(No Model.)

D. SINTON.

Smoke Consuming Furnace.

No. 239,352. **Patented March 29, 1881.**

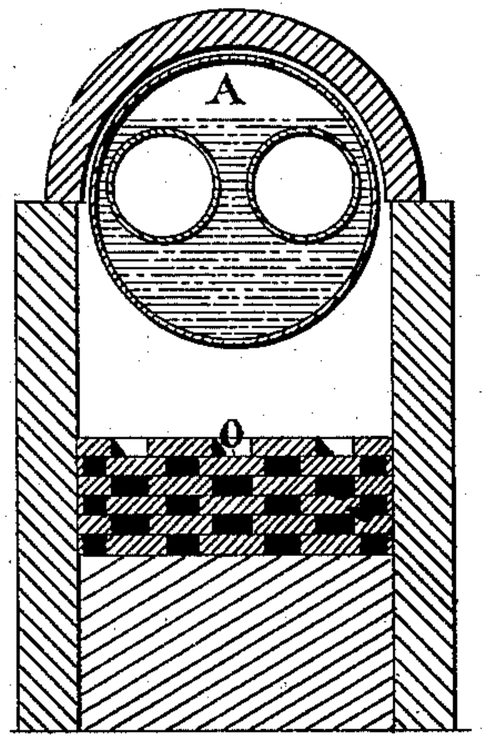

Fig. 1.

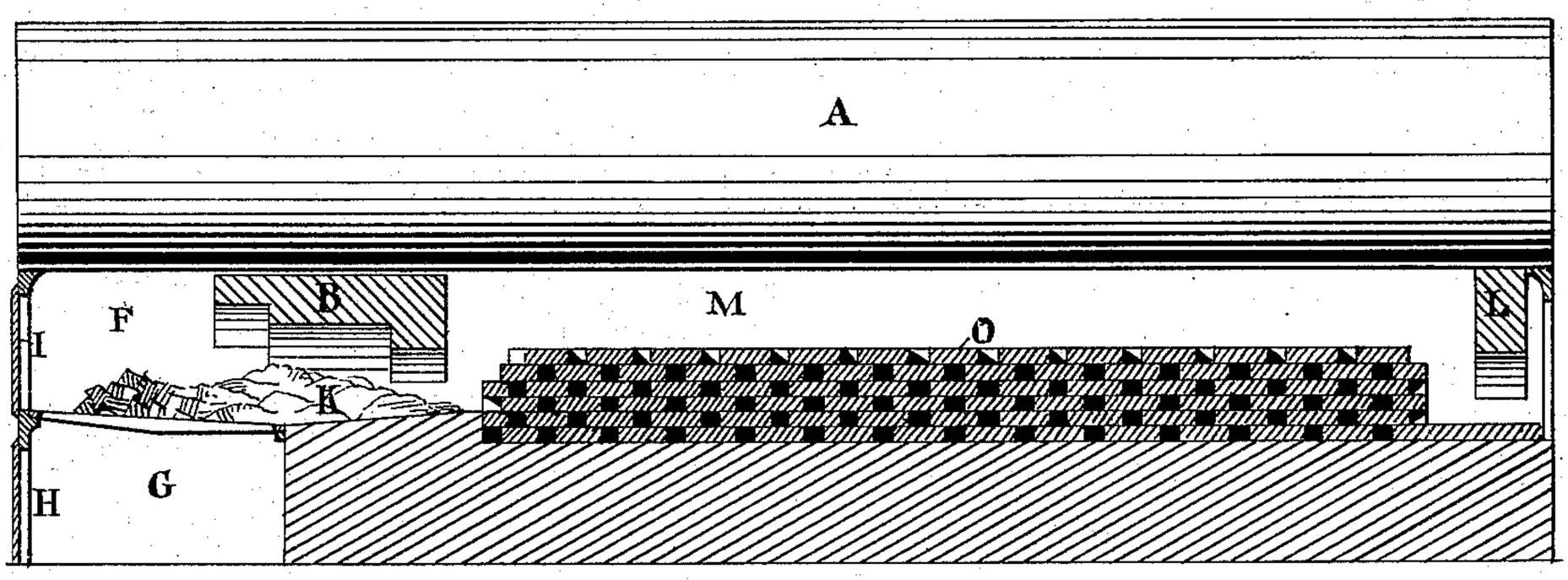

Fig. 2.

Attest:
H. J. Thomas
Jos. F. Kastner

Inventor:
David Sinton.

UNITED STATES PATENT OFFICE.

DAVID SINTON, OF CINCINNATI, OHIO.

SMOKE-CONSUMING FURNACE.

SPECIFICATION forming part of Letters Patent No. 239,352, dated March 29, 1881.

Application filed December 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, DAVID SINTON, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Smoke-Consuming and other Furnaces, of which the following is a specification.

The object of my invention is to economize fuel in boiler or other furnaces by increased accumulation and retention of heat in their flue-chambers, and the more perfect combustion of the evolved gases, to illustrate which I have prepared drawings accompanying this application representing a smoke-consuming boiler-furnace with this invention in the flue-chamber thereof, being in all other respects substantially the same as that for which I obtained from the United States Letters Patent No. 233,168, dated October 12, 1880.

This invention consists of a sufficiently refractory brick structure built in the flue-chamber under the boiler, occupying its entire width, and of such length and height that the spaces above and at the ends thereof shall be left large enough to not interfere with the proper draft of the furnace, and constructed in such manner that the surface of each brick shall be so exposed and the adjoining spaces such as to admit of the most perfect distribution of the gases and the absorption of heat throughout the entire structure.

The chamber under the boiler for this invention should be of sufficient depth to admit of such mass of structure as will suffice for the requirements of the various furnaces to which it may be applied.

The brick used for this invention may be of any form or size, and built up in any manner which may be found most expedient consistent with the objects herein set forth.

To more fully describe my invention I refer to the drawings herewith, in which—

Figure 1 is a cross-section, showing the arrangement in that position. Letter A is the boiler, and O the brick structure thereunder.

Fig. 2 is a longitudinal section of the furnace and boiler, showing the said structure built in the flue-chamber under the boiler. Letter A is the boiler; B, the stepped arch; F, the fire-chamber; G, the ash-pit; H, the ash-pit door; I, the fire-chamber door; K, the tunnel; M, the flue-chamber; L, the rear arch; and O is my improvement in the flue-chamber.

The plan of building the structure in the flue-chamber (shown in the drawing) may be altered to suit the form of the chamber, or as is most convenient; but I prefer that it should be distributed as much as practicable beneath the entire under surface of the boiler. The heavier unconsumed gases coming in contact with this structure and passing through the spaces between the bricks thereof, their currents are broken up, and they are more perfectly mingled with oxygen, whereby the combustion becomes more complete and the heat more perfectly accumulated, conserved, and radiated.

This invention will apply to other furnaces by occupying with brick, as aforesaid, the flue-chamber of each between the fire-chamber and the rear end of the furnace.

What I claim, and desire to secure by Letters Patent, is—

An open structure composed of brick or other refractory material built in the flue-chamber of a smoke-consuming furnace, in combination with the horizontal or inclined grate, fire-chamber F, the tunnel K, downwardly-extending arch B, the flue-chamber M, and rear arch, L, substantially as shown, and for the purpose described.

DAVID SINTON.

Witnesses:
H. J. THOMAS,
JEREMIAH F. TWOHIG.