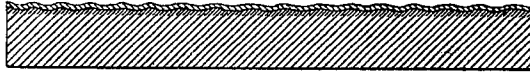


No. 632,162.

Patented Aug. 29, 1899.

G. S. WOLFF.
ENAMELED LEATHER.
(Application filed Sept. 17, 1898.)

(No Model.)



Witnesses:-
Charles De Cou.
Amos W. Whitehead

Inventor:-
George S. Wolff.
by Ties, Attorneys
Housen & Housen

UNITED STATES PATENT OFFICE.

GEORGE S. WOLFF, OF PHILADELPHIA, PENNSYLVANIA.

ENAMELED LEATHER.

SPECIFICATION forming part of Letters Patent No. 632,162, dated August 29, 1899.

Application filed September 17, 1898. Serial No. 691,184. (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 improvements in Enameled Leather, of which the following is a specification.

My invention consists of enameled leather having the coating of enamel applied directly to the unbuffed grain-surface of the leather.

The figure in the accompanying drawing represents an exaggerated section of a piece of leather having an enamel coating applied directly to the grain-surface thereof in accordance with my invention.

The usual method of preparing enameled or "patent" leather has been to apply the enamel either to the "flesh" side of the leather or to what is termed a "buffed" grain—that is to say, the natural grain-surface has been removed by means of an instrument called a "buffing-knife" or "slicker" in order to secure a roughened foundation upon which to apply the enamel and insure the adherence of the same to the leather, the natural grain of the leather presenting a smooth surface to which enamel coatings prepared in the ordinary manner will not properly adhere.

Ordinary enamel or patent leather coatings consist of linseed or other drying oil boiled to a pasty or gummy consistency, so that it can be spread in thin layers, which will not be absorbed by the leather and which when dried form a foundation upon which to apply as many coats of thin varnish as is requisite in order to obtain the desired finish. Besides failing to adhere properly to the smooth grain-surface of the leather an oil boiled to the usual pasty consistency would be more or less opaque, and hence would hide the grain of the leather if applied directly thereto, while if of less than a pasty consistency it would to a greater or less extent be absorbed by the leather. In carrying out my invention, therefore, I discard the usual foundation applied to a "buffed" surface of the leather and apply directly to the smooth grain-surface a varnish which has been rendered elastic, adherent, and non-absorbable by the grain-surface, this result being attained by the addition to the oil used as a foundation for the varnish of a medium which will impart the desired qualities to said oil without thickening the same to such an extent that it will hide the grain-surface of the

leather. The medium which I prefer to use is gum-chicle combined with india-rubber and camphor.

The varnish which I use at some period during the treatment possesses 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 from my invention be of such a 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 on to give it the desired fluidity.

I take the leather, of whatever kind selected, 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 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, and I 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° Fahrenheit and then exposed to the air until the coating of 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 second 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, whereupon 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 temperature named I introduce from one-half to one per cent., by weight, of Prussian blue or other oxidizing agent, the temperature being then raised to about 520° 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 125° Fahrenheit, whereupon I

introduce into the same fifty per cent., by volume, of benzin, 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, 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 per cent., by weight, of an oxidizing agent, such as Prussian blue, if the varnish is intended for black leather, or ten per cent., by weight, of an oxidizing agent, such as borate of manganese, if intended for colors other 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 125° Fahrenheit, whereupon I introduce into it fifty 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 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 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 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 product being then strained through a cloth. Gum-camphor is dissolved in twice its own weight of turpentine and also strained through a cloth.

In preparing varnish No. 1 I take of the linseed-oil prepared for that purpose in the manner before stated one hundred and fifteen parts, by measure, and of the camphor solution forty-five parts, by measure, and mix the two by stirring them together, whereby they immediately combine. I next stir into the compound twenty parts, by measure, of the chicle solution, and when this has been effected I add twenty 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. 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 purpose in the manner set forth seventy parts, by measure, and of the camphor solution thirty parts, by measure, and after mixing the two strain the mixture through a cloth and then thin it with sufficient benzin 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 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 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, 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 to the base or menstruum shall be such as to impart to the varnish those properties which render it elastic, adherent, and non-absorbable, whereby it may be applied directly to the grain-surface of the leather.

The enamel coating produced in accordance with my invention does not hide the grain-surface of the leather, but follows the contour of the same, so that the grain-surface is apparent after the application of the enamel thereto.

I do not herein claim the liquid enamel which I have described, as this forms the subject of a separate application filed July 5, 1899, Serial No. 722,853.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. As a new article of manufacture, flexible enameled leather having directly upon its unbuffed grain-surface, an adherent enamel coating.

2. As a new article of manufacture, flexible enameled leather having directly upon its unbuffed grain-surface, an adherent enamel coating containing as an element, material which prevented its absorption by said grain-surface.

3. As a new article of manufacture, flexible enameled leather, directly to the unbuffed grain-surface of which has been applied an adherent fluid-enamel coating containing as an element material which prevented its absorption by said grain-surface.

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

GEORGE S. WOLFF.

Witnesses:

H. F. REARDON,
 FRANK E. BECHTOLD.