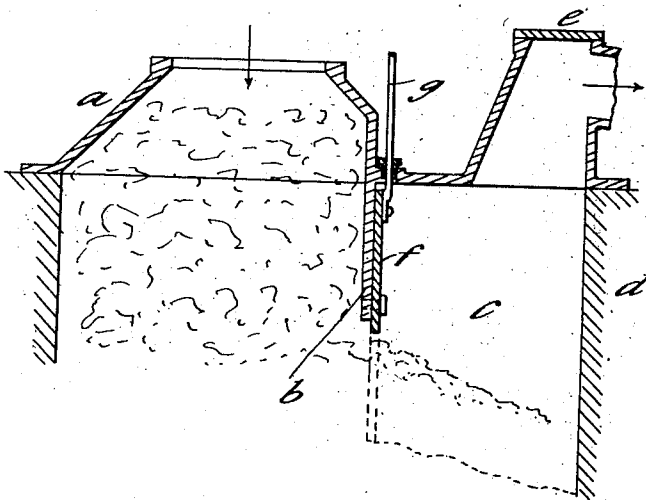


A. McD. DUCKHAM.
VERTICAL RETORT FOR THE CARBONIZATION OF COAL OR THE LIKE.
APPLICATION FILED DEC. 4, 1911.

1,037,822.

Patented Sept. 3, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

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VERTICAL RETORT FOR THE CARBONIZATION OF COAL OR THE LIKE.

1,037,822.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed December 4, 1911. Serial No. 663,832.

To all whom it may concern:

Be it known that I, ARTHUR McDougall Duckham, a subject of the King of Great Britain, residing in the county of Surrey, and whose post-office address is Walden, Little Bookham, Surrey, England, have invented a certain new and useful Improvement in Vertical Retorts for the Carbonization of Coal or the Like, of which the following is a specification.

Vertical retorts for the carbonization of coal, or the like, have been constructed in such manner that the coal charged into the retort does not at once fill the whole cross sectional area thereof, but is confined for a short distance from the top of the retort by a plate or plates depending from the said top. Between the wall of the retort and the plate or plates there are one or more empty spaces through which the gases escape from the retort. Such space or spaces, which are highly heated by radiation from the wall of the retort, have been found to be of value in breaking down the liquid hydrocarbons held in suspension in the gases, whereby useful permanent gases are produced. It has been difficult, however, to make proper use of such space or spaces in this direction, because there has been no means of regulating the total amount of heat imparted to the gases as they pass through the space or spaces.

The present invention overcomes this difficulty by making the vertical length of the plate or plates adjustable, so that the extent of the free space for the gases may be varied to obtain the best results for a given coal and a given temperature of the retort wall. The adjustment should be easily performed from outside the retort.

The accompanying drawing is a vertical section through the top of a retort to which the invention is applied.

The coal is fed through the casting *a* on one side of which is extended downward as at

b so as to form a partition across the width of the retort. By this arrangement there is left a space *c* between the extension *b* and the wall *d* of the retort, which space is free of coal and is surmounted by the take-off *e* for the gases.

According to this invention a plate *f* is attached to the extension *b* so as to slide vertically thereon; for instance the plate may have vertical slots through which extend bolts fixed to the extension *b*. To the plate *f* is fixed a rod *g* extending through a suitable gland in the cover of the retort. By moving this rod up or down, the plate *f* is raised or lowered to determine the level of the coal outside the extension *b*. The uppermost position of the plate *f* is shown in full lines and the lowermost in dotted lines.

I claim:—

1. In a vertical retort for the carbonization of coal, the combination of a plate depending from the top of the retort forming a partition across the retort, a second depending plate movably mounted on the first said plate, and means for adjusting the level of the lower end of one plate relatively to the lower end of the other, substantially as and for the purpose set forth.

2. In a vertical retort for the carbonization of coal the combination of a plate depending from the top of the retort forming a partition across the retort, a second depending plate movably mounted on the first said plate, and means for sliding the second plate lengthwise on the first plate whereby the extent to which the second plate depends into the retort is adjusted, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR McDougall Duckham.

Witnesses:

JOSEPH MILLARD,
J. P. CRAWLEY.