(No Model.)

F. W. P. & L. P. SWINBORNE.

PROCESS OF PREPARING GELATINOUS MATTER FROM HIDES OR SKINS.

No. 408,548. Patented Aug. 6, 1889.

Fig. 1.

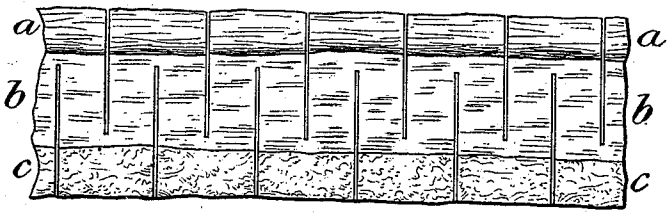
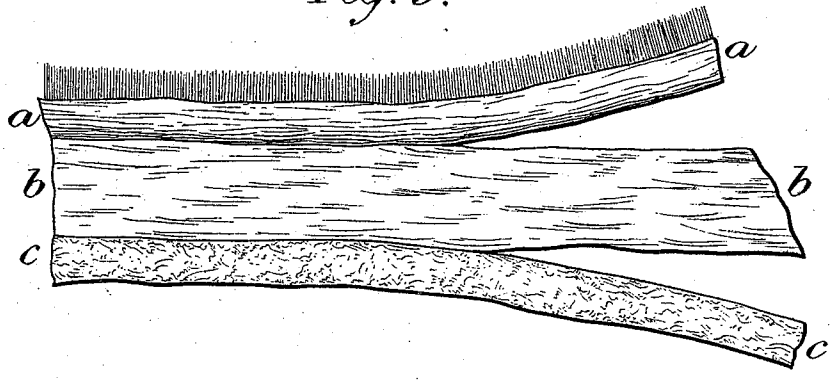


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK W. P. SWINBORNE AND LATIMER P. SWINBORNE, OF LONDON, ENGLAND.

PROCESS OF PREPARING GELATINOUS MATTER FROM HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 408,548, dated August 6, 1889.

Application filed November 28, 1888. Serial No. 292,139. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK W. P. SWINBORNE and LATIMER P. SWINBORNE, manufacturers, subjects of the Queen of Great Britain, both residing at Nos. 33 and 34 St. Andrew's Hill, Queen Victoria Street, London, E. C., England, jointly have invented certain new and useful Improvements in Methods or Processes of Treating Hides or Skins to Obtain Gelatinous Matters Therefrom, of which the following is a specification.

The object of our invention is cheaply, economically, and expeditiously to obtain pure gelatinous matter fit for food, as well as for other purposes, from hides or skins by direct simple treatment without the use of chemicals, which ends we attain in the following manner: We preferably take fresh, untainted hides or skins, wash and otherwise thoroughly cleanse them, cut them into thin leaves, shreds, or other suitable analogous forms, and dry them quickly in a current of air before they have an opportunity of becoming tainted. The cutting of the hide or skin allows the air freely to permeate it, so that it can be thoroughly dried before decomposition has time to set in, and the dry cuttings will keep for an indefinite time and can be used for cooking or other purposes, as gelatines or isinglasses are now employed.

Dry hides, or those treated with lime or other preservative, should be thoroughly washed before treatment, as above described.

Raw hide gives the best result; but the process must be carried out with great care. Otherwise the product will be tainted. Liming, on the other hand, prevents decomposition, but if carried to excess is prejudicial to the product. Calf-skin gives the best result; but ox or other skins may be used.

The hide or skin may be washed after the cutting; but this must be done quickly. Otherwise the material will swell and become sticky.

The product obtained in the manner above described contains coloring-matter and other impurities. To remove these and obtain a superior product, we remove superficial layers from both the hair side and the flesh side of the hide or skin before cutting and drying it, retaining only the middle portion. The cut on the hair side should be sufficiently deep to remove the grain and hair roots, and that on the flesh side sufficiently deep to remove the veins and other impurities. We thus get rid of the greater part of the coloring-matter and other impurities. The central portion contains, practically, only gelatine and a small percentage of fibrous material. Hide or skin thus treated is often thin enough to dry properly without further reduction; but, if thick, it should be further divided. The dry product may in all cases be cut still smaller—for example, if in the form of leaves, it may be desirable to shred them after drying.

The hide or skin may be pounded, pressed, rolled, or otherwise attenuated, reduced, or disintegrated, either before or after removing its superficial layers, in place of cutting, as above described; but the product thus obtained does not look so well.

In the accompanying drawings, illustrative of our improved process, Figure 1 represents an edge view of an unhaired and fleshed skin, showing our preferred system of preliminary cutting. This cutting may be done in various ways, a convenient one being to pass the hide or skin between rolls armed with cutters. Fig. 2 is a similar view of the same cut skin pulled or rolled out to expose its cut surfaces to the air; and Fig. 3 is a similar view of a fleshed skin with the hair upon it, showing the cuts whereby the superficial layers on both sides are removed from the middle portion. All these views are considerably magnified.

The superficial layer *a* comprises the grain and hair roots. The middle portion *b* is almost pure gelatine, while the lower superficial layer *c* is composed of gelatinous matter more or less mixed with fat, flesh, veins, &c.

The transverse preliminary cuts shown in Fig. 1 are made alternately on the two sides, extending almost, but not quite, through the middle portion from each side. This permits of the cut hide or skin being pulled or rolled out into the thin strip shown in Fig. 2. It will, however, be understood that many other systems of cutting may be adopted.

Although the hair is shown in Fig. 3, it is evident that the process is equally applicable to unhaired hides.

The above-described cutting not only allows the hide readily to dry while it remains sweet, but also permits a great part of the gelatine to be extracted by hot water merely, thus rendering boiling unnecessary. Such gelatinous matter is consequently of superior quality.

We are aware that pieces of hides and skins heretofore have been dried and sold (for the extraction of gelatinous matter therefrom) under the name of "glue-pieces;" but, owing to their size and thickness, they necessarily become more or less tainted during the drying process, which renders them entirely unfit for food and many other purposes.

Swinborne's English patent, No. 11,978 of 1847, describes a method of obtaining gelatinous matters by reducing glue-pieces into films, shavings, or thin slices, successive operations of soaking in pure water, and other processes therein described, which differ materially from ours, especially in the soaking of the shavings, which is fatal to success. We wash the skin quickly to cleanse it, but do not soak the shavings before drying them; consequently our process leaves the original constituents of the hide unaltered, which is not the case with the patent above mentioned.

Having thus fully described our improved method of treating hides or skins to obtain gelatinous matters therefrom, what we claim therein as new, and desire to secure by Letters Patent, is—

1. In the process of preparing gelatine from hide or skin, the improvement which consists in cleansing the hide or skin, subdividing it into thin leaves or pieces, and drying it before decomposition commences.

2. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin and drying its middle portion thoroughly before decomposition commences.

3. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin, subdividing the middle portion into thin leaves or pieces, and thoroughly drying it before decomposition commences.

4. In the process of preparing gelatine from hide or skin, the improvement which consists in cleansing the hide or skin, subdividing it into thin leaves or pieces, drying it thoroughly before decomposition commences, and afterward submitting it to the action of hot water to extract a solution of gelatine therefrom.

5. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin and submitting its middle portion to the action of hot water before decomposition commences.

6. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin, subdividing its middle portion into thin leaves or pieces, and submitting them to the action of hot water before decomposition commences.

7. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin, drying its middle portion thoroughly before decomposition commences, and afterward submitting it to the action of hot water.

8. In the process of preparing gelatine from hide or skin, the improvement which consists in removing the superficial layers of the hide or skin, subdividing the middle portion into thin leaves or pieces, drying it thoroughly before decomposition commences, and afterward submitting it to the action of hot water.

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