(No Model.)

2 Sheets—Sheet 1.

H. HARTUNG.

FIRE BAR.

No. 396,482. Patented Jan. 22, 1889.

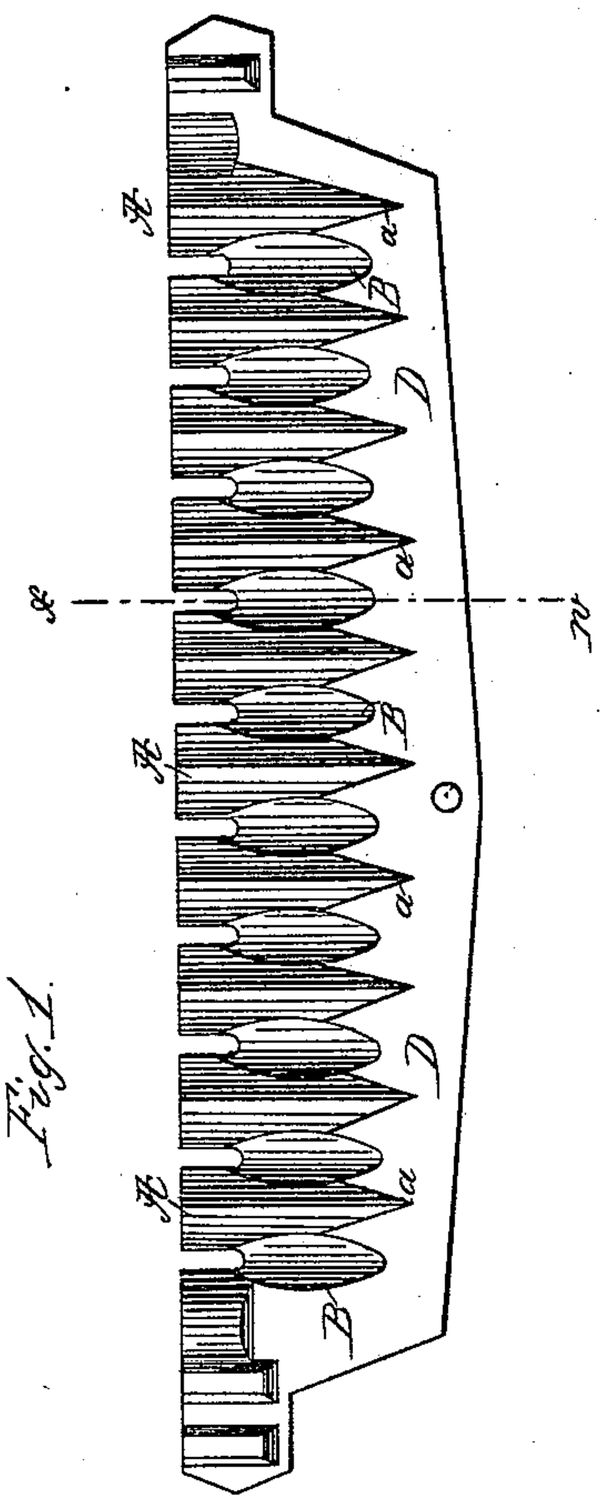

Fig. 1.

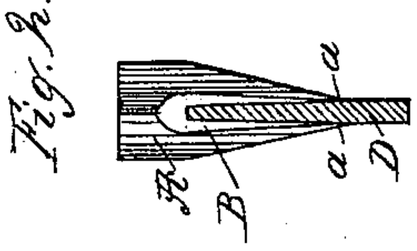

Fig. 2.

Fig. 3.

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(No Model.)

2 Sheets—Sheet 2.

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FIRE BAR.

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Fig. 6.

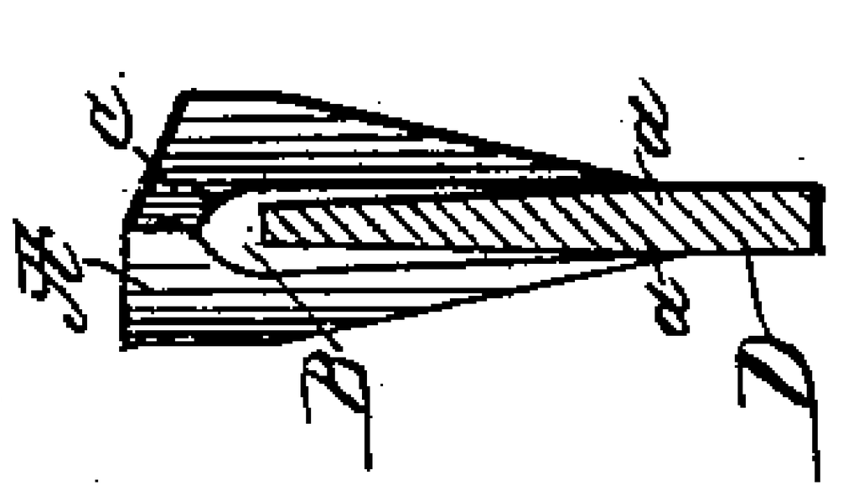


Fig. 4.

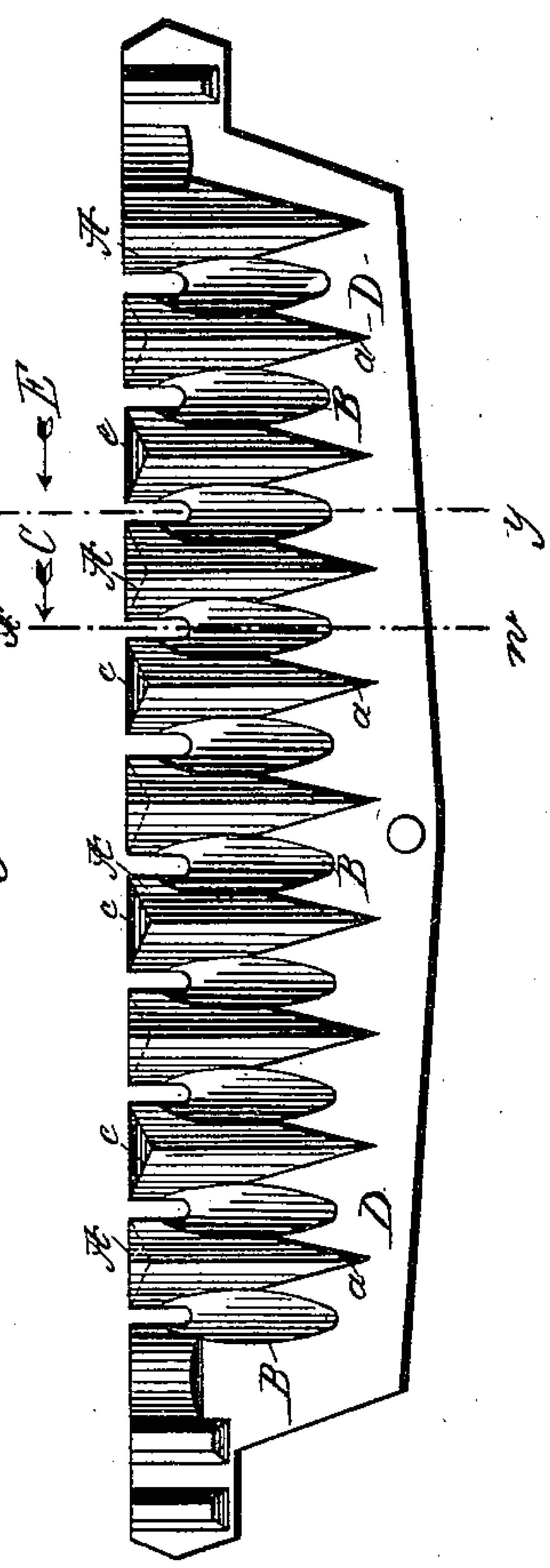


Fig. 3.

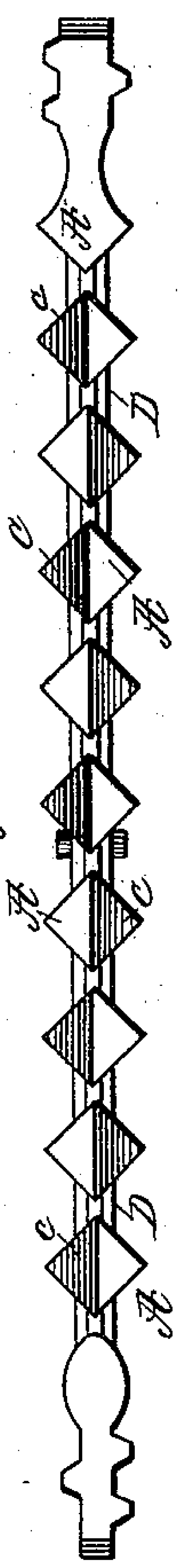
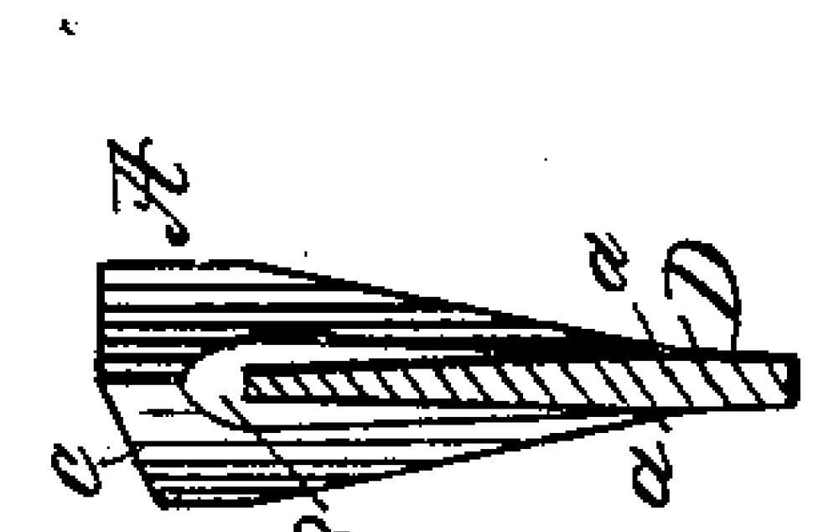


Fig. 5.



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UNITED STATES PATENT OFFICE.

HUGO HARTUNG, OF BERLIN, GERMANY.

FIRE-BAR.

SPECIFICATION forming part of Letters Patent No. 396,482, dated January 22, 1889.

Application filed March 16, 1888. Serial No. 267,415. (No model.) Patented in England December 23, 1887, No. 17,666, and in Belgium December 31, 1887, No. 79,134.

To all whom it may concern:

Be it known that I, HUGO HARTUNG, a subject of the King of Prussia, German Emperor, residing at Berlin, in the Kingdom of Prussia, German Empire, have invented a new and useful Fire-Bar, (for which I have obtained a patent in Great Britain December 23, 1887, No. 17,666, and Belgium December 31, 1887, No. 79,134,) of which the following is a specification.

My invention relates to improvements in fire-bars in which the bar is provided with a number of polygonal-shaped divisions, which taper from the top of the bar to nothing, or run into the bar in conjunction with peculiarly-shaped air-passages between each of the polygonal-shaped divisions; and the object of my improvement is that the air passing through the peculiarly-formed air-passages and between each division of the bar is in a manner compressed, as when the bars are lying close together the divisions form conical-shaped tubes, and the air being heated by the fire on the top of the grate the air from the ash-pit is drawn at a great velocity through these passages and is greatly heated before entering the furnace by coming into close contact with such a large surface of the fire-bars, which means a great saving in coal, which would be necessary to heat the cold air entering the furnace, and also the bars last longer, as they are not burned away so quickly on account of the free circulation of air between them. I attain these objects by the form of bar illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an entire bar. Fig. 2 is a section through the line *w x*, Fig. 1. Fig. 3 is a plan of the improved bar. Fig. 4 is a side elevation of a modification of my improved bar. Fig. 5 is a section through line *w x*, Fig. 4, of the modified form of bar, as seen from C. Fig. 6 is a section through line *y z*, Fig. 3, as seen from E. Fig. 7 is a plan of the modified form of the improved bar.

Similar letters denote similar parts throughout the several views.

In Fig. 3 it can be seen that the bar is divided, as it were, into a number of polygonal-shaped divisions, A, which on reference to Fig. 1 it will be seen how these divisions taper or run into the body of the bar at *a*, and so forming when two bars are placed together tapering spaces, through which the air flows to the grate. In order to help the flow of air and also to give it more heating-surface on the fire-bar, there are the peculiar hollow-shaped air-passages B between each polygonal-shaped division.

Fig. 4 shows an elevation of a modified form of the improved fire-bar, in which the surface of the polygonal-shaped divisions A are slanted away on alternated sides *c c*, as seen in Figs. 5, 6, and 7. The advantage of this is that the coal lying on the bars does not lie on these slanted surfaces *c c*; or, in other words, these slanted surfaces form hollows under the coal lying on the grate, and thus let the air in better contact with the coal, and thus aid combustion.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent in the United States, is—

In a fire-bar having the polygonal-shaped divisions A, which taper into the body of the fire-bar at *a*, in combination with the peculiarly-formed air-passages B between each division and the alternated slanting surfaces *c*, for the purpose as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HUGO HARTUNG.

Witnesses:
P. MÜHLUER,
B. ROI.