Mattress with Sag-Resistant Insert

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- FIG. 1
- FIG. 2
- FIG. 3
- FIG. 4
- FIG. 5
This invention relates to mattress constructions. More particularly, the invention is concerned with novel and simplified means to prevent a mattress from sagging longitudinally or in the direction of the spine while simultaneously allowing freedom of flexing of the mattress transversely or at right angles to the spine. One of the advantages of mattresses constructed according to the invention is that they are lightweight and may readily be rolled up transversely into a compact roll.

An object of the invention is to utilize a thin section or panel of corrugated metal or the like for producing a mattress which will not sag appreciably in the longitudinal direction during use, therefore being a great aid to users who have back difficulties.

Another object is to provide a mattress stiffening or reinforcing element which is particularly adapted to be used with or incorporated in the construction of an all foam rubber mattress, but which may also be placed beneath any type of mattress or between a mattress and a box spring unit.

Another object is to provide a non-sag insert for mattresses which will also serve as a spring to a certain extent.

Another object is to provide means of the above-mentioned character which aid in rendering the mattress sanitary and resistant to drafts or wind.

Other objects and advantages of the invention will be apparent during the course of the following detailed description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same.

FIGURE 1 is a perspective view of a mattress embodying the invention, partly broken away;

FIGURE 2 is an enlarged fragmentary transverse vertical section through the mattress, taken on line 2—2 of FIGURE 1;

FIGURE 3 is a fragmentary perspective view of a stiffening insert or panel;

FIGURE 4 is an end elevation of a rolled-up mattress on a reduced scale; and

FIGURE 5 is a fragmentary transverse vertical section similar to FIGURE 2 through a modified mattress construction according to the invention.

In the drawings wherein for the purpose of illustration are shown preferred embodiments of the invention, attention is directed first to FIGURES 1 through 4, in which the numeral 10 designates a mattress or cushion in its entirety, comprising upper and lower slabs 11 and 12 of foam rubber or like soft resilient material. The two slabs 11 and 12 are preferably of equal thickness, as shown, although in some instances the thicknesses may vary.

Disposed between the foam rubber slabs 11 and 12 and approximately coextensive therewith is a thin corrugated stiff sheet material stiffening insert or panel 13, preferably formed of thin gage aluminum or like sheet metal. The stiffening panel 13 has a multiplicity of equidistantly spaced parallel corrugations 14 extending lengthwise thereof for the entire longitudinal dimension of the mattress. The corrugations may be about one inch deep and spaced apart about two inches on centers, although these dimensions are not critical and may be varied.

Preferably, although not necessarily, the corrugations and the intervening valleys of the panel 13 have flattened faces 15, FIGURE 2, in order to provide adequate surface areas for bonding with the opposed faces 16 of the mattress slabs 11 and 12. Preferably, the two slabs 11 and 12 are cemented to the flat faces 15 of the corrugated panel. To further improve the bonding between the slabs 11 and 12 and the stiffening panel 13, the latter may be embossed over its entire surface as indicated at 17 in FIGURE 3. This is an optional feature which may be dispensed with when desired.

The mattress 10 constructed in the described manner will not bend or sag readily in the lengthwise direction along the corrugations 14 or in the direction of the spine of a person or persons on the mattress. However, the corrugated panel 13 allows the mattress to flex and yield readily in the transverse direction to such an extent that an entire double-size mattress can be rolled up manually into a tight roll, only about fifteen inches in diameter as depicted in FIGURE 4. The mattress 10 is therefore very supple in the transverse direction while quite rigid longitudinally and this satisfies the main objective of the invention.

FIGURE 5 shows a modification, wherein the mattress 18 has a fabric envelope 19 which maintains the foam rubber slabs 20 and 21 assembled with an intervening stiffening panel 22, without the necessity for cementing or bonding. This arrangement also allows ready removal or replacement of one or more of the mattress elements when required. The panel 22 in FIGURE 5 may be identical to the described panel 13. The slabs 20 and 21 may, if preferred, be premolded to provide longitudinal ribs 23 thereon to interfit with the corrugations of the panel 22. If desired, the slabs 20 and 21 may be formed with flat faces similar to the slabs 11 and 12.

It is to be understood that the forms of the invention herewith shown and described are to be taken as preferred examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or scope of the subjoined claims.

Having thus described my invention, I claim:

1. A mattress comprising upper and lower slabs of foamed elastomer, said slabs being of approximately the same size, and an intervening corrugated stiffening insert between said slabs having corrugations which extend lengthwise of the slabs so as to stiffen the mattress structure against longitudinal sagging while enabling it to be readily rolled up transversely into a compact generally cylindrical roll.

2. The invention as defined by claim 1, and wherein said slabs and corrugated stiffening insert are adhesively bonded together in superposed relation to form a unit.

3. The invention as defined by claim 2, and wherein said slabs have opposed substantially flat faces and said insert includes flat surface portions on the peaks and valleys of said corrugations for bonding with said slabs.

4. The invention as defined by claim 1, and wherein said slabs and insert are separately formed elements, and an envelope surrounding and enclosing the slabs and
insert to maintain these elements in assembled relationship.

5. The invention as defined by claim 1, and wherein the opposed surfaces of the upper and lower slabs are corrugated to interfit with and conform to the corrugations of said stiffening insert.

6. The invention as defined by claim 1, and wherein the corrugated stiffening insert comprises a sheet of relatively thin gage metal.

7. The invention as defined by claim 6, and wherein the sheet metal insert is embossed over substantially its entire surface area to improve the bond between said upper and lower slabs.

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