

July 9, 1929.

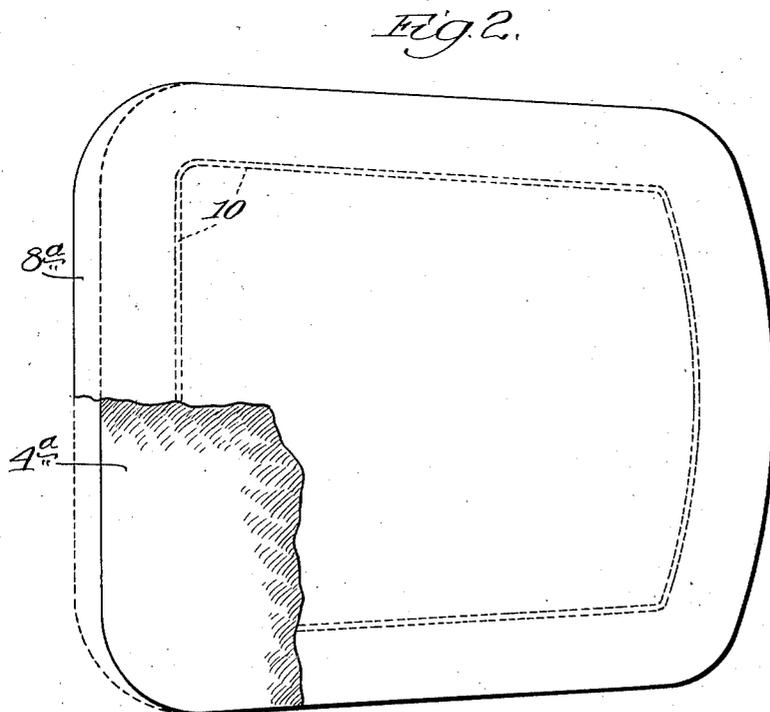
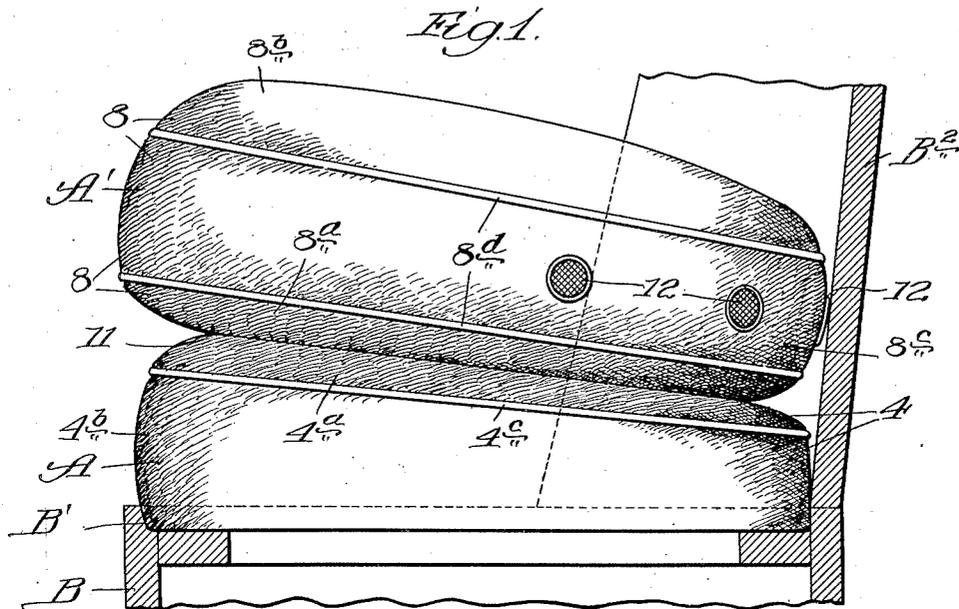
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1,720,480

CUSHION STRUCTURE AND MANUFACTURE

Filed March 9, 1927

2 Sheets-Sheet 1



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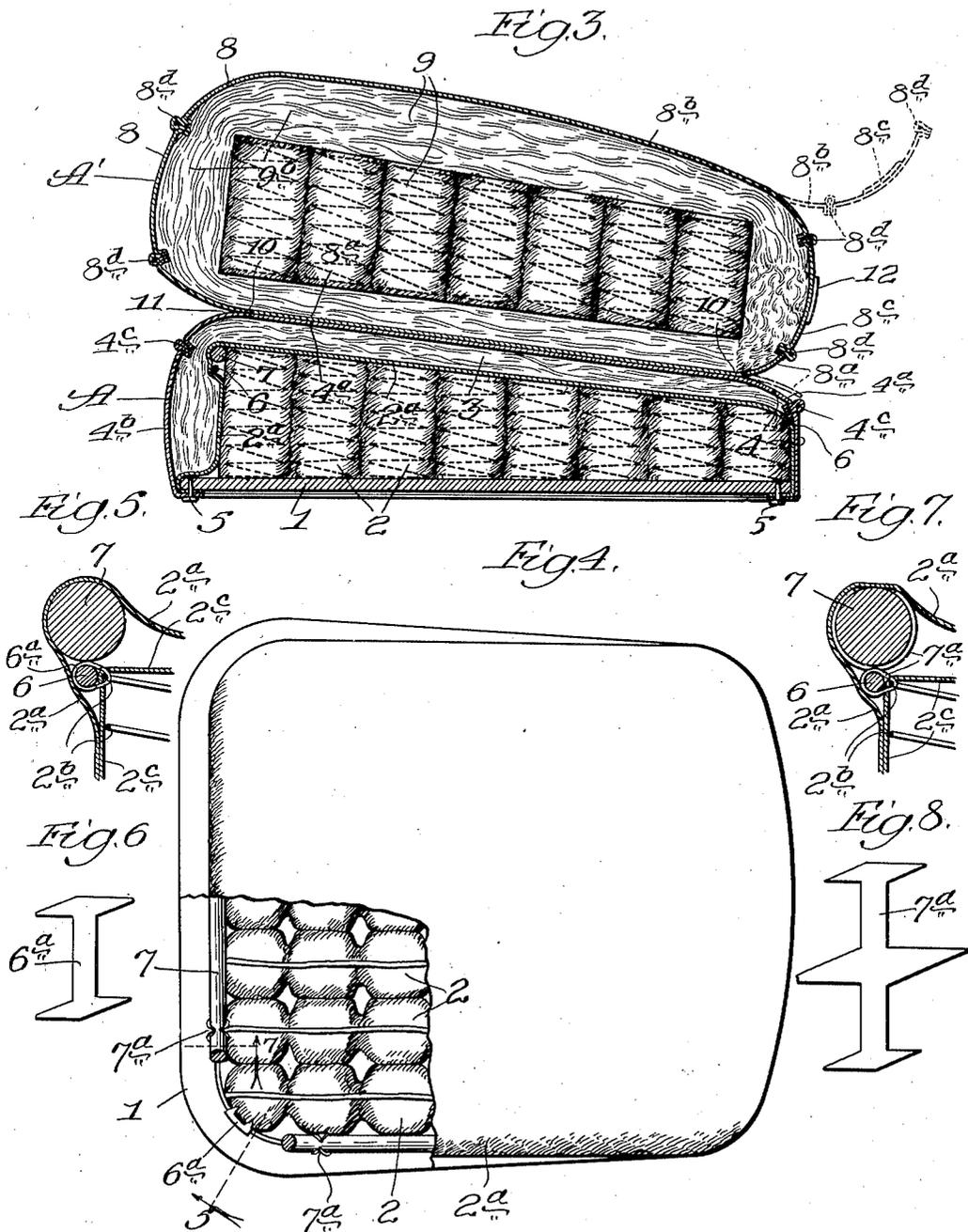
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CUSHION STRUCTURE AND MANUFACTURE

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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE.

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## CUSHION STRUCTURE AND MANUFACTURE.

Application filed March 9, 1927. Serial No. 173,946.

This invention relates to a cushion-structure which is particularly desirable for use in chairs in auto-busses, but which may be used in seats and chairs, generally, where desired.

The primary object is to provide an improved cushion-structure and an improved method of manufacturing the same. The improved device is a unitary structure, comprising a lower cushion-unit and a surmounting cushion-unit, these units being so united as to give the effect of a loose upper cushion. The cushion-structure can be supported removably in a chair-frame, for example, having a shallow cushion-socket within which the base-portion of the cushion-structure may be received loosely.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Fig. 1 is a broken sectional view of a seat-frame supporting the improved cushion-structure, shown in side elevation; Fig. 2, a plan view illustrating the preferred way of uniting the bottom section of the upper casing to the top section of the lower casing; Fig. 3, a vertical sectional view of the improved cushion-structure; Fig. 4, a broken plan view of the lower cushion-unit; Fig. 5, an enlarged broken detail sectional view taken as indicated at line 5 of Fig. 4; Fig. 6, a plan view of a clip employed for anchoring a marginal rod to the coil springs in the lower unit; Fig. 7, an enlarged broken detail sectional view taken as indicated at line 7 of Fig. 4; and Fig. 8, a plan view of a clip employed for securing an edge-roll to the marginal rod mentioned.

In the embodiment illustrated, the cushion-structure comprises a bottom cushion-unit A and a surmounting cushion-unit A', so united to the bottom unit as to give the advantages of a loose upper cushion while obviating the disadvantages thereof. In Fig. 1, the cushion-structure is shown supported by a seat-frame B provided with a cushion-socket B' and equipped with a back B". It may be stated here that in the preferred method of manufacture, the top-section of the lower casing is secured to the bottom-section of the upper casing; the upper casing is then filled by means of a suitable stuffing machine; and the lower casing, now carrying the complete upper cushion-unit, is upholstered

upon a base-plate carrying a spring-structure and additional stuffing material.

The cushion-unit A, as preferably constructed, comprises a base-plate 1; a spring-structure 2 secured thereon and covered by fabric 2<sup>a</sup> of muslin or burlap; a layer 3 of cotton batting or other suitable stuffing material; and a casing 4 of any suitable finish fabric, such as leather, imitation leather, mohair, or the like.

The casing 4 is shown as comprising a top-section 4<sup>a</sup>, a skirt 4<sup>b</sup>, and a welt 4<sup>c</sup>, stitched together as shown in Fig. 3. The base-plate 1 may be of wood veneer, or of any suitable material. The spring-structure 2 is shown as consisting of rows of coil springs 2<sup>b</sup> contained within individual pockets in fabric 2<sup>c</sup>. The spring-structure is anchored to the base-plate in any suitable manner. In the illustration given, the fabric 2<sup>a</sup> is stretched tightly over the spring-structure and has its skirt-portions tacked to the member 1, as indicated at 5. The skirt-portion is also secured, if desired, by stitchings to the fabric 2<sup>c</sup> forming the spring-cells.

A marginal rod, or heavy frame-wire, 6, is secured to the upper portions of the adjacent springs, as by means of metal clips 6<sup>a</sup>. An edge-roll 7 surmounts the marginal rod and is secured thereto by metal clips 7<sup>a</sup>. The clips have suitable prongs which are clinched upon the members which they embrace. The edge-roll is of suitable flexible, resilient material, such as soft vulcanized rubber.

The layer of stuffing material 3 is reflected over the edges of the spring-structure. The skirt-portion 4<sup>b</sup> of the casing 4 also is tacked to the board 1, as by means of the tacks 5.

The upper cushion-unit A' comprises a casing 8; and a resilient filling 9. As shown, the casing comprises a bottom-section 8<sup>a</sup>, a top-section 8<sup>b</sup>, an interposed edge-section 8<sup>c</sup>, and welts 8<sup>d</sup>, all suitably stitched together. The filling 9 is shown as comprising a light spring-structure 9<sup>a</sup> of the Marshall type, and a layer of stuffing material 9<sup>b</sup>, such as cotton batting enveloping the spring-structure.

In forming the casings, the top-section 4<sup>a</sup> of the lower casing is secured to the bottom-section 8<sup>a</sup> of the upper casing. Preferably, this is accomplished by a line of stitchings 10 extending substantially parallel with the edges of the cushion-structure and about two or three inches inside of the general periphery

of the structure. This has the effect of producing a re-entrant angle or peripheral V-shape recess 11 between the cushion-units A and A'. Considering the cushion-structure as a whole, the V-shape recess presents a central constriction of the periphery of the structure, as appears from Fig. 2.

The edge-strip 8<sup>c</sup> of the upper casing is shown provided with vents 12. These may be equipped with inwardly opening valves (not shown), the use of which is now well understood. After the casing-sections 4<sup>a</sup> and 8<sup>a</sup> have been united, the upper casing may be completed, except that it may be left open at its rear end, as indicated by the dotted lines in Fig. 3. The upper casing may then be shirred upon the spout of a stuffing machine and the stuffing 9 may be introduced. The rear end of the casing may then be sewed up, and the lower casing may then be applied to cover the stuffing of the lower cushion-unit, the skirt-portions being tacked to the base-plate 1.

Both casings preferably consist of suitable finish-fabrics, although, obviously, the portions inside the line of stitchings 10 are not exposed to view.

The improved cushion-structure possesses several advantages. It is highly resilient and extremely luxurious, yet capable of regaining its normal form after long-continued use; the upper unit, within reasonable limits, pivots upon the lower unit, adding greatly to the resilience and comfort in partially

turning or tilting movements; and, moreover, the structure presents the appearance of a loose upper cushion, but obviates the danger of the cushion being thrown about the bus, or stolen.

It may be remarked that in the space bounded by the line of stitching 10, a single ply of fabric may be employed in lieu of the double ply afforded by the fabrics 4<sup>a</sup> and 8<sup>a</sup>. Where the marginal portions of the cushion-units project beyond the line of stitching, it is necessary, of course, that both plies 4<sup>a</sup> and 8<sup>a</sup> be used.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claim should be construed as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

The method of forming a cushion-structure which comprises: mounting upon a base-plate a group of upholstery springs and a surmounting layer of stuffing material; forming and uniting upper and lower casings, the upper casing being left open at one edge; stuffing the upper casing and closing the open edge thereof; and applying the lower casing, now bearing the upper cushion-unit, over the spring-structure and stuffing material mentioned and securing the skirt-portions of the lower casing to said base-plate.

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