

No. 737,089.

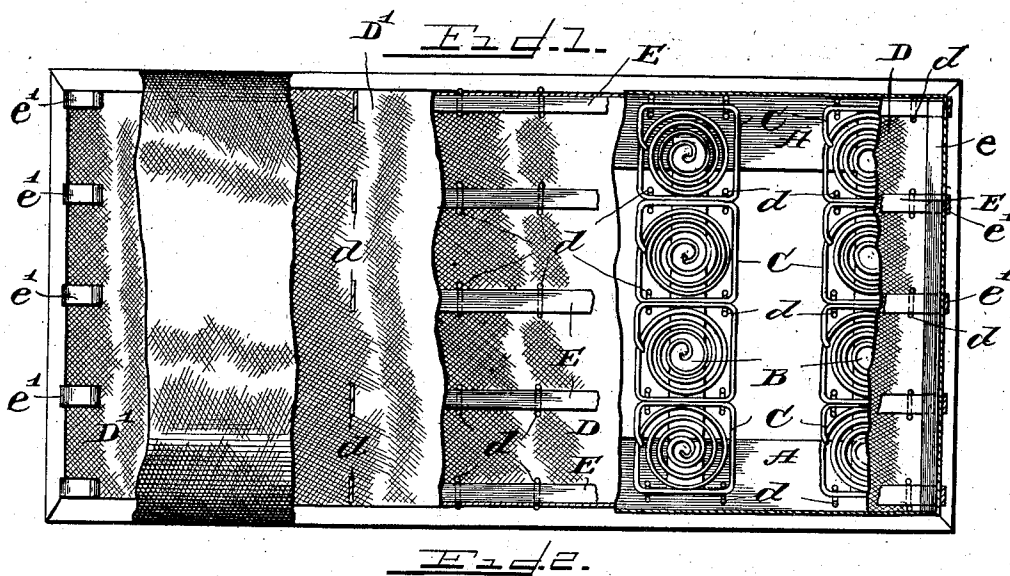
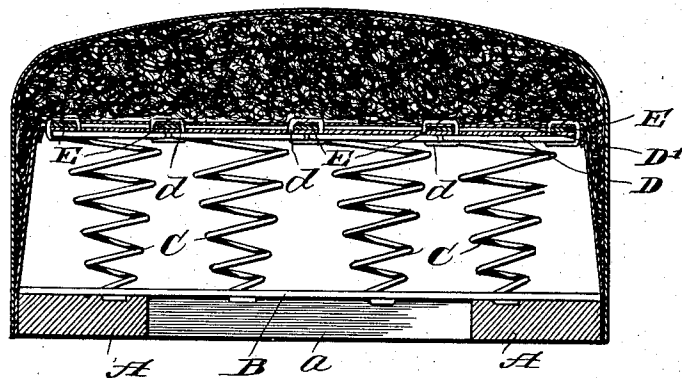
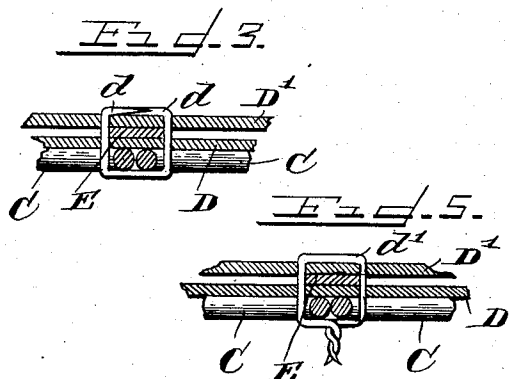
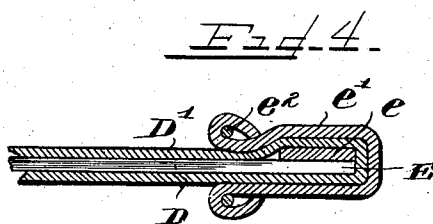
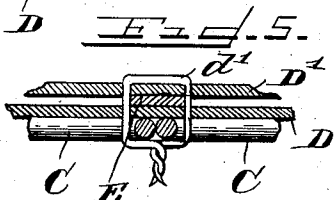
PATENTED AUG. 25, 1903.

J. H. DONALDSON.

CUSHION.

APPLICATION FILED DEC. 24, 1901.

NO MODEL.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES H. DONALDSON, OF CHICAGO, ILLINOIS.

CUSHION.

SPECIFICATION forming part of Letters Patent No. 737,089, dated August 25, 1903.

Application filed December 24, 1901. Serial No. 87,123. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. DONALDSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cushions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in cushions, and is shown more particularly embodied in a cushion for car-seats, though obviously the invention may be embodied in a cushion or a mattress for any desired purpose.

In many of the cushions heretofore devised it has been difficult to provide a construction that will retain its original form during a period of continued use, and it has generally been true that the cushions used for car-seats soon get out of order through the breakage or detachment of springs or otherwise, thereby necessitating expensive repairs. In most of the constructions heretofore devised such breaking or detachment of a spring from the remaining springs forming the cushion has been very difficult to repair without removing the upholstery, thus entailing considerable expense.

The object of my invention is to provide a cushion of great resiliency and great strength adapted to withstand without serious injury the rough usage to which car-cushions are usually subjected and so constructed that in the event of injury or damage to a spring or springs the same may be readily removed and another replaced or repaired by one not specially skilled in upholstering and without disturbing the upholstery.

The invention consists of the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a top plan view, partly broken away to illustrate the construction. Fig. 2 is a transverse section of the cushion. Fig. 3 is an enlarged detail illustrating the means for attaching the springs together. Fig. 4 is an enlarged detail illustrating the serving of the ends in longitudinal

and transverse strips. Fig. 5 is a detail similar to Fig. 3 and illustrates means for detachably securing the springs to the longitudinal strips.

In said drawings my invention is shown embodied in a car-seat cushion. A bottom frame is provided for the cushion consisting of longitudinal side members A and transverse end members a, which may be of wood or metal, as preferred, and are rigidly secured together, forming a rectangular base-frame. Extending transversely across said frame and secured at their ends on the side members A are the transverse carrying-strips B, which may be of any desired material and, if preferred, may be flat springs. Any desired number of said carrying-strips B may be provided and the same may be of any desired width. Spiral springs, herein shown as conical, but approximately rectangular at the larger end, are secured on the transverse members, as indicated in Figs. 1 and 2, with the larger or square end uppermost and having the smaller ends of the same secured on said carrying-strips by passing the end of the wire forming the spring through an aperture in the carrying-strip. The width of the square portion of said springs is such that a given number of the same secured in contact with each other, as indicated in Fig. 1, provide a desired width of cushion. Over the square upturned ends of said springs is secured the sheet of fabric D, and thin resilient strips E, preferably of steel, are laid thereon, extending longitudinally of the cushion, as shown in Fig. 1, and covering the lines of contact of said springs with each other. At each end of the cushion a corresponding resilient strip e is secured, which rests upon the ends of the longitudinal strips E, as shown in Figs. 1 and 4. Over the structure thus formed is stretched the sheet of fabric D', which entirely covers the top of the same and extends down over the sides and ends and is drawn down and permanently secured on the base-frame by nailing or the like, as shown in Fig. 2, thereby exerting a sufficient tension on the springs to bring the same into alinement. After securing said covering fabric, as described, staples of wires d, as shown, are passed upwardly

through the fabric D and D', inclosing and engaging together when closed down the adjacent meeting portions of the tops of the springs and the superposed longitudinal strip

5 E. The ends of the strip E and the transverse strip *e* are permanently secured together by serving the same preferably with a strip of sheet metal, (indicated by *e'*,) the ends of which are bent over and engages over
10 the fabrics and incloses the end of each longitudinal strip and the adjacent portion of the transverse strips *e*, as shown in Fig. 4, and is rigidly and permanently secured thereon by means of a wire or staple *e*². The ends
15 of said strip *e'* are then turned backwardly, as shown in Fig. 4, thereby preventing the withdrawal of the serving from the longitudinal and transverse strips. The spring-cushion thus formed is then upholstered in the
20 usual or any desired manner, the covering for said upholstery being preferably carried down and secured upon the base-frame.

The operation is as follows: The base-frame forms a rigid and permanent support for the
25 springs, acting to retain the same at all times in operative position. The tops of said springs being square admit of lying in close contact with each other and of being permanently attached to each other, as described, thus forming
30 a continuous support for the entire width of the cushion for any weight that may be placed thereon. The longitudinal strips E being preferably of steel and of considerable resiliency act, together with said springs, to
35 increase the resiliency of the cushion and serve as a resilient tie between adjacent transverse lines of springs, thereby distributing or diffusing the strain of any superposed weight over the entire surface of the cushion. The
40 transverse strips *e*, while in no wise interfering with the resiliency of the cushion, act to rigidly bind the longitudinal strips together and aid in distributing the strain on the springs. Obviously the strain being
45 brought equally on all the springs of the cushion there is much less liability to breakage than in cushions as heretofore constructed. Should, however, any spring be injured, broken, or displaced, the same may be re-
50 moved and a new one substituted therefor by inverting the cushion, releasing the staples *d* which engage that particular spring, substituting a new spring, and resecuring the same in position by means of the staples *d* or
55 by wiring the same together, as indicated in Fig. 5, in which event a piece of wire *d'* is passed around the meeting parts of adjacent springs and the longitudinal strips and the ends thereof twisted together below the tops
60 of the springs.

While a car-seat cushion has been illustrated and described, I do not desire to be restricted to seat-cushions only, inasmuch as my invention is obviously applicable to the
65 construction of cushions of any kind or in making spring-mattresses for beds or the like.

Obviously many details of construction may be modified without departing from the principle of this invention.

I claim as my invention—

70 1. In a cushion the combination with a rigid base-frame of transverse carrying-strips secured thereon, a plurality of conical coiled springs having their larger ends approximately rectangular, the lower and smaller
75 ends of said springs engaged in said carrying-strips, said springs being arranged in series transversely of the cushion and having the adjacent sides at their upper ends permanently secured together, a flexible cover
80 over said springs and secured to the base-frame, a plurality of longitudinal leaf-springs on said cover and overlapping the joints between said coiled springs and a layer of flexible material covering said leaf-springs and
85 also secured to the base-frame.

2. In a cushion the combination with a rigid base-frame, of carrying-strips engaged thereon, a plurality of coiled springs larger at one
90 end than at the other rigidly attached to said strips by their smaller end and the larger end thereof being approximately rectangular in shape, a fabric covering the coiled springs, a
95 plurality of leaf-springs resting on said fabric and arranged longitudinally and covering the joints between said coiled springs and permanently secured thereon by wire clips which
100 also secure the coiled springs each to each, transverse resilient strips engaging the ends of said leaf-springs, a metallic binding engaging the same together, a sheet of fabric covering the spring structure thus formed
105 and an upholstered cushion thereon the covering thereof engaging at its margins on the base-frame.

3. In a device of the class described the combination with a rigid base-frame, of carrying-strips secured thereto, a plurality of spiral
110 springs arranged in parallel rows, the upper ends of said springs being rectangular in shape and the adjacent sides thereof secured together, a plurality of longitudinal leaf-springs intermediate two sheets of flexible material covering said spiral springs and rigidly
115 secured thereto by means of wires or the like, the ends of which are secured to be accessible from the under side of the cushion, leaf-springs extending across the ends of the longitudinal springs and a metallic binding engaging around and rigidly securing the transverse and longitudinal leaf-springs together.
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4. In a cushion, a rigid frame, resilient carrying-strips permanently secured thereon, spiral springs attached to said strips having
125 their larger and upper ends rectangular in form and arranged in rows transversely of said cushion and having their adjacent sides removably fastened together, a plurality of leaf-springs arranged longitudinally of said cushion removably fastened to the contact
130 edges of said spiral springs, sheets of flexible material above and below said leaf-springs

adapted to hold the spiral springs in alignment, flexible strips arranged transversely of the ends of said leaf-springs, metallic binding-strips clasp-
5 ing longitudinally of the ends of the leaf-springs and transversely of the contact parts of said strips and staples or the like adapted to hold said binding-strips in locking position.

In witness whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JAMES H. DONALDSON.

In presence of—
C. W. HILLS,
L. J. DELSON.