J. WILSON.

Parlor Grate.

No. 4,191. Patented Sept. 13, 1845.

Fig. 1.

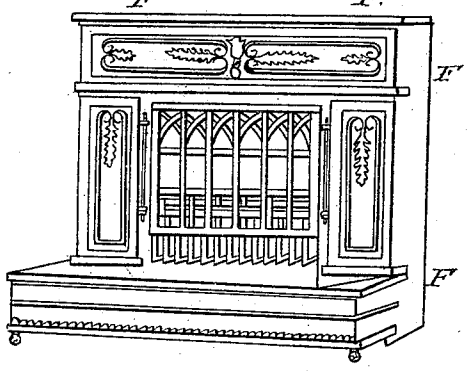


Fig. 4.

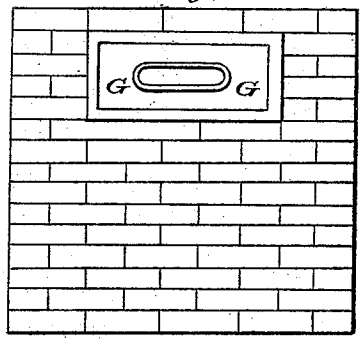


Fig. 3.

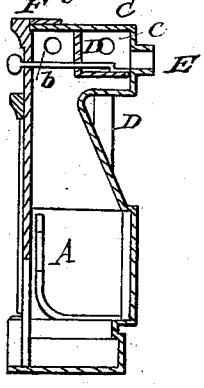
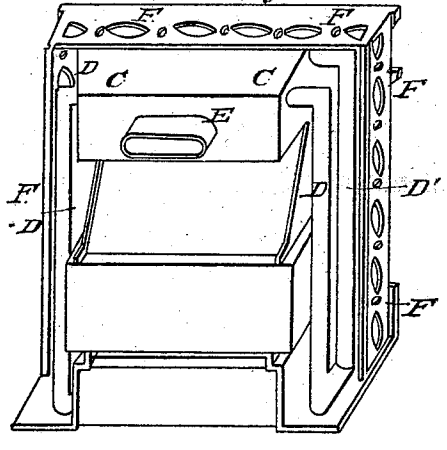


Fig. 2.



UNITED STATES PATENT OFFICE.

JAMES WILSON, OF NEW YORK, N. Y.

PARLOR-GRATE.

Specification of Letters Patent No. 4,191, dated September 13, 1845.

To all whom it may concern:

Be it known that I, JAMES WILSON, of the city of New York, in the State of New York, have invented certain new and useful Improvements in the Manner of Constructing Hot-Air Parlor-Grates, which I denominate the "Grecian Grate"; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawings, Fig. 1, is a perspective view of my stove, in front; Fig. 2, a perspective view thereof on the rear side; Fig. 3, a vertical section of it from front to back, through its center, and Fig. 4, a wall of brick that is made to inclose the fireplace, in a manner and for a purpose to be hereinafter described.

A, A, is the grate for containing the fuel, and which is to be lined at the back and ends with soap-stone, or fire-brick.

B, B, are sash doors, containing panes of mica; which doors extend down so as to cover a large portion of the front grate bars, which they approach, when closed, within a short distance. By this arrangement, when the doors are closed, the draft of air is compelled to pass, principally, through the body of the burning coal, and the fire will be rendered clear in front to an extent not seen in grates as ordinarily used; these doors I usually hinge, but they may be made to slide if preferred; in either case they should be made to fit closely, or much of their beneficial effect will be lost.

It is a well-known fact that in the use of open grates, the gases, or heated air, from which passes directly into the chimney a very large proportion of the heat generated in the combustion of the fuel escapes without heating the apartment; and such would be the case to a greater degree when a grate is inclosed by doors in the manner above described unless provision be made for arresting it, and diffusing it in the room; such provision I have made by an arrangement of parts to be now described.

In Figs. 2, and 3, C, C, is a box, or heated-air space, which is peculiar in its construction, being divided by partitions extending along it from end to end, as shown in the section, Fig. 3. Into the spaces formed by these partitions, the heated-air tubes, D, D′, open at each end of the space. To admit of a direct draft from the fire into the escape flues or pipes, E, E, there is provided a sliding valve, or damper, *a*, such direct draft existing when the damper, *a*, is opened, but when it is closed the heated air is compelled to pass through the tubes or flues, D, D′, at each end of the grate, before it arrives at the escape pipe; the damper, *a*, may extend from end to end of the box, C, so as to allow a free passage; in the section, this damper is represented as closed, and, of course, so situated as to cause the heated air to pass through the side tubes or flues. It then passes directly up from the fire into the space *b*, into which the tubes D, enter at either of its ends. These tubes or flues descend nearly to the bottom of the grate, where they connect with the tube, D′, up which the heated-air ascends, and enters the space, *c*, into which the escape pipe opens, and communicates with the chimney.

When the grate is set into a fire place no part of its back, or sides, is to be in contact with the brick work, a space, or chamber, being left for the heating and free circulation of air. At each side, and on the top of the stove there is an offset, extending back at right angles to the front, consisting of an open-work plate, F, F, which may be about three inches broad; the back edge of this is to be in contact with the jambs and breast of the fire place. For the discharge of the hot air within the fire place a brick wall, Fig. 4, is to be built sufficiently far back to stand at the distance of two, three, or more, inches from the back plates of the grate, and this wall is to be closed at top so as not to admit any passage to the chimney excepting through the escape pipe, E. Into this wall, a cast, or wrought, iron plate, G, G, is to be inserted; this plate has a collar on it that receives the escape-pipe, and is provided with flanches allowing of its being removed for the admission of a chimney-sweeper, or for any other purpose. When the grate is in place, an air-chamber will thus be formed at the back and ends of it where the contained air will be highly heated by the heat radiating from the tubes, D, D′, and from all the cast-iron plates constituting the rear portion of the whole. In close apartments, it may be found advantageous to provide the means of admitting fresh air from without the room into the middle portion of this air-chamber, a damper being provided by which to close, or govern its passage.

Having thus fully described the manner

in which I construct my parlor grate, and arrange the respective parts thereof, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The manner in which I have arranged the partitions and damper in the box, or heated-air space, C, C, and combined them with the heated-air tubes or flues D, D′, at each end of the grate, for the purpose set forth.

2. I claim the forming of the jambs of the grate with open-work offsets F, F, in combination with the particular arrangements and provision made for setting the same so as to constitute an air-heating chamber in the rear thereof, as described.

3. I do not make any claim to the forming of an air-heating chamber at the back of a grate, but limit my claim to the particular manner herein made known of arranging the same, in connection with the wall that receives the plate, G, G, and the escape pipe, E.

JAMES WILSON.

Witnesses:
H. H. BENLOCK,
FRANKLIN BROWN.