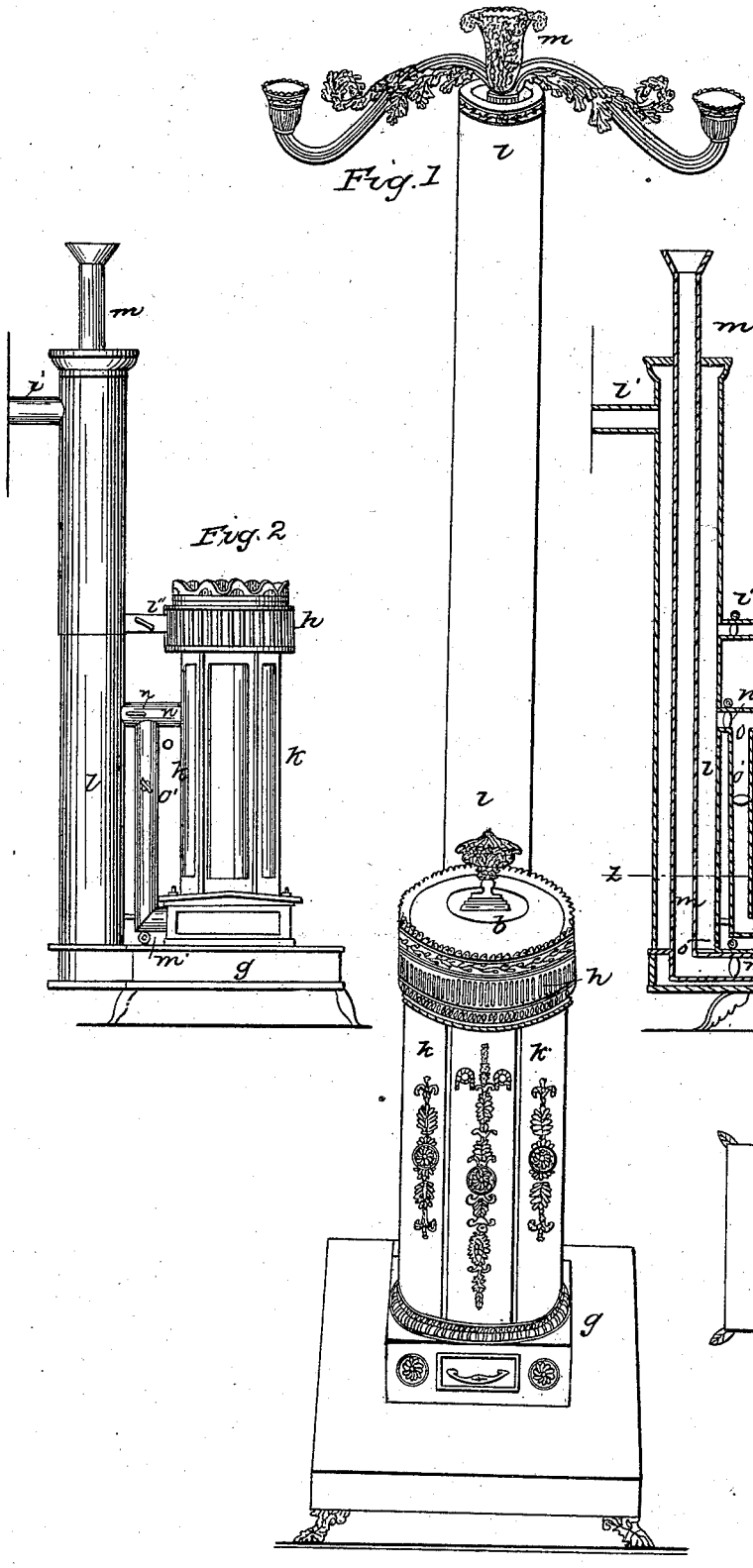
J. MORRISON.

Heating Stove.

No. 3,946. Patented March 12, 1845.



N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN MORRISON, OF NEWARK, NEW JERSEY.

STOVE.

Specification of Letters Patent No. 3,946, dated March 12, 1845.

To all whom it may concern:

Be it known that I, JOHN MORRISON, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Stoves for Heating Parlors and other Purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1, is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a vertical section through the center on the line *x*, *x*, Fig. 1. Fig. 4, is a horizontal section on the line *z*, *z*, Fig. 3.

The nature of my invention consists in taking the air from near the ceiling of rooms, for supplying air to the fire, and thus incidentally ventilating the apartment and burning the fuel at a high temperature, thereby economizing fuel.

The construction of my improvements is as follows; a stove of any convenient shape is made having a fire chamber (*a*, Fig. 3,) in it lined with fire brick, above which the fire chamber is continued nearly to the top of the stove, where it is contracted at (*a'*,) and the smoke is discharged through a row of holes into the outer casing for the egress of the smoke, as shown by the arrows in Fig. 3, there is an opening (*b*,) for the supply of fuel from above; this upper part is of the same diameter as the inside diameter of the brick lining; at the bottom of the fire chamber there is a grate (*c*,) for the coal to rest on, below which a short cylinder (*d*,) extends down to the bottom of the stove, and is closed by a sliding door (*e*,) on which the ashes from the grate fall; the cylinder (*d*,) is of larger diameter than that of the fire chamber, and in the flanch (*f*,) that connects them, there is a series of holes for a purpose hereafter named; the outer casing for this stove (Figs. 1, and 2,) is a straight cylinder placed on a square, or other formed base (*g*,) with a projecting cornice (*h*,) or other finish at top; at the bottom of this projection there is a horizontal division, plate (*i*) Fig. 3, that extends inward to the fire chamber at the point (*a'*,) above named which forms the upper chamber for the smoke &c. to pass into—four pilasters (*k*,) extend from this chamber down to the base and open into both, thus forming diving flues (a cross section of them is shown in Fig. 4,) to convey the smoke from top to bottom, where it enters a large ascending pipe or radiator (*l*,) that extends up behind to some distance above the stove, from this a pipe (*l'*,) Figs. 2 and 3, leads into the chimney; there is a short pipe (*l''*,) opening from the chamber at the top of the stove, directly into the said pipe (*l*,)—this is furnished with a damper which when closed causes the smoke to descend as above described through the pilasters.

A pipe (*m*,) of smaller diameter than pipe (*l*,) extends from near the ceiling of the room in which the stove is placed (where it may be divided into two or more branches as shown in Fig. 1,) down through the center of the pipe (*l*,) and into the base where it is furnished with a damper (*m'*,) and terminates in the cylinder (*d*,), this supplies the air to support combustion which is heated in its passage to the fire to a high temperature, the air by this arrangement is drawn from near the top of the room where it is found to be most impure and the room is thus effectually ventilated—if the air furnished to the fire is found not to be sufficient in quantity to perfectly ventilate the apartment, the current is increased by opening a valve (*n'*,) in a short pipe (*n*,) that communicates from pipe (*l*,) to the space around the fire chamber, this causes the air to pass up into said space through the holes at (*f*) Figs. 3, and 4, and out through the smoke flue. There is another pipe (*o*,) leading down from pipe (*n*,) to the base of the stove and thence into cylinder (*d*,) which, when damper (*n'*,) is closed, carries the hot air from the space around the fire chamber again into the cylinder (*d*,) and adds heat to that entering the fire. This pipe is also furnished with a valve (*o'*.)

A stove constructed as above will perfectly ventilate a room and heat it with much greater economy than ordinary stoves, in consequence of presenting a large radiating surface and burning the coal at a high temperature by introducing the air in a heated state.

Having thus fully described my improvements what I claim therein as new and desire to secure by Letters Patent is—

1. The combination of a pipe or tube (*m*) constructed and arranged substantially in

the manner set forth, with a stove or fire chamber as above described for ventilating the room and supplying air at a high temperature.

2. I also claim in combination with the above the radiator or column (*l*), the outer case surrounding the stove and the eduction or hot air pipes (*n*, *o*,) constructed and arranged in the manner and for the purpose herein specified.

JOHN MORRISON.

Witnesses:
J. J. GREENOUGH,
J. H. GODDARD.