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RETTING PROCESS OF TEXTILE MATERIALS

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5 Claims. (Cl. 92—5)

The usual retting in pits transforms, by an action of biological microbial nature the coat of parenchyma, called pectose, which is uniting the fibres to the wood of textile materials.

5 Nature produces the diastatic agents indispensable to retting, but is not able to free in one operation the fibres from the agglutinating matters uniting the fibres.

10 The intermediate lamellæ existing between the fibrous cells in the fibre fascicles are composed of pectose and lignin, the latter offering a much greater chemical stability.

15 The reaction producing pectic acid in a gelatinous form does also take place in the presence of a catalyzator. This colloidal substance gives to the fibres their resistance, their elasticity, their brilliant and onctuous glaze and their susceptibility of splitting.

20 If the fibres remain too long in the water, the pectic acid is decomposed, the flax loses all its qualities and can also be destroyed.

25 The retting of choice fibres, like flax straw, requires two and even three successive immersing and drying operations. This explains the very high cost price.

30 In the usual retting procedure the microbial action produces finally a pestilential odour; the opening of the pits and the spreading on the meadows for drying liberate an intolerable smell and the germs of putrefaction are spread and diffused all over the country.

35 The new invention suppresses all these numerous drawbacks and first quality flax is obtained after a sole operation. Workmanship is considerably reduced, the production resulting from the scutching is increased; the fibres of the plant are entirely transformed in flax and the tow formation is avoided. The process eludes radically all the disgusting smells, allows a rapid drying and destroys the centers of putrefaction.

40 The new process can be performed in the actual retting pits without any change in the existing installations or in the working manner.

45 The retting duration will depend on the nature of the textile material, on the quality of flax desired, on the retting temperature, and on the organization of the manufacturing plant itself.

50 Because they do not like to change their habitual practice the retters and scutchers prefer generally, when they employ the new process, a duration of immersion equal to the usual one.

The new invention is founded on the incorporation to the retting water of a special compound described further on.

55 If we take, for instance, flax of medium quality

immersed in an ordinary retting pit working at 28 degrees centigrade during four days, the above mentioned special compound, basis of this invention, will be mixed to the retting water on the third day and the flax will be removed the following day.

When the retting of the flax plants is very difficult this duration will be increased; on the contrary with flax plants which are easily retted the duration can be reduced by raising the retting 65 temperature.

With the new process the danger of going too far in the retting does not exist, consequently the retting operation does no more require a specialized workmanship.

70 The above mentioned special compound to be added to the retting water, is a compound dissolvable in water. It is composed of saponified fatty stuffs to which are added in certain proportions, varying with the fibre and its destination, salts 75 from strong bases and weak acid. These salts thus formed, undergo within the retting water, acting as a catalyzator, a more or less complete decomposition in free acid and free base, a hydrolytic reaction giving rise to a compound alto- 80 gether hydrogenizing and oxidating.

As to the saponified fatty substances, completely divided and dissolved in the retting water, they allow the fibres to be impregnated by the necessary greasy and pectic elements.

85 This coating protects the fibres from the action of the free nascent alkali liberated in this incompletely saturated medium, the latter acting exclusively on the pectose.

90 These various hydrolitic reactions, in the midst of the retting waters give the following results: the incorporation of the maximum of pectic acid to the flax, the complete decomposition of the gummy substances and the destruction of all the putrid fermentations.

95 In the case of the flax straw, taken as an example, the fatty stuffs are principally provided by linseed-oil, and, the special compound intervenes at the rate of 1 to 2% of the weight of flax in working.

100 It is obvious that the invention is not exclusively confined to the described processes and that numerous modifications can be brought to it or used without deviating from the reach or import of the present patent.

105 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. Retting process characterized by the facts that in the case of the flax plant, the saponified 110

fatty stuff is in preference saponified linseed-oil and that the total product intervenes about for 2% of the flax's weight.

2. A retting process for plants yielding textile fibres comprising immersing the plants in water the temperature of which is never allowed to exceed 35° C. and to which there is added at the correct period a soluble agent comprising a mixture of saponified oils, soluble carbonates and hyposulphites of the Na₂O type.

3. A retting process according to claim 2,

wherein the oils employed are those derived from the seeds of the plants being treated.

4. A retting process according to claim 2, wherein the amount of soluble agent employed does not exceed 2% by weight of the fibres being treated.

5. A retting process according to claim 2, wherein the components of the soluble agent are added separately to the retting water.

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