

UNITED STATES PATENT OFFICE.

ALBERT GAGEDOIS, OF DON, NEAR ANNŒULLIN, FRANCE.

PRODUCTION OF WHITE PULP.

No. 848,361.

Specification of Letters Patent.

Patented March 26, 1907.

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To all whom it may concern:

Be it known that I, ALBERT GAGEDOIS, a citizen of the French Republic, residing at Don, by Annœullin, Nord, France, have invented certain new and useful Improvements in the Production of White Pulps, of which the following is a specification.

Hitherto, as far as known to me, the production of pure white pulp for use in paper-making has only been possible by using raw material which was white at starting and not much soiled.

The process which forms the object of this invention enables pulps of pure and brilliant whiteness to be obtained by employing wood, hemp, jute, phormium, aloes, and other similar vegetable products in the natural state, white or colored rags, old ropes, and other waste material, even if colored, as also the white waste material from spinning-works, hitherto exclusively employed for manufacturing white pulps. In order to effect this bleaching of materials, hitherto regarded as not capable of being utilized in the manufacture of white pulps for use in making white paper, the natural vegetable products are subjected to the following operations preparatory to the bleaching: First, one or more lye-washings with lime or with soda, followed by a thorough washing, in the first place with acidulated water when lime-lye has been used, and then with fresh clean water, so as to obtain a neutral pulp free from reagents; secondly, chlorination, in the case of wood-pulps. This chlorination is followed by the necessary washings with pure water in order to obtain a neutral pulp. The bleaching is then effected, the materials which have been treated with lye or with lye and chlorin being beaten for four to six hours in a bath constituted as follows: In the necessary quantity of clean cold water for well moistening the pulp to be converted into paper two to three kilograms of alkalin peroxid per hundred kilograms of material are dissolved, according to the quality of the material and the extent to which it is prepared for bleaching. To this solution ten to thirty kilograms of neutral alkalin silicates of 5°

Baumé are added for each one hundred kilograms of material.

The function of the alkalin silicate is to retard the decomposition of the peroxid and allow the liberated oxygen to act gradually on the pulp to be bleached. This it does, in part, by obstructing the decomposition by heat and in part by thickening the mass, and thus obstructing the free escape of the nascent oxygen and compelling its contact with all of the particles of the pulp.

During the heating, which is continuous, the temperature is gradually raised to about 80° centigrade. This increase of the temperature is only intended to effect the decomposition of the peroxid in the baths which does not contain any reagent, so that the oxidation is carried on gradually throughout the material without injury to the pulp under treatment. The alkalin silicate employed will be neutral, and it will not react on or affect the alkalin peroxid. The heat alone decomposes the peroxid, and the alkalin silicate merely acts mechanically to retard, as above explained. The pulp is then washed with clean cold water and subjected to the following operations: first, soaping in a tub or trough provided with a stirrer; secondly, chlorination, followed by the necessary washings for eliminating all traces of chlorin.

If the materials employed in the manufacture of the white paper are waste colored fabrics, the lye-washings are preceded by a decoloring operation consisting in beating the said fabrics in a solution of nitric acid of 2° Baumé containing fifteen to twenty per cent. of the said acid. This decoloring operation is followed by a washing with clean cold water.

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

1. The herein-described process of treating a neutral, cleansed, vegetable pulp for paper and the like, which consists in mixing the pulp with alkalin peroxid, and neutral alkalin silicate as a retarder, the pulp, peroxid and silicate being in about the proportions specified, then heating the mixture gradually,

for decomposing the peroxid, up to about 80° centigrade, and finally soaping and chlorinating the pulp so treated.

5 2. The herein-described process of treating vegetable pulps for paper and the like, which consists in first washing the pulp thoroughly with lye, then chlorinating, then washing it to produce a neutral pulp, then heating the pulp gradually up to about 80° centigrade in

a mixture of neutral alkalin silicate and an alkalin peroxid, and finally soaping and chlorinating the material treated.

In testimony whereof I have affixed my signature in presence of two witnesses.

ALBERT GAGEDOIS.

Witnesses:

EIS. HOBRAUS,
TH. PALLETT.