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CUSHION OR MATTRESS CONSTRUCTION AND METHOD OF MANUFACTURE

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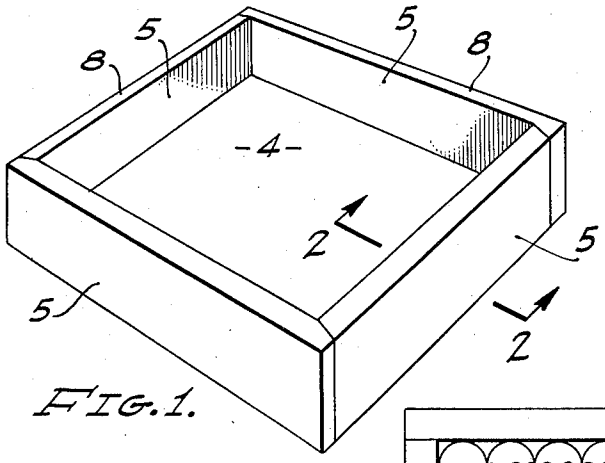


FIG. 1.

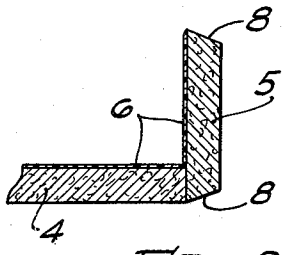


FIG. 2.

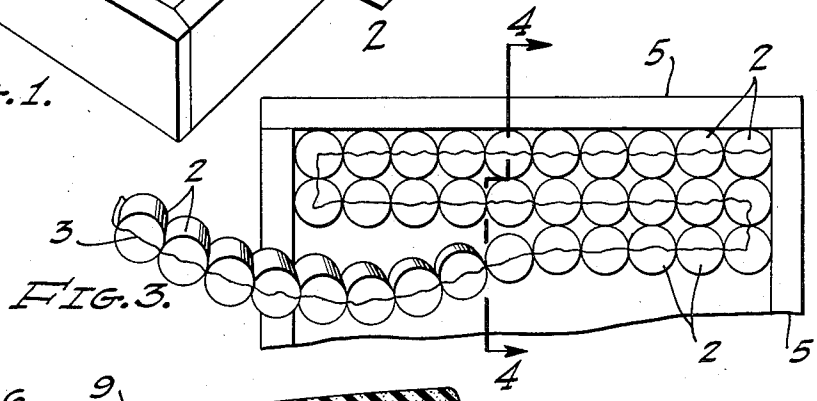


FIG. 3.

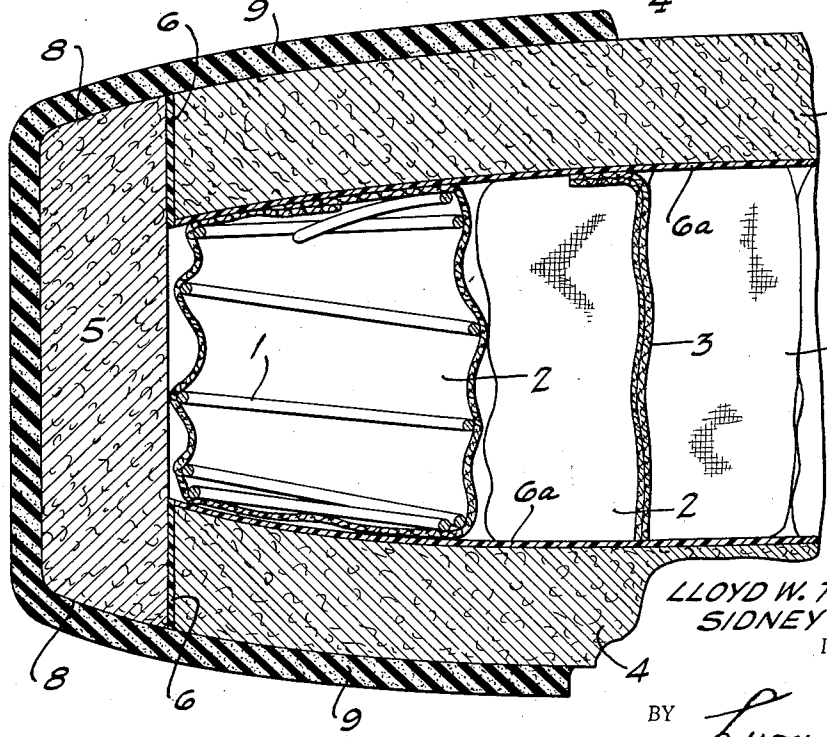


FIG. 4.

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CUSHION OR MATTRESS CONSTRUCTION AND METHOD OF MANUFACTURE

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4 Claims. (Cl. 5—353)

This invention relates to cushion or mattress construction and method of manufacture and is a continuation-in-part of a previously filed application for "Cushion or Mattress Construction and Method of Manufacture" filed March 26, 1956, Serial No. 573,927, now abandoned. Included in the objects of this invention are:

First, to provide a cushion or mattress construction wherein a bed or core of fabric bag-enclosed springs is completely surrounded and restrained by a covering formed of rubberized or latex-coated hair, without the use of metal fastening means between the springs or the use of metal framework bounding the core or the covering.

Second to provide a cushion or mattress construction and method of manufacture, wherein a box-like container is formed of cemented sections of rubberized or latex-coated hair or analogous material, into which is packed a continuous string of fabric bag-enclosed springs and over which is cemented a cover also of such coated hair, the shape and form of the finished cushion or mattress being determined by the container formed of the coated hair rather than an interconnected series of coil springs.

Third, to provide a cushion or mattress construction and method of manufacture of this type wherein the fabric bag enclosures for the springs are cemented to the confronting surfaces of the container or covering of latex-coated hair so that the springs are fixed in place.

Fourth, to provide a cushion or mattress construction which combines the advantages and avoids the disadvantages inherent in conventional foam rubber cushions and mattresses and conventional coil spring cushions and mattresses.

With the above and other objects in view, as may appear hereinafter, reference is directed to the accompanying drawings in which:

Figure 1 is a perspective view of the encasing structure;

Fig. 2 is a fragmentary, sectional view thereof, taken through 2—2 of Fig. 1;

Fig. 3 is a fragmentary, plan view thereof, showing the manner in which the fabric bag-enclosing springs are installed in the box-like structure;

Fig. 4 is an enlarged, fragmentary, sectional view, taken through 4—4 of Fig. 3, showing the completed cushion or mattress.

The cushion or mattress includes a plurality of helically coiled springs **1** which are encased in compartments **2** provided in a fabric strip **3**. The fabric strip is first folded upon itself and stitched transversely to form contiguous compartments, after which the springs are inserted and the open ends are sewn closed.

The springs as encased in fabric bags may be considered conventional and are known in the trade as "Marshall-type" springs. Conventionally, these springs are arranged in rows and columns and clipped together at their points of tangency by metal clips, so as to form a self-supporting spring unit which may be later encased to form a mattress or cushion. In the exercise of the present invention, however, the metal clips or other

fastening devices between the springs, other than the connection afforded between the compartment of the folded fabric strip, are completely eliminated. Thus, contrary to standard construction, the springs do not form a self-supported spring unit.

In place of wrapping and sewing the conventional padding over and around the clip-connected spring units, the loose spring units are packed into a box-like structure formed of special padding material. To accomplish this, such box-like structure is formed of a rubberized or latex-coated hair or hair-like material. Such material is quite porous, yieldable, and resilient. The rubberized or latex-coating, which holds the hair-like material in place, provides a tough bond between the hair or filaments so that pads of such material are easily handled and have a substantial amount of tensile strength. Still further, such pads retain to a remarkable degree their original "memory" or ability to return to their original shape after being deformed.

The box-like structure includes a bottom pad **4**, preferably of uniform thickness. Joined to the edges of the bottom pad are side wall pads **5**. This may be accomplished by use of rubber or plastic cements, as indicated by **6**, which firmly and permanently join the pads together.

After the box-like structure is formed, the fabric strip **3** with the springs **1** encased therein is folded back and forth within the confines of the side wall pads **5** until the cavity formed thereby is completely filled, and the springs are held in position by mutual engagement as well as by the surrounding side wall pads. After the springs have been installed, a cover pad **7** is placed thereover. The cover pad is dimensioned to fit within the upper margins of the side wall pads **5** and is joined thereto by cement or adhesive **6**.

Prior to placement of the springs, the interior of the bottom pad **4**, cover pad **7**, and, if desired, the side wall pads **5** are coated with an adhesive **6***a*. The fabric strip may, if desired, also be precoated with adhesive, either in its entirety or at the ends of the compartments **2**. As a consequence, the springs are yieldably maintained in their individual positions.

The free length of the springs, that is, of the maximum length thereof as determined by the compartments **2** in which they fit, is preferably somewhat greater than the distance between the bottom and cover pads so that on installing the cover the springs are compressed an optimum amount so that the springs tend to bow the bottom and cover pads from each other, as suggested in Fig. 4. Also it has been found highly desirable to bevel the upper and lower edges of the side wall pads **5**, as indicated by **8**.

The cushion or mattress structure thus formed may be further enclosed in various conventional coverings such as various batting materials or by foam rubber sheeting, as indicated by **9** in Fig. 4. Such foam rubber sheeting may form a complete encasement for the pads **4**, **5**, and **7**, and may in turn be encased in suitable fabric, not shown.

While it is preferred that all of the walls of the encasing structure be formed of latex-coated hair or similar material, it should be noted that the wall which ultimately becomes the bottom side may be a rigid member, for example, formed of plywood.

While a particular embodiment of this invention has been shown and described, it is not intended to limit the same to the exact details of the construction set forth, and it embraces such changes, modifications, and equivalents of the parts and their formation and arrangement as come within the purview of the appended claims.

What is claimed is:

1. A cushion or mattress construction, comprising: an encasing structure having a bottom wall, top wall, and

side walls defining a completely enclosed cavity, at least some of said walls being formed of panels of latex-coated hair-like material and said walls being permanently cemented together; a plurality of coil springs; and fabric casings for said coil springs, said springs and their casings completely filling said cavity for mutual support and constituting the sole content thereof, and yieldably restrained by the surrounding walls, said fabric casings being cemented at their upper and lower ends to said top and bottom walls.

2. A cushion or mattress construction, comprising: an encasing structure having a bottom wall, top wall, and side walls defining a completely enclosed cavity, at least some of said walls being formed of panels of latex-coated hair-like material and said walls being permanently cemented together, a plurality of coil springs; and a continuous strip of fabric having a series of pockets therein to receive said springs, said strip with the springs in said pockets constituting the sole content of said cavity and being packed snugly between the side walls of said structure, whereby the springs mutually support each other and are restrained by said side walls, said fabric casings being cemented at their upper and lower ends to said top and bottom walls.

3. A cushion or mattress construction, comprising: an encasing structure having a bottom wall, top wall, and side walls defining a completely enclosed cavity, at least some of said walls being formed with panels of latex-coated hair-like material and said walls being permanently cemented together; a plurality of coil springs; limp fabric casings for said coil springs, said springs completely filling said cavity for mutual support, said springs

and their casings constituting the entire contents of said cavity and yieldably restrained by the surrounding walls; and a cover completely surrounding said encasing structure, said fabric casings being cemented at their upper and lower ends to said top and bottom walls.

4. A cushion or mattress construction, comprising: an encasing structure having a bottom wall, top wall, and side walls defining a completely enclosed cavity, at least said top wall comprising a panel of latex-coated hair-like material and said walls being permanently cemented together; a plurality of coil springs; and limp fabric casings for said coil springs, said springs and casings constituting the sole content of and completely filling said cavity; and an adhesive bond between the top and bottom ends of said casings and said encasing structure to yieldably maintain each of said springs in position, the unrestrained length of said springs and casings being greater than the normal height of said cavity whereby said top wall is crowned upwardly.

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