

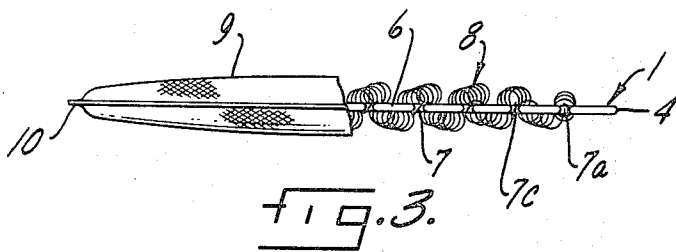
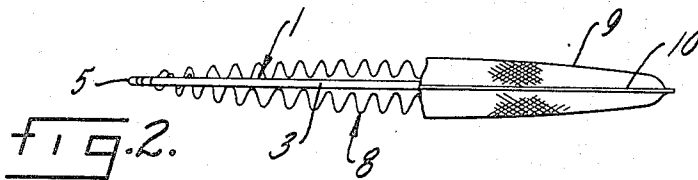
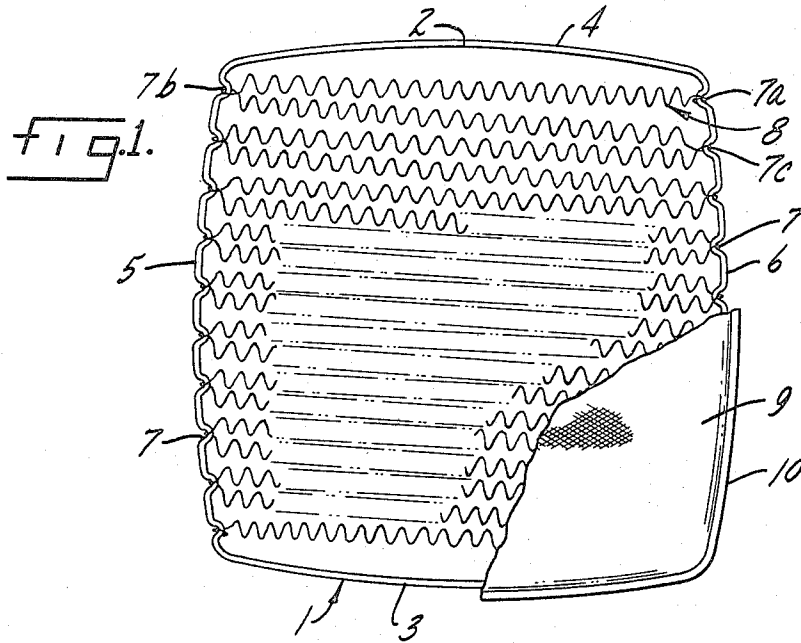
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VENTILATED CUSHION

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VENTILATED CUSHION

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ABSTRACT OF THE DISCLOSURE

A ventilating cushion including a border frame and a single length of coiled wire wound across the frame in segments alternately above and below the frame and at an angle to the frame center line and to each other and out of contact with each other.

This invention includes a cushion formed of a border wire frame, a single length of coiled wire having segments lying across and about the frame at an angle with the frame center line and with each other and out of contact with each other, the segments bowing alternately above and below the frame and a cover enclosing the frame and coiled wire.

One purpose of the invention is to provide a ventilated cushion having maximum air-circulating space therewithin.

Another purpose is to provide a ventilated spring cushion having means insuring against the shifting of spring coil lengths while maintaining maximum air-circulating space within the cushion.

Another purpose is to provide a ventilated spring cushion having maximum freedom from uneven or bumpy surfaces.

Another purpose is to provide a ventilated spring cushion wherein coil spring lengths are employed in their original configuration and without the necessity for flattening or otherwise deforming the curvature of any coils in said lengths.

Another purpose is to provide a ventilated spring cushion capable of rapid production and maximum economy in production and material cost.

The invention is illustrated more or less diagrammatically in the accompanying drawings wherein:

FIGURE 1 is a planar view;

FIGURE 2 is an end view; and

FIGURE 3 is another end view.

Like parts are indicated by like numerals throughout the specification and claims.

Referring now to the drawings, FIGURE 1 shows a spring cushion constructed in accordance with the invention and having a border frame 1 formed of a continuous length of relatively firm wire material. As shown, the frame 1 constitutes a length of wire bent upon itself in a general cartouche design, the opposite ends of the wire length being secured together as indicated, for example, at 2 to form a continuous length, the juncture 2 being formed in any suitable manner, such as by a butt weld. The frame 1 includes unbroken opposite side portions 3, 4, a rear portion 5 and a forward portion 6. The portions 5 and 6 have a plurality of spaced indentations 7 inwardly directed with respect to the frame 1. A single continuous length of coiled spring wire, indicated generally by the numeral 8, is positioned within the frame 1. One end of the coil spring length 8 is joined to an end indentation 7 of frame portion 6, as indicated at 7a. The member 8 thence extends across the frame 1 and is turned about an end indentation on the frame portion 5, as indicated at 7b. From the point 7b the coil length 8 is reversed, extending again across the frame 1 at a slight angle to a center line thereof and is wrapped

about the indentation adjacent point 7a as indicated at 7c. It will be apparent from the drawing that this process is continued, the length 8 being wound across the frame 1 and engaging sequential indentations 7 on the frame portions 6 and 5, the distal end of coil spring length 8 being secured to an indentation 7 adjacent the side frame portion 3.

Indicated generally by the numeral 9 is a cover for the cushion of the invention, the cover 9 being formed of air permeable material and covering the upper and lower surfaces of the frame 1, edges of the upper and lower material pieces being joined together in a border as indicated at 10.

Whereas there has been shown and described an operative form of the invention, it should be understood that this showing and description are to be taken in an illustrative or diagrammatic sense only. There are many modifications in and to the invention which will be apparent to those skilled in the art and which will fall within the scope and spirit of the invention.

The use and operation of the invention are as follows:

The product of the invention is capable of rapid production. A single border wire frame member 1 has its portions 5, 6 indented and is joined together at 2 to form the frame 1. A single piece of wire coil 8 is then joined at one end to an end indentation on the frame portion 5 or 6 and wound about the sequential indentations 7, its opposite end being secured to the last such indentation. The frame may, of course, be rotated to wind the coil length 8 alternately across the indentations in the frame portions 5 and 6 to form the structure illustrated in the drawings. The tension of the coil surface is determined by the individual coil selected for extension about the side frame portions 5 and 6 and the indentations 7 are of sufficient depth to insure against escape of said coils. The cover is then placed upon the resulting frame and spring structure to form the cushion of the invention.

While a single cushion element is illustrated in the drawings, it will be understood that a combination seat-and-back cushion may be formed in the same manner, a structure corresponding substantially to that of FIGURE 1 serving as both the seat and back portions. In such event the cover 9 may conveniently extend across both seat and back portions, the opposite end segments of such elongated cover being joined between a pair of frames 1 to form a hinge.

A minimum of coil spring wire is required in the cushion of the present invention, thus providing a maximum air flow space through the cushion. Shifting or spreading apart of the individual cross-lengths of the single coil 8 is prevented by the indentations 7 in the frame portions 5 and 6. Intersecting and interlocking lengths of coil wire are avoided, thus reducing the amount of coil wire within the cushion and providing maximum air flow space. The avoidance of such intersecting rows of coils further escapes any need for compressing or pressing the wire coil lengths to insure interlocking thereof. As may be readily seen in FIGURES 2 and 3, the individual cross-portions of coil length 8 extending across the frame 1 may bow upwardly in their excursion across the frame in their free state. It will be realized that the cover 9 may tend to compress or lower the said lengths into a closer planar alignment with the frame 1. Since the individual portions of coil length 8 extending across the frame are separated from each other, they are free to move into such planar or horizontal alignment in response to compression of the cover and to move further into such alignment in response to the weight of the user when the cushion is sat or leaned upon. Uncomfortable bumps or rigid irregularities are also avoided by the separation of the individual coil portions extending across the frame 1 and without the necessity of flattening

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the coils thereof to preclude such bumps or irregularities. The frame 1, having a wire diameter substantially less than the diameter of the coils of length 8, is not felt by the user whose body is, of course, supported by the coils of length 8 and an individual coil of length 8 extends about the side frames 5, 6 in securing, simply and securely, the coil surface to frame 1, as may be seen in the drawings.

There is claimed:

1. A ventilating cushion comprising a bend resistant border wire frame having indentations formed in two opposite side portions, a single length of coiled spring wire extending across said frame between said side portions, said length of coiled spring wire being wrapped around the border wire frame and engaging each of said indentations and substantially filling the space within said frame in individual coiled wire segments, said segments individually extending alternately above and below said frame; said indentations in said border wire frame being

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so related that said segments lie at an angle with respect to a center line of said frame and are out of contact with each other and a cover enclosing said frame and coiled wire length.

2. The structure of claim 1 wherein each said segment lies at an angle with respect to an adjacent segment.

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