No. 645,921. Patented Mar. 20, 1900.

R. S. MAYER.

GRATE FOR FURNACES.

(Application filed Dec. 1, 1899.)

(No Model.)

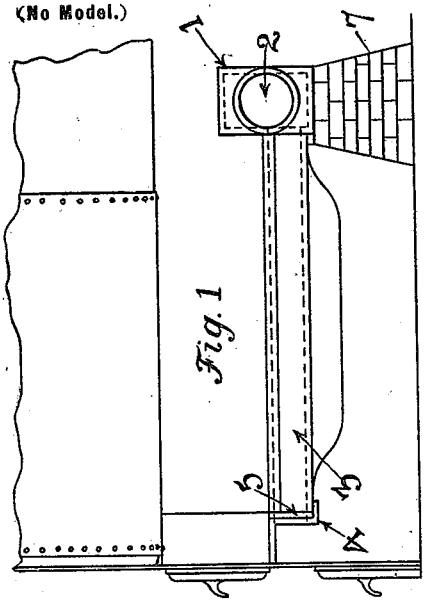

Fig. 1

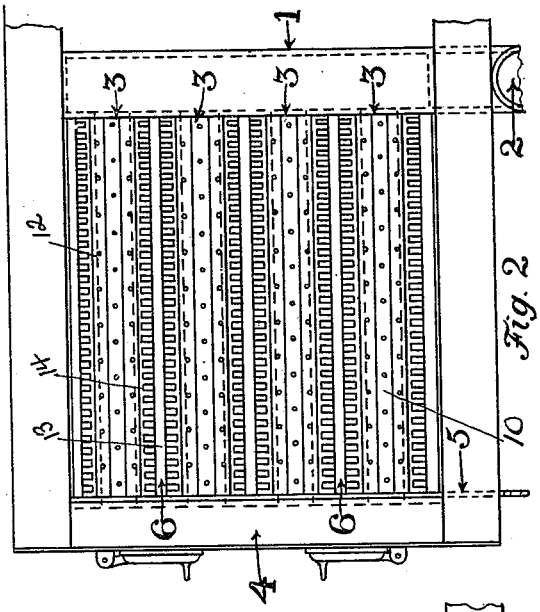

Fig. 2

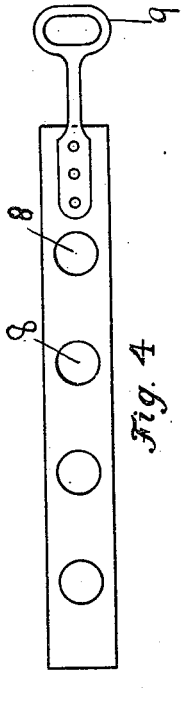

Fig. 4

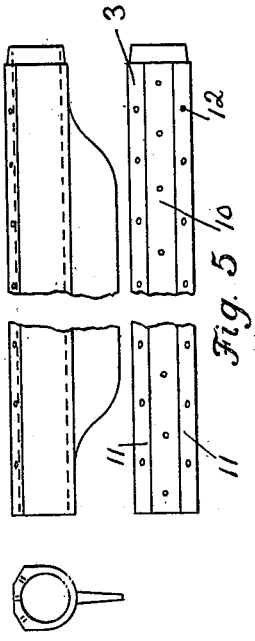

Fig. 5

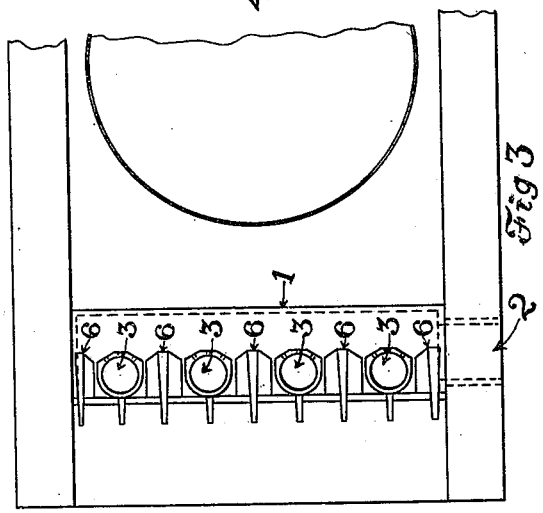

Fig 3

WITNESSES

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UNITED STATES PATENT OFFICE.

ROBERT S. MAYER, OF CINCINNATI, OHIO, ASSIGNOR OF TWO-THIRDS TO HARRIE D. CRANE AND ANTON MAYER, OF SAME PLACE.

GRATE FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 645,921, dated March 20, 1900.

Application filed December 1, 1899. Serial No. 738,882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. MAYER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Grates for Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to grates for furnaces; and its object is to provide improved means for supplying air to the furnace to aid combustion.

The construction of the improved grate will be fully described hereinafter in connection with the accompanying drawings, which form a part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a sectional side elevation of a furnace-grate embodying the invention. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section, and Figs. 4 and 5 illustrate parts in detail.

The reference-numeral 1 designates a rectangular box or casing constituting an air-chamber and provided at one end with an opening 2 for the admission of air from any suitable blower or like source. This air-chamber 1 is located upon the bridge-wall 7 of the furnace.

3 designates hollow grate-bars, the inner ends of which communicate with the air-chamber 1, while their forward ends rest upon a supporting-bracket 4, secured transversely within the front of the furnace. Between the outer ends of the grate-bars 3 and their support 4 is interposed a slide 5, formed with openings 8, corresponding to the openings in the ends of the grate-bars 3 and adapted to register therewith when the slide is moved to the proper position by means of its handle 9.

The cross-sectional contour of the bars 3 is shown in Fig. 3. The upper surface of each bar is flat at its center 10 and beveled or inclined in opposite directions at each side of the center, as shown at 11. The bars are also formed with perforations 12 for the passage of air.

Alternating with the hollow or tubular bars 3 I employ open grate-bars 6, each comprising a central body portion 13, from which project on opposite sides parallel fingers 14, the upper surfaces of which are inclined.

The operation and utility of the construction above described will be readily understood. When the fire is started, the slide 5 is moved to close the front ends of the tubular bars, the open bars supplying sufficient air for starting the fire. Air is then supplied to the air-chamber 1 and passes through the perforations in the tubular bars to the fire. Thus the fire can be regulated and a substantially-complete combustion of the fuel obtained.

I claim—

1. In a furnace-grate, the combination with an air-chamber supported upon the bridge-wall of the furnace, of a series of hollow perforated grate-bars having their inner ends communicating with the air-chamber; open grate-bars alternating with the tubular bars; and a slide for closing the front ends of the hollow bars.

2. In a furnace-grate, the combination with an air-chamber, of a series of tubular perforated grate-bars, a series of open grate-bars alternating with the tubular bars, each of said grate-bars having its upper surface beveled or inclined in opposite directions; and a slide or damper at the front ends of the bars.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT S. MAYER.

Witnesses:

W. F. NORTH,

JAMES M. BRANDT.