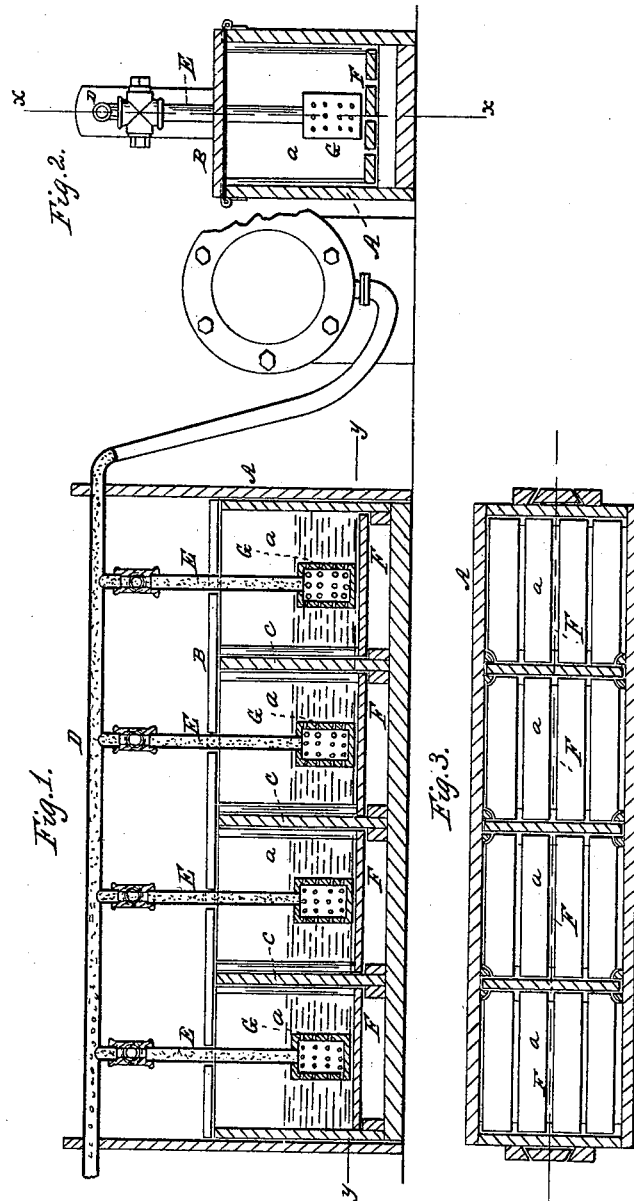


S. W. PINGREE.

Apparatus for Making Extracts from Tan Bark.

No. 50,626.

Patented Oct. 24, 1865.



Witnesses:

M. M. Livingston  
C. L. Dwyer

Inventor:

S. W. Pingree

# UNITED STATES PATENT OFFICE.

S. W. PINGREE, OF LAWRENCE, MASSACHUSETTS.

## IMPROVED APPARATUS FOR MAKING EXTRACTS FROM TAN-BARK.

Specification forming part of Letters Patent No. 50,626, dated October 24, 1865.

*To all whom it may concern:*

Be it known that I, S. W. PINGREE, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and Improved Apparatus for Making Extracts from Tan-Bark, &c., by Means of Exhaust-Steam; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of this invention, the line *x x*, Fig. 2, indicating the plane of section. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a horizontal section of the same, the plane of section being indicated by the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to utilize exhaust-steam from a steam-engine for the purpose of making extracts from tan-bark and other materials.

The invention consists in the arrangement of a box with perforated sides and bottom in combination with a pipe which conducts the exhaust-steam to the leach containing the bark or other material to be extracted in such a manner that the steam is free to expand and made to condense partially as it passes from the exhaust-pipe into said box, and all back-pressure on the piston is avoided, and at the same time the full benefit of the action of the steam on the bark or other material is obtained.

A represents a leach, which is provided with a tightly-fitting cover, B, and which, for the sake of convenience, may be divided off by transverse partitions C in a series of compartments, *a*. A pipe, D, extends over the entire length of the leach and branch pipes E lead from this pipe down into the several compartments C, as clearly shown in Fig. 1.

The bark or material to be extracted rest on slotted or perforated false bottoms F, and the branch pipes E lead into boxes G, which are situated close to the leach. The cross-section

of the boxes G is considerably larger than that of the pipes E, so that the steam, in passing into the same, is free to expand, and the sides of said boxes are perforated with a large number of holes, through which the steam passes out to the bark.

The pipe D is intended to connect with the exhaust-pipe of a steam-engine, and, as the exhaust-steam passes through said pipe and the branch pipes E into the boxes G, it expands readily, and a partial condensation takes place both within said boxes and outside of the same, and by this partial condensation, combined with the rapid expansion of the steam as it reaches the boxes G, all back-pressure on the piston of the engine is avoided. The steam, on passing through the perforated sides of the boxes G, heats the bark or other material to be extracted, and the operation of making extracts can thus be effected with little expense and with a very good result.

This apparatus is particularly applicable to a process for making extracts on which Letters Patent have been granted to me March 1, 1864, and which is principally intended for making extracts from tan-bark.

In tanneries a steam-engine is usually employed to impart motion to the grinding-mills and other machinery requisite in preparing bark, and to pumps and other machines necessary in such establishments, and by my apparatus the exhaust-steam is utilized and a great saving in fuel is effected, which is usually needed to heat the bark to be extracted. It is obvious, however, that my apparatus can be used with equal advantage for making extracts of any other desirable material.

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

The boxes G, with perforated sides, applied in combination with the exhaust-pipe D and leach A, or its equivalent, in the manner and for the purpose substantially as set forth.

S. W. PINGREE.

Witnesses:

M. M. LIVINGSTON,  
C. L. TOPLIFF.