

# UNITED STATES PATENT OFFICE.

A. H. EMERY, OF NEW YORK, N. Y.

## IMPROVEMENT IN THE MANUFACTURE OF TURPENTINE, &c.

Specification forming part of Letters Patent No. 49,249, dated August 8, 1865.

*To all whom it may concern:*

Be it known that I, A. H. EMERY, of the city, county, and State of New York, have invented a new and Improved Process of Manufacturing Turpentine, Oil of Turpentine, Rosin, &c., from Pine Wood; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in regulating the heat in the distillation of pine wood in such a manner as to produce a large amount of oil of turpentine and rosin before destructive distillation of the wood commences, whereby the oil of turpentine and rosin thus produced are free from acid, tar, smoke, &c., without the use of applied steam or superheated steam.

To enable others skilled in the art to make use of my invention, I will proceed to describe the precise process and operation.

Heretofore in the distillation of pine wood without the use of steam or superheated steam the heat has been so regulated as to produce oil of turpentine, tar, acid, smoke, &c., simultaneously.

What I desire is to take out as much of the oil of turpentine and rosin as possible before destructive distillation commences, which produces the tar, creosote, acid, gas, &c., as it is difficult to separate these products from the fine oil of turpentine, besides the quality of the oil of turpentine formed at the high heat is not as good as that driven off at the low heat.

I put the wood into the retort and close it

up air-tight, and gradually raise up the heat sufficiently to drive off the best of the oil of turpentine and the rosin without raising the heat sufficiently to cause destructive distillation. The retort being closed up the pressure of the vapors soon becomes sufficient to aid largely in the equalization of the heat throughout the retort. This pressure may be allowed to reach two or three atmospheres, and the valve connecting with the condenser be opened sufficiently to keep up the desired pressure without allowing it to get to be too great. A very convenient way of operating this valve is to have it weighted like an ordinary safety-valve and set the valve so as to give the pressure we want in the retort, when the excess of vapors required for this purpose will be rapidly passed through into the condenser. If no pressure is used in the retort except atmospheric, it will require great care to regulate the heat so as to produce the distillation of the oil of turpentine and rosin without also forming some tar, smoke, and acid, which are very injurious to the first-named products.

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

Distilling wood under more than atmospheric pressure without the application of steam or superheated steam.

A. H. EMERY.

Witnesses:

W. A. CRAWFORD,

C. F. EMERY.