

UNITED STATES PATENT OFFICE.

CHARLES A. EVANS, OF METHUEN, MASSACHUSETTS.

ARTIFICIAL LEATHER.

SPECIFICATION forming part of Letters Patent No. 238,372, dated March 1, 1881.

Application filed January 24, 1880.

To all whom it may concern:

Be it known that I, CHARLES A. EVANS, of Methuen, in the State of Massachusetts, have invented an Improvement in Artificial Leather, of which the following is a specification.

This invention relates to an improvement in the manufacture of artificial leather, originally patented to me by Letters Patent No. 202,427.

The original fabric when patented was, and is, a very useful fabric; but owing to the fact that rubber is more or less readily attacked by contact with grease and oil or oily surfaces, it has been desirable to improve it in that respect. In consequence thereof, for such purposes as require the exposure of the surface of the fabric to oil or oily surfaces, I have invented an improvement in the fabric, which I will now describe.

I take about two pounds of gutta-percha and dissolve it, with the aid of heat, in one gallon of naphtha, adding naphtha from time to time as it gets too stiff. The temperature required for this purpose is about a temperature which is moderately warm to the hand, and the heat may be applied through a steam-pipe which is inserted in the kettle, or by a jacket, or other suitable means. After this solution is made it is placed in a covered tank and ground with a masticator, so as to be made of uniform quality. In preparing this body for the surfacing material either dark or white gutta-percha may be used, the dark being preferable for such colors as russets, and the "white," so called, for light-colored tints or for cream-colored fabrics. India-rubber may be substituted for gutta-percha to a limited degree—say about a third of the gum—a half is too much not to materially alter the oil-proof quality desired, while it renders the fabric stiffer than if pure gutta-percha only be used. Into the solution of gutta-percha in naphtha so prepared is put from three-quarters of a pound to a pound and a half (more or less) of zinc-white, or chalk, or other mineral body of light color, in powder, and the whole is then ground in a masticator to uniformity of texture and quality. From time to time in the course of these operations, if the material gets to be too thick and stiff to work, naphtha is added in small quantities, so as to

keep it in a good working condition of plasticity. This body of surfacing material may then be canned for use, and when it is desired to use the same it is heated to about the same temperature as at first—namely, to about the temperature at which it is moderately warm to the hand.

If russet or cream-colored fabrics are desired they are very slightly tinted. If fabrics are desired which shall have special color, about one ounce (more or less) of proper aniline-fat color is taken to three gallons of this body so prepared, as above set forth, and this is properly dissolved and stirred into the warm material, which is thereby colored substantially throughout. The aniline-fat colors have been recently introduced into the market, and will serve for this purpose, and in this menstruum very admirably, while the common dry aniline colors do not serve. The coloring material may, of course, be mixed before canning; but this requires a larger stock of body to be carried than when mixed only just before using. This colored compound, when thus prepared, is then spread upon the surface of close cloth fabric, as described in my former patent by use of a knife-machine. It is not necessary in using this gutta-percha solution to use heated pipes or rollers, as is desirable in spreading the india-rubber solution of the former patent. The differences in physical qualities of the gutta-percha and india-rubber, although they are considered for many purposes substantially equivalent in the rubber manufacture, render the fabric manufactured in this way more useful on account of its oil-proof qualities than the plain india-rubber fabric, and these physical qualities require the use of a low degree of artificial heat in dissolving the gutta-percha, and also allows me to dispense with the use of heated pipes or rollers in spreading it. After the fabric has been spread with this composition, it will be noticed that the color is comparatively dull, in consequence of the gutta-percha being of a dirty shade. Color, however, may be produced upon it as brilliant as desired, in the following manner: The fabric completed and dried is now varnished with spirit-varnish containing aniline in solution. The ordinary solution of shellac in alcohol may be used, or the solution in methyl, or indeed

any of the alcohols. The coating of tinted varnish is to be thin and light, and the cloth so surfaced is next run through a pebbling-machine to produce the desired texture of the surface, 5 and after pebbling is again varnished. The pressure and power of the pebbling-machine, while it produces texture upon the surface, also effects this result, that the shellac and its coloring material are very thoroughly incor- 10 porated into the surface of the fabric, and thereby the color of the surface is made permanent, brilliant, and positive, instead of dull, as when only gutta-percha is used without the surface-finish. After pebbling, the fabric is 15 again varnished with spirit-varnish, either with or without color, as may be desired.

The russets and cream-colors are very slightly tinted in the surface-color desired, and rather

for the purpose of getting brilliancy than purity of shade, while the fabrics which have 20 the more brilliantly-tinted aniline-fat colors embodied in their substance are surface-colors, as well to produce the purity of shade as to add to the brilliancy of it.

I claim as my invention and desire to secure 25 by Letters Patent—

As a new article of manufacture, a close-textured fabric, surface-coated with a compound consisting of dissolved gutta-percha and light-colored mineral matter and fat ani- 30 line, substantially as described.

CHAS. A. EVANS.

Witnesses:

F. F. RAYMOND, 2d,

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