United States Patent [19]

Worley

[11] **3,751,742**

[45] **Aug. 14, 1973**

[54] **FILLER FOR USE BETWEEN A BEDSPRING AND A SEPARATE MATTRESS**

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[21] Appl. No.: **154,937**

[52] **U.S. Cl.**..... **5/317 R,** 5/335, 5/351, 5/354

[51] **Int. Cl.**..... **A47c 23/04,** A47c 27/22

[58] **Field of Search**..... 5/317, 338, 341, 5/351, 354, 355, 361

[56] **References Cited**

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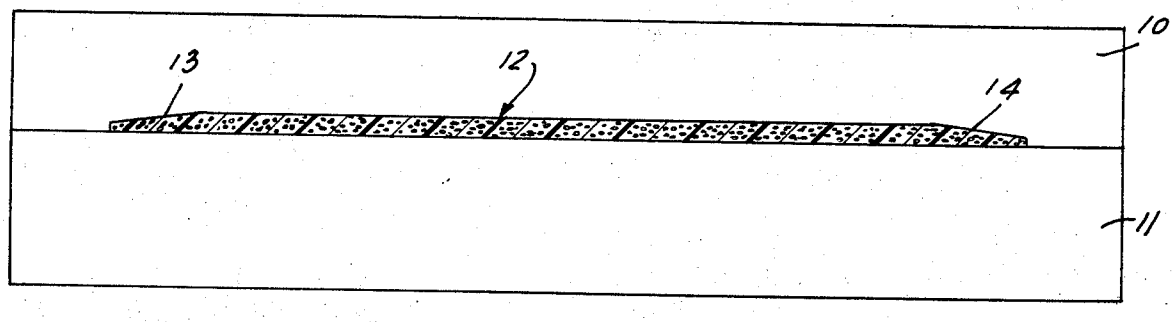
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[57] **ABSTRACT**

A sheet of polyurethane foam is provided that has beveled edges at least along its longitudinal marginal portions. The beveled sheet is laced on a box spring with its beveled surface directed upwardly and on which a coil-spring or foam-type of mattress is disposed and is thereby supported.

10 Claims, 2 Drawing Figures



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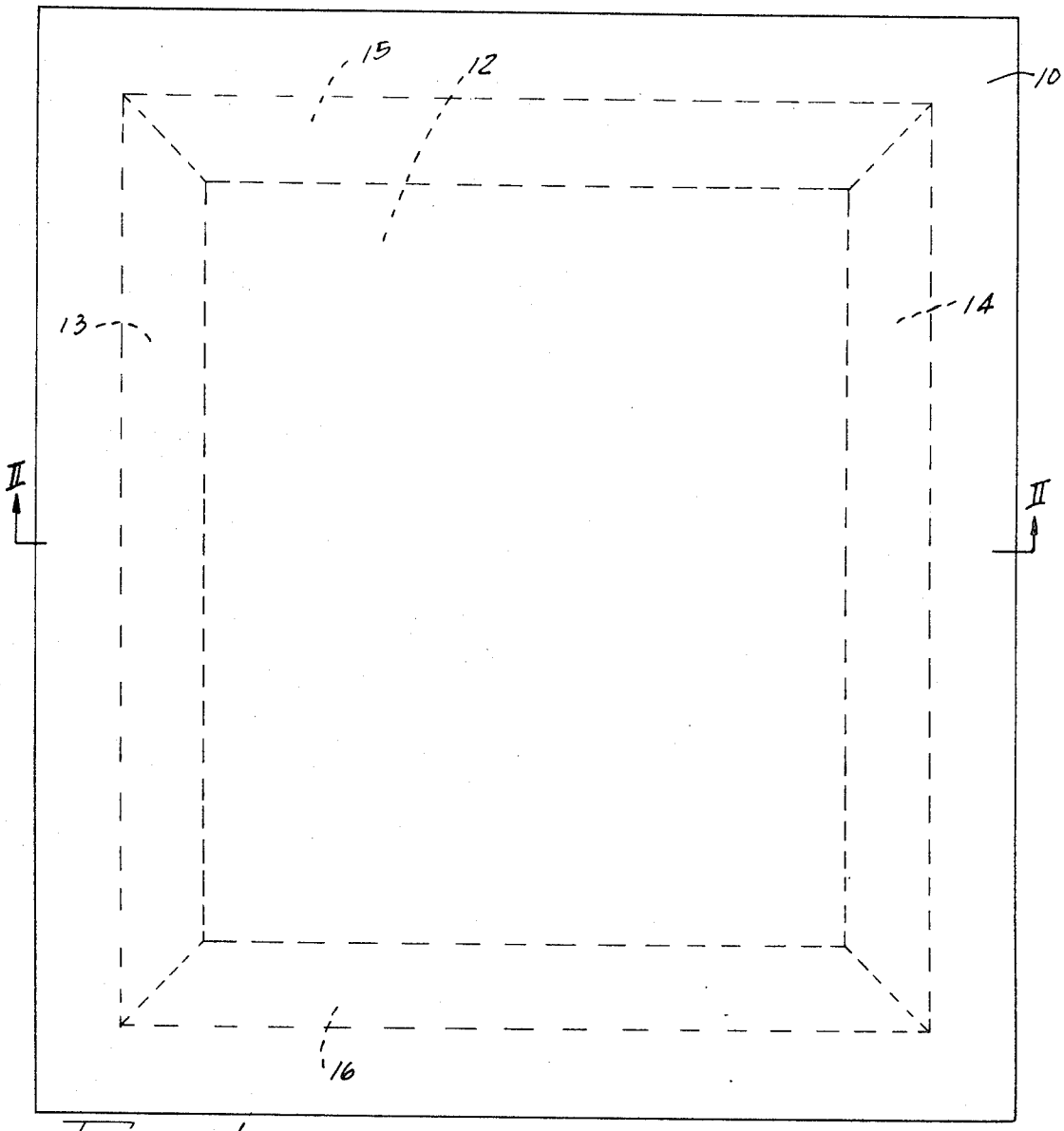


Fig. 1

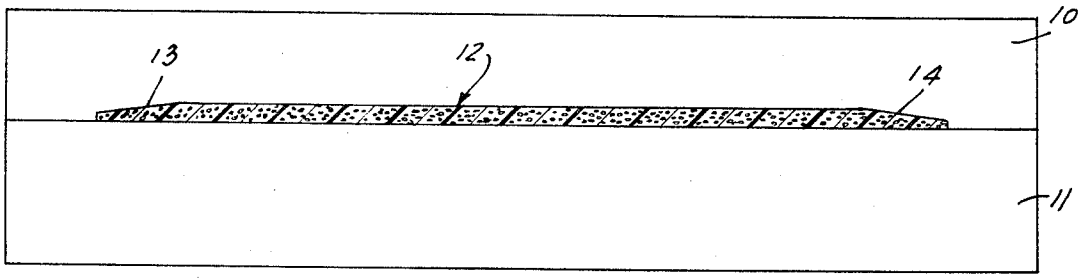


Fig. 2

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FILLER FOR USE BETWEEN A BEDSPRING AND A SEPARATE MATTRESS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to box spring and mattresses, and more specifically to a mattress filler utilized to offset a weakened mattress.

2. Prior Art

It is well known that with use, a mattress tends to form weak areas as evidenced by obvious sagging, by too great a yielding during use, by loss of original comfort and the like. This problem has been recognized previously both in home and in institutions. For instance, it is not uncommon in a well-equipped hospital having an orthopedic ward for the staff to place a layer of boards immediately beneath the mattress to augment the firmness thereof. Sometimes plywood is utilized. I have noted that the use of such boards tends to break box springs owing to the concentration of force that can take place at an edge or end of such board. Further, boards are relatively slippery and there is a tendency for a mattress to slide on such board and for bedding to pull out readily from beneath a mattress resting on such a device. Also, a board is so rigid that normally or frequently it can be seen.

SUMMARY OF THE INVENTION

According to this invention, a sheet of foam material such as polyurethane is used between the mattress and box spring, and in order to idealize such usage, I provide a taper or bevel at least along the longitudinal edges whereby the sheet thickness decreases in a marginal portion which is about as wide as a marginal portion of the mattress that directly lies against the box spring. For example, full thickness of the sheet is utilized to within about ten inches of the edge of the mattress. The beveled portion then extends about halfways to the edge, and the thickness reduces about 50 percent.

Accordingly, it is an object of the present invention to provide a mattress filler which reestablishes for a used mattress the original comfort of a new mattress.

A further object of the present invention is to provide a mattress filler that reestablishes for a used mattress the original shape of a new mattress.

Yet another object of the present invention is to provide a mattress filler that in effect rebuilds a weakened area of a used mattress.

Another object of the present invention is to provide a mattress filler that has a good coefficient of friction to eliminate the likelihood of the mattress sliding thereon.

Further, it is an object of the present invention to provide a mattress filler constructed so that the edge of the mattress beyond the filler is provided with firm support.

A still further object of the present invention is to provide a box spring and mattress with a mattress filler wherein the appearance of the edge of the spring and mattress combination will not be affected by the presence of the filler and thus be normal.

Yet another object of the present invention is to provide a mattress filler whereby a sheet can be tucked under the mattress and be held in place by such filler.

A still further object of the present invention is to provide a mattress filler of such construction as to provide both a smooth appearance to the upper surface of the used mattress and to eliminate likelihood that there is any tendency for the user to roll off the mattress and to minimize the tendency to roll toward the center of the mattress.

Many other advantages, features and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description of the accompanying drawing in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

ON THE DRAWING

FIG. 1 is a top plan view of a spring and mattress, shown diagrammatically, and provided with a mattress filler in accordance with the principles of the present invention; and

FIG. 2 is a cross-sectional view taken along line II—II of FIG. 1, the spring and mattress being shown diagrammatically.

AS SHOWN ON THE DRAWING

The principles of the present invention are particularly useful when embodied in a mattress filler for use between a box spring and a used mattress, such as a coil spring or foam type of mattress. A mattress **10** may have various sizes as to length and width. This is also true in the instance of the various box springs **11.** In accordance with this invention, there is provided a mattress filler **12** which has a uniform thickness throughout the major part of its area. The mattress filler **12** comprises a sheet of resilient foam material such as polyurethane of about 1 inch thickness, and such full thickness terminates preferably about ten inches from the edge of the mattress **10.** Along the longitudinal edge of the filler **12,** there is provided a beveled edge portion **13** and a beveled edge portion **14** which preferably extend approximately half the distance from the full-thickness portion of the filler to the edge of the mattress **10.** Thus in the example given, the beveled edge portion has a width of about 5 inches. At its thicker end of its cross section, the beveled portion has the thickness of the sheet, and this tapers or bevels to a lesser thickness which is about one-half that of the sheet. Thus in the example given, over a range of 5 inches, the thickness decreases from 1 inch to ½ inch.

At least the surface of the beveled edge portions **13, 14** is produced by cutting as distinguished from molding so that no slick surface is provided, but rather all of the fine pockets that make up the porosity of the foam material that are intersected by the beveled surfaces are thus open to the atmosphere. Preferably, all of the upwardly and downwardly directed surfaces of the filler comprise cut surfaces.

It is to be noted that mattresses seldom have the damage at the head end or foot end that they would elsewhere, and also that less support is needed where it is desired to augment the firmness of a non-damaged mattress at the head and foot ends. Thus, I have provided a beveled edge portion **15** at the head end and a beveled portion **16** at the foot end of the filler, but such beveled portions are entirely optional for the reasons given. Ordinarily, they will not be necessary. However, where they are provided, the parameters, dimensions and relationships are the same as those set forth herein for the beveled portions **13, 14.**

The preferred material thus comprises polyurethane sheet of about 1 inch in thickness, and having a firmness such that it is more firm than the mattress or is more firm than the effective firmness of the mattress.

With this construction, the objects set forth herein are thus met. The mattress filler has no sharp or hard edges whereby a box spring can be damaged. Further, it can be used to augment firmness, and to reestablish original comfort and shape by in effect rebuilding a weakened area. The porous nature of the cut polyurethane foam provides an excellent coefficient of friction so that the mattress will not slide thereon. The beveled edge portion while extending into the 10 inch area around the edge of the mattress will keep the edge of the mattress supported firmly, enabling it to engage the spring around the outer portion whereby appearance is maintained normal, and yet there is firm support which is graduated. With this construction, a sheet can be tucked under the mattress and such tucked sheet will normally extend more than 5 inches under the mattress so that the coefficient of friction of the foam will also act on the sheet to tend to hold the same in position. Although a board that is disposed 10 inches in from the edge of the mattress would provide both height and lack of marginal support that would tend to promote the likelihood of a person rolling off the mattress, the present structure avoids this problem and provides a smooth transition. The tapered surface is disposed toward the mattress because the box spring is firmer than the mattress and it is the weakened area that is to be supported or lifted.

So far as I am presently informed, it is believed that molding this device would be impractical because of its broad extent. It is believed that problems would arise in the formation of blow holes, which is avoided by cutting the entire sheet from a larger thicker member, something like the manner in which wood is peeled from a log to make plywood. Further, the cuttinG provides open porosity whereby slickness is avoided and the coefficient of friction is maximized.

Although various modifications may be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such embodiments as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

1. A filler for use above a bed-spring assembly and below a separate sagging mattress assembly, comprising:

a sheet of resilient foam material having a length and width less than that of the spring and mattress, said sheet having a beveled edge portion along each of its longitudinal edges.

2. A filler according to claim **1** in which at least the surface of the beveled edge portion is a cut surface whereby the surface has a large amount of small open air pockets providing slip resistance.

3. A filler according to claim **2** in which substantially all the upper and lower surfaces of the filler are cut surfaces.

4. A filler according to claim **1** in which the beveled edge portion at its larger end is the thickness of said sheet, and at its smaller end is about one-half the thickness of said sheet.

5. A filler according to claim **1** in which the beveled edge portion decreases from the thickness of the sheet to about one-half such thickness over a horizontal distance of about 5 sheet thicknesses.

6. A filler according to claim **1** in which said sheet has a beveled edge portion along at least one of its end edges.

7. A filler according to claim **1** including a box spring beneath the wider side of said sheet and a separate mattress above the beveled side of said sheet.

8. A filler according to claim **7** in which said foam material is firmer than the effective firmness of said mattress.

9. A filler according to claim **3** in which the beveled edge portion decreases from the thickness of the sheet to about ½ thickness over a horizontal distance of about five sheet thicknesses.

10. A filler according to claim **1** in which the foam material is a polyurethane sheet of about 1 inch in thickness.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,751,742 Dated August 14, 1973

Inventor(s) Richard A. Worley

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Abstract, l. 3, change "laced" to --placed--.

Col. 3, l. 38, correct the spelling of "cutting".

Signed and sealed this 23rd day of April 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

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