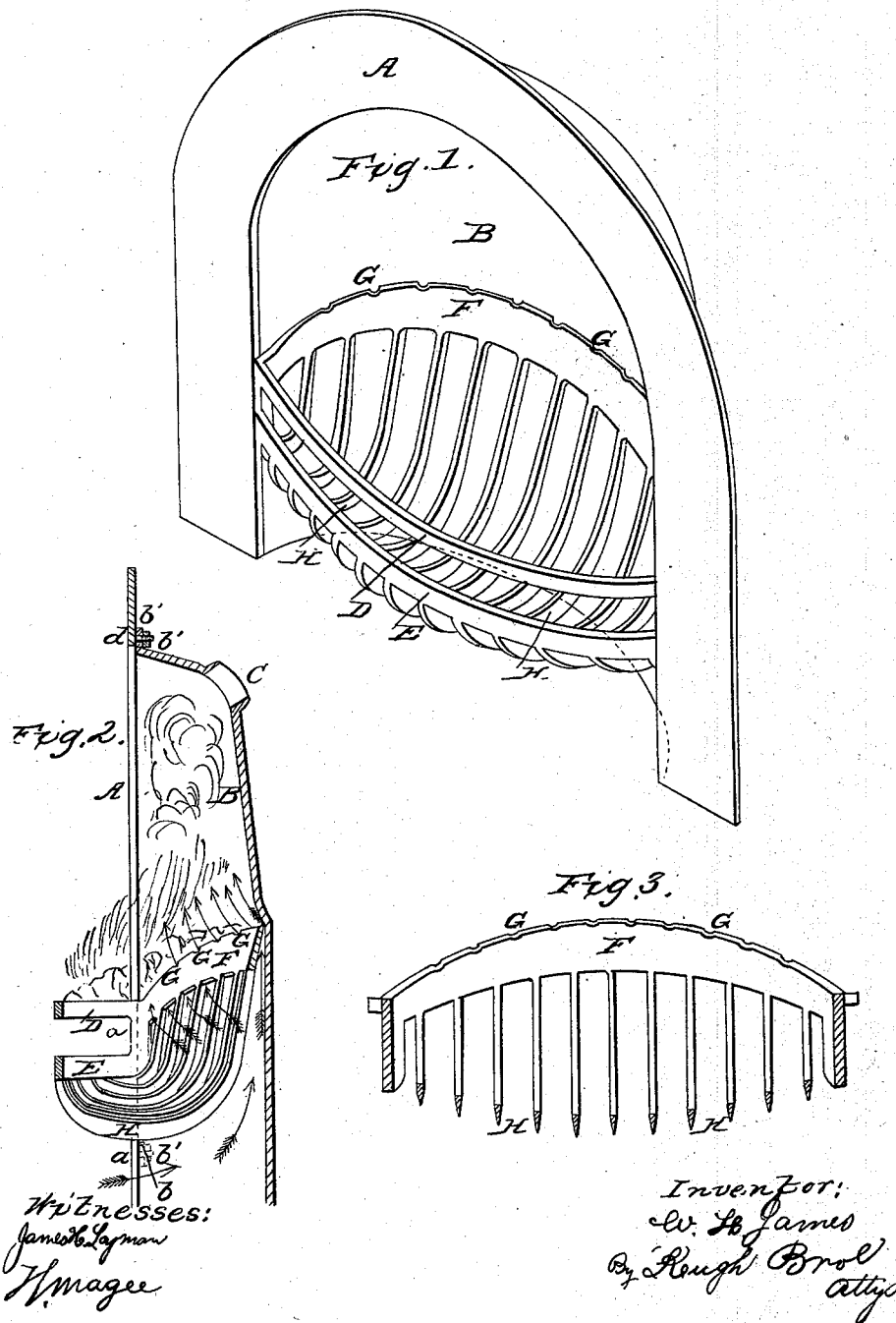


W. H. JAMES.

Fireplace.

No. 47,423.

Patented April 25, 1865.



UNITED STATES PATENT OFFICE.

WILLIAM H. JAMES, OF CINCINNATI, OHIO.

FIRE-PLACE.

Specification forming part of Letters Patent No. 47,423, dated April 25, 1865.

To all whom it may concern:

Be it known that I, WILLIAM H. JAMES, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Fire-Place; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to form of open fire-place and grate which combines the advantages of the most active and equally distributed draft and combustion in every part of the grate and of the most effective radiation and conduction of heat, together with complete utilization of fuel and permanence of those parts which in the common forms are liable to burn out.

Figure 1 is a perspective view of my improved fire-place. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section immediately in rear of the mantel.

The front or mantel may be a single casting of the form represented at A. The said casting may have projecting from its rear side customary studs, *a*, and lugs *a'*, for the attachment of the back and suspension of the grate, respectively.

My fire-back B is niche-formed, its horizontal section being semi-elliptical, and its upper part being arched forward to meet the mantel in manner substantially as represented in Fig. 2. *b* are lugs near its front margin, which receive the studs *a*, projecting from the mantel, said studs being secured behind the said lugs either by riveting or the application of screw-nuts *b'*. A smoke-ventage, C, is provided near the upper part of the back. My fire-back may, like the mantel, consist of a single casting.

The third and remaining piece, which constitutes my fire-place, is the grate which belongs to the class known as "basket-grates," and has certain peculiarities of form, which, in combination with the fire-back, insures perfect combustion and access of draft at every part. The said grate is lenticular or double convex in its horizontal section, said section being bounded by two circular or elliptical arcs, of which the rear one is concentric with the concave surface of the fire-back, while the front arc is somewhat flatter. The grate is low in front, its two front bars, D and E, being arcs of horizontal circles or ellipses, and its

rear margin being formed of a convex and arched bar, F, whose extreme upper edge is made to fit and rest against the concavity of the fire-back, and is crenated or indented with notches G, for admitting finely-divided jets of heated draft-air to the smoke and flame. Depending from the bars E and F are a suitable number of longitudinal bars H, which form collectively the represented convex bottom, and whose rear edges slope away from the fire-back, so as to secure at all times a perfectly-unobstructed draft-passage to all parts of the rear, ends, and top, as well as of the front of the fire. This perfect access of air, together with absence within the grate of the usual "dead corners" for accumulation of ashes, and the free-escape provided for the latter at every part, secure a perfect and active combustion throughout.

A marked advantage of my invention consists in the comparative exemption from "burning out" of those parts of the grate and fire-back usually subject thereto, such exemption being due to the access of air to every part; and incidental to this is yet another advantage, in the fact that no part of the fire-back becomes so intensely heated as to be incapable for air-warming, and consequently the entire space in its rear, save that required for the smoke-flue, may be a hot air chamber capable of being made available for warming the same or other apartments by any customary arrangement of pipes and registers.

It is intended that the fire shall be built sloping upward from the bar D to the bar F, as shown in Fig. 2, so as to bring the jets of air in contact with the smoke at its place of most active evolution, and so as, in conjunction with the concave and arched surfaces of the fire back, to radiate a copious stream of light and heat.

I claim—

As a new article of manufacture, the fire-place composed of the elements A, B, C, D, E, F, and G, the same being formed, combined, and adapted to operate in the manner set forth.

In testimony of which invention I hereunto set my hand.

WILLIAM H. JAMES.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.