

G. DURYEE.  
Pottery, Tile, and Glass Furnace.

No. 229,525.

Patented July 6, 1880.

Fig 1.

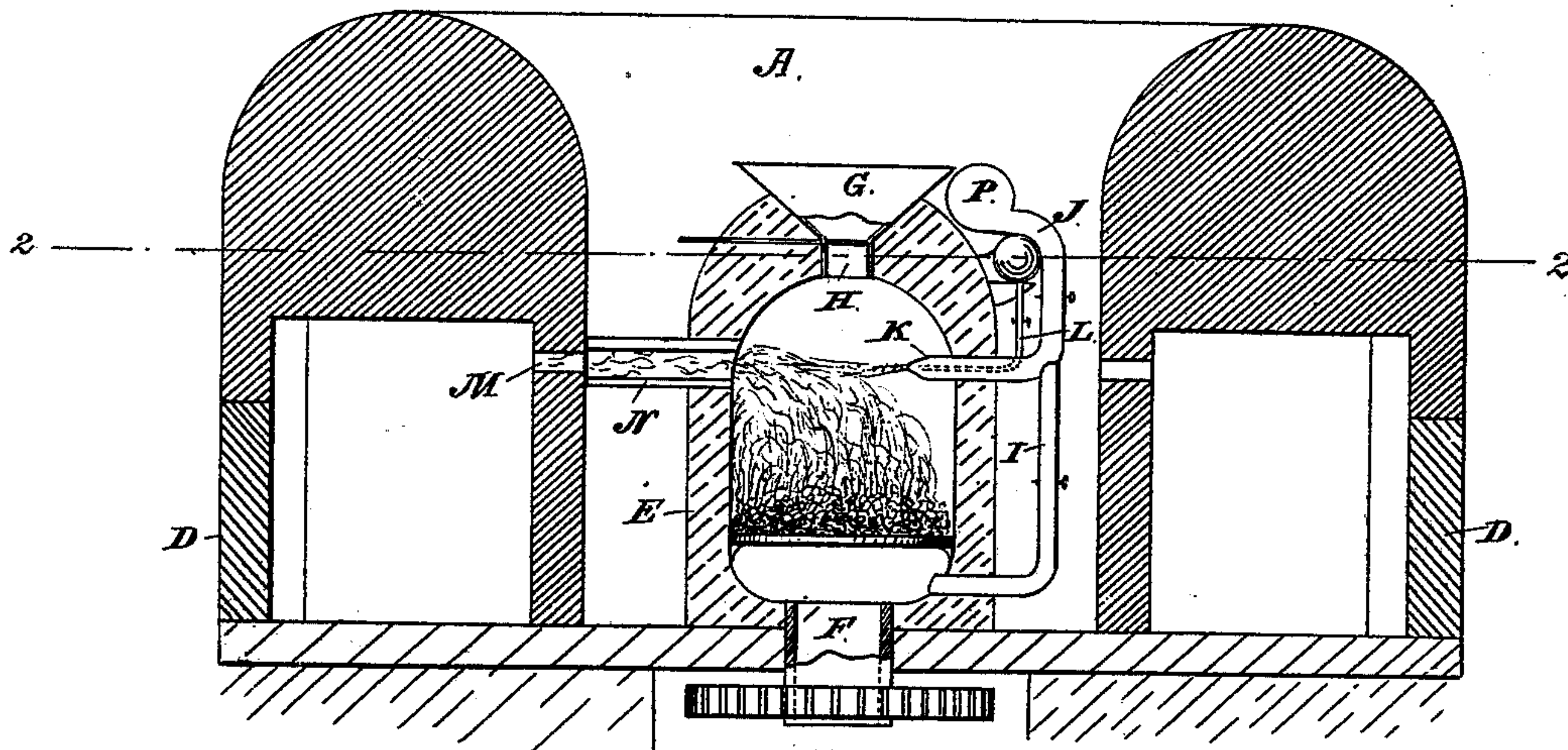


Fig 2.

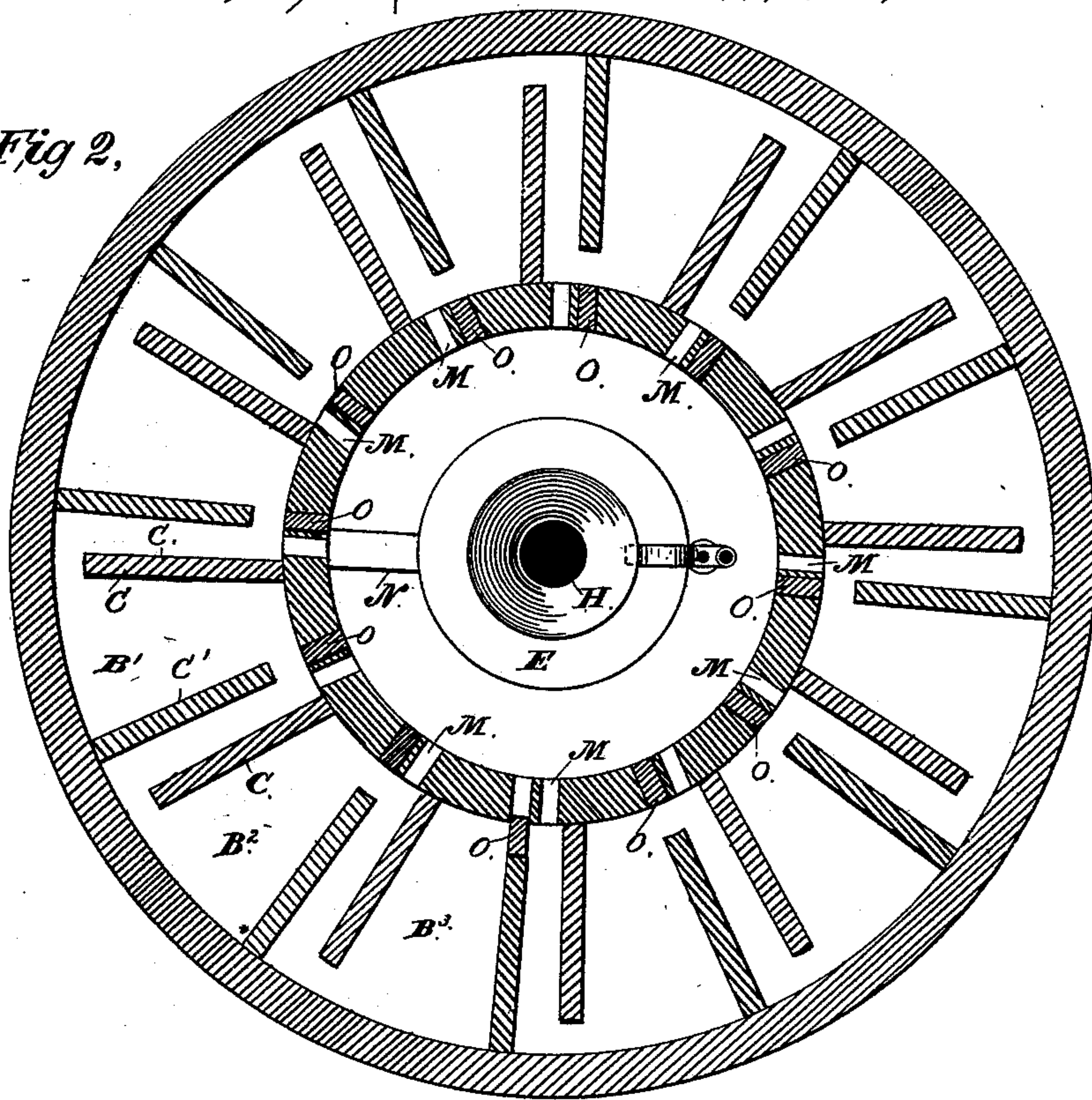
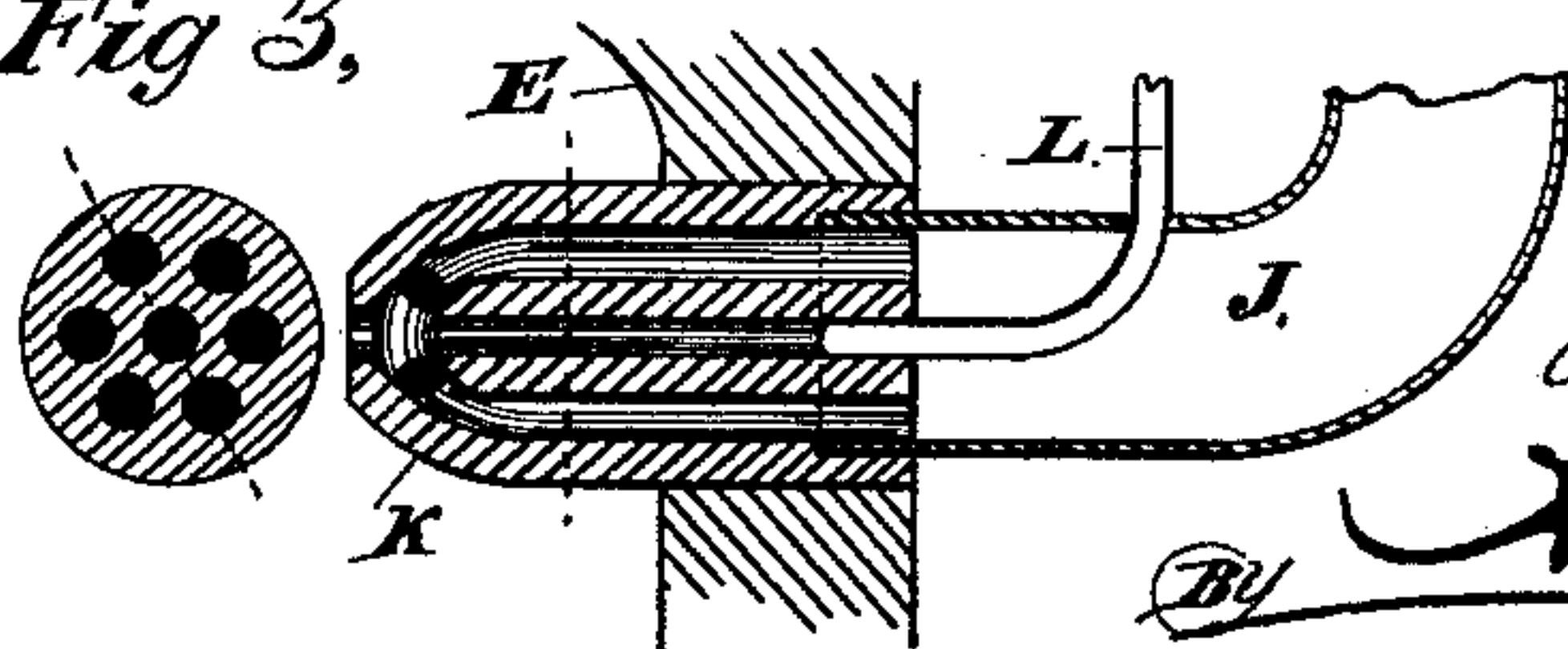


Fig 3.



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By *Knights Bros*  
attys



# UNITED STATES PATENT OFFICE.

GEORGE DURYEE, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND JOHN  
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## POTTERY, TILE, AND GLASS FURNACE.

SPECIFICATION forming part of Letters Patent No. 229,525, dated July 6, 1880.

Application filed November 28, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE DURYEE, M. D., of New York, in the county and State of New York, have invented certain new and useful Improvements in Kilns for the Burning of Pottery, Brick, Tile, and other Ware, and for Glass-Making, of which the following is a specification.

The subject of my invention is an annular kiln consisting of a number of compartments divided by radial partitions, in combination with a central blast apparatus constructed with a fuel-furnace and a compound nozzle for the injection of a combined jet of air and liquid fuel or gas in such position and direction as to impinge against the flame in the fuel-furnace, produce a blow-pipe flame, and drive the said blow-pipe flame through an opening into either of the kiln-compartments, said blast apparatus being adapted to rotate on its axis, in order to apply the intense heat to each of the kiln-compartments in succession for baking or burning its contents, from whence it is conducted through other compartments for the preliminary drying of wares therein.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a vertical section of my compound annular kiln. Fig. 2 is a horizontal section of the same on the line 2 2, Fig. 1. Fig. 3 is a longitudinal section of the compound blast-nozzle on a larger scale.

A represents an arched kiln or oven, constructed with any desirable number of compartments  $B' B^2 B^3$ , and separated by fire-brick walls or partitions  $C C'$ , and provided with doors D.

E is a furnace mounted upon a vertical axis, F, so that it may be rotated, as desired, to communicate with either one of the oven-compartments B. The furnace is supplied with coal or other fuel from a hopper, G, or may, preferably, be filled with asbestos or other non-combustible porous material and supplied with crude petroleum conducted from a reservoir through a pipe, which may take the place of the fuel-conducting pipe H.

I is a blast-pipe to support combustion in the furnace and stimulate the fire, as required.

J represents a blast-pipe terminating in a nozzle, K, with which is combined a pipe, L, conducting any suitable hydrocarbon or other liquid fuel or gas, which, combining with the air-blast in the pipe I, forms a compound jet acting on the flame in the fuel-furnace and injecting a blow-pipe flame of intense heat through the fire-clay nozzle N and any one of the flame-openings M in the respective oven-compartments  $B' B^2 B^3$ . The flame enters the space in front of one of the partitions, C, and, passing behind the same into the adjacent compartment  $B'$ , bakes or burns the wares or articles therein, then, passing in front of the next partition,  $C'$ , and back, around, and behind the next partition, C, enters the next partition  $B^2$  for drying the contents thereof, and so on through as many compartments as it may be desired to act on at once or as may have been charged, the opening in the partition of the last compartment ( $B^3$ , for example) being closed by a gate, O.

As soon as the contents of one compartment are cooked a gate, O, is inserted to close the partition  $C'$ , separating the said compartment from the next, and the fire being extinguished and the flow of oil stopped, the air-blast may be used to cool the charge in the compartment  $B'$  as rapidly as desirable. The furnace is then rotated, so as to drive the blow-pipe flame through the opening M into the next compartment  $B^2$ , while the wares or articles are removed from the compartment  $B'$ , and a new charge introduced.

The operation is thus carried on continuously around the kiln by turning the furnace forward from each compartment in succession as soon as the charge therein is baked.

The air-blast is applied to the pipes H I, preferably through flexible hose. The fan P or other air-pressure device may be mounted on the rotary furnace, or the blast-pipe may be riveted, as may be preferred, so as not to interfere with the rotation.

The bottom of the furnace projects in the form of an annular or hollow shaft, F, through which the furnace may be cleaned and slag

removed, and by which it may be turned. It is preferably supported on friction-rollers, to adapt it to turn with facility.

For the manufacture of glass the compartments B' B<sup>2</sup> are provided with platforms to hold the pots or crucibles, or a suitable basin may be formed in the floor of the compartment itself. The blow-pipe flame may be applied to any desirable number of the compartments at once, the openings between the compartments being doors of smaller size than those used in a kiln for burning pottery, tile, and like wares, and being closed at will by slabs of fire-clay or other suitable material.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

An annular kiln divided in compartments, in combination with a rotary furnace provided with a suitable fuel-burner and pipes for the application of a compound jet of air and liquid fuel or gas, so constructed as to inject a blow-pipe flame into any of the compartments of the kiln at the will of the operator.

GEORGE DURYEE, M. D.

Witnesses:

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