

T. HALL.

Furnace Attachments for Steam-Boilers.

No. 148,693.

Patented March 17, 1874.

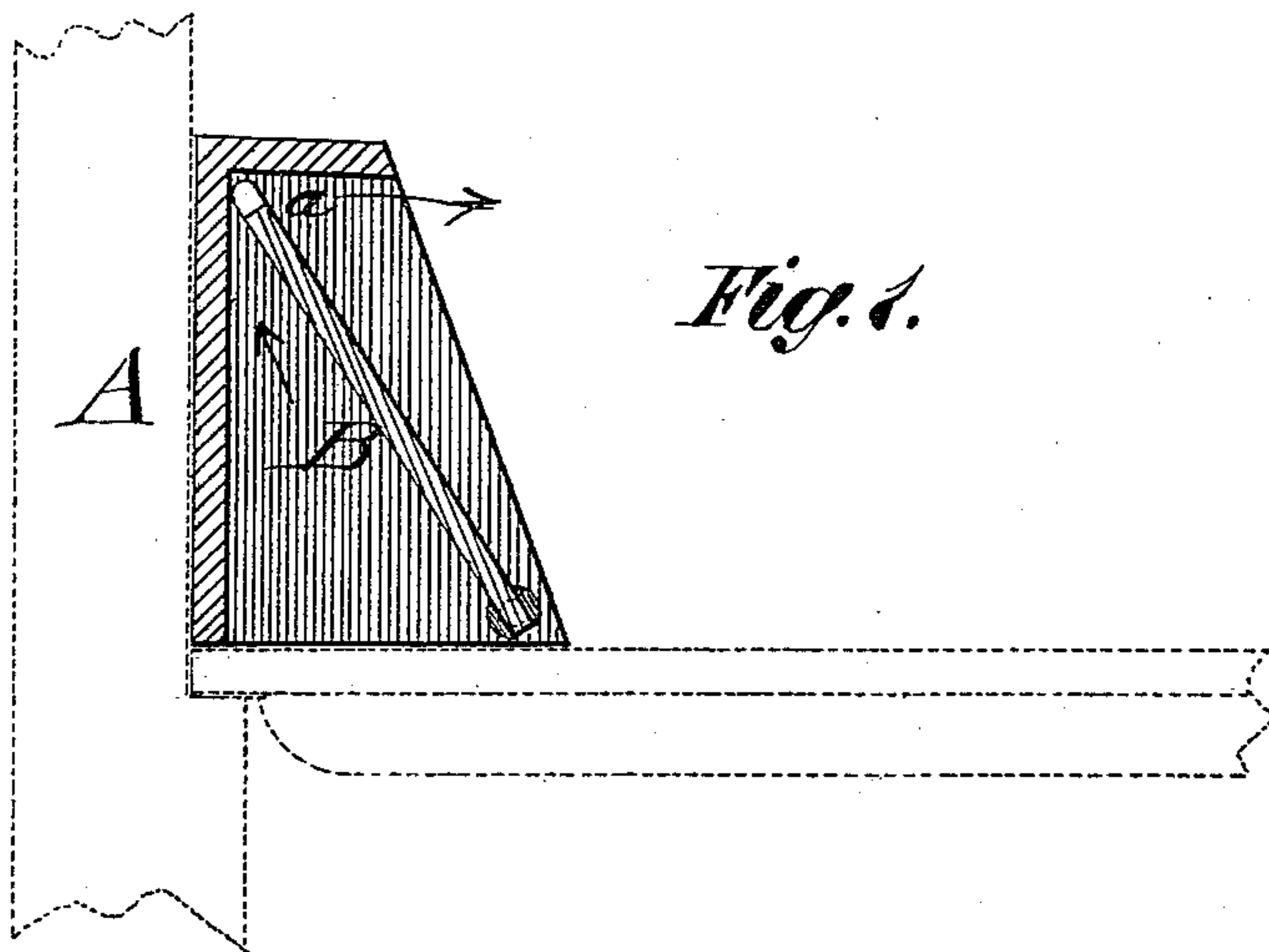


Fig. 1.

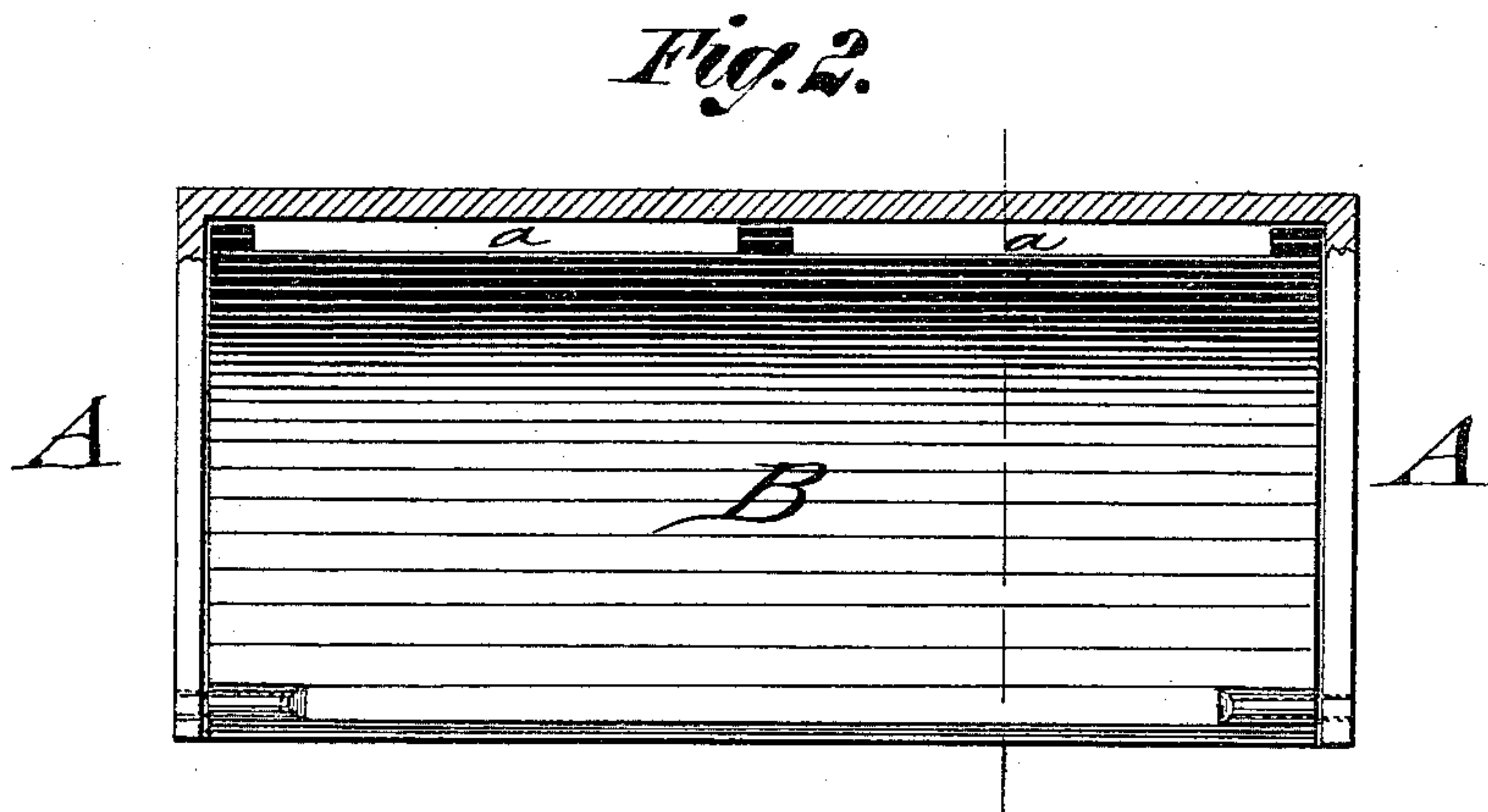


Fig. 2.

WITNESSES:

Francis M. Ordle.
Hedgcock

INVENTOR:

T. Hall

BY

Wm. Hall

ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS HALL, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN FURNACE ATTACHMENTS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. 148,693, dated March 17, 1874; application filed January 31, 1874.

To all whom it may concern:

Be it known that I, THOMAS HALL, of Lawrence, Essex county, Massachusetts, have invented a new and Improved Furnace Attachment to Steam-Boilers, &c., of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical transverse section of my improved heating attachment to furnaces, and Fig. 2 a front elevation of the same.

Similar letters of reference indicate corresponding parts.

The object of my invention is to produce a cheap and useful attachment to the furnaces of steam-boilers, by which fuel is economized, a higher degree of heat generated, and the combustion of smoke and unconsumed gases is obtained. My invention consists of a frame or casing of suitable material, which is placed on the rear ends of the grate-bars at the fire-bridge, being open at the bottom, with forward-projecting top piece and connecting sides, to which a front plate is attached. This plate extends laterally across the casing, being inclined diagonally toward the top corner of the same, and there provided with recesses, through which a current or sheet of air is conducted and thrown forward to mingle with the fire-gases for their more complete combustion.

In the drawing, A represents the frame or casing, of cast-iron or other suitable material, and of a size to fit into the rear part of the fire-box of a steam or other boiler. It is placed laterally across the grate-bar, resting with its rear wall against the fire-bridge, as shown in Fig. 1. Casing A is open at the bottom, and has

forward-extending sides, which taper toward the top, and a connecting top plate, which extends forward to some distance from the rear walls. An inclined plate, B, is attached to the sides of frame A, and runs in a diagonal direction from the lower front corners of the side walls to the rear top corner, forming, with the casing, a hollow chamber, into which the air is admitted from below through the grate-bars. The upper end of the plate B is provided with one or more slots or recesses, *a*, which admit the air from below and throw a sheet-like current of heated air along the top plate forward into the top part of the fire. The air there mingles with the fire-gases, and produces, by the additional oxygen furnished, a more complete combustion of the same, giving thereby a greater heating power of the fuel and less smoke.

The attachment may be applied to any furnace, and produces a considerable saving in fuel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A heating attachment for furnaces, consisting of box A, open at the bottom as well as in front, and provided with plate B, extending diagonally from bottom to the vertex of angle formed by back and top, and recessed at *a a*, all as set forth.

THOMAS HALL.

Witnesses:

WILLIAM EDWARD HALL,
JAMES NEWTON.