

UNITED STATES PATENT OFFICE.

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PROCESS FOR DETANNING MINERAL OR CHROME TANNED LEATHER OR LEATHER-WASTE.

No. 837,016.

Specification of Letters Patent.

Patented Nov. 27, 1906.

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To all whom it may concern:

Be it known that I, ALBERT RUDOLF WEISS, Jr., a subject of the German Emperor, residing at Hilchenbach, Westphalia, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in an Improved Process for Detanning Mineral or Chrome Tanned Leather or Leather-Waste, of which the following is a specification.

The present invention relates to a new or improved method or process whereby mineral-dressed materials—such, for instance, as chrome-tanned leather or leather-waste—can have the tanning substance removed for the purpose of making gelatin or glue therefrom.

As is known, several attempts have already been made to prepare leather-waste by suitable treatment in such a way that gelatin and glue can be produced therefrom. Thus a process is already known whereby bark-tanned or chamoised leather-waste is treated first with alkalies or quicklime and then with oxalic acid. Furthermore, attempts have been made to remove the tannin from leather-waste with the aid of sulfuric acid, this process being especially applicable to leather-waste. The first-named process did not prove suitable even for bark-tanned or chamoised leather. For mineral-tanned, and especially chrome-tanned, leather it has not been used at all, as such tanned leathers were quite unknown at the time, and a process which had failed with bark-tanned and chamoised leather would not have been tried for mineral or chrome tanned leather. The commercial failure of the process was due to the fact that the oxalic acid had an insufficient solvent action and formed insoluble salts with the lime which was used in the form of quicklime. Owing to their price it was out of the question to use other alkalies with such a process if it was to be carried out on an industrial scale. With the second process mentioned the sulfuric acid formed with the quicklime, which was also used, a plaster or gypsum mud, which rendered the working up difficult and gave the glue produced a bad appearance. The tannin-extracting process also lasted too long. It required from thirty-six to forty days. The action of the sulfuric acid upon the spatches or glue materials was the chief reason why

the quality and appearance of the glue obtained was not satisfactory. These drawbacks are entirely removed by the method or process according to the present invention. According to this process the leather or the leather-waste (it being here a question of mineral-tanned, and more especially of chrome-tanned leather-waste) is treated first with alkalies. With a view to cheapness, instead of alkalies there can also be used quicklime or the corresponding combination of one of the other alkaline earths either alone or with a slight addition of alkali—for instance, soda.

After the treatment with quicklime, which can be used as lime-milk or in any other composition desired, the leather cuttings are washed and laid in acid. For this muriatic acid is preferably employed; but any other mineral acids can also be used—such as fluorhydric acid, sulfurous acid, &c.—either alone or combined with muriatic acid. An acid solution of a determined degree of concentration is used, according to the kind of acid. The acid—for instance, muriatic acid—removes the tannin not only from the leather-waste, but also dissolves any mineral admixtures which may originate from the tanning process. After a time the acid liquid is drawn off and can subsequently be used alone, if it is profitable to do so. The leather-waste is washed in the usual manner, neutralized, and worked up into gelatin or glue.

The preceding process is therefore based, essentially, upon the fact that it renders the hide fibers suitable for the manufacture of gelatin or glue. The advantages may again be briefly stated. The successive order of the action of quicklime and then of muriatic acid upon the waste saves a considerable amount of time. The detanning and boiling down into gelatin is considerably simplified, as no insoluble lime combinations are produced.

In comparison with all processes already known the most important technical advantage lies, however, in the remarkable quality of the gelatin obtained. Thus on using sulfuric acid only a common glue is obtained, while the use of muriatic acid enables a good gelatin to be produced. If the process is to be unusually accelerated, the time therefor can be still further reduced by the use of me-

chanically-agitated vessels, such as are used in various manufacturing branches, and employed for the detanning processes.

What I claim as my invention, and desire
5 to secure by Letters Patent, is—

The method of preparing glue, which consists in subjecting chrome-tanned leather to the action of an alkaline solution, washing it thoroughly in water, steeping it in muriatic

acid, again carefully washing with water, 10 and finally neutralizing the resultant product.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

ALBERT RUDOLF WEISS, JR.

Witnesses:

GUSTAV CESNER,

WILHELM RUPPERS.