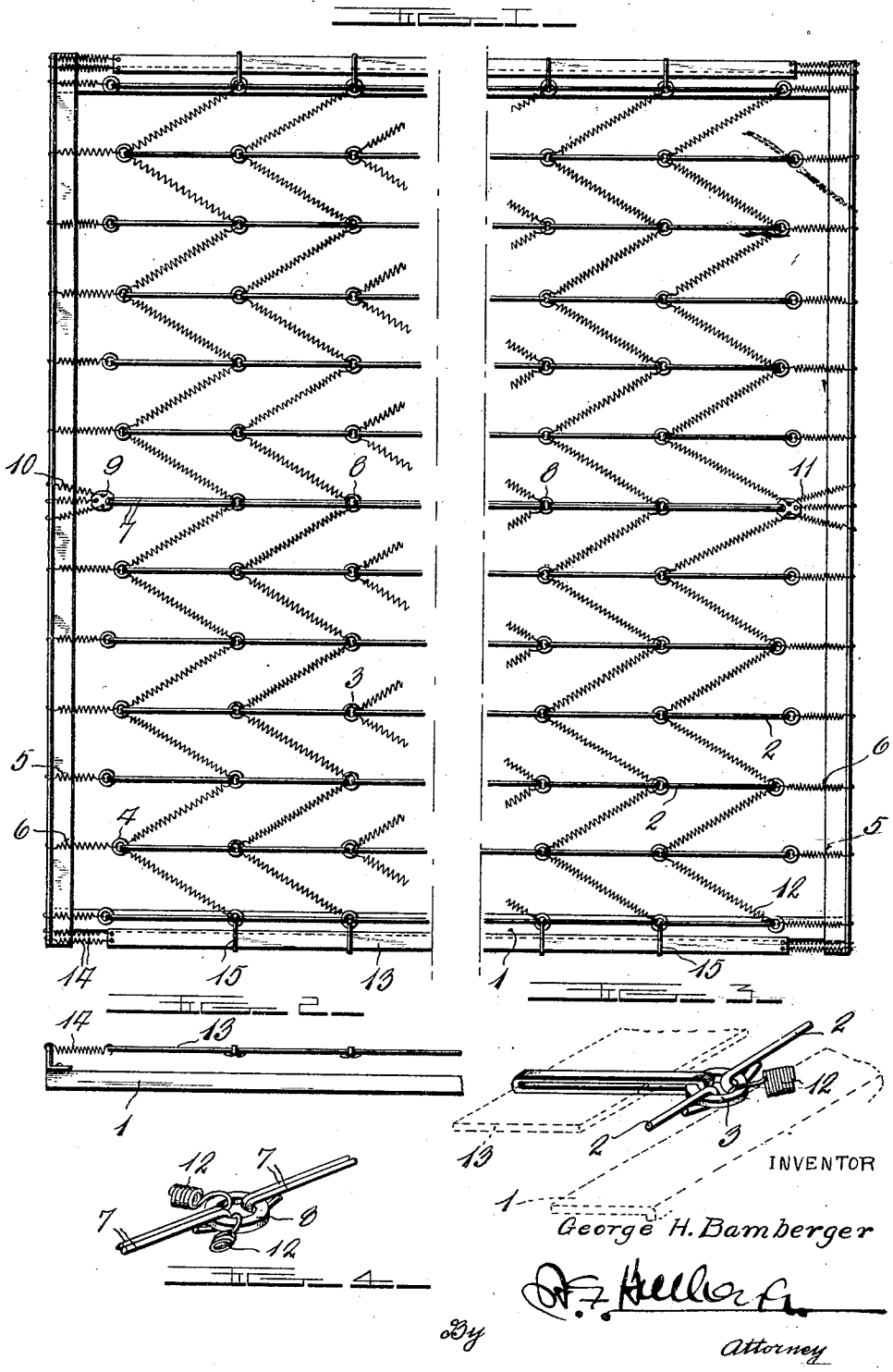
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BEDSPRING FABRIC

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GEORGE H. BAMBERGER, OF BALTIMORE, MARYLAND.

BEDSPRING FABRIC.

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To all whom it may concern:

Be it known that I, GEORGE H. BAMBERGER, a citizen of the United States of America, residing at Baltimore, in the county of Baltimore City and State of Maryland, have invented certain new and useful Improvements in Bedspring Fabrics; and I do hereby declare that the following is a full, clear, concise, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in bed springs, having for an object to provide a novel form of bed spring so constructed as to combine in a single construction the desirable qualities of resiliency of a spiral spring and those desirable qualities of durability and tenacity of a link fabric spring, the arrangement being such that with the application of uneven weights or stress to two different portions of the improved spring, the same will be flexed at such points of application and evenly and uniformly distribute the stress throughout the entire construction without the recognized objectionable center flexing or sagging of the spring, which, as will be understood, would cause the several objects of uneven weight to commonly move into the pocket so formed with the resultant discomforture, as when such objects are persons of different weights.

It is also an object of the invention to provide a bed spring which with the application of weight to but one side portion thereof will be flexed only at that particular point of application to resiliently absorb and support the same.

Another and equally important object of the invention is to provide a bed spring wherein the spring and connecting and supporting elements thereof are so relatively arranged as to cooperate for the even diffusion of weight or stress throughout the same, as a unit, and at the same time, will so function as to brace each other, hence, lending materially to its durability and strength.

Yet another object of the invention is to provide a bed spring employing side bracing strips or struts which will function with the application of weight or stress thereto, to prevent side or marginal sagging of the spring or the engaging or resting of the side portions of the spring upon the side support bars of the spring frame and yet, permit of ample movement of such side portions of the spring for absorbing and resiliently supporting such weight.

Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings, and in the detailed following description based thereon, set out one possible embodiment of the same.

In these drawings:—

Figure 1 is a plan view of my improved spring having the intermediate portion of the same and the frame supporting it broken away;

Figure 2 is a fragmentary detail in side elevation of the improved spring and the frame supporting the same;

Figure 3 is an enlarged fragmentary detail in perspective showing the connection as between the side supporting strip or strut and the spring fabric; and,

Figure 4 is an enlarged fragmentary detail in perspective showing the novel form of connection as between the parallel longitudinally disposed series of supporting links and the helical springs.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the invention may be stated to comprehend a substantially rectangular frame composed of jointed angle iron bars indicated in its entirety by the numeral 1, the head and foot bars of the frame being arranged above the side bars in the manner shown in the Figure 2, as is common in the art.

The improved spring fabric comprises a plurality of spaced parallel series of longitudinally disposed links generally indicated by the numeral 2, said links being loosely jointed at their adjacent ends by means of rings 3, which, as will be noted, are of a size or diameter sufficient to permit of loose or free relative pivotal movement as between the ends of said links 2 so jointed. These parallelly arranged series of loosely jointed longitudinally disposed links 2, as will be noted upon reference to the Figure 1, are arranged within the side members of the spring supporting frame 1 and are of different lengths, the longer of the series

being arranged alternately of the shorter thereof. Upon the free ends of the outermost links of the various series of the same, other rings 4 are loosely connected or received and in turn, have the adjacent ends of coiled springs 5 and 6 connected thereto, the remaining ends of which springs are positively connected or secured to the head and foot pieces of the spring frame 1 in equidistant spaced relation throughout their lengths. In this connection, it is to be noted that the arrangement of the coiled springs 5 and 6 which serve to connect the longitudinally disposed series of loosely jointed links to the foot and head pieces of the frame 1 are of different lengths and that the same are alternately arranged, that is, to one end of one series of loosely jointed links, a short spring 5 is connected for effecting connection of the same with the adjacent foot or head piece of the spring frame, while to the opposite end of said series of links a long spring 6 is connected whereby to effect connection of that particular end with the corresponding foot or head piece of the spring frame 1. This arrangement is clearly shown in the Figure 1.

If desired, one or more of the series of loosely jointed links 2 may be provided with a different disposition of the links, that is, instead of single longitudinally disposed loosely jointed links such as indicated by the numeral 2, pairs of links may be arranged in juxtaposed relation as indicated by the numeral 7 and have their adjacent ends loosely inter-connected by rings 8 corresponding to the rings 3. Pie plates 9 having spaced openings therein are connected to the opposite end of the series of links and receive therein the adjacent ends of coiled springs generally indicated by the numerals 10 and 11, the springs 10 being of lengths less than the lengths of the springs 11 and thus corresponding to the arrangement of the springs 5 and 6, as heretofore described. By this latter arrangement of the links 7, the spring fabric will be positively divided into sections as where a spring of size adaptable for use upon a double bed is employed.

Arranged between the various parallel longitudinally disposed series of links 2 and 7 are contractile coiled springs generally indicated by the numeral 12, said springs being arranged in substantially V-shaped pairs, as shown in the Figure 1, and extending in zig zag or substantially V-shaped formation transversely throughout the width of the bed spring fabric. Certain of the ends of these coiled springs 12 are bent or otherwise engaged with the adjacent rings joining the adjacent ends of one series of the longitudinally disposed links, while the opposite ends of the springs are similarly engaged with the diagonally opposite rings 3 or 8 of the adjacent or next longitudinally disposed series of links.

It should be here noted that the type of coiled springs 5, 6, 10 and 12 employed in the production of my improved spring is of the expansion and compression or give and take design and in consequence, will act to function with the application of either pull or thrust thereto.

Due to the peculiar zig zag or V-shaped transverse arrangement or formation of the coiled springs 12 in the improved spring fabric, it will be understood that they will function to effect a resilient and weight absorbing connection as between each individual longitudinally disposed series of loosely jointed links 2 or 7, and in consequence, with the application or weight or stress to any one point of the spring fabric so constructed, flexing of said fabric only at that point will occur. Yet, at the same time, that portion of the fabric in proximity to the portion being flexed under stress or weight will have a portion of the same imparted thereto and in consequence, said stress or weight will be evenly diffused throughout the spring construction hence, permitting the latter to effectually and resiliently support the same.

Also, by reason of the alternate arrangement of the long and short springs 5, 6, 10 and 11 with respect to the free ends of the longitudinally disposed series of loosely joined links 2 and 7, the application of stress or weight thereto will be more evenly and uniformly diffused throughout the spring construction. For example, it is an accepted fact that the resilient qualities of a spring increase with the length of the same and in consequence, by alternately connecting long and short springs to the opposite ends of the longitudinally disposed rows of links, it will be understood that the spring supporting qualities of the bed spring fabric from either of its longitudinally disposed ends will be the same. Thus, where a greater weight is applied to either end of the spring fabric and to the opposite end thereof, the capability of the spring to yieldably support the same will be in no way detracted from, since the short springs will provide a more rigid support, whereas the longer springs will afford a more yieldable support. Thus, a marked advantage is secured over those forms of spring fabrics wherein a transverse series of long springs is employed for connecting one end of the spring fabric to an adjacent end of the bedspring frame, whereas a transverse series of short springs is employed to connect the opposite end thereof to its particular end of the spring frame. Furthermore, by interposing, alternately, the long springs, it will be understood that a greater resiliency will be afforded by the

spring than would result from the use of a plurality of transverse series of short springs, whereas the stability of the spring construction is increased by the interpositioning of the short springs between the long springs thereof.

To prevent undue side flexing or sagging of the opposite side portions of my improved spring fabric, I may and preferably do employ bracing strips or struts indicated by the numeral 13, consisting of flat strips of metal of lengths slightly less than the lengths of the spring supporting frame 1. Openings are formed in the opposite ends of these struts 13 and serve to permit the connection of the adjacent ends of pairs of give and take coiled springs 14 thereto, the opposite end of such springs being fixedly connected to the adjacent outer end portion of the head and foot pieces of the spring frame 1 in the manner shown in the Figures 1 and 2. Metal straps or links 15 snugly embrace these struts 13 at points equidistant throughout their respective lengths and are loosely connected at their inner ends to the adjacent rings 3 inter-connecting the various links of the outermost longitudinally disposed series thereof, as shown in the Figure 1 and in this way, it will be understood that a resilient yet bracing connection between the side portions of the spring fabric and the bracing strips or struts 13 will be afforded. Because of this connection, a bracing action will be entailed and in consequence, excessive flexing or sagging of the opposite side portions of the spring fabric to an extent whereat the same will strike, engage or rest upon the longitudinal side pieces of the spring frame 1 will be prevented. Yet, the resilient supporting qualities of the side portions of the spring fabric will be in no way detracted from. Also, it will be understood that because of the loose or pivotal connection as between the braces or struts 13 and the side portions of the spring fabric, the latter will be permitted to effectually function to absorb and resiliently support weight or stress directed thereonto.

Manifestly, the construction shown is capable of considerable modification and such modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. A bed spring fabric comprising a plurality of parallel series of loosely joined longitudinally disposed comparatively rigid links and longitudinally disposed rows of spaced diagonally extending; coiled springs arranged in substantially Z-shaped transverse relation between said parallel series of links and connected to the same adjacent their loose jointures.

2. A bed spring fabric comprising a plurality of parallel series of loosely joined longitudinally disposed comparatively rigid links, and longitudinally disposed rows of spaced diagonally extending; coiled springs arranged in reversely disposed transverse relationship between said parallel series of links and loosely connected to the same adjacent their respective loose jointures.

3. A bed spring fabric comprising a plurality of parallel series of loosely joined longitudinally disposed comparatively rigid links, and longitudinally disposed rows of spaced diagonally extending; coiled springs arranged in reversely disposed fashion between said parallel series of links and connected to the same adjacent their loose jointures, said springs being disposed in substantially zig zag formation transversely of the fabric.

4. A bed spring fabric comprising a plurality of parallel series of loosely joined longitudinally disposed comparatively rigid links, and coiled springs of give and take type arranged in substantially V-shaped transverse relationship between said parallel series of links and loosely connected to the same adjacent their respective loose jointures.

5. A bed spring comprising a frame, a plurality of parallel series of loosely joined longitudinally disposed links arranged in said frame, coiled springs of different lengths connected to the opposite ends of said series of longitudinally disposed links and to adjacent portions of the foot and head pieces of said frame, said springs of different lengths being arranged in alternate fashion, and coiled springs arranged in substantially V-shaped transverse relation between said parallel series of links and connected to the same adjacent their respective loose jointures.

6. A bed spring fabric comprising a frame, a plurality of parallel series of loosely joined longitudinally disposed links arranged therein, coiled springs of different lengths connected to the free ends of said series of links and to adjacent portions of the head and foot pieces of said frame, said springs of different lengths being arranged in alternate fashion, coiled springs arranged in substantially V-shaped transverse relation between said parallel series of links and loosely connected to the same adjacent their respective loose jointures, bracing strips resiliently connected at their opposite ends to the opposite ends of the head and foot pieces of said frame, and means for effecting loose connection between the outermost of said series of inter-connected links and said bracing strips.

7. A bed spring fabric comprising a frame including head and foot pieces, a plurality of parallel series of loosely joined longitudinally disposed links therein, coiled springs of different lengths connected to the free ends

of said series of inter-connected links and to adjacent portions of said head and foot pieces, said springs of different lengths being arranged in alternate fashion, diagonally disposed coiled springs arranged between said parallel series of links and connected to the same adjacent their loose jointures, said springs extending in zig zag formation transversely throughout the width of the fabric, struts arranged parallel to the outermost of said series of inter-connected links, coiled springs connecting the opposite ends of said struts to the opposite end portions of said head and foot pieces, and metal straps snugly embracing said struts equi-distant throughout their respective lengths and loosely connected to said links adjacent their respective loose jointures.

In witness whereof I have hereunto set my hand.

GEORGE H. BAMBERGER.