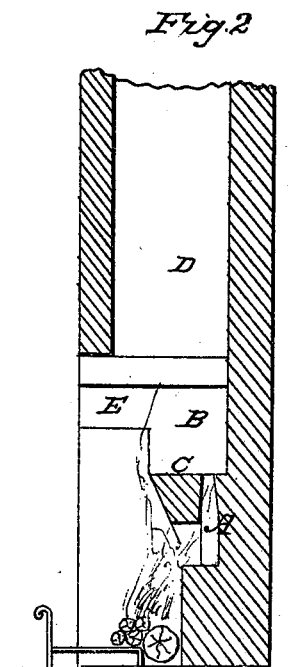
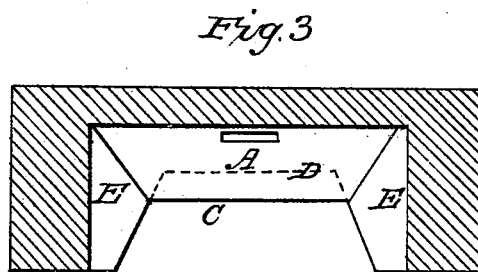
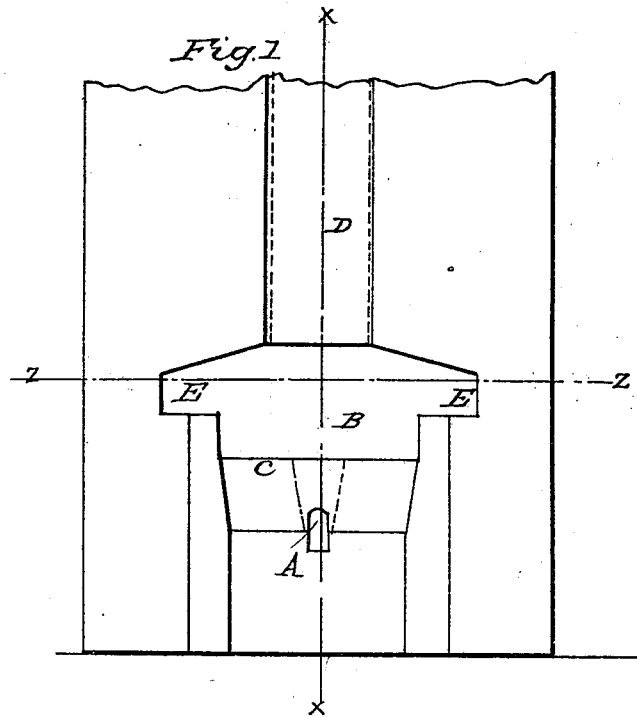


C. W. RUSSELL.

Fire Place.

No. 7,149.

Patented March 5, 1850.



UNITED STATES PATENT OFFICE.

CHAS. W. RUSSELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

CONSTRUCTION OF FIREPLACES AND THROATS OF CHIMNEYS.

Specification of Letters Patent No. 7,149, dated March 5, 1850.

To all whom it may concern:

Be it known that I, CHARLES W. RUSSELL, of the city of Washington and District of Columbia, have invented a new and useful improvement in the construction of fireplaces and chimneys to increase their draft and prevent smoking, called the "centripetal fireplace," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a front elevation of a portion of a chimney, the breast being removed in order to show the formation of the flues. Fig. 2 is a vertical section on the line $x x$ of Fig. 1. Fig. 3 is a horizontal section on the line z, z , of Fig. 1.

Similar letters in the several figures refer to corresponding parts.

The nature of my invention and improvement in constructing fireplaces, and chimneys, and in altering those already constructed, to increase their draft and prevent them from smoking, consists in forming a flue A, in the center of the back of the fire place, between the hearth and top of the back or horizontal offset C extending horizontally from the fire place into the brick work as far as the back wall of the chimney and them perpendicularly to the top of said back and opening into the space B directly above the horizontal offset C, and centrally under the flue D, of the chimney, flaring to the right and to the left as it ascends and at the same time becoming narrower in its cross section making the area of the outlet at the plane of the offset C, lesser than the area of the inlet A, at the back of the fire place, as represented in the drawings. The top of the horizontal portion of this flue commences about 5 inches, or two courses below the top of the back or offset. Its area in front is about 2x5 or 10 inches. The area of its outlet is about one third less. And in connection with the before described flue A in the back of the fire place the main flue D, of the chimney stack must be brought down to within nine inches from the bottom of the arch or breast of the fire place, the gathering over or contraction above the fire place and below the flue commencing at E, four inches beyond the jams

of the fire place and continued at an angle of 10 degrees till it intersects the bottom of the said main flue D, which is of the usual size and which is continued thence upward at a uniform size to the top of the chimney stack. And also in connection with the before described improvements dropping the back of the fire place about two courses below the arch or breast forming the horizontal offset C, before mentioned, thus increasing the size of the space between the flue in the back of the fire place and the main flue by which the draught is greatly increased. The reason why this additional flue A in the back of the fire place, and the bringing down of the main flue D nearly to the arch of the breast has the effect of increasing the draught is that as soon as fire is applied to the combustible materials in the fire place and the heat passes into said contracted back flue A the air is expanded and put in motion and a strong upward current is created in said flue and is continued into the main flue D causing a suction from the sides and from all parts of the fire place by reason of the partial vacuum that is created in the center which is instantly filled by the streams of air rushing in from the front and sides and thus producing a powerful upward current or draught sufficient to overcome any downward currents in the chimney, and carrying up all the smoke, light dust, and ashes that may arise in the vicinity of the fire place.

Chimneys constructed on the plan as before described very rarely smoke, and fire places that have a poor draught and which let the smoke into the apartments, when altered to the above described form, invariably draw well, and carry off all the smoke and produce a lively combustion of the fuel and pleasant radial heat.

The back of the fire place, where the opening is made, should be faced or lined with a plate of iron having an opening in it corresponding with the opening in the brick work to render the chimney back, and mouth of the opening more durable.

What I claim as my invention and desire to secure by Letters Patent consists in—

Constructing chimneys with an additional flue A in the back of the fire place, made in

the manner and for the purpose herein fully
set forth, in combination with the bringing
down of the main flue D of the chimney
stack, as above described, with the hori-
5 zontal offset C at the top of the back of the
fire place and the spaces E at the sides all as
herein fully set forth.

In testimony whereof I have hereunto
signed my name before two subscribing
witnesses.

CHAS. W. RUSSELL.

Witnesses:

WM. P. ELLIOT,

H. E. B. DENNISON.