T. McCLEARY.

Fire Place.

No. 59,620. Patented Nov. 13, 1866.

Fig. 1

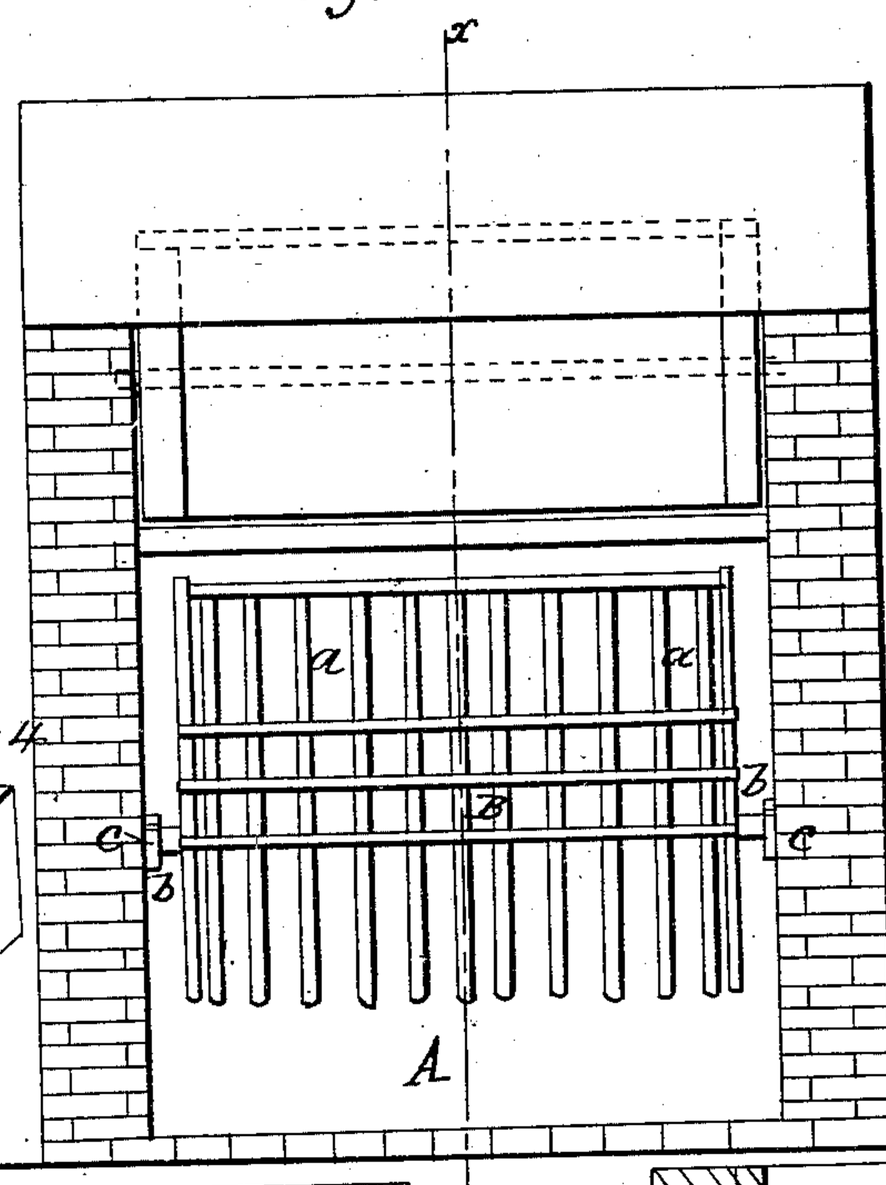


Fig. 4

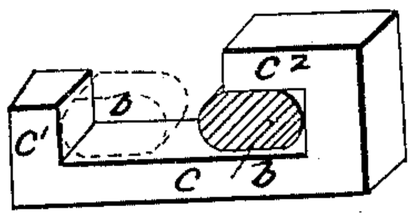


Fig. 2

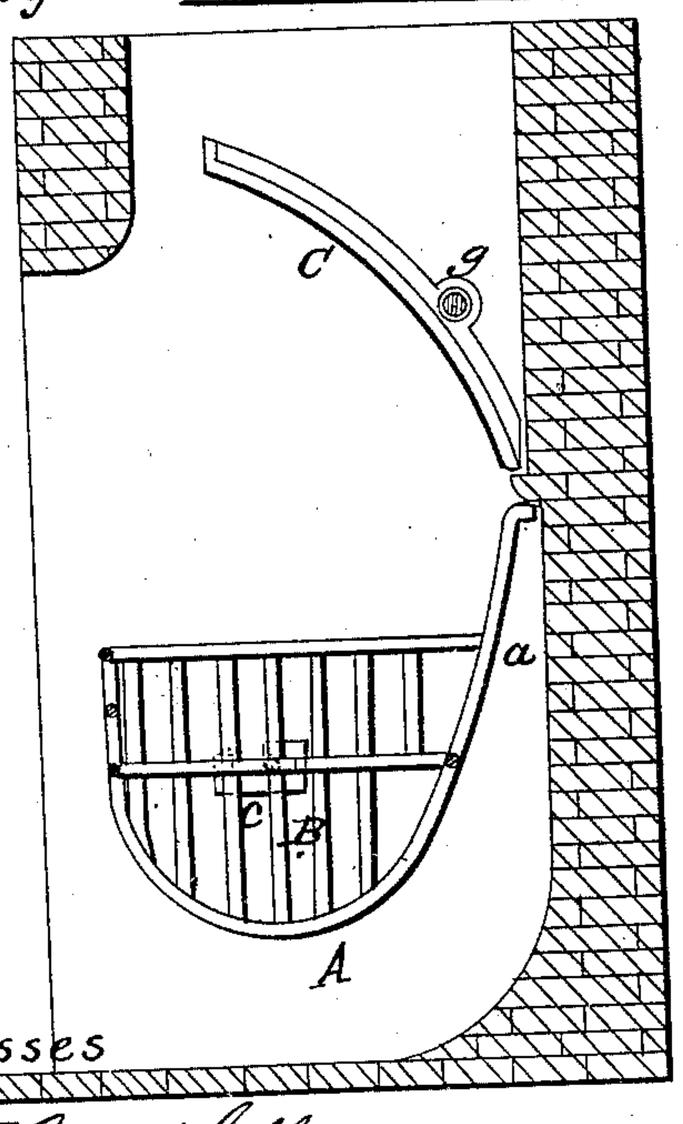
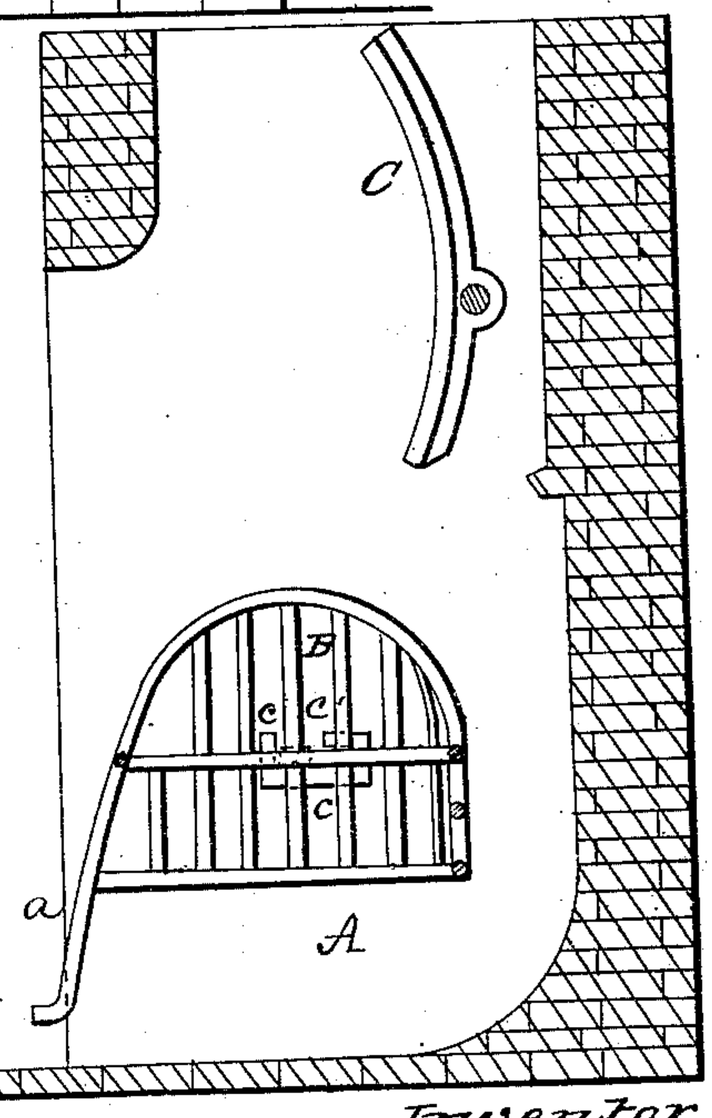


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS McCLEARY, OF BLAIRSVILLE, PENNSYLVANIA.

IMPROVEMENT IN FIRE-PLACES.

Specification forming part of Letters Patent No. **59,620,** dated November 13, 1866.

To all whom it may concern:

Be it known that I, THOMAS MCCLEARY, of Blairsville, in the county of Indiana and State of Pennsylvania, have invented a new and Improved Grate and Reflector; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of a fire-place having my improved grate and heat-reflector arranged within it. Fig. 2 is a transverse section taken in the vertical plane indicated by red line *x x* in Fig. 1. Fig. 3 is a similar view, showing the grate upset and the reflector or damper in a position for allowing of a direct draft. Fig. 4 is a perspective view of one of the bearings for the journals of the grate.

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

The main object of my invention is to so construct a grate for fire-places and stoves that a free circulation of air is allowed all around and through it for the purpose of promoting complete combustion of the coals at the back and ends, as well as at the front side, of the grate, and to so construct such a grate that it can be upset at pleasure for the purpose of cleaning it out, as will be hereinafter described.

Another object of my invention is to provide the grate with end bearers or supports which will admit of the upsetting of the grate when desired, and at the same time which will admit of the grate being secured safely in an upright position, as will be hereinafter described.

Another object of my invention is to employ a heat-reflector, which is so arranged within the throat of the chimney as to serve also as a damper for regulating the draft, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a common fire-place having my improved grate B arranged in it. This grate is constructed with a semicircular bottom and an elevated back, *a;* also with perpendicular ends having flattened journals projecting from them, as shown at *b b*, which are exactly opposite each other, so as to support the grate in a level position upon oblong bearings *c c*, which are suitably secured to the jambs or sides of the fire-place, as shown in Fig. 1. This grate B is constructed of bars, so that free air-spaces are formed at the back and ends as well as in front, as shown in the drawings. The elevated back *a* of this grate is supported against the back wall of the fire-place only at its highest point, and it inclines downward and outward from said point, so as to afford a free air-space behind the grate for the upward passage of air through every part of this back, thus preventing the coals at this point from smoldering for want of oxygen.

It will be seen by reference to Fig. 2 that there is comparatively a wide space at the lower portion of the back of the grate, which space is gradually contracted, and terminated at the highest point of the grate. This allows air to rush unobstructed behind the grate, and to find its way through the back *a* as it arises. There may be lugs formed at the upper corners of the back *a*, as shown in the drawings, so that air may pass upward and around the bar which is at the highest point of said back. The elevated back *a* being heavier than the front part of the grate will cause this back to preponderate, and prevent to some extent any liability of the grate upsetting when filled with burning coals.

The ends of the grate B are set a sufficient distance from the side walls of the fire-place to allow of the free circulation of air through these spaces and between the bars of these ends, as shown in Fig. 1.

The journals *b b*, which project from the ends of the grate, rest upon bearings *c c*, as above stated, which are constructed so as to allow the grate to be moved bodily outward or backward for a short distance. The front ends of these bearings *c c* terminate in elevations or stops c^1 c^1, and the inner ends of the bearings terminate in grooves or overhanging portions c^2 c^2, as clearly shown in Fig. 4.

When the flattened journals *b b* are beneath the projections c^2 the grate will be prevented from tilting forward; but when the grate is moved forward, as shown in Fig. 3, its journals will be no longer restrained by said projections c^2, and it may be upset and its contents discharged.

In Fig. 4 the journal *b* is indicated in red in a position which will allow the grate to be upset, and in black in a position which will prevent the grate from oscillating.

Above the grate B is a reflector, C, having a concave front face, which is pivoted to a rod, *g*, that is suitably secured into the side walls of the chimney, so that this reflector can be adjusted as shown in Figs. 2 and 3. The object of this reflector C is twofold. It serves, when in the position shown in Fig. 2, to reflect a large amount of heat into a room which would otherwise be carried up the chimney and lost, and it also serves as a damper or heat-regulator, for when it is in the position shown in Fig. 2, it directs the heated products of combustion forward, leaving but a small space between its upper edge and the front wall of the fire-place for the escape of heat and smoke into the flue or chimney, and when it is arranged as shown in Fig. 3 the smoke and heat will escape directly up the chimney on each side of this damper and reflector. By having this plate C hinged as described, the throat of the chimney can be contracted or increased in size, as may be desired, and when it is employed in conjunction with an open grate having air-spaces all around it, a very perfect fire-place will be obtained, and considerable heat will be saved and radiated into a room.

I am aware of W. H. James's grate patented April 25, 1865, and therefore do not claim anything covered by said patent; but

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The construction of a grate, B, with open front and ends, and with an open elevated back having air-spaces surrounding it, when such grate is supported by journals in such a manner that it can be upset at pleasure or secured firmly in an elevated position, substantially as described.

2. The construction of the oblong bearings *c c* for the flattened journals *b b* of the grate, substantially as described.

3. Arranging the swinging concave reflector and damper C above the open grate B, substantially as described.

4. So constructing a grate and arranging it in a fire-place that it can be upset at pleasure, and at the same time so that it can be locked in an upright position, by means substantially as described.

THOS. McCLEARY.

Witnesses:
A. DAVIS,
CHAS. RUGG.