

## UNITED STATES PATENT OFFICE.

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## PROCESS OF FINISHING PATENT-LEATHER.

SPECIFICATION forming part of Letters Patent No. 772,933, dated October 25, 1904.

Application filed December 22, 1903. Serial No. 186,215. (No specimens.)

*To all whom it may concern:*

Be it known that I, BYRON B. GOLDSMITH, a citizen of the United States, and a resident of the city and State of New York, have invented a new and useful Process for Finishing Patent-Leather and Patent-Leather Produced Thereby, of which the following is a specification.

My invention relates to an improvement in the manufacture of patent-leather in accordance with which the process of manufacture is rendered cheaper, quicker, and more convenient of execution and the character, gloss, and wearing qualities of the finished article are enhanced.

The process of manufacturing patent-leather which is and has for a long time past been most commonly used consists in first applying a coating of linseed or drying oil mixed with a pigment or prepared in various ways to act as a preliminary or ground coat. After a sufficient number of such preparatory or ground coats have been applied and pumiced when dry to make them smooth there is applied one or more finishing or gloss-giving coats of a pure linseed-oil varnish for the purpose of giving the high gloss desired. I have heretofore improved upon this common process by using for my preliminary ground coat or coats a pyroxylin varnish and superimposing thereon as a gloss-giving varnish a finishing coat of drying-oil; but in either of these two old processes certain difficulties are encountered in the application of the finishing coat or coats of the gloss-giving or drying-oil varnish. Thus, for instance, the application of the finishing or gloss-giving coat of linseed-oil varnish frequently produces small pimply specks on the finished article. Again, it is necessary after drying the leather with the finishing coat of linseed-oil varnish in heated chambers to expose it for a certain length of time to the action of sunlight before it is sufficiently dry for shipment. This carries with it the necessity of large yards to be used in the sun-drying operation, the expenditure of considerable time, more especially in cloudy weather, and the constant watching of the skins and their removal to shelter in case of rain or storms. In addition to all this the

finished article produced by these old processes shows a tendency to crack by reason of the tendency of the linseed-oil coating to become brittle, and this cracking often occurs spontaneously by mere changes of temperature without other apparent cause.

By means of my invention the above-mentioned difficulties are removed. I have, in fact, discovered, as the result of long series of experiments, that if the gloss-giving or finishing coat or coats in the manufacture of patent-leather consist of a mixture of linseed or other drying oil and pyroxylin in solution, with or without the addition of substances to increase the flexibility, the finishing or gloss-giving coat or coats do not have a tendency to form a pimply surface, but dry smoothly and evenly. Again, the finishing coats can be sufficiently heated in the drying-room for immediate shipment without the tedious exposure to the sun, thus insuring the continuity of the manufacture irrespective of climatic conditions. Finally, the finished article has lost much of its tendency to crack spontaneously. The pyroxylin in solution, which I add to the finishing coats of drying-oil, not only seems to impart tenacity to these coats, but also to retard the oxidation, which is constantly going on in the linseed-oil coats after they are dry. I thus largely prevent this oxidation, which would eventually destroy the pure linseed-oil coating, and thereby add to the life of the coating.

The proportion of linseed-oil and pyroxylin, which constitute my finishing or gloss-giving coats, may be varied within wide limits. Thus where the finished product is to be used for the tips of shoes, which are not subjected to much much bending, I may use a less proportion of drying-oil than when the leather is to be used for the body of shoes, which must suffer considerable bending. I can, in fact, vary the proportions of drying-oil and pyroxylin in my mixture from such as contain more pyroxylin than drying-oil to such as contain considerably more oil than pyroxylin. In fact, somewhat small quantities of pyroxylin are calculated to impart to the mixture the desirable qualities above enumerated.

I may remark that for the substances above



referred to, intended to impart flexibility to the finishing or gloss-giving coat, I may use any of that class of substances which are ordinarily employed to give flexibility to pyroxylin, among which I may mention, for instance, non-drying oils.

From what has been said above the character of my process and the article produced thereby will be clear. I first apply to the leather one or more of the usual preliminary coats such as are to-day commonly used in the manufacture of patent-leather. As a sample of such preliminary coatings I may mention coatings of linseed-oil with a pigment, or coatings of a mixture of linseed-oil and a soft rubber, or a coating of pyroxylin. It is to be understood that the peculiar character of these preliminary coatings forms no part of my present invention. On these preliminary coats I apply one or more gloss-giving coats consisting of a mixture of a drying-oil and pyroxylin, which mixture is formed by dissolving the pyroxylin in one of its usual solvents, such as a suitable compound ether or a ketone, and then mixing the pyroxylin solution with the drying-oil in the desired proportion. Although it is to be thoroughly understood that I am not limited to the proportions of the ingredients which I employ and that these may be varied within wide limits, as stated above, I may, by way of a specific example, state that I may use for my gloss-giving coats a mixture of drying-oil and pyroxylin prepared as follows: I take a solution of pyroxylin in amyl acetate taken by itself or mixed with benzin or turpentine. Thus I may add six ounces of pyroxylin to one gallon of amyl acetate. To eighty cubic centimeters of this solution I may add eighty cubic centimeters of linseed-oil or linseed-oil varnish—that is to say, linseed-oil which has been boiled with suitable driers. The preliminary coat or coats having been applied, the gloss-giving coat or coats, consisting of a mixture of a drying-oil and pyroxylin in solution, having been applied, and these gloss-giving coats having been dried in heated chambers, the leather is finished and ready for its intended use; but, manifestly, there is nothing to prevent the use of sun-drying instead of or in addition to drying in heated chambers;

nor does my invention exclude the application of other coatings—for instance, coatings of pyroxylin—to the article described. The point of my invention is the application of the gloss-giving coats consisting of a mixture of a drying-oil and pyroxylin in solution.

I claim—

1. The process of finishing patent-leather which consists in applying to the leather, when provided with a preparatory coat or coats, a gloss-giving coat consisting of a mixture of drying-oil and pyroxylin in solution, substantially as described.

2. The process of manufacturing patent-leather which consists in applying to it one or more preparatory coats, and in then applying to the preparatory coat last applied one or more gloss-giving coats consisting of a mixture of a drying-oil and pyroxylin in solution, substantially as described.

3. The process of manufacturing and finishing patent-leather which consists in applying to it one or more preparatory coats, in applying to the preparatory coat last applied one or more gloss-giving coats consisting of a mixture of a drying-oil and pyroxylin in solution, and completely drying the product in heating-chambers, substantially as described.

4. The process of finishing patent-leather which consists in applying to the leather, when provided with a preparatory coat or coats, a gloss-giving coat consisting of a mixture of drying-oil, pyroxylin and a substance imparting flexibility to the coat, substantially as described.

5. Patent-leather having a preparatory coat or coats and a gloss-giving coat consisting of a mixture of a drying-oil and pyroxylin, superposed thereon, substantially as described.

6. Patent-leather having a preparatory coat or coats and superposed thereon a gloss-giving coat consisting of a mixture of a drying-oil, pyroxylin and a substance imparting flexibility to the coat, substantially as described.

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

BYRON B. GOLDSMITH.

Witnesses:

M. TETZKOFF,  
F. T. CHAPMAN.