J. ETOT.

CUSHION AND MATTRESS.

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943,923. Patented Dec. 21, 1909

Fig. 1

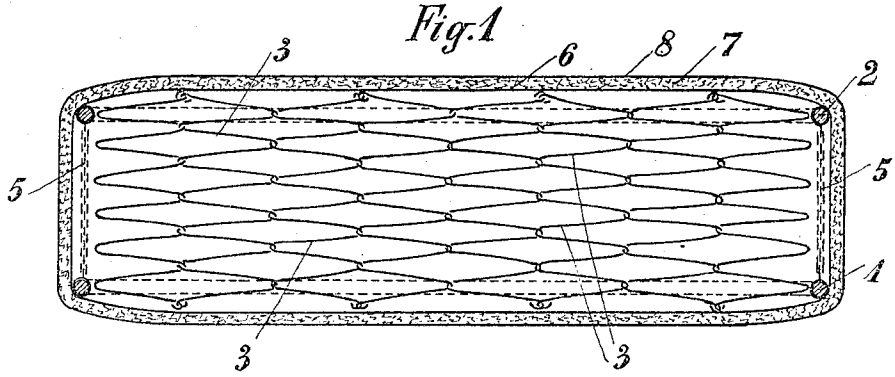
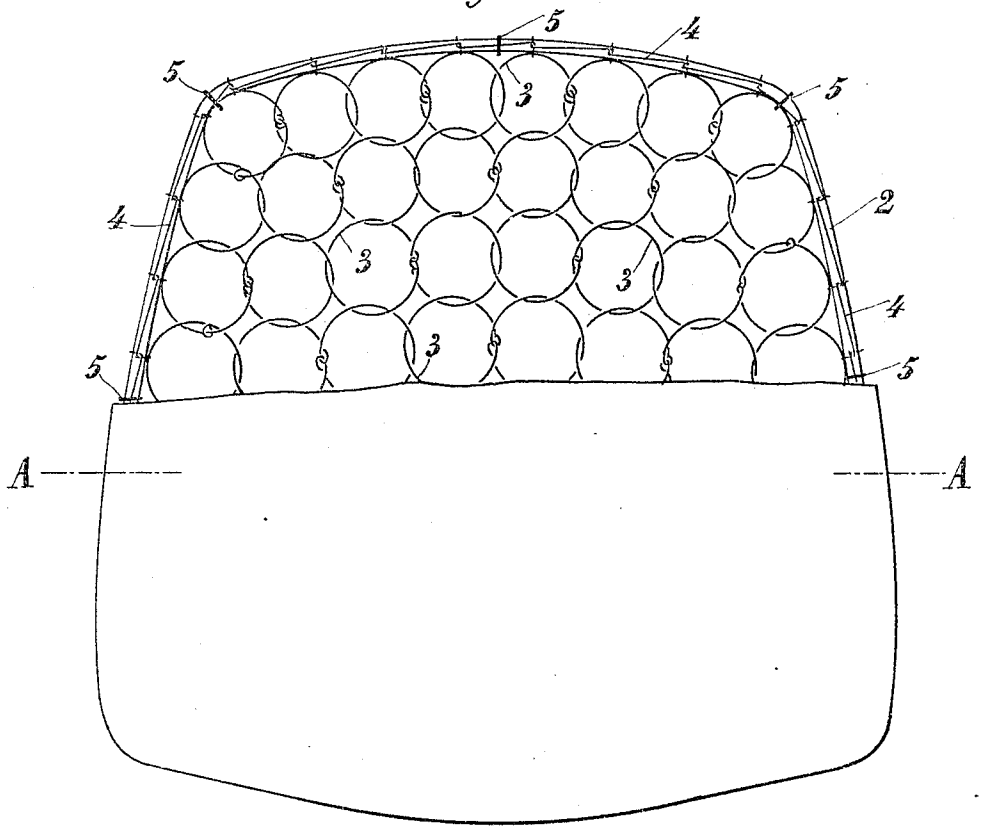


Fig. 2



Witnesses.

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CUSHION AND MATTRESS.

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To all whom it may concern:

Be it known that I, JULES ETOT, a citizen of France, residing at Mer, in the Department of Loir-et-Cher, France, have invented certain new and useful Improvements in Cushions and Mattresses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cushions and mattresses and consists in the construction and combination of parts hereinafter more particularly set forth and claimed.

In the case of hitherto known mattresses and other resilient fillings in upholstered furniture and the like, double or single conically wound springs are in general utilized, which springs are arranged independently of one another, that is, they stand mostly separately on bars, or belts and are connected above by means of belts or the like stretched over them, or by means of cords or wires. In the case of these contrivances, the springs have been intertwined at their upper ends in order to dispense with the above-mentioned connecting members. Finally, such conical springs united by wires have in some cases been arranged between frames which are formed of wire and which are held together with the aid of wires or chains. In the case of all these well-known contrivances, comparatively powerful springs are requisite as, in all cases, only those springs which are directly loaded are subjected to the pressure, the pressure being hardly transmitted at all to the neighboring springs. The elasticity of these resilient bodies, is consequently very limited as the powerful springs are only slightly flexible. Consequently they require a large amount of upholstering or they are employed with special top-cushions. Further, it frequently happens that the springs, in spite of their strength, break when the pressure is directed obliquely, and then these elastic bodies are quite unusable. As fillings for spring mattresses, and the like, these well-known contrivances cannot be considered. Consequently such cushions are made of horsehair, vegetable down, or similar materials.

The subject-matter of the present application is a new arrangement of springs which may be formed as a resilient filling or body for mattresses, upholstered furniture, and so on, but which is principally intended to serve as a filling or body for spring mattresses, chair cushions, carriage cushions and other cushions. According to the present invention this resilient elastic body consists of a combination of many cylindrical helical springs arranged directly close to one another, that is, the one by the side of the other, which springs throughout their whole length are screwed together, that is, engaged with one another, so that in this manner a continuous whole is formed, that is, a texture which is everywhere continuous. Seeing that each spring is connected with its neighboring spring throughout its whole length and is consequently supported all over so that the pressure is transmitted to a whole series of springs, it follows that, in the case of this new arrangement the individual springs may be made from comparatively thin wire. Consequently the elasticity and softness of the device is much greater than heretofore. In the case of the new device, special connecting members which can come undone do not exist at all. It is absolutely impossible for the individual springs to bend double. Consequently this new resilient body or filling has an unlimited life. If this body is employed as a filling for spring-supports, for example, for spring mattresses, only a slight amount of upholstering is necessary, which, if desired, may be applied only at one side. In this manner a spring-support spring mattress or under spring-cushion is obtained which excels in softness and elasticity devices of a similar kind consisting of horsehair, and moreover the new devices can be manufactured at far less cost than any other hitherto known device of the same kind. At the same time, the new arrangement possesses the advantage that it can be more readily aired than hitherto known devices. In many cases upholstering may even be entirely dispensed with as the resilient body possesses sufficient softness in itself and consequently requires to be provided merely with a cover of linen or the like. The new resilient body may with advantage be arranged between frames on which the edge-springs are held and by means of which they are maintained in partial tension. This, however, is not absolutely necessary.

One embodiment of the new device is illus-

trated by way of example in the accompanying drawing, which illustrates a spring cushion for a seat.

In said drawing Figure 1 is a section on the line A—A of Fig. 2, and Fig. 2 is a plan of the cushion, a portion of the covering having been removed.

The resilient filling for the cushion, which filling is arranged according to the present invention is, in the example illustrated, held together by means of the wires 1, 2, forming the frame. This filling itself, consists of the cylindrical helical springs 3 which are formed from comparatively thin wire. Said springs are screwed together, that is, they engage throughout their entire length with their neighboring springs and are connected by means of their ends with one another in such a manner that they form altogether a continuous resilient texture. By means of a binding wire 4 the outermost springs are fastened to the frames 1, 2. Small chains 5, arranged at intervals on the frames insure the frames remaining at the proper distance from one another, so that they keep the springs in tension while not preventing the springs from being compressed.

The pressure exerted on a number of springs when the filling is loaded or subjected to pressure is, as stated above, in consequence of the peculiar interconnection of the springs transmitted to the neighboring springs so that finally all the springs are more or less subjected to the pressure. The connections of the springs with one another are so neat that the clothes of persons sitting on them are not injured. In fact, the resilient body may be employed without any covering at all, that is, it may consist merely of metal parts. In the example however, the elastic body is first provided with a linen covering 6, which surrounds a soft layer 7 of wool, wadding, or the like, and finally the whole is covered with a covering 8, of suitable material.

What I claim as my invention and desire to secure by Letters Patent is:—

A spring mattress or like article, consisting of an upper metallic border or frame, a lower metallic border or frame, interposed means connecting said borders together and a number of helical springs filling the space within said borders, all the coils of each spring being connected with the corresponding coils of all the proximate springs and the outer springs being connected to the borders or frames, substantially as set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JULES ETOT.

Witnesses:
GUSTAV HÜSERP,
A. RENAUD.