

J. S. RUNYAN.
Fire-Place Grates.

No. 142,514.

Patented September 2, 1873.

Fig. 1.

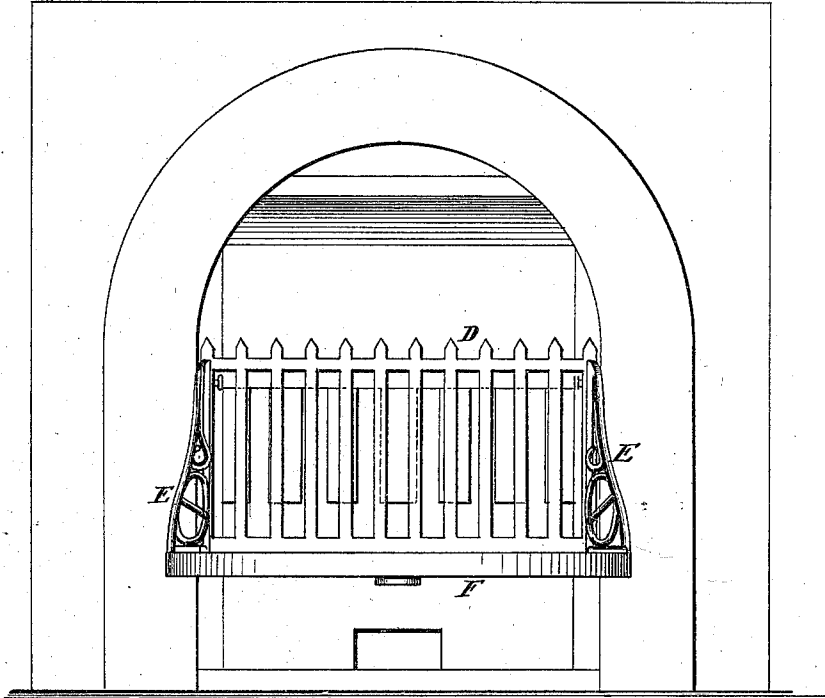


Fig. 2.

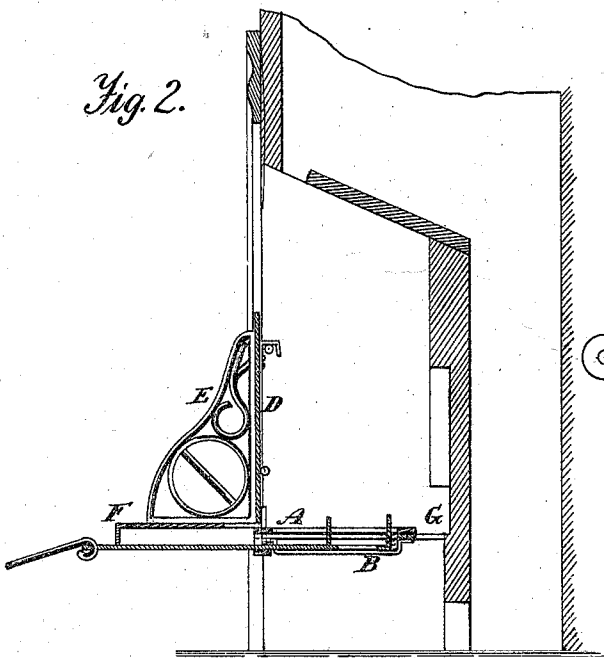
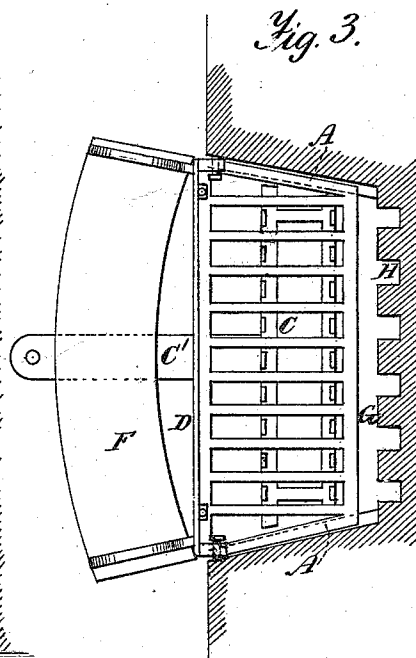


Fig. 3.



Witnesses.
A. Ruppert.
William Broadford.

J. S. Runyan
Inventor.
W. P. Holloway & Co
Attys

J. S. RUNYAN.
Fire-Place Grates.

No. 142,514.

Patented September 2, 1873.

Fig. 4.

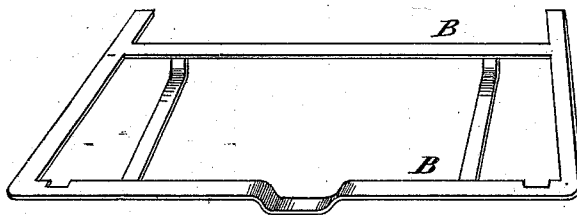
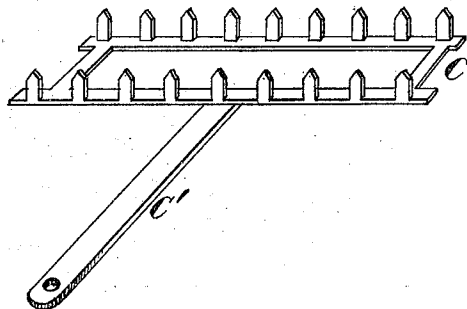


Fig. 5.



Witnesses.

A. Ruppert.

William Bradford

J. S. Runyan
Inventor.

D. P. Holloway & Co
Attys

UNITED STATES PATENT OFFICE.

JOHN S. RUNYAN, OF COLUMBUS, OHIO.

IMPROVEMENT IN FIRE-PLACE GRATES.

Specification forming part of Letters Patent No. 142,514, dated September 2, 1873; application filed May 27, 1873.

To all whom it may concern :

Be it known that I, JOHN S. RUNYAN, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Grates for Fire-Places, of which the following is a specification:

Figure 1 is a front view of my improved grate, showing the fire-place in which it is placed. Fig. 2 is a sectional elevation, showing the grate or rake for the removal of ashes, the hearth with its supporting-brackets, the air-passage in rear of the grate, and the throat or outlet for the smoke above. Fig. 3 is a plan view, showing the grate, the rake, the hearth, and vertical flues in the rear wall of the fire-place for the passage of air. Fig. 4 is a plan view of the frame upon which the sliding rake rests, and Fig. 5 is a plan view of the rake.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to grates to be used in fire-places. My invention consists in combining with the horizontal and vertical portions of the grate, basket, brackets, and a hearth supported thereon; and, further, in constructing the back wall of the fire-place with a transverse recess formed therein at the end of the grate, connected with which there are vertical recesses extending a short distance upward for the purpose of promoting the combustion of the fuel, and at the same time protecting the back wall against the action of the fire.

In constructing grates of this character, I employ a frame, A, of cast or of wrought metal, so constructed as to fit the fire-place in which it is to be placed, it being provided with the necessary bars for the support of the fuel, and with the necessary spaces for the passage of the air up through the fuel, and for the passage of the ashes to the ash-pit below; it is also provided with apertures through its front bar for the passage of pins or bolts for the retention of the front portion of the grate and the hearth. Underneath the grate A there is placed a frame, B, which rests upon supports formed in the walls of the fire-place, it being provided with a depression in its front bar, and with cross-bars fitted for the

reception of the rake C, which consists of two or more longitudinal bars of metal, and two or more cross-bars, the longitudinal bars having upon them vertically-projecting teeth, which are of sufficient length to enter the spaces between the bars of the grate A, in order that as the rake is drawn outward and pushed inward the fuel will be agitated, and the ashes and clinkers will be caused to fall down into the ash-pit. For convenience in moving, this rake has attached to it a handle, C', which projects outward, and may be provided with a rod of iron for moving it, if desired. In front of and rising above the grate A and rake C there is placed a vertical portion, D, of the grate, which consists of horizontal and vertical bars, and is provided with hooks or other suitable devices for securing it to the walls of the fire-place, and with projecting pins or bolts for entering the apertures formed in the horizontal portion A of the grate.

The construction and arrangement of the grate proper are shown in Figs. 1 and 2, where it will be seen that there are brackets E E attached to the outer surface of the vertical portion D of the grate. These brackets serve to support the hearth F, which is attached to their lower ends, it being made in the form of a segment of a circle, or in any other suitable form.

To produce as perfect and uniform combustion of the fuel in the grate as possible, and at the same time protect the back part of the fire-place from the heat of the coal banked against it, I construct the back wall of the fire-place with a transverse recess, G, formed therein at the end of the horizontal part of the grate, and from this recess I extend other vertical recesses or flues, H H, upward to about the height of the front part of the grate, where these flues are terminated, so that the ascending current of air shall be passed through the coal banked against the back wall.

This last-named arrangement of the passages for air will be found to be of great importance in promoting the combustion of the fuel in that part of the fire-place, and also in protecting the same from the action of the intense heat when the material employed in its construction is cast-iron.

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

1. In combination with the grate A, the fireplace, constructed with the recess G formed in the back wall back of the grate, and the vertical recesses or flues H H, extending therefrom, terminating within the coal-space below the level of the upper front edge of the basket, substantially as set forth.

2. The combination of vertical portions D

of the grate, the brackets E E, and the hearth F, substantially as and for the purpose set forth.

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

JOHN S. RUNYAN.

Witnesses:

JOHN A. GROVE,
THEODORE TREYENS.