Dec. 29, 1942. O. S. CAESAR ET AL 2,306,864

CHAIR OR SEAT STRUCTURE, AND BACK CLOTH AND ANTISCUFF DEVICE THEREFOR

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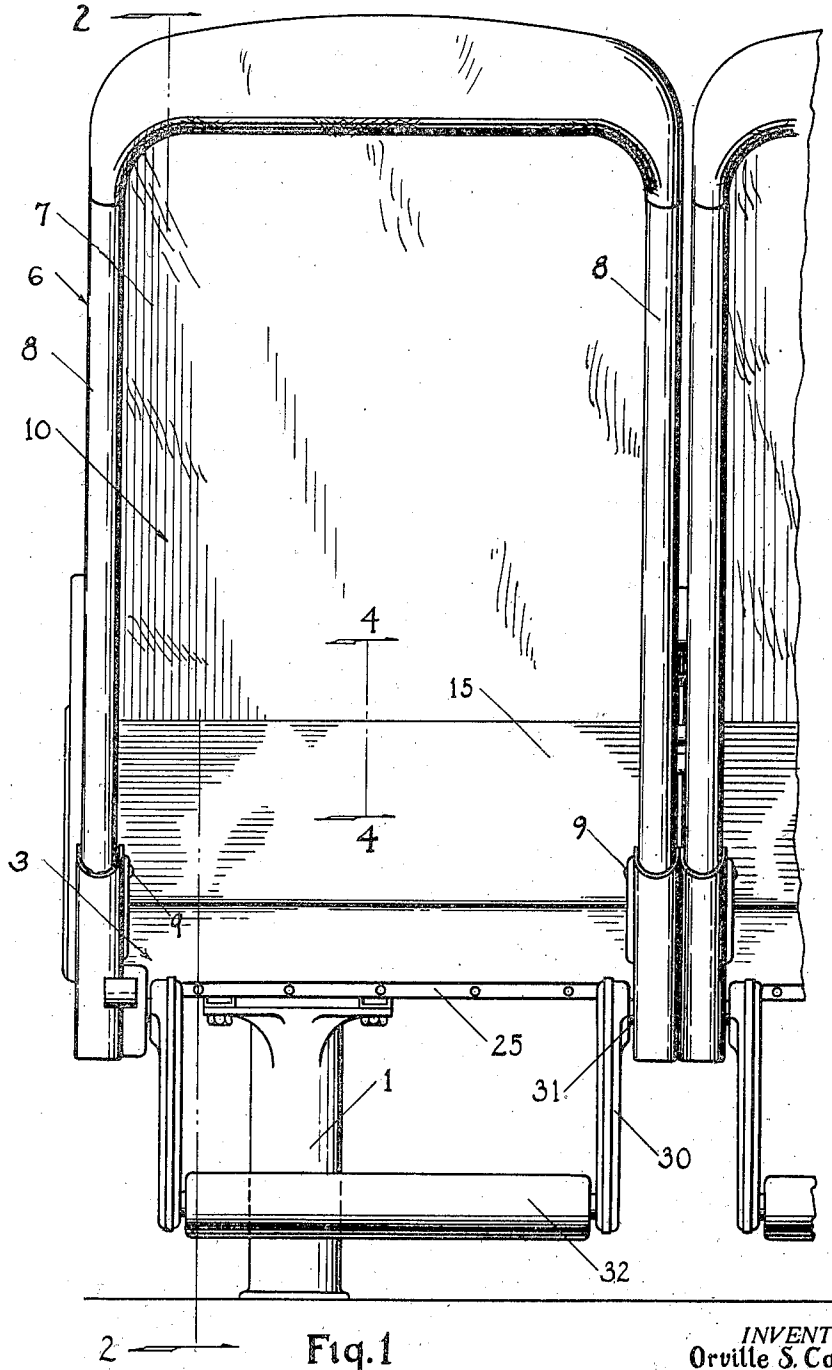


Fig. 1

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Fig. 3

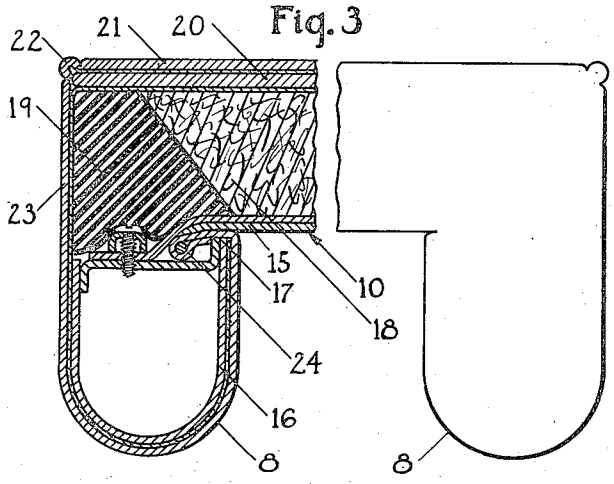
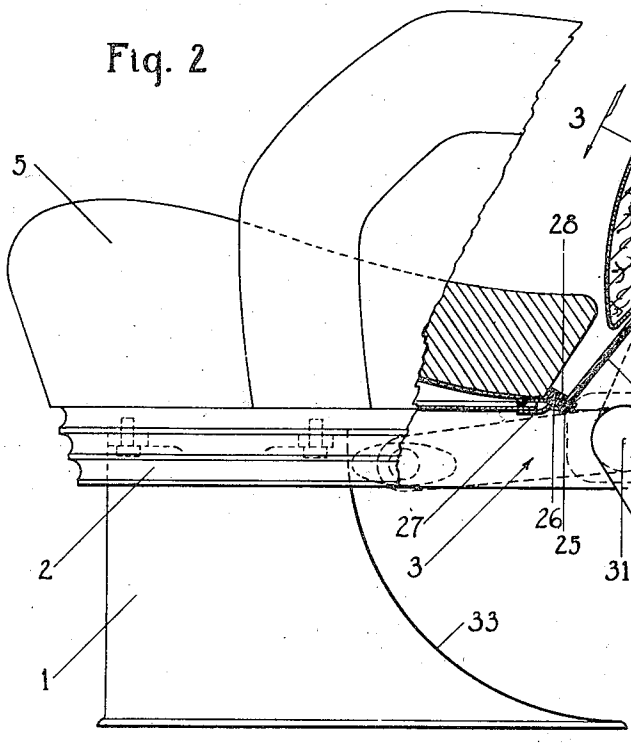


Fig. 2



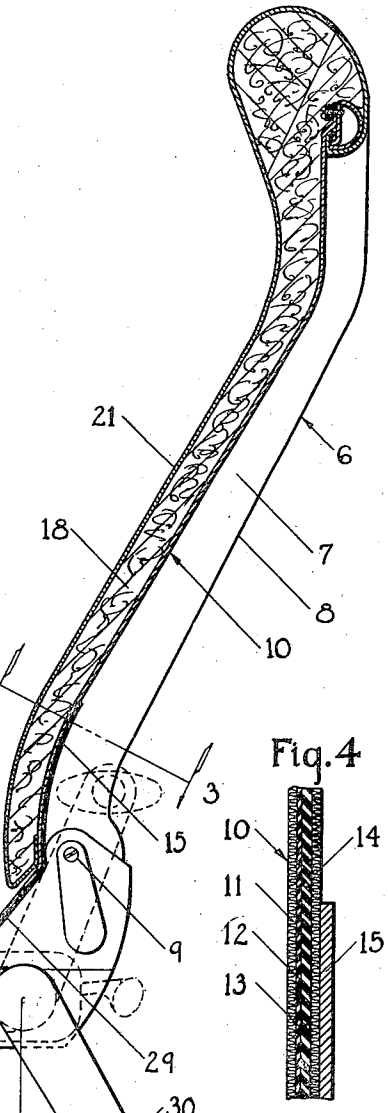


Fig. 4

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CHAIR OR SEAT STRUCTURE AND BACK CLOTH AND ANTISCUFF DEVICE THEREFOR

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Application August 10, 1940, Serial No. 352,050

4 Claims. (Cl. 155—191)

This invention relates to improvements in protective means for the upholstery material of the backs or other parts of chairs or seats, and has found valuable application for use on bus or vehicle seats, wherein the occupants of a rearwardly placed seat habitually place their feet on the back of the seat in front, or so place their feet on a foot rest of the forward seat that their shoes come in contact with and scuff, mar, soil or tear the finishing material.

It is, therefore, the main object of this invention to provide a scuff-resisting layer which is flexible and which is applied to the exposed face of the finishing or covering or back cloth material of the chair or seat. Heretofore plates of metal or other inflexible material have been used, and they have been called "kick plates." For convenience this expression has been used herein, but only as an expression of the general function, and not as indicative of the quality of the material.

Insofar as we are aware, this is the first time anyone has conceived of making a flexible "kick plate," or of making a stretchable one. The invention is applied to the fabric back of the seat, sometimes called a hanging back cloth. A feature is that the back cloth, as well as the anti-scuff material, is flexible and/or stretchable. The cloth or suitable flexible material, generally ornamental, extends in this case from the top of the back of the seat downwardly below the back and forwardly to a point beneath the seat, whereat it is attached to the base of the seat.

Features of the invention relate to a back cloth construction as an article of manufacture having a flexible anti-scuff protecting layer; the use of stretchable material, both for the cloth and for its anti-scuff protective layer; the use of one-way stretch materials for this purpose; the use of two-way stretch materials for this purpose; the particular connection of the back cloth and its protective means in relation to a foot and shin receiving recess at the rear of a seat; the relation of the foot rest to this recess and to the protective material; the particular manner of connecting the lower end of the back cloth to the base; the idea of so using stretchable material between the movable back and the stationary base that it can be maintained in taut condition for all adjusted positions of the back; all details of construction, both of the back cloth and its anti-scuff layer per se, and the back cloth as applied to the particular chair structure; and all other details of construction related to the objects herein set forth, along with all broader ideas of means inherent in the disclosure.

Objects, features and advantages of the invention are disclosed in the description of the drawings, and in said drawings—

Figure 1 is a rear view of a portion of a twin chair or seat structure showing the invention applied to the back thereof;

Figure 2 is a vertical section taken on line 2—2 of Figure 1 showing how the back cloth is connected and arranged in relation to the recess of the base and to the swinging back;

Figure 3 is a horizontal section on line 3—3 of Figure 2 illustrating the manner of connecting the back cloth to the back frame; and

Figure 4 is an enlarged section showing the laminated construction of the stretchable back cloth with its tear-, scuff- and soil-preventing layer.

Referring first to Figure 2. The numeral 1 indicates a pedestal, and the numeral 2 generally designates the seat or chair base or chassis supported by the pedestal. The chassis is formed at the back to provide a forwardly extending foot and shin-receiving recess indicated at 3, and this recess extends to a point well below the upper surface of the base 2 and a large part of it is at a substantial level below the top surface of the removable seat cushion 5. The back of the chair is generally indicated at 6 and is provided in its rear with a forwardly extending leg-receiving recess 7, which forms an upward continuation of the recess 3. The back frame has substantially the form of an inverted U providing upright sides, each having a tubular cross-sectional configuration like that shown in Figure 3. The sides of the frame are indicated at 8, and each is pivoted as at 9 to the base 2 for swinging adjustment. Suitable back-adjusting mechanism is employed but it forms no part of the present invention and is not shown. The adjustability in relation to a particular kind of back cloth, however, is a feature of our invention herein. By referring to Figure 3 it can be seen how the recess 7 is formed in the back. The hanging back cloth is generally indicated at 10 and is composed of flexible, stretchable material, preferably laminated. The construction of the back cloth per se with its anti-tear, anti-scuff and anti-wear construction is a feature of our invention, aside from the particular manner of attaching and arranging it (or any other form of kick plate), with reference to the recess of the base.

The hanging back cloth is composed, in this

instance, of four layers. First, a layer of knitted cotton indicated at 11 on a layer of white rubber indicated at 12, in turn on black rubber 13. On the black rubber is a finishing fabric, preferably knitted, indicated at 14. Against the material 14 at the lower end is laid a protecting layer 15 of rubber which constitutes the anti-scuff layer.

As used herein the term "kick plate" means any flexible device used to protect the back or finished surface of the back cloth of a seat or chair, from injury by the feet of a person who is generally seated rearwardly of that chair.

In Figure 3 the assembly of the cushion material on the back cloth 10 has been shown, as well as the means for connecting the back cloth to the back. For the phase of the invention in which the back cloth is used on a swingable back and has its end attached to a stationary member of the seat or base, the use of stretchable material is a feature of our invention. The use of two-way stretch material is of course desirable in the upholstery art. For other phases of the invention such as the specific manner of connecting and arranging the cloth at the bottom within the recess, the back cloth may or may not be composed of stretchable material.

The back frame is preferably made of tubular metal. The side arms 16 of the back frame are each provided with a forward extension 17 which is located at the inner side as shown in Figure 3. The padding on the forward side of the back cloth 10, is secured in place by finishing material 21 and 23, the part 23 of which is tucked between this extension 17 and the rear surface of the back cloth. This cushion or padding assembly comprises a paratex layer 18 laid against the back cloth. Paratex is a well known combination of curled hair and latex. The paratex layer is flanked and its transverse area is extended on each side by means of inserts 19 of rubber. On the forward side of the paratex is placed a layer of the cotton 20 and over this is stretched mohair finishing material 21 connected as at 22 to leather material 23. The connection 22 has been only diagrammatically represented, since per se it forms no part of the present invention. The leather material has a terminal bead 24 which is brought around the arms 16 and tucked in as shown, so that the bead lies at the inner side of a shoulder formed by the extension 17. A similar connection is made for the upholstery at the top, as shown in Figure 2.

Now referring to Figure 2. The back cloth extends below the upholstering material and forwardly and downwardly and has its terminal clamped within a bent metal strip 25, which strip is suitably releasably fastened to projections 26 arranged at the rear edge of a bottom-forming structure 27 of the base. The strip is so related to the elements 26 as to provide a series of passages 28 through which dust and dirt may fall. It is noted that this forwardly extending portion 29 of the back cloth lies along the recess 3 so that this part 29 and the structure 27 form the top of the recess, which thus extends beneath the seat.

Within the recess is pivoted a foot rest 30, the pivot being shown at 31, and the foot-receiving part of the foot rest being indicated at 32. One full line position and two dotted line positions of the foot rest are shown, and it is noted that the rest is so arranged that it can be swung clear of the floor for cleaning purposes, and swing either rearwardly or forwardly for that purpose, and for the forwardly swinging of the rest the pedestal is formed as at 33. When the rest is at either extreme of adjustment the greater part of its supporting elements lie within the recess.

This arrangement is believed to be new in relation to the novel flexible kick plate structure which includes the layer 15. It is noted that this layer extends a substantial distance upwardly above the lower terminal of the padding 18, and also extends a considerable distance downwardly and forwardly of this point so that generally speaking, it is in a position to be engaged by the feet, whatever the usual adjusted positions of the foot rest may be.

The back cloth extends below the back and slants forwardly and is connected to the base and so does the rear protective facing of the back cloth.

We believe it new to make a back cloth having a flexible kick plate attached thereto or to make a flexible kick plate and vulcanize it to a flexible back cloth, and we believe it new to have the back cloth composed of either one or two-way stretchable material covered by such a flexible kick plate so that both the back cloth and the kick plate may stretch simultaneously. The kick plate may extend upwardly a substantially greater distance than is shown in the drawings. The kick plate is preferably of rubber of the proper consistency and is preferably vulcanized to the cloth finishing layer 14, it being understood that this layer 14 is ordinarily of an ornamental character, and therefore it is particularly desirable to keep it from being torn, scuffed or soiled.

It will be noted by an inspection of Figures 1 and 2 that there are no cross-braces arranged between the side elements 16 of the back frame or in any position within or in the neighborhood of the recess 7 against which the shins, legs or feet could be engaged. In other words, there is a large recess provided, of which the back cloth forms part of the top. The recess is below the upholstery material and the foot rest swings in relation to this recess and in relation to the kick plate structure. Heretofore, it has been the practice to put a cross-brace at about the level of this recess and to have this brace so near the upholstering material of the back that a person seated for long periods against the cushioning material would so compress it that they could feel the brace through the material sufficiently to make them uncomfortable.

As arranged herein, the kick plate stretches with the back cloth and the kick plate and the back cloth may stretch sufficiently to remain in taut condition for every adjusted position of the back, thus maintaining the contour of the upper wall of the recess which is formed by the downward extension of the back cloth and its kick plate.

It will be noticed that the forwardly slanting back cloth at the bottom, along with its anti-scuff layer, is spaced forwardly of and slants away from the bearings or bearing housings for the foot rest.

Although in the drawings it appears that the foot rest could be adjusted to such a height that with the feet on the rest the soles of the shoes would engage the material at a point where there is no anti-scuff protection, it will be understood that this anti-scuff layer may be extended to any desired height. However, in practice the spacing between the seats is such as to preclude the likelihood of such a high adjustment which,

if carried out, would require bending of the knees at an uncomfortable angle. The drawings show the anti-scuff material extending to a height at which it is usually extended in practice. Usually the foot rest is lowered in adjusting it to a comfortable position; in some instances it is swung forwardly to its lowest position. This rest can be swung to such a position that the feet may rest on the floor without interference by the foot rest and, moreover, it may be swung in either direction to such a height as to clear the floor for cleaning purposes.

We believe ourselves the first to provide a back cloth composed of flexible, stretchable material, and having a stretchable, flexible, anti-scuff or kick plate layer, and/or to attach a back cloth in the manner shown in the drawings in relation to other chairs or seat structures or in relation to the particular seat construction herein shown. We also believe ourselves the first to attach a back cloth to a chair wherein the back is adjustable at different angles, and wherein the end of the back cloth is immovably attached to a stationary part and to the movable back so that the back cloth moves with the adjustable back, but because of its stretchable nature can be maintained in taut condition whatever the position of the back.

We also believe ourselves the first to arrange a back cloth and a kick or anti-scuff plate section thereon in a specific relation to an adjustable foot rest, which rest is singularly adjustable in an angle of at least 180°, and so that the kick plate will be in guarding position for various adjusted positions of the rest. We also believe it new to arrange a flexible or rubber kick plate with a kick or anti-scuff layer in a forwardly extending recess provided in or at the rear of the seat to provide foot and shin room.

In Figure 3 the anti-scuff section **15** has not been shown as extending entirely transversely of the back cloth **10**. It will, of course, be understood that in manufacturing this cloth it is ordinarily so extended. The cloth can be made in any suitable widths and can be cut to have the desired lesser width, in which case the element **15** will be of the same transverse overall width as that of the back cloth. On the other hand, it is not necessary that this "kick plate" so extend, and it is conceivable that it may be applied as a patch or island, suitably located.

It is further to be noted that the invention is not entirely limited to the stretchability of the materials. We believe it new to use a flexible kick plate, other than metal, attached in any suitable manner to an element which is the functional equivalent of a back cloth, that is, which is itself flexible.

We claim as our invention:

1. In combination with a base having an adjustable back, said base having a removable seat section, a hanging back cloth of stretchable material secured to the back and extending downwardly to the bottom of the back, thence below the back and forwardly, said back cloth having a terminal marginal clip secured to the base and said cloth having on its rear face and extending from a point near said clip upwardly to a point well above the level of the removable seat section, a stretchable rubber facing suitably secured to the back cloth in guarding position.

2. A seat having a base section, a back for the chair and means pivoting it so that it may be angularly adjusted in relation to the base, a back cloth of stretchable material for the back having a portion extending below the back and connected to the base and stretchable material covering the rear surface of the lower portion of said back cloth, and adapted to protect said surface from tearing, scuffing and soiling by the shoes of a person seated rearwardly of said back cloth.

3. A chair having a base and a back, said back having a back cloth which extends below its lower end and is attached to the base, a kick plate overlying and attached to the rear face of the back cloth and also extending below the bottom of the back, those portions of the back cloth and kick plate which extend below the bottom of the back being of stretchable material, and said back being pivoted to the base for movements forwardly and rearwardly, the pivotal point of the back with the base and the connecting point of the back cloth with the base and the relation of these points with reference to the bottom of the back being such that the materials of the back cloth and kick plate remain in stretched condition for all adjusted positions of the back.

4. A chair having a base having at its rear a forwardly extending recess, an inverted U-shaped frame, means separately pivoting the lower end of each leg of said U-frame to said base and at opposite sides of the recess to allow the back frame to be adjusted, a back cloth stretched across the legs on the forward side of the frame and attached thereto and forming with the frame a forwardly extending recess, and having its lower portion connected to said base, said back cloth extending below the pivotal point of said frame with said base, and forming the forward wall of said base recess, said back cloth being made of two-way stretch material and a layer of two-way stretch protective material connected to the rear surface of said back cloth and extending downwardly into the recess of the base and continuously upwardly into the recess of the back.

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