

UNITED STATES PATENT OFFICE.

HENRY T. CUMMINGS, OF PORTLAND, MAINE.

TREATING AND CURING SPANISH MOSS.

SPECIFICATION forming part of Letters Patent No. 224,000, dated February 3, 1880.

Application filed November 25, 1879.

To all whom it may concern:

Be it known that I, HENRY T. CUMMINGS, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in the Treatment and Curing of Spanish Moss, of which the following is a specification.

The subject of this application for Letters Patent is a process for treating the air plant known botanically as the "*Tillandsia Usneoides*," and in common language as "Spanish moss," or moss with the adjective of locality added, in a manner analogous to what takes place naturally in separating the bark from the fiber which it invests.

The object of the invention is to promote and hasten the decomposition or disintegration of the bark by a species of decay which may be called "dry rot," in contradistinction to the process of water-rotting hitherto followed.

The special means which I have invented for producing this dry rot consists in subjecting the green moss, either fresh from the tree or thoroughly air-dried, to the action of dry gaseous compounds containing nitrogen in forms, combinations, and proportions other than that existing in common air, or to solutions of the same compounds in water for a period of twenty-four hours or less, as may be required. The moss is previously thoroughly wetted, and after being subjected to the reagent is placed in a heap to await the process of decomposition, which may take place in not less than four weeks nor more than twelve weeks. At the end of this time the cortical part of the moss is so much decomposed that upon drying it and rubbing it between the hands or ginning it it separates readily and easily from the fiber, leaving the latter almost perfectly clean.

The gaseous or liquid compounds specially had in view in the above-described operation are dry ammoniacal gas, the red nitrous fumes formerly called by chemists the "binoxide of nitrogen," and nitrate of soda, either one of them or all. The first two are obtained in the manner usually employed by chemists. The latter can be purchased in the market.

The manner of employing the above reagents on the large scale is as follows: A car-body carried on trucks or wheels is constructed of size sufficient to contain, when loaded, one or more tons of the moss to be treated. The car is open at the top, its sides and ends being of boards and perfectly air-tight, the bottom of open-work like slats or strips of wood, one or more inches apart, running across from side to side of the bottom frame. When loaded this car is pushed into a tight room or cell just large enough to receive it, and the frame of the bottom and the walls of the room, by a special adjustment, form an air-tight joint, which permits no air to rise around the sides of the car, but all must pass through the load contained within the body. At the highest part of the room is an opening leading into a pipe connected with an exhausting-fan, which, upon the door of the room being closed, is immediately set in motion.

As the air and vapor of water are withdrawn from the moss the gas follows it and completely permeates the moss, acting upon every fiber of it.

When the smell of the ammonia arrives at the end of the exhaust-pipe the operation may be considered as terminated, and the moss remains in the room for some hours, in order that the gas may be absorbed as completely as possible. The car is then withdrawn from the room and unloaded, in order to receive a succeeding charge.

The remaining steps of the process are simple. The moss is allowed to remain in heap for the decomposition to progress. When this has gone far enough—a point which is determined by occasional examination—it is dried, ginned, baled, and sent to market.

I am aware that heretofore cleaned moss has been treated by sulphate of iron and soda, and also that rotted moss has been treated with a solution of pyroacitate of iron, and that process has been employed by use of copperas, logwood, and vinegar to color the moss, and I do not claim any of these.

What I claim in this invention is—

1. The process of treating Spanish moss by subjecting it to the action of dry gaseous com-

pounds containing nitrogen in forms, combinations, and proportions other than that existing in common air, or to solutions of the same compounds in water, substantially in the manner described.

2. In the process of treating Spanish moss by nitrogen, as herein described, the use of a car open at the top, close at the sides and ends, and having a slatted or perforated bottom to hold the moss, in combination with a tight

chamber or cell and an exhaust-fan or like means, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY T. CUMMINGS.

Witnesses:

BYRON D. VERRILL,
EDWARD D. JACOBS.