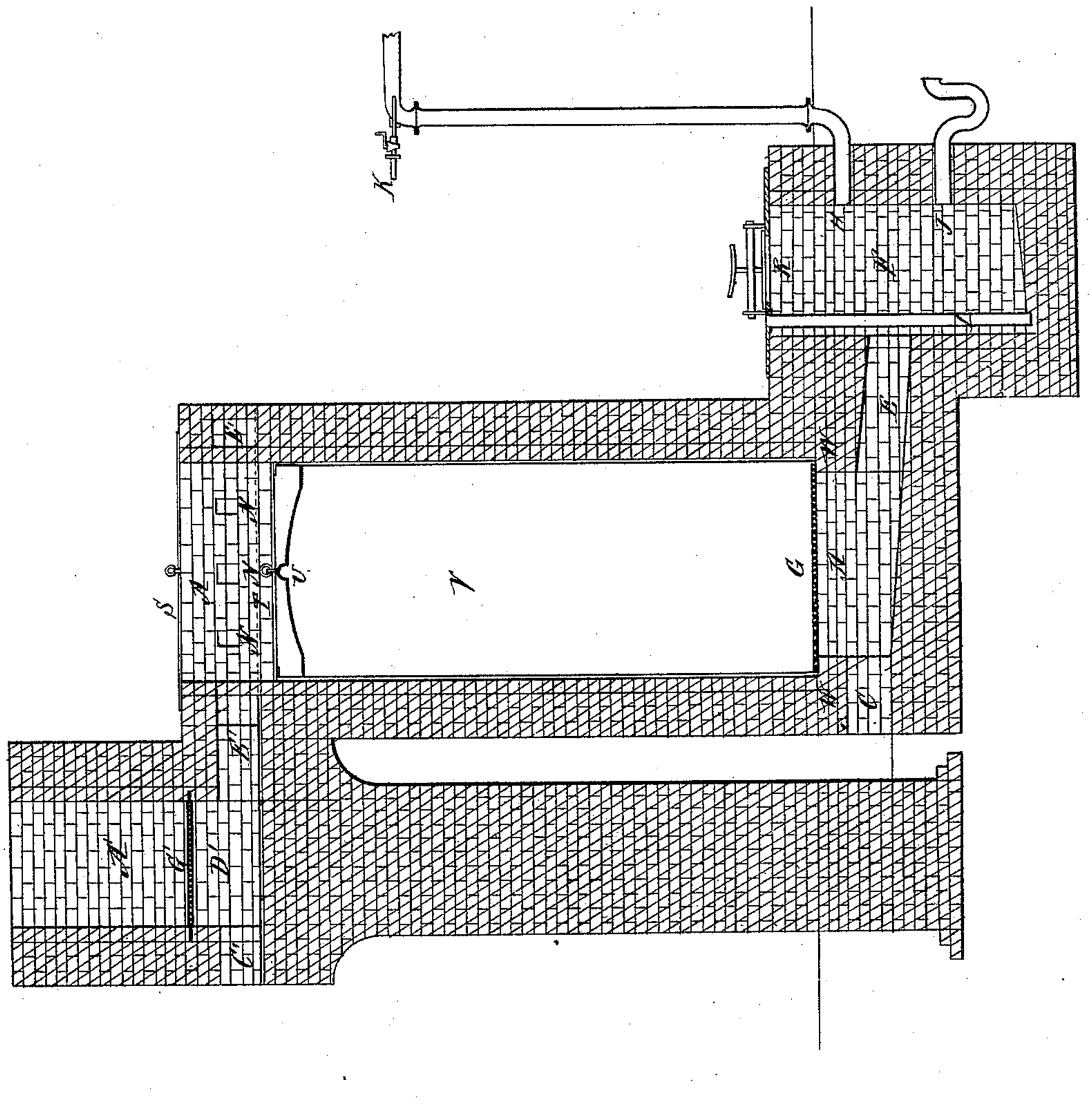
L. ATWOOD.

Oil Still.

No. 22,408. Patented Dec. 28, 1858.



UNITED STATES PATENT OFFICE.

LUTHER ATWOOD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN APPARATUS FOR DESTRUCTIVE DISTILLATION OF WOOD, &c.

Specification forming part of Letters Patent No. **22,408**, dated December 28, 1858.

To all whom it may concern:

Be it known that I, LUTHER ATWOOD, of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Apparatus for Decomposing Wood, Bones, &c, which are especially adapted to the manufacture of gunpowder-charcoal, charring bones, &c., where it is desirable to secure and protect the residue from impurities; and I do hereby declare the following to be a full and exact description thereof, reference being had to the annexed drawing, forming a part of this specification, which represents a vertical longitudinal section of the apparatus in which my improvements are used, which consist—

First. In the use of the inner cylinder of metal, V, which may be made of sufficient length to hold one, two, or three layers of cord-wood packed endwise, and provided with a perforated bottom, G, and a suitable bale or handle, U, in the following manner, viz: The wood or bones in pieces of suitable size are placed in the case V, (the top or cover of which, T, is only to be used when the case, with its contents, is removed from the distilling-tower,) and by means of the draft induced by the steam-jet K a current of products of combustion is drawn from the fire-place A′, where fuel is burned on grate G′, down through the passage D′, annular passage E′, and through the passages N, which open into the distilling-tower A from the upper part of the inner side of the annular passage E, and thus prevent ashes from the fire in A′ from being drawn into the distilling-tower, only the heat and gases from combustion which follows the upper part of the flues entering. The distilling-tower A being covered with a cover, S, which is air-tight, or may be made so with cement or otherwise, the heat and gases of combustion pass down through the case V and the mass of material therein contained, decomposing the material and conveying the vapors thrown off by decomposition down through the perforated bottom G, passages D and E, and tar-cistern F, where any liquids that separate themselves from the current are collected, the current passing out of F through pipe H. The current should be properly regulated, so that combustion shall not take place in V, and care should be taken that no air is admitted to the material in V except what is deprived of its free oxygen by the fire in A′. When the wood or bones are converted into charcoal, the cover S is removed, and the case V is lifted out by a suitable tackle hitched on at U, and deposited on a hearth on its perforated bottom, and the edges immediately cemented closely to the hearth and the cover T placed on the top, and also closely cemented, so as to prevent the admission of air until the contents are sufficiently cooled, when the cover may be taken off and the charcoal removed.

Second. In the manner of protecting the material while in process of decomposition from ashes from the combustion-chamber A′ by the arrangement of the passages N, leading from the annular passage E into the distilling-tower.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The use of the inner case, V, in the manner and for the purposes substantially as hereinbefore set forth.

2. The within-described arrangement of the flues N, leading from the annular passage E into the distilling-tower A, substantially as and for the purposes hereinbefore set forth.

3. The combination, with the distilling-tower, of the combustion-chamber or fire-place A′, when so arranged as to supply products of combustion by a downward draft through the fire-place, substantially as hereinbefore described.

LUTHER ATWOOD.

Witnesses:
I. MCGINNIS,
JACOB K. LOCKMAN.