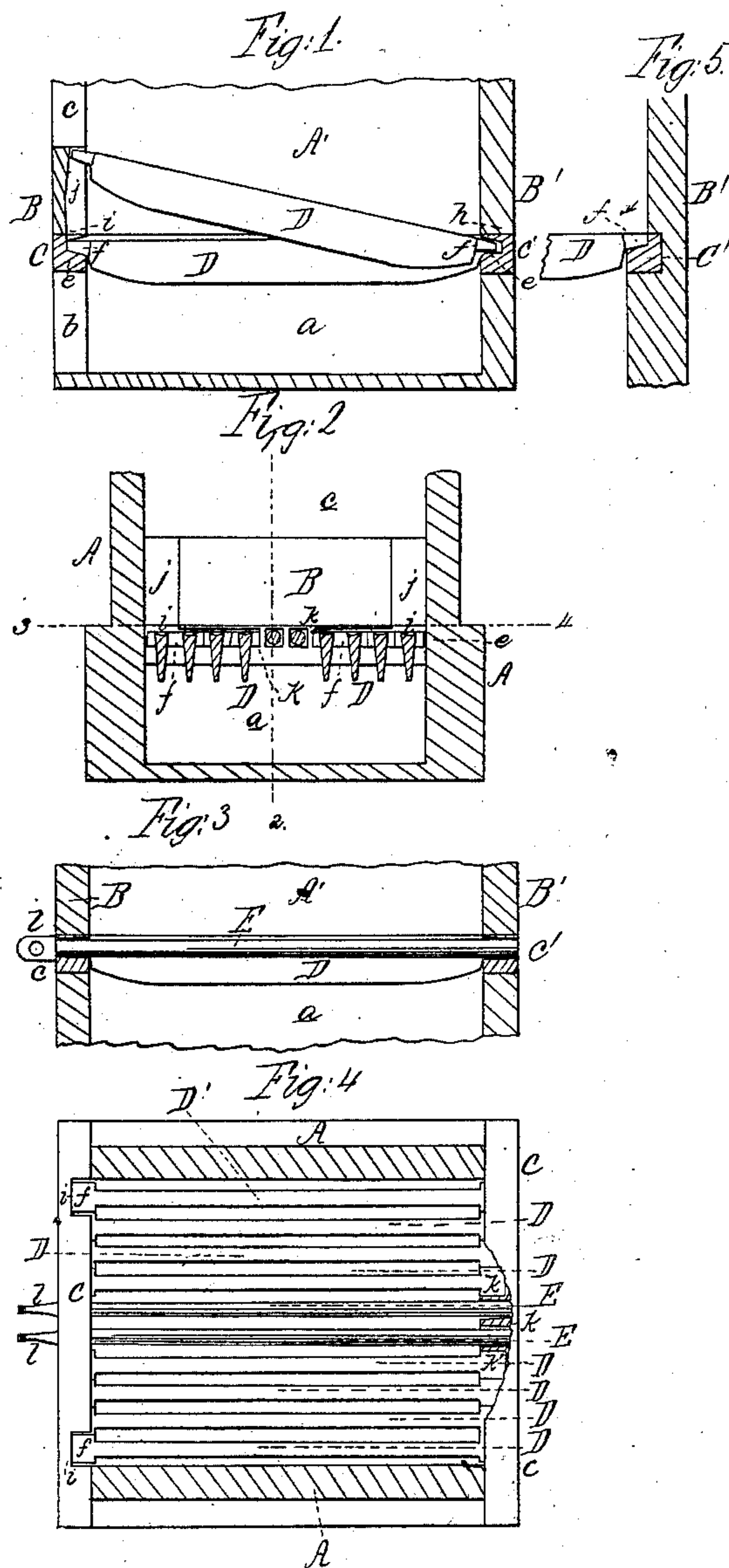


*J. Reynolds,
Furnace Grate.*

M. 9 66.628.

Patented July 9, 1867.



Witnesses:

Wm. Albert Steel
L. K. & Isaac Godwin

Inventor.

J. Reynolds
By Mrs. A. A.
H. H. H.

United States Patent Office.

JESSE REYNOLDS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 66,628, dated July 9, 1867.

IMPROVEMENT IN GRATES FOR FURNACES.

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, JESSE REYNOLDS, of Philadelphia, Pennsylvania, have invented an Improvement in Fire-Places for Furnaces, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in so constructing the grate-bearers of a fire-place, and so arranging them in respect to the walls, and for the reception of the bars, that the latter may be readily inserted and secured in their places or withdrawn.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a vertical section of part of a furnace showing my improvement.

Figure 2, a transverse section of fig. 1.

Figure 3, a section on the line 1-2, fig. 2.

Figure 4, a sectional plan view of the furnace on the line 3-4, fig. 2; and

Figure 5, a sectional view of part of an ordinary furnace.

Similar letters refer to similar parts throughout the several views.

A and A' are the side walls, and B and B' the front and rear walls of a furnace, in which are the ash-pit *a*, ash-door *b*, and fire-door *c*. The cast-iron grate-bearers C and C', the former at the front and the latter at the rear of the furnace, are supported by and have their ends imbedded in the brick-work of the side walls A and A'. In each of the grate-bearers is formed a longitudinal recess, *e*, for the reception of the ends *f* of the grate-bar D, and the flanges *h* of the said bearers above the recess *e* serve as a partial support for the walls B and B'. At each end of the grate-bearer C, close to the side walls of the furnace, and communicating with the recess *e*, is an opening, *i*, of a width corresponding to that of the ends of the grate-bars, fig. 4. Directly over these openings *i* a portion, *j*, of the front wall of the furnace is cut away, for a purpose described hereafter. (See fig. 1.) In the centre of the furnace are two or more cylindrical grate-bars, E, which are inserted from the front through circular openings in the bearers C and C', and in the recesses *e* of the bearers are partitions *k*, one on each side of, and one between the cylindrical bars.

One of the bars D is introduced into the furnace through the fire-door, and its end inserted into the recess *e* of the bearer C', as shown in fig. 1. Its opposite end is then lowered through the cut-away portion *j* of the front wall, and through the opening *i* of the bearer C, and is then moved laterally through the recesses *e* until it comes in contact with the partitions *k* of the bearers. Another bar is now inserted, and pushed up to the first, and this operation is repeated on both sides of the cylindrical bars E until the grate is complete, as shown in fig. 4. Each of the cylindrical bars E above described is provided with a handle, *l*, outside the furnace, by which the bars can be withdrawn or turned round, so as to rake the fire in the centre of the grate.

The fire-place of a furnace, as usually constructed, is somewhat longer than the ash-pit beneath; and this is rendered necessary by the usual manner of arranging the grate-bars, as shown in fig. 5, the bars resting upon the bearers, and having their end sexposed; and as these ends are made wider than the body of the bar, so that the interstices of the grate may be preserved of an equal width, it is evident that a continuous ledge must be formed by the ends of the bars, and that there must be an objectionable accumulation of ashes on this ledge. By constructing the fire-place and grate-bearers in the manner described, the walls can be built up straight from the bottom of the ash-pit. At the same time the objectionable ledge is avoided and the draught improved. Under some circumstances the bearers may be inverted, so as to allow the bars to be inserted and secured in their places from beneath.

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

The bearer C, with its groove *e* and openings *i*, in combination with the recessed bearer C', the whole being arranged within a fire-place for the reception of the grate-bars, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

J. REYNOLDS.

Witnesses:

CHARLES E. FOSTER,

W. J. R. DELANY.