

(No Model.)

T. A. BUCKLAND.
LOCOMOTIVE FURNACE.

No. 246,072.

Patented Aug. 23, 1881.

Fig. 1.

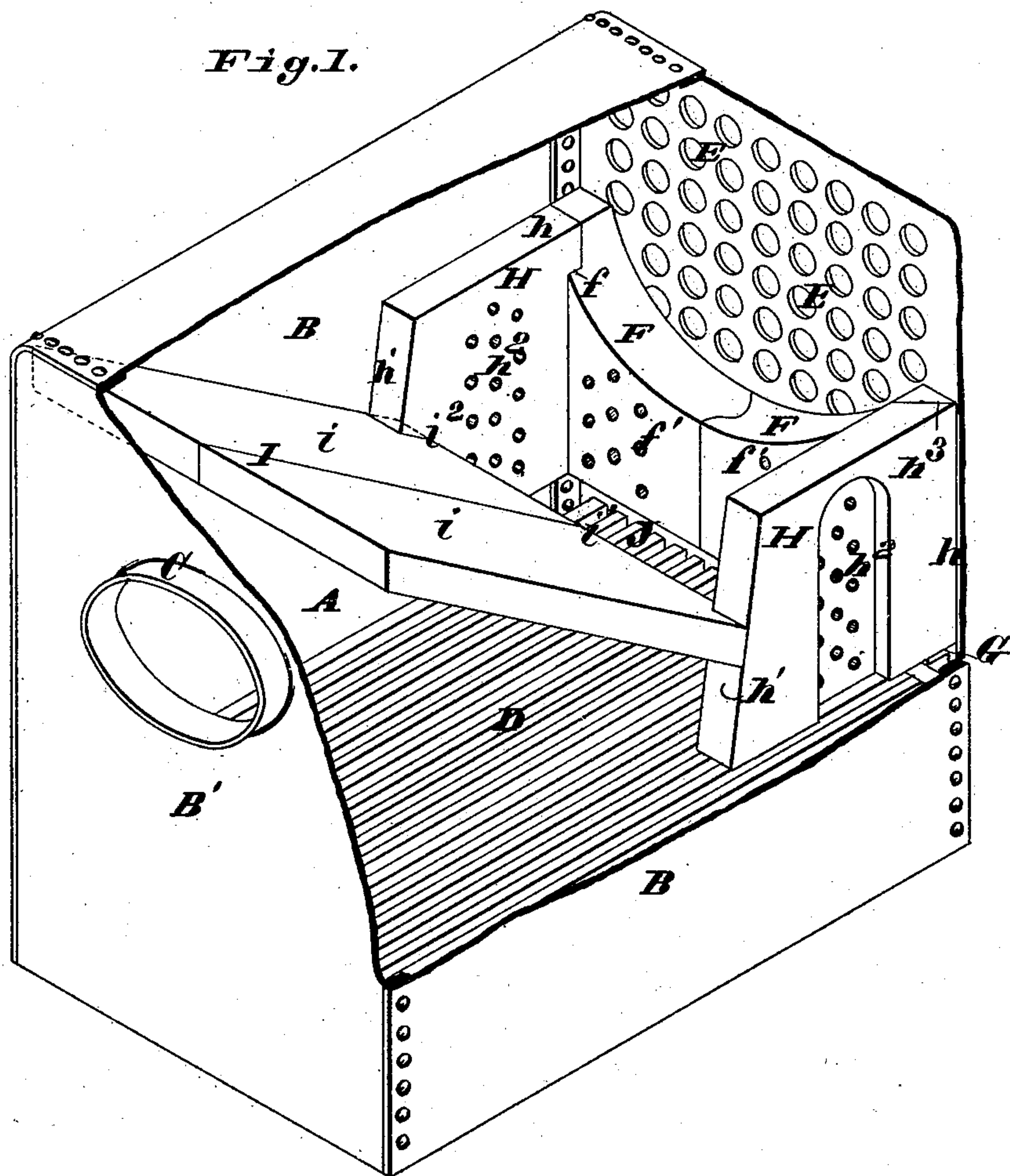
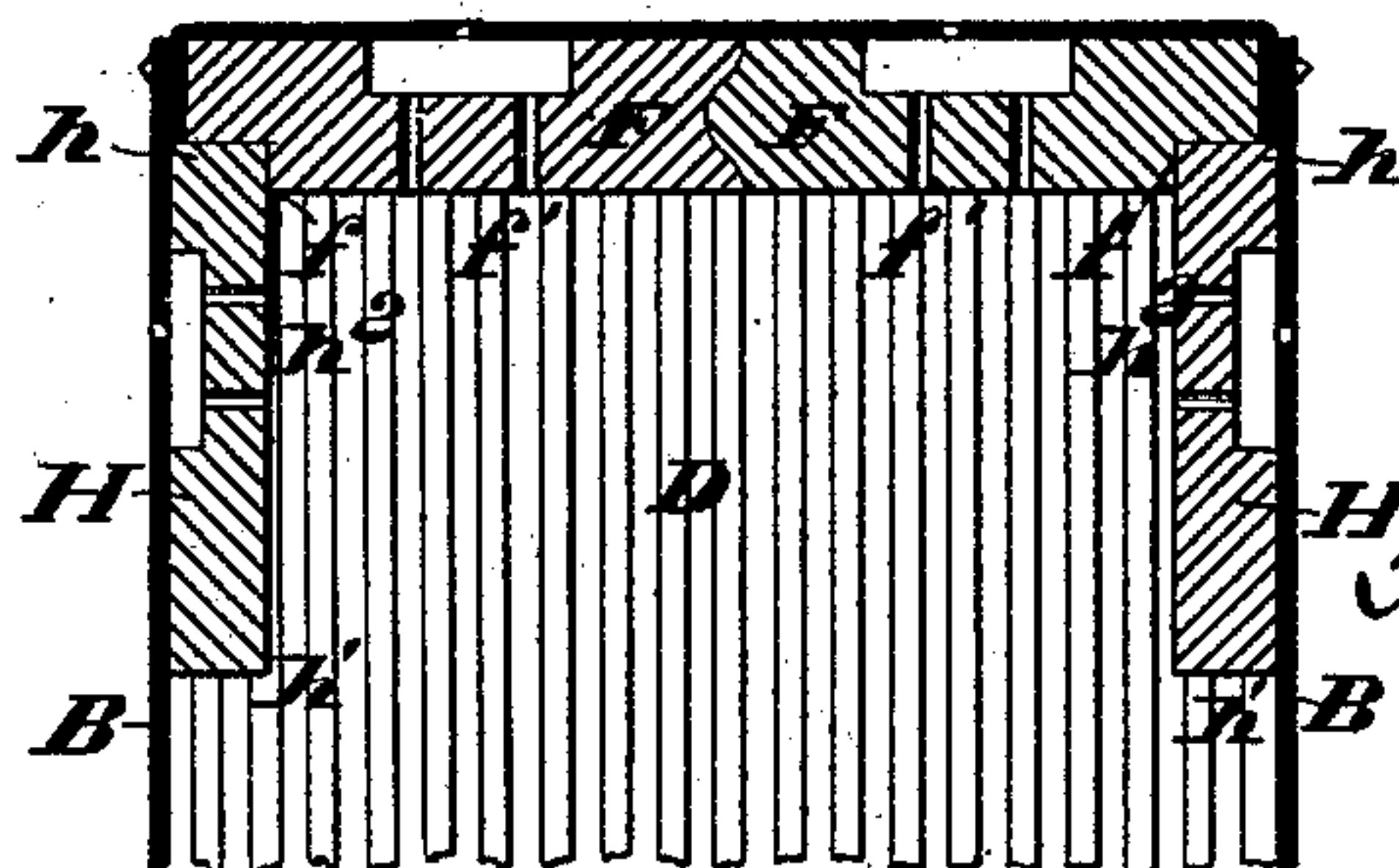


Fig. 2.



Attest:

Charles Pickles
Greensboro

Inventor:

Thomas A. Buckland
by C. D. Moody.
atty

UNITED STATES PATENT OFFICE.

THOMAS A. BUCKLAND, OF ST. LOUIS, MISSOURI.

LOCOMOTIVE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 246,072, dated August 23, 1881.

Application filed January 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. BUCKLAND, of St. Louis, Missouri, have made a new and useful Improvement in Locomotive-Furnaces, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective, showing that portion of a locomotive with which the improvement in question is immediately connected, the shell of the furnace-chamber being broken away to exhibit the interior construction; and Fig. 2, a detail, being a horizontal section taken through the forward end of the furnace-chamber, the section passing through the vertically-arranged tiling at the forward end of the furnace, but below the level of the forward end of the diaphragm.

The same letters denote the same parts.

The improvement relates to the system of tiles employed in the furnace-chamber; and it consists in the combination of a set of tiles arranged vertically at and around the forward end of the furnace-chamber, and a sloping tile the upper end of which rests against the rear or door wall of the furnace-chamber and the lower end against the vertically-arranged tiles, the various tiles being shaped and arranged, more particularly described, as follows:

A represents the furnace-chamber, of the usual construction, B B' being the wall of the furnace, C the doorway to the furnace, D the grate, and E the inlets to the flues.

At the forward end of the furnace-chamber is a tile, F F, preferably in two parts, as shown. It rests upon a cross-iron, G, or upon the grate D, and extending upward to the flues, the upper ends of the tile being preferably shaped to conform to the location of the flues, being higher at the sides of the furnace-chamber than at the center, as seen in Fig. 1.

H H represent tiles, arranged respectively at each side of the furnace-chamber, being supported underneath by any suitable means, (not shown,) and, if desired, resting upon the grate. The forward ends, *h h*, of the tiles are held in offsets *f f* in the tile F F. The rear ends, *h' h'*, of the tiles H H are battered.

I represents a tile-diaphragm, preferably in

two or more parts, *i i*. Its upper rear end rests against the rear wall, B', of the chamber. Its forward lower end rests against the rear ends, *h' h'*, of the tiles H H, operating to brace the latter longitudinally against the tile F F, and the tiles F F H H, in turn, operating to uphold the diaphragm, the sloping ends *h' h'* preventing the forward end of the diaphragm from dropping. The center *i'* of the lower end of the diaphragm projects between the inner sides of the tiles H H, to keep the latter laterally in place. When the diaphragm I is in two or more pieces the various pieces may be arched together, so as to act as one part against the tiles H H—that is, if the diaphragm is divided longitudinally the arch is turned transversely in the furnace-chamber, and if divided transversely the arch is turned longitudinally in the furnace-chamber. If the parts *i i* are perfectly flat, as shown, the central portion of the diaphragm may be supported by a cross water-tube. (Not shown.)

If desired, the tiles H F can be connected by a miter-joint, as shown at *h³*, Fig. 1, and, instead of battering the ends *h' h'* of the tiles H H, the latter may be notched, as shown at *i²*, Fig. 1, and the diaphragm I inserted in the notch.

The system of tiling, F H I, forms a throat, J, at the forward end of the furnace-chamber, in which the fuel is more perfectly burned and a higher degree of heat attained than in the ordinary furnace-chamber. These results may be further improved by admitting air through the perforations *f' h²* in the tiles F H. The chief advantage, however, of the improvement is that the various parts of the system of tiling can be easily made, readily set up in place, and when set up in the furnace-chamber they coact to keep each of the parts permanently in position.

I claim—

The furnace-chamber A, having the tiles F F H H I and I, combined, arranged, and held substantially as described.

T. A. BUCKLAND.

Witnesses:

CHAS. D. MOODY,
SAML. S. BOYD,