

UNITED STATES PATENT OFFICE.

GEORGE S. WOLFF, OF PHILADELPHIA, PENNSYLVANIA.

ENAMELED LEATHER.

SPECIFICATION forming part of Letters Patent No. 632,163, dated August 29, 1899.

Application filed July 5, 1899. Serial No. 722,854. (No specimens.)

To all whom it may concern:

Be it known that I, GEORGE S. WOLFF, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Enameled Leather, of which the following is a specification.

My present invention is a specific embodiment of the general invention forming the subject of my application for patent, Serial
10 No. 691,184, filed September 17, 1898, my present invention consisting of tanned goatskin or "kid" leather, as it is termed, having an elastic and adherent coating of enamel applied to its unbuffed grain-surface.

15 A tanned goatskin or piece of kid leather has never heretofore been provided with an enamel coating, because such enamel coatings have hitherto always been applied either to a "buffed" grain or the flesh side of the
20 cow or calf skins of which such enameled leather is made. Neither of these methods of manufacture is available in the case of a goatskin, because the grain-surface of such skin cannot be subjected to the ordinary buffing operation, while the flesh side is of such a
25 fuzzy or fibrous character that it cannot be made to present a proper surface upon which to apply enamel in the ordinary way.

In a separate application filed by me of
30 even date herewith I have described and claimed an enamel which is applicable directly to the unbuffed grain-surface of goatskin or kid leather and which will not be absorbed by said surface, but will form an adherent flexible coating thereupon.
35

In preparing the varnish or enamel I add to the oil used as the foundation for the varnish a material which will prevent the varnish from being absorbed by the grain-surface of the skin, while yet it adheres firmly thereto and is elastic, the coating being so thin and transparent that it will not hide the grain-surface, however fine the same may be. The material which I prefer to use for the
45 purpose is vegetable gum, and I also prefer to employ a combination of gum-chicle, gum-camphor, and india-rubber in the manner hereinafter set forth.

50 The varnish possesses at some period during the treatment such fluidity as will insure its taking hold of the grain-surface and adhering firmly thereto, and said varnish is

preferably so fluid in the first instance that it can be applied by means of a brush or sponge, although it may, without departing
55 from my invention, be of such consistency that it may have to be originally applied by means of a dauber, spatula, or like implement, heat or other subsequent treatment being relied upon to give it the desired fluidity. 60

In carrying out my invention I take the tanned skin after the same has been prepared up to the point where it would in the ordinary course of treatment be finished as either polished, glazed, ironed, or dull-surface
65 leather. This leather is then dampened, stretched, dried, soft-boarded, and again dried and stretched, as is common in the ordinary practice of making patent-leather or enameled leather from cow or calf skins. I
70 then apply directly to the grain-surface of the stretched skin a coating of the varnish hereinafter referred to as "varnish No. 1," the coated skin being then dried or baked in a suitable oven at a temperature of about 180°
75 Fahrenheit and then exposed to the air until the coating or varnish has become thoroughly dry and hard. I then apply a second coating of the varnish, hereinafter referred to as "varnish No. 2," and dry or bake this sec- 80
ond coating in the same manner as the first, after which the leather is again aired for the purpose of removing the slight stickiness inherent to a freshly-varnished surface, where-
85 upon the leather is removed from the stretching-frame and is ready for the market.

In preparing the oil for varnish No. 1 I first heat the oil to a temperature of 400° Fahrenheit; using, by preference, ordinary linseed-oil, into which when heated to the
90 temperature named I introduce from one-half ($\frac{1}{2}$) to one (1) per cent., by weight, of Prussian blue or other oxidizing agent, the temperature being then raised to about 520°
95 Fahrenheit and kept at that point from two and a half to three and a half hours or more, depending upon the character of the oil employed, after which the oil is allowed to cool until it reaches a temperature of about 105°
100 Fahrenheit, whereupon I introduce into the same fifty (50) per cent., by volume, of benzine, this addition being for the purpose of rendering the boiled oil sufficiently fluid to permit of its effective application by means

of a brush or sponge, the benzin evaporating immediately after such application, so as to leave the oil upon the surface in the same condition as though it had been applied alone, 5 if such application had been possible.

In preparing the oil for varnish No. 2 I also prefer to use ordinary linseed-oil, which I heat to a temperature of 400° Fahrenheit and then introduce into the same eight (8) 10 per cent., by weight, of an oxidizing agent such as Prussian blue, if the varnish is intended for black leather, or ten (10) per cent., by weight, of an oxidizing agent such as borate of manganese if intended for colors other 15 than black. The temperature is then raised to about 520° Fahrenheit and continued at that point for about one and a half hours, after which the oil is allowed to cool until it reaches a temperature of about 105° Fahrenheit, whereupon I introduce into it fifty (50) 20 per cent., by volume, of benzin for the same purpose as that before set forth, the greater amount of oxidizing agent employed in this compound as compared with varnish No. 1 25 being to cause it to present a surface which when dry will not be or become sticky or "tacky."

I also prepare solutions of chicle, rubber, and camphor in the following manner: A 30 given weight of chicle is masticated in an equal volume of turpentine until the whole has been reduced to a syrupy mass, which is then strained through a cloth, so as to produce a clear liquid. India-rubber is also masticated in turpentine, using, however, four (4) 35 parts, by volume, of turpentine to one part of rubber employed, the mixture being kept at a temperature of about 180° Fahrenheit for three days or more by means of a water-bath or in any other available manner, and the 40 product being then strained through a cloth. Gum-camphor is dissolved in its own weight of turpentine or benzin and also strained through a cloth.

45 In preparing varnish No. 1 I take of the linseed-oil prepared for that purpose in the manner before stated one hundred and fifteen (115) parts, by measure, and of the camphor solution forty-five (45) parts, by measure, and mix the two by stirring them together, whereby they immediately combine. I next stir into the compound twenty (20) 50 parts, by measure, of the chicle solution, and when this has been effected I add twenty (20) 55 parts, by measure, of the india-rubber solution, and I then run the whole compound

through a paint-mill or other mixing apparatus, previously introducing a pigment of any desired character, if such is needed, which will by the action of the mill be intimately mixed with and ground into the varnish. 60 After being subjected to the action of the paint-mill the varnish is strained through cloths and is then ready for use. For varnish No. 2 I take of the oil prepared for the 65 purpose in the manner set forth seventy (70) parts, by measure, and of the camphor solution fifty (50) parts, by measure, and after mixing the two strain the mixture through a cloth and then thin it with sufficient benzin 70 to cause it to flow freely.

The main purpose of the chicle and camphor in varnish No. 1 is to render the varnish non-absorbable by the leather, and I add the rubber for the purpose of giving the 75 varnish the desired toughness and elasticity, the use of camphor also lessening the brittleness of the chicle-gum and the stickiness of the rubber and leading to a better combination of the whole. The purpose of the camphor solution in varnish No. 2 is to prevent 80 the same from setting as rapidly as it would otherwise have a tendency to do because of the high percentage of drier used in boiling the oil. I wish it to be understood, however, 85 that my invention is not in its broadest embodiment limited to the use of the three gums in the manner described, the essential feature of this part of my invention being that the medium or mediums employed in addition 90 to the base or menstruum used shall be such as to impart to the varnish those properties which render it elastic and adherent and prevent the base or menstruum from being absorbed by the leather. 95

I do not herein claim, broadly, leather having an adherent enamel coating applied directly to the unbuffed grain-surface, as this forms the subject of my application, Serial No. 691,184, before referred to; but 100

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

Goatskin or kid leather having an enamel coating upon the unbuffed grain-surface.

In testimony whereof I have signed my 105 name to this specification in the presence of two subscribing witnesses.

GEORGE S. WOLFF.

Witnesses:

FRANK E. BECHTOLD,
JOS. H. KLEIN.