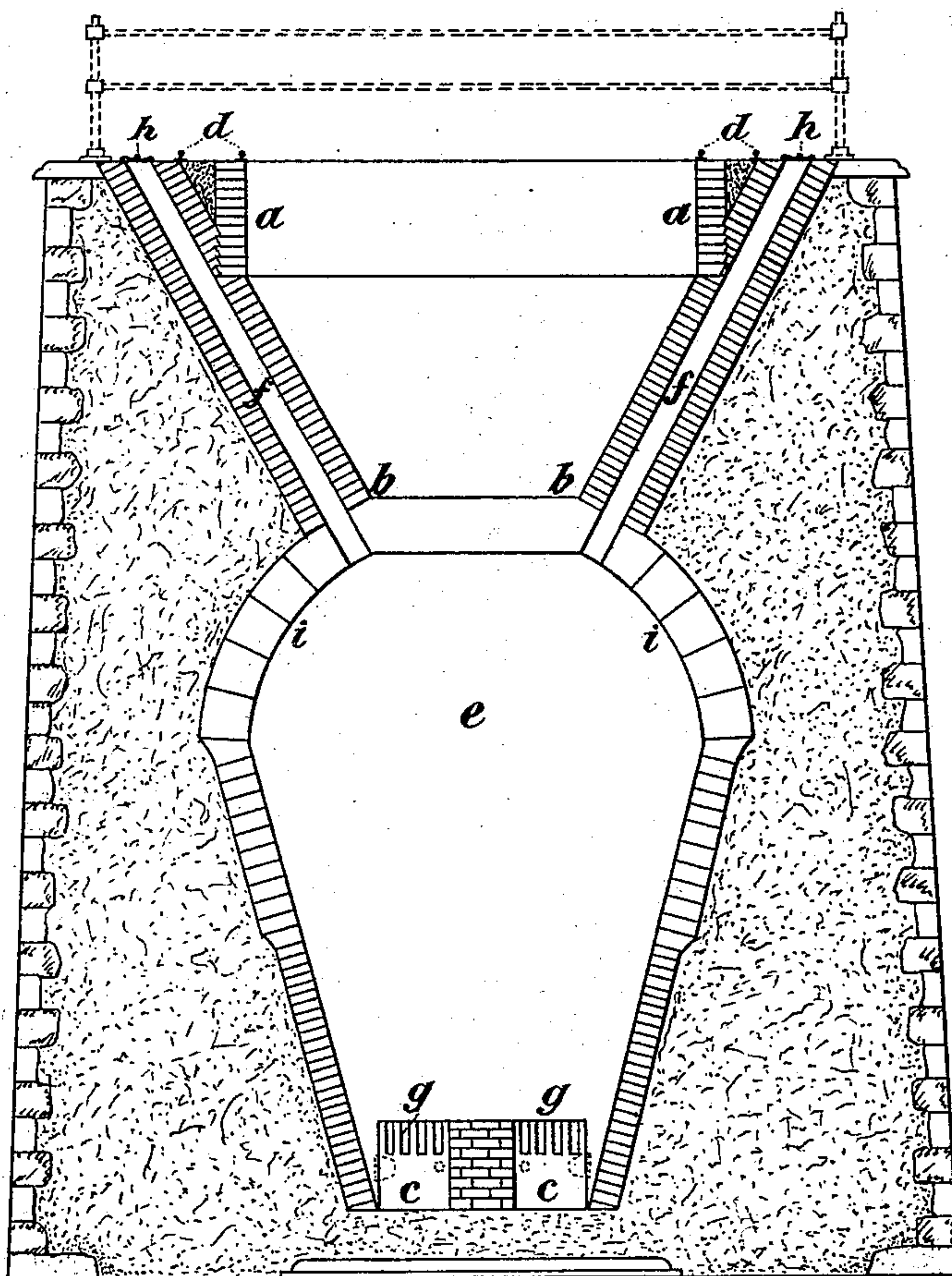


(No Model.)

J. BRIGGS.  
KILN FOR BURNING LIMESTONE.

No. 507,411.

Patented Oct. 24, 1893.



Witnesses.

George Baumann  
James Gracie

Inventor.

John Briggs  
By his Attorneys  
Howson and Howson

# UNITED STATES PATENT OFFICE.

JOHN BRIGGS, OF CLITHEROE, ENGLAND.

## KILN FOR BURNING LIMESTONE.

SPECIFICATION forming part of Letters Patent No. 507,411, dated October 24, 1893.

Application filed October 24, 1892. Serial No. 449,768. (No model.) Patented in England April 16, 1892, No. 7,308.

*To all whom it may concern:*

Be it known that I, JOHN BRIGGS, a subject of the Queen of Great Britain and Ireland, residing at Clitheroe, in the county of Lancaster, England, have invented Improvements in the Construction of Kilns for Burning Limestone, Cement, and other Similar Material, (for which I have obtained a patent in Great Britain, No. 7,308, dated April 16, 1892,) of which the following is a specification.

The object of my improvements is to improve the construction of kilns and to diminish the quantity of fuel required for burning limestone, cement, and other similar materials. The nature of my said invention and the manner in which the same is to be performed or carried into practical effect will be readily understood on reference to the illustrative drawing hereunto annexed and the following explanation thereof.

The drawing represents my improved kiln in vertical section.

The kiln is open at the top *a* with a gradual contraction toward the neck at *b* which is about one third down the depth of the kiln, and is provided with hinged doors *c* at the lower end from which the burnt lime, cement or other material is drawn.

The limestone, cement, or other material to be burned or calcined is brought to the top *a* of the kiln in trucks running on the tramway *d*, and is simply tilted into the opening *a* no leveling, setting, or packing being required. A small amount of coal is fed into the top *a* of the kiln with the limestone or other material and the whole descends through the neck or contraction at *b* into the calcining chamber *e*. The bulk of the coal required for burning or calcining the limestone or other material is passed down the sloping chutes *f* and entering the kiln below the neck *b* is mixed with the bulk of the limestone or other material and calcines it in the chamber *e*, the

waste heat from which partially calcines the fresh material entering between *a* and *b*. The burned or calcined lime or other material gradually descends to the bottom of the kiln cooling as it falls and is drawn off by the door *c*.

Spaces or openings *g* are left at the top of the doors to allow extra air to enter the kiln for cooling the lime and to cause better combustion of the fuel in the calcining chamber *e*.

*h* are cast iron covers which are placed over the mouths of the coal chutes *f* leading into the kiln.

Arched or long bricks may be used to build the dome *i* over the calcining chamber *e* and in constructing this kiln at least two feet thick of clay only should be used behind the brick lining to prevent the heat from escaping except in an upward direction. The heat from the kiln will burn this into a hard mass and keep it compact which will be found very useful when repairs are necessary to the kiln.

I claim as my invention—

A kiln comprising a single domed calcining chamber having an open neck at the top about one third down the depth of the kiln and a number of sloping chutes leading from the top of the kiln into the dome for the admission of fuel thereto, the top of the kiln being open but gradually contracting toward the said neck at the top of the calcining chamber, whereby the fuel and material to be calcined may both be fed into the kiln from the open and level top, and a suitable drawing hole or holes being formed in the bottom of the calcining chamber, substantially as and for the purposes set forth.

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

JOHN BRIGGS.

Witnesses:

CHARLES A. DAVIES,  
JNO. HUGHES.