

(No Model.)

2 Sheets—Sheet 1.

E. PEARSON & J. KITSON.

FURNACE FOR MELTING GLASS, &c.

No. 330,050.

Patented Nov. 10, 1885.

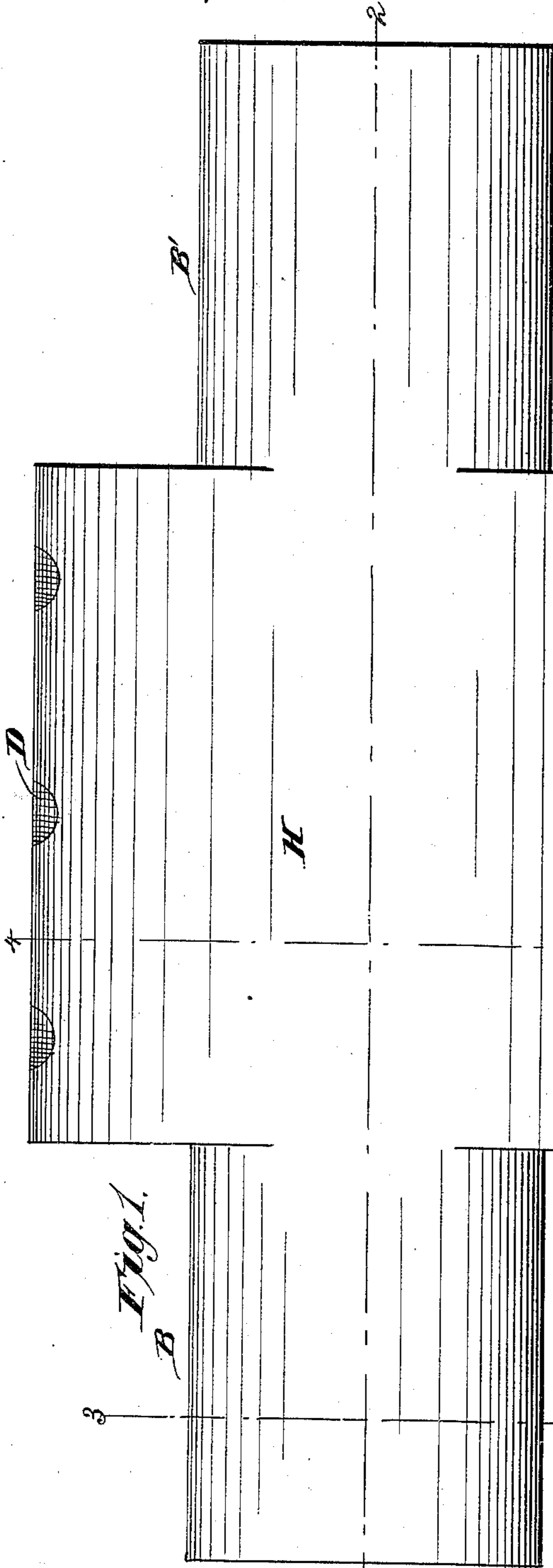


Fig. 1.

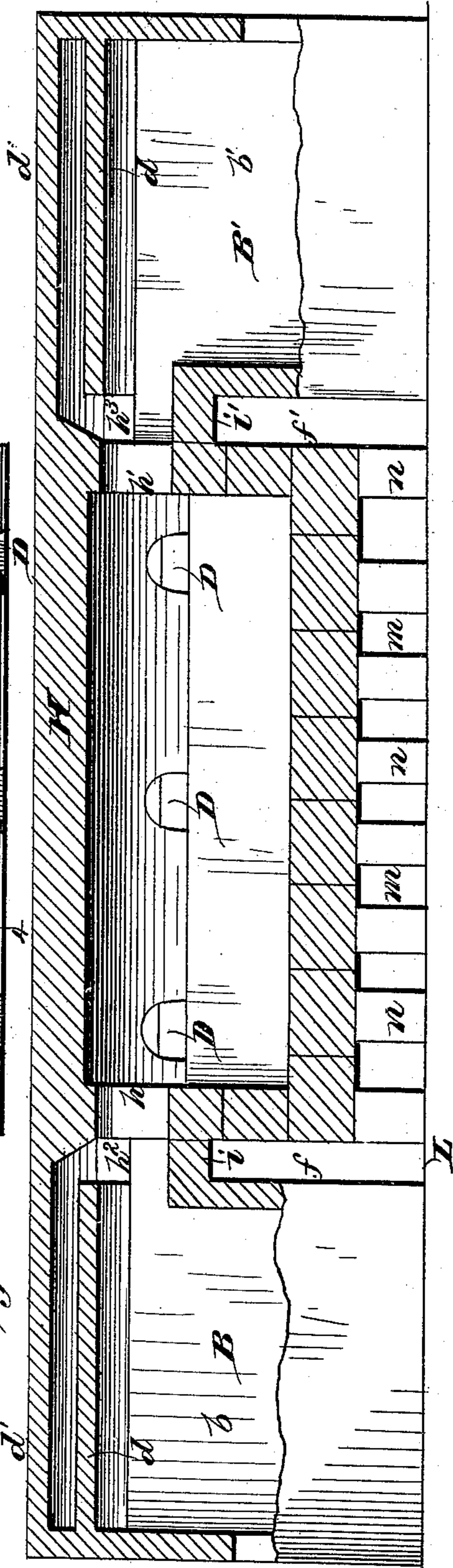


Fig. 2.

Witnesses.

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Geo. C. Boulton

Inventors

Edward Pearson & John Kitson

By A. Wells,  
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(No Model.)

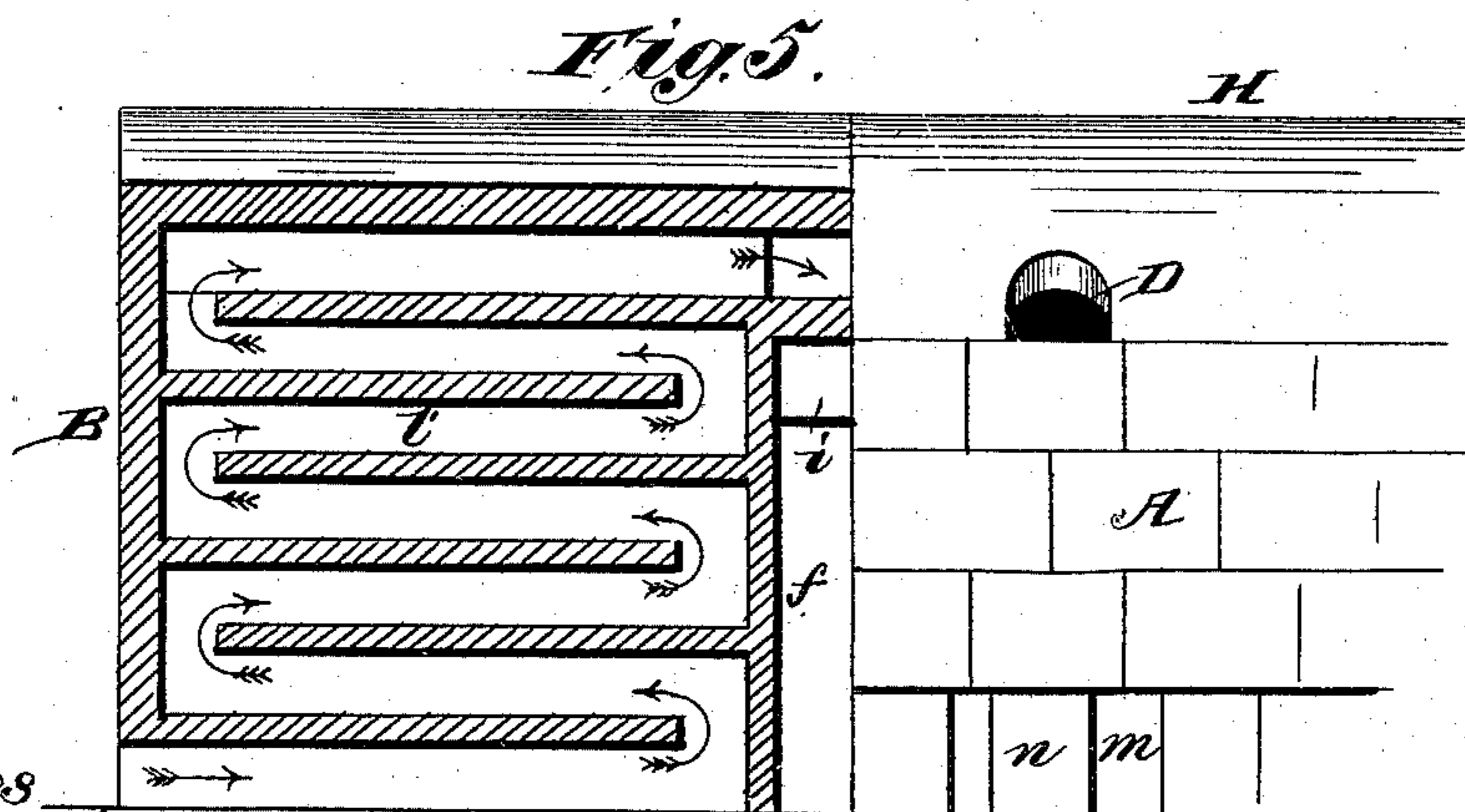
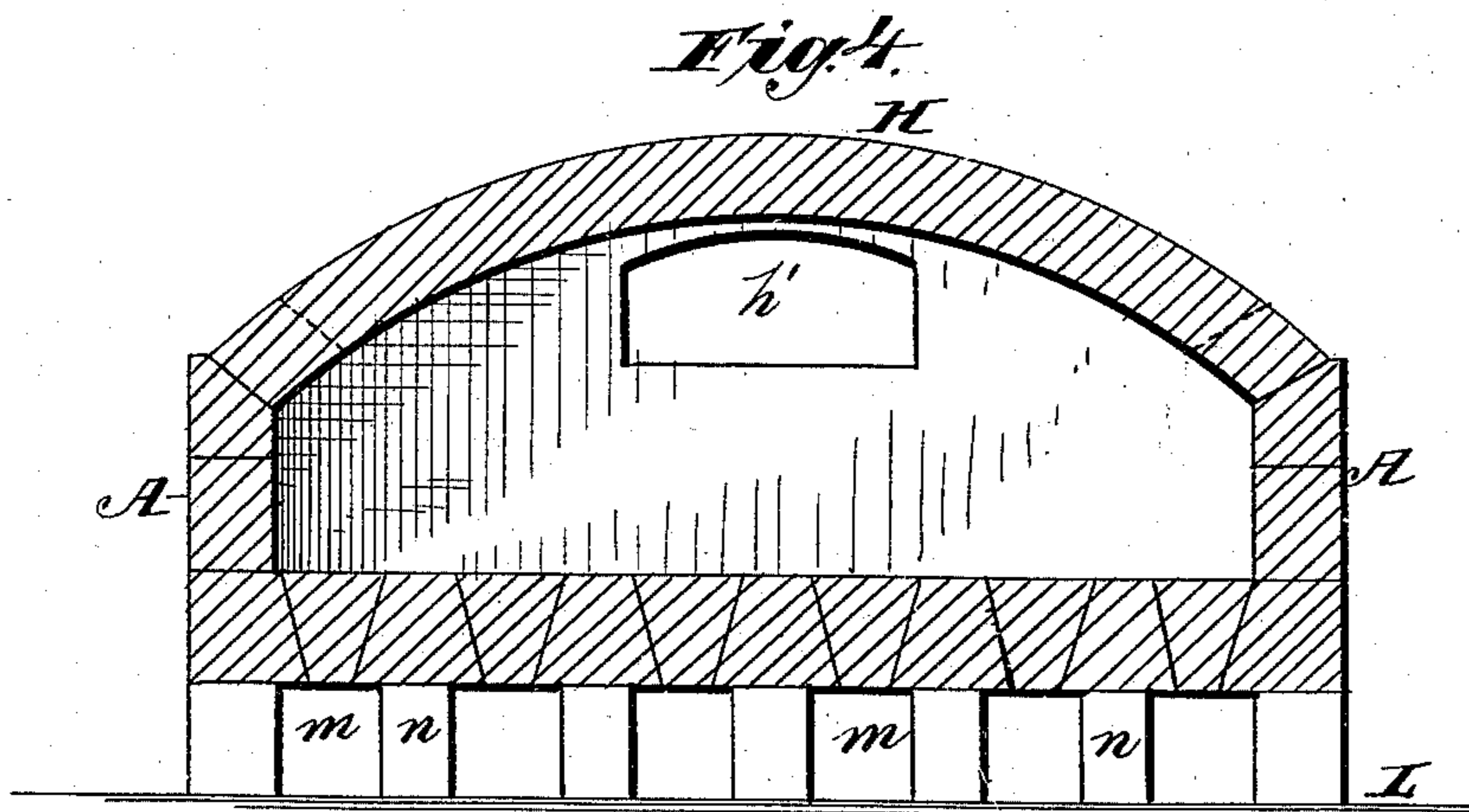
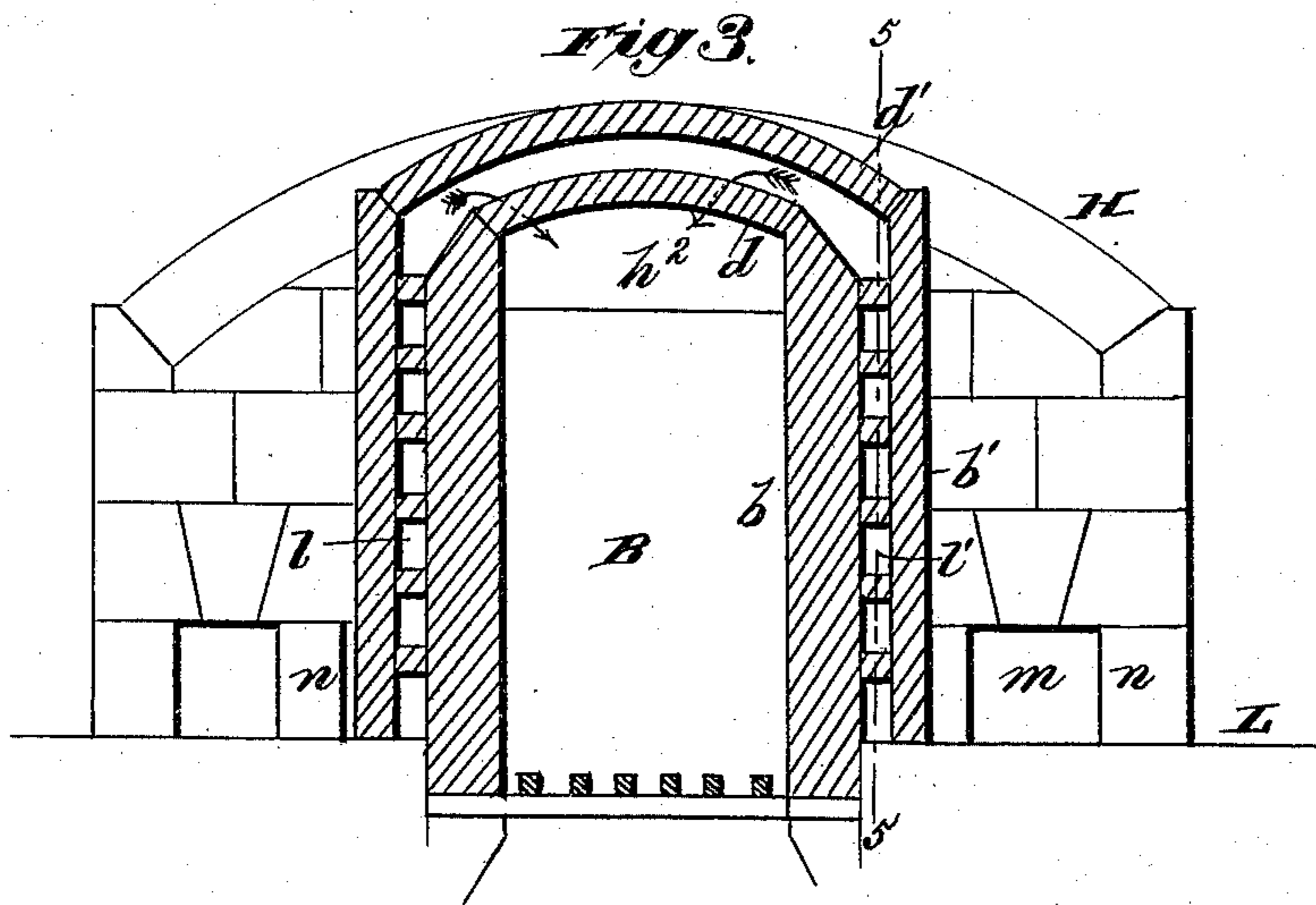
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Robert Everett.

Geo. C. Poulton

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Edward Pearson & John Kitson

By Edward A. Dick

their Atty.

# UNITED STATES PATENT OFFICE.

EDWARD PEARSON AND JOHN KITSON, OF CADIZ, OHIO.

## FURNACE FOR MELTING GLASS, &c.

SPECIFICATION forming part of Letters Patent No. 330,050, dated November 10, 1885.

Application filed June 25, 1885. Serial No. 169,743. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD PEARSON and JOHN KITSON, of Cadiz, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Furnaces for Melting Glass, &c., of which the following is a specification.

This invention has relation to improvements in furnaces for melting glass, &c.

10 The object of our invention is to produce a glass-melting furnace provided with a rectangular tank having a bottom composed of beveled stone or other suitable material, erected on pillars at suitable distances apart to form  
15 air-spaces, for the purpose of keeping said bottom from bulging or warping, and also providing the tank with fire-boxes at each end with double crowns and with air-spaces in the side walls thereof, communicating with  
20 said crowns, to throw the flame into the tank to thoroughly melt the batch or raw material contained therein.

The invention consists in the novel construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a top plan view of our invention. Fig. 2 is a central longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on line 3 3 of Fig. 1. Fig. 4 is a transverse section on line 4 4, Fig. 1; and Fig. 5 is a vertical section on the line 5 5, Fig. 3.

Referring to the drawings, the letter L represents the ground-work of our improved furnace, upon which we arrange pillars *n* at suitable distances apart to form air-spaces *m*. We erect on these pillars the bottom of the tank, which is composed of stone or other suitable  
40 material made in beveled or key shape form, with each alternate piece resting on one of said pillars, whereby cold air is admitted under the bottom of the tank by means of said air-spaces *m*, for the purpose of preventing the heat from warping or bulging the joints of said bottom and coming in contact with the material contained in said tank. The sides  
45 A of the tank can be constructed of the same material as its bottom, with the exception of building it of plain or square pieces. The tank is made square or in rectangular form,

and is provided with a crown or semicircular shaped top portion, H, having openings *h* and *h'* at each end.

The letters B and B' designate two fire-boxes 55 or heating-furnaces, having side walls, *b* and *b'*, the upper rear ends of which are provided with necks or bridges *i* and *i'*, which are connected with the ends of the tank, and above the rear walls of the fire-boxes are openings *h*<sup>2</sup> 60 and *h*<sup>3</sup>, which communicate with the openings *h* and *h'* of the crown head H, for the passage of the flame from the furnaces into the tank. The top portions of the crown-heads *d* and *d'* of the fire-boxes are made double, as shown, 65 and between the side walls, *b* and *b'*, of said fire-boxes are arranged hot-air flues *l* and *l'*, which communicate with said double crown-heads *d* and *d'*, as shown by the arrows, and is driven therefrom into the tank, by means of 70 which the flame or blast from the furnaces is evenly distributed for melting the batch or raw material contained therein.

Below or under the necks *i* and *i'*, and a short distance from the ends of the tank, are 75 spaces or recesses *f* and *f'*, which prevent the heat from warping or otherwise injuring the construction in the ends of the tank. The crown-head of the tank is provided with charging or working-out holes D, which also allow 80 the flame to pass through them to exclude cold air from the tank.

At the corners of the tank we erect suitable stacks, which are not shown in the drawings.

Below the grate-bars of the furnaces we arrange suitable vats or ash-pits of any well-known construction, which we do not deem necessary to describe in this specification or illustrate in the drawings.

We wish it to be understood that we do not 90 confine ourselves to the precise construction of our furnace herein shown and described, as we may vary the same without departing from our invention and the true spirit and scope thereof.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

In a furnace for melting glass, the combination, with the tank having openings *h* *h'*, of 100 the boxes B B' at each end of said tank, connected by necks *i* *i'*, and having openings *h*<sup>2</sup> *h*<sup>3</sup>,

communicating with the openings  $h$   $h'$  of the tank, and the said fire-boxes provided with hot-air flues  $l$   $l'$  in the side walls thereof, communicating with the spaces between the double  
5 crown-heads  $d$   $d'$  of the fire-boxes, whereby said air is driven through the openings  $h^2$   $h^3$  of said boxes and through the openings  $h$   $h'$  of the tank, as shown and described.

In testimony whereof we have hereunto set our hands this 17th day of June, 1885.

EDWARD PEARSON.  
JOHN KITSON.

Witnesses:  
W. G. ESTEP,  
HARRY JONES.