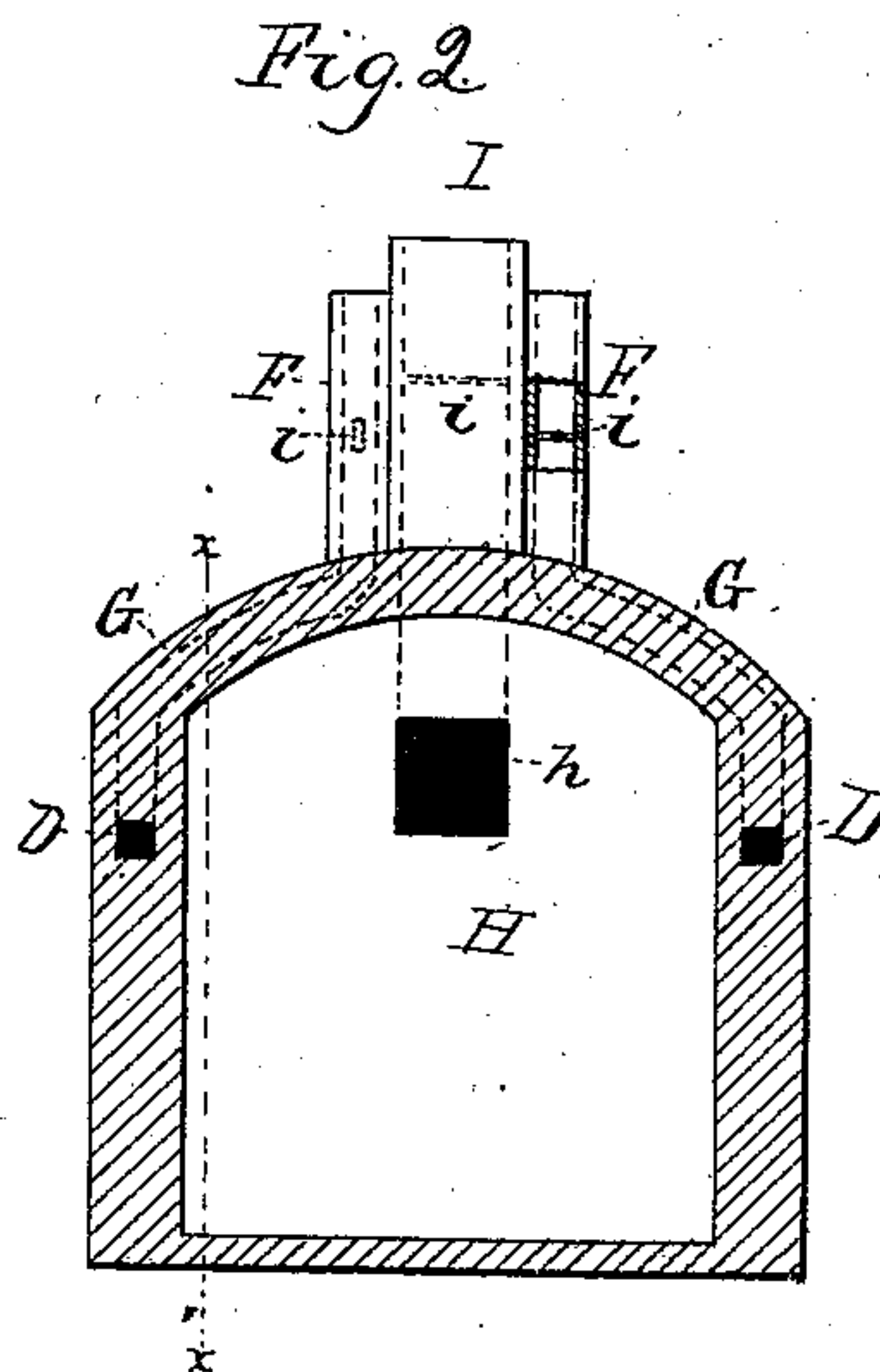
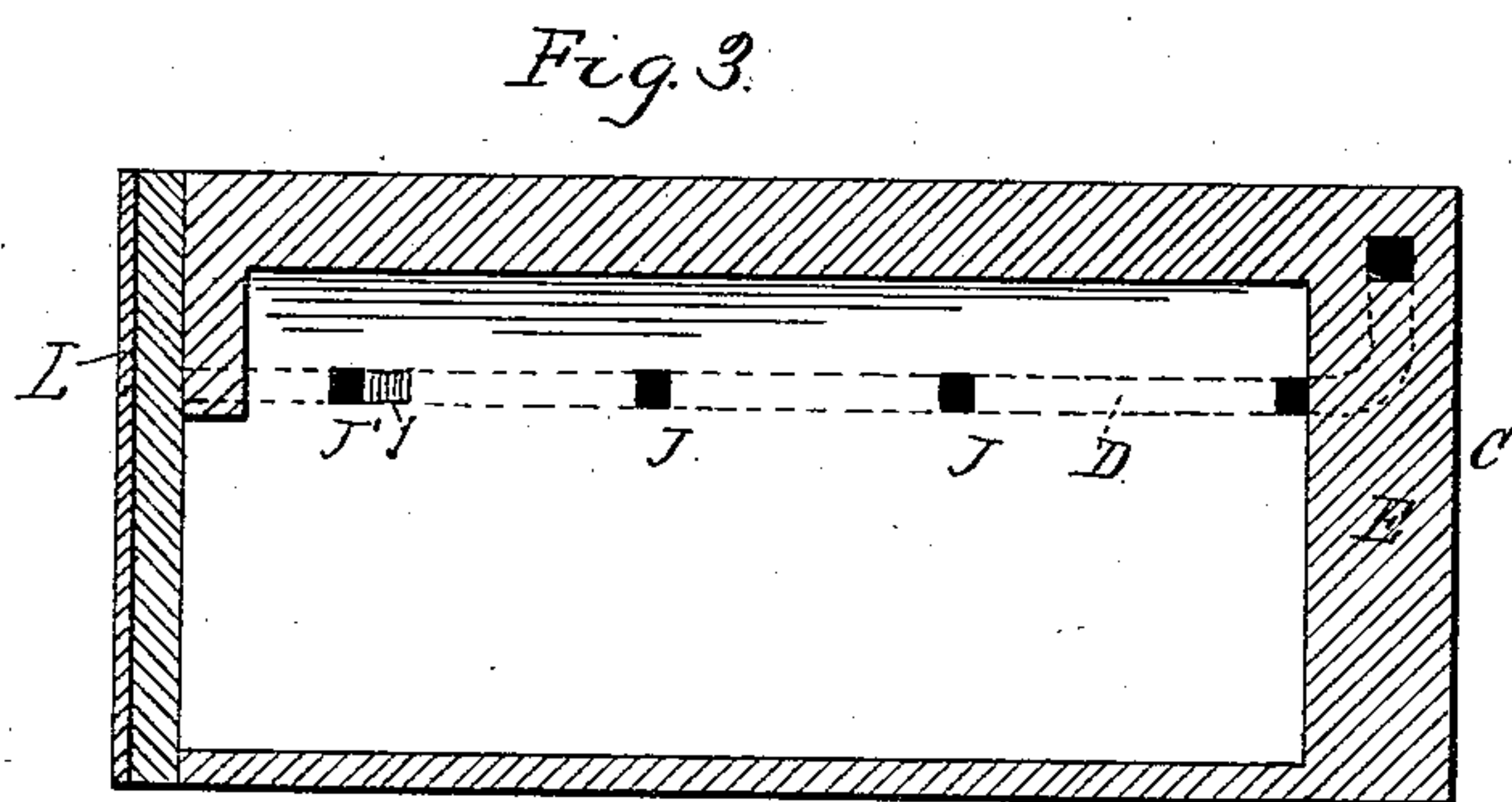
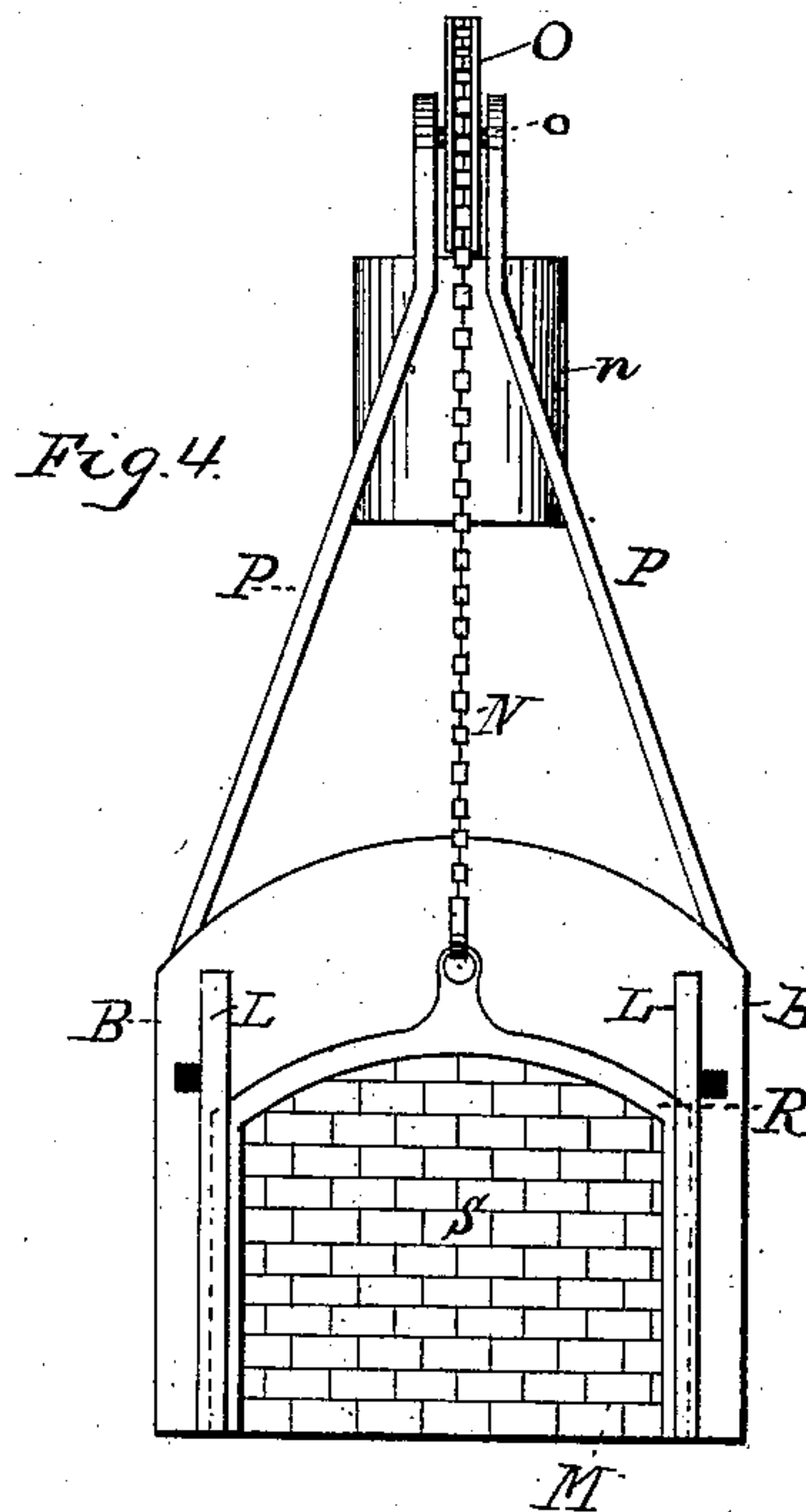
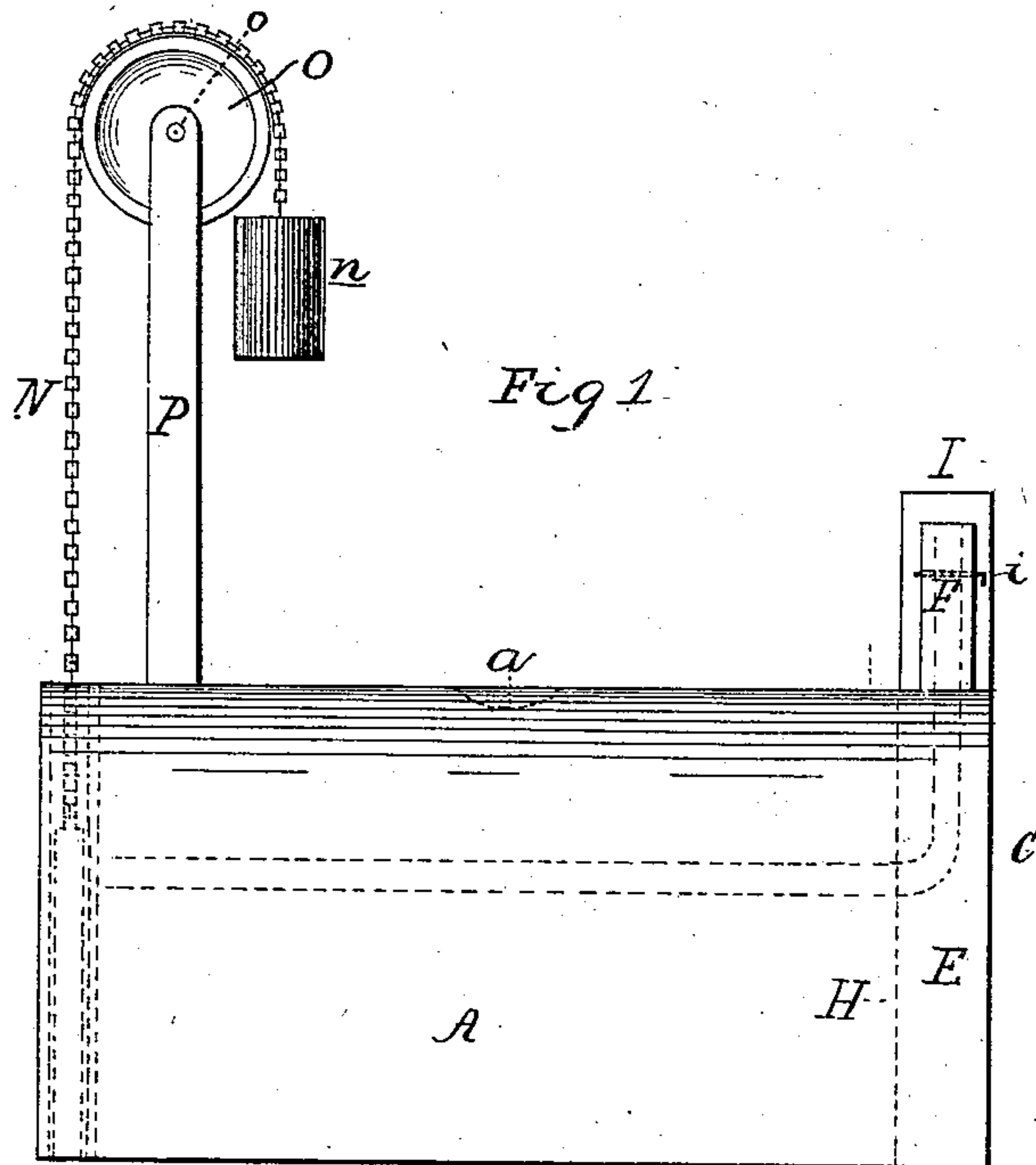


(No Model.)

J. BUTLER.  
COKE OVEN.

No. 289,887.

Patented Dec. 11, 1883.



WITNESSES:

W. P. Robertson.

E. A. Bond.

INVENTOR

Joseph Butler

BY

J. W. Robertson

ATTORNEY.



# UNITED STATES PATENT OFFICE.

JOSEPH BUTLER, OF KENNON, OHIO.

## COKE-OVEN.

SPECIFICATION forming part of Letters Patent No. 289,887, dated December 11, 1883.

Application filed June 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH BUTLER, a citizen of the United States of America, residing at Kennon, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Coke-Ovens, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to coke-ovens, the object being to provide an oven of improved construction, whereby an effective draft will be insured to aid combustion and to discharge the sulphur and gases arising from the coal.

The invention consists in the combination, with an oven and its main discharge flue or stack, of draft-passages arranged in the sides of the oven and adapted to admit air to the interior of the oven, and escape-passages for conveying the products of combustion to discharge-flues arranged independently of the main flue.

The invention further consists in the features of construction and combinations of parts hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my improved oven, with parts shown in dotted lines. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a longitudinal vertical section, and Fig. 4 is an end elevation of the oven.

A represents the oven proper, formed with a feed-opening, *a*, for coal, and the usual semi-elliptical top. The side walls, B B, and front end wall, C, are preferably of brick-work, and near the upper edge of each side wall, B, is formed a longitudinal passage, D, extending the entire length of the oven, and communicating at the forward end of the latter with escape-flues F F by means of curved connecting-flues G G. These curved flues G G are arranged within a space, E, formed by a partition, H, arranged parallel to the end wall, C, of the oven. The partition H is formed with an opening, *h*, through which the products of combustion pass to the main flue or stack I, arranged centrally between the flues F F. The inner sides of the walls B B are formed with a series of openings, J and J', to admit the products of combustion to the longitudinal passages D D. Adjacent to the rear

end of the oven, and preferably just forward of the rear openings, J', each of the longitudinal passages D is closed by a filling or block, *j*, of non-combustible material. Said passages D D are open at their rear ends, as shown in Fig. 4, to admit air to the oven to support combustion. Each of the discharge-flues F F and I is provided with a suitable damper, *i*.

From the construction and arrangement of flues thus described, it will be apparent that the air will enter the rear open ends of the passages D D, and pass through the openings J' to the interior of the oven. When the flues F F are closed by their dampers, the gases and other products of combustion will be discharged through the main flue I. It will be understood that the coal in the oven rests below the openings J and J' of the passages D D. After the oven has been started sufficiently, the main flue I is closed, thus compelling the escape of the gases through the passages D D and their escape-flues F F.

In Figs. 1 and 4 I have represented vertical guideways L L, secured to the inner sides of the rear ends of the sides B B of the oven. Between these guideways L L is arranged a vertically-sliding gate, M, secured at its upper end to a chain, N, which passes over a pulley, O, mounted upon a shaft, *o*, supported in bearings or standards P P, secured to the oven. The chain N is provided with a counterbalance-weight, *n*.

The sliding gate M consists of a metallic frame, R, and a filling or body portion, S, of brick-work. The gate as thus constructed is well adapted to resist the heat of the oven, and is therefore much more durable than the ordinary metallic door or gate, and the devices for sliding the gate admit of the ready opening and closing of the oven.

What I claim as new is—

1. In a coke-oven, the combination, with side walls, each formed with a longitudinal passage or flue communicating with the interior of the oven by a series of openings, as described, of escape-flues communicating with said longitudinal passages, and arranged independently of the main flue or stack of the oven, substantially as set forth.

2. In a coke-oven, the combination, with the

longitudinal passages formed in the side walls of the oven, and provided with openings J and J', of blocks or fillings for closing said passages, escape-flues communicating with said  
5 passages, and a main discharge-flue, each of said flues being provided with a damper, substantially as set forth.

3. In a coke-oven, the combination, with the longitudinal passages formed in the side walls  
10 of the oven, and provided with a series of openings, as described, and closed near their rear ends by blocks or fillings of non-combustible

material, of a partition, H, having an escape-opening, the main discharge-flue, the escape-flues F F, and connecting-flues G G, substantially as set forth. 15

In testimony whereof I affix my signature, in presence of two witnesses, this 9th day of June, 1883.

JOSEPH BUTLER.

Witnesses:

G. W. McGUIRE,  
H. C. BARTOW.