

(No Model.)

D. S. LOE.  
FIRE PLACE.

No. 282,740.

Patented Aug. 7, 1883.

Fig. 1.

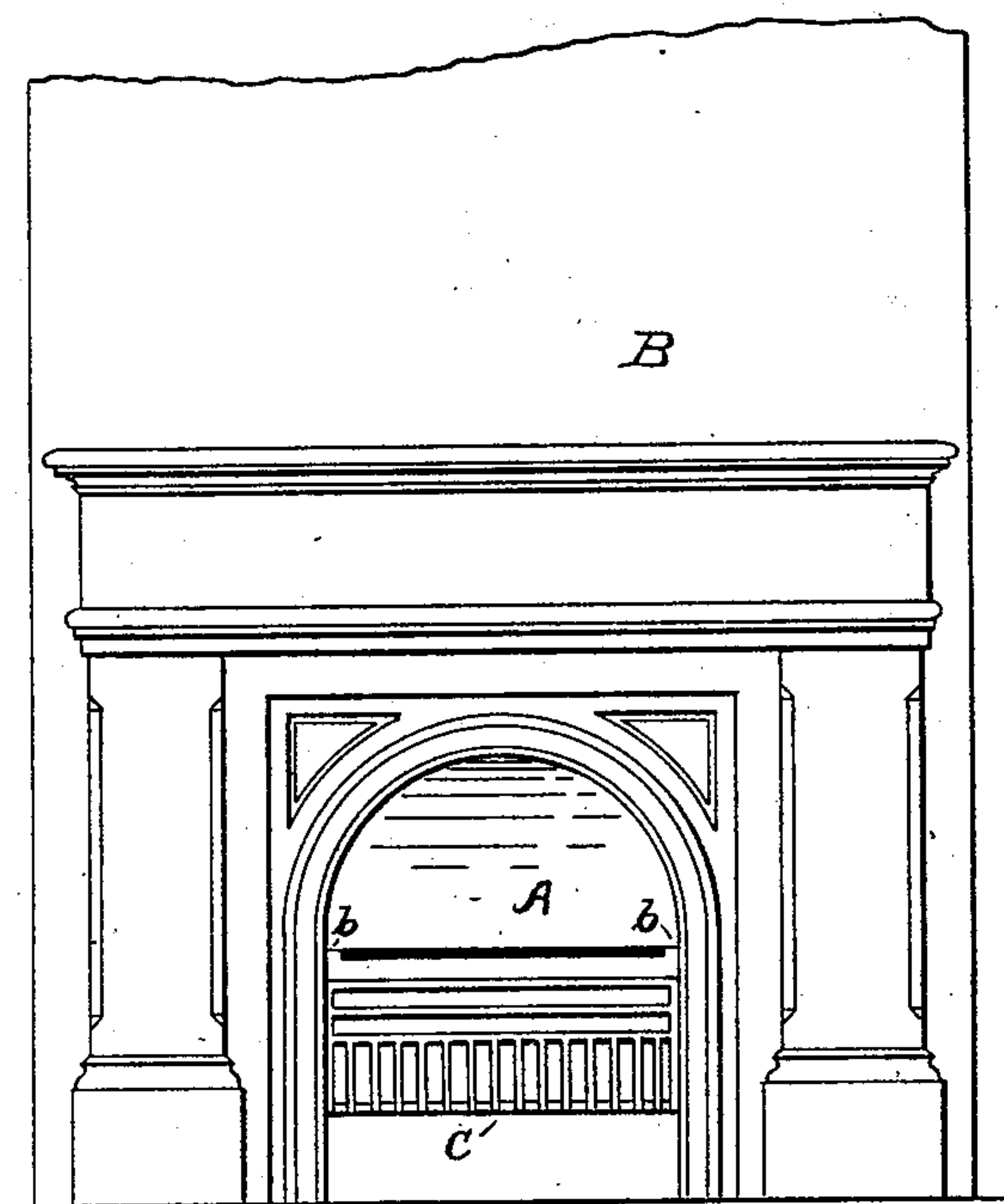


Fig. 2.

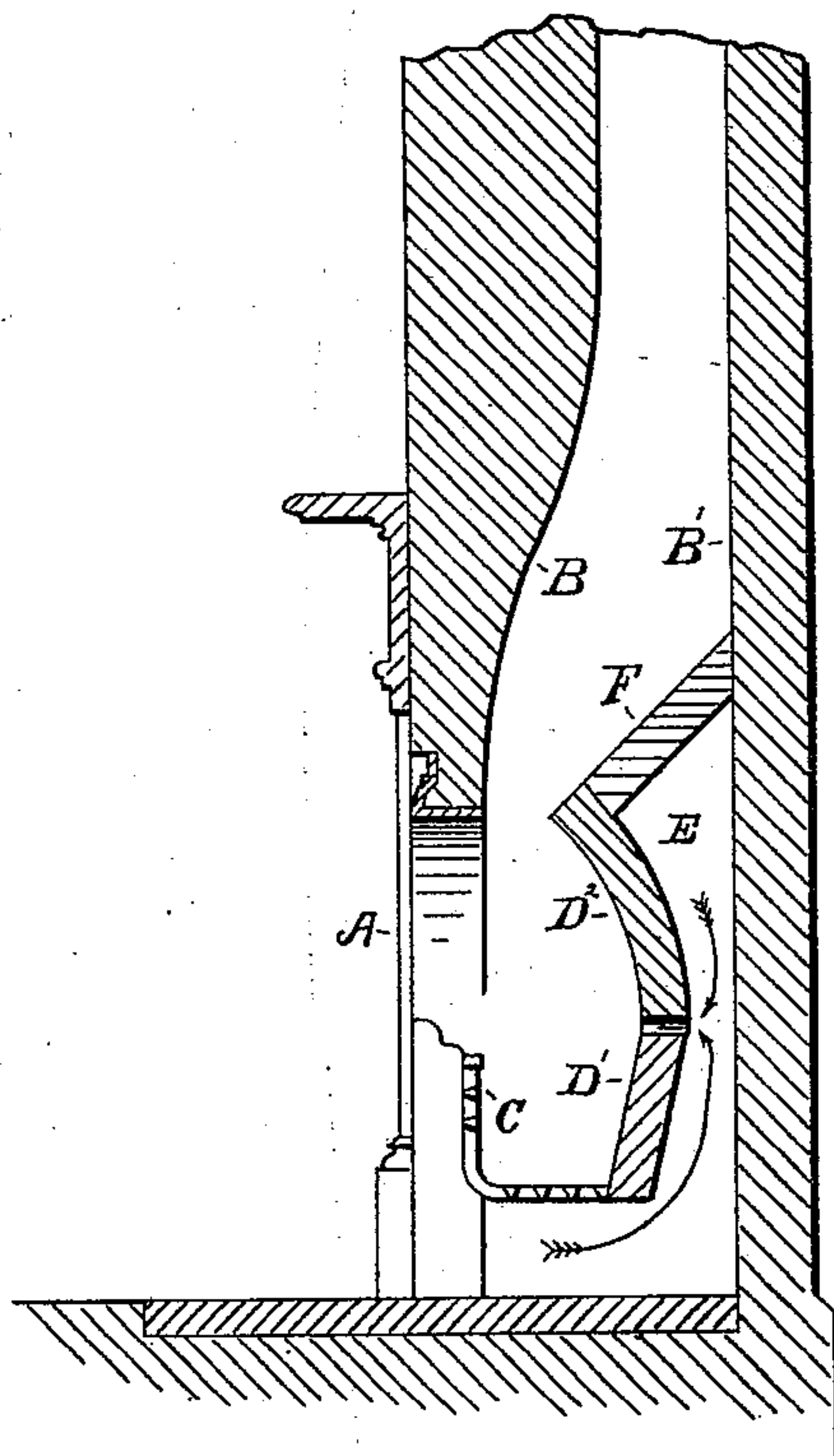
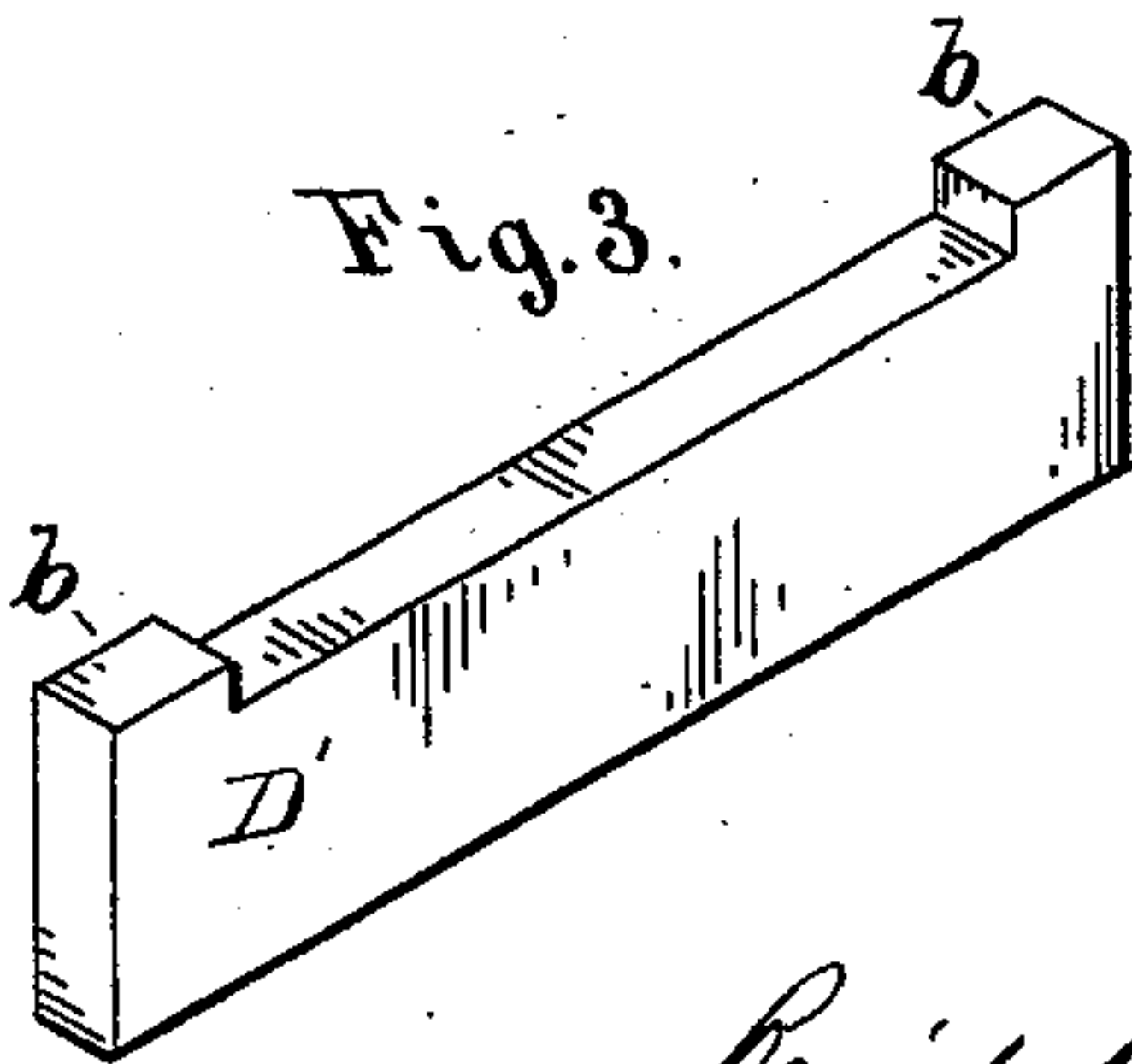


Fig. 3.



WITNESSES.

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INVENTOR

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# UNITED STATES PATENT OFFICE.

DAVID S. LOE, OF POORMAN, OHIO.

## FIRE-PLACE.

SPECIFICATION forming part of Letters Patent No. 282,740, dated August 7, 1883.

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

*To all whom it may concern:*

Be it known that I, DAVID S. LOE, a resident of Poorman, (Poorman P. O.,) in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Fire-Places; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to utilize the heat of the back wall to supply a sufficient quantity of warm fresh air to the bed of coals near the top of the fire at the back of the grate, to ignite the gases and consume the smoke arising from the same; and to this end my invention consists in the general construction and arrangement of the fire-place, whereby this object is attained in a simple and effective manner.

In the drawings, Figure 1 is a front elevation, and Fig. 2 a vertical cross-section, of a fire-place showing my improvements; Fig. 3, a detail of tile used in the back wall.

Like letters of reference refer to like parts.

A represents the fire-place opening in the chimney; B and B', front and rear walls.

C is a grate, which may be of any suitable shape or style, placed preferably a few inches back from the front of the opening, resting at each end on the masonry, or on hooks provided for the purpose.

D<sup>1</sup> D<sup>2</sup> are fire-clay tile of suitable thickness—usually two and a half inches thick—extending lengthwise of the grate and resting on the jambs at each side to form the back wall of the grate. The tile D<sup>1</sup> is purposely made about the height of the front of the grate, and is formed with two raised blocks, *b b*, three-sixteenths of an inch high, one on each end, which serve as supports for the tile D<sup>2</sup>, placed above it. When the edges of the two tile are brought together in their proper position in the back wall, they form a slit or crevice about three-sixteenths of an inch wide, extending lengthwise of the grate into the warm-air chamber. For an ordinary fire-place I find this width of crevice sufficient, supposing soft coal to be used for fuel.

The tile D<sup>2</sup> is of ordinary construction, and can be either straight or curved on the inner face, as may be desired.

F is a tile which forms a covering for the air space or chamber E, and is usually plastered on top to make it air-tight. Ordinary brick can be used for the same purpose.

The space under the grate, and adjacent to the back wall, is left entirely open back to the rear wall of the chimney and up around the back wall to the throat of the fire-place, to permit of a free circulation of air, and also obtain the largest possible radiating-surface to heat the air before it is drawn into the fire.

It is obvious that the lower edge of the tile D<sup>2</sup> could be cut out or recessed to form a crevice when placed on the lower one, in the same manner as the recess or depression in the upper edge of the lower tile, D<sup>1</sup>; but this I do not consider the best plan, for the reason that the upper portion of the fire-wall of a fire-place is made in so many different shapes and sizes that it would be expensive and troublesome to form each style with a recess along its edge, whether cut by hand or shaped in the patterns.

The air entering the fire in a broad thin stream or stratum just at the top of the same readily commingles with the smoke and gases and materially aids thorough combustion.

In a fire-place constructed in this manner there is no trouble from the sulphur rising into the room when the fire is stirred, for the heat of the fire causes an upward current back of the grate, which carries with it all dust caused by lifting the ashes or poking the fire.

My improvement can be applied to any old fire-place by simply resetting the grate and forming the warm-air chamber in the rear, and it is also applicable to all kinds of open-grate stoves, where clay tile or heavy metal plates are used.

I am aware that a fire-place having a warm-air chamber in the rear of the back wall, and provided with passages through said back wall from the warm-air chamber to supply warm fresh air at or near the top of the fire-grate, is not new, and I do not broadly claim such construction.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

In a fire-place, a back wall composed of a

tile, D', recessed on the upper edge, and a tile,  
D<sup>2</sup>, adapted, when placed in position upon the  
said tile D', to form a continuous horizontal  
air-opening across the entire width of the grate-  
5 back from the warm-air chamber at the rear  
to the fire in the grate, substantially as de-  
scribed.

In testimony that I claim the foregoing as  
my own I hereby affix my signature in presence  
of two witnesses.

DAVID S. LOE.

Witnesses:

ALEXANDER LYAL,  
GEO. K. STORM.