

June 20, 1961

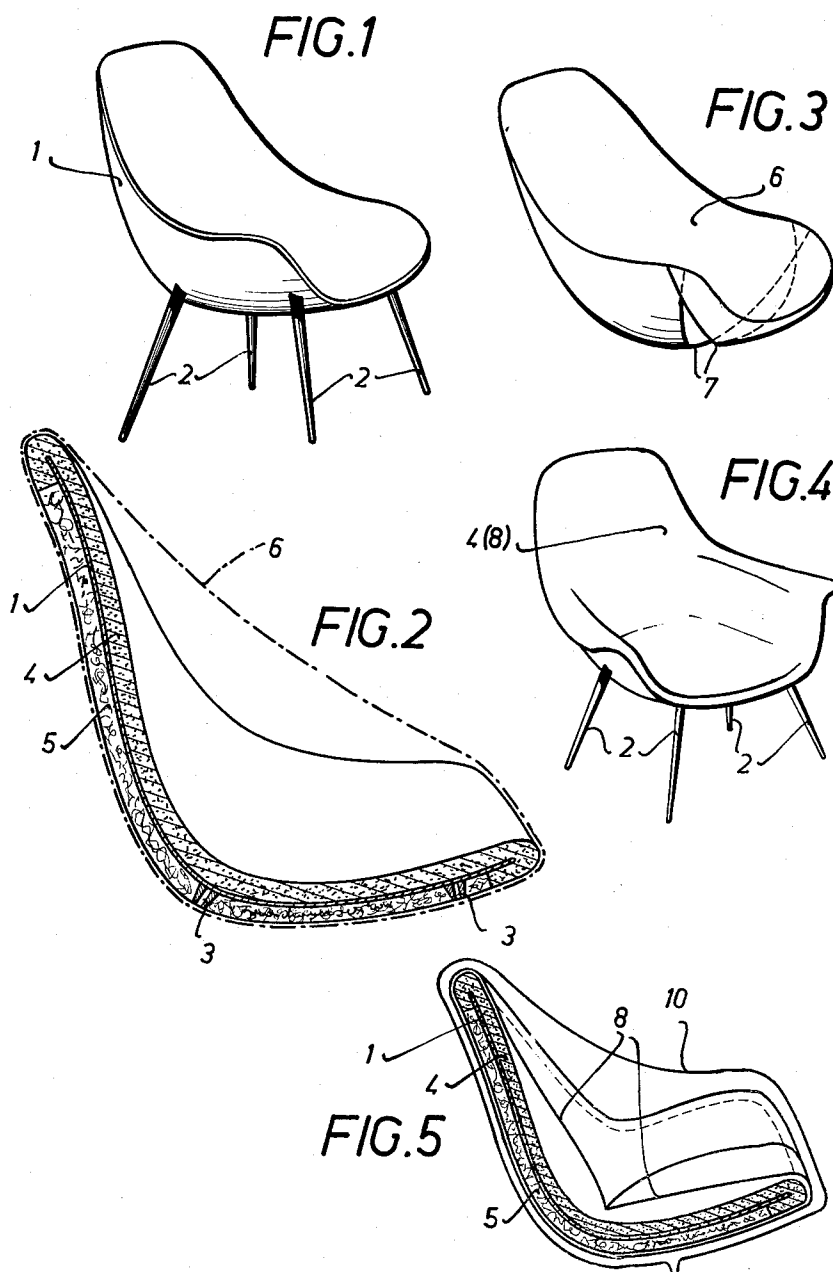
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2,989,112

METHOD OF COVERING BUCKET SEATS

Filed July 22, 1958

2 Sheets-Sheet 1



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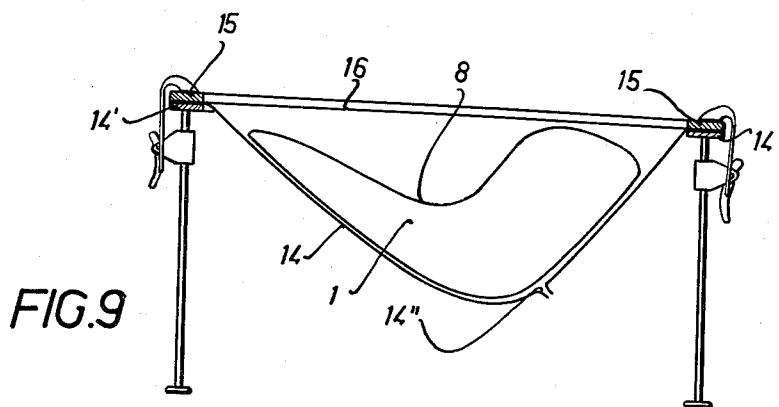
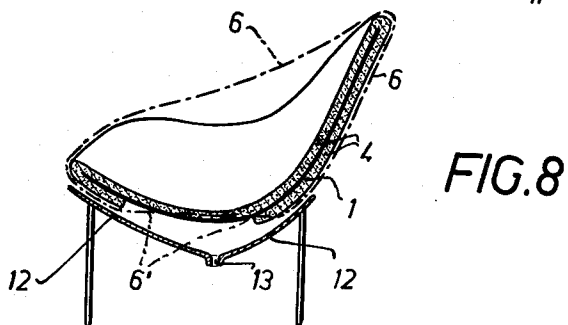
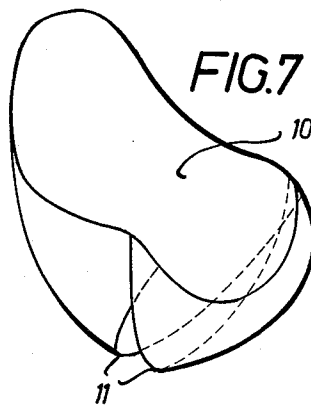
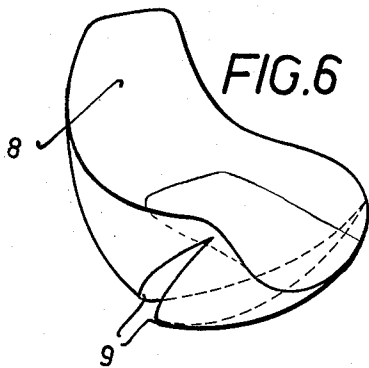
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METHOD OF COVERING BUCKET SEATS

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Filed July 22, 1958, Ser. No. 750,212

Claims priority, application Austria Oct. 19, 1957

5 Claims. (Cl. 154—41)

It is an object of the invention to provide a substantially simplified and improved and, therefore, less expensive method of covering bucket seats. This provision of a covering on bucket seats has previously been very difficult. It is another object of the invention to enable the covering of the concave inside surface of bucket seats with plastic foil. These and other objects are achieved according to the invention by applying adhesive to the bucket on its concave inside surface and rim portions, preferably provided with a pad of foamed rubber, and covering it with a baglike envelope conforming thereto so that the opening of this envelope lies on the lower convex outside surface, whereafter that part of the covering which covers the concave inside surface of the bucket is forced by the application of external force without wrinkles against the inside surface of the bucket to adhere thereto. Where a plastic is to be used as a covering material for the bucket seat, the baglike envelope may consist of plastic foil and may be airtightly sealed after the bucket has been covered therewith. That portion of this plastic envelope which overlies the inside surface and the rims of the bucket is forced against the opposite surface and caused to adhere thereto without wrinkles upon evacuation. The plastic envelope used as a covering remains permanently connected to the bucket. Where the covering is to consist of a woven fabric. The bucket is loosely covered with a fabric envelope, which is sewn to be an approximate fit; then the bucket is covered with a baglike plastic envelope. That portion of the fabric envelope which overlies the inside surface and the rims of the bucket is then forced without wrinkles against the concave inside surface of the bucket and the rims thereof by the vacuum formed by the evacuation of the subsequently applied plastic envelope, which has been airtightly closed. After the plastic envelope is removed the fabric remains permanently connected to the bucket. That portion of the fabric envelope which overlies the concave seat surface is provided with adhesive before it is applied to the bucket. That portion of the plastic envelope which overlies the concave inside surface of the bucket is subjected to radiant heat in a manner known per se before and/or during the evacuation. This will facilitate the expansion of the plastic material. According to the invention the plastic covers the bucket without nails or folds so that a long life of the plastic covering is ensured. Owing to its permanent inherent stress the plastic foil will always pull up the foamed plastic pad to its original position so that the fatigue previously observed in the foamed plastic pads of bucket seats after prolonged use can no longer occur. For this reason the padding effect cannot be lost. The covering of the bucket with a fabric by means of a plastic bag affords the advantage that the fabric can be applied without any wrinkles and that the time-consuming manual sewing operations previously required during the application of the covering are entirely eliminated. It is sufficient to provide a single manual seam for making and closing the baglike fabric envelope. Where a transparent plastic foil is used the covering operation can be continuously checked. This will enable the immediate elimination of any wrinkles which may have formed.

The drawing shows some illustrative embodiments of the process according to the invention of covering bucket seats.

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FIG. 1 is a perspective view showing a bucket seat covered with a plastic foil.

FIG. 2 is a longitudinal sectional view of the seat of FIG. 1.

FIG. 3 is a perspective view of the bag-like plastic envelope serving as a covering for the bucket seat.

FIGS. 4 and 5, respectively, are perspective and cross-sectional views showing a bucket seat covered with woven fabric by the process according to the invention.

FIGS. 6 and 7, respectively, show the baglike fabric envelope used for this purpose and the plastic envelope also required.

FIGS. 8 and 9, respectively, show preferred methods of covering, using plastic and fabric envelopes.

With reference to FIGS. 1 to 3, a foamed plastic pad 4 is pasted on the inside surface of the seat bucket 1 made of plastic, wood or the like, before the legs 2 are or the leg frame is screwed into the bosses 3 formed with a female screw thread. A cotton wool layer 5 is provided on the outside of the bucket 1. A bag 6 consisting of a carrierless plastic foil (not shown in FIG. 3) is pulled over the bucket 1. The opening of this bag is airtightly closed by pasting its overlapping edges 7 together. When the bucket 1 is covered by the closed plastic bag 6, the portion overlying the foamed plastic pad is subjected to radiant heat. By means of an evacuation valve (not shown) provided on the underside of the bucket 1 the closed bag is evacuated. The resulting vacuum causes the application of an external force, consisting of the difference between the atmospheric pressure and said vacuum, to the plastic bag portion disposed over the foamed plastic pad 4 so that this bag portion is drawn against the pad 4, which has previously been provided with adhesive. After cooling, the plastic foil forced by the vacuum against the foamed plastic pad will firmly adhere to the pad. To facilitate the evacuation the bucket has suitably some holes adjacent to the evacuation opening. When the bucket has been covered with the plastic foil the legs 2 are screwed into the bosses 3 of the bucket 1, which are provided with a female screw thread. It is sufficient however, to provide the bosses 3 with a tapered bore and to drive the tapered ends of the legs into the same.

According to FIGS. 4 to 7 a bag 8 of woven fabric, as is apparent, e.g., from FIG. 6, is pulled over the bucket 1, which carries a foamed plastic pad 4 on its inside surface and a cotton wool layer 5 on its outside surface. The opening 9 of the baglike fabric envelope 8 is closed by a seam. The baglike fabric envelope is chosen so that the fabric covers the concave seat and back surfaces of the bucket, more particularly the foamed plastic pad 4, with a spacing which corresponds to the coefficient of expansion of the fabric. A baglike envelope 10 as is apparent from FIG. 7, which consists of a carrierless transparent plastic foil, is then pulled over the bucket 1 provided with the fabric 8. The opening of this plastic bag is then closed by pasting overlapping edges 11 together or by closing a plastic slide fastener provided on the edges of the opening. When the entire bucket has been covered by the closed plastic bag 10, that portion of the latter which overlies the foamed plastic pad 4 is subjected to radiant heat. When the closed plastic bag is then evacuated, the resulting vacuum will cause the application of an external force, consisting of the difference between the atmospheric pressure and said vacuum, to the portion of the plastic bag which overlies the foamed plastic pad 4 so that said portion of the plastic bag is drawn against the fabric 8 and with the latter against the pad 4, which is provided with adhesive. After cooling the fabric forced against the pad

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4 adheres firmly thereto so that the plastic bag can be pulled off.

According to FIG. 8 the bucket seat 1 is covered with the plastic bag 6 in such a manner that the edges of the opening 6' of the bag lie closely against the underside of the bucket. The covered bucket 1 is then placed with its bottom portion on a conical bucket 12 so that the latter surrounds airtightly the edges of the opening 6' of the plastic envelope. When the plastic envelope 6 is then evacuated through the opening 13 of the bucket 12, that part of the plastic bag which overlies the inside surface of the bucket will be drawn against the latter. When the bucket 12 has been removed the exposed area on the underside of the bucket may be provided with a pasted cover, if desired. The bucket 12 carries on its sealing surface suitably resilient sealing pads (not shown). The method of covering shown in FIG. 8 is particularly suitable for the quantity production of bucket seats covered with plastic foils.

The process which is apparent from FIG. 9 is desirable for the covering of a quantity of bucket seats with woven fabric. The bucket 1 enclosed in the baglike fabric envelope 8 is inserted in a pan 14 of plastic foil conforming to the external shape of the bucket. This pan is then closed by a flat ring 15, which is airtightly clamped on the rim flange 14' of the pan and which is covered by a plastic diaphragm 16. When the pan is evacuated through the opening 14'' the plastic diaphragm 16 is drawn against the inside surface of the bucket to force the fabric, which is loosely applied thereto, on the bucket. After the flat ring 15 provided with the plastic diaphragm has been removed the bucket seat which is covered with fabric without wrinkles can be taken out of the pan.

I claim:

1. A method of covering bucket seats having a concave inside surface, a convex underside and rim portions, which comprises applying to said inside surface a resilient foamed plastic pad having a concave exposed surface substantially coextensive with said concave inside surface, providing adhesive on said exposed surface and on said rim portions, pulling a prefabricated baglike envelope conforming to said seat and having an opening over said seat so that said opening lies on said convex underside, and applying external force to that portion of said envelope which overlies said concave exposed surface and said rim portions to force portion against said foamed plastic pad and said rim portions and cause it to adhere thereto and to resiliently compress said plastic pad.

2. A method of covering bucket seats having a concave inside surface, a convex underside and rim portions, which comprises applying to said inside surface a resilient foamed plastic pad having a concave exposed surface substantially coextensive with said concave inside surface, providing adhesive on said exposed surface and on said rim portions, pulling a prefabricated baglike fabric envelope conforming to said seat and having an opening over said seat so that said opening lies on said convex under-

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side, airtightly enclosing said seat in an envelope of airtight material having a flexible portion overlying said exposed surface and rim portions when said seat is thus enclosed, evacuating said envelope of airtight material to apply external force to that portion of said fabric envelope which overlies said exposed surface and rim portions to force said portion of said fabric envelope without wrinkles against said exposed surface and said rim portions and to cause it to adhere thereto and to resiliently compress said foamed plastic pad.

3. A method of covering bucket seats having a concave inside surface, a convex underside and rim portions, which comprises applying to said inside surface a resilient foamed plastic pad having a concave exposed surface substantially coextensive with said concave inside surface, providing adhesive on said exposed surface and on said rim portions, pulling a prefabricated baglike envelope of airtight material and conforming to said seat and having an opening over said seat so that said opening lies on said convex underside, which envelope has a flexible portion overlying said exposed surface and rim portions when said envelope has thus been pulled over said seat, airtightly closing said opening, and evacuating said envelope to apply external force to that portion of said envelope which overlies said concave exposed surface and said rim portions to force said portion of said envelope against said foamed plastic pad and said rim portions and cause it to adhere thereto and to resiliently compress said plastic pad.

4. A method as set forth in claim 2, which comprises placing said bucket seat over which said fabric envelope has been pulled into an open-topped hollow receptacle conforming to the shape of the outside surface of said seat and placing a ring carrying a plastic diaphragm on said receptacle, said receptacle, ring, and plastic diaphragm forming said flexible envelope of airtight material and said plastic diaphragm forming said flexible portion of said envelope of airtight material.

5. A method as set forth in claim 1, in which said envelope has edges defining said opening and is pulled over said seat so that said edges closely engage said underside of said seat, and that said envelope is airtightly closed by applying a conical bucket against the underside of said seat around said opening.

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