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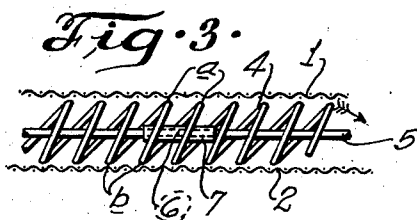
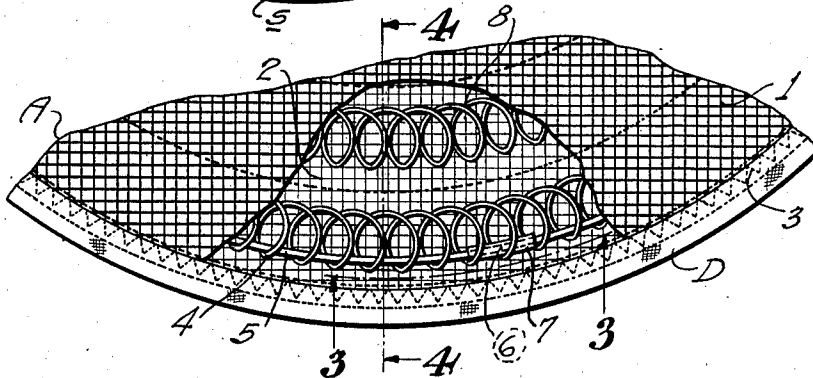
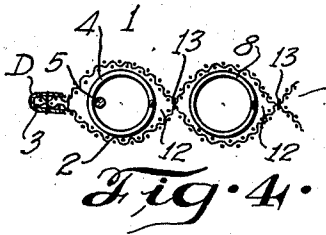
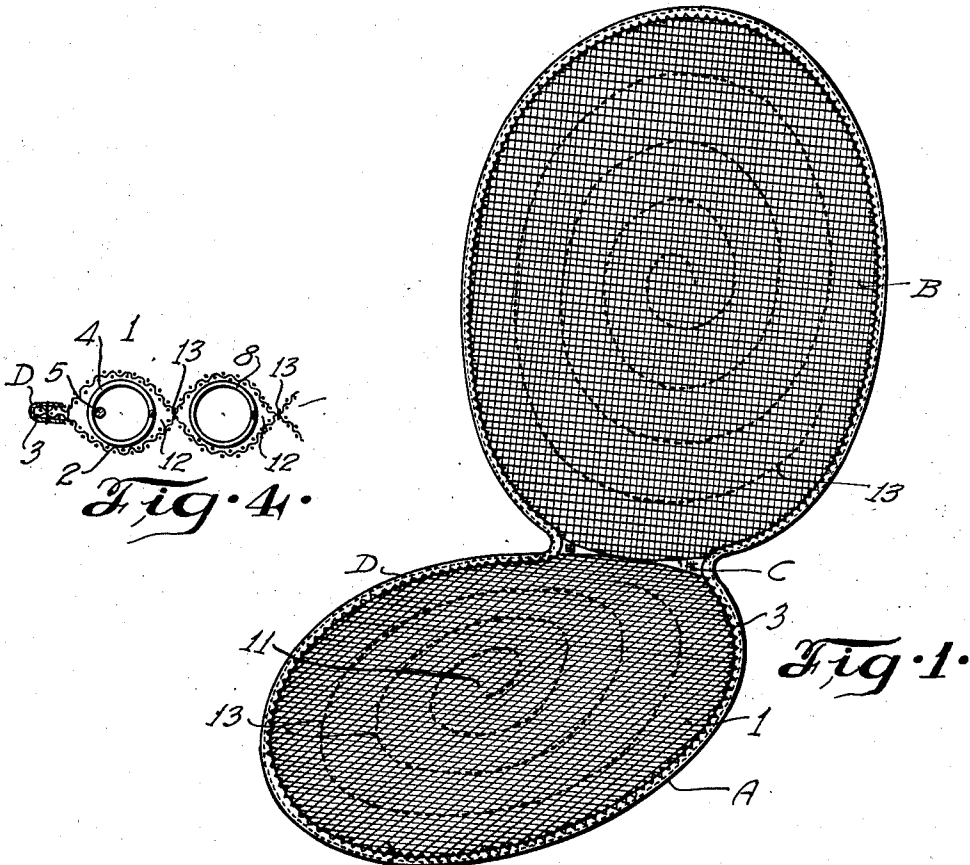
E. P. HARLEY

2,129,353

SEAT PAD AND CUSHION

Filed Sept. 4, 1936

2 Sheets-Sheet 1



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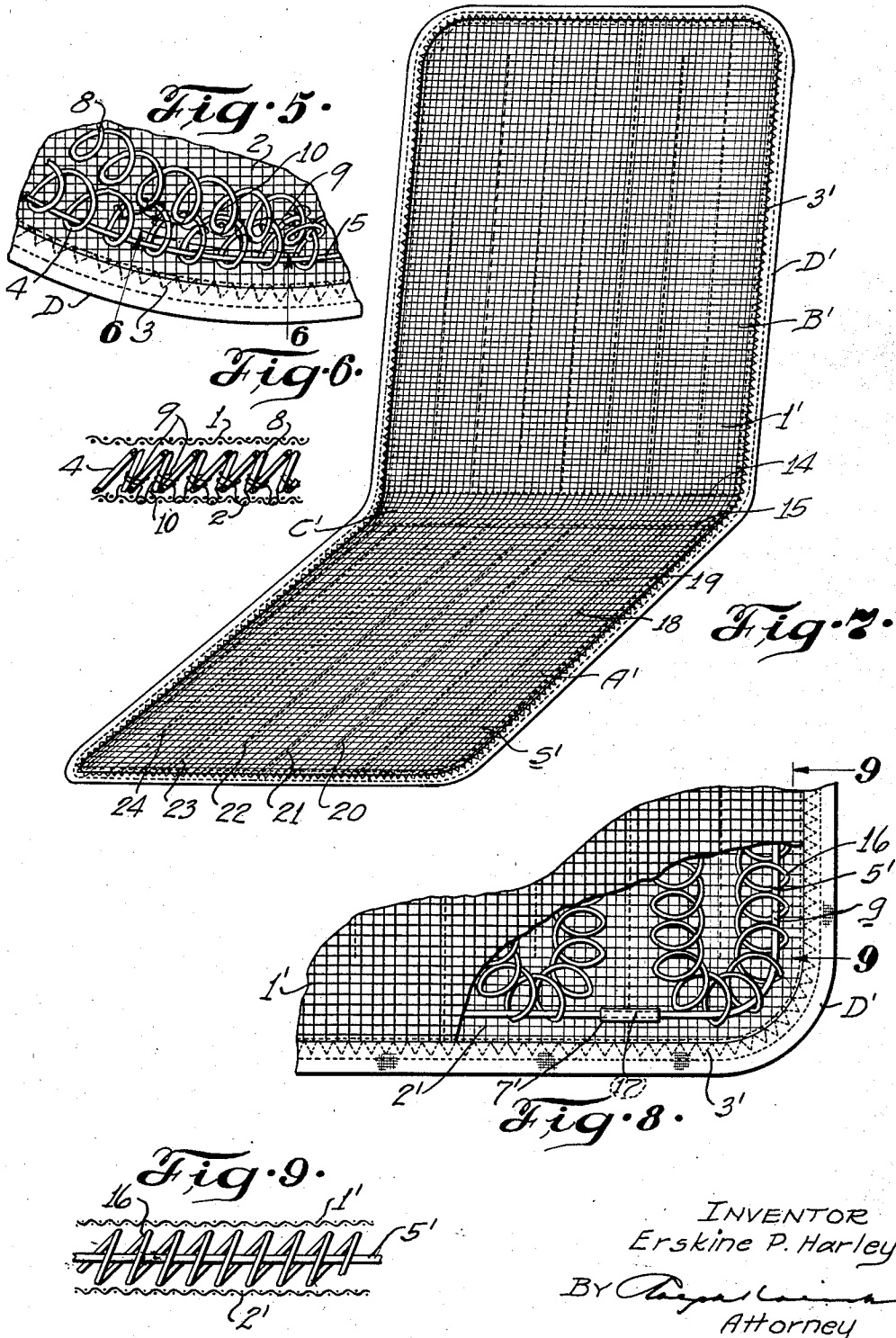
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SEAT PAD AND CUSHION

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2 Sheets-Sheet 2



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SEAT PAD AND CUSHION

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2 Claims. (Cl. 155—182)

This invention relates generally to seat-pads and cushions and, more particularly, to a certain new and useful improvement in seat-pads and cushions of the resilient ventilated type.

5 My invention has for its object the provision of a seat cushion of the class stated which is inexpensive in structure, which will to the comfort of the user readily conform yieldingly to the contours of the human body, which will permit free
10 circulation of air between the body of the user and the chair or other support upon which the cushion is placed, which is of exceptional strength, durability, and resiliency and possesses high resistance to permanent deformation in use, and
15 which is efficient in the performance of its intended functions.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out
20 in the claims.

In the accompanying drawings (two sheets),—

Figure 1 is a perspective view of a seat-cushion constructed in accordance with and embodying
25 my present invention;

Figure 2 is an enlarged fragmentary plan view of the cushion, a portion of the upper wall or cover of the cushion being broken away for disclosing the cushion's internal construction;

30 Figure 3 is a fragmentary sectional view of the cushion, taken approximately on the line 3—3, Figure 2;

Figure 4 is a fragmentary transverse sectional view of the cushion, taken approximately on the
35 line 4—4, Figure 2;

Figure 5 is a view of the cushion similar to Figure 2, showing the internal construction of another portion of the cushion;

Figure 6 is a detail sectional view of the cushion
40 taken approximately on the line 6—6, Figure 5;

Figure 7 is a perspective view of a slightly modified seat-cushion embodying my present invention;

Figure 8 is a fragmentary plan view of the
45 cushion of Figure 7, a portion of the upper wall of the cushion being similarly broken away for disclosing the internal construction of the cushion; and

Figure 9 is a fragmentary sectional view of the
50 cushion taken approximately on the line 9—9, Figure 8.

Referring now in more detail and by reference characters to the drawings, the cushion as a whole preferably includes a seat section or pad A
55 and a back-rest B joined together for relative

swingable movement by a flexible hinge-strip C of fabric or other similar material.

The seat-pad section A and the back-rest section B are substantially of similar construction, each comprising an upper wall or top covering
5 member 1 and a lower wall or bottom cover member 2, each, in turn, constructed preferably from burlap or similar type of loosely woven fabric having a large number of interstitial openings for
10 allowing the free circulation of air therethrough, the walls or cover members 1 and 2 being stitched or otherwise permanently secured together along their marginal edges, as shown at 3 in Figures 1
15 and 2, and the stitched margin of the cushion-member being enclosed within a suitable binding D, which, as best shown in Figure 1, is continuous around both the cushion-members A and B. Thus, as it may be said, the stitched or otherwise
20 secured together top and bottom cover members 1, 2, of each respective member A, B, form an envelope or shell s for housing other parts, now to be described, of the particular cushion-section or member.

Disposed within the so provided shell or envelope, is an outer or marginal convoluted spring
25 element 4 formed in a preferably circular shape along a shape-defining wire member or frame 5, the opposite ends of which are brought together in abutting relationship, as shown at 6 in Figure 2, and clampingly secured in a sleeve or thimble
30 7, the spring element 4 extending continuously around within the shell s, as shown in Figure 2, and having its opposite ends joined together in any suitable manner.

Also disposed within the shell s, is a second
35 convoluted spring member 8 disposed in a spiral form within the confines of the outer or circular spring-member 4, the member 8 at one end being tangentially disposed, and by a wire or cord lashing 9, secured to, the outer spring member 4 and
40 to the bottom cover-member 2, as shown at 10 in Figure 6.

From such point of connection 10, the spring member 8 extends inwardly and spirally to the center point 11 of the particular cushion-member
45 through a continuous spiral channel 12 formed between the top cover-member 1 and the bottom cover-member 2 by a continuous chain of stitches 13, as best seen in Figures 1 and 4, both the outer or marginal spring member 4 and the spiral spring
50 member 8 being thus held against any substantial sidewise or radial shifting or deformation in use.

The outer or marginal spring member 4 and the inner spiral spring member 8 are each formed in a plurality of convolutions, which are angu-
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larly or obliquely disposed to the axial center line of the respective spring-member, as best seen in Figure 3. Hence, when the weight of the body is impressed against the top edges *a* of the particular convolutions, as indicated in Figure 3, the convolutions will tend to pivot about the bottom edges *b* thereof in the direction of the arrow, thus providing a very flexible or yielding action without producing any appreciable permanent deformation or distortion in the convolutions of the particular spring elements 4, 8. Further the various adjacent turns of the particular spring elements 4, 8, are relatively free, thereby obviating any tendency of the convolutions of one segment of a particular spring element binding against the corresponding convolutions of an adjacent segment. At the same time, the spring elements 4, 8, being substantially confined within the channels 12 formed by the spiral stitching 13, which brings the top and bottom members of A and B impingingly or directly together, any tendency of the spring elements 4, 8, to shift sidewise is most effectively overcome. Finally, the inner spiral element 8, being fixed to the outer element 4 by the lashing 9, is positively held from "crawling", as it may be said, or becoming displaced from its proper position relative to the outer or marginal spring element 4.

The back member or rest B is constructed in substantially the same manner as the seat member including a shape-defining member or frame and spring members, in all respects similar to the frame 5 and the spring members 4, 8, of the seat-pad A and, joined swingably to the seat-member A by the hinge-strip C, consisting preferably of an elongated fabric-like strip of material stitched or otherwise secured along its longitudinal margins respectively to the back member B and the seat member A, thereby holding the sections in somewhat spaced apart free-swinging relation and thus forming a unitary structure readily opened and conveniently disposed upon a chair, automobile-seat, or the like, it being obvious, however, that each of the top members 1 and each of the bottom members 2, respectively, of the seat and back A and B may, while not here specifically shown, be unitarily formed from single pieces of material and suitably stitched in the area which would correspond to the connecting member C to serve as an integrally formed hinge or flexible connecting element. Further, while also not specifically here shown, the members A and B may constitute separate and independent cushions, the binding D being completed upon each unit.

The cushion may also be of a rectangular form, as shown in Figure 7. As there appears, the cushion comprises a rectangular top cover-member 1' and a similar rectangular bottom cover-member 2' formed similarly of a burlap or other "open-weave" material, the top and bottom cover-members 1', 2', being secured together in shell formation along their marginal edges by a chain of stitches 3' and a binding strip D' and also being transversely stitched by spaced rows of stitches 14, 15, to provide a hinge portion C' and thus dividing the cushion proper into a seat portion 1' and a back portion 2'.

Disposed within the shell *s'* of the seat portion 1', is a continuous convoluted spring-member 16, which is formed on and around a rectangular shape-determining element or frame 5' having its ends brought around into abutting relationship, as shown at 17 in Figure 8, and clampingly held in a sleeve or thimble 7'.

The convoluted spring member 16 extends longitudinally along and around one side, as *g*, of the frame 5' to one corner thereof, is then bent away from the frame 5' to extend in a line parallel and laterally spaced from the frame-side *g* to a point on the adjacent transverse side of the frame 5', and is then continuously and successively disposed backwardly and forwardly between the opposite transverse sides of the frame 5' in a sort of serpentine fashion across the entire extent of the seat portion 1', the spring-member 16 being disposed in a continuous serpentine-like channel formed in the shell *s'* between the top and bottom cover members 1', 2', thereof by suitably spaced rows of thread stitches or the like 18, 19, 20, 21, 22, 23, and 24.

The convolutions of the spring-member 16 are likewise angularly disposed to the axial line of the spring in the same manner and for the same purposes and advantages as previously described in connection with the convoluted spring-members 4 and 8 of the cushion-members A, B.

The back portion B' also includes a rectangular frame or shape-determining element and a convoluted spring-member, which are substantially similar in all respects to the rectangular frame 5 and convoluted spring-member 16 of the seat portion A', thus in a similar manner providing a unitary cushion having hingedly connected resilient back and seat portions, readily unfolded for convenient disposition upon a chair, automobile-seat, or the like.

The seat pad or cushion of my present invention is particularly durable and yet exceedingly resilient and comfortable, the unique interior resilient or spring elements being exceedingly flexible and yieldable in a manner requiring a minimum amount of deformation in the convolutions thereof. Further, such interior resilient elements readily elastically conform to the contour and shape of the body in use, and yet are not subject to permanent "mashing" or deformation. Finally, the present seat-pad or cushion provides a substantial constant amount of free ventilating space between the body of the user and the chair or other support upon which the cushion is placed, the convolutions of the spring-members tending at all times in use to move into overlying staggered relation rather than to flatten and bend.

Of course, as previously stated, single seat-pads or cushion elements may be constructed in accordance with the present invention, thus providing a pad which may be used separately as a seat cushion or back cushion according to the desires and tastes of the individual user.

It will be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the seat-pad or cushion may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is,—
1. As an article of manufacture, a seat cushion comprising a pair of companion-shaped cover members marginally secured together to form an envelope, a rigid shape-defining frame member disposed within the envelope, a first convoluted spiral spring member disposed within the envelope, said spring member being mounted on and extending continuously around the frame member, a second convoluted spring member attached at its one extremity to the first spring member, said second spring member extending inwardly

of the first spring member in a diminishing spiral for substantially filling the envelope and resiliently urging the cover members thereof away from each other, and a diminishing spiral row of stitching securing the cover members together in surface contact in the formation of a spring enclosing spiral channel for confining said second spring member against unauthorized lateral movement.

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2. As an article of manufacture, a seat cushion comprising a pair of companion-shaped cover members marginally secured together to form an envelope, a rigid shape-defining frame member disposed within the envelope, a first convoluted spiral spring member disposed within the envelope, said spring member being mounted on and

extending continuously around the frame member, a second convoluted spring member disposed within the envelope, means rigidly connecting the outer end of the second spring member to the envelope, said second spring member extending inwardly of the first spring member in a diminishing spiral for substantially filling the envelope and resiliently urging the cover members thereof away from each other, and a diminishing spiral row of stitching securing the cover members together in surface contact in the formation of a spring enclosing spiral channel for confining said second spring member against unauthorized lateral movement.

ERSKINE P. HARLEY.

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