To all whom it may concern:

Be it known that I, MORRIS CHARLES LAMB, a subject of the King of Great Britain, residing at 176 Tower Bridge road, in the county of London, England, have invented certain new and useful Improvements in Processes for Detanning Chrome-Leather, of which the following is a specification.

My invention relates to the treatment of leather that has been tanned or retanned by the chrome process, for the purpose of removal and recovery of the chrome salts used in the tanning or retanning, with a view to rendering the detanned material available for use in the manufacture of glue, gelatin or any other purpose for which it may be suitable.

According to the present invention chrome leather, either waste or pieces, is treated by immersing it in a sufficiently concentrated solution of an organic acid containing two or more hydroxyl groups, thereby rendering soluble the chromium compounds in the leather and enabling them to be removed. The hide or skin substance thus obtained may be treated in any well known or suitable manner with a view to the production of glue or gelatin.

I find that organic acids containing two or more hydroxyl groups have the power of rendering soluble the chromic oxid on and in the fibers of the chrome tanned leather, enabling the chromium compounds to be readily removed by washing with water. Among the acids available for the purpose are, phthalic, lactic, tartaric, succinic, malonic, oxalic and carboxylic acids. It has been found in practice that oxalic is one of the most suitable for use.

One method of carrying out the process is as follows:

The chrome leather, which should preferably be disintegrated or cut into small pieces, is treated by either well washing to free the leather from soluble salts and then thoroughly drying, or, if desired, the leather can be first dried and afterward well washed.

The next operation consists in soaking the leather in a solution of oxalic acid of a convenient strength. It has been found that the amount of oxalic acid to be used in the detanning ranges between 10 and 40 per cent. on the weight of the dry leather. A 25 solution weaker in strength than about 15 per cent. requires a somewhat prolonged immersion; above 15 per cent. it brings about a rapid solution of the chrome salts.

The leather, preferably with an occasional movement, is allowed to remain in contact with the acid solution for about 48 hours.

The resulting chrome solution is now separated from the solid residue and can be subsequently treated for the purpose of making it available for use in chrome tanning, or chromium hydrate may be precipitated from the solution. The dechromed leather is then well washed in a weak solution of an alkali, and may then be subjected to the ordinary liming process, customarily practised on patches or hides or skin pieces required to be manufactured into glue.

The further treatment for the production of the glue may follow on well known lines; for example, after washing with water and treatment with a weak lime solution, the detanned leather may then be subjected to the ordinary process of washing, treatment with hydrochloric acid and subsequent boiling with water until the gelatinous mass extracted has attained the desired strength.

What I claim and desire to secure by Letters Patent of the United States is:

1. A method of detanning chrome leather which consists in immersing the leather in a solution of an organic acid containing at least two hydroxyl groups until the chromium compounds are rendered soluble and in separating the solution from the residue.

2. A method of detanning chrome leather which consists in immersing the leather in a solution of oxalic acid until the chromium compounds are rendered soluble and in separating the solution from the residue.

3. A method of detanning chrome leather which consists in removing soluble salts by washing, drying the leather, soaking it in a solution of oxalic acid in an amount ranging between 10 and 40 per cent. of the weight of the dry leather and separating the solution from the solid residue.

MORRIS CHARLES LAMB.