a. Separate superimposed layer
b. Mixture of matted fibres and cementing binder.
c. Woven fabric.
UNITED STATES PATENT OFFICE.

CHARLES ELWOOD ARNOLD, OF WILMINGTON, DELAWARE, ASSIGNOR TO E. L. Dr FOUNTAIN & COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

PROCESS OF MAKING ARTIFICIAL LEATHER AND PRODUCT THEREOF.

Application filed September 5, 1918. Serial No. 252,665.

To all whom it may concern:

Be it known that I, CHARLES E. ARNOLD, of Wilmington, in the county of New Castle, and in the State of Delaware, have invented

a certain new and useful Improvement in Processes of Making Artificial Leather and Product Thereof, and do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to a process of making artificial leather and the product thereof, that is to say, coated fabrics having the appearance of leather.

The object of my invention is to provide a process and product thereof, in which an artificial leather is obtained that is entirely free from clothly appearance. Hitherto, artificial leathers have had a tendency to develop a clothly appearance, especially when submitted to pressure or tension, as for example, when stretched around a corner of an object. It is the object of my invention to avoid the development of such clothly appearance.

Further objects of my invention will appear from the detailed description thereof contained hereinafter.

While my invention is capable of embodiment in many different forms, for the purpose of illustration I shall describe only certain forms thereof herein, a preferred form being indicated in the accompanying drawing.

For example, I may make an artificial leather in accordance with my invention by napping one or both surfaces of a fabric, as for example, the close-mesh woven fabric known as a double-faced moleskin; then applying to a napped surface thereof a nitrocellulose composition, such as the following:

8 parts nitrocellulose by weight,
8 parts castor oil by weight,
84 parts solvent by weight.

which after the evaporation of the solvent will mat the nap into a mass which will protect and cover up the weave of the fabric; and then applying to this surface when dry another coating of a nitrocellulose composition which may be the following:

10 parts nitrocellulose by weight,
18 parts castor oil by weight,
5 parts pigment by weight,
67 parts solvent by weight.

Instead of producing the artificial leather in this manner, I may depend upon hiding the weave of the fabric by superimposing thereon a layer of a material which is not woven, and which will, therefore, have no tendency to show a weave or clothly appearance. Such superimposed fabric may, for example, be a layer of felt. In carrying out my invention in this manner, I may apply to a layer of woven fabric which may be napped and therefore comprise end-attached fibres on one or both sides, or not, as desired, and which may have an exposed weave or not, as desired, which fabric, for example, may be moleskin, a layer of a coating composition, such as the following:

10 parts nitrocellulose by weight,
18 parts castor oil by weight,
72 parts solvent by weight,
upon which I will immediately apply by pressure a layer of felt before said coating is dry. Upon the surface of the felt I may then apply a layer of nitrocellulose coating composition, as for example, the following:

10 parts nitrocellulose by weight,
18 parts castor oil by weight,
5 parts pigment by weight,
67 parts solvent by weight.

An artificial leather made in accordance with any one of the methods above described will be of such a character that not only will the weave or clothiness not be apparent when located in a given plane, but even when subjected to pressure or tension, as for example, when stretched around a corner, the weave or clothiness will not appear, but will remain entirely hidden. In this way, an artificial leather is obtained which will at all times retain its leather-like appearance.

While I have described my invention above in detail, I wish it to be understood that many changes may be made therein without departing from the spirit thereof.

Claims:

1. The process which comprises providing upon the surface of a woven fabric a protective layer of solid materials comprising an end-attached fibrous constituent, and then applying a coating composition, and then applying a nitrocellulose coating to the upper surface thereof.

2. The process which comprises providing upon the surface of a woven fabric a protective layer of solid materials comprising
an end-attached fibrous constituent matted with a nitrocellulose coating composition, and then applying a nitrocellulose coating to the upper surface thereof.

3. The process which comprises providing upon the surface of a woven moleskin a protective layer of attached fibrous materials, and then applying a nitrocellulose coating to the upper surface thereof.

4. The process which comprises napping and then matting the nap of a woven moleskin to form a protective layer of solid materials comprising a nap matted with a coating composition, and then applying a nitrocellulose coating to the upper surface thereof.

5. The process which comprises napping and then matting the nap of a woven moleskin to form a protective layer of solid materials comprising a nap matted with a nitrocellulose coating composition, and then applying a nitrocellulose coating to the upper surface thereof.

6. An artificial leather comprising a woven fabric having thereon a protective layer of a nap matted by a nitrocellulose coating composition, and a distinct coating superimposed on the first layer, said second coating containing a pigment.

7. An artificial leather comprising a woven moleskin having thereon a protective layer of an end-attached solid associated with a coating composition, and a coating composition layer superimposed thereon.

8. An artificial leather comprising a woven moleskin having thereon a protective layer of a nap matted by a coating composition, and a separate coating composition layer superimposed thereon.

9. An artificial leather comprising a woven moleskin having thereon a protective layer of a nap matted by a nitrocellulose coating composition, and a separate coating composition layer superimposed thereon.

In testimony that I claim the foregoing I have hereunto set my hand.

CHARLES ELWOOD ARNOLD.

Witnesses:

P. E. STRICKLAND,

C. S. GWYNNE.
Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,408,081, granted February 28, 1922, upon the application of Charles Elwood Arnold, of Wilmington, Delaware, for an improvement in "Processes of Making Artificial Leather and Product Thereof," an error appears in the printed specification requiring correction as follows: Page 2, line 7, before the word "attached" insert the word "end;" and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 4th day of April, A. D., 1922.

[seal.]  

KARL FENNING,  

Acting Commissioner of Patents.