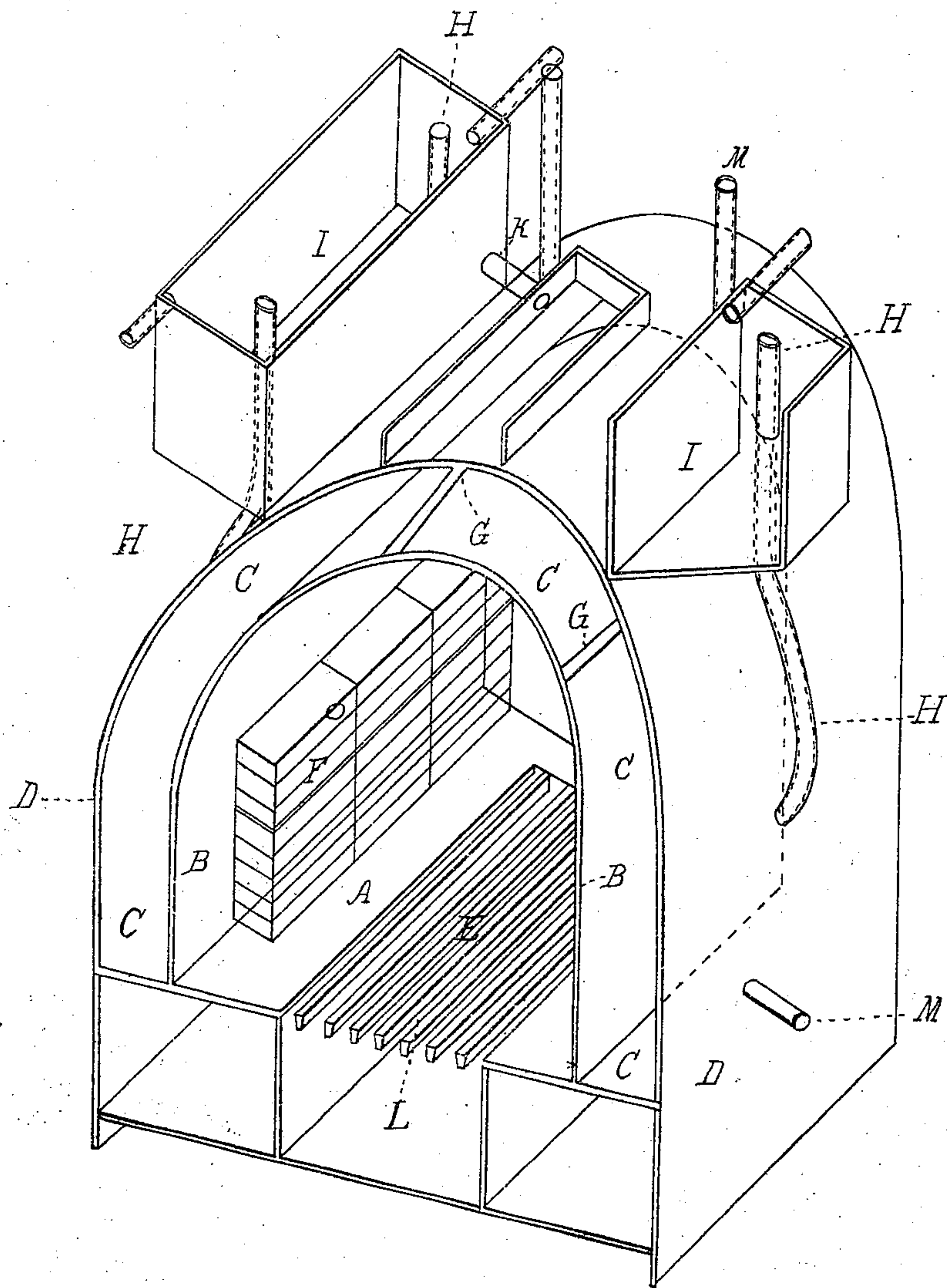


Brady & Sloan.
Furnace for Roasting Ores &c.
Nº 71271 *Patented Nov. 26, 1867.*



Witnesses

Philip T. Harding
J. L. Davenport

Inventors

Edward Brady
John Sloan

UNITED STATES PATENT OFFICE.

EDWARD BRADY AND JOHN SLOAN, OF PHILADELPHIA, PENNSYLVANIA,
ASSIGNORS TO EDWARD BRADY, OF THE SAME PLACE.

IMPROVEMENT IN FURNACES FOR ROASTING ORES AND FOR OTHER PURPOSES.

Specification forming part of Letters Patent No. **71,271**, dated November 26, 1867.

To all to whom it may concern :

Be it known that we, EDWARD BRADY and JOHN SLOAN, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and improved furnace for melting ores, &c., making gas, bake-ovens, and for other purposes; and we do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, and to the letters marked thereon, the same making part of this specification.

The nature of our invention relates to a new and improved method of constructing furnaces for melting ores, &c., making gas, bake-ovens, and for other purposes, with plates or slabs of iron, or other suitable metal, securely fastened together, so as to be air-tight, the outer side of which forms one side of a compartment, made of iron or other suitable material, of a sufficient width, kept constantly filled with water, which can be supplied from cisterns.

By this mode of construction, among the objects accomplished will be that the fire or heat or burning matter in the inside of the furnace will not destroy the metal sides thereof, which material will be, to a great extent, preserved from the effects of the heat, &c., by the water constantly surrounding the outer sides of the same; and, also, almost all the heat, &c., from the burning substance in the inside of the furnace will be retained therein; and, likewise, a saving of fuel will be effected, as there will be only a small portion of the heat, &c., consumed by the metal plates or sides of the furnace when the same are kept in a continual contact, on the outer side thereof, with the water.

To enable others skilled in the art to which our invention appertains to fully understand and to make and use the same, we will proceed to describe its construction and operation.

In the accompanying drawing, Figure 1 represents a sectional view of furnace A, of the known forms, constructed of iron or other

metal plates or sides B, which also form the inner side of an air-tight compartment filled with water, C, and whereof D forms the outer plate or side at a sufficient width from the sides B. E is the lower part of the interior or inside of the furnace A, where the fire or other substance is burned or melted. A lining of fire-brick, &c., F, may or may not be placed against the inner sides of the metal plates or sides B; and there may or may not be bars or studs G supporting, at proper distances, the furnace A to the water-compartment C, the interior sides of which may be galvanized or coated with any non-corrosive material. H are tubes of sufficient capacity, which furnish, from cisterns I, the compartment C with a regular supply of water, to keep it always filled, by any ordinary appliances, such as a floating ball and valve, &c., or the upper portion of it being made higher than the remainder, so as to enable it to become constantly full of water, by a flow of water into it equivalent to the waste from steam, &c. K is an escape-aperture for waste-water, or for steam generated in the water-compartment C. L is the door or opening of the furnace A. M are the pipes from the inside of the furnace A for the passage of hot air, smoke, or gas, &c., and to admit a draft of air from a fan, or otherwise, if desired.

What we claim as our invention, and desire to secure by Letters Patent, is—

The construction of furnaces for melting ores, &c., making gas, bake-ovens, and for other purposes, of the known forms, by the employment, application, and combination of metal plates B with the compartment C, constantly filled with water, all of which operate substantially for the objects set forth.

EDWARD BRADY.
JOHN SLOAN.

Witnesses:

H. B. FREEMAN,
THOMAS R. ELCOCK.