UNITED STATES PATENT OFFICE.

MATTHEW MASON, OF NEW YORK, N. Y., ASSIGNOR TO THE ARLINGTON LEATHER COMPANY, A CORPORATION OF NEW JERSEY.

RECONSTRUCTED LEATHER.

989,788. Specification of Letters Patent. Patented Apr. 18, 1911.

No Drawing. Application filed August 20, 1909. Serial No. 513,751.

To all whom it may concern:

Be it known that I, MATTHEW MASON, a citizen of the United States, and a resident of the borough of Brooklyn of the city of New York, in the State of New York, have invented certain new and useful Improvements in Reconstructed Leather, of which the following is a specification.

The invention relates to improvements in compounds which are used as substitutes for leather, and its object is to provide a compound of this sort having superior qualities to those in use heretofore.

The present improvements belong to that class of artificial leathers in which leather scrap or old leather is employed as a base in contradistinction to those which contain rubber or require vulcanizing or are made up principally of gums. Various compounds have been devised heretofore, some containing leather scrap and some not, for the purpose of producing an imitation leather which could be empolyed for various purposes where leather had formerly been used; but a nearer approach to real leather, both in appearance and so far as its physical characteristics are concerned, than is furnished by these existing compounds has long been a desideratum.

I have discovered that the use of balata gum, or balata, or gums similar thereto, in connection with the reconstruction of leather from leather scrap or old leather, will produce when properly compounded, a substance having all the physical qualities of leather and being remarkably similar thereto. I have also discovered that the mixture of balata and leather scrap may be treated with a substance like copal to produce a stiffness in the resulting compound and with a substance like glycerin or other oleaginous substance to make the resulting compound more pliable; and that a very dense, strong and elastic product may be made without using any vulcanizing process whatever and in fact, by carrying on the manufacture thereof at a comparatively low temperature.

Substances like copal which imparts stiffness to the resulting compound, and like glycerin which makes it more pliable, both modify the flexibility of the resultant compound, *i. e.*, they cause it to be more or less stiff or more or less pliable. The tern "flexibility" is therefore to be given this broad and generic meaning.

In carrying out my improvements, I first grind or otherwise reduce the leather to be used to a finely divided condition, preferably to one of shreds or fibers. Then I add to it about an equal part of balata from which the rosin has preferably been extracted, the leather and balata being thereafter intimately mixed by stirring and applying such heat as may be required to soften the balata. After the compound has been thoroughly mixed, it is run through hot or warm calender rolls, the material itself also being preferably warm, and the mass is thus rolled out into sheets and afterward introduced into a hydraulic press where the sheets are pressed down hard to produce a strong, dense and homogeneous mass. Moreover, for some purposes, it may be desirable to roll the mass out in several plies with alternating plies of cotton duck or sheeting.

The proportions of leather scrap and balata may be varied more or less, depending upon the use to which the finished compound is to be put, so that the proportions given above need not be strictly adhered to in carrying out the improvements. The addition of other ingredients and their proportions will also depend upon the use to be made of the compound when finished. Where glycerin or vaseline or linseed oil or the like is to be used to make the compound more pliable, a sufficient quantity, according to the degree of pliability required, is added to the mixture of leather scrap and balata; and similarly, where a stiffening substance like shellac is to be employed, a sufficient quantity is added to the primary mixture of balata and leather scrap to impart the required rigidity.

In some cases, it is advantageous to cut the balata or other gum with a solvent for the purpose of thinning it out and reducing it to an easily flowable state, whence the mixture of the leather scrap and gum is the more readily accomplished; and for solvents I may use naphtha, benzin and tetra-chlorid of carbon and in fact any gum solvent.

Moreover, the compound may be colored by adding an appropriate coloring paint or pigment or by employing anilin dyes.

The mixture can be effected at ordinary temperatures and may be slightly warmed to soften the balata or other gum employed therein. When it has been intimately mixed, it is passed between warm calender rolls in order to sheet it, and thereafter, if hydraulic leather is desired, the sheeted product is subjected to compression in a hydraulic press. In this way an excellent homogeneous substitute for leather may be obtained with considerable economy of production owing to the use of old waste leather or scrap in compounding it.

The improved product may be used in the various arts for which ordinary leather is available as well as for many uses to which rubber and gutta percha products are applied. Moreover, it is waterproof and can be molded in any form and pressed into various shapes.

I claim as my invention:

1. A compound consisting of leather and balata gum.

2. A compound consisting of leather and balata gum with the rosin extracted.

3. A compound consisting of a mixture of leather and balata gum, condensed by pressure.

4. A compound consisting of leather and balata gum and a substance which modifies the flexibility of the resultant product.

This specification signed and witnessed this 18th day of August, A. D., 1909.

MATTHEW MASON.

Signed in the presence of—
G. McGRANN,
LUCIUS E. VARNEY.