

UNITED STATES PATENT OFFICE.

W. W. WAITE, OF SOUTH NATICK, ASSIGNOR TO FLAX LEATHER MANUFACTURING COMPANY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF ARTIFICIAL LEATHER.

Specification forming part of Letters Patent No. 51,781, dated December 26, 1865.

To all whom it may concern:

Be it known that I, W. W. WAITE, of South Natick, in the county of Middlesex and State of Massachusetts, have invented an Improved Artificial Leather; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

Various attempts have of late years been made to produce from scraps and clippings of leather an artificial sheet-leather, by reducing the material to a pulpy condition and subjecting the pulp to the ordinary paper-making processes, the leather being sometimes the only material entering into the composition of the article produced, and sometimes combined with other fibrous material. These experiments have all failed, to a greater or less degree, to produce a firm, compact, and tenacious material, one and the principal reason for which failure I consider to be the presence of the tannin in the leather and the difficulties attending its practical removal.

The object of my experiments (resulting in my present invention) has been to produce an artificial leather, or an article adapted to many of the various purposes for which leather is now used, from a substance or substances having the desirable qualities which exist in leather as to its fibrous or membranous and tenacious character, but which are free from, and have not been subjected to, the influence of tannin. For this purpose I use animal-skins reduced to the state of simple membrane, and which may or may not have been subjected to further treatment by tawing, oil-dressing, shamoying, or other processes other than tanning, such material, generally obtained from clippings and skiving of the skins, being reduced to pulp, mixed with a fibrous material, and finally made into a paper or board by the process (or substantially that) used in making paper and pasteboard.

My invention therefore consists in a new article of manufacture—namely, an artificial leather produced from a combination of animal-skin (in a simple membranous or in an untanned condition) and a vegetable fiber.

In the process of manufacture I generally

proceed substantially as follows: I take a sufficient quantity of buckskin and sheepskin scraps or clippings, discarding from them all unduly thick and hard pieces, and subject them, successively, to treatment in a duster and in a beating-engine, adding to the pulp in the engine about ten per cent., more or less, of oakum or other vegetable fibrous material, according to the quality desired in the article produced or the use for which it is intended, the oakum being pulped in a separate engine and added to the animal-pulp. The pulp is then let into the stock-chest, thence into the vat, thence onto the endless apron upon which the web is formed, from whence it passes to the felt and the pressure-rolls, the material, while in the web or the cylinder over which it passes, having a vibratory lateral motion imparted to it to cross the fibers. From the pressure-rolls the web is conveyed to and around a cylinder or cylinders, upon one of which it is wound (if to be made into board) in successive layers until thick enough to form the board desired, the web being then slit across to form the rectangular sheet.

This process may, of course, be varied as circumstances may require, there being nothing new in it, excepting the employment of the material from which the result is obtained, and other kinds of skins and additional substances combined therewith, and in various proportions, may, of course, be used, according to the kind of artificial leather desired. A small percentage of leather scraps is sometimes added to the scraps of skins.

The article so manufactured is applicable to machine-card clothing, machine-belted, boot and shoe stock, and to many other purposes in which leather is now used. By filling or penetrating the material with oil it may be rendered as flexible and water-proof as circumstances may require.

I claim—

As a new article of manufacture, an artificial leather made of animal and vegetable material combined, substantially as set forth.

W. W. WAITE.

Witnesses:

FRANCIS GOULD,
J. B. CROSBY.