

Cl. 92

ALIEN PROPERTY CUSTODIAN

REFINED CELLULOSE AND METHOD FOR OBTAINING THE SAME

Erich Opfermann, Berlin, Germany; vested in the Alien Property Custodian

No Drawing. Application filed April 19, 1940

This invention relates to refined cellulose and method for obtaining the same, and more particularly to cellulose cooked according to the acid process.

An object of this invention is to obtain a uniform refined cellulose derived from wood having a large amount of foliage and other impurities.

Another object of this invention is to provide a method for removing impurities from cellulose in a simple inexpensive manner.

A further object of this invention consists in treating cellulose to remove the very fine cellulose particles such as the parenchyma, sclerenchyma, pith ray and epidermal cells.

A more specific object of this invention consists in treating cellulose, particularly such made through the acid process, with milk of lime to remove the undesired fine particles and agglomerate slimy and mealy materials contained therein, which may then be removed by a suitable washing.

Up to the present time it has been difficult to obtain a cellulose from wood pulp, which is free from impurities, extremely reactive and of uniform composition. This is particularly true when the wood pulp is obtained from trees bearing a large amount of foliage, for the resulting cellulose will then contain a high percentage of undissolved fine materials differing chemically, physically and morphologically from the main wood fiber. Short fibers, broken fiber fragments and fine fiber elements such as the parenchyma, sclerenchyma, pith ray and epidermal cells also add to the non-uniformity of the final product. Methods have heretofore been proposed for removing the undesired fiber elements, but such

methods have involved either the use of expensive materials or expensive and time consuming working operations.

In accordance with the present invention, it is proposed to refine the cellulose merely by treating the same with milk of lime at any stage of the preparation or bleaching, and then subject it to an intensive washing upon the usual apparatus. The treatment of the cellulose with milk of lime may be effected at low or high temperatures, or with or without pressure depending upon the final product desired, as will be at once apparent to those skilled in this art.

Through the chemical action of the calcium hydroxide upon the hemicellulose, a part of the finest fiber elements are already separated out and placed in solution. Additionally, the small lime particles agglomerate the slimy and mealy materials contained in the cellulose in such a manner that the later washing step can remove them easily together with the parts of the lime remaining undissolved.

By reason of the above method a truly technical important advantage results through the fact that on the one hand by the use of inexpensive quicklime the cellulose is improved in its chemical, physical and paper-technical characteristics and on the other hand by the following washing process the cellulose is freed from the mealy material and lime, is much cleaner and more reactive, and will have a substantially uniform composition. No supplemental acid treatment of the final product except that which is usual in all cases will be necessary.

ERICH OPFERMANN.