No. 628,498. Patented July 11, 1899.

J. E. SOMMERS.

BED BOTTOM.

(Application filed June 30, 1898.)

(No Model.)

Fig. 1.

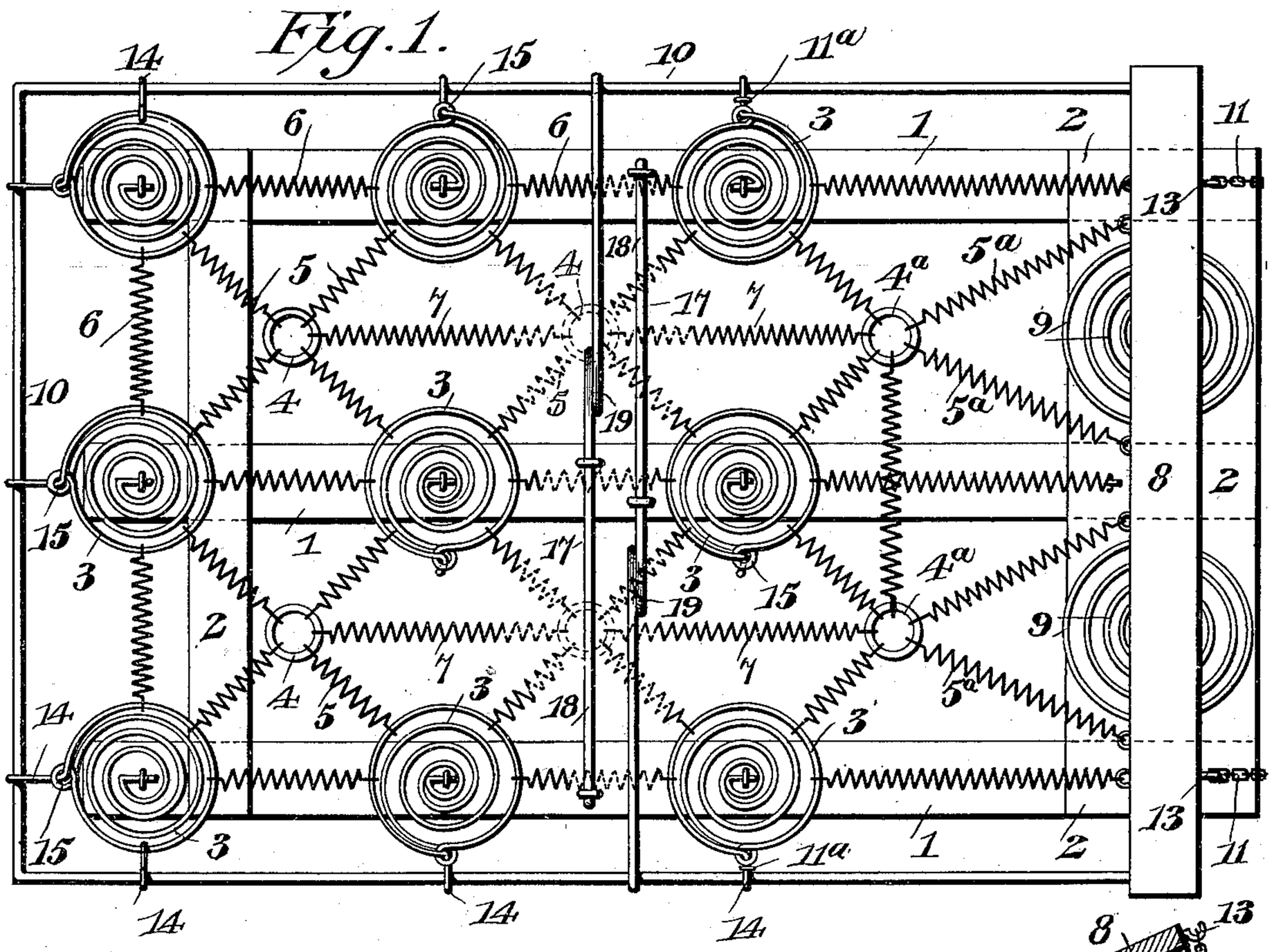


Fig. 2.

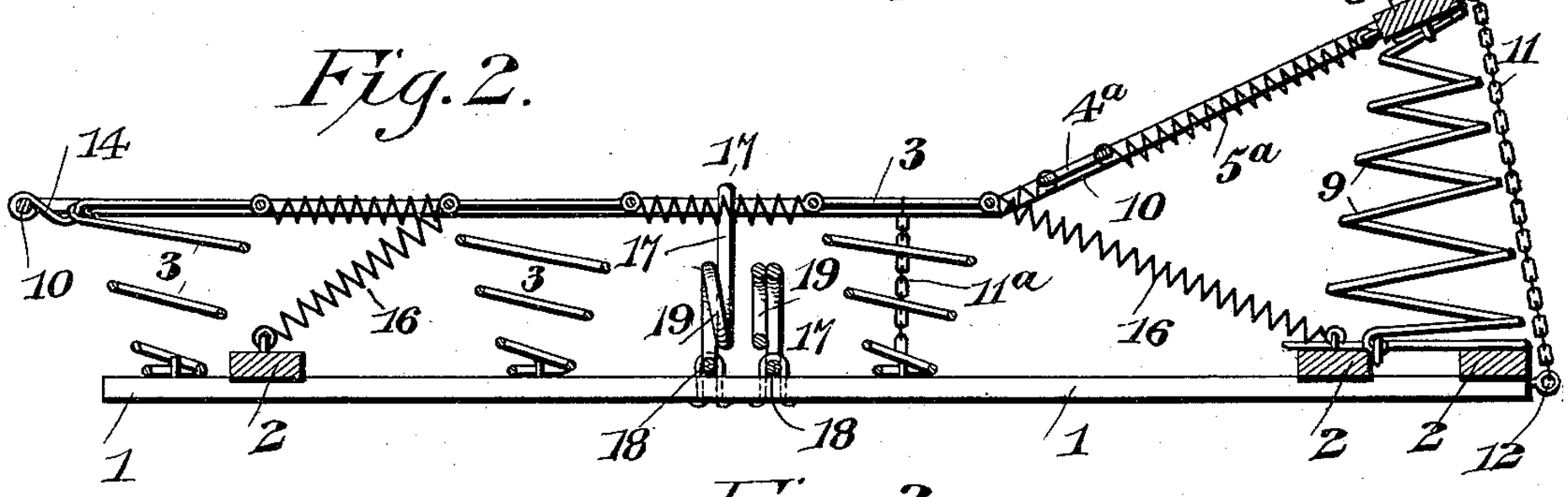
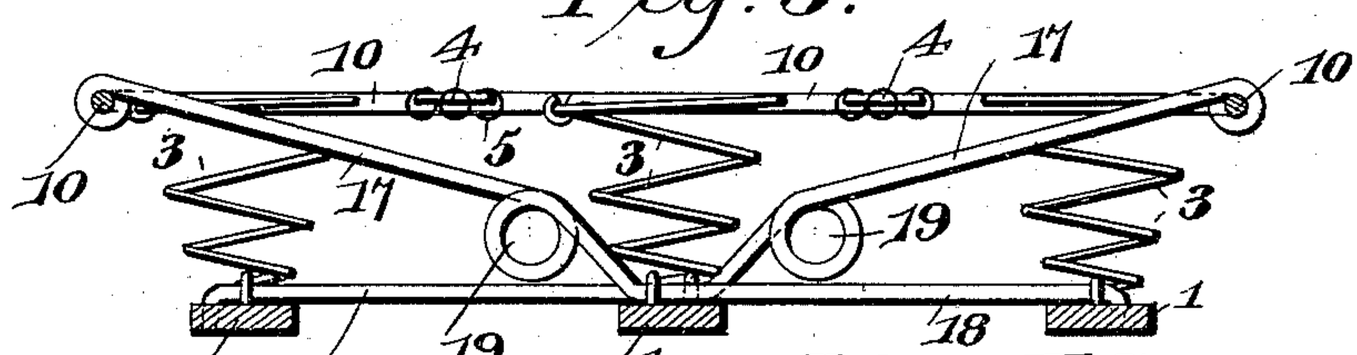


Fig. 3.



Witnesses

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BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 628,498, dated July 11, 1899.

Application filed June 30, 1898. Serial No. 684,811. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. SOMMERS, a citizen of the United States, residing at North Baltimore, in the county of Wood and State of Ohio, have invented a new and useful Bed-Bottom, of which the following is a specification.

My invention relates to bed-bottoms, and has for its object to provide a simple, compact, and efficient construction and arrangement of parts inclusive of an adjustable head-rest, which is held in its normal or elevated position by the combined operation of a spring-frame and supporting-springs of the spiral type, and, furthermore, to provide such a relative construction of spiral springs and connections between the same and the bracing-frame as to maintain the parts of the bed-bottom permanently in their operative positions and prevent such displacement as to render the members or elements thereof either partially or wholly inoperative.

Further objects and advantages of this invention will appear in the following description and the novel features thereof will be particularly pointed out in the appended claims.

Figure 1 is a plan view of a bed-bottom constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section taken parallel with and contiguous to the planes of the transverse braces of the retaining-frame.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The supporting-frame of the bed-bottom embodying my invention may, as illustrated in the drawings, consist of longitudinal side and intermediate bars 1, connected by cross-bars 2, upon which the spiral body-springs 3 are seated. Preferably located at the center of each group of body-springs is a connecting-ring 4, by which the inner ends of coiled connecting-springs 5 are united, said connecting-springs radiating from the rings and being attached at their outer extremities to the upper coils of the body-springs 3. Also the body-springs are connected longitudinally and transversely in series parallel with the longitudinal and transverse bars of the supporting-frame by similar coiled springs 6. Also the rings 4 are connected by longitudinal and transverse intermediate springs 7, whereby all of the intervals between the body-springs are occupied to form a uniform surface suitable for upholding a mattress or the equivalent thereof.

The head-rest includes a bar 8, arranged transversely above the head end of the supporting-frame and supported by head-rest springs 9, which are seated upon the cross-bars 2, and this head-rest bar is of a length greater than the interval between the outermost sides of the side marginal body-springs 3 and is connected with the side arms of a U-shaped retaining-frame 10, which forms the border of the bed-bottom in the plane of the uppermost coils of the body-springs and which is continuous and of stout wire. The side arms of the retaining-frame 10 are upwardly deflected contiguous to the transverse line of body-springs 3, which is near the head-rest bar 8, and the head-rest bar is connected with the springs of said adjacent transverse series by means of rings 4^a and radiating springs 5^a, which occupy relative positions analogous to those described herein for connecting the body-springs in the horizontal portion of the bed-bottom. The elevation of the head-rest bar 8 is controlled by limiting or stop chains 11, attached at their lower ends to the supporting-frame by means of hooks or keepers 12 and having their links detachably engaged with hooks 13 on the head-rest bar. It is obvious that in order to lower the head-rest it is simply necessary to depress the same manually to engage the hooks 13 with those links of the chains 11 which will maintain it at the desired adjustment.

As above indicated, a function of the frame 10 is to maintain the movable parts of the bed-bottom in their operative positions, and in order to accomplish this I provide a direct and positive connection between each of the marginal body-springs 3 and the frame 10, said connections consisting of links 14, which radiate, respectively, from the body-springs. A convenient construction of link is to extend the upper terminal of each body-spring through a coiled eye 15, and thence carry it radially to the retaining-frame, whereby the link is integral with the uppermost coil of the body-spring and is approximately rigid. In addition to the increased strength derived

from this construction it will be seen that the number of parts is diminished, as well as the number of joints between the parts, and the loose end of the spring, which in the ordinary practice must be wrapped or otherwise shielded to protect a superposed mattress, is conveniently disposed. In other words, the loose end of each marginal body-spring forms the link by which connection is made with the retaining-frame, and the outer end of this link being passed over and then doubled upon itself it is obvious that the extremity thereof will lie under the body portion of the link, and thus will be held out of contact with a superposed fabric.

In addition to the main limiting-chains 11 I employ auxiliary intermediate limiting-chains 11[a], connecting the side arms of the retaining-frame with a supporting-frame approximately in the plane of that transverse series of body-springs 3 which is arranged adjacent to the head-rest bar, and hence near the upward bends formed in the side arms of the retaining-frame at the point of junction of the head-rest with the body portion of the bed-bottom. Thus the use of the U-shaped retaining-frame forms a direct connection between the marginal springs of the bed-bottom, and as each intermediate spring is connected with a plurality of marginal springs, while the marginal springs are in turn connected by the springs 6 parallel with the adjacent portions of the retaining-frame, it is obvious that relative displacement of the members, and particularly of the body-springs, is rendered practically impossible, except by the absolute breakage of one or more of the elements. The retention of the parts in their proper positions, however, is made still more positive by the use, as shown in Fig. 2, of a plurality of guy-springs 16, extending longitudinally and downwardly from intermediate and marginal body-springs to the cross-bars 2, which are located near the head and foot of the bed-bottom. These guy-springs are especially desirable in connection with one or more transverse lines of body-springs located at an intermediate point of the bed-bottom, where the major portion of the weight of a superposed body is applied.

To prevent transverse contraction or yielding of the retaining-frame, I have shown a pair of bracing-arms 17, having a securing-arm 18, which preferably extends from a longitudinal supporting-frame bar 1 at one side of the bed-bottom to the center longitudinal bar of said frame, while the bracing-arm proper, which is a continuation of said securing-arm, springs from said central longitudinal bar and thence extends in an upwardly and outwardly inclined direction to an intermediate point of the retaining-frame, to which it is secured. Also each bracing-arm is preferably provided at an intermediate point, preferably adjacent to its inner end or adjacent to the center of the supporting-frame, with a yielding coil 19, which allows vertical movement of the retaining-frame, while preventing horizontal contraction thereof, and hence serving effectually to prevent the displacement of the body-springs.

The device embodying my invention is simple, the same being particularly desirable for use in connection with invalid-beds, where it is necessary to adjust the elevation of the head of the patient with the least possible disturbance of and inconvenience to the patient, and it will be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A bed-bottom having a supporting-frame, and body-springs seated at their lower ends thereon, a U-shaped-frame rod arranged in the plane of the uppermost coils of the body-springs and having its arms provided with upwardly inclined or deflected terminal portions, links extending from the upper coils of the marginal body-springs to the frame-rod, a plurality of these links being integral with said springs to yieldingly support the frame-rod, a head-rest bar attached to the extremities of said upturned portions of the side arms of the frame-rod, supporting-springs for the head-rest bar, and means for limiting the upward movement of said bar, substantially as specified.

2. A bed-bottom having a supporting-frame, body-springs seated at their lower ends upon the supporting-frame, a head-rest bar arranged above the plane of the uppermost coils of the body-springs, supporting-springs for the head-rest bar, a U-shaped-frame rod arranged in the plane of the upper coils of the body-springs and having its side arms provided with upwardly deflected or inclined terminal portions attached at their extremities to said head-rest bar, a link extending radially from the uppermost coil of each body-spring and attached to the frame-rod, and transversely-disposed bracing-arms secured at their inner ends to the supporting-frame, inclining upward and outward toward, and attached at their outer extremities to, the side arms of the frame-rod, said bracing-arms being provided with intermediate spring-coils, substantially as specified.

3. A bed-bottom having a supporting-frame, body and head-rest springs seated upon the supporting-frame, a head-rest bar arranged upon said supporting-springs, means for limiting the upward movement of the head-rest bar, a U-shaped-frame rod having the extremities of its side arms upturned and attached to the head-rest bar, the body portion of said frame-rod being arranged in the plane of the uppermost coils of the body-springs and outside of the same, rigid connections between the uppermost coils of the marginal

body-springs and the frame-rod, intermediate connections between the body-springs, guy-springs 16 extending longitudinally from intermediate body-springs toward the extremities of the supporting-frame and attached at their outer ends thereto, and intermediate limiting devices connecting the arms of the frame-rod with the supporting-frame approximately in the transverse plane of that series of body-springs which is adjacent to the head-rest bar, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN E. SOMMERS.

Witnesses:
CHAS. F. BLACK,
B. L. PETERS.