Oct. 12, 1937. A. R. KERNAN 2,095,937

FURNACE REGENERATOR

Filed Sept. 24, 1936

Fig. 1.

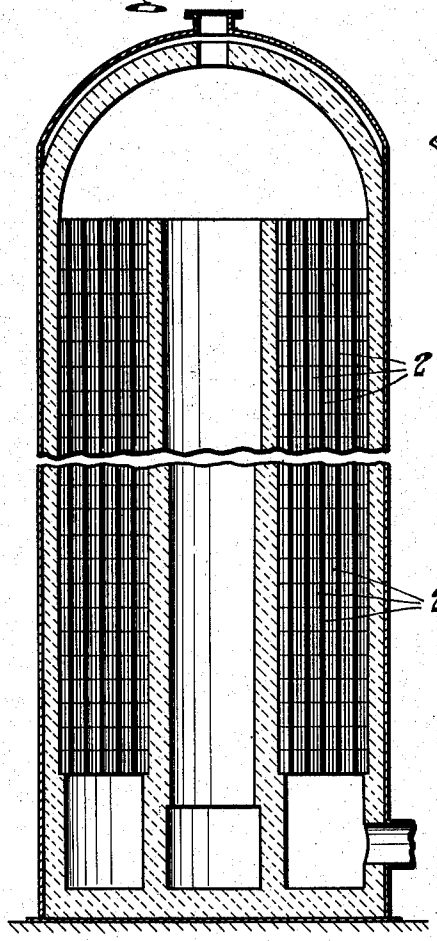


Fig. 2.

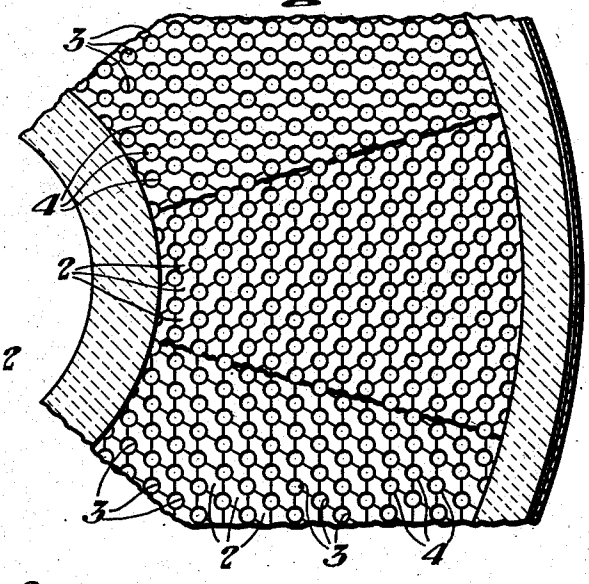


Fig. 3.

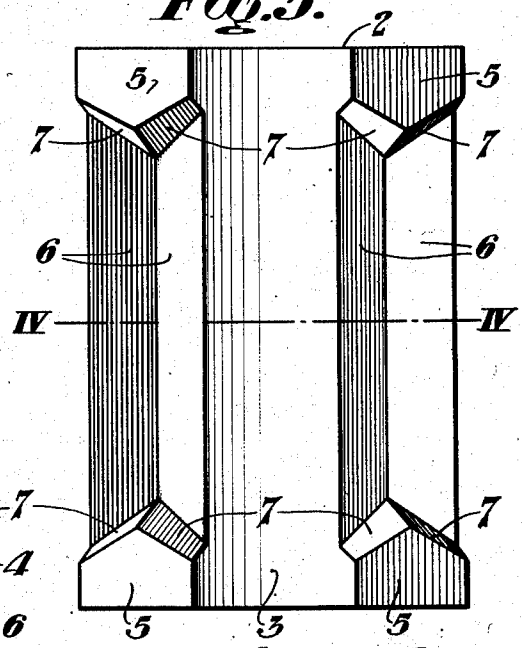
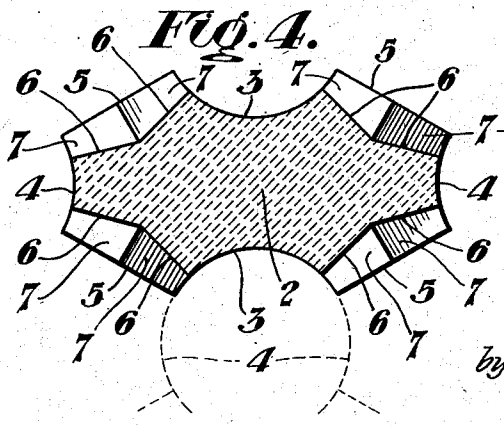


Fig. 4.



Inventor:
A. RAPHAEL KERNAN,
by: Uhlmann & Lauber
his Attorneys.

Patented Oct. 12, 1937 2,095,937

UNITED STATES PATENT OFFICE

2,095,937

FURNACE REGENERATOR

Andrew Raphael Kernan, Aspinwall, Pa.

Application September 24, 1936, Serial No. 102,411

2 Claims. (Cl. 263—51)

This invention relates to furnace regenerators and, more particularly, to a brick checkerwork therefor.

It is among the objects of the present invention to provide a stable brick checkerwork for furnace regenerators which establishes a maximum heating surface.

Another object is the provision of a checkerwork having straight cylindrical vertical passages which can be conveniently cleaned, while at the same time permitting a free circulation of gases in a horizontal direction.

Still another object is to provide a checkerwork possessing the advantages previously recited, which may be easily and cheaply made, installed and maintained. That is to say, the checkerwork is composed of elements which may be manufactured at a price comparable to standard brick, and handled and laid with equal ease.

The foregoing and further advantages will become apparent after referring to the drawing, in which:

Figure 1 is a sectional elevation of a center-combustion hot-blast stove embodying the regenerator checkerwork of the invention.

Figure 2 is an enlarged fragmentary sectional plan.

Figure 3 is an enlarged elevation of one of the regenerator checkerwork elements or bricks of the invention.

Figure 4 is a sectional view on the line IV—IV of Figure 3.

Referring more particularly to the drawing, the numeral 2 generally designates the novel brick elements which compose the regenerator checkerwork. These brick elements 2 are substantially oblong in overall sectional dimensions and greatly elongated in elevation. That is to say, when vertically disposed, as in Figure 3, the brick elements 2 appear substantially oblong in plan and of a height considerably greater than any other dimension.

Both sides of each of the brick elements 2 are provided with a curved inwardly extending portion 3, while both ends thereof are provided with a curved inwardly extending portion 4 formed on the same radius and extending over a shorter arc.

The surfaces of the brick elements 2 which are intermediate the inwardly curved portions 3 and 4 are flattened at the upper and lower ends of the brick elements to form corners, as shown at 5. Between the upper and lower corner portions 5, the brick elements 2 are provided with two flat convergent surfaces 6 which provide between them a V-shaped longitudinal recess. The corner portions 5 at the upper and lower ends of the brick elements 2 are connected to the V-shaped longitudinal recesses formed by the two flat convergent surfaces 6 by two convergent surfaces 7 which are beveled. These convergent beveled surfaces 7 prevent any undue accumulation of dirt, as they permit the same to readily slide off to the bottom of the regenerator. This is further assured because of the tendency of the gases to expand into the V-shaped recesses formed by the two flat convergent surfaces 6 and wash their surfaces clean.

In assembling the furnace regenerator formed by the brick elements 2 they are laid in parallel relationship in a series of levels to form a checkerwork of straight cylindrical vertical passages made up of complementary curved inwardly extending portions 3 and 4.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of my invention, as defined by the following claims.

I claim:

1. A substantially oblong regenerator element having four recessed corner portions and inwardly curved portions intermediate said corner portions, each of the recessed corner portions having opposed converging beveled surfaces adjacent the ends thereof.

2. A regenerator element having four recessed corner portions and coextensive inwardly curved portions intermediate said corner portions, each of the recessed corner portions having opposed converging beveled surfaces adjacent the ends thereof.

A. RAPHAEL KERNAN.