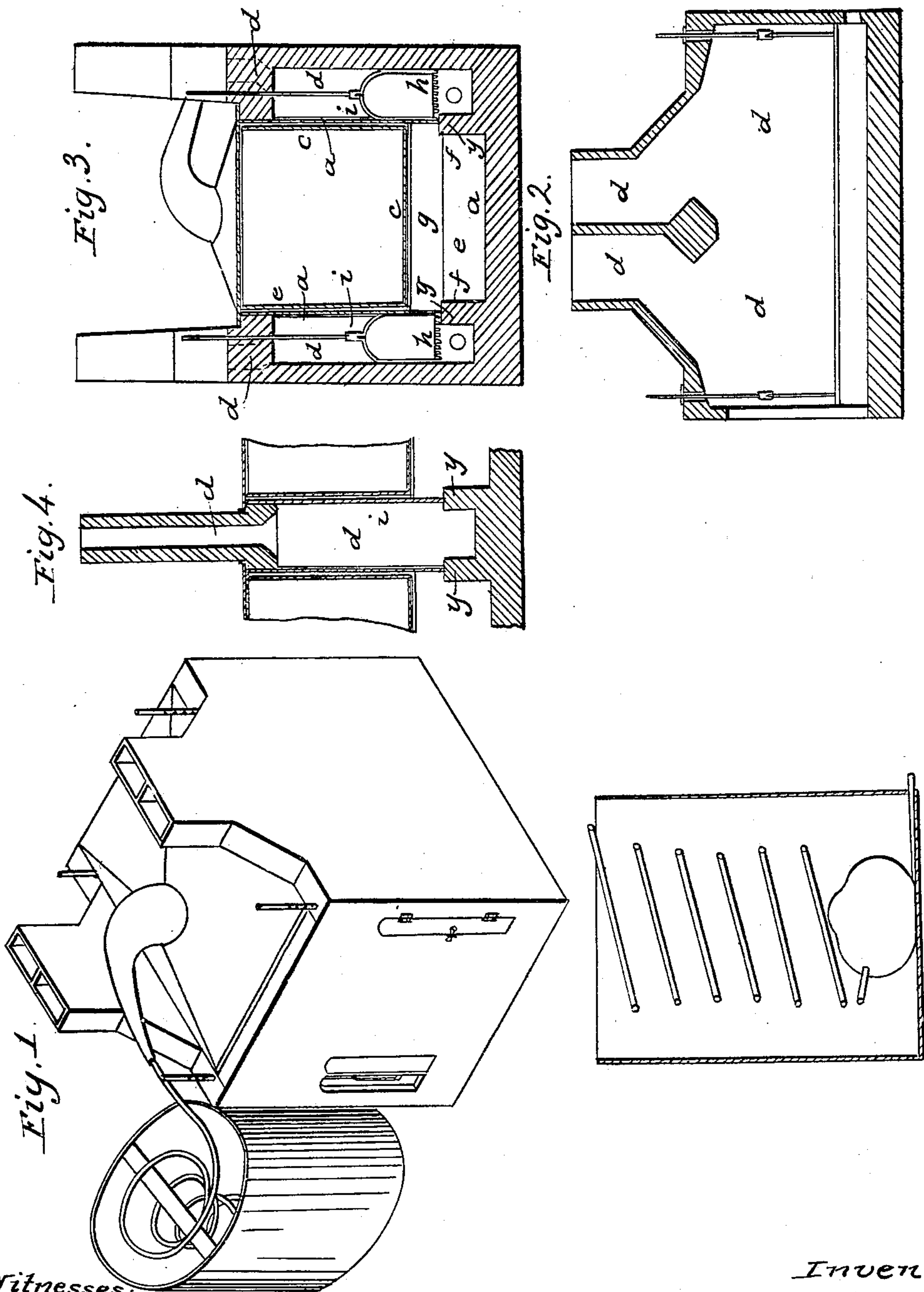


J. A. MATTOCKS.

Distilling Pine Wood.

No. 53,641.

Patented April 3, 1866.



Witnesses:
Louis Weber
John A. Tomlinson

Inventor:
J. A. Mattocks

UNITED STATES PATENT OFFICE.

JAMES A. MATTOCKS, OF SWANSBOROUGH, NORTH CAROLINA.

IMPROVEMENT IN DISTILLING PINE-WOOD.

Specification forming part of Letters Patent No. 53,641, dated April 3, 1866.

To all whom it may concern:

Be it known that I, J. A. MATTOCKS, of Swansborough, in the county of Onslow and State of North Carolina, have invented a new and useful Improvement in the Construction and Arrangement of the Apparatus for the Destructive Distillation of Pine-Wood; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a corner view of the apparatus; Fig. 2, a sectional view of the side, and Fig. 3 a section of the front end, of the apparatus, in which—

a a a shows a plain-sided iron retort, with flanged top, so as to receive the cap; *c c c*, a perforated iron box, resting on supports near the bottom of the retort, for the purpose of containing the wood; *d*, the furnaces and flues upward; *e*, the tar resting on the bottom of the retort; *f*, the inward bend of the retort, filled with brick-work to protect the side surface of the tar from too great heat; *g*, the space between the bottom of the perforated box and the upper surface of the tar; *y*, the brick-work protecting the side surface of the tar; *h*, the sliding grate, which is let down on the brick protector for the purpose of further heating the space marked *g*; *i*, the sheet-iron or other material for protecting the sides of the retort from the corroding effects of the flame.

Fig. 4 represents the manner in which two or more may be connected together, causing a great saving of fuel.

The mode of operating the machine or apparatus is as follows: The wood is split into sticks one or two inches in diameter and three or four feet in length and set into the receiving-box end upward. The box is then raised and let down into the retort, resting on the supports, and the cap put on and connected with the condensing-tube. Then I start the

fires in the furnaces, the grates being raised as high as the bottom of the box containing the wood. The fumes pass over and are condensed and collected in the usual way, while the oils and acids separate on account of their specific gravities being different. The distillation being completed, which is known by any more liquid refusing to run, the sliding grate is let down upon the brick-work which protects the side surface of the tar, for the purpose of further heating the upper surface of the tar, nearly all the oils and acids of which, being in their nascent state, are floating on the surface, and are fumed off without carrying but little of the resinous matter with them. The resinous mass is then run off and the box, containing only coal, is taken out, when the apparatus is ready for another charge.

First, the wood which is to go into the box and that which is to be burned in the furnace may be left long, instead of being chopped up short, which saves considerable labor; secondly, labor and time are saved in filling the box; thirdly, much time is saved in running off a charge by being able to apply the fire directly; fourthly, I apply the heat to the top of the tar while the oils and acids are in the proper position and condition for being driven off to the greatest advantage; fifthly, the construction and arrangement enable me to connect two or more and run them with a great saving of fuel.

On the merit of these several improvements I claim as my invention and desire to secure by Letters Patent—

The construction and arrangement of a retort protected by sheet-iron or other material, furnaces, flues, sliding grates, and the application of heat to the upper surface of the tar, as shown in the accompanying drawings and specification.

JAS. A. MATTOCKS.

Witnesses:

JOHN S. HOLLINGSHEAD,
Z. B. BROOKE.