

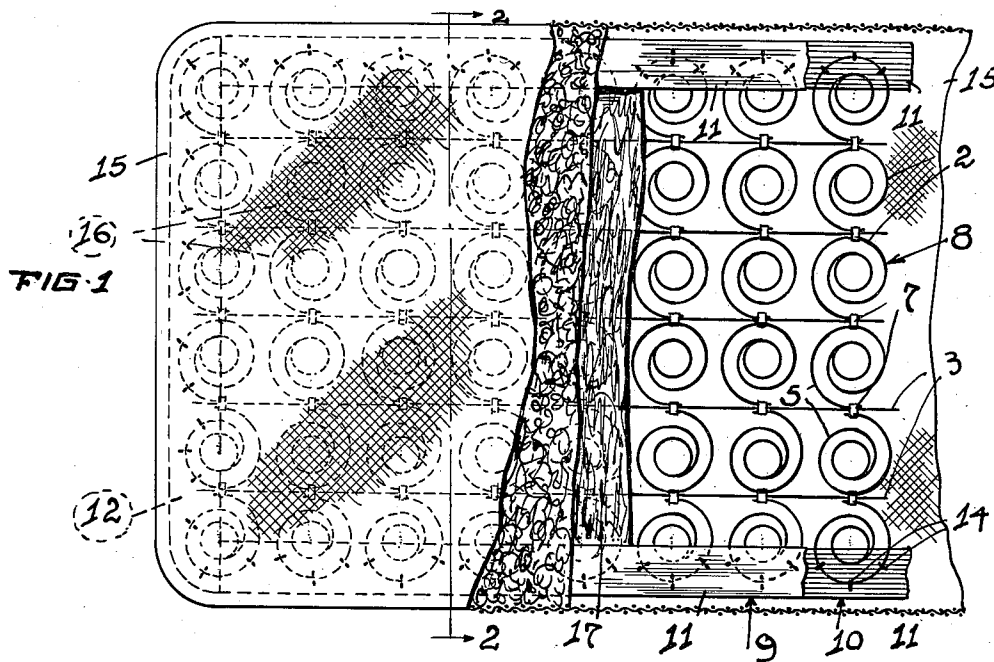
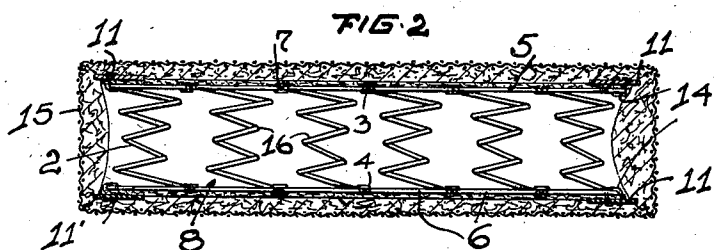
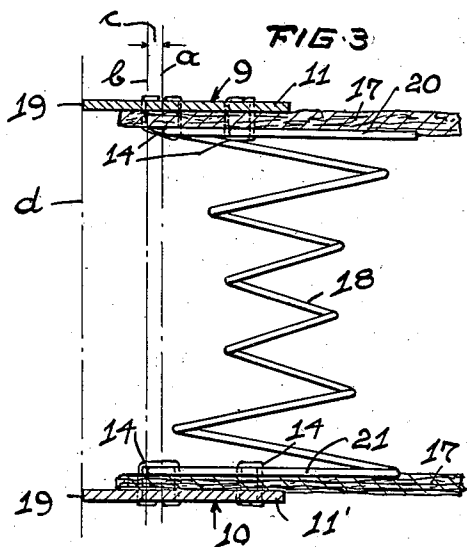
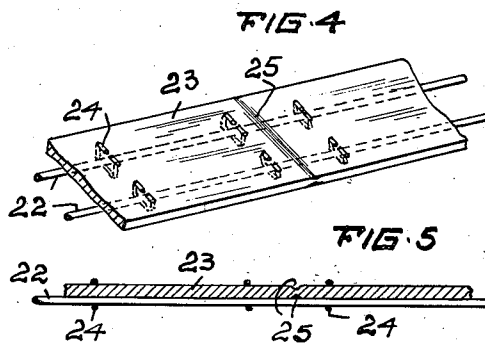
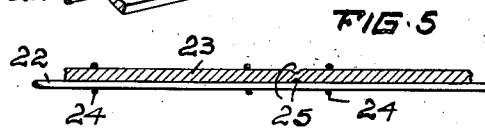
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2,273,064

SPRING UNIT FOR MATTRESSES

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SPRING UNIT FOR MATTRESSES

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5 Claims. (Cl. 5—260)

The present invention pertains to improvements in spring cushion constructions and is particularly directed to spring cushions adapted to be incorporated in inner spring mattresses or upholstery constructions and the like devices.

Inner spring mattresses generally embody a spring unit which is placed within a bag or sack. This spring unit comprises a plurality of parallel rows of aligned parallel coil springs, preferably of the hour-glass type, which springs are interconnected with each other by clips or interlaced by the turns of longitudinal elongated helical spring or wire members to a spring assembly having the upper and lower convolutions of the springs arranged in parallel planes. These spring units should be dimensioned to the size of the cut bag or sack to avoid undesirable fitting and to permit of pre-cutting of ticking, all for the purpose of reducing manufacturing costs of mattresses. However, such dimensioning of the spring units is difficult, as the size of the coils of the individual springs in these spring units varies and cannot be held within desired limits (slight variations in hardness of spring wire, temperatures during coiling operations etc., all effecting the size of such coils). Such variations in sizes of the coils of springs in some cases even effect the shape of the springs, so that the axes of these springs are not rectangularly related to their end coils, and boxing of spring units with imperfect spring coils of this type is extremely troublesome and costly.

It is the general object of the present invention to overcome these deficiencies in present day spring units for mattresses by providing slightly undersized spring units and attaching to the top and bottom areas of these undersized units yieldable strips of pasteboard or fibre in such a manner that the outer edges of these boards extend beyond the edges of the units and give same the desired dimensions.

Another object of this invention is the provision of slightly undersized spring units for mattresses with strips of pasteboard or fibre rigidly secured to the tops and bottoms of the outer rows of the springs of these units and outwardly extended beyond these rows to give the units any desired dimension; the strips of pasteboard or fibre in addition are scored between the individual springs to which they are attached to facilitate yielding of the strips.

In addition, the invention has other marked improvements and superiorities which radically distinguish it from presently known structures. These improvements or superior characteristics

embodying certain novel features of constructions are clearly set forth in the appended claims, and a preferred embodiment of the invention is hereinafter shown with reference to the accompanying drawing, forming part of the specification.

In the drawing:

Fig. 1 is a fragmentary plan view of an inner spring mattress embodying the invention, parts of the mattress being broken away to show the pasteboard strips and their connections with the sisal and the springs.

Fig. 2 is a cross sectional view through the mattress shown in Fig. 1, the section being taken on line 2—2 of said figure.

Fig. 3 is an enlarged view of one of the end springs of the structure shown in Fig. 1, the spring being slightly oblique and having a strip of pasteboard and a layer of sisal jointly secured to its end coils, the pasteboard strips effecting proper alignment of top and bottom edges of the thus formed spring structure.

Fig. 4 is a fragmentary perspective view of a wire-reinforced, scored pasteboard strip; and Fig. 5 is a longitudinal sectional view through such a wire-reinforced, scored pasteboard strip.

Referring now in detail to the exemplified form of the inner spring mattress shown in the drawing, reference numeral 2 represents a plurality of opened coil springs in which the extremities of each spring are not affixed to another part of the same spring. Springs 2 which are of the hour-glass type, though the invention is not to be limited to this type of springs, are arranged in horizontal rows tied to each other by tie wires 3 and 4 which are secured to the adjacent upper end coils 5 and the adjacent lower end coils 6 of the springs by means of clips 7, and consequently the springs of each row are not directly connected to one another, but are held in mutually spaced relation by the tie wires. The interconnected rows of springs 2 form a spring unit 8, the top and bottom border areas of which have rigidly secured thereto equally dimensioned yielding open frame structures 9 and 10 of pasteboard or similar material. Each of the two frame structures embodies two longer strips 11 and two shorter strips 12, and the frame structures 9 and 10 built from these strips are oversized with respect to spring unit 8, so that the longer and shorter strips 11 and 12 extend outwardly beyond the upper and lower coils of the outer springs. Frame structures 9 and 10 are attached to the outer springs by means of staples 14, which securely stitch said boards to the end

coils of said springs, and are axially aligned so as to form properly positioned straight edges on unit 8, thus permitting of construction of perfectly dimensioned spring units readily and easily boxable in a bag or sack 15. The pasteboard strips 11 and 12 which are of a width approximately equal to the radius of the end coils of springs 2 to prevent cramping or buckling of the finished mattress under side stresses, retain the outer springs in perfect alignment and prevent transfer of lateral stresses to the inner springs 16 of the unit.

In addition, frame structures 9 and 10 permit of properly securing spring coverings to the opposite sides of the spring unit. This will be best understood from an inspection of Fig. 3 of the drawing, in which spring 18 has its end coils 20 and 21 covered by layers of sisal 17. Layers 17 are held in place by pasteboard strips 11, 11', which, together with said layers, are secured to the spring by means of staples 14.

The spring 18, shown in Fig. 3 is imperfect or defective, as top coil 20 and bottom coil 21 are laterally offset with respect to each other, see distance *c* marked by lines *a* and *b*. However, the defective shape of the spring is fully overcome by use of strips 11, 11', the outer edges 19 of which are properly aligned with each other as indicated by line *d*.

Spring units constructed in the manner disclosed above are perfectly shaped to fit a pre-cut bag or sack 15 and will permit of manufacturing of perfectly tailored mattresses at low cost.

The material for strips 11 and 12 may be pasteboard of the desired thickness or any other suitable fibre material having sufficient inherent elasticity to insure proper yielding action of the border areas of the spring unit, and, if desired, the strips of pasteboard 11 and 12 may be reenforced by wires as shown in Figs. 4 and 5, in which wires 22 are stapled to a strip by means of staples 24, so as to permit of relative movements of wires 22 with respect to strip 23. In addition strips 23 are scored as at 25, preferably in the space between the springs attached thereto to increase the yielding action of the strips.

Having thus described my invention, what I claim is:

1. A spring unit for inner spring mattresses including rows of coil springs arranged side by side and coupled with each other to form a spring body of slightly less length and width than the spring unit, straight edge strips of pasteboard seated on the end coils of the springs of the outer ones of said rows extending outwardly beyond the said end coils to form outwardly extended straight edges on said spring unit and properly dimension its top and bottom faces, layers of spring covering between said strips and said coil springs, and clips jointly securing with said strips

and spring covering to the end coils of the outer ones of said rows of coil springs.

2. A spring unit for inner spring mattresses comprising rows of coil springs dimensioned and connected with each other to form a spring body having slightly less length and width than the spring unit, and elongated edging strips of pasteboard-like material seated on the outer springs of said spring body in properly adjusted outwardly extended relation with respect thereto to dimension the top face of said spring body to the desired proportions and provide said top face with straight, smooth edges, said edging strips in their adjusted positions being rigidly attached to the end coils of the said outer springs.

3. A spring unit for inner spring mattresses comprising rows of coil springs dimensioned and connected with each other to form a spring body having slightly less width than the spring unit, and elongated, straight edge strips of pasteboard seated on the outer ones of said springs lengthwise of said spring body in properly adjusted outwardly extended relation with respect thereto to dimension the top face of said spring body to the desired width and provide said top face with straight, smooth edges, and clips rigidly securing the paste board strips in their adjusted positions to the end coils of the said outer springs.

4. A spring unit for inner spring mattresses comprising rows of coil springs dimensioned and connected with each other to form a spring body of slightly less length and width than the spring unit, and elongated edging strips of pasteboard-like material seated on the opposed end coils of all the outer springs of said spring body in properly adjusted, outwardly extended relation with respect thereto to dimension the top and bottom faces of said spring body to the desired proportions, provide said top and bottom faces with straight smooth edges and align said top and bottom faces in spaced relation with respect to each other, and clips rigidly securing said edging strips in their adjusted positions to the said end coils of said outer springs.

5. A spring unit for inner spring mattresses comprising rows of coil springs dimensioned and connected with each other to form a spring body having parallel top and bottom faces, and elongated, straight edge strips of pasteboard-like material seated in properly adjusted positions on the opposed end coils of all outer springs of said spring body, said strips being adjusted to extend to and slightly beyond said end coils to provide straight, smooth edges for the top and bottom faces of said spring body, dimension said spring body and align its top and bottom faces with each other, and clips rigidly securing said strips in their properly adjusted positions to the end coils of said outer springs.

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