UNITED STATES PATENT OFFICE.

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TRANSFERRING FUR, FEATHERS, HAIR, &c., FROM THEIR SKINS TO ARTIFICIAL BACKINGS.

SPECIFICATION forming part of Letters Patent No. 416,151, dated December 3, 1889.

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To all whom it may concern:

Be it known that I, ALFRED FRANCIS BILDERBECK-GOMESS, a subject of the Queen of Great Britain and Ireland, of 24ª Alfred Place West, South Kensington, in the county of Middlesex, England, have invented new and useful Improvements in Transferring Animal Fur, Feathers, Hair, Bristles, and the Like From their Natural Skins to Artificial Backings, of which the following is a specification.

This invention relates to the removal of fur, feathers, hair, bristles, and the like from the skins to which they are attached, and to the substitution for the natural skin of an artificial backing, the principal objects being, first, to secure attachment of the fibers, feathers, hairs, or bristles composing the covering of the natural skin in a more perfect manner to the artificial backing than is attained by the means hitherto employed for the purpose; and, secondly, to enable the coverings of numerous natural skins or pieces of skin to be transferred to or mounted upon a single artificial backing in such a manner that the lines of juncture are imperceptible.

In applying my invention, by way of example, to the treatment of fur, having tacked the skin upon a board I coat the fur-covered side of the skin with a liquid medium which, when solidified, serves to firmly hold the fibers or hairs whereof the fur is composed. A medium suitable for the purpose consists of sulphate of sodium applied in a warm state. The natural skin is then stripped off, leaving the roots of the hairs projecting from the surface which formed the lower side of the solidified holding medium. This surface is then treated with an adhesive solution of a kind hereinafter described, with the effect of imparting stiffness to the projecting roots, and of preparing the surface for the reception of the artificial backing. A solution appropriate for this purpose consists of caoutchouc dissolved in coal naphtha, or of shellac dissolved in methylated spirit. Upon the prepared surface, when dried, is laid a covering of muslin, gauze, net, or other fine fabric having an open texture, the same being applied in such a manner that the roots of the hairs penetrate the meshes of the muslin or other open-textured fabric. A second coating of the adhesive solution is then applied, the mode of manipulation being such that the extremities of the hairs are bent over and caused to engage with the threads of the muslin or other fabric employed. A backing of a substantial character is then added, the same being secured by means of the caoutchouc solution or other adhesive agent to the intermediate lining of muslin. The material forming the main backing may consist of a woven or felted fabric, leather, skin, or stout paper, according to the purpose to which the artificially-backed fur is intended to be applied. Finally, the sulphate of sodium or other agent employed as a temporary holding medium is redissolved or may be removed by efflorescence.

The employment of a thin lining fabric in the manner hereinbefore described has the further advantage of enabling small pieces of fur to be pieced together preliminarily to the application of a backing of a substantial character, such backing serving to hold the various portions of the fur together. For this purpose it is not essential that the root ends of the hairs should penetrate the muslin or equivalent lining material, or that the root ends of the hairs should be bent over upon the reverse side thereof.

The soluble medium employed for temporarily holding the fur may be composed of sulphate of sodium ($Na_2SO_4 10H_2O$) liquefied by heat in conjunction with sulphate of sodium (Na_2SO_4) effloresced, these elements being combined in such proportions as to produce a creamy mixture. The composition having set, the skin is stripped off, as previously described, leaving the roots of the hairs exposed. (If, however, any difficulty be experienced in stripping the skin, a suitable caustic alkali or a sulphide may be applied to the skin for a short time.) These may then be served with a caoutchouc solution containing sulphur or other vulcanizing agent, the surface of the artificial backing being heated in the same manner. The surfaces having been allowed to dry are again served with the caoutchouc solution and forthwith brought together. The salts of sodium employed as a

temporary holding medium are then dissolved (by immersing the fur in a bath of hot sulphate of sodium or otherwise) and removed, and the permanent or caoutchouc-holding medium vulcanized. The salts of sodium may, if preferred, be removed by efflorescence.

In treating cured skins it is sometimes advantageous to apply to the back thereof a suitable caustic alkali or a sulphide, either separately or in combination, the removal of the hair or other dermic covering being hereby greatly facilitated.

Instead of employing the salts of sodium hereinbefore specified in the preparation of the temporary holding medium, there may be substituted sulphite of sodium ($Na_2SO_3.10H_2O$) or trisodic phosphate (subphosphate) ($Na_3PO_4.12H_2O$) or hydro-disodium phosphate ($Na_2HP.O_412H_2O$,) each in conjunction with its own effloresced salt; or a salt of iron—such as the protosulphate ($FeSO_4.7H_2O$), or sulphate of magnesium ($MgSO_4.7H_2O$)—may be similarly employed, or a suitable medium may be formed of silicate of sodium ($Na_2O.4SiO_2$) by melting together fifteen parts of quartz, eight parts of sodic carbonate, and one part of charcoal. For the eight parts of sodic carbonate there may be substituted ten parts of potassic carbonate.

Where the skins are intended to be converted into leather, a temporary holding medium may be formed of potassium-aluminium sulphate ($K_2Al_2(SO_4)_4.24H_2O$,) sodium-aluminium sulphate ($Na_2Al_2(So_4)_4.24H_2O$), ammonium-aluminium sulphate ($(NH_4)_2Al_2(SO_4)_4.24H_2O$), or chromium-aluminium sulphate ($Cr_2Al_2(SO_4)_4.24H_2O$), and there may be combined with the above-mentioned compound salts chloride of sodium (either alone or in conjunction with sulphate of sodium) in treating skins which have not been cured.

In attaching the coverings of numerous natural skins or pieces of skin to a single artificial backing, the various pieces of fur, while still attached to their skins or mounted on their lining fabric, as hereinbefore described, may be matched together and tacked down upon a board, so as to cover an area of any given size or form before the artificial holding medium is applied. In preparing large pieces of artificially-backed fur, however, I prefer to employ two thicknesses of backing material—an inner and thin one—of muslin or similar material, and an outer and stout one, of calico or canvas. Nevertheless an inner lining is not essential, particularly if care be taken to apply the caoutchouc solution evenly and rather thickly.

Instead of constructing large pieces of artificially-backed fur in the manner hereinbefore described, the constituent parts may be matched and pieced together at that stage in the process last described, when the fur has been transferred to the inner or thin backing of muslin or caoutchouc, as the case may be, but before the outer or stout backing of canvas or equivalent material is applied.

Having now particularly described and explained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The herein-described method of transferring fur or other dermic covering from the natural skin to an artificial backing, which consists in saturating the fur or its equivalent on the skin with a substance which hardens and holds the fur rigidly therein while the skin is being removed and its substitute applied.

2. The herein-described method of transferring fur or other dermic covering from the natural skin to an artificial backing, which consists in first saturating the fur on the skin with a substance which hardens and holds the fur rigidly in place therein, then stripping off the skin, then applying to the projecting roots of the fur an intermediate lining fabric of open texture, through which the roots pass and with the meshes whereof they are caused to engage, then attaching, by means of an adhesive material, a suitable backing fabric, and finally removing the hardened substance from the fur.

3. The herein-described method of preparing pelts for the transfer of the dermic covering thereon to an artificial backing, which consists in saturating the fur or like covering with a self-hardening composition, consisting of sulphate of sodium, liquefied by heat, in conjunction with sulphate of sodium effloresced, whereby the fur is held rigidly in mass for the purpose set forth.

4. The herein-described method of building up large pieces of artificially-backed fur from numerous small fur-covered skins or pieces of skins, which consists in transferring each fur covering to a lining of muslin or other suitable thin material, arranging the several pieces of lined fur edge to edge and temporarily fastening them to a board, applying a soluble composition to the fur-covered surface for temporarily holding the hairs or other fibers, then removing the board, then attaching the main backing, and finally removing the temporary holding composition.

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Witnesses:
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