

# UNITED STATES PATENT OFFICE.

OBADIAH RICH, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN PROCESSES FOR EXTRACTING TANNIN FROM LEATHER.

Specification forming part of Letters Patent No. **12,139**, dated January 2, 1855.

*To all whom it may concern:*

Be it known that I, OBADIAH RICH, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in the Extraction of Tannic Acid from Leather and the Preparation of Materials for Making Glue; and I do hereby declare that the following is a full, clear, and exact description of the process.

The object and design of my invention is to procure tannin or tannic acid from scraps and shavings of leather, and to prepare the leather for the manufacture of glue.

It is well known that small scraps of leather are now of little value. The tannic acid while combined with the gelatine of the skin is worthless, and glue cannot be made from the tanned skin, as it is insoluble in water. Neither can the scraps of leather, although rich in fertilizing materials, be used as a manure, as they are not readily decomposed by the action of heat and moisture. In extracting the tannin or tannic acid from leather and converting the same into its original condition, or what is termed "raw-hide," I proceed as follows: The leather, having been first chopped in small pieces, is thoroughly washed to remove the dirt and a part of the coloring-matter. It is then placed in suitable cisterns or vats and digested in a caustic alkali either of ammonia, potash, or soda. The caustic soda is to be preferred, as it is much the cheapest. Its specific gravity should be about 1.025, and the leather should remain in the solution from six to twelve hours, or until the whole of the tannin has been extracted. It is then subjected to pressure, in order to expel as much of the liquor as possible; or it may be placed in the centrifugal machine, which will produce nearly the same effect and leave the skin comparatively free from moisture. This liquor is now acidulated with sulphuric, muriatic, or acetic acid, in order that the tannic acid may be set free and more readily combine with gelatine. This liquor, now charged with the tannic acid that has been extracted from the leather, is to be used for tanning skins, or in dyeing or other purposes in which tannic acid is used. The principal part of the tannic acid having been removed from the

leather by the process above described, it is necessary before proceeding to the manufacture of glue that the skin be again subjected to the action of a new solution of caustic soda of about the same specific gravity as named above in order to insure the entire removal of the tannin. This last solution, after the skin is taken out, will be nearly as pure as at first, as it contains but a small amount of tannin, and it is to be used for extracting the tannin from a second lot or charge of leather. The tannic acid being now entirely removed, the scraps of skin are to be well washed in pure water to remove all traces of the soda. This being accomplished, the scraps are to be digested in very dilute acid for about twenty-four hours, in order to remove the coloring and earthy matters. When this is done they are to be immersed in a weak solution of carbonate of soda, in order to neutralize any trace of acid that may remain, and when well washed are then ready to be converted into glue, in the usual manner, by boiling. The residuum, after the gelatine is extracted, may be used as a manure.

It is very important that the tannic acid be entirely removed from the skin as above described, for if a very small portion of the tannin remains in combination with the gelatine the latter cannot be extracted by the process of boiling.

Old boots and shoes and refuse leather of all kinds that is not suitable for glue may be subjected to the process for the extraction of the tannin, and the whole of the residuum, which is then readily decomposable by air and moisture, used as a manure.

What I claim, and desire to secure by Letters Patent, is—

The process herein described for the removal of tannic acid from leather and the subsequent preparation of the skin for making glue, or for use as a manure, substantially as herein set forth.

OBADIAH RICH. [L. S.]

In presence of—

J. M. BATCHELDER,  
F. L. BATCHELDER.