Oct. 10, 1933. H. PERLESZ 1,929,792

SPRING CUSHION

Filed Jan. 23, 1933

Fig. 1.

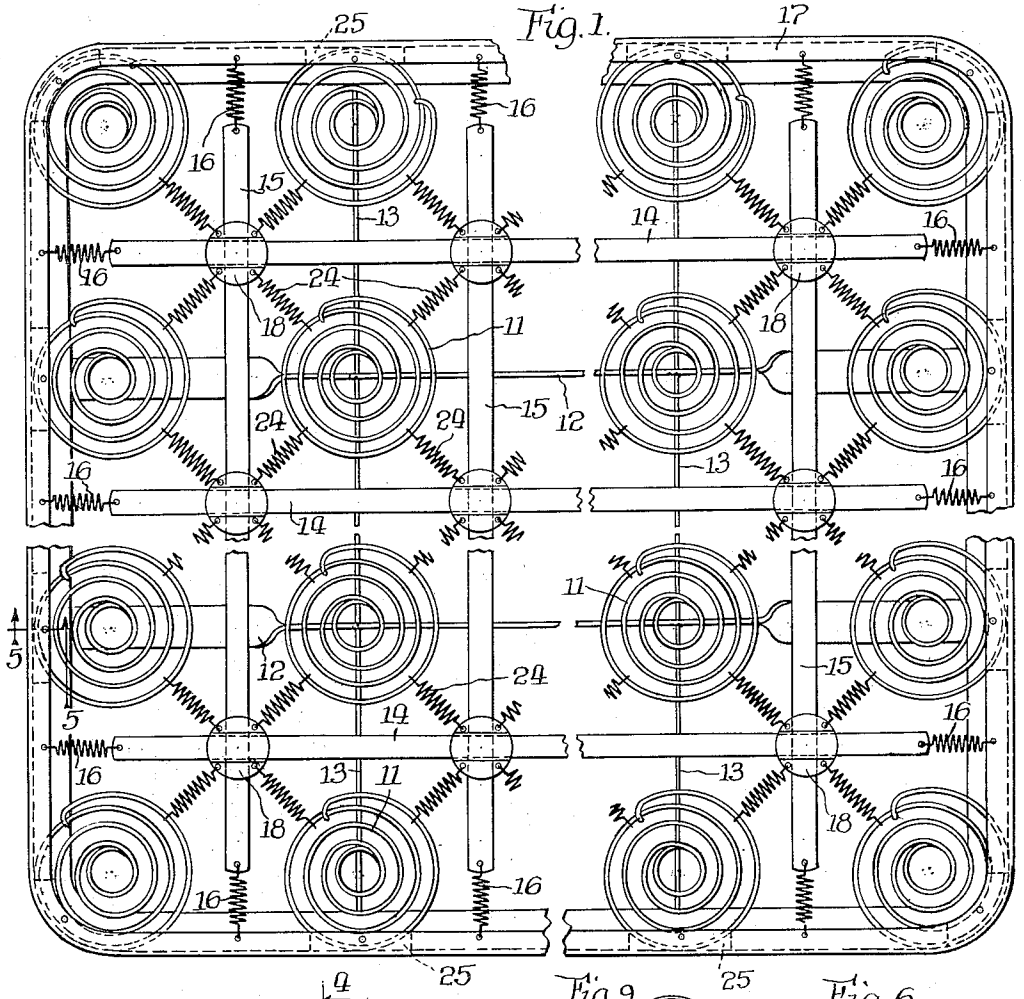


Fig. 2.

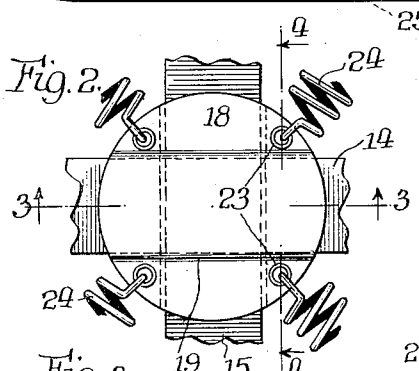


Fig. 3.



Fig. 4.

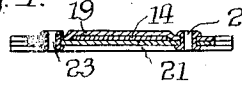


Fig. 5.

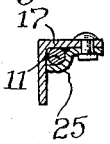


Fig. 8.

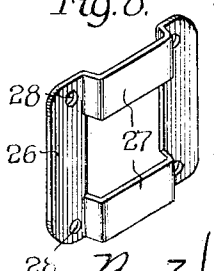


Fig. 9.

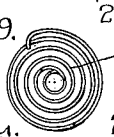


Fig. 10.



Fig. 6.

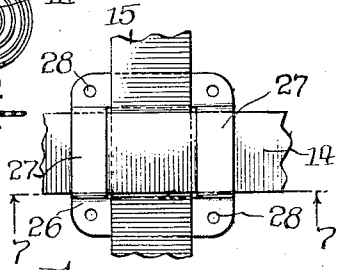
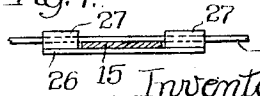


Fig. 7.



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Patented Oct. 10, 1933 1,929,792

UNITED STATES PATENT OFFICE

1,929,792

SPRING-CUSHION

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Application January 23, 1933. Serial No. 653,030

2 Claims. (Cl. 5—267)

My invention relates to several features of betterment and advantage in spring-cushions in general, and in bed-springs more in particular.

One of the leading aims and prime purposes of the invention is to provide a spring-cushion which possesses adequate elasticity and resiliency, which has the spaces between the top coils of convolutions of its upright spiral-springs occupied by suitable members which prevent the superposed padding or mattress from sinking unduly between the springs and which members also assist in holding the erect spiral-springs somewhat yieldingly in position, which is relatively economical to construct, and which is free from noise when in use.

Viewed in another way, the novel construction incorporates a yieldingly mounted strap or slat supporting means, with the spaces between the crossing bands or straps occupied by suitable filling means, such as upright spiral-springs, appropriately connected to the associated straps or slats.

To the accomplishment of the specified and other desirable objects, I have devised the present preferred embodiments of the invention illustrated in the accompanying drawing and described in detail below.

In this drawing, throughout the several views of which like reference numerals have been employed to designate the same parts:—

Figure 1 is a fragmentary or interrupted plan view of the top of one style of cushion or bed-spring;

Figure 2 is an enlarged plan view of one of the band or slat connectors showing the associated bands or straps and portions of the companion helical springs;

Figure 3 is a section on line 3—3 of Figure 2;

Figure 4 is a similar section on line 4—4 of Figure 2;

Figure 5 is an enlarged cross-section on line 5—5 of Figure 1;

Figure 6 is a plan view of another form of connector and its bands or straps;

Figure 7 is a section on line 7—7 of Figure 6;

Figure 8 is a perspective view of the connector presented in Figures 6 and 7; and

Figures 9 and 10 are plan and sectional views, respectively, of another style of upright spiral-spring.

Referring to the views of this drawing, it will be readily understood that the spring-cushion depicted in Figures 1 to 5, inclusive, incorporates an appropriate number of upstanding spiral-springs 11, 11 of the usual and ordinary structure and arranged in rows both lengthwise and crosswise the cushion, their lower ends being mounted in the customary way on supporting bars 12, 12 to which they are locked or fastened by cooperating wires 13, 13, but any other convenient manner of mounting or supporting the lower ends of such springs will suffice.

Practically midway between the top convolutions of such springs I employ flexible metal bands, straps, slats, or ribbons 14, 14 arranged crosswise the cushion and with their flat surfaces horizontal, and I use like elements 15, 15 lengthwise the cushion and located just below the companion members 14, or, if preferred, such lengthwise elements may be positioned above the crosswise members.

All such straps, bands, or slats have their plane surfaces arranged practically horizontal and substantially in the plane of the top coils of the spiral-springs 11.

Each of such thin, flat, resilient bands or straps is yieldingly attached at its opposite ends by helical springs 16, 16 to a border-frame 17, so that in addition to the flexibility of the bands themselves, they are yieldingly mounted in their supporting-frame.

At the points of contact or crossing of the transverse straps 14 with the lengthwise bands 15 they are bound or connected together, but in such a manner that each can slide longitudinally and transversely relatively to the other.

Each such connector comprises an upper, round disc or plate 18 bent to provide a bearing 19 on its underside for slidingly receiving the corresponding strap 14, and a like lower plate or disc 21 bent to supply a bearing 22 on its top face to slidingly accommodate the companion band 15, the bottom surface of the top disc and the upper surface of the under disc being in contact with one another at four points outside of the straps or slats, the two discs of such connector being fastened or tied together at such points by four eyelets 23, 23 occupying registering holes in the two discs.

The top terminal coil of each upright spiral-spring 11, except the border ones, is yieldingly joined to the four adjacent connectors 18—21 by four diverging or diagonal helical-springs 24, 24, the inner ends of which fit around or hook over such top coil while their other ends extend through the eyelets, all as is clearly illustrated.

Around the border of the spring-structure,

some of the helical-springs 24 are omitted and the spiral-spring top convolutions are directly connected to the border-frame 17 by suitable clamps 25.

Thus it will be perceived that the spaces between the erect or perpendicular springs are well filled by the flat straps or bands, their connectors, and the associated helical-springs, and all the parts of the cushion are so connected or joined together that the structure as a whole possesses adequate resiliency and the parts can shift positions relatively to one another comparatively easily without noise or sound and without permanent displacement.

Furthermore, the bands or slats are flexible up and down and they can easily slide in their connectors to favorably accommodate themselves to the load imposed on the cushion.

Viewing the structure differently, it may be considered as a slat mattress-supporting construction with the spaces between the straps or bands occupied by the springs for assisting in yieldingly supporting the superposed mattress or cushion at such points and even such springs may be replaced by other space-filling means, if desired.

In Figures 6, 7, and 8, a modified form of connector is shown which is composed of a single piece of sheet-metal bent to the required shape or form.

Such connector comprises a rectangular frame 26 having a central, square opening and two elevated parts 27, 27.

The band 15 rests on the frame and the strap 14 which is just above the band 15 is accommodated beneath the raised sections 27, so that the band and strap can slide lengthwise and relatively to one another with ease and facility.

The corner portions of this connector are provided with apertures 28 into which the ends of the springs 24 are adapted to hook.

In both instances, the structure functions in practically the same way, but the connector shown in Figures 6 to 8, inclusive, is simpler in structure and therefore more economical to produce.

In some cases, instead of using the common or usual erect spiral-springs 11, another form or style, shown in Figures 9 and 10, may be used to substantial advantage.

Such spring 111 is of the customary spiral-wire type, except that it has an enlarged, top, flat head formed of a plurality of convolutions of the wire in the same horizontal plane.

These added convolutions give the head increased space-filling properties, they afford greater resiliency for that part of the spring, and they support the superposed cushion or mattress over a greater area.

Those acquainted with this art will readily understand that the features of this invention are not limited to the precise constructions presented and that many more or less minor or radical modifications may be incorporated in the spring-cushion without departure from the heart and essence of the invention as defined by the appended claims and without the loss or sacrifice of any of the material advantages accruing from the employment of the invention.

I claim:

1. In a spring-cushion, the combination of a frame, upright spiral-springs arranged in rows longitudinal and transverse to said frame, flat metal straps with their plane surfaces horizontally arranged lengthwise the structure practically midway between and substantially in the plane of the top coils of said springs, springs connecting the ends of said straps to said frame, flat metal bands with their plane surfaces horizontally arranged crosswise the structure practically midway between and substantially in the plane of said top coils and crossing said lengthwise straps, springs connecting the ends of said cross bands to said frame, connectors joining said straps and bands together at their crossing points, said straps and bands being slidable lengthwise in said connectors and helical-springs connecting each of said top coils to the four adjacent connectors.

2. In a spring-cushion, the combination of a frame, upright spiral-springs arranged in rows longitudinal and transverse to said frame, some at least of said spiral-springs each having a flat top coil composed of a plurality of convolutions of the wire forming the spring, flat metal straps with their plane surfaces horizontally arranged lengthwise the structure practically midway between and substantially in the plane of the top coils of said springs, springs connecting the ends of said straps to said frame, flat metal bands with their plane surfaces horizontally arranged crosswise the structure practically midway between and substantially in the plane of said top coils and crossing said lengthwise straps, springs connecting the ends of said cross bands to said frame, connector joining said straps and bands together at their crossing points, said straps and bands being slidable lengthwise in said connectors, and four means connecting each of said top coils to the four adjacent connectors.

HUGO PERLESZ.