

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MANUFACTURE OF ARTIFICIAL SKINS.

Specification forming part of Letters Patent No. **19,542**, dated March 9, 1858.

*To all whom it may concern:*

Be it known that I, JOHN HARCOURT BROWNE, of Abbey Mills, Romsey, Hants, England, a subject of Her Majesty the Queen of Great Britain, have invented or discovered new and useful Improvements in the Manufacture of Artificial Skins; and I, the said JOHN HARCOURT BROWNE, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object to produce artificial skins for the manufacture of parchment or such like articles and leather; and it consists in employing the cuttings or other parts of hides and skins by reducing the same to pulp, and then by rollers or pressure to produce sheets. For this purpose the parts of skins or hides which it is preferred should have the outer surfaces removed are soaked in water having dissolved therein, by preference, barilla and caustic lime, though other matters may be used. The parts of skins or hides are then well washed and subjected to a bath of water having therein alum and sulphuric acid. The parts of hides are then, after being washed, pulped and subjected to pressure between rollers or other presses, some of which are coated with felt and others are smooth. The sheets thus made are used in the manufacture of parchment or such like articles and leather.

Having thus described the nature of my said invention, I will proceed to explain the manner of performing the same.

The cuttings or other parts of hides or skins are soaked in cold soft water for about three days. They are then submitted to a solution of caustic barilla and caustic lime in the proportions of three pounds of the former to one pound of the latter in about one hundred pints of water, and they are allowed to remain in this solution for about twenty-four hours or until they are soft enough to allow the fiber to break down with the blow of a hammer of about three pounds weight. The cuttings or parts of hides or skins are next to be washed clean in cold soft water, and they are then to be ground, which I prefer to do with edge-stones; or they may be passed between rollers or be well hammered or beaten in place of grinding,

till they are formed into a thin tissue. I next subject the cuttings or parts of skins or hides to an acidulated bath composed of one part, by measure, of sulphuric acid of commerce to one hundred parts, by measure, of soft water until the fiber or matters separate and assume a flocky appearance, and this will generally result in from twelve to twenty-four hours, depending on the nature of the skins or hides, and care is to be observed not to make the acidulated bath too strong, as it injures the texture. I then add bleaching materials, and for this purpose I prefer to employ hyposulphate of soda, muriate of soda, (common salt,) and alum, and I use them at the rate of eight ounces of hyposulphate of soda, three ounces of muriate of soda, and one ounce of alum for each bath of one hundred and one gallons, by measure, of water and acid, and as much cuttings as such a bath will contain submerged, and I allow the matters to remain for about six or eight hours, stirring them frequently. I would, however, remark that the bleaching of the fiber is not resorted to in all cases, particularly when the fabric produced is to be subjected to processes for making leather therefrom. The fibers are next to be washed free of acid in cold soft water, and they are afterward to be subjected to a paper or rag engine to reduce the same to pulp of the degree of fineness desired, and the pulp may then be made into sheets in like manner to what vegetable pulp is made into paper; but I have found it desirable to use a fine-woven fabric of cotton, linen, or other fiber over the wire-cloth of the paper-machine or sieves used, and when passing between the couching-rollers there should also be a similar fabric above. The fabrics thus made of animal pulp are next to be dried either by warmed cylinders or otherwise, which should be covered with felt or other fabric, taking care to keep the artificial heat down to as low a degree as may be. I prefer not to use a temperature greater than from 95° to 100° of Fahrenheit; but I believe that atmospheric drying is preferable when such drying can be resorted to, the sheets in all cases being kept extended when drying; or, in place of making the pulp into sheets, as above explained, the water may be strained out and the plastic pulp rolled into sheets. When sheets or other forms of

articles made of animal pulp, as above explained, are to be converted into leather, I prefer to proceed to act on the sheets or articles just before they are dry, and they are to be treated when making leather thereof in like manner to what hides or skins have heretofore been treated.

I would state that when making the finer classes of manufacture—such as imitations of good parchment—I prefer to have the outer skin or hair side removed from the cuttings or other parts of hides or skins before using them, as herein described.

Having thus described the nature of my said invention and the manner of performing the same, I would have it understood that what I claim is—

The manufacture of artificial skins, herein described.

J. H. BROWNE.

Witnesses:

GEO. PITT,  
THOS. BROWN.