

A PORTABLE SPRING BED

The present invention relates to a portable bed, and more particularly to a bed having elastic members incorporated.

5 It is known that an air-cushioning bed can be used outdoors. One may sleep thereon without being disturbed by the rugged ground surface of a place filled with pebbles at an open-air camping.

10 The present invention attempts in another approach to provide a portable spring bed which can keep the user apart from the ground, while still providing sufficient comfort.

According to the present invention there is provided a portable spring bed comprising:

15 a bed member having two longitudinal sides which are single turned and stitched up to form two channels; two side pieces which are formed of a plurality of interengagable hollow tube sections and received in said two channels respectively, wherein each of said
20 hollow tubes has a convergent end portion which is able to fit securely in the internal hollow portion of another of said hollow tubes;

a plurality of mounting means mounted beneath said side pieces including a hollow cylinder and a
25 projection which are pivotally engaged with said side pieces, wherein said projection includes a first through hole;

a generally flat member curving up at its central portion for being placed on a rugged ground surface,
30 the generally flat member including a lateral flange at each of its two ends, wherein each of said flanges includes a second through hole, and said generally flat member has a support hole at a distance from each of its two ends;

35 an elastic member engaging with said first and second through holes for creating springiness in said

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bed; and

a supporting member having a bent end which is pivotally mounted about one of said support holes, the other end of the supporting member being received in
5 said hollow cylinder of said mounting means.

The supporting member is pivotally mounted between the flat piece and the mounting means for supporting the side piece spaced with the ground surface.

The bed member can be a sheet of fabric or
10 synthetic plastic.

The present invention is intended to provide a portable and comfortable spring bed which is preferably capable of standing at a rugged ground surface.

For a better understanding of the present
15 invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

Figure 1 is a perspective view of a portable spring bed of the present invention;

20 Figure 2 is a partial horizontal section view of a side piece of a portable spring bed of the present

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invention;

Figure 3 is a side view of a portable spring bed of the present invention;

Figure 4 is a sectional view taking along B-B direction of Fig. 3; and

Figure 5 is a schematic and sectional view showing a portable spring bed of the present invention in use.

Referring now to Fig. 1, there is shown a portable spring bed which includes a bed member 1, side piece 2, mounting means 3, elastic member 5, flat piece 4 and supporting member 6. Each of the two longitudinal sides of bed member 1 is single turned and stitched up to form a channel 11 to receive a side piece 2. Side piece 2 can be formed of two hollow tubes 21, 22. The engaging ends of tubes 21, 22 are shaped convergent portion 211 and internal divergent portion 221 respectively for being able to interengage securely, as shown in Fig. 2.

Mounting means 3 is mounted beneath side pieces 2, as shown in Fig. 3. Mounting means 3 includes a hollow cylinder 31 and a projection 32. Flat piece 4 curls up at a central portion 41 and has a rectangular cross section. Each of two lateral flanges 42 of flat piece 4 is provided at an end of flat piece and has a hole 421. Flat piece 4 also includes two through holes 43, each of which is provided at a distance to an end of flat piece 4. Two barbs 51, 52 of elastic member 5 engage with a hole 321 of

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projection 32 and hole 421 of lateral flange 42 respectively. Supporting member 6 has a circular cross section and has an upper end received in a hollow portion 311 of cylinder 31. A bent end of supporting member 6 is pivotally mounted through one of holes 43 and is provided with a hole 62 at the end portion for retaining a cotter pin 61 to guard the bent end in a hole 43, as shown in Fig. 4.

A schematic sectional view shown a portable spring bed in use is shown in Fig. 5. In a free condition, bed member 1 is stretched by springs 5 and tends to have a plane surface, as shown in the solid line of Fig. 5. When force is applied to bed member 1, supporting members 6 tend to rotate about their own bent ends inwardly and springs 5 elongate in a quantity corresponding to the force applied as set out by the Hook's Law, as shown in the phantom line in Fig. 5.

A portable spring bed is disassembled like follows:

Upper barb 51 of spring 5 is released from hole 321 of projection 32. Then, upper end of supporting member 6 is detached from hollow portion 311 of cylinder 31. And then, two sections 21, 22 of side piece 2 are disengaged and drawn out of the space 11. Now, sections 21, 22 of side pieces 2 as well as flat pieces 4 attached with supporting members 6 and springs 5 can be gathered together or wrapped up in bed member 1 and ready for portage.

With curling up at central portion 41 of flat piece 4, such spring bed can be placed on a rugged ground



surface without failure. In addition, bed member 1 can be a fabric, such as a sheet of canvas or a kind of synthetic plastic.



CLAIMS

1. A portable spring bed comprising:

a bed member having two longitudinal sides which are single turned and stitched up to form two channels;

5 two side pieces which are formed of a plurality of interengagable hollow tube sections and received in said two channels respectively, wherein each of said hollow tubes has a convergent end portion which is able to fit securely in the internal hollow portion of
10 another of said hollow tubes;

a plurality of mounting means mounted beneath said side pieces including a hollow cylinder and a projection which are pivotally engaged with said side pieces, wherein said projection includes a first
15 through hole;

a generally flat member curving up at its central portion for being placed on a rugged ground surface, the generally flat member including a lateral flange at each of its two ends, wherein each of said flanges
20 includes a second through hole, and said generally flat member has a support hole at a distance from each of its two ends;

an elastic member engaging with said first and second through holes for creating springiness in said
25 bed; and

a supporting member having a bent end which is pivotally mounted about one of said support holes, the other end of the supporting member being received in said hollow cylinder of said mounting means.

30 2. A portable spring bed as claimed in Claim 1, wherein said mounting means are in an alignment with each other along said side pieces.

3. A portable spring bed substantially as hereinbefore described with reference to the
35 accompanying drawings.
