J. SEELIG.

METALLIC BED BOTTOM.

APPLICATION FILED AUG. 16, 1919.

1,329,145.

Patented Jan. 27, 1920.

3 SHEETS—SHEET 1.

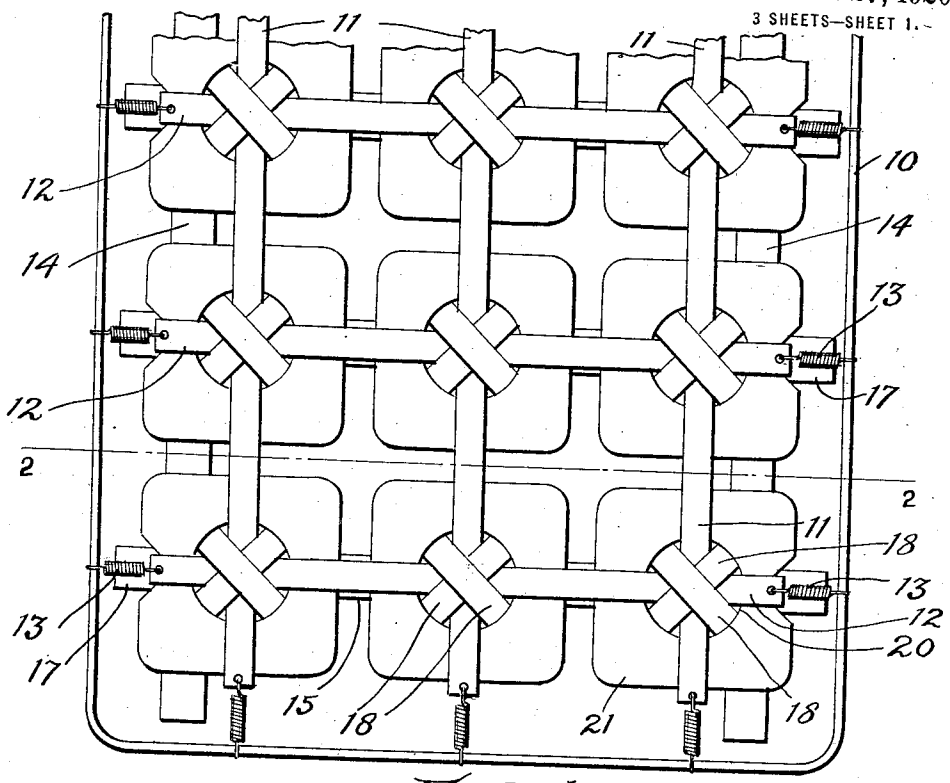


Fig. 1.

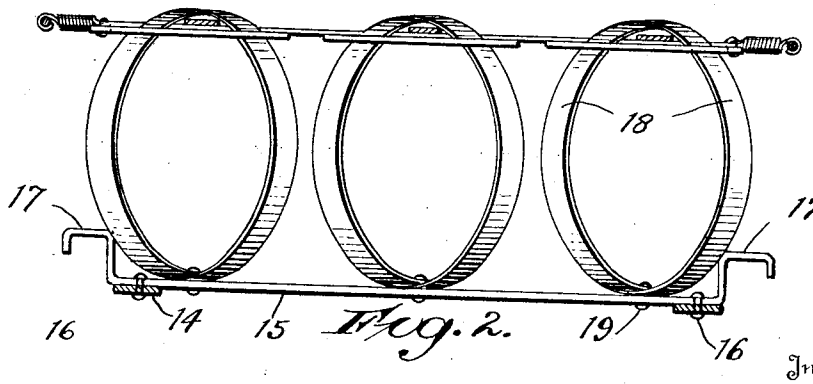


Fig. 2.

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3 SHEETS—SHEET 2.

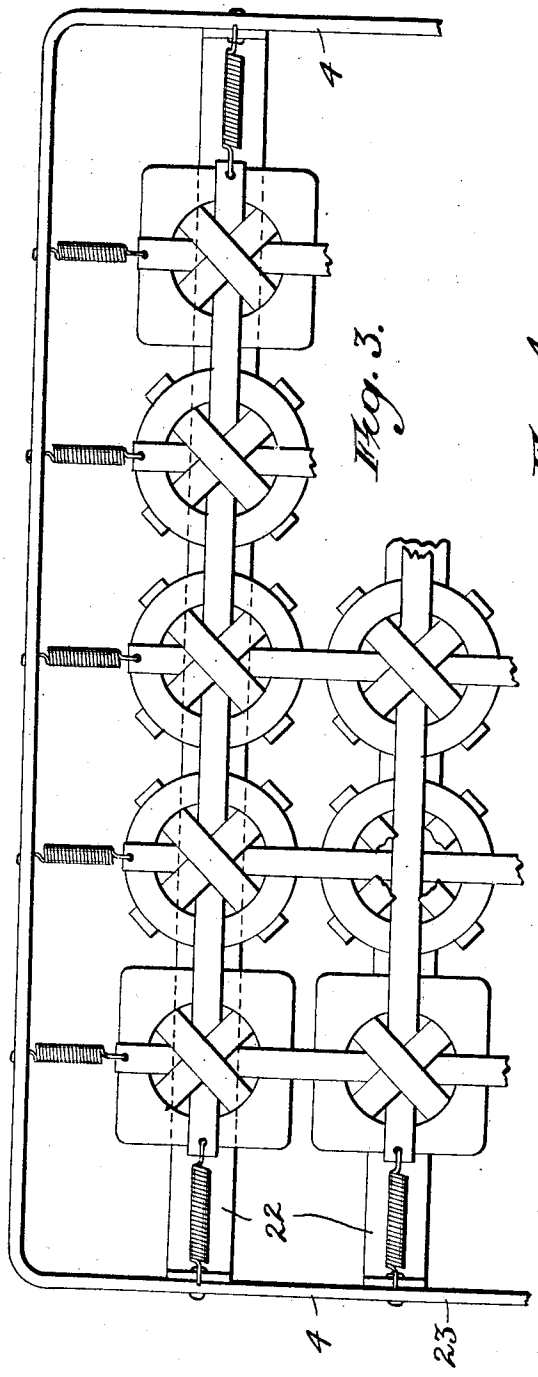
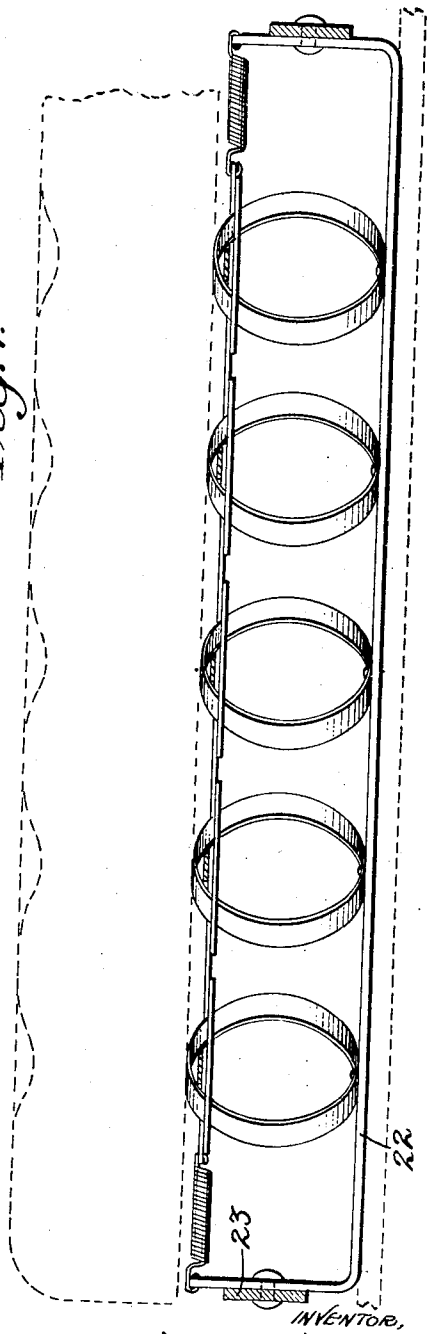


Fig. 3.

Fig. 4.



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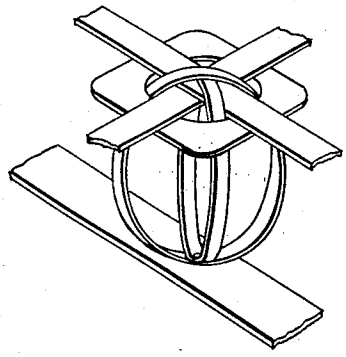
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3 SHEETS—SHEET 3.

Fig. 5.



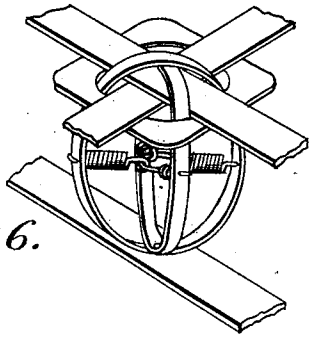


Fig. 6.

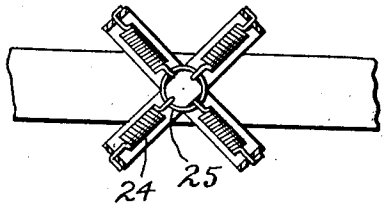


Fig. 7.

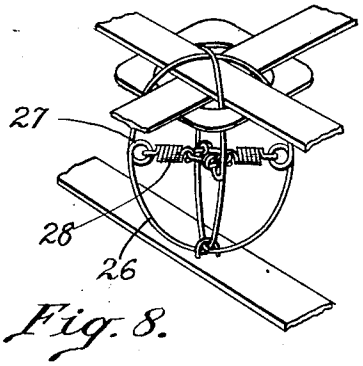


Fig. 8.

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UNITED STATES PATENT OFFICE.

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METALLIC BED-BOTTOM.

1,329,145. Specification of Letters Patent. **Patented Jan. 27, 1920.**

Application filed August 16, 1919. Serial No. 317,927.

To all whom it may concern:

Be it known that I, JOSEPH SEELIG, a citizen of the United States of America, and a resident of Lead, South Dakota, have invented a new and useful Improvement in Metallic Bed-Bottoms, which invention is fully set forth in the following specification.

This invention relates to improvements in metallic bed-bottoms such as are employed to support the ordinary mattress, and which consist of upper and lower sustaining frames connected by interposed annular springs. In bed-bottoms of this character, as heretofore constructed, much trouble has been experienced in providing a cheap, and at the same time efficient, means for holding the annular springs in their proper relative positions to withstand hard usage. The present invention has for its object the provision of a bed-bottom of this general construction in which cheap and efficient means are employed to sustain the annular springs in such a way as to withstand hard usage. Such means consist primarily of a series of spring units interposed between upper and lower frames composed of longitudinal and transverse stays or strips, with each spring unit comprising nested spring rings angularly disposed with their upper intersection projected through a locking plate with crossed stays of the upper frame passing between the plate and the protruding nesting ring-sections, and their lower intersection secured to the stays of the lower frame. The invention will be described in detail hereinafter.

While the invention is primarily intended to be used in the construction of bed-bottoms, and will be so described, yet it is also particularly adapted to the construction of spring seats such as are used in automobiles and which are subjected to extremely hard usage. The device is also adapted to other obvious purposes not requiring special mention.

In the drawings, in which similar reference characters designate corresponding parts,—

Figure 1 is a plan view of a bed-bottom embodying the invention;

Fig. 2 is a cross-sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a plan view, broken away in part, of a modified form of the invention;

Fig. 4 is a sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a detail perspective view showing one of the spring units of Fig. 1;

Fig. 6 is a similar view of a modification;

Fig. 7 is a horizontal sectional view of a spring unit showing the ring connection between the crossed spiral springs shown in Fig. 6;

Fig. 8 is a detail perspective view of another modification of the spring unit.

Referring more particularly to Figs. 1, 2 and 5, the upper sustaining frame comprises the rectangular member 10, the longitudinal stays 11 and the transverse stays 12, said stays being connected at their ends to the rectangular member by the coiled springs 13. The lower sustaining frame is formed by the side stays 14 and the cross-stays 15 riveted together, as at 16. The ends 17 of the cross-stays are hook-shaped to fit over the side rails of the bedstead to support the bed-bottom as a whole.

Interposed between the upper and lower sustaining frames are the annular springs 18 associated in pairs, with the members of each pair nested and angularly disposed to each other. Each pair of associated springs is riveted at their lower intersection, as at 19, to one of the cross-stays 15 of the lower frame. At their upper intersection, each pair of associated springs projects through the circular opening 20 in the locking plate 21. Between the locking plate and the nested sections of the ring-springs protruding above the plate, extend the crossed longitudinal and transverse stays 11 and 12 of the upper sustaining frame. This interlocking of the nested ring-springs, plate and stays in the upper sustaining frame, and the riveting of the lower intersecting sections of the springs to the stays of the lower sustaining frame, serve to secure the different spring units together in their proper relative positions.

In a bed-bottom so constructed, the annular springs are each permitted to perform its individual function of yielding to pressure and of returning to its normal condi-

tion when relieved of such pressure, and at the same time, by the conjoint action of the angularly disposed members of each pair of associated springs, each member will oppose any upsetting of the other member. The bed-bottom as a whole will form a yielding support that will give readily to the movement of an occupant of the bed, but will at the same time offer stout resistance to rough usage. By employing the interlocking connection between the stays of the upper sustaining frame and the nested rings, the spring units can be secured together in a cheap and efficient manner.

In the modification shown in Figs. 3 and 4, the supporting frame is of somewhat different construction from that shown in Figs. 1 and 2. In this modified form, the sustaining frame comprises a U-shaped member 22 for each longitudinal set of spring units. The upright ends of the members 22 are secured to the rectangular frame 23. In this modified construction, the bed-bottom is intended to be placed upon the ordinary slats of a bedstead. In Fig. 4 a mattress is shown in dotted lines.

In the modification shown in Figs. 6 and 7, auxiliary coiled springs 24 extend diametrically across the annular springs, the inner ends of the coiled springs being attached to the ring 25. The spring unit of this construction is particularly adapted to automobile seats, as the coiled springs 24 add considerably to the resistance of the annular springs to the sudden jolts and jars imparted to an occupant of the seat in the rapid travel of the vehicle over a rough road. Such unit springs could also be used to an advantage in bed-bottoms when placed where the bottom is subjected to most strain, as along the side edges and in the center. Also, by the use of the coiled springs 24, the annular springs could be made of lighter material than in the first described embodiment.

The construction of the modification shown in Fig. 8 is substantially the same as that shown in Fig. 6, except that, in Fig. 8, the annular springs are made of spring wire instead of flat spring as in Fig. 6. In the springs 26, eyelets 27 are bent to receive the ends of the coiled cross-springs 28.

In the drawings showing the bottom, but few of the spring units, as compared with the number actually employed in the construction, are shown for the sake of clearness in the illustration; the size and number of the spring units used in the actual construction of a bed-bottom, seat or other embodiment of the invention can be varied to meet the different requirements. Also, the shape of the locking plate may be either square, round, or other configuration. It is to be noted that this plate not only serves to lock the spring members and stays together, but also forms a bearing surface for the mattress or cushion placed on the bottom.

What is claimed is:—

1. In a device of the class described, a lower frame, an upper frame having stays extending across the same, annular springs interposed between the two frames and secured to the lower frame, said springs being associated in nested pairs with the members of each pair angularly disposed to each other, an apertured locking plate for each pair of associated springs having the contacting sections of the nested springs protruding through the aperture in said plate, and a stay of the upper frame passing between the locking plate and the contacting sections of the springs protruding through the plate.

2. In a device of the class described, a lower frame, an upper frame having intersecting stays crossing the same, annular springs interposed between the two frames and secured to the lower frame, said springs being associated in nested pairs with the members of each pair angularly disposed to each other, an apertured locking plate for each pair of associated springs having the nesting sections of such pair protruding through the aperture in the plate, and a pair of intersecting stays of the upper frame passing in opposite directions between the locking plate and the nesting sections of the annular springs protruding through the plate.

3. In a device of the class described, a spring mechanism comprising an apertured locking plate, a plurality of nested annular springs angularly disposed to each other with their nested sections protruding through the aperture in the locking plate, an upper stay extending between the locking plate and the nesting sections of the annular springs projecting through said plate, and a lower stay riveted to the lower crossed sections of the annular springs.

4. In a device of the class described, a spring mechanism comprising an apertured locking plate, a plurality of nested annular springs angularly disposed to each other with their nested sections protruding through the aperture in the locking plate, and a stay extending between the locking plate and the nesting sections of the annular springs projecting through said plate.

5. In a device of the class described, a spring mechanism comprising an apertured locking plate, a plurality of nested annular springs angularly disposed to each other with their nested sections protruding through the aperture in the locking plate, and a plurality of crossed stays extending between the locking plate and the nesting sections of the annular springs projecting through said plate.

6. In a device of the class described, a

spring mechanism comprising an apertured locking plate, a plurality of nested annular springs angularly disposed to each other with their nested sections protruding through the aperture in the locking plate, a plurality of crossed stays extending between the locking plate and the nesting sections of the annular springs projecting through said plate, and coiled springs extending diametrically across the annular springs.

In testimony whereof I have signed this specification.

JOSEPH SEELIG.