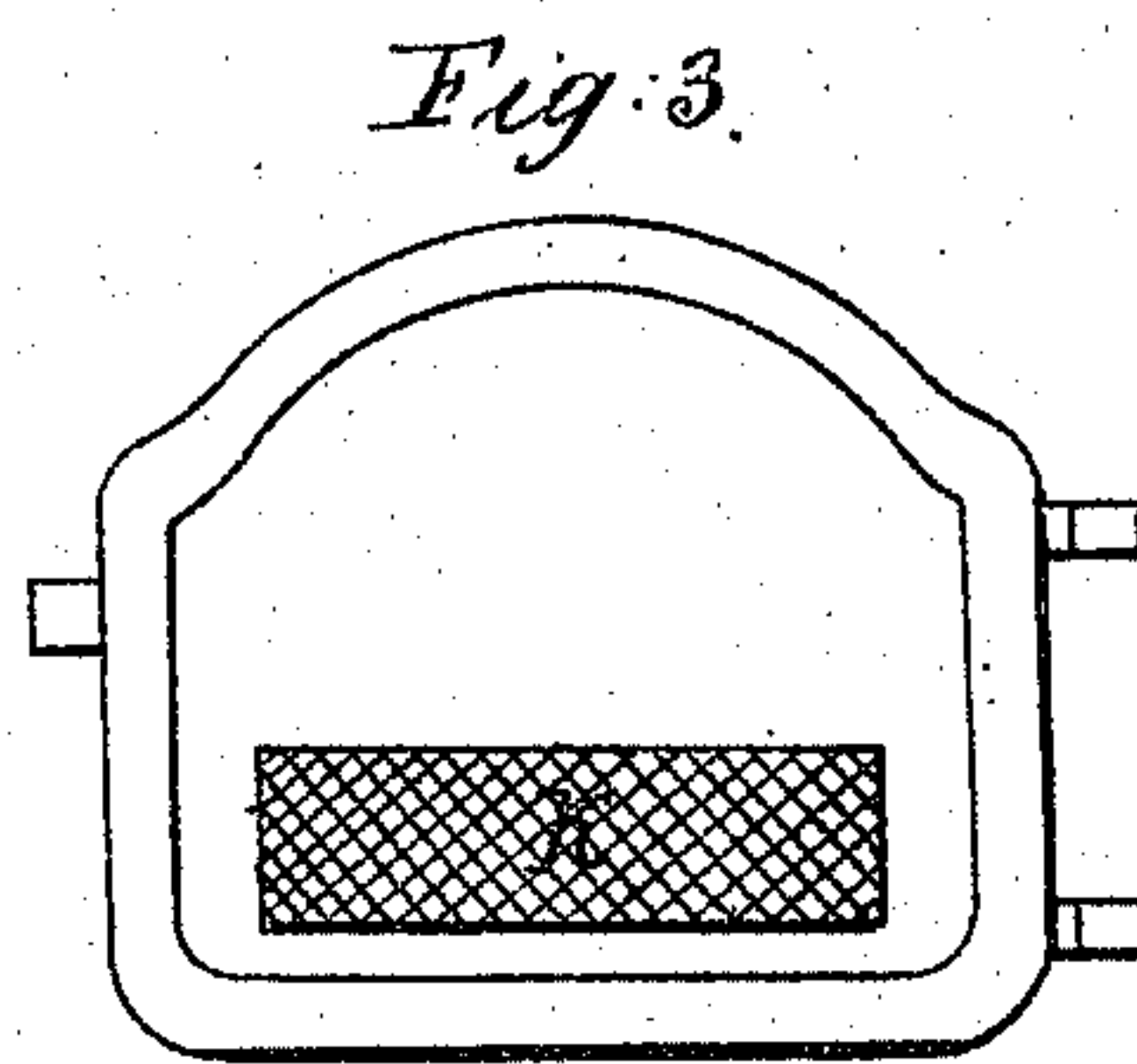
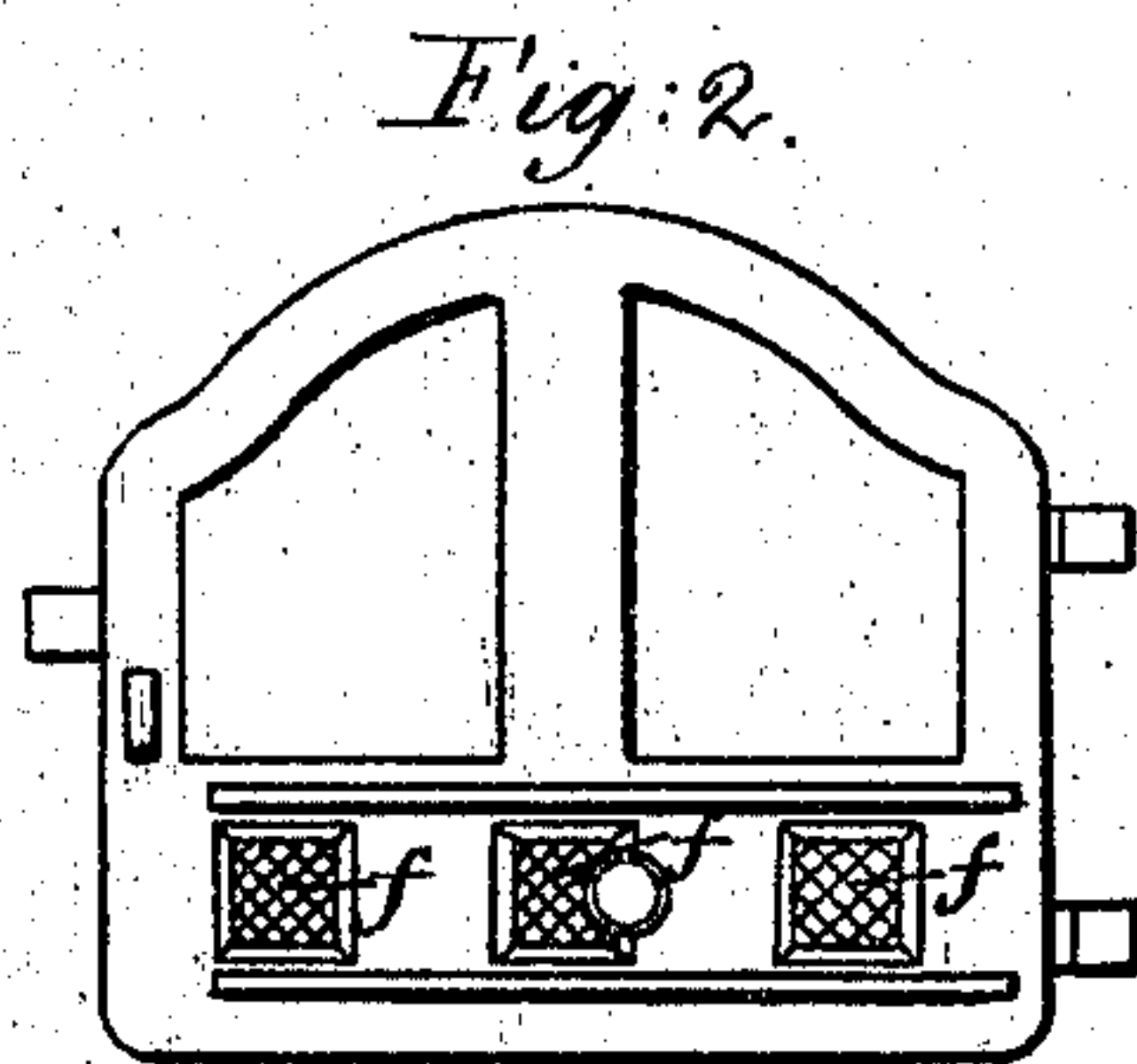
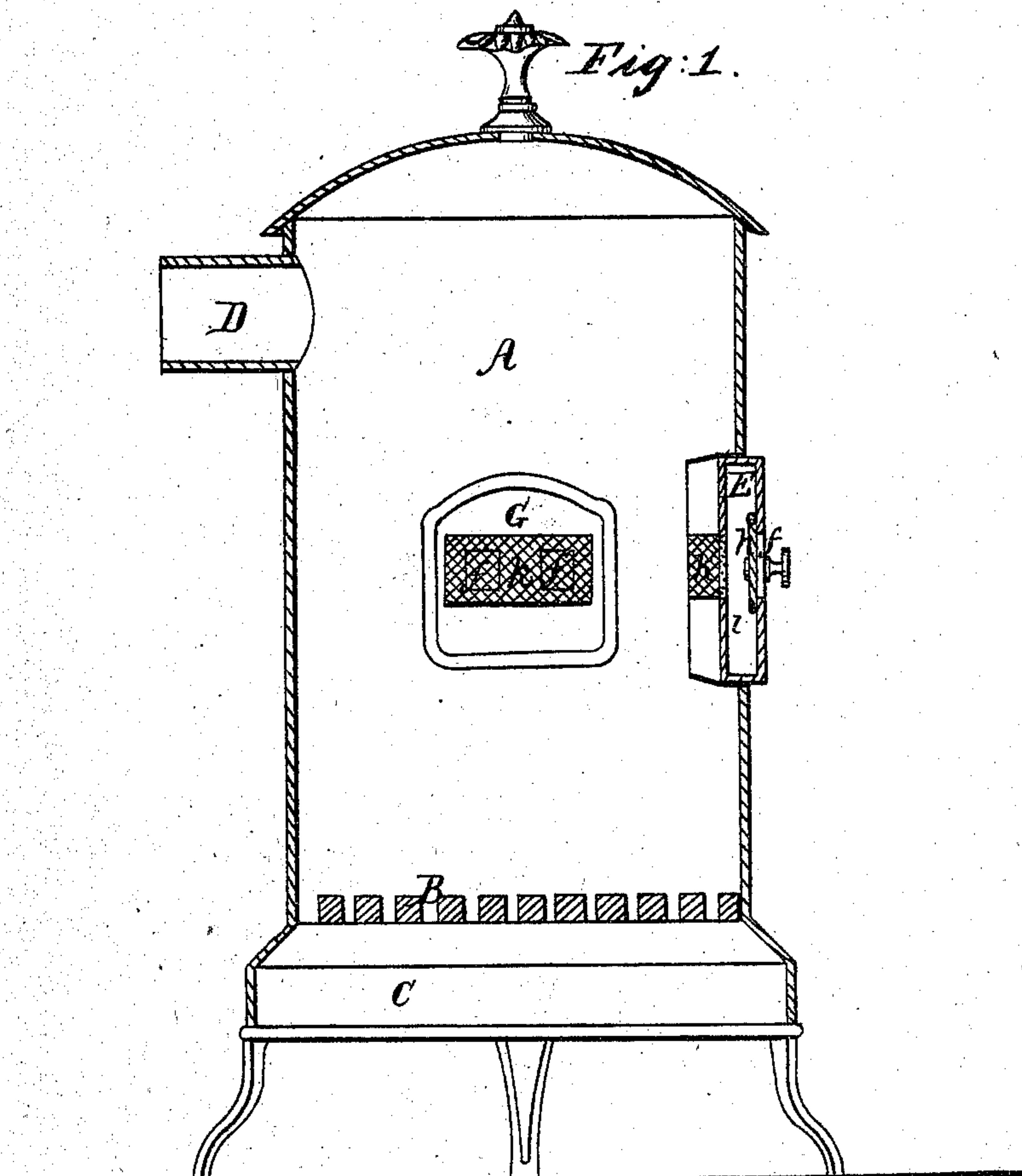


E. WESTON.

Stove Door.

No. 105,393.

Patented July 12, 1870.



Witnesses:

Edw. C. Jones.
Rollin Germain

Inventor;

Elijah Weston
Per J. Fraser & Co. attys.

United States Patent Office.

ELIJAH WESTON, OF BUFFALO, NEW YORK.

Letters Patent No. 105,393, dated July 12, 1870.

STOVE-DOOR.

The Schedule referred to in these Letters Patent and making part of the same.

I, ELIJAH WESTON, of the city of Buffalo, county of Erie and State of New York, have invented an Improvement in the Construction of Stoves, of which the following is a specification.

The object of my invention is to facilitate the combustion of the smoke and unconsumed gases of the fuel; and

It consists in constructing the feed-door or mica-windows, or both, with slides or registers for the admission of air, in combination with a screen of wire-cloth or perforated metal, situated on the inner partition of said door or windows, the same being made with a double wall, leaving a space or chamber between.

As represented in the accompanying drawing—

Figure 1 is a sectional elevation of a cylindrical stove so constructed;

Figure 2, an elevation of the inside of the door; and

Figure 3, a like view of the outside of the same.

In the drawing—

A is the body or cylinder of the stove, of which B is the fire-grate, C the ash-pit, and D the smoke-pipe.

The door E is situated at such an elevation as to admit air through the slide or openings *f f*, a little above the ordinary level of the burning fuel, being nearly as possible coincident with the line of separation between the flame and ignited fuel.

If fixed frames or windows, G, are employed, they are situated at like elevation at any convenient points or distances apart around the sides.

The door, as also the window-frames, are preferably cast with double walls, as shown, the external one being provided with the air-openings *f f* and slide *h*, the latter to regulate the amount of air admitted, and the interior plate having an opening of a size equaling

the combined areas of the slide openings, the latter being covered by the wire-cloth *k*, or equivalent perforated material.

There is an intervening chamber, *l*, which holds sufficient quantity of air to be kept warm.

The volume of air which passes freely through the slide-openings into the chamber after being heated is subdivided into numerous minute jets, corresponding with the meshes of the perforated screen, and these myriad jets intermingle with the smoke and gases which arise from the fuel, diffusing oxygen in their midst, thereby igniting and consuming them before they escape into the smoke-pipe. This method of supplying air is shown by experience to be far more effectual than that of admitting an undivided volume, partly, it is believed, because the small jets do not sufficiently lower the temperature of the gases to prevent the ready combustion, and partly in consequence of the more general and uniform diffusion obtained.

The device described may be applied in various ways to admit air to the chamber of combustion at a point in contact with or immediately above the surface of the fire of stoves and other heating apparatus, with advantage in the saving of fuel and increased amount of heat.

I claim—

The employment, in stoves and other heating apparatus, of the air-induction chamber, consisting of the chamber *l*, in combination with the wire-gauze distributor *k*, and graduating damper *h*, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ELIJAH WESTON.

Witnesses:

JONA. AUSTIN,
KATE N. JONES.