May 14, 1963 T. C. BOYLES 3,089,154

MATTRESS CONSTRUCTION HAVING DIFFERENT DEGREES OF FIRMNESS

Filed March 9, 1961 2 Sheets-Sheet 1

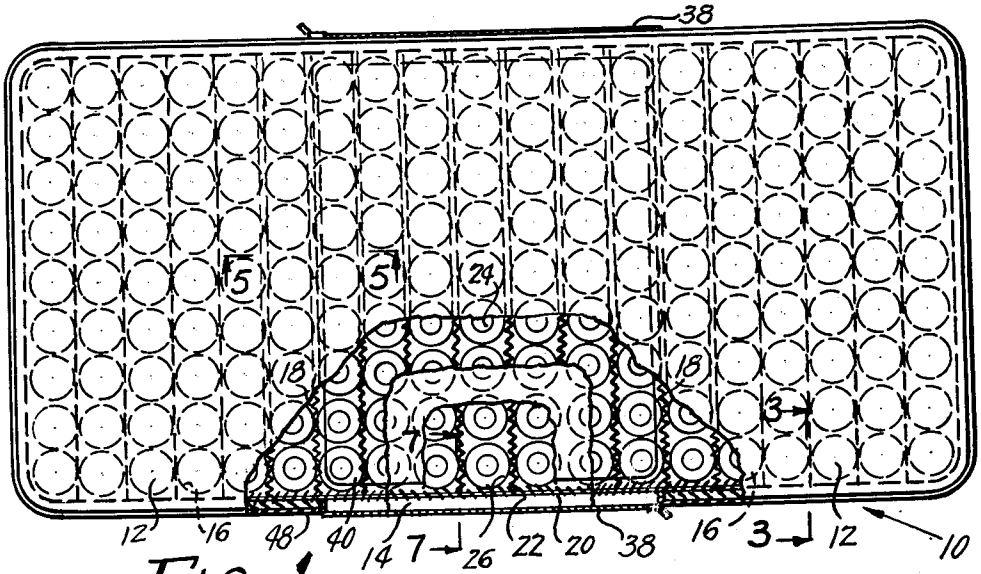

FIG. 1

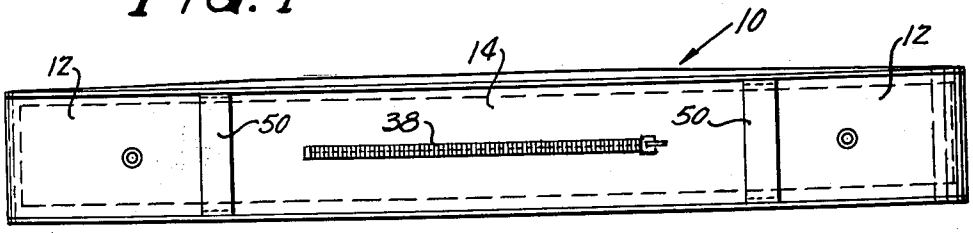

FIG. 2

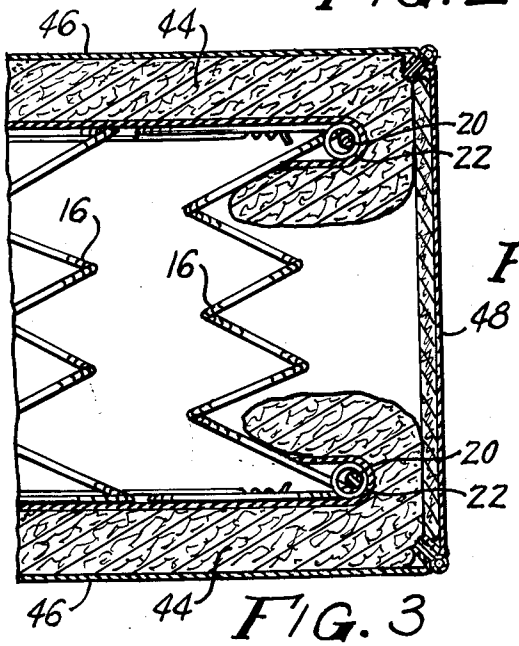

FIG. 3

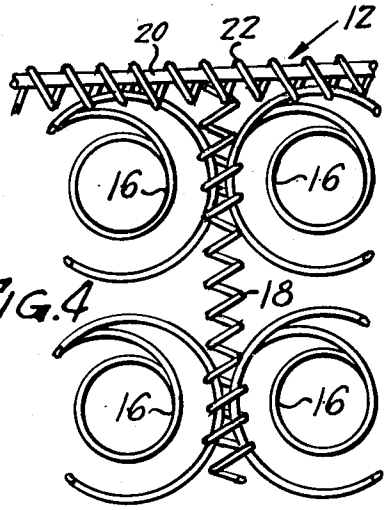

FIG. 4

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MATTRESS CONSTRUCTION HAVING DIFFERENT DEGREES OF FIRMNESS

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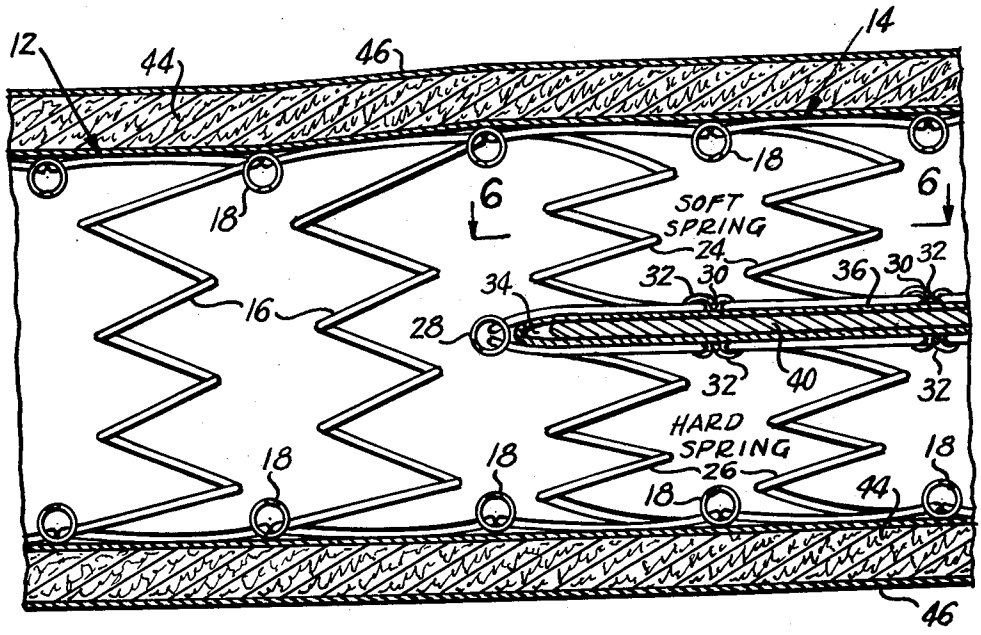

FIG. 5

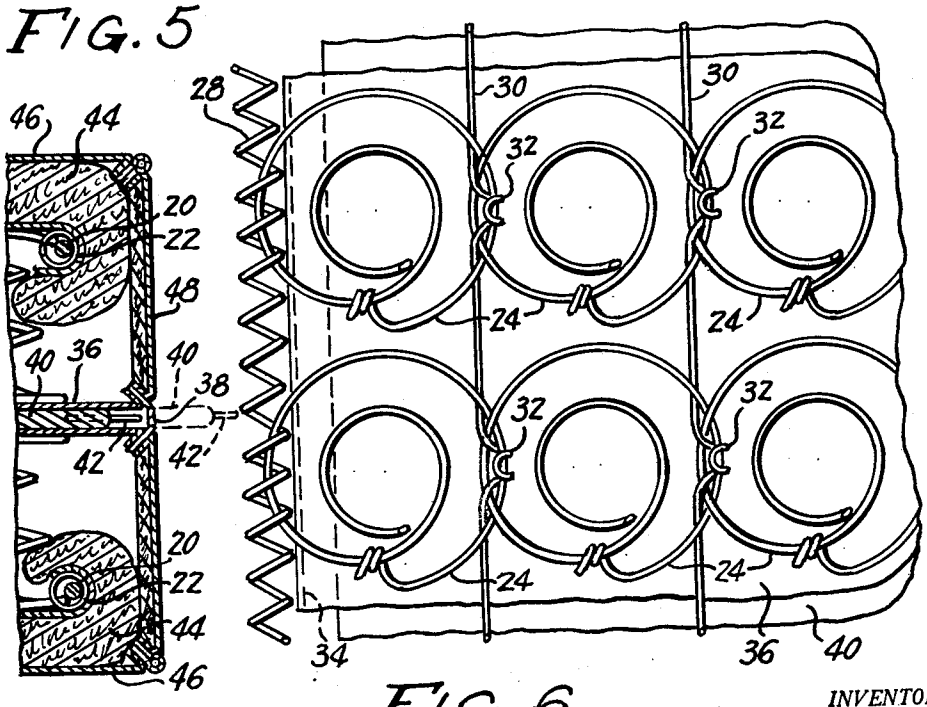

FIG. 6

FIG. 7

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3,089,154
MATTRESS CONSTRUCTION HAVING DIFFERENT DEGREES OF FIRMNESS

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8 Claims. (Cl. 5—351)

This invention relates to a mattress construction having different degrees of firmness, and has for an object to provide an improved mattress construction having different degrees of firmness, particularly in the transverse center section thereof, which may be reversed to provide a different degree of firmness on one side than on the other side.

A further object of this invention is to provide a mattress construction having a central transverse section and two end transverse sections, wherein the firmness of the central section is different from the firmness of the two end sections, and furthermore, where the mattress is reversible and the firmness of the central section on one side is different from the firmness of the central section on the other side and, in addition, which may be provided with an insertible flat plate or board which can be inserted into or removed from the central section so as to provide two additional degrees of firmness for the opposite sides of the central section.

Still a further object of this invention is to provide a mattress construction made up of two transverse end sections and a transverse central section, wherein the end sections may be of conventional construction, and wherein the transverse central section may be controllably provided wtih four different degrees of firmness, two degrees of which are obtained by reversing the mattress in use, and two additional degrees of which are obtained by inserting the flat plate intermediate the top and bottom of the central section.

Still a further object of this invention is to provide a mattress construction wherein there are two end sections consisting of substantially identical sets of coil springs extending the full thickness of the mattress construction, the end sections being separated by two sets of coil springs superposed one above the other and separable from each other to provide a passageway therebetween.

With the above and related objects in view, this invention consists in the details of construction and combination of parts, as will be more fully understood from the following description, when read in conjunction with the accompanying drawing, in which:

FIG. 1 is a plan view, partly broken away, of the mattress construction of this invention.

FIG. 2 is a side elevation of FIG. 1.

FIG. 3 is a sectional view on line 3—3 of FIG. 1.

FIG. 4 is an enlarged fragmentary view showing the snake coil wires tying the coil springs together.

FIG. 5 is a sectional view on line 5—5 of FIG. 1, on an enlarged scale.

FIG. 6 is a sectional view on line 6—6 of FIG. 5.

FIG. 7 is an edge sectional view on line 7—7 on an enlarged scale, of FIG. 1.

There is shown at 10 the mattress in which the mattress construction of this invention is included. The mattress construction of this invention consists of two transverse end sections 12 and a transverse middle section 14, the middle section 14 constituting approximately one-third, more or less, of the length of the mattress 10 which has the general appearance of a conventional mattress, rectangular in outline.

The coil springs 16 of the end sections 12 are all substantially identical, and are secured together in a conventional manner by snake wires 18, and are secured in a similar conventional manner to the mattress rods 20 by means of snake wires 22.

The middle section 14 of the mattress construction is provided with two separate superposed sets of coil springs 24 and 26, the coil springs 24 being secured to each other just as the coil springs 26 are secured to each other, but separate except for the very end loops of the end transverse coils of each set, where they are secured to each other—that is, the end loops of the end coil springs 24 are secured to the end loops of the end coil springs 26 by a conventional snake wire 28, as shown in FIGS. 5 and 6.

While outermost ends of each of the loops of coil springs 24 and 26 are secured to each other in the same conventional manner by snake wires 18, the inner ends of each of the coil springs 24 are secured to each other by conventional joining wires 30 and intertwined loops 32 securing interengaging end loops of the coil springs, the same construction being used in connection with the inner ends of coil springs 26. However, the inner ends of each set of coil springs 24 and 26 are separate from the inner ends of the other set, except for the end loops of the end coils secured together by conventional snake wire 28, as shown in FIGS. 5 and 6.

The two sets of coil springs 24 and 26, superposed one above the other, are thus separable from each other and provide a passageway 34 therebetween, extending from at least one side of the mattress 10 and, preferably, extending through both sides of the mattress 10, the passageway 34 having therein a sleeve or pocket 36, this member 36 being a sleeve if it has entrances at both transverse edges of the mattress 10, or a pocket if it has an entrance at only one transverse edge. This sleeve or pocket member 36 may be of any suitable material such as canvas, duck, ticking or the like.

The entrance at one or both ends is closable by means of a separable fastener 38, often commonly known in one form as a "zipper." Insertible through the entrance to the pocket after opening the zipper 38, is a rigid plate 40 having a handle grip 42 at either or both edges to facilitate the entry or removal of the plate 40 into the pocket or sleeve 36.

The mattress construction is enclosed within conventional padding 44 and ticking 46, with the usual edging 48, and the mattress itself is provided with spaced handles 50 in a conventional manner facilitating handling the mattress.

The set of springs 24 differs from the set of springs 26 in the firmness of the springs, the set of springs 24 being indicated as a soft spring, while that at 26 is a hard spring. The difference in firmness of the two springs, making one a soft spring and the other a hard spring, is provided in any conventional manner, such as by making the springs of different gauges of wire, or of wires of different strength, or different numbers of coils in the wire, or in any other conventional manner.

In operation, the user may select the degree of firmness that he desires according to which face of the mattress he places upwardly, and he has four different degrees of firmness available.

For the softest mattress, he removes the plate 40 and places the soft spring set 24 uppermost. For a slightly harder degree, he inserts the rigid plate 40 into position by manipulating the zipper 38 to permit its entry. For a greater degree of firmness, he will reverse the mattress and place hard set of springs 26 uppermost, and for the maximum degree of hardness, he will insert the rigid plate 40 with the set of hard springs 26 uppermost.

It will be noted, moreover, that these varying degrees of firmness are present only in approximately the middle third transverse section of the mattress, which is the section that carries most of the weight of the human body, that is, the thighs and trunk of the user.

Thus, the user may vary the degree of firmness of the mattress according to his desire and health condition, by

removing or replacing the plate 40 and by reversing the mattress as desired. When the plate 40 is present, the central section 14 of the mattress necessarily becomes slightly thicker, as shown in an exaggerated degree in FIG. 2.

Although this invention has been described in considerable detail, such description is intended as being illustrative rather than limiting, since the invention may be variously embodied, and the scope of the invention is to be determined as claimed.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A reversible mattress construction comprising a central transverse section and an end transverse section extending on and secured to opposite transverse sides of said central section, each transverse end section comprising a set of coil springs secured in position relative to each other, said central transverse section comprising two sets of coil springs, one set of said central transverse section coil springs superposed above the other set, the coil springs of each central transverse section set being secured to the other adjacent coil springs of the same set, but unsecured to adjacent coil springs of the other central transverse section set, the central transverse section coil springs of one superposed set being of a different degree of firmness than said other central transverse section set of superposed springs and a uniform layer of padding overlying each side of said transverse central and end sections, whereby one side of the central transverse section of the mattress provides a different degree of firmness than that of the opposite side of said central transverse section, and different from that of the end transverse sections.

2. The mattress construction of claim 1, said two sets of central section superposed coil springs being separable forming a passageway therebetween, and a rigid plate member removably interposed in said passageway thereby providing two additional degrees of firmness to the mattress.

3. The mattress construction of claim 2, and a sleeve fixed in said passageway facilitating the placement and removal of said rigid plate member therein.

4. The mattress construction of claim 3, and separable fastening means closing the end of said passageway.

5. A reversible construction comprising four transverse sets of coil springs, two of said transverse sets providing transverse end sections, and the other two transverse sets of coil springs being superposed one on the other, said two superposed transverse sets being secured at transverse ends to both said transverse end sections, the firmness of one tranverse set of superposed coil springs being different from the coil springs of said other transverse sets of superposed coil springs and a uniform layer of padding overlying each side of said transverse central and end sections, whereby one side of the central transverse section of the mattress provides a different degree of firmness than that of the opposite side of said central transverse section, and different from that of the end transverse sections.

6. The mattress construction of claim 5, said two sets of superposed coil springs being separable forming a passageway therebetween, and a rigid plate member removably interposed in said passageway thereby providing two additional degrees of firmness to the mattress.

7. The mattress construction of claim 6, and a sleeve fixed in said passageway facilitating the placement and removal of said rigid plate member therein.

8. The mattress construction of claim 7, and separable fastening means closing the end of said passageway.

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