

A. C. Fletcher.

Grate-Bar.

N^o 74526

Patented Feb. 18, 1868.

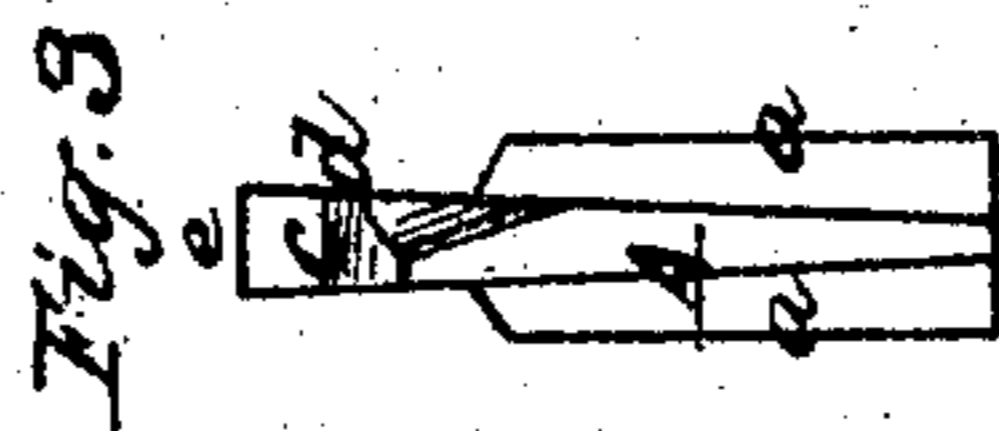
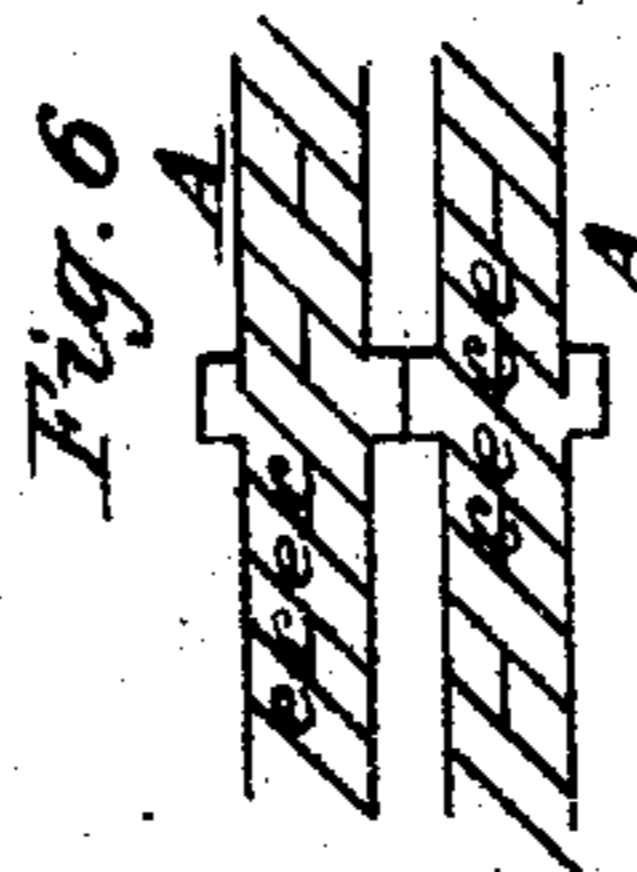
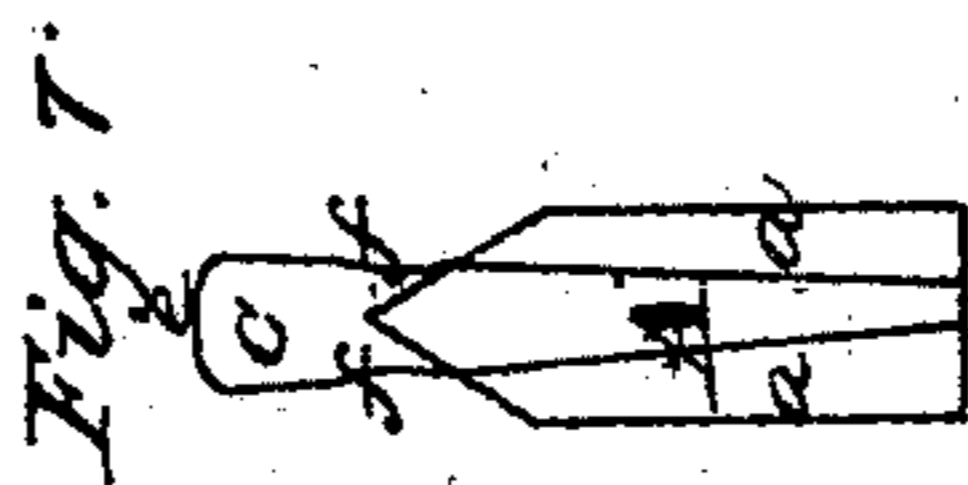
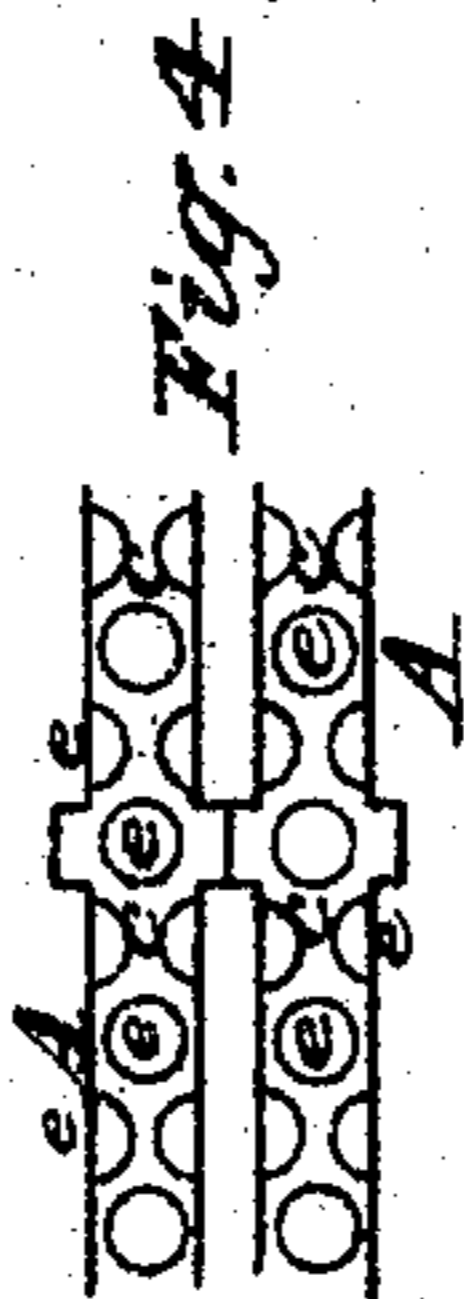
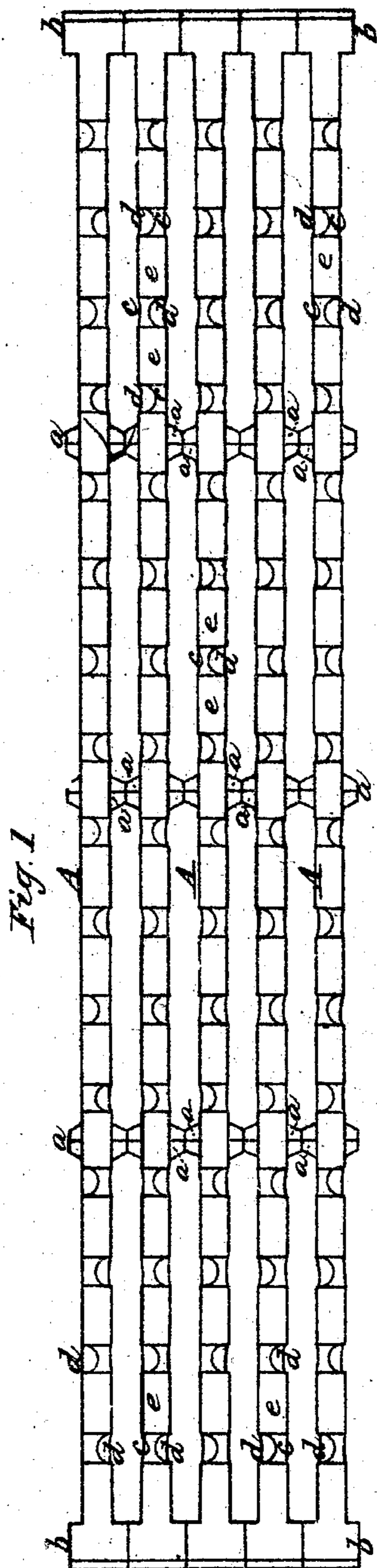
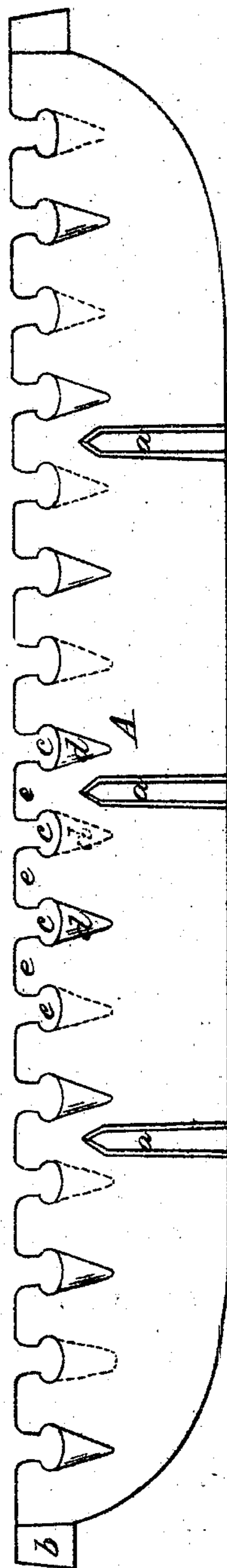


Fig. 2



Witnesses

M. Hornby
G. W. Reed

Inventor

Addison C. Fletcher

United States Patent Office.

ADDISON C. FLETCHER, OF NEW YORK, N. Y.

Letters Patent No. 74,526, dated February 18, 1868.

GRATE-BARS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ADDISON C. FLETCHER, of the city, county, and State of New York, have invented a new and useful Improvement in Grate-Bars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan of a portion of a grate composed of my improved bars.

Figure 2 is a side view of one of the bars.

Figure 3 is a transverse section of the same.

Figures 4, 5, and 6 are plan views illustrating modifications of my invention.

Figure 7 is a transverse section of one of the bars represented in fig. 6.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is threefold, viz, first, to facilitate the circulation, and obtain a more uniform distribution of air among the fuel on the grate; second, to provide more effectually for the escape from the fire-bed of the dust and ashes, which form the residue of the combustion of the fuel; and, third, to prevent the overheating of the bars. To these ends the invention consists in the construction of the upper part of the bars with transverse recesses, which are of greater width toward or near the bottoms, forming a series of ducts, through which the air may circulate under, and be distributed among the fuel, and, by the passage of the air through which, the upper parts of the bars are kept cool; and it further consists in the combination, with such transverse recesses, of recesses in the sides of the bars, to facilitate the dropping from the fire of the dust and ashes.

To enable others to construct grate-bars according to my invention, I will proceed to describe it with reference to the drawings.

A A, figs. 1, 2, 3, are the bars, the general form of which is the same as that of ordinary grate-bars for furnaces, inasmuch as they are straight, with their thickness diminishing downward, as shown in the section, fig. 3, and they have cast on their sides projecting ribs *a a* and *b b* to keep their bodies at the required distance apart. The particulars in which they differ from ordinary bars are in their having recesses *c c* in their upper parts or faces, and recesses *d d* in their sides communicating with the recesses *c c*. The recesses *c c* are at short intervals, so that the intervening portions *e e* of the upper part form a series of small stud-like bearings for the support of the fuel, under which the air, admitted from below the grate, and between the bars, can circulate in the recesses *c c*, in such manner as to provide for its more diffused circulation among the fuel. It will be seen, by reference to fig. 1, that the recesses *c c* have their width increased some distance below the faces or upper fuel-bearing surfaces of the bars, by which means not only is provision afforded for a more copious circulation of air, but for the cooling of the fuel-bearing surfaces at the tops of the portions *e e* of the bars, and for the free falling away and riddance of the dust and ashes from the fuel. The recesses *d d* are in the form of upright grooves in the sides of the bar communicating with the recesses *c c*, and are arranged in opposite sides of the bar alternately, that is to say, that in communication with one recess, *c*, being on one side, and that in communication with the next one being arranged on the other side of the bar, by which arrangement the weakening of the bar is, in a great measure, obviated, and a more uniform distribution of air to and among the fuel is obtained. These recesses *d d* not only provide for the free supply of air to the recesses *c c*, but for the escape of the dust and ashes from them. In the modification shown in fig. 4, the recesses *c c* are so arranged as to form a series of round pins or stud-like projections, *e e*, to constitute the fuel-bearing surfaces; and in fig. 5 the said recesses *c c* are so formed as to leave the intervening projections *e e* lozenge-shaped. In figs. 6 and 7, the recesses *c c* extend obliquely across the bar, and their bottoms are bevelled in opposite directions, as shown in fig. 7, at *ff*. These modifications serve to illustrate my invention to make the recesses of various forms in their horizontal sections, all of which I consider equivalent to those illustrated in fig. 1. I will remark that, in all cases, I intend to make the recesses wider or larger toward or near their bottoms, substantially as shown in fig. 2.

What I claim as my invention, and desire to secure by Letters Patent, is—

The alternating conical recesses *d*, in combination with the rounded points *e*, substantially as shown and described, for the purposes specified.

Witnesses:

J. W. COOMBS,
G. W. REED.

ADDISON C. FLETCHER.