RICHARD MÜLLER, OF EILENBURG, GERMANY.

PROCESS OF MANUFACTURING CELLULOSE.

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To all whom it may concern:

Be it known that I, Richard Müller, a citizen of Wurttemberg, and residing at Eilenburg, Prov. Sachsen, Germany, have invented certain new and useful Improvements in Processes of Manufacturing Cellulose, of which the following is a specification.

It is already known that cellulose can be produced out of wood by treating the latter with nitric acid or mixtures of nitric and sulphuric acids, but as such a process is not profitable on account of the high price of nitric acid it has not hitherto been employed on a large scale.

It has been found, however, that the diluted mixture of sulphuric and nitric acids, or diluted nitric acid alone, such as the waste washing-liquid from the nitrating process, which, as a result of its extreme dilution, is completely without value, and is even a nuisance to the works in question because it has to be neutralized at considerable expense to avoid polluting the rivers, etc., is very suitable for the treatment of wood, placed in the liquid in the usual form of very small pieces, so changing the lignose that it can be extracted, together with the other incrustations, pyrolicnic acid, etc., without difficulty, even with cold, diluted alkales. Firwood, for instance, which had lain in a mixture of 3% nitric acid and 10% sulphuric acid for 14 days at about 20° centigrade, was so changed that treatment with a 1/2% solution of caustic soda resulted in a yield of about 52% of excellent cellulose. Still weaker acids, when allowed to act longer, have also resulted in good disintegration and excellent yields. In this manner it is possible, when the diluted acids are subsequently again used as washing-liquid for the nitrating products to obtain up to three times the quantity of cellulose to one part of nitro-cellulose and to secure a satisfactory yield of good cellulose for the nitrating process and for other purposes.

Patent claim.

1. The process comprising the following steps: nitrating cellulose or the like by the action of nitrating acid, washing the nitrated product and digesting wood by treatment with the wash liquor thereby to produce a further supply of cellulose.

2. The process comprising the following steps: nitrating cellulose or the like by the action of nitrating acid, washing the nitrated product, digesting wood by treatment with the wash liquor thereby to produce a further supply of cellulose and utilizing the liquor from the digestion step to wash further nitrated material and so on.

3. The process of manufacturing cellulose from wood characterized by the step of disintegrating the wood by treatment with wash liquor from nitrating processes.

4. A reagent for the production of cellulose from wood consisting of the acidulous wash liquor produced in nitrating processes.

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

Witnesses:

A. Conrad Amer, Werner Gross.

DRE. RICHARD MÜLLER.