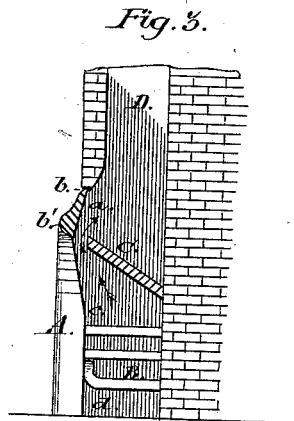
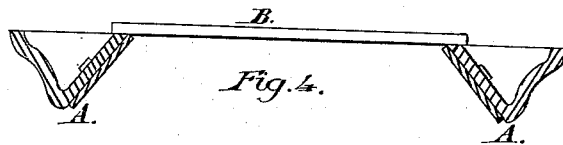
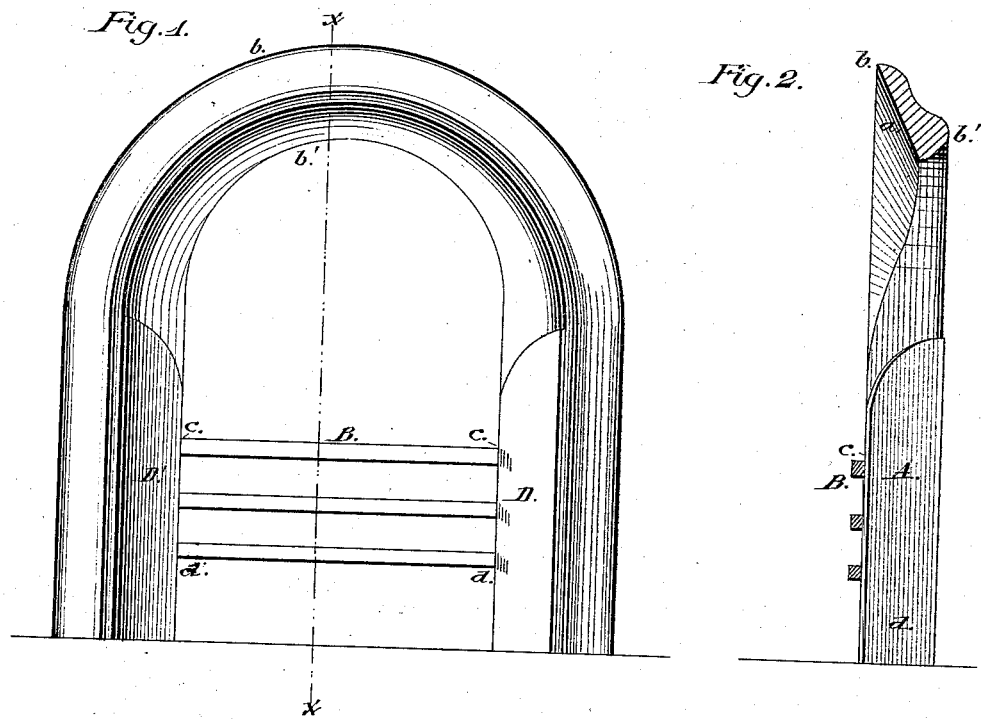


J. OLD.

Grate and Stove Fronts.

No. 168,771.

Patented Oct. 11, 1875.



Witnesses:  
*Myrdner,*  
*Edw. W. Dound*

Inventor:  
*James Old*  
*By Milton C. Donn*  
*Attorney*

# UNITED STATES PATENT OFFICE.

JAMES OLD, OF ALLEGHENY, PENNSYLVANIA.

## IMPROVEMENT IN GRATE AND STOVE FRONTS.

Specification forming part of Letters Patent No. 168,771, dated October 11, 1875; application filed March 18, 1875.

*To all whom it may concern:*

Be it known that I, JAMES OLD, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Grate and Stove Fronts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in the construction of fronts for grates and stoves, the object of which is to enable the grate to be set back in the fire-plate sufficiently far for the front thereof to clear the foot or entrance to the flue, and thus allow a broad reflecting-tile to be fixed over the grate, for the purpose of partly closing the flue, but at the same time to leave sufficient space for a draft-passage to the flue over the front of the grate. It consists in constructing the front with its interior surface inclined or beveled from the edge or circumference of the outer semicircle to the inner. This inclination or bevel commences where the grate is hung, and is carried to the top of the arch, so that when the grate is hung to the flange, and a broad tile is fixed above it with its outer edge in line with the interior of the flange, there will be an air-channel directly over the front of the grate leading to the foot of the flue.

This construction reduces the entrance to the flue, and places it in front of the fire, instead of immediately over it, as heretofore, so that the heat as it ascends impinges on the tile, and is reflected into the room, while the deleterious products of combustion are carried up the flue.

Figure 1 is a rear elevation of the flange. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section of the breast of the chimney. Fig. 4 is an elevation of the front.

A represents the front, the bases and exterior of which are made in the ordinary manner. The upper part of the interior of the front, or from where the grate is hung at *c c*, is beveled or inclined to the exterior thereof from the outer edge *b* to the inner

edge *b'*, as shown at *a a a*, so that the bases of the front at *d d* are farther back than the edge *b'* of the inner semicircle of the arch. When the grate is hung to the flange its front falls in line with the upper edge of the arch, and thus the beveled surface *a a a* forms a segmental channel over and a little forward of the grate-front.

In Fig. 3 the front and grate are shown fixed in a fire-place. The grate B is hung to the flange. Directly above, a broad reflecting-tile, C, is fixed at an angle, with its outer edge in line with the rear of the front, so as to close up the foot of the flue immediately above the grate. In front of the tile, the channel formed by the beveled surface is left open, so that a draft-passage, leading to the flue, is made in front of the fire in the grate, and the products of combustion instead of entering directly into the smoke-flue are compelled to pass forward around the reflecting-tile C, as indicated by the arrows. The heat as it rises from the fire impinges against the tile, and is reflected out into the room.

The greater part of the heat is, by this device, utilized, and but little of it escapes up the chimney.

D' D' are flanges fixed to the exterior of the front immediately before the grate or stove, and set at such an angle to the fire that the heat as it impinges upon them is reflected into the room. They are either made in single pieces, as in the present application, or they may be cast in several pieces, and fixed to the front, or they may be cast with the front.

The front herein described, by enabling the grate to be set farther back in the fire-place, and giving room for a reflecting-tile above it, adds greatly to the heating capacity of the grate, as all the heat arising therefrom is compelled to pass forward and around the reflecting-tile, and from thence it is thrown out in the room, producing something of the effect of the radiators attached to stoves. In addition to this, the position of the grate or stove, back in the fire-place, with the passage to the smoke-flue over its front, is advantageous on account of its cleanliness, as thereby no ashes can fall out on the hearth, and the dust arising from the grate is carried up the flue.

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

The grate-front A, having recess *a*, constructed as described, in combination with grate B and flue D, substantially as and for the purpose hereinbefore described and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of March, 1875.

JAMES OLD.

Witnesses:

SAML. ANDERSON,  
JOHN HERON.