I. E. PALMER.

RESILIENT BOTTOM FOR COUCH HAMMOCKS, &c.

APPLICATION FILED MAY 13, 1909.

955,351. Patented Apr. 19, 1910.

Fig. 1

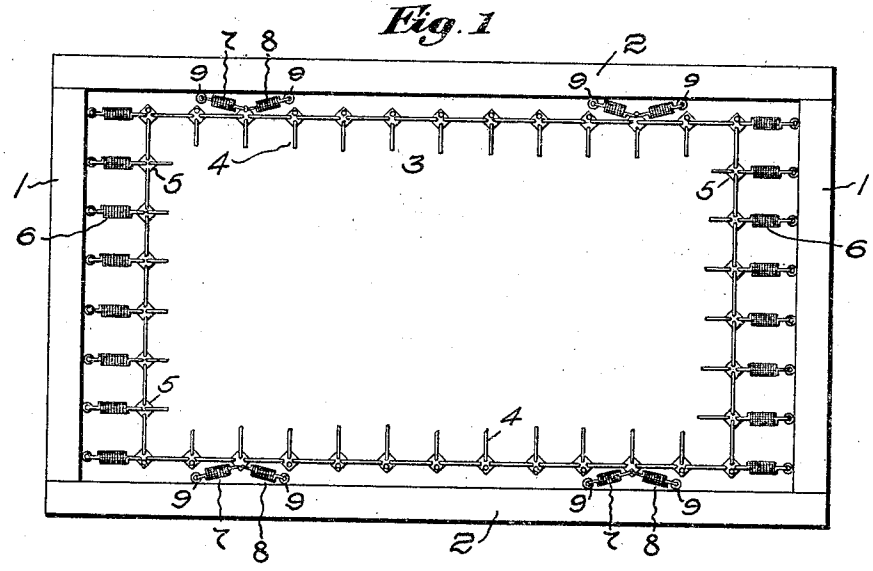


Fig. 2

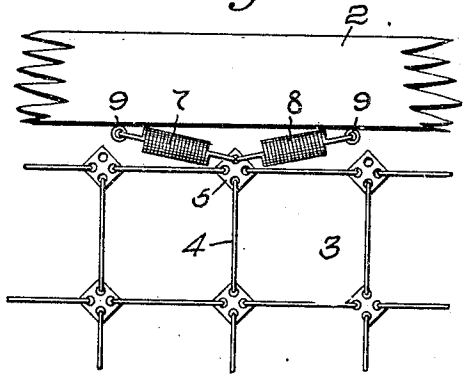


Fig. 3

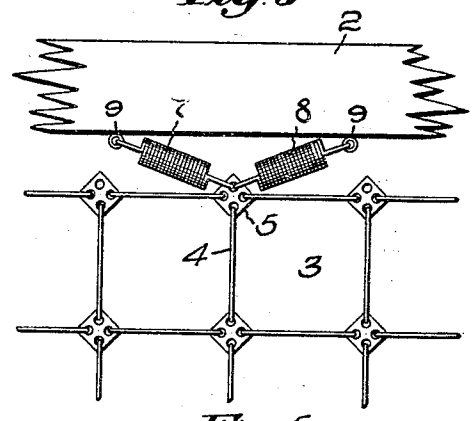


Fig. 4

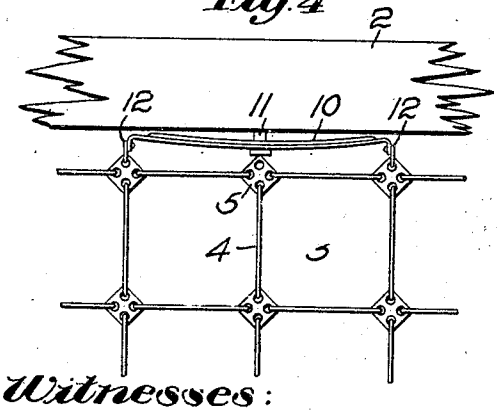
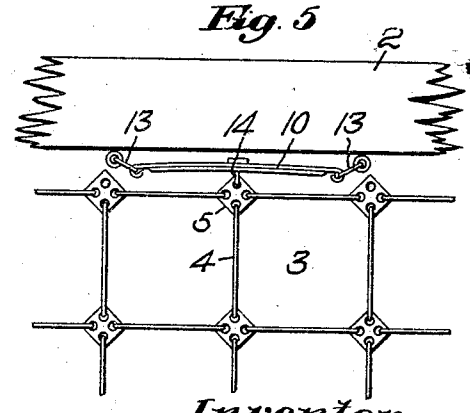


Fig. 5



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UNITED STATES PATENT OFFICE.

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RESILIENT BOTTOM FOR COUCH-HAMMOCKS, &c.

955,351. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed May 13, 1909. Serial No. 495,685.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented an Improvement in Resilient Bottoms for Couch-Hammocks, &c., of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

This invention relates to resilient bottoms for couch hammocks and other structures, and the object thereof is to provide a resilient bottom having a frame and seating and lateral springs connecting the frame and seating so positioned and arranged as resiliently to support the lateral edges of the seating in close proximity to the longitudinal members of the frame and in substantially the plane thereof.

Further objects of my invention are more specifically set forth hereinafter.

In order that the principles of the invention may readily be understood, I have disclosed certain types or embodiments thereof in the accompanying drawings, wherein—

Figure 1 is a plan view of a resilient bottom embodying my invention; Fig. 2 is a detail of a portion of the structure shown in Fig. 1 and representing the position of the parts when the device is not subjected to the strain of use; Fig. 3 is a similar detail, but representing the position of the parts when subjected to the strain of use; and Figs. 4 and 5 are similar details of modified structures and representing the position of the parts when not subjected to the strain of use.

While the resilient bottom herein disclosed may be of general application, it is more particularly intended for use in connection with so-called couch or framed hammocks, which support the occupant in substantially a horizontal position. If desired, the frame may be applied to and rest upon the upper surface of the hammock body, or it may be secured to the hammock body in such way as to underlie the body or to be connected thereto in any suitable manner not herein necessary to describe in detail.

The frame of the resilient bottom is composed of end members 1—1 and longitudinal or side members 2—2 connected in any suitable manner, and preferably lying in the same plane so that when the frame is applied to the hammock, the side and end members may contact therewith and occupy the minimum of space. The seating of the resilient bottom is indicated at 3, it being of any suitable structure and material. Preferably, however, it is composed of wire links 4 rectangularly arranged and connected to suitable eyes 5. Preferably the ends of the seating are connected to the end members 1 of the frame, and are herein shown as connected thereto by coiled springs 6, of which any suitable number may be employed. The sides of the seating are connected to the side members 2 of the frame by springs. I may employ any suitable type of spring, as for example the coiled springs shown in Figs. 1, 2 and 3, or the flat springs shown in Figs. 4 and 5. In the event that coiled springs are employed, I arrange the springs in pairs as represented at 7, 8 in Figs. 1, 2 and 3. Preferably the inner or adjacent ends of each pair of springs 7, 8 are connected to a common eye 5, the members of said pairs of springs extending in opposite directions and being connected at their outer ends to the inner edges of the side members 2 in any suitable manner, as for example by screw eyes or hooks 9 screwed into said inner edges. It is important that the lateral edges of the seating be positioned close to the inner edges of the lateral members 2, for in this manner the said lateral members as well as the seating may be utilized without inconvenience by the occupant of the hammock. Referring to Figs. 1 and 2, it will be apparent that the members 7, 8 of each pair of side springs are, when not subjected to the strain of use, in substantial alinement with each other, and therefore in substantial or general parallelism with said side members 2—2 and are relieved of all strain. In this manner, it is possible to position the lateral edges of the seating close to the said side members of the frame and yet to obtain the full effect of the elasticity of the springs. I am aware that heretofore seatings have been connected to the lateral members or frames by springs extending inward in substantial parallelism with the end members of the frame; that is, normal to said side members. In such case, however, it has been impossible to position the lateral edges of the seating close to the lateral edges of the frame and yet to employ springs of sufficient size and length satisfac-

torily to support the seating in a resilient manner so as to be comfortable in use.

Owing to the fact that in applicant's preferred construction the springs are in substantial alinement and their inner ends are connected to a common point or to substantially a common point, the inner end of each spring of a pair mutually supports the inner or adjacent end of the other member of this pair, so as substantially to prevent downward sagging of the lateral edges of the seating and to restrict the movement or yielding of the seating in use to one in substantially the plane of the frame. That is to say, the lateral edges of the seating yield inwardly and not downwardly. Moreover, when the springs are arranged as shown the strain imparted by the seating to the inner ends of a pair of springs is immediately divided and distributed, and thus conveyed to the separated eyes to which the outer ends of the springs are connected. I am also aware that the lateral edges of seatings have been connected to the lateral edges of the frame or frames by coiled springs extending inwardly and downwardly, but not supporting the seating in substantially the plane of said side members. By my invention I am enabled to support the lateral edges of the seating in substantially the plane of the side members, even when the device is subjected to the strain of use.

When the device is in use, the seating herein disclosed will not sag down abruptly from the side members, but the downward curve of the seating is gradual. Thus, there is no abrupt or appreciable change from the plane of the side members 2 to the plane of the lateral edges of the seating when in use, and thus the inner edges of the side members 2 do not present ridges or sharp portions to the body of the user. In other words, it is possible with my invention to use without discomfort the entire width of the bottom; that is to say, the seating and the side members of the frame. When the device is not in use the side and end members of the frame, the seating and the side and end springs all lie in the same plane. When the device is subjected to the strain of use, the lateral edges of the seating and the side springs still remain in the plane of the side members of the frame and only the central portion of the seating at the most extends below the general plane of the frame, this depending, of course, upon the amount of the weight to which the device is subjected. In any event, however, the slope or inclination of the seating, when viewed in cross section, is slight and gradual. When the device is not subjected to the strain of use, the coil springs 7, 8 extend in substantial alinement and are relieved of substantially all strain and hence they do not tend to warp, strain or distort said side members, as there is no strain upon the latter when the seating is not in use. Viewing Figs. 1 and 2, it will be apparent that when the device is not in use, the said springs 7, 8 extend in substantial alinement and in general parallelism with the side members 2—2 of the frame. It will be further observed that the lateral edges of the seating may be positioned close to the inner edges of the side members 2—2, and that the said lateral edges need be separated from the side members 2—2 by a distance but slightly exceeding the diameter of said coiled springs. When the device is subjected to the strain of use, the lateral edges of the seating are drawn inward, thereby drawing the springs 7, 8 into substantially the position represented in Fig. 3. In such position, however, the inner edges of said seating are so closely adjacent to the side members 2 and are so maintained in substantially the plane of said side members 2 that the occupant of the hammock may without discomfort rest upon or utilize either side member 2 of the frame as well as the seating.

Viewing Fig. 3, it will be apparent that when the device is subjected to the strain of use the pull of the spring 7, 8 is exerted upon the sides of the eyes or hooks 9 and is not so exerted as to tend to pull said hooks or eyes from the members 2. In other words, the lateral pull of the springs 7 and 8 is resisted by the entire length of the hooks or eyes that is embedded in the members 2, whereas if the pull of the springs 7 and 8 were directly or substantially directly inward, said hooks or eyes could be more readily drawn from their supports. Moreover, if the side springs extended inward in a direction normal to said side members 2, the tendency of the springs would be to bow or bend said side members inward.

In Figs. 4 and 5, I have illustrated other types of springs that may be employed to connect the seating to said side members. In Fig. 4, I have shown a substantially flat spring 10 connected at its middle portion to the side member 2 by a bolt 11, the ends of the spring being suitably connected as indicated at 12 to the lateral edges of the seating. In Fig. 5, I have shown a reverse construction, the spring 10 being connected at its ends 13 to the side member 2 and at its middle portion 14 to the lateral edge of the seating.

It will be apparent that in the construction shown in Figs. 4 and 5, the springs 10 are in substantial alinement with the longitudinal members 2 and that the lateral edges of the seating may be arranged in close proximity to said members 2. Moreover, the springs 10, when the device is not subjected to the strain of use, are themselves relieved of substantially all strain. If the ends of the spring 10 be connected to the longitudinal members 2, any suitable connecting

means may be provided permitting the proper flexing of the springs in use.

It is apparent from the foregoing description that the resilient bottom may readily be applied to a hammock of the couch type, and that the construction is such as to permit the lateral edges of the seating to be supported close to the inner edges of the longitudinal members of the frame, while permitting the interposition between the said seating and longitudinal members 2 of thoroughly resilient supports, serving to sustain said lateral edges of the seating in substantially the plane of the frame, even when subjected to heavy strains in use. Thus, the entire width of the frame may be readily utilized by the occupant without any discomfort.

Preferably the springs at both the sides and ends, whether the flat or coiled springs be employed at the sides, are connected to the side and end members of the frame below the upper surface of the latter. Preferably also the upper surfaces of the side and end members of the frame lie in the same plane. Thus, the frame has a smooth upper surface peculiarly suitable for use with couch hammocks. Moreover, by connecting the side springs to the side members between the upper and lower faces of the latter, there is no direct strain brought upon either face of said members, and what is even more important, the frame and seating have two identical faces, this permitting reversal of the frame without loss of any of the advantages previously set forth or altering the relation of the then upper face of the seating to the frame.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. A resilient bottom for couch hammocks and other structures comprising in combination, a frame having side and end members, whose upper faces are in substantially the same plane, a seating, means connecting said seating to the said end members and side, coiled springs connecting said seating to the inner edges of said side members, said side springs being arranged in pairs whose inner ends are connected to substantially a common point, so that the inner ends of each pair of springs are mutually supporting and substantially prevent sagging of the lateral edges of the frame in use, the members of each pair of springs being substantially in alinement and in parallelism with the side members and relieved of strain when the seating is not subjected to the strain of use, the said frame being reversible without substantially altering the relation of the then upper face of the seating thereto.

2. A resilient bottom for couch hammocks and other structures comprising in combination a frame having side and end members whose upper faces are in substantially the same plane, a seating, means connecting said seating to the inner edges of said end members and side coiled springs connecting the lateral edges of said seating to the inner edges of said side members, said side springs being arranged in pairs having adjacent ends connected to substantially a common point, the members of each pair of springs being substantially in alinement and in parallelism with the side members of the frame and relieved of strain when the seating is not subjected to the strain of use.

3. A resilient bottom for couch hammocks and other structures, comprising in combination a frame having side and end members whose upper faces are in substantially the same plane, a seating, means connecting said seating to the inner portions of said end members, and side spring members connecting the lateral edges of said seating to the inner portions of said side members, each of said side spring members having at least three points of connection to the side members of the frame and the seating, and normally, when the seating is not subjected to the strain of use, being in substantial parallelism with said side members and with the adjacent edges of said seating and supporting the lateral edges of said seating in proximity to said side members of the frame, said spring members being substantially relieved of strain when the seating is not subjected to the strain of use.

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

ISAAC E. PALMER.

Witnesses:
FRED. E. FOWLER,
CHAS. M. SAUER.