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ELIMINATING ELECTRIC SHOCK

Filed Dec. 19, 1927

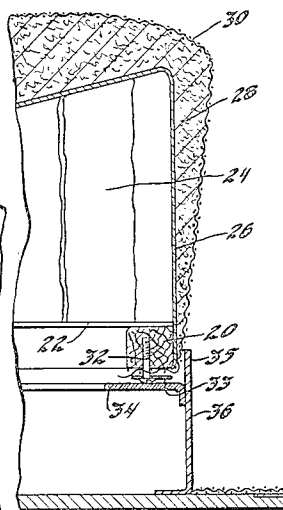
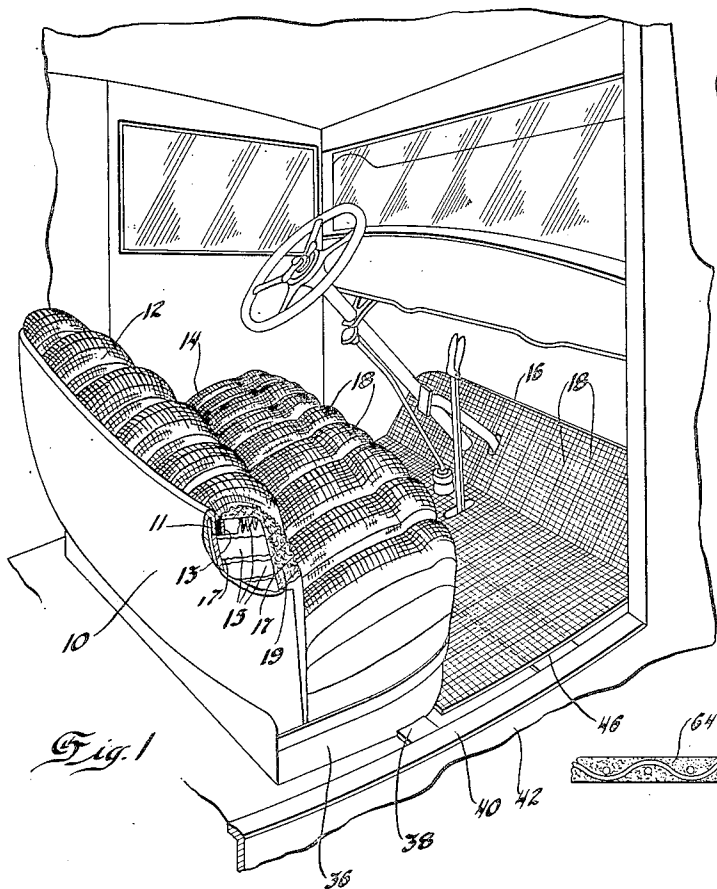


Fig. 2



Fig. 5

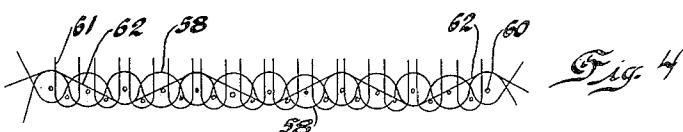


Fig. 4

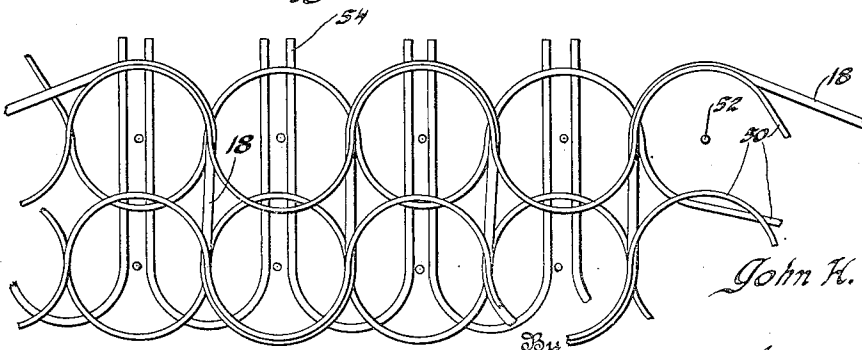


Fig. 3

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ELIMINATING ELECTRIC SHOCK

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The present invention relates to the dissipation of static charges which tend at times to accumulate on a person walking or sitting on a covering material formed with a thick soft fabric.

Operators and users of automobiles, especially of closed cars, which are provided with upholstery covered with a thick plush fabric are often troubled with discharges of static electricity. These discharges are especially prevalent in cold dry weather when woolen clothing is worn. The sliding contact of the woolen clothing with the thick fabric covering the upholstery produces a considerable charge of static which is discharged when the operator moves his hand close to the door handle or other metallic part of the car. The sparks and shocks accompanying these static discharges are often great enough to cause considerable annoyance to a nervous, sensitive person.

Similar occurrences are encountered in hotels and dwelling houses where thick rugs, carpets and chair coverings are provided. The sliding friction accompanying the movement of a person across the room or into the seat often creates such a considerable charge that when the person moves his hand close to an electrically grounded metallic object and the discharge occurs, the accompanying spark and sound are distinct enough to be nerve racking and the accompanying shock may be quite severe.

It is an object of the present invention to avoid the inconvenience occasioned by such static discharges by preventing their accumulation. I accomplish this by providing means in the fabric for dissipating the static charges so that they will not accumulate on the persons in contact therewith. In the case of an automobile, I provide means in the seat covering and for the floor mat for dissipating the charges.

Other objects and advantages of the invention will appear in the course of the following description, taken in connection with the accompanying drawing and appended claim.

In the drawing:

Figure 1 is a perspective view, partly bro-

ken away, of a portion of automobile including the driver's seat and adjacent parts.

Figure 2 is a vertical longitudinal section through the front portion of the cushion and including the adjacent part of the floor mat.

Figure 3 is an enlarged longitudinal section through a portion of the fabric covering the front seat, showing diagrammatically the weave of the cloth and wire.

Figure 4 is a diagrammatic view showing a modified form of the weaving of the wire with the fabric.

Figure 5 is a sectional view showing the weaving of the wire with a fabric of general form.

Referring to the drawing, I have illustrated a portion of an automobile with a closed body, the door and body on the right hand side being omitted for purposes of illustration. The seat is of the usual form and comprises a metallic base frame 36 and a metallic back rest frame 10. The back rest is upholstered as at 12, and supported on the base 36 is an upholstered cushion 14. The floor of the car is covered with a mat 16. Woven in the cloth fabric covering the cushion 14 and back rest 12 are a number of fine wires, the position of which is indicated by the lines 18. The wires 18 extend longitudinally of the car in the fabric covering the seat and in the floor mat and are laterally spaced at regular intervals.

As shown in Figure 1, the metallic frame 10 of the back rest is bent forward on its upper edge, as at 11. The edge of the cloth covering the upholstered portion 12 of the seat is extended down against the flange 11 and is held thereagainst by a metal lath 13, extending the width of the seat and held against the flange 11 by means of spaced bolts (not shown). The remainder of the back rest is of usual construction, comprising coil springs 15 covered with burlap 17, the outer fabric being held spaced from the burlap 17 by means of the upholstery 19. The structure described insures that the wires 18 in the fabric covering the upholstered portion 12 of the back rest will be electrically grounded on the metallic frame 10 and hence on the frame of the car.

In Figure 2 I have illustrated the grounding connection of the wires in the cushion 14. Extending along the lower front edge of the cushion is a wooden frame piece 20 on the upper side of which is fastened the wire screen or mesh 22 which supports the coil springs which are surrounded by the usual tubular sacks 24. Fixed to the frame piece 20 and extending over the springs is the bur-lap cover 26. Arranged over the cover 26 is the upholstery 28 and covering this is the woven fabric 30.

The lower edge of the fabric 30 is turned under the frame piece 20 and is fixed thereto by means of a metallic lath 33 extending along the under side of frame piece 20 and fixed thereto by means of screws 32. The heads of the screws 32 rest on the flange 34 of the sheet metal frame 36 upon which the seat is supported. The frame 36 rests on the floor of the car but contacts at the ends with the arm 38 of the metallic strip 40 which is supported on the longitudinal frame member 42 of the car. The lower part of the fabric 30 is firmly pressed between frame piece 20 and metal lath 33, this arrangement insuring that the wires 18 in the cushion will be grounded with the frame of the car.

Extending across the floor of the car is a metallic strip 46 which is integral with the metallic strip 40. The wires 18 in the floor mat are grounded by contact with the strip 46.

The weave of the fabric is illustrated diagrammatically in Figure 3. This view illustrates a cloth of double weave in which the numeral 50 indicates the woof and 52 the warp. The strands 54 are woven in to give the cloth a velvety effect. The numeral 18 indicates the strand of wire woven into the fabric. This wire may be of any metal from which can be formed a fine tough wire.

In Figure 4 is illustrated a looser weave in which lines 58 indicate the woof, lines 60 the warp and lines 61 the strands woven in to give the velvety effect. The wire 62 is woven in more loosely than in the fabric illustrated in Figure 3.

In Figure 5 I have illustrated a strip 64 which may be of any material which is used to cover the seat or floor of the car, whether woven or not. Sewed or woven into this fabric are the wires 66 which form a network therein. Adjacent parallel wires may be spaced any desired distance apart.

By the structure described, any static charge which occurs as a result of the rubbing of the clothing of the occupant against the fabric covering the front seat will be carried away by the network of wires and the accumulation of a considerable charge on the person of the occupant will be avoided. It may be considered sufficient to have the wires woven into the floor mat alone since there is usually sufficient moisture about the shoes of the occupant to establish electrical contact

between the person of the occupant and the wires in the floor mat.

The metal which is placed in the fabric to prevent the accumulation of static charges may be arranged in a wide variety of ways which will at once suggest themselves to one familiar with the art. It may be considered sufficient to arrange the conducting metal in the seat fabric alone or in the mat alone. The wires may be arranged in a single direction or they may be woven in with both the warp and the woof. It is sufficient that it be placed in the car adjacent the seat in such a relation that it will be in close enough contact with the apparel of the occupant to dissipate static charges as they occur. The metal in the fabric may be grounded in a wide variety of ways, since there are a large number of metallic parts adjacent the seat which are electrically connected with the frame of the car.

In any case where the static dissipating metallic wire is placed in a floor covering, a grounding element must be placed in the floor in such a position as to contact with the metal in the fabric.

I claim:

Upholstering material for an automotive vehicle comprising a fabric covering in which are carried spaced metallic conductors electrically grounded with the frame of the vehicle for preventing the accumulation of static charges on the person of the occupant of the vehicle.

In testimony whereof I affix my signature.
JOHN H. HUNT.