

UNITED STATES PATENT OFFICE.

CHARLES B. CARTER, OF LAWRENCE, MASSACHUSETTS.

PROCESS OF TREATING WOOD, &c.

SPECIFICATION forming part of Letters Patent No. 235,070, dated December 7, 1880.

Application filed October 23, 1880. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES B. CARTER, of Lawrence, of the county of Essex and State of Massachusetts, have invented a new and useful Process of Treating Wood or a Vegetable Fibrous Substance, for the removal therefrom of matters detrimental to its conversion into pulp for the manufacture of paper or other use in the arts; and I do hereby declare the same to be described as follows:

In carrying out my present invention the wood or fibrous vegetable material is to be introduced into a suitable retort or vessel provided with a tube or educt, and while therein the wood or material is to have applied to it heat and the vapors expelled from it by such heat, being careful that the temperature should not be such as to materially injure or carbonize the wood or fibrous material, but be sufficient and kept up a proper period to extract from the fibers the incrusting matter, and principally remove the same by said vapor or vapors in their passage through the educt, the completion of their removal being effected by steam at suitable pressure let into the vessel and upon the wood or fibrous material, and thence out of the vessel through its educt, such steam serving to wash away or take up and carry off any of the evolved incrusting matter that, were it not for such use of steam, would be liable to or might remain in the retort or vessel and become condensed upon the charge of wood or fibrous vegetable material to the injury thereof.

The tube or educt of the retort or vessel may or should usually lead into a suitable condenser, whereby the volatile matters or vapors removed from the retort may be condensed and reduced to pyroligneous acid or other products usually resulting from the distillation of wood or vegetable growths.

In some cases I apply the heat to the wood in whole or in part by means of superheated steam let into the vessel or retort, such being one means of effecting the separation of the in-

crusting matter from the fibers of the charge, and of effecting recomposition of such.

The temperature required in most cases to produce the desired result is about 450° or 500° Fahrenheit, it being kept up for several hours, or until the wood or fibrous vegetable matter may have the fiber-incrusting matter properly removed from it, a pyrometer being employed from time to time, as occasion may require, to indicate the temperature within the retort or treating-vessel.

The wood or fibrous material to be so treated should generally be cut into small or short lengths before being placed in the retort, but in some cases this will not be necessary or desirable.

I do not herein claim a destructive distillation of wood to obtain from it pyroligneous acid and other products resulting from the incrusting substance of the fibers of such wood, as in my process there is no such destructive distillation, the wood or vegetable material not being subjected to a heat or temperature sufficient to produce carbonization or reduction of the wood to carbon.

I would also remark that I do not herein claim the subject of either of the United States Patents Nos. 215,580, 219,566, and 219,567, granted to me.

What I claim as my invention is as follows—that is to say:

In combination with the described process of treating wood or a vegetable fibrous material in a retort or vessel, as set forth, by heat, and by vapor extracted thereby from the wood or charge, the subsequent passage of steam through the retort or vessel and upon or about the charge, so as to prevent the accumulation on or remove from it condensed vapors of the products eliminated from it, all being substantially as specified.

CHARLES B. CARTER.

Witnesses:

R. H. EDDY,
S. N. PIPER.