UNITED STATES PATENT OFFICE.

ERNA REIDEL, OF MANNHEIM, GERMANY.

PROCESS OF MANUFACTURING ARTIFICIAL BELT OR SOLE LEATHER AND LIKE PRODUCTS.

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To all whom it may concern:

Be it known that I, ERNA REIDEL, chemist, a citizen of the German Empire, residing at Mannheim, in the State of Baden, Germany, have invented certain new and useful Improvements in Processes of Manufacturing Artificial Belt or Sole Leather and Like Products, of which the following is a specification.

This invention relates to an improved process of manufacturing artificial belt or sole leather or similar products, which over the known products has the advantage that it is a perfect substitute for good and elastic leather while its manufacture is very cheap.

The process is put into practice as follows:—Animal offals from butcheries such as tendons, sinews and useless intestines are pressed in suitable molds and dried, whereby they remain finely stretched, which is of importance for the process. Thereupon the dried offals mentioned are treated between rollers or in any other suitable way, until they are torn into thin fibers. Said animal fibers are then in crosswise fashion combined, by carding, into one fleece, that is they are now mechanically decomposed and must then in the further way of the process, be chemically decomposed. For this purpose, the fleece thus prepared is brought into a bath containing a medium which is capable of swelling the animal fibers, for instance light solutions of alkali salts such as sodium sulfid or similar compounds, or inorganic acids such as sulfuric acid, hydrochloric acid or the like, or organic acids such as lactic acid, propionic acid or the like, the fleece being then left in said bath until the swelling of the fibers is completed, which lasts about 4 to 6 hours, or longer, according to the thickness of the fibers or the strength of the swelling medium. This swelling solution or bath may vary from about ½% to 1½% according to the density and thickness of the fleece and the length of time it can be left in the solution. Preferably, some long fibers such as oakum, Sisal fiber or the like may be carded into the animal fiber fleece, that is the animal fibers may be mixed with the long fibers, for increasing their tensile strength. The long fibers remain unattacked by the swelling process, or they are, if alkaline solutions are employed, slightly mercerized or also slightly crisped. Care must, however, be taken that the animal fibers are not too much swollen, as they become thereby too gelatinous and lose their durability and tensile strength. After removal from the swelling bath, the fleeces are well washed off with water to remove therefrom the adhering parts of the swelling medium. This being effected, the swollen animal fibers can either at once or preferably by successive pressure be combined with the long fibers into one integral body and exposed to a tannic liquid, until they are perfectly tanned, whereupon they are dried. Before the product is pressed as above mentioned, however, purified blood, globulin, fibrin or like agents, and further a saturated soap solution are incorporated in the product to impart thereto a greater firmness and a certain flexibility respectively. The blood or other albumins employed may be mixed with dilute salt water, soda water, or the like, before adding to the fleece. By action of the tannic liquid, the blood, globulin and fibrin, as well as the soap solution are fixed. The soap solution can also be added after tanning and then fixed by metallic salt solutions. It addition to the soap solution, an emulsion of ceresin or paraffin may also be used to render the outer surfaces of the material smooth. Further, the fleece prepared as aforementioned can,—after its mechanical decomposition, without being further chemically decomposed or swollen and after the animal fibers are mixed with the long fibers,—be saturated with purified blood, golobulin, fibrin or the like, then an agent, as mentioned, be added thereto for obtaining a certain flexibility, and the product be pressed and tanned. Also in this case, the agent for obtaining a certain flexibility can be employed after tanning as aforementioned. After drying, the product can be finished like natural belt or sole leather and dyed as desired.

Claims.

1. A process of producing artificial belt or sole leather and like products which consists in preparing a fleece of animal fibers in a suitable manner by mechanically decomposing dried tendons, sinews and intestines, fastening them by long fibers, treating the fleece thus formed in a swelling bath, washing it with water, incorporating therein purified blood, globulin and fibrin,

as well as a soap solution, combining the whole under successive pressure into a compact body, tanning the product, drying the same and treating it finally with a paraffin emulsion, all for the purpose set forth.

2. A process of producing artificial belt or sole leather and like products which consists in preparing a fleece of animal fibers in a suitable manner by mechanically decomposing dried tendons, sinews and intestines, fastening them by long fibers, incorporating therein purified blood, globulin and fibrin, as well as a soap solution, combining the whole under successive pressure into a compact body, tanning the product, drying the same and treating it with a paraffin emulsion, all for the purpose set forth.

3. A process of producing artificial belt or sole leather and like products which consists in preparing a fleece of animal fibers in a suitable manner by mechanically decomposing dried tendons, sinews and intestines, fastening them by long fibers, incorporating therein an albumin-containing substance as well as a soap solution, combining the whole under pressure into a compact body, tanning the product and drying the same, all for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ERNA REIDEL.

Witnesses:

FRIEDRICH CARL WENTZEL,

HERMANN HOPPNER.