

(No Model.)

2 Sheets—Sheet 1.

W. A. HUGHES.
FIREPLACE OR STOVE.

No. 580,315.

Patented Apr. 6, 1897.

Fig. 1

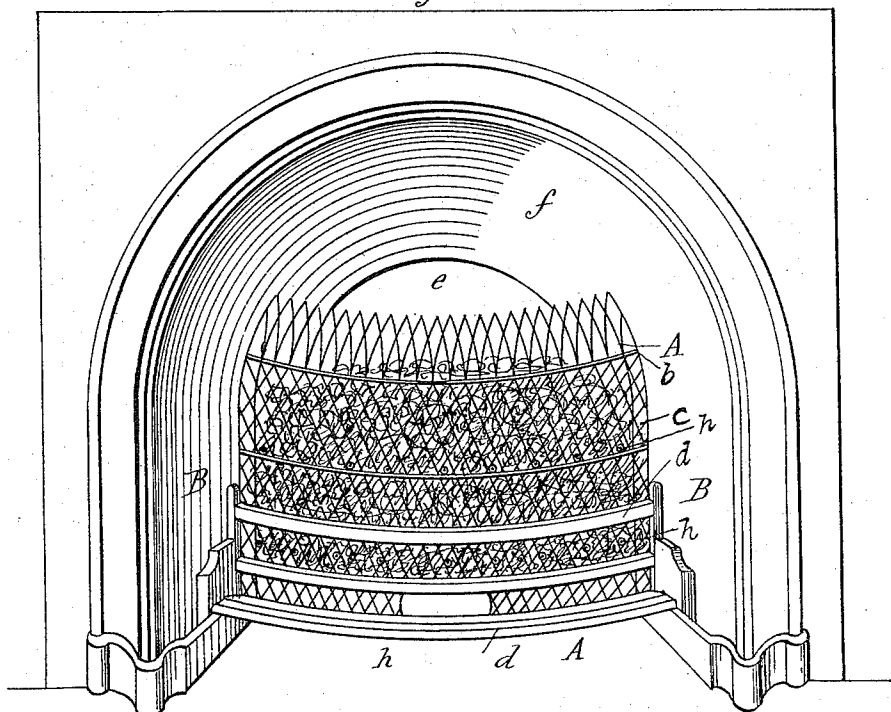
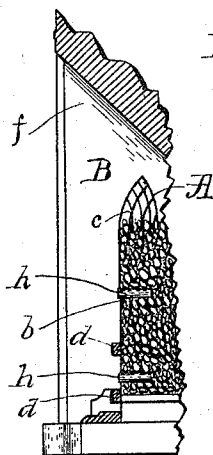


Fig. 2.



Witnesses

Chas. Lucas
Ferdinand J. Hole

Inventor

Wm. A. Hughes

(No Model.)

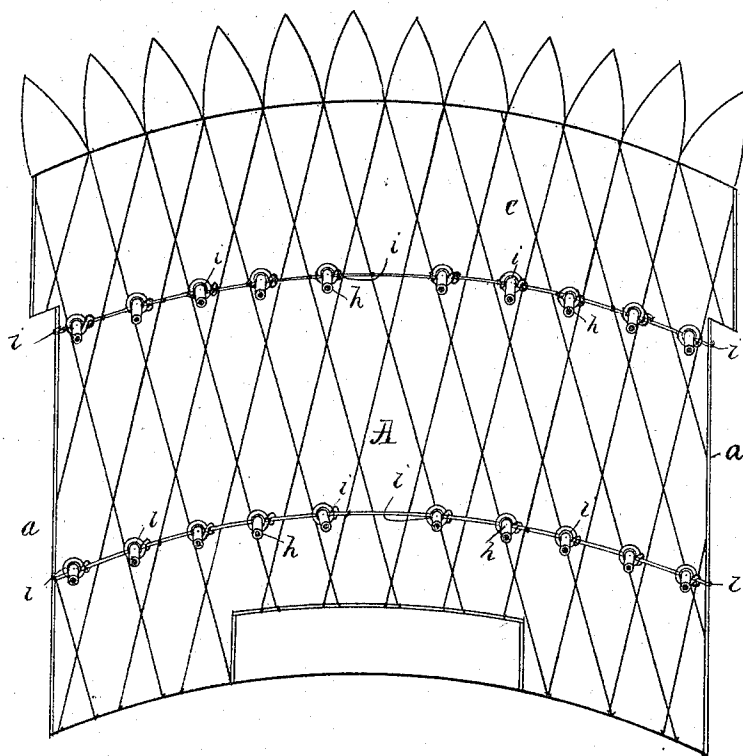
2 Sheets—Sheet 2.

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Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILSON ALFRED HUGHES, OF LONDON, ENGLAND.

FIREPLACE OR STOVE.

SPECIFICATION forming part of Letters Patent No. 580,315, dated April 6, 1897.

Application filed March 17, 1896. Serial No. 583,611. (No model.) Patented in England February 5, 1895, No. 2,470.

To all whom it may concern:

Be it known that I, WILSON ALFRED HUGHES, a subject of the Queen of Great Britain and Ireland, and a resident of 53 Victoria Street, Westminster, London, England, have invented certain Improvements in or Relating to Fireplaces or Stoves, (for which I have obtained a British patent, No. 2,470, dated February 5, 1895,) of which the following is a specification.

My invention relates to improvements in means for promoting the combustion of fuel in grates, and more particularly to an improved open-work frame inclosing the fuel and provided with tubes adapted to extend into the fuel, whereby a more perfect draft through the same may be had, which is accomplished by compelling most of the draft which otherwise passes over top of the fuel and up the chimney to pass first through the fuel and then up the chimney.

To more fully describe my invention, reference is had to the accompanying drawings, in which the same parts are represented by the same letters throughout the several views.

Figure 1 represents in front elevation a fireplace provided with my improved fire-frame. Fig. 2 represents a vertical section through the fireplace and frame on a somewhat smaller scale, with parts broken away to show the position of the air-tubes relative to the fuel; and Fig. 3 represents an enlarged perspective view of my invention.

My improved device consists, among other parts, of an open-work or skeleton frame A, composed of an open-work wire structure c, with cross-pieces or strengthening-ribs b and upright end pieces a, attached to the said ribs. The pieces b are curved to conform to the curvature of the ordinary grate-bars d and slightly shorter, so that the skeleton frame will fit just inside of the said bars. Along the ribs or strengthening-bars b are attached a plurality of short tubes h. These tubes may be attached to the ribs b by passing a wire i around them and securing the wire to the ribs, though any simple and obvious means may be employed for attaching the tubes to the frame.

The frame A is placed in position behind the front grate-bars d of the ordinary fireplace B and the fuel placed in the grate behind the said frame. As the frame A extends

almost to the top of the fireplace B, the fuel may be filled almost to the top of the fireplace, and owing to the skeleton form of the frame all of the air except the very small portion which passes through the space e will pass through the fuel.

Currents of air are admitted into the body of the fuel also through the tubes h, which extend thereinto, as shown. The space e at the top of the fireplace is left for the purpose of stoking.

That by the herein-described arrangement a more perfect combustion of the fuel in fireplaces may be had is obvious, and not only is the fuel burned more thoroughly, but may be made to extend out from the fireplace a greater distance than the usual construction of grates will admit of, which in itself warrants a more perfect heating of the room in which the fireplace should be located. It is obvious also that the shape of the framework and the positions of the tubes and other obvious modifications may be made without departing from the spirit of my invention, and while the drawings show my improved frame applied to an ordinary fireplace it is obvious that the same may be applied as well to stoves and almost any heating arrangement using solid fuel.

Having particularly described and ascertained the nature of my said invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A device for promoting the combustion of fuels, which consists of an open-work frame having tubes extending into the fuel for conveying air thereto, substantially as described.

2. An attachment for fireplaces or grates consisting of a skeleton or open frame adapted to inclose a part of the front of the fireplace and transverse tubes secured to the said frame and adapted to project into the fuel for conveying air thereto, substantially as described.

3. A device for promoting the combustion of fuel, which consists of an open-work frame with ribs or stiffening-bars across the same, and a plurality of tubes attached thereto and adapted to extend into the said fuel, substantially as described.

WILSON ALFRED HUGHES.

Witnesses:

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FERDINAND J. HOLE.