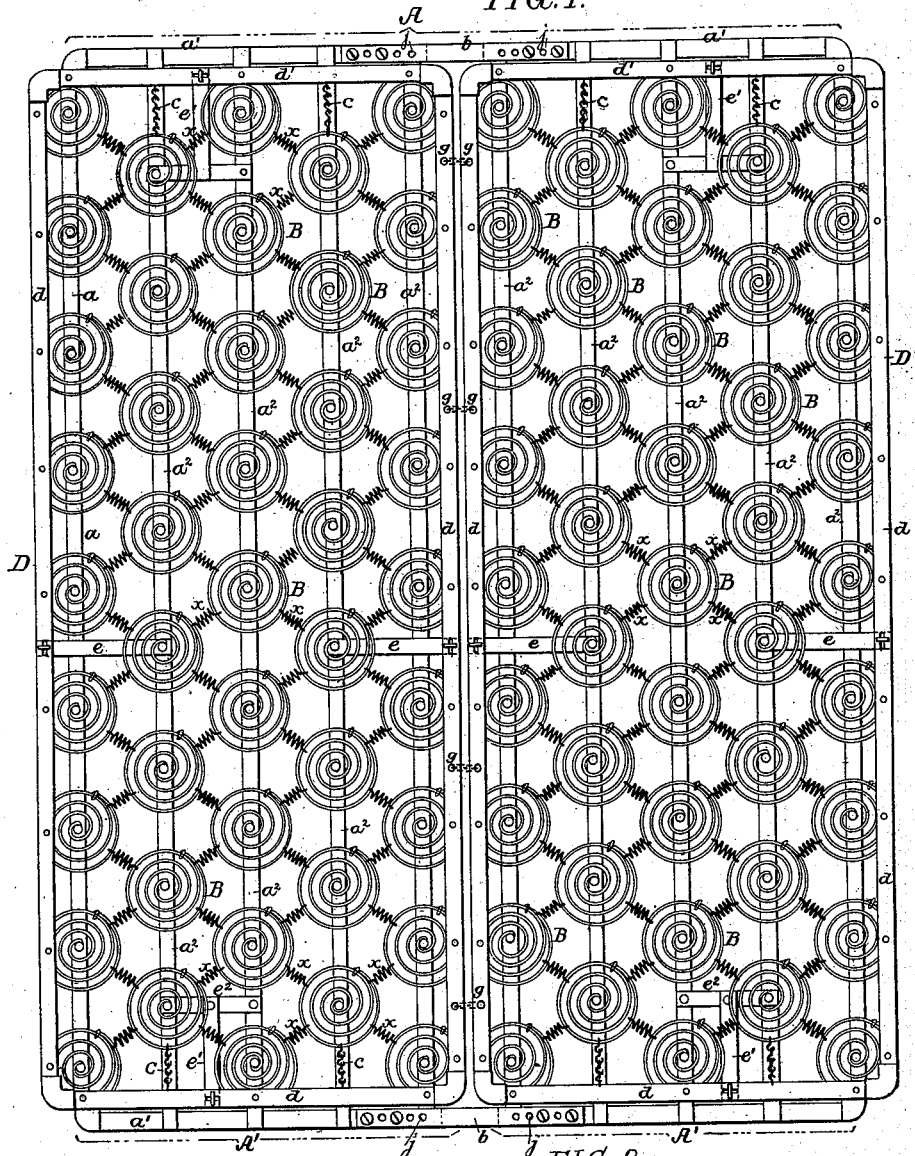


FIG. 2.

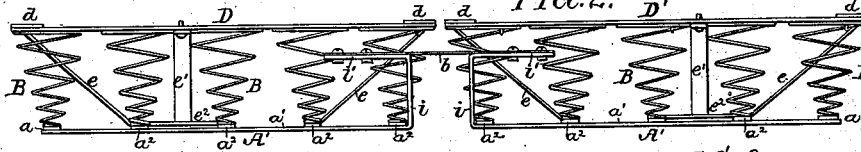
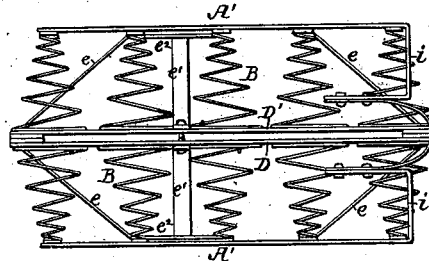


FIG. 3.



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FIG. 4.

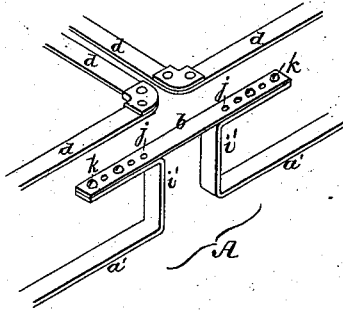


FIG. 7.

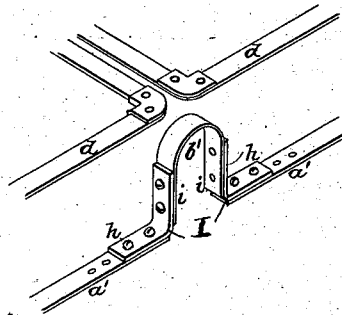


FIG. 6.

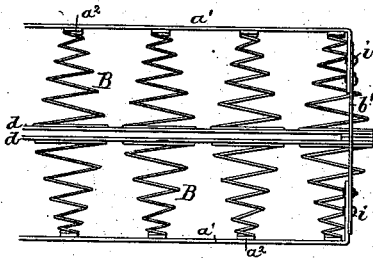


FIG. 5.

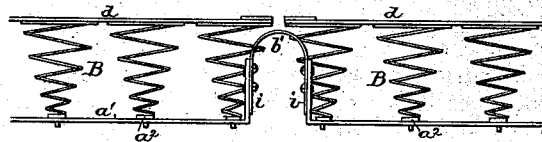


FIG. 9.

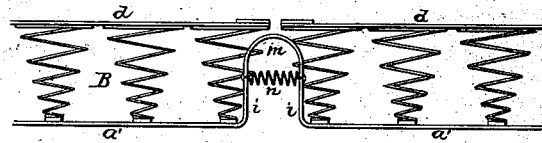


FIG. 8.

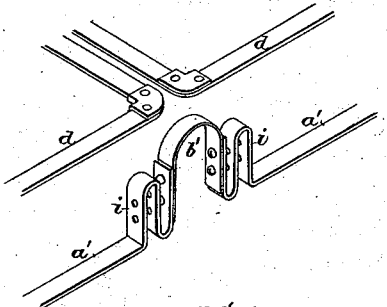


FIG. 13.

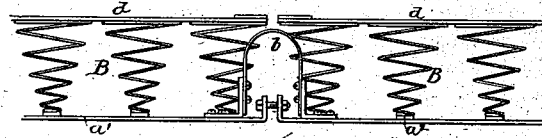


FIG. 10.

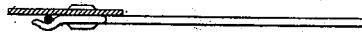


FIG. 12.

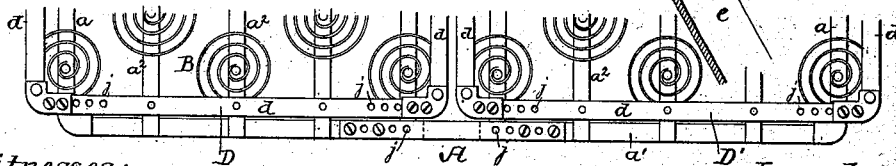


FIG. 11.



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UNITED STATES PATENT OFFICE.

WILLIAM A. MOONEY, OF PHILADELPHIA, PENNSYLVANIA.

SPRING BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 382,486, dated May 8, 1888.

Application filed June 15, 1887. Serial No. 241,397. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MOONEY, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Spring Bed-Bottoms, of which the following is a specification.

The object of my invention is to construct a spring bed-bottom that can be folded upon itself without distorting any of the springs when folded, a further object of the invention being to make the upper portion of the bed in two or more distinct sections, which can be independently adjusted as regards tension and stiffness, and at the same time can be connected together when required, as fully described hereinafter.

A further object of the invention is to detachably connect the upper frames to the springs, so that they may be removed when required, when a very soft bed is desired.

In the accompanying drawings, Figure 1 is a plan view of my improved bed-bottom. Fig. 2 is an end view. Fig. 3 is an end view of the bed folded. Fig. 4 is a detached perspective view of a portion of the bed, showing the flexible joint. Fig. 5 is an end view showing a modified form of a flexible joint. Fig. 6 is the same folded. Figs. 7 and 8 illustrate different forms of lateral adjustment. Fig. 9 is a modified form of flexible joint, and Fig. 10 is a view showing the detachable fastening by which the springs are secured to the upper frames. Fig. 11 is a detached perspective view of one of the details of my invention. Fig. 12 is a plan view of a portion of a spring bed-bottom, illustrating the lateral adjustment of the top frame. Fig. 13 is a view showing locking devices for the bed-bottom.

Referring, in the first instance, to Figs. 1, 2, 3, and 4, A is a quadrangular frame made in two sections, A' A', and connected together by flexible pieces b b. This base-frame A is formed of metallic side pieces, a a, and end strips, a', connected together at their joints, and longitudinal strips a², which extend in this instance from end to end of the bed, and are secured to the end strips, a'. These strips a², with the side strips, a, support the springs B, which are securely attached to these strips by rivets or other suitable fastenings. The springs B are divided into two complete sections, and each section is bounded at the top by a quad-

angular frame, D or D', having side bars, d d, and end bars, d', connected together in any suitable manner. The outer rows of springs B are detachably secured to these frames D D' by suitable cleats, f. (Shown in Fig. 10, and preferably of the same pattern as that shown and described in the patent granted to me on October 5, 1886, No. 350,265.)

When the top frames are applied to the springs, the latter offer greater resistance to compression than when the top frames are removed; hence by dividing the springs into two independent sets, each with a detachable top frame, the latter can be removed from either set of springs if it is desirable that one half of the bed shall be more elastic than the other half. The inner springs of each set are connected to each other and to the outer rows of springs by small coiled springs z, or may, in some instances, be connected together by chains, as in my former patent, or hooks.

I connect the springs that are between the outer end rows of springs B to the frames D D' by chains c, preferably adjustable in the same manner as in my above-mentioned patent, so that the springs may have the different degrees of tension required.

The upper frames, D D', are braced from the lower frame by suitable braces, e e', at the different points required. The braces e', I secure to a cross-piece, e², which extends from one longitudinal supporting-strip, a², to the other. The object of this is to avoid the springs B B as much as possible, so that they will have free movement when compressed. These braces e e', I detachably connect to the upper frames, D D', by suitable turn-buckles, (shown in Fig. 11,) so that the frames can be entirely dispensed with when required.

If the bed-bottom is to be used as a single bed, I prefer to connect the two frames D D' together by suitable chains or straps, g, as shown in Fig. 1, so that the two frames will act as one solid bed-bottom.

As before remarked, the two lower frames, a a', are connected together, preferably, by a flexible plate, b. In Figs. 1, 2, and 3 the end strips, a', are turned up near the middle, forming upright extensions i i, having at their top transverse extensions i', to which the flexible connection b is secured. The object of extending the upright i to the point indicated is

to locate the flexible plate *b*, which forms the pivot, as near the center of revolution as possible.

By making the connections of the two lower frames, *a a'*, of flexible material—such as spring-steel—I get a very firm lower frame, which is not liable to break as readily as the usual hinge-joint, and cannot become loose from wear, as it is a continuous piece from frame to frame.

I have found by experience that a hinge-joint as usually made from metal as wide as the end strips soon becomes loose and often breaks at the joint, and, moreover, the cost of the flexible strip is merely nominal, as it is mostly made from scrap. The flexible connection will also accommodate itself to the different heights of springs when the bed is folded, so that it will be compact and firm for transportation.

When it is wished to store or transport the spring bed-bottom, one section is turned upon the other—that is, the top of one section is turned upon the top of the other section, so that the longitudinal strips *a'* of the bottom section will protect the spring during transportation, as shown in Fig. 3, the flexible portions *b* at each end of the bed yielding to the desired extent, and, as before remarked, as near the center of revolution as possible. The springs *B* will not be crushed or bent to one side; but the two upper frames, *D D'*, will rest directly one upon the other, and the springs remain as regards tension in precisely the same condition as they were when the bed-bottom was flat.

When it is required to adjust the spring bed-bottom to fit different sizes of bed-frames, I perforate the flexible strips *b* at *j*, as shown in Figs. 1 and 4, and by inserting the securing-bolts *k* in either of the perforations, the bed-bottom may be adjusted to different widths, as required.

In Figs. 1, 2, 3, and 4 I have shown the flexible connecting-strips *b* flat when the bed is open, but under tension when the bed is closed.

In Figs. 5 and 6 I have shown the flexible plate *b'* under tension when the bed-bottom is opened, and flat when the bed-bottom is folded, as in Fig. 6 the flexible plate *b'* is flat and relieved from tension, the flexible plate in this instance being connected directly to the upright *i i*. In order to make this style of plate adjustable, I either form right-angled pieces *I I*, instead of the upright piece *i*, and secure them to the flexible plate *b'*, and adjustably secure them to the end strips, *a'*, by means of bolts *h*, Fig. 7; or in some instances the upright strips *i* may be bent in the form of a goose-neck, as shown in Fig. 8, and the plate *b'* can be adjustably secured to one or other of the sections.

In Fig. 9 I have shown the end strips, *a'*, continuous from side to side of the bed-bottom, having a portion, *m*, which extends up near the pivot-point of the sections and placed under tension by a spring, *n*, extending from one upright *i* to the other.

When an extensive lateral adjustment is required of the bed-bottom to fit rather a large bed-frame, I not only adjust the two lower frames, *a a'*, in respect to each other, but also adjustably connect the outer frames, *d d'*, of the upper frames, *D D'*, to their end frames, as shown in Fig. 12, that they can be extended to cover the desired width, and then fastened in the position required.

When it is desired to lock the springs in the open or flat position, I extend the end strips, *a'*, as shown in Fig. 13, until they nearly join each other, then form two uprights, and connect them together by suitable bolts and nuts, so that it will be utterly impossible to fold the bed without first removing these bolts.

I claim as my invention—

1. The combination of the quadrangular base-frame made in two sections, springs supported thereby, and two top frames carried by said springs, each top frame and its springs being entirely independent of the other, a pivot-section free from springs connecting the two spring-sections together, whereby the whole structure can be folded with the top frames face to face without distorting any of the springs, the base-frame acting as a guard for the springs, substantially as specified.

2. The combination of the quadrangular base-frame, two sets of springs supported thereby, and two top frames carried by said springs, each top frame and its springs being entirely independent of the other, and each top frame detachably secured to the outside rows of the springs supporting said frames, whereby either one or both of the top frames are removable from the bed, all substantially as and for the purpose described.

3. The combination, in a spring bed-bottom, of the base-frame with supporting-springs connected thereto, each end bar of the frame having a flexible connecting-section free from springs, and extending to or nearly to the top of the springs, substantially as described.

4. The combination of the base-frame *A*, made in two sections, *a a'*, carrying suitable springs, and independent top frames for each section, a flexible section free from springs connecting the two spring-sections together, and extending to or nearly to the top frame, so that when the bed is folded the springs will not be crushed, substantially as specified.

5. The combination of the base-frame *A*, made in two sections, *a a'*, each having an upright extension, *i i*, with a flexible strip, *b*, connecting the extensions *i* of the sections together, all substantially as specified.

6. The combination of the base-frame *A*, made in two sections, *a a'*, each having upright extensions *i i*, with a connecting flexible strip, *b*, adjustably attached to one or both of the extensions *i* of the sections, substantially as specified.

7. The combination of the bottom frame, the end strips, *a*, and spring-bearing strips *a'*, with a cross-piece, *e'*, extending from one bearing-strip to another, and a brace extending from

the cross-strip *e* to the top frame, substantially as described.

8. The combination of the base-frame A, made in two sections, with connecting-strips
5 adjustably attached to one or both of said sections, springs carried by each section of the base-frame, and quadrangular top frames carried by said springs, one or both of said top
10 frames being adjustable as to width, and each top frame and its springs being entirely inde-

pendent of the other, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM A. MOONEY.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.