F. E. THOMPSON & D. KNAPPENBERGER.

OPEN-FRONT HEATING-STOVE.

No. 193,198. Patented July 17, 1877.

Fig. 1

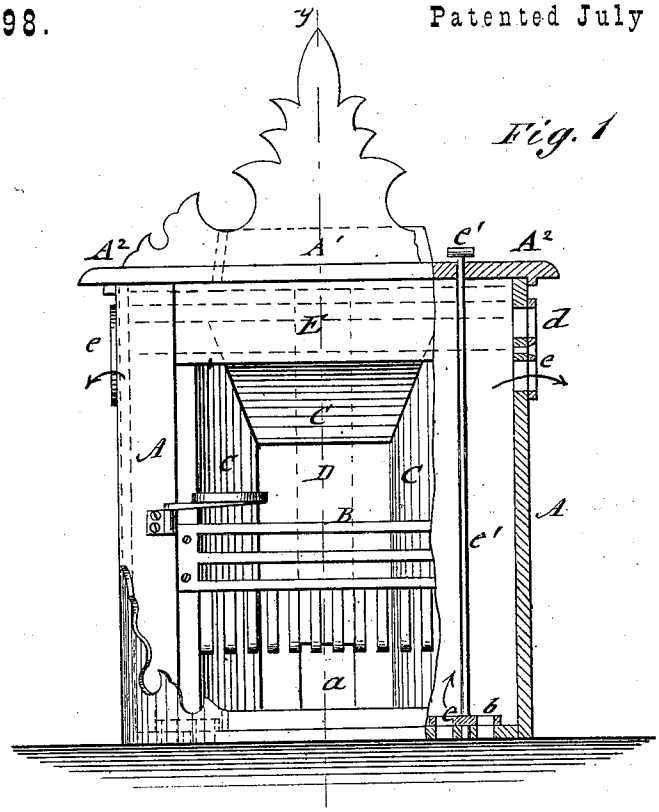
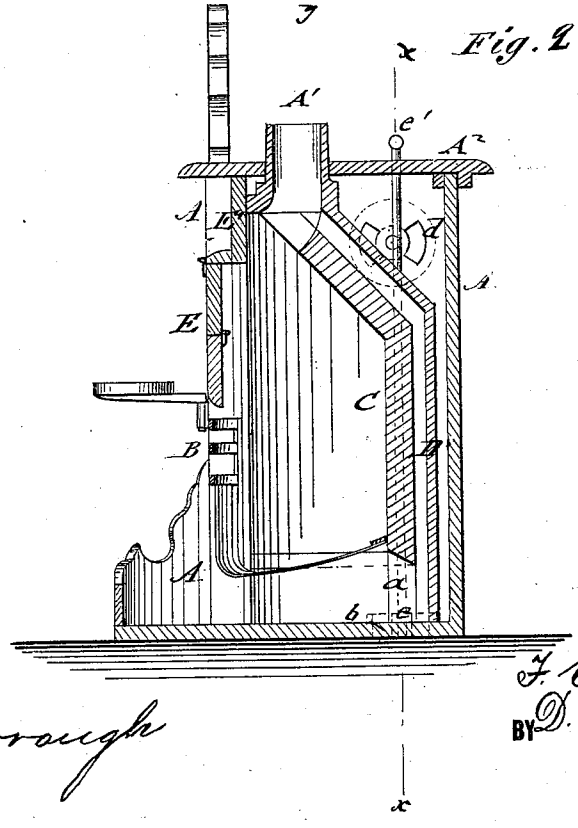


Fig. 2



WITNESSES:

C. Neveux

J. H. Scarborough

INVENTORS

F. E. Thompson.

BY D. Knappenberger

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANCIS E. THOMPSON AND DANIEL KNAPPENBERGER, OF BELKNAP, PA.

IMPROVEMENT IN OPEN-FRONT HEATING-STOVES.

Specification forming part of Letters Patent No. **193,198**, dated July 17, 1877; application filed May 12, 1877.

To all whom it may concern:

Be it known that we, FRANCIS E. THOMPSON and DANIEL KNAPPENBERGER, of Belknap, in the county of Armstrong and State of Pennsylvania, have invented a new and Improved Heating-Stove, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a front elevation of our improved heating-stove, partly in section, on line *x x*, Fig. 2, and Fig. 2 a vertical transverse section of the same on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of our invention is to provide an improved heating-stove that combines the cheerfulness and advantages of the open grate with the economical features of the common heating-stoves, and which provides, also, a continuous and conveniently-regulated supply of pure heated air, acting as a ventilator and dust-escape in all the seasons.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the drawing, A represents the outer rectangular casing of our improved heating-stove, which is provided at the open front part with a grate, B, of the customary construction.

The fire in the grate is to be surrounded by four tiles, C, which are placed in outwardly-inclined or flaring position, so as to throw the heat forward by reflection. The tiles are supported by a closely-fitting iron jacket, which is cast with a dust-flue, D, that is connected with a central bottom aperture, *a*, below the tiles, so as to conduct off all the dust in the room, and act also, to some extent, as a ventilating-flue. The tiles are set loosely in the jacket, which is connected with the front, the front being formed with a view to prevent the gas from escaping forward into the room.

The exit-collar A^1 is joined directly to the fire-box, which is superior to the common construction, in which the collar is joined to the top plate at some distance above the throat leading from the fire-chamber, thus having to pass through a large chamber of air without flue or collar to conduct the discharge, which is objectionable.

The entrance-opening of the exit-pipe A^1 and the upper end of the forward inclined tile C are rounded off to admit the free exit of the smoke and gases into the pipe and chimney.

The open fire-place is surrounded by the casing A and closed by a top shelf, A^2, which form, together, a large air-chamber around the back, top, and sides of the fire-place. The air is introduced into this chamber, through bottom openings *b*, by means of a pipe or box beneath the floor, from the outside of the house, being then heated up in the air-chamber, and thrown into the room by openings *d* at the top part of the casing A.

The bottom entrance and top exit openings are opened or closed by registering devices *e*, by which the admission of air is regulated. The bottom registers are operated by rods *e'*, passing up through the air-chamber and out through the top shelf. The air is warmed up in this air-chamber and supplied in a pure state to the room.

The front of the stove is provided with a folding door or shield, E, that is hinged to the face-plate, and stored away by its own weight in a recess, E', of the face-plate, hanging down from the same, as shown in Fig. 2, when the fire is to be started. The face-plate beneath door or shield E catches all smoke and gas and conducts the same off through the exit-pipe A^1.

The stove rests on the floor and against the wall with or without feet, the outer shell never becoming heated to such an extent as to be dangerous. If feet are used, they may be made of cylindrical form, and wide enough to correspond with the bottom apertures, so as to conduct the air.

The stove economizes heat and fuel, ventilates without introducing cold air, draws off the dust, so as to provide a purer air in the room, and admits a quick fire at any time, without blowers, by the folding shield.

The stove can be made ornamental in ap-

pearance by attaching a fender and hinged side brackets, the whole forming a heating-stove of superior qualities.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination, in a heating-stove, of the casing A, exit A^1, shelf A^2, tiles C, jacket having the flue D connected with aperture *a*, and the shield E, and recess E′, all constructed and arranged as and for the purpose specified.

FRANCIS E. THOMPSON.
DANIEL KNAPPENBERGER.

Witnesses:
D. P. MARSHALL,
D. L. MARSHALL.