

UNITED STATES PATENT OFFICE.

JOSEF EDUARD PFIEL, OF VIENNA, AUSTRIA-HUNGARY.

PROCESS FOR OBTAINING TEXTILE FIBERS.

972,403.

Specification of Letters Patent.

Patented Oct. 11, 1910.

No Drawing.

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To all whom it may concern:

Be it known that I, JOSEF EDUARD PFIEL, a subject of the Emperor of Austria-Hungary, residing at Vienna II, Austria-Hungary, have invented a certain new and useful Improved Process for Obtaining Textile Fibers, of which the following is a specification.

This invention relates to a process for obtaining textile fibers, which renders it possible to remove completely the lignified portions from raw vegetable material and thus to obtain fibers of an exceptional purity, flexibility, strength, brilliancy and whiteness.

The present process chiefly consists in boiling vegetable material with alkaline solutions, so that the bast can be easily removed from the stem by peeling it off, whereupon the bast thus obtained is heated under pressure with alkalis once or repeatedly with alternate washing with water, and the material is finally treated with bisulfites. This process consists of a series of steps none of which are novel in themselves. The process can be applied to vegetable material generally but it is of special importance for obtaining nettle fibers, for this process renders it possible to utilize the ordinary stinging nettle, on a large scale for obtaining fibers and thus to replace foreign fibrous materials, such as cotton or the like. It is important to carry out the various operations mentioned in a given order as otherwise the desired effect does not take place. The nettle fibers owing to their special strength, etc., have been highly valued for some time, but hitherto it has been impossible to use them much, as there has been no practical process for obtaining them. This has been attained in a completely satisfactory manner by the present process.

As an example of carrying out this invention the process will be described as applied to nettle fibers. The nettle stems are boiled for two or three hours with an 8% solution of soda-lye, lime milk or the like. Then the lye is poured off and the stems are freed from the solvents by repeated washing in water. It is now possible to remove by hand easily and completely the bast from the

strongly lignified portions, and the bast is treated in an autoclave with an 8% solution of soda-lye at a pressure of 15 atmospheres for three minutes. After washing the bast again in water it is treated for a second time in the autoclave with an 8% solution of soda-lye at a pressure of 10 atmospheres for five minutes. The fibrous material obtained, which is then already in a fairly pure state, is washed out in water and then completely degummed, for instance, it is placed in a 9% solution of calcium bi-sulfite and left there for about two hours. It is preferable to bleach immediately after obtaining the fibers and the bleaching is effected with a diluted solution of permanganate of potassium with subsequent treatment with calcium bisulfite. If it is not desired to bleach the textile fibers at once, which in the most cases is unnecessary then the fibrous material treated with calcium bisulfite is neutralized, for instance, with diluted soda-lye, and then washed. The present process can be used in the same manner for obtaining strongly lignified fibers from other plants, as for instance, from the stems of hops or sun flowers.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A method of obtaining textile fibers from vegetable material, consisting in first boiling the material with alkalis, then separating the bast from the woody parts, then heating the bast under pressure with alkalis then washing with water, and then treating the product with bisulfites.

2. A method of obtaining textile fibers from vegetable material, consisting in first boiling the material with alkalis, then separating the bast from the woody parts, then heating the bast under pressure with alkalis repeatedly with alternate washing with water and then treating the product with bisulfites.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEF EDUARD PFIEL.

Witnesses:

SURG. VICTOR FREY,
ROBERT W. HEINGARTNER.