

G. H. Nott.

Boiler Furnace.

No. 95,601.

Patented Oct. 5, 1869.

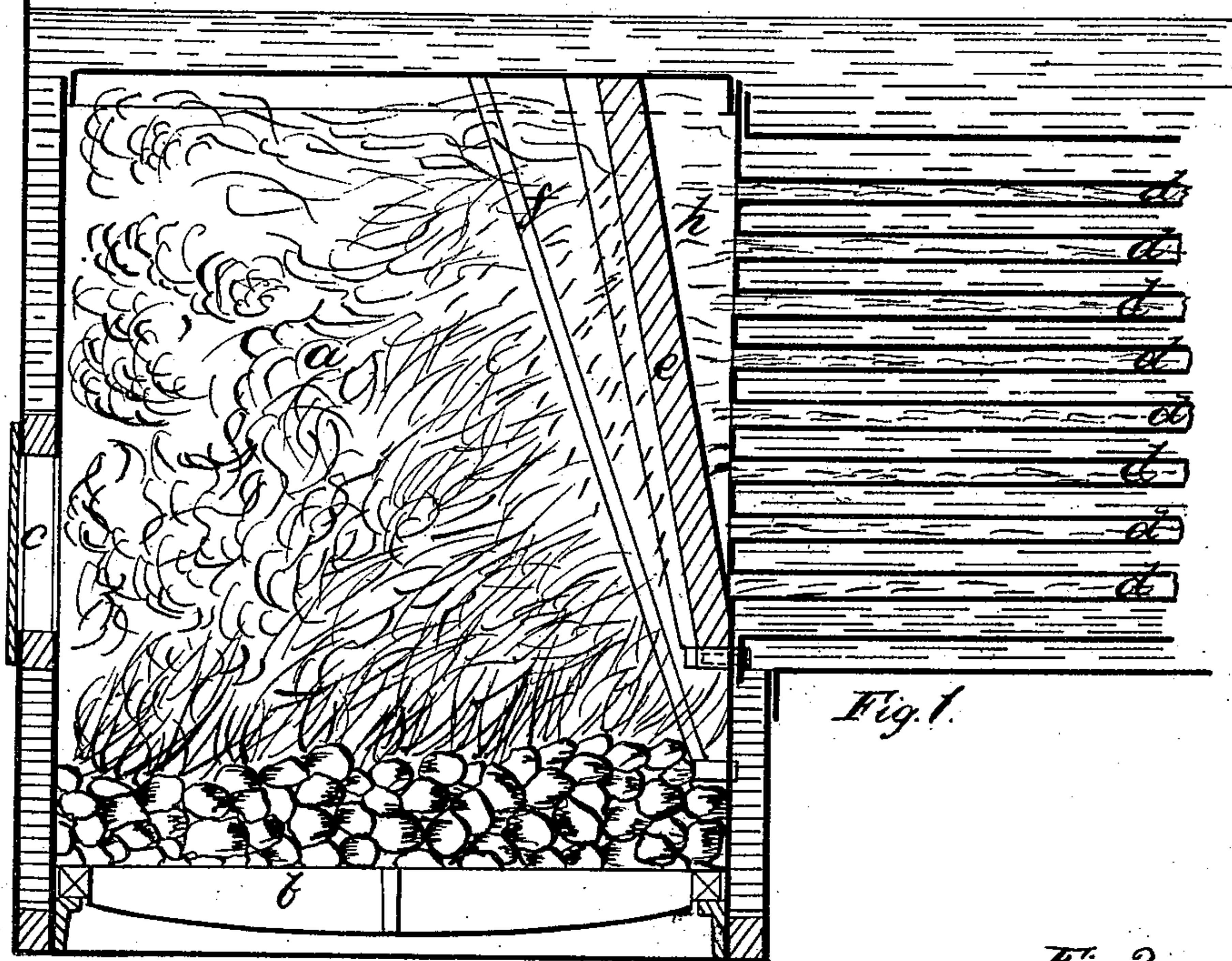


Fig. 1.

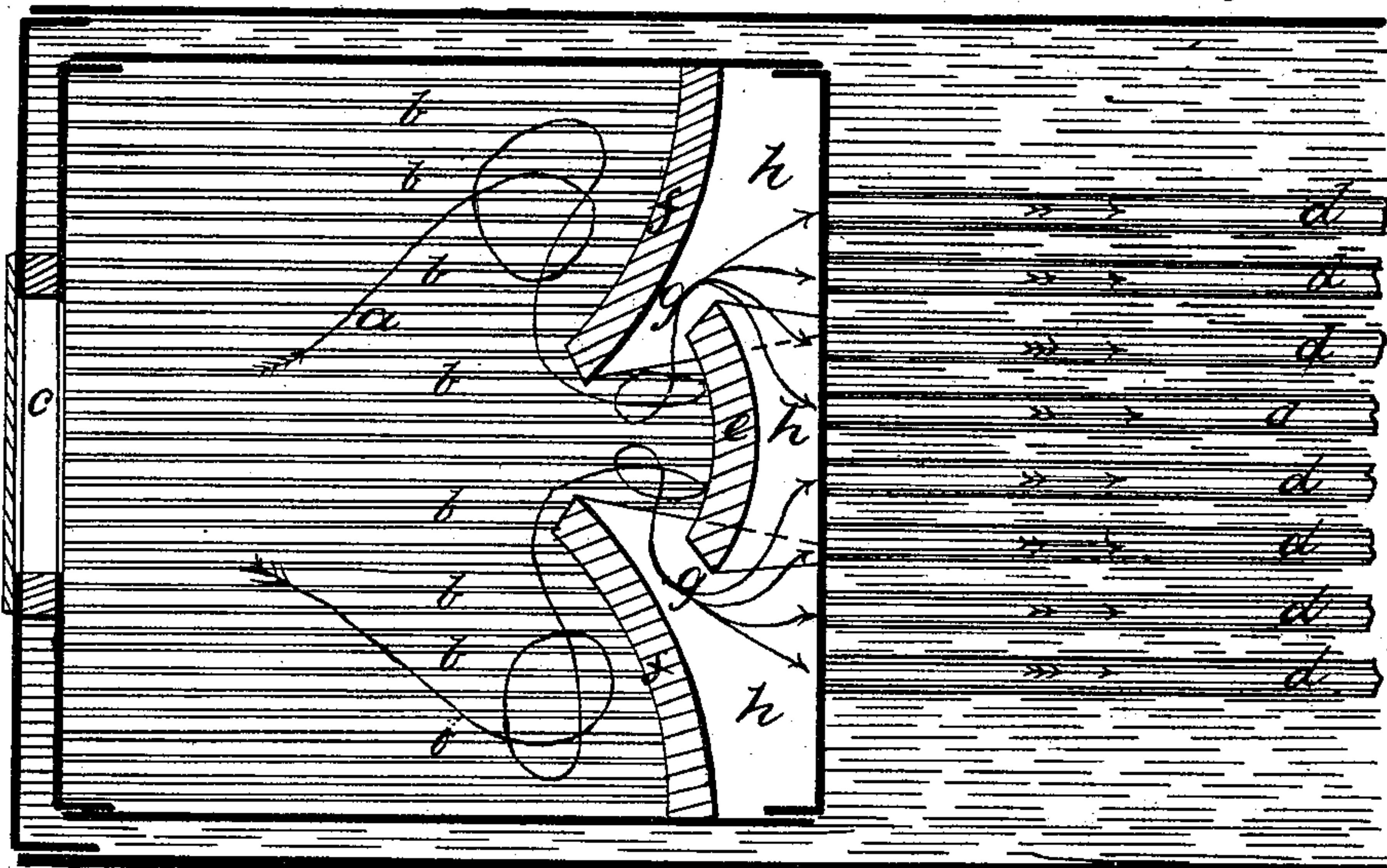


Fig. 2.

Witnesses

Alban G. Andren,

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# United States Patent Office.

GORDON HALL NOTT, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 95,601, dated October 5, 1869.

## IMPROVEMENT IN BOILER-FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GORDON HALL NOTT, of 61 Water Street, Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal section of the furnace, and Figure 2 is a ground plan of the same furnace.

The nature of my invention consists in providing a protection for the tubes and tube-sheets, as well as bringing the unconsumed fuel that otherwise would be lost into the central or hottest portion of the fire-box or furnace.

On the annexed drawings—

*a* is an ordinary furnace or fire-box, with grate-bars *b*, whereupon rest the fuel, as usual.

*c* is the door for feeding the furnace.

*d d* are tubes, through which the heat passes after leaving the furnace.

*e* is a solid wall or division, represented on the drawing as being made of fire-brick, extending from the crown-sheet to a place a little lower than the lowest row of tubes.

*f f* are solid walls or divisions, extending also from the crown-sheet to a place lower than the wall *e*, so as to allow a sufficiently large passage, *g*, for the gases to pass through between the walls before entering the tubes.

The working of my improved furnace may thus simply be described.

The burning fuel emits unconsumed smoke and gases, which readily pass away in an ordinary furnace, but with my improved one the smoke and gases strike solid walls *f f*, and are by this means thrown back again into the central or hottest place of the furnace, and there partially consumed. Afterward, the gases strike, in their way onward, the solid wall *e*, where the yet unconsumed parts rebound again into the central part of the furnace, to be yet more fully consumed.

The gases now pass between the walls *e* and *f f* into a space, *h*, behind, and enter then into the tubes or flues leading to the chimney.

It will readily be understood, by the above description, the solid walls *e* and *f f* are safe means for the protection of the tubes and tube-sheet, as the exceedingly hot gases arising from the fuel do not at first come in contact with the tubes and tube-sheet, until the gases have first struck against the solid walls and there condensed a portion of their heat.

As a natural consequence, the solid walls also arrest and rebound such sparks and cinders that may be drawn into the tubes from the grate-bars.

Having thus described the nature and working of my invention,

I wish to secure by Letters Patent, and claim—

The construction and arrangement of the protective walls *e* and *f f*, all facing the fire, with their concave sides before the tube-sheet in the furnaces of boilers, for the purpose as fully set forth and described.

GORDON H. NOTT.

Witnesses:

ALBAN G. ANDRÉN,  
A. L. B. STEVENS.