

# UNITED STATES PATENT OFFICE.

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## PROCESS OF PRODUCING PAPER-PULP FROM TOBACCO.

SPECIFICATION forming part of Letters Patent No. 430,516, dated June 17, 1890.

Application filed July 11, 1889. Serial No. 317,196. (No specimens.)

*To all whom it may concern:*

Be it known that I, HERMANN ENDEMANN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in the Process of Producing Paper-Pulp from Tobacco, of which the following is a specification.

This invention relates to the production of paper-pulp from tobacco; and it consists in an improved process of producing the same, as hereinafter set forth.

In carrying out the invention I use chiefly stems and waste portions of the tobacco plant, but the whole plant can be used, if desired.

I take about ten tons of tobacco stems and waste, and after moistening the same with water I cut the same into lengths of an inch (more or less) and then crush it by any suitable means—as, for example, by passing it through a crushing-machine. By moistening the tobacco before it is crushed I prevent it from becoming finely broken up and crumbled by the crushing operation, as would be the case if crushed while dry. The moistened condition enables the crushing operation to be effective in splitting and disintegrating the body or structure of the tobacco stems and waste, so that their fibers will be exposed and the soluble portions be the more readily removed by the subsequent treatment; but where the saving of time in removing the soluble portions is of no great importance the moistening of the tobacco may be omitted and the tobacco be crushed or ground dry.

The tobacco is next treated with hot water, so as to dissolve out of the tobacco the soluble portions—that is to say, the portions which can be dissolved out by means of hot water, leaving behind the fibrous or woody insoluble portions. This can be accomplished by boiling the tobacco in water in any suitable vessel or boiler with or without pressure for a sufficient length of time to dissolve out therefrom the portions which are soluble in water, which are then removed from the undissolved fibrous residue of the tobacco. The said fibrous residue of the tobacco is then treated with a solution composed of some soluble neutral compound of alumina

with an inorganic acid—such, for example, as sulphate of alumina, with water—as follows: I take the said fibrous residue of the tobacco and immerse it in the said solution, composed of one part, by weight, of said sulphate of alumina dissolved in about eight hundred parts of water, the whole being placed in a rotating boiler and heated by steam in any usual or convenient manner up to a pressure of about forty pounds to the square inch, which pressure is maintained for not more than one to two hours. The mixture is allowed to cool off somewhat, and the liquor having been drawn off, the boiler is emptied of the said fibrous portions or residue of the tobacco, which are then transferred to a beating-engine, where they are washed and “brushed out” and bleached in the usual manner of treatment of paper-stock for making it into paper-pulp.

The proportion of the sulphate of alumina which I use in the said treatment is from two to four per cent. of the weight of tobacco stems and waste.

Before putting the tobacco fiber into the beating-engine it may be treated with a solution of an alkaline substance—such as milk of lime or solutions of caustic or carbonated alkalies—for the purpose of further purification, boiling it therein with or without pressure, using of such alkaline substance about from three to eight per cent. of the weight of the original tobacco and a sufficient quantity of water that the mass becomes semiliquid. The boiling of the mass is continued for about one to eight hours, according to the nature of the raw materials. When the boiling is finished, the alkaline liquor is separated from the fibers by any suitable means.

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

1. The process of producing paper-pulp from tobacco, which consists in crushing the tobacco, steeping or boiling the crushed tobacco in water, treating the fibrous residue with a solution of sulphate of alumina under heat and pressure, and subjecting it to the action of a beating-engine, substantially as described.

2. The process of producing paper-pulp

from tobacco, which consists in steeping or  
boiling the crushed tobacco in water, treat-  
ing the fibrous residue with a solution of sul-  
phate of alumina under heat and pressure,  
5 and then treating it with an alkaline sub-  
stance, substantially as described.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing  
witnesses.

HERMANN ENDEMANN.

Witnesses:

JEAN SCHMIDT,

J. VAN SANTVOORD.