W. Ferrell,

Furnace Grate.

No. 3,059. Patented Apr. 25, 1843.

Fig. 1.

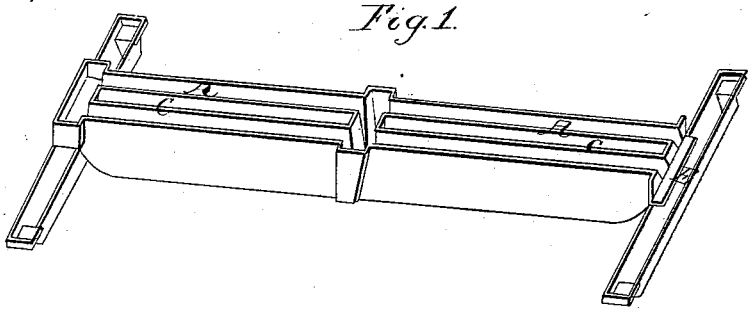


Fig. 2.

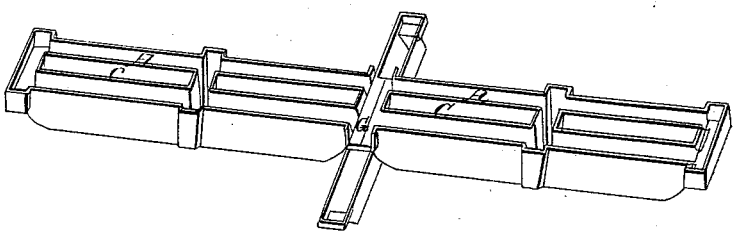


Fig. 3.

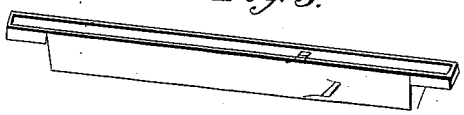


Fig. 5.

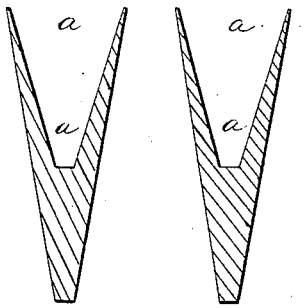
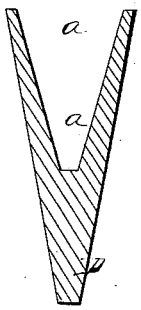


Fig. 4.



UNITED STATES PATENT OFFICE.

WM. FERREL, OF CHARLESTON DISTRICT, SOUTH CAROLINA.

GRATE-BAR.

Specification of Letters Patent No. 3,059, dated April 25, 1843.

To all whom it may concern:

Be it known that I, WILLIAM FERREL, of New York, now a resident of Charleston district, State of South Carolina, have discovered and invented a new and useful Improvement on Ordinary Fire Bars or Gratings as Now in Common and in General Use; and I do hereby declare that the following is a full and exact description of the form, make, use, and operation of the same, reference being had to the acompanying drawings, making a part of this specification.

The principle, operation, and use of my improvement consists, in this of my improvement, of constructing and adapting a cavity in the fire bar or grating, which cavity I call the ashes cavity, and which I fill with ashes, it being a nonconductor of heat, and further I construct, make and cast, the edge or edges of my fireproof bar or grating, to and within the sixteenth of an inch, as to any of the ordinary known size, or sizes, of the ordinary fire bar or grating, now in common or in general use, a reference being had to the accompanying drawings, in the which—

Figure 1, is a perspective view, of a single length of my fire proof bar or grating, with one end of it left open, as is shown at letter F, so as to admit if necessary an additional length. Fig. 2 represents a perspective view of two lengths of my fire proof bar or grating, connected or joined by a center fire proof bearer as shown at letter G. Fig. 3 represents a perspective view of my fire proof bearer. Fig. 4, represents a sectional view of my fire proof bearer. Fig. 5 represents sectional views, of my fire proof bar or grating.

To enable others skilled in the art to make, form, construct, and use, this my discovery and improvement, I will proceed to describe its make, form, construction, use and adaptation, to all steam power, agency, or engines in mechanical use and operation.

I construct, and cast this my improvement of fire proof bar or grating, in any of the known forms, make, or model excepting of this my discovery, invention and new and useful improvement, of making, forming, constructing, and providing a cavity in the bar or grating, which cavity, I call the ashes cavity, and which I fill with ashes, and as shown in the accompanying drawings at letters A, and also, as shown in the sectional drawings at letters *a a*.

The space or opening between my fire proof bar or grating, as shown in the accompanying drawings, at letters C, represents the necessary space or opening, which admits a free circulation or draft, between the bar or grating, which action and effect in common, with the ashes cavity does contribute to lessen and prevent, any undue degree of temperature, to fuse and destroy, the metal, of my fire proof bar or grating.

The bearer of my fire proof bar or grating, I make, form, construct and cast after the accompanying drawings, as shown at letters D, in the perspective and sectional drawings. The bottom of the said fire proof bearer I construct, and cast from one inch to any of the ordinary known size or sizes, of the ordinary fire bar or grating, now in common, and in general use.

What I claim as my discovery, invention, and new and useful improvement, on the ordinary fire bar or grating—is this of my invention and improvement, of—

Forming and adapting a cavity, in my fire proof bar or grating, which I fill with ashes, and which I call the ashes cavity, the principle, operation, and use of the said ashes cavity, when filled with ashes, it being a nonconductor of heat, operates, in its effect, to prevent that excess of temperature on the metal, thereby rendering my fire proof bar or grating more durable, and capable of bearing the heat, which does in common and in general fuse or melt and destroy the ordinary fire bar or grating, as is now in common and in general use, using for that purpose cast, wrought iron, or any other metal or metallic compound which may be used for the intended purpose and effect.

WM. FERREL.

Witnesses:

THOMAS R. SALTAR,

ROBT. L. BAKER.