UNITED STATES PATENT OFFICE.

WILHELM DIETERLE, OF FEUERBACH, NEAR STUTTGART, GERMANY,
ASSIGNOR TO I. HAUFF, OF SAME PLACE.

BATING.

SPECIFICATION forming part of Letters Patent No. 413,615, dated October 22, 1889.

Application filed November 14, 1888. Serial No. 290,785. (Specimens.)

To all whom it may concern:

Be it known that I, WILHELM DIETERLE, a subject of the King of Würtemberg, residing at the village of Feuerbach, near Stuttgart, in the Kingdom of Würtemberg, German Empire, have invented certain new and useful Improvements in the Processes for Removing the Lime from the Hides and Swelling the Latter, of which the following is a specification.

So far no process is known by which the lime contained in hides is neutralized in such a manner that all practical requirements are successfully complied with. The acid first suggested for this purpose was hydrochloric acid. The general use of this acid, however, is connected with many losses and inconveniences which arise from the application of the same by inexperienced hands. Besides hydrochloric acid, there have been recommended for the neutralization of lime in hides certain organic acids which are formed by acid fermentation or decomposition; but these acids may exert a destructive influence on the hides, as they are liable to transmit fermentation into the hide substance itself, so as to destroy the same in a comparatively short time.

Other processes for removing lime have been proposed, such as treatment with carbonic acid and with other substances; but none of them have been successfully introduced into practice.

All the objections and drawbacks of the processes heretofore in use in removing lime from hides, however, are removed by the use of cresotinic acid. This acid is but sparsely soluble in water, (the solubility of its isomeres obtained from coal-tar cresol varying from 1 to 1,200 and 1 to 3,000,) and renders thereby possible the dangerless and thorough removal of the lime from the hides, inasmuch as any excess of cresotinic acid may be added to the neutralizing-liquid without exerting any deleterious influence on the hides. When cresotinic acid is present in excess, it remains always visible during the tanning operation, and forms thereby a very perfect indicator for the observer. The acid disappears then only to the eye when it is entirely neutralized by the lime contained in the hides. By adding an equivalent quantity of hydrochloric acid a certain quantity of cresotinic acid is precipitated from the solution and can be used again immediately in the same vat, or the same acid can, for the purpose of avoiding the danger of working in practice with an excess of hydrochloric acid, be precipitated by hydrochloric acid and regained by filtering and drying in a very simple manner, or the acid can be precipitated and used directly again. By thus regaining the cresotinic acid the process of neutralizing the lime in the hides by the same is nearly as cheap as the use of hydrochloric acid alone, as only that quantity of hydrochloric acid which is required for the precipitation of the cresotinic acid can be considered, while the loss caused by the small quantity of cresotinic acid which remains in the solution after precipitation is of no account when the certainty and simplicity of the process are considered.

Another advantage of this process of treating hides for neutralizing the lime in the same consists in the antiseptic properties of the cresotinic acid, whereby the decomposition of the hide is absolutely prevented. Should the hides, however, have been subjected to partial fermentation, the same will be immediately restored by the use even of a diluted solution of cresotinic acid. If the hide, after the lime is neutralized, be placed in a fresh solution of cresotinic acid, it is normally swelled, which is of special importance in the manufacture of sole-leather.

Analyses of hides treated by the described process have given the following results:

First. If the hide contained before the removal of the lime 1.45 per cent., it contained afterward 0.40 per cent of lime.

Second. If the hide contained before the removal of the lime 2.01 per cent., it contained

after being subjected for a greater length of time to the action of cresotinic acid 0.12 per cent. of lime.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The process herein described of neutralizing the lime contained in hides and swelling the same, which consists in treating the same with an aqueous solution of cresotinic acid, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILHELM DIETERLE.

Witnesses:
ERNST DIETRICH,
SIGMUND SEGER.