

SPRING USED IN MATTRESSES

BACKGROUND OF THE INVENTION

1. Fields of the invention

The present invention relates to a spring, and more particularly, to
5 a spring that is used in mattresses with pocketcoils. The spring includes
excellent resilient feature to provide users' weight.

2. Descriptions of Related Art

The conventional springs used in mattresses are made by single
one steel wire which is extended and formed to have multiple continuous
10 coil portions which provide resilient feature. The single steel wires cannot
be recovery after a long period of use. Another type of springs are
developed and includes multiple wires which are spirally assembled
together to form one wire which is then extended and formed to have
multiple continuous coil portions which provide resilient feature. This type
15 of springs are used in pocketcoil mattresses and there are four wires to be
spirally assembled together to form one wire. The springs have better
strength and resilient feature so as to provide better support feature to the
users.

However, this type of springs involve complicated manufacturing
20 processes which cause high manufacturing cost. Besides, the four wires are

difficult to be spirally combined evenly so that the resilient efficient is not satisfied.

The present invention intends to provide a spring which includes a first wire and multiple second wires which are snugly wrapped around in a spiral way. The spring eliminates the shortcomings mentioned above.

SUMMARY OF THE INVENTION

The present invention relates to a spring and comprises a first wire and multiple second wires which are spirally wrapped along the axis of the first wire. The second wires are snugly in contact with the outside of the first wire to form a spring wire.

Preferably, the diameter of the first wire is the same as the diameter of each of the second wires.

Preferably, the diameter of the first wire 1 is different from the diameter of each of the second wires.

Preferably, the material of the first wire is the same as the material of each of the second wires.

Preferably, the material of the first wire is different from the material of each of the second wires.

Preferably, the spring wire includes multiple coil portions which continuous and spirally extend along the axis of the spring wire. The coil portions each have the same diameter.

The primary object of the present invention is to provide a spring which is easily manufactured with low cost. The springs have better durability and supporting ability.

5 The present invention will become more apparent from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

10 Fig. 1 is a perspective view to show the spring of the present invention;

Fig. 2 is an enlarged view to show the arrangement of the first wire and the second wires of the spring of the present invention;

Fig. 3 shows that the three second wires are wrapped to the first wire;

15 Fig. 4 is an end cross sectional view, taken along line A-A in Fig. 3, and

Fig. 5 shows that the springs of the present invention are used in a mattress.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

20 Referring to Figs. 1 to 5, the spring of the present invention comprises a first wire 1 which has a round cross sectional area. Multiple

second wires 2 which are spirally wrapped along the axis of the first wire 1. The second wires 2 each which have a round cross sectional area. the second wires 2 being snugly in contact with an outside of the first wire 1 to form a spring wire 3. The location of the second wires 2 relative to the first wire 1 is shown in Fig. 4.

The first wire 1 is used as the axial wire and the second wires 2 are spirally wrapped to the outside of the first wire 1. The three wires 2 are evenly spaced from each other. The spring wire 3 is formed to include multiple coil portions 31 which continuous and spirally extend along the axis of the spring wire 3. The coil portions 31 each have the same diameter. The springs are then received in pockets made of non-woven fabrics to become the support pillars in the mattresses.

The diameter of the first wire 1 can be the same as the diameter of each of the second wires 2. Alternatively, the diameter of the first wire 1 is different from the diameter of each of the second wires 2. The different settings of the diameters of the first and second wires 1, 2, and the change of the distance between the coil portions 31 allow the manufacturers to customize the springs to meet specific needs of different users.

The material for the first and/or second wires 1, 2 has high recovery ability and high resilient feature. The material used to make the first and/or second wires 1, 2 are less expensive than that of the steel wires,

so that the mattresses using the springs of the present invention provide better support and the springs are not deformed permanently.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in
5 the art that further embodiments may be made without departing from the scope of the present invention.

WHAT IS CLAIMED IS:

1. A spring comprising:

a first wire;

multiple second wires which are spirally wrapped along an axis of
5 the first wire, the second wires being snugly in contact with an outside of
the first wire to form a spring wire.

2. The spring as claimed in claim 1, wherein a diameter of the first
wire is the same as a diameter of each of the second wires.

3. The spring as claimed in claim 1, wherein a diameter of the first
10 wire is different from a diameter of each of the second wires.

4. The spring as claimed in claim 1, wherein a material of the first
wire is the same as a material of each of the second wires.

5. The spring as claimed in claim 1, wherein a material of the first
wire is different from a material of each of the second wires.

15 6. The spring as claimed in claim 1, wherein the spring wire
includes multiple coil portions which continuous and spirally extend along
an axis of the spring wire, the coil portions each have the same diameter.

7. The spring as claimed in claim 4, wherein the spring wire
includes multiple coil portions which continuous and spirally extend along
20 an axis of the spring wire, the coil portions each have the same diameter.

8. The spring as claimed in claim 5, wherein the spring wire includes multiple coil portions which continuous and spirally extend along an axis of the spring wire, the coil portions each have the same diameter.