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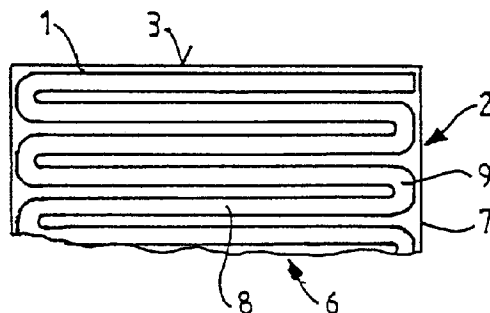
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(54) **REMBOURRAGE DE MOBILIER**

(54) **FURNITURE UPHOLSTERY**



(57) L'objet de la présente invention est un rembourrage de meuble dans lequel un certain nombre d'éléments de ressorts de compression (2) sont réalisés sous la forme de coussin puis assemblés pour former un composite large, étiré, et dans lequel, pour chaque élément de ressort de compression en forme de coussin, le matériau tissé (6) de fils est produit par maillage et plié (8) à plusieurs reprises pour former l'élément spatial. Il est par conséquent souhaitable de simplifier la construction du rembourrage pour ce qui est des épaisseurs additionnelles et de l'améliorer pour ce qui est de la souplesse et de l'isolation thermique. Cela peut être réalisé du fait que le fil du tissu est un fil textile lâche torsadé à partir de fils partiels lâches et du fait que les fils individuels sont filés à partir de fibres. Le rembourrage de mobilier ne nécessite pas de couches de souplesse et d'isolation si chaque ressort de compression en forme de coussin ou de paquet consiste en un matériau mou et si chacun comporte un certain nombre de très petits espaces vides répartis, qui assurent l'isolation thermique.

(57) This is a furniture upholstery in which a number of compression spring elements 2 are made in the form of a cushion and joined to form a wide-stretched flat composite and in which, in every cushion-shaped compression spring element 2, web material 6 from threads is produced by meshing and folded 8 repeatedly to form the spatial element. It is thereby desirable if the construction of the furniture upholstery can be simplified with respect to additional layers and is improved with respect to softness and heat insulation. This is attained thereby that the thread of the web material is a loose textile thread twisted from partial threads and thereby that the partial strands are spun from fibers. The furniture upholstery does not require softness-promoting and heat-insulating layers if the individual cushion-shaped or packet-like compression spring elements consist of a soft material and each have a number of distributed, very small empty hollow spaces, i.e. are heat insulating.

Abstract

This is a furniture upholstery in which a number of compression spring elements 2 are made in the form of a cushion and joined to form a wide-stretched flat composite and in which, in every cushion-shaped compression spring element 2, web material 6 from threads is produced by meshing and folded 8 repeatedly to form the spatial element. It is thereby desirable if the construction of the furniture upholstery can be simplified with respect to additional layers and is improved with respect to softness and heat insulation. This is attained thereby that the thread of the web material is a loose textile thread twisted from partial threads and thereby that the partial strands are spun from fibers. The furniture upholstery does not require softness-promoting and heat-insulating layers if the individual cushion-shaped or packet-like compression spring elements consist of a soft material and each have a number of distributed, very small empty hollow spaces, i.e. are heat insulating.

Applicant: Dr. Michael Polus
Title: Furniture Upholstery

Description

The invention concerns a furniture upholstery in which a number of compression spring elements are made in the form of a cushion and joined to form a wide-stretched flat composite in which each compression spring element is a spatially divided structured element and held together by retaining means and in which, in every cushion-shaped compression spring element, web material consisting of threads is made by interlooping and is folded several times to form the spatial element.

A known (US Patent 4,324,012) furniture upholstery of this type is a flat upholstery layer which is placed on a car seat and against the back of a seat. The thread of the web material of this furniture upholstery is relatively rigid and acts in a spring-like manner due to deflection. The thread consists of plastic material and is neither elastic nor resilient. This is, therefore, a single filament thread. The flat upholstery layer for a car seat should have more the function of a shock-absorbing layer. The known furniture upholstery therefore provides a relatively hard elasticity. However, in furniture upholstery, a soft, long-lasting elasticity is generally desired.

A furniture upholstery is also known (DE-PS 39 09 716) which consists of a single mattress-shaped compression spring element with a wide-stretched flat extension. In this case, a layer-thick web material of gathered staple fibers, which are distributed at random, are manufactured and folded many

times to form the mattress-shaped furniture upholstery. This furniture upholstery is gently pliant and heat-insulating without special layers. Since this furniture upholstery is not divided into individual cushion-shaped or packet-like compression spring elements, it does not exhibit the special upholstery properties required. Since the gathered staple fibers are distributed at random, this furniture upholstery can changed its upholstery properties, e.g. spring properties, from one area to the adjacent area.

A cushion-shaped compression spring element to be used as a vibration eliminator is known (DE-OS 38 15 750) from vibration technology, in which the web material is made from threads by interlooping and folded repeatedly to form a spatially divided structured element. The thread is a single filament flexible steel wire. The spatial element obtained by folding the web material is compressed so strongly by pressing that the spring wire remains deformed. This cushion-shaped or packet-like compression spring element is not suitable for furniture upholstery because it is too heavy, has inadequate spring properties and is too hard with respect to use by human beings.

Thus, it is an object of the invention to create furniture upholstery of the aforementioned type which can be more simply constructed with respect to additional layers and improved with respect to softness and heat insulation. The furniture upholstery according to the invention which solves this object is characterized therein that the thread is a loose textile thread twisted from partial threads and that the partial threads are spun from fibers.

The furniture upholstery according to the invention does not

require softness-promoting and heat-insulating layers if the individual cushion-shaped or packet-like compression spring elements consist of a soft material and each exhibit a number of distributed, very small empty hollow spaces, i.e. are heat insulating. The meshing or looping, which is knitting, weaving or crocheting, provides a precalculated structuring of each compression spring element. Due to the folding, the compression spring element is divided. The desired upholstery properties, especially the desired spring, result due to the use of the textile threads in the twisted form consisting of partial threads or individual threads. Twisting provides elastic expandibility of the textile thread. The upholstery and spring properties are very durable. The compression spring element can be made in an accurately preset manner due to the interlooped web material and exhibits the softness conditioned by the textile material and the necessary spring properties without compacting. Since the partial threads are spun from fibers, these are therefore not extruded threads. The fiber structure of the partial threads improves their permanent elasticity.

The web material is looped e.g. by knitting or weaving. It is especially useful and advantageous when the looping of the web material is a crochet looping. This type of looping produces a web material which is improved with respect to elasticity or spring properties.

The textile thread consists e.g. of only two partial threads or thin threads. It is especially useful and advantageous when the textile thread is twisted from more than two partial threads. This improves the permanent elasticity of the furniture upholstery.

It is especially useful and advantageous when the textile thread consists of animal wool or an equivalent synthetic wool. Thus, cotton is excluded in this case. Surprisingly, the compressed spring element of the furniture upholstery of the invention can be made from animal wool, e.g. sheep's wool, with the desired compression spring properties. This is a furniture upholstery from natural material.

The furniture upholstery is primarily a mattress for a chaise lounge type furniture, but also for seat upholstery or back upholstery of a seating furniture. The furniture upholstery is an upholstery intended for use by human beings. The web material is looped so as to be sufficiently close-meshed that the desired upholstery properties result even without compacting. However, a prestressing of the compression spring element is feasible. The compression spring elements of the furniture upholstery are arranged more or less close to one another. The compression spring properties of the compression spring element can be improved thereby that the textile threads are treated in a manner which improves their spring properties.

The retaining means have the function of holding the respective compression spring element together in itself and are, for example, holding threads passing through the length of the compression spring element. Usually, the retaining means are made as a guide mounting which is e.g. a cloth bag, and holds the compression spring element together against deforming pressure and thus improves the compression spring properties. The compression spring element has a load surface to which the compressive force is at right angles. In the cushion format of the compression spring element, the height of the compression spring element generally amounts to at

least one quarter of the smaller measurement of the load surface. The compressive force is generally directed at right angles to the layers forming the compression spring element.

However, it is especially useful and advantageous if the front edges of the web material, repeatedly folded, form a load surface for a compressive force. For example, a tightly wound roll is wound from the web material which is loaded in axial direction. A number of such rolls are arranged axially parallel adjacent to one another and the upper front sides of the rolls form the load surface.

The web material which is as close-meshed as possible is formed, e.g. by flat mesh frames, i.e. essentially two dimensional. However, it is especially useful and advantageous if the meshed web material forms compact ball structures which each consist of several thread runs twisted so as to be connected with one another. These ball structures considerably improve the compression spring properties of the compression spring element. This is a meshed web material of increased thickness, i.e. in a three-dimensional form. The ball structures can be produced, in particular, by crocheting the web material. Each thread run is a circulating thread section which is more or less bent. The ball structures are arranged e.g. close to one another, whereby each ball structure comes into contact with two or more adjacent ball structures.

It is thereby especially useful and advantageous if there are more than two thread runs in each ball structure. Since the bend of the thread runs increases the cushioning properties, a larger number of thread runs are advantageous.

The web material is, for example, divided into individual pieces which are stacked on top of one another. It is also possible to roll up a strip-like web material or to wind it up into a roll. However, it is especially useful and advantageous if the layers of the web material adjacent to one another in the spatial element merge into one another via folds in the web material. These narrow 180° bends or folds improve the spring properties of the compression spring element quite considerably.

It is also useful and advantageous if at least some of the cushion-shaped compression spring elements run untrue in their cross-section. In this way, the compression spring elements can adapt to specific contours of the furniture upholstery.

A preferred embodiment of the invention is illustrated in the drawings, showing:

- Fig. 1 a top view onto a part of a furniture upholstery,
- Fig. 2 a sectional view of the furniture upholstery according to Fig. 1,
- Fig. 3 a side view of a part of a cushion-shaped compression spring element of the furniture upholstery according to Fig. 1, enlarged vis-à-vis Fig. 1,
- Fig. 4 a first web material, in a knitted meshing, for the furniture upholstery according to Fig. 1,
- Fig. 5 a second web material, in a knitted meshing, for the furniture upholstery according to Fig. 1,
- Fig. 6 a third web material, in a crochet looping, for the furniture upholstery according to Fig. 1,
- Fig. 7 a schematic representation of the crochet looping in Fig. 6,

- Fig. 8 a piece of a twisted textile thread, enlarged vis-à-vis its actual size,
- Fig. 9 a piece of a spun partial thread, enlarged vis-à-vis its actual size,
- Fig. 10 a top view onto a further embodiment of a cushion-shaped compression spring element and
- Fig. 11 a side view onto a part of a furniture upholstery consisting of cushion-shaped compression spring elements according to Fig. 10.

The furniture upholstery according to the drawings is a mattress and has compression spring elements 2 arranged adjacent to one another in an all-around outer casing 1, which are square-shaped and each form a compressive surface 3 on each of two sides opposite one another. The compression spring elements 2 are situated between two flexible layers 4 and fastened with them to stabilize their position. The compression spring elements 2 form a wide-stretched flat composite 5. Each of the cushion-shaped compression spring elements 2 is formed from web material 6 which is held by retaining means 7 in the form of a small sack or bag. The web material 6 is placed evenly on top of one another in orderly positions 8 or layers and forms a type of stack from the web material layers 8. Layers 8 which are adjacent to one another are here adjacent to one another in a loose manner. According to Fig. 3, two adjacent layers 8 merge into one another via a crease-like fold 9. Each compression spring element is formed from a single strip-shaped web material 6 which is continuously folded.

The web material 6 is a mesh of loose twisted textile threads, as available on the market in the form of wool threads for knitting and crocheting. Three different forms of the meshing

are shown in Figs. 4, 5 and 6, as shown and described in the book "*Das neue Strick- und Häkelbuch*" [The New Knitting and Crocheting Book], 1968, Otto Maier Verlag on p. 104 under 64, p. 154 under 153 and p. 14 under 12. The embodiments of Figs. 4 and 5 are knitting patterns; the embodiment of Fig. 6 is a crochet pattern and is preferred. In each case, the looping is close-meshed, i.e. without any larger mesh openings. In the preferred embodiment, ball structures 10 are produced by means of bundle meshes which are schematically shown in Fig. 7. Each ball structure 11 consists of annular surrounding thread runs 10 and four adjacent thread runs per ball structure are shown in Fig. 7.

Fig. 8 shows a loose textile thread 12 as provided in the present furniture upholstery. The textile thread 12 consists of at least 2 partial threads 13, 14 which are twisted together with one another. A piece of such a partial thread 13 is shown in Fig. 9. The partial thread 13 is spun from a number of fibers 15.

According to Figs. 10 and 11, web material 16 is wound into a roll which forms a cushion-shaped compression spring element 17. A number of such compression spring elements 17 are joined to form a furniture upholstery, whereby the central axes 18 of the rolls extend at right angles to a load surface 19 (indicated by a broken line) which is formed by the front edges of the web material 16. This furniture upholstery is loaded as indicated by an arrow 20.

Patent Claims

1. Furniture upholstery,
in which a number of compression spring elements are formed in the shape of a cushion and joined to form a wide-stretched flat composite,
in which each compression spring element is a spatially divided structured element and held together by retaining means
and
in which, in every cushion-shaped compression spring element, web material is produced from threads by meshing and folding repeatedly to form the spatial element, characterized therein
that the thread is a loose textile thread (12) twisted from partial threads (13, 14) and
that the partial threads (13, 14) are spun from fibers (15).
2. Furniture upholstery according to claim 1, characterized therein that the meshing of the web material (6) is a crochet meshing.
3. Furniture upholstery according to claim 1 or 2, characterized therein that the textile thread (12) is twisted from more than two partial threads (13, 14).
4. Furniture upholstery according to claim 1, 2 or 3, characterized therein that the textile threads (12) consist of animal wool or an equivalent synthetic wool.
5. Furniture upholstery according to one of the preceding

claims, characterized therein that front edges of the web material (16), folded several times, forms a load surface (19) for a compressive force (20).

6. Furniture upholstery according to one of the preceding claims, characterized therein that the meshed web material (6) forms tightly arranged ball structures (10) which each consist of several thread runs (11) twisted with one another so as to be joined.
7. Furniture upholstery according to claim 6, characterized therein that there are more than two thread runs (11) in each ball structure (10).
8. Furniture upholstery according to one of the preceding claims, characterized therein that layers (8) of the web material (6), adjacent to one another in the spatial element, merge into one another via folds (9) of the web material.
9. Furniture upholstery according to one of the preceding claims, characterized therein that at least some of the cushion-shaped compression spring elements (2) run untrue in cross-section.

Fig.1

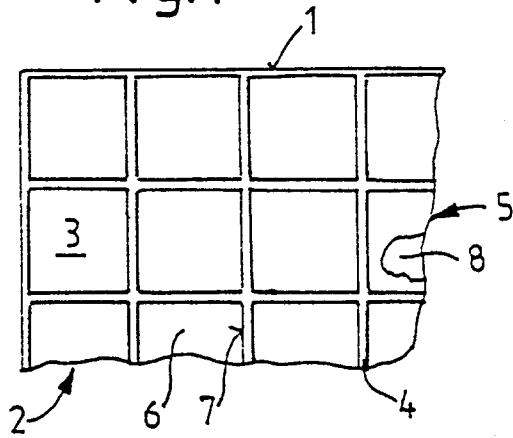


Fig.2

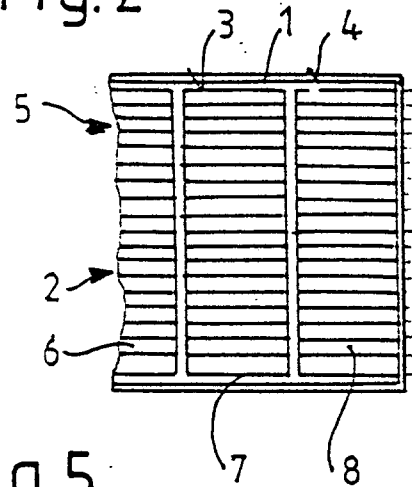


Fig.3

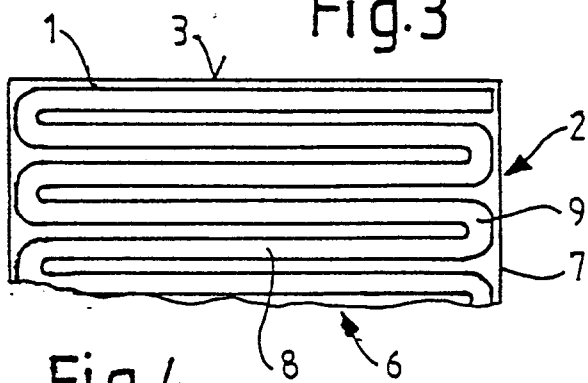


Fig.4

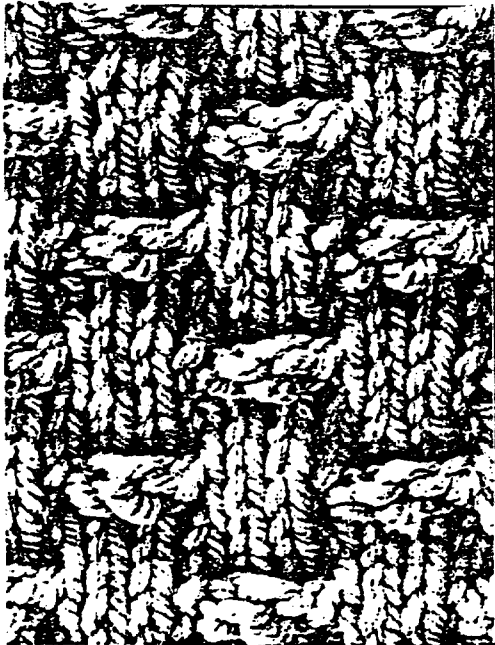


Fig.5

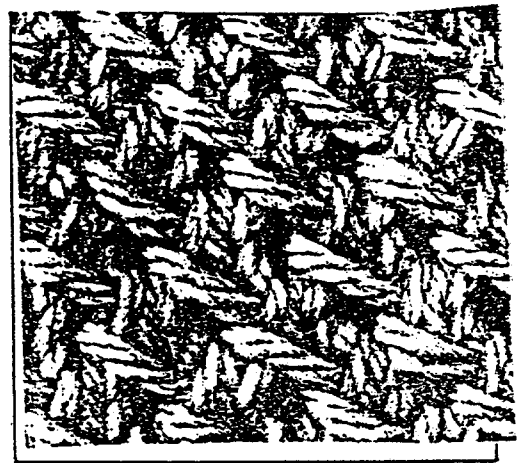


Fig.6

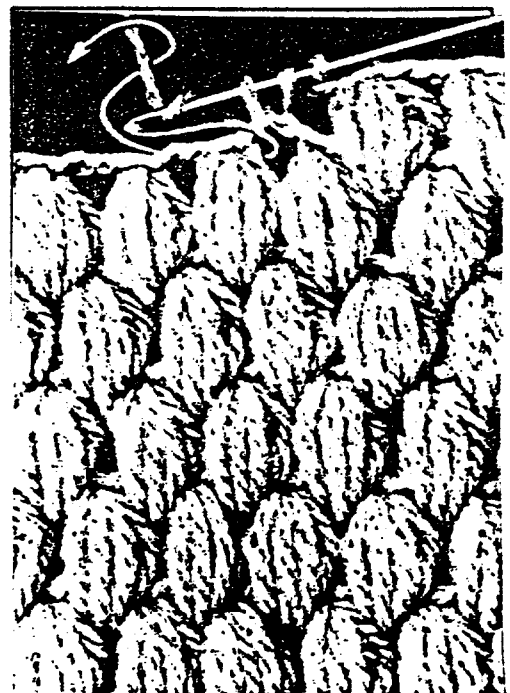


Fig.7

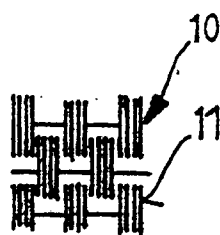


Fig. 8

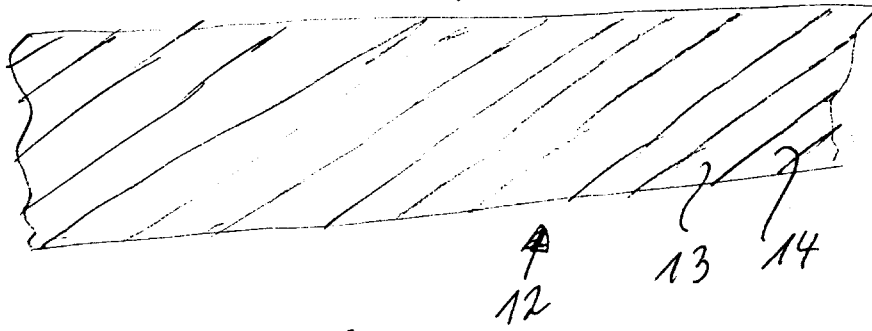


Fig. 9

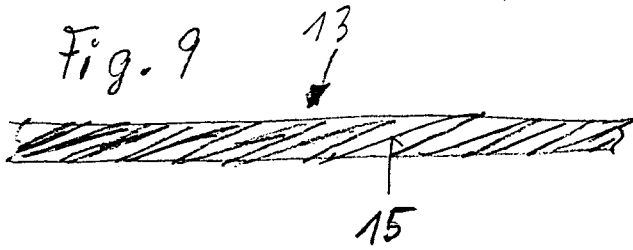


Fig. 10

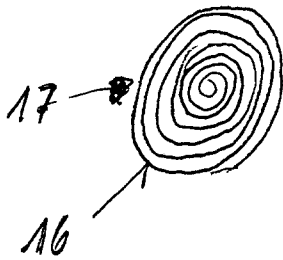


Fig. 11

