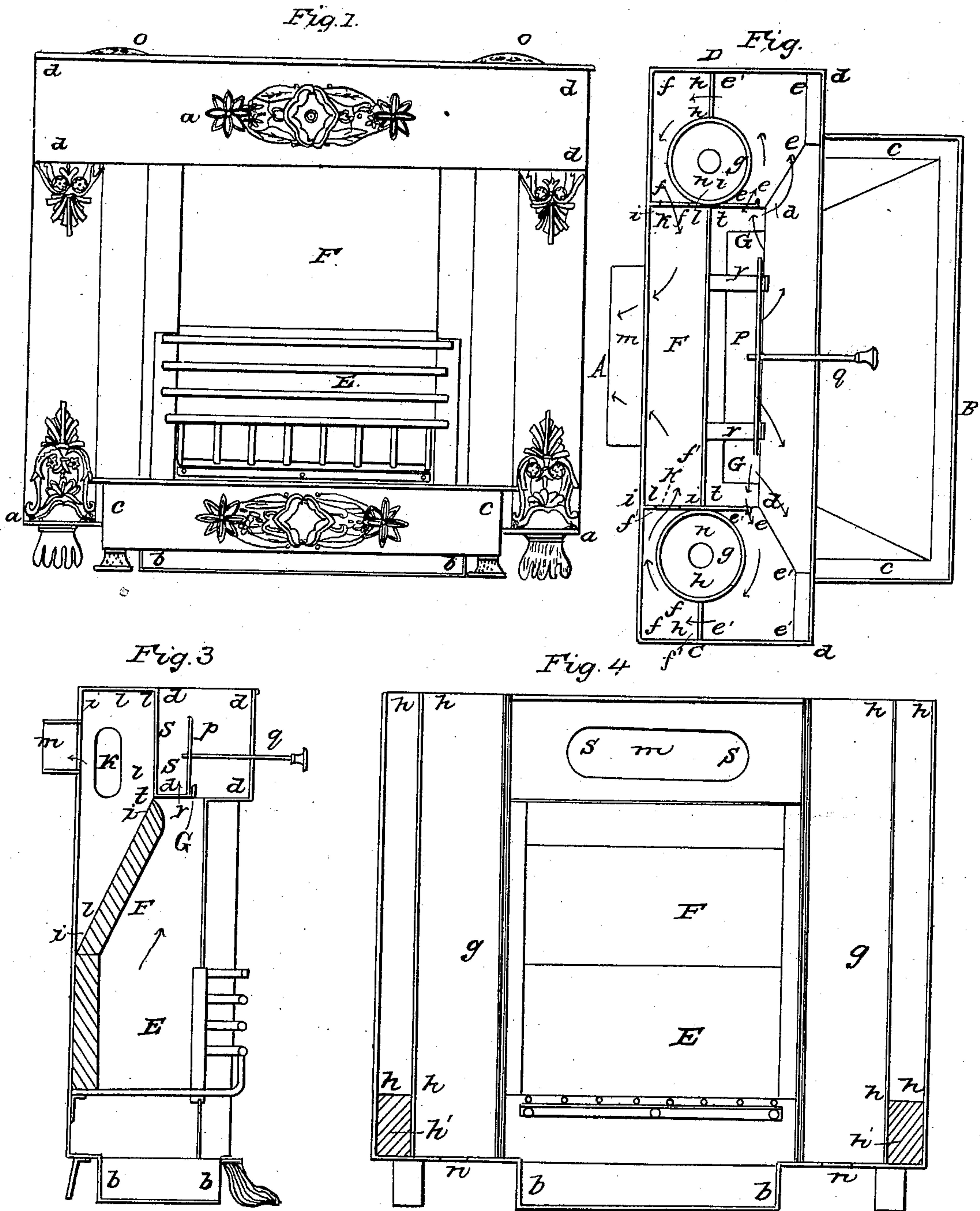


C. R. WHEELER.

Fire Place.

No. 1,693.

Patented July 18, 1840.



UNITED STATES PATENT OFFICE.

CHARLES R. WHEELER, OF BOSTON, MASSACHUSETTS.

STOVE.

Specification of Letters Patent No. 1,693, dated July 18, 1840.

To all whom it may concern:

Be it known that I, CHARLES R. WHEELER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Parlor-Grates or Open Fireplaces.

The said improvement, the principles thereof and modes in which I have contemplated the application of the same by which it may be distinguished from other inventions of a like character, together with such parts or combinations I claim as my invention and consider original and new I have herein set forth and described, which description taken in connection with the accompanying drawings herein referred to, forms my specification.

It is well known that the great desideratum in grates or stoves, is to heat the atmosphere in the room to the requisite temperature, for comfort, with the least possible expenditure of coal or other fuel. It will likewise be admitted that this object will be more effectually attained by revolving the air in the room, and, as it were, constantly recharging the same with caloric. This principle has already been adopted in the construction of stoves but has not, to my knowledge been applied to the open grate or fireplace, which application or combination constitutes the novelty or distinguishing feature of my improvement, by which, besides heating the air of the room by the smoke &c. I obtain the heat directly from the fuel, and not through the medium of a conducting material, as must necessarily be the case in stoves, where the fuel is inclosed on all sides.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1, is a front view or elevation of my parlor grate; Fig. 2, represents a detailed top view, or plan showing the appearance of the interior parts of the grate, when the top is removed; Fig. 3, is a longitudinal section taken vertically on the line A B; Fig. 4, being a transverse section taken vertically on the line C D.

a— a— a— a, &c., Fig. 1, is the casing or exterior of the grate which incloses the various chambers or apartments.

b b, Fig. 3, is the ash box and *c c* the movable hearth, shaped and arranged as in grates of ordinary construction and as seen in the drawings.

E is the fire-place in which the fuel is placed, the bars of which are arranged in the usual manner. The back F of this fire place is beveled inward toward the top as seen in Figs. 1, 2, and 3 so that the smoke &c. shall converge to and pass through the rectangular aperture or flue G G Fig. 2, directly over the fire, into the chamber.

d d d d, above the same, on the right and left of this apartment the pectagonal chambers *e e e*, *f f f*,—*e' e' e'*, *f' f' f'*, (extending from the top to the bottom of the grate as seen in Fig. 4,) are similarly, and respectively arranged, with cylinders *g, g*, and partitions *h h*, *h h*, &c., situated or fixed in the same as seen in the drawings, dividing the spaces *e e f f f f e e e*—*e' e' f' f' f' f' e' e' e'* each into two apartments *e e e e e*, *f f f f f*, *e' e' e' e' e'*, *f' f' f' f'*, which communicate with each other by means of openings *h'*, *h'*, in the bottoms of the partitions *h h h h*, Fig. 4 thereby forming two descending flues *e e e*, &c. and *e' e' e'*, &c. and two ascending ones *f f f*, &c. and *f' f' f'*, &c. In the sides *i i*, *i i* Figs. 2, 3 of the ascending flues, spaces or apertures *k k*, *k*, *k*, &c., are formed, which open into the wedge shaped flue *l l* at the back of the fire place, which latter flue communicates with the discharge pipe *m* in the back of the grate.

The cylinders *g, g*, receive the atmosphere of the room through circular openings *n, n*, at their bottoms, and the smoke passing through the various flues in the directions indicated by the arrows in the different drawings, viz. through the flue G G into the chamber *d d d d*; thence to the right and left down the descending flues *e e e* &c. *e' e' e'* &c. passing through the openings *h' h'* in the partitions *h h*, *h h* and upward through the ascending flues *f f f*, &c. *f' f' f'* &c. thence through the openings *k, k*, and flue *l, l*, to the discharge pipe *m*, and thus, as will readily be perceived, heat every portion of the surface of said cylinders, with the exception of the two small portions at which they are tangents to the partitions

h h h i i, &c. Thus the air in the cylinders becomes heated, and is allowed to escape into the room again, through any suitable openings *o o*, Fig. 1, in the top of the cylinders or grate.

When the room becomes sufficiently warm, the smoke may be made to escape directly through the discharge pipe *m*, by means of the damper *p*— moved by the handle or wire, *q*, and sliding on supports *r, r*, as seen in the drawing, said damper operating with the opening *s, s* Figs. 3 and 4 in the partition *t t* so as to allow or prevent the smoke from passing into the flue *l l* and through the same into the discharge pipe *m*.

The peculiar arrangement of the cylinders and partitions should be particularly noted, the same being such that the smoke has a rotary motion, and will heat every portion of the surface of the cylinders. The fire place will be lined with fire brick, soapstone or other suitable material, and the exterior of the grate may be formed of sheet or cast iron, or a combination of both ma-

terials according to the pleasure of the manufacturer.

Having thus described my improvements in parlor grates, I claim in the same as follows:

Constructing the hollow jambs by making each of them with a vertical division plate, so as to conduct the smoke down on one side and up on the other; in combination with the cylinders, placed between said flues, for the purpose of heating the air of the room; the whole being constructed arranged and operating in the manner and for the purposes herein above described.

In testimony that the above is a true description of my said invention and improvement I have hereto set my signature this eighth day of February in the year of our Lord eighteen hundred and forty.

CHAS. R. WHEELER.

Witnesses:

R. H. EDDY,
E. LINCOLN, Jr.