UNITED STATES PATENT OFFICE.

BRUNO TRENCKMANN, OF SCHÖNEBERG, NEAR BERLIN, GERMANY, ASSIGNOR TO ZEPHYRLEDERFABRIK GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG VORMALS TRENCKMANN & CO., OF SCHÖNEBERG, NEAR BERLIN, GERMANY.

LEATHER AND PROCESS OF MANUFACTURING THE SAME.

No. 831,491. Specification of Letters Patent. Patented Sept. 18, 1906.

Application filed April 25, 1904. Serial No. 204,749.

To all whom it may concern:

Be it known that I, BRUNO TRENCKMANN, manufacturer, a subject of the German Emperor, residing at 25 Hauptstrasse, in the city of Schöneberg, near Berlin, Germany, have invented new and useful Improvements in Leather and Processes of Manufacturing the Same, of which the following is a specification.

This invention relates to a new leather that is distinguished by its fineness, suppleness, lightness, and durability. Leather having such properties is required for many industrial purposes, and particularly for lining organ-pipes and in the manufacture of bellows or the like, and generally for purposes where it is desired to have an air-tight, light, and flexible material. The leather hitherto used for such purposes was usually not absolutely air-tight or sufficiently flexible, while rubber sheets or fabrics impregnated with a solution of rubber, although air-tight, are very difficult to fit snugly by reason of lack of softness and have besides the serious drawback of being liable to deteriorate and lose their flexibility, thereby becoming brittle under the influence of cold. This is of great importance in the case of organs in churches which are not heated during the winter. The new leather obviates all these drawbacks and is therefore suitable for various purposes.

The new leather is manufactured from the outside wall of the intestinal tube, more particularly from the caecum or blind gut of the animal. This outermost skin of the blind gut has hitherto been deprived of its fat and dried and used as the so-called "gold beaters skin." It has been proposed to subject the skin of the blind gut to a tanning process; but the leather obtained in that way alone is not sufficiently air-tight and durable for such purposes as have been referred to above.

According to this invention the blind-gut skin, well cleaned and washed with potash or the like, is first tanned by means of mineral substances, such as chrome alum, &c., or with vegetable substances. In practice I have found that for two hundred skins of the maximum size four hundred grams zinc sulfate with ten liters of water is suitable as a tanning solution, or about the same amount of chrome alum may be used. Then the skin is placed in a filling-bath of yolks of eggs, flour, or the like, permitted to remain until thoroughly impregnated, whereby the skin is rendered thicker and stronger. This bath is preferably made by adding to about one liter of yolk of eggs a small quantity of flour. By this filling process the skins absorb the oil of the eggs. After having rinsed the skin it is stretched and dried. This drying is effected by placing two skins one on top of another and allowing them to dry together in intimate contact. During this drying process the skins firmly adhere to each other without any gluing or cementing material being used. The best plan is to place the grain or outermost sides of the two skins against each other. More than two skins may be superposed, in which case the similar sides are placed in apposition.

When a multiple skin treated in the above-described manner has become sufficiently dry, it is degreased or deprived of its fat by treating it with benzin. The skins are then at the same time rubbed and kneaded in the benzin, whereby they are rendered exceedingly soft and supple. This treatment is necessary to remove the oil incorporated in the skin by the treatment with the eggs and to render the leather soft, pliable, and capable of cementing to wood and the like.

The new leather has the property of being suitable for gluing or piecing together, so that large pieces of any size may be made from small pieces, and the leather can be cemented to other materials, such as wood or the like, which is of great importance for organ-pipes and the like.

My preferred process, as above stated, includes the step of tanning the skins; but if the untanned skins are subjected to the other steps of the treatment—filling, superposing, and washing with benzin—a product is obtained having many advantageous characteristics over the untanned skins previously known.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of making leather, which consists in subjecting the outer peritoneal intestinal coating to a filling-bath of yolk of

eggs, superposing two or more pieces thereof while wet, and permitting to dry in intimate contact.

2. A process of making leather, which consists in subjecting the outer peritoneal intestinal coating to a filling-bath of yolk of eggs and flour, superposing two or more pieces thereof while wet, drying and washing in a fat solvent.

3. The process of making leather, which consists in tanning the outer peritoneal intestinal coating, subjecting to a filling-bath, superposing two or more pieces thereof while wet, and permitting to dry in intimate contact.

4. The process of making leather, which consists in tanning the outer peritoneal intestinal coating, subjecting to a filling-bath, superposing two or more pieces thereof while wet, drying and washing in a fat solvent.

5. The process of making leather, which consists in tanning the outer peritoneal intestinal coating, subjecting to treatment in a filling-bath of the yolk of eggs, superposing two or more pieces thereof while wet, drying, and washing and kneading in benzin.

6. As an article of manufacture, a leather consisting of multiple superposed adherent layers of the tanned outer peritoneal intestinal coating.

7. As an article of manufacture, a leather consisting of multiple adherent degreased filled layers of the tanned outer peritoneal intestinal coating.

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

BRUNO TRENCKMANN.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.