MOODY & HALL.

Heating Stove.

No. 56,979. Patented Aug. 7, 1866.

Fig. 1

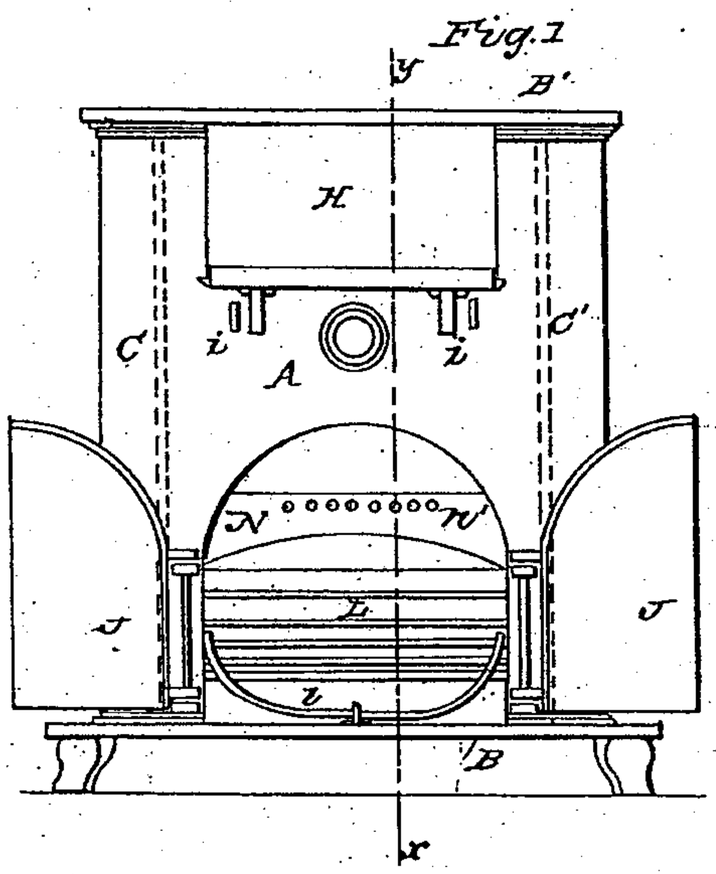


Fig. 2

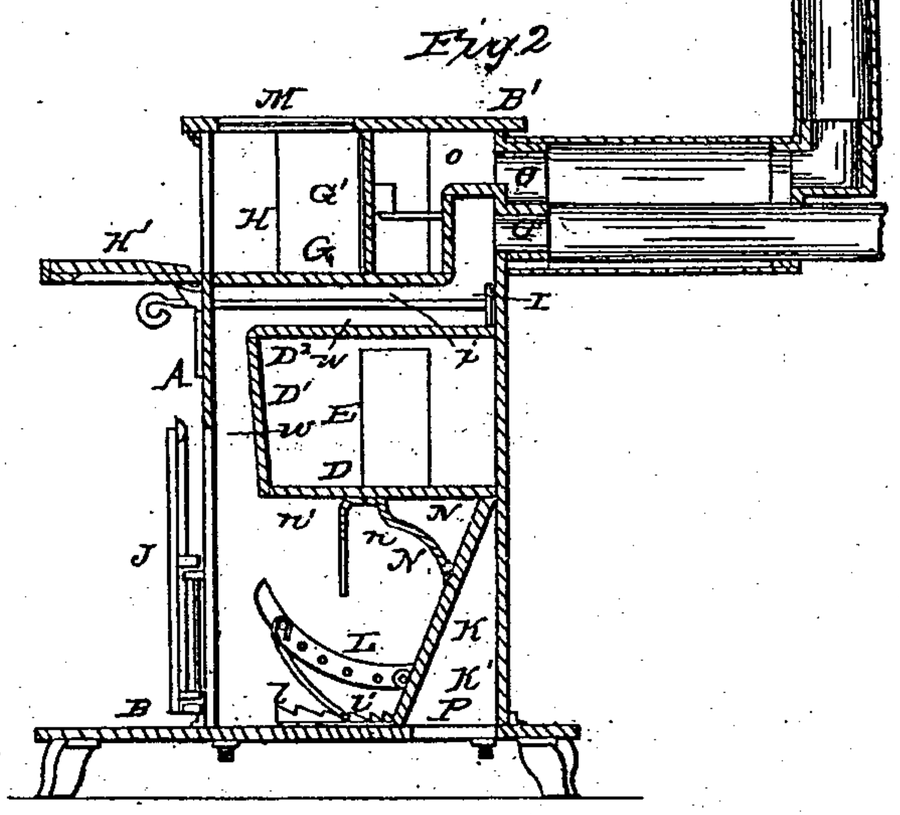


Fig. 3

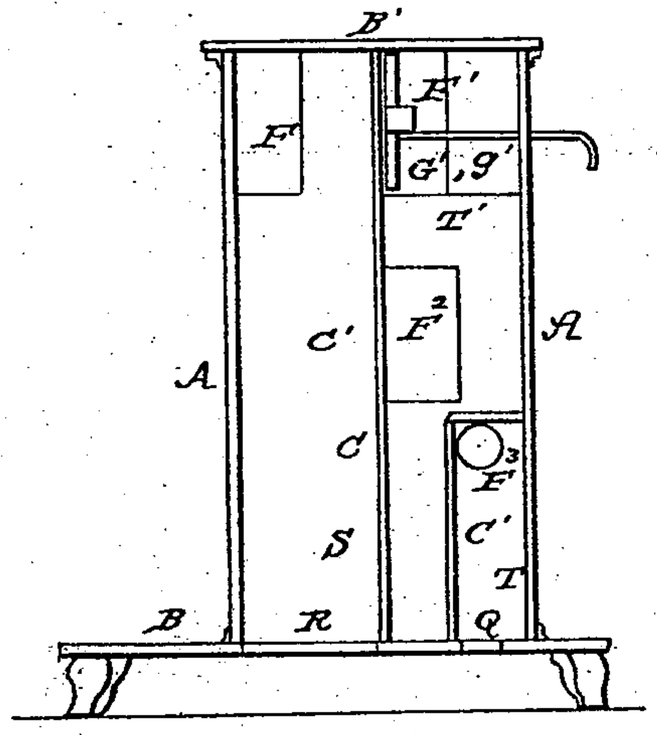
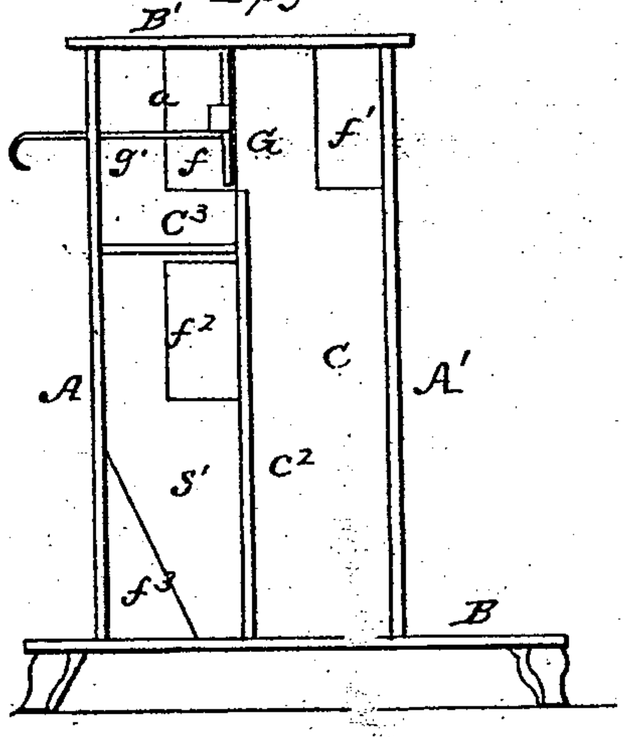


Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **56,979**, dated August 7, 1866.

To all whom it may concern:

Be it known that we, GRANVILLE MOODY and WILLIAM P. HALL, both of Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Stoves; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters refer to the same parts of the stove in all the figures.

Figure 1 is a front view of a stove containing our improvements, with the lower doors thrown open and the upper door removed. Fig. 2 is a cross-section through the line *x y*, Fig. 1. Fig. 3 is a view of one end of the stove with the outer plate removed. Fig. 4 is a view of the opposite end with the outer plate removed.

A is the front outer plate of the stove, A′ the back plate, B the bottom plate, and B′ the top plate. C C′ are two inner plates parallel to the outer end plates, and *c*, *c′*, *c²*, and *c³* are partition-plates extending from said inner plates, C C′, to the outer end plates, and forming flues at each end of the stove. D D′ D² are internal plates extending from the plate C to the plate C′, and forming a hot-air chamber, E, between said plates C and C′. F, F′, F², and F³ are openings in the inner plate, C′, communicating with the end flues, and *f*, *f′*, *f²*, and *f³* are openings in the plate C for similar purposes. G is a horizontal plate extending from the plate C to the plate C′, and G′ is a movable vertical plate forming the back wall of an oven or hot-air chamber, H. *g g′* are two rods for moving the plate G′. I is a damper and scraper, and *i i* are rods for operating the same. H′ is the front door to the oven or hot-air chamber H, and J J are the furnace-doors. K is an inclined plate forming the back wall of the fire-box or furnace. L is the grate hinged to said inclined plate K, and *l* is a bail or pawl hinged to the grate, by means of which and the ratchet *l′* the front of the grate may be elevated or depressed at pleasure. N is a bent plate forming a hot-air chamber over the back part of the grate, with a horizontal row of perforations (one of which is shown at *n*, Fig. 2) for introducing jets of heated air to the fire, to aid in the complete combustion of the smoke and gases. A similar row of perforations, *n′*, is made in the front portion of said bent plate as vents for heated air. M is a sliding register in the top plate of the stove, by means of which the hot air from the oven or air-chamber H can be introduced into the room, if desired, or can be made available to heat water in a boiler constructed to sit immediately over said register.

It will be seen that said chamber H may be used as an oven to bake or roast in, or as a hot-air chamber from which heated air may be conducted through the exit-pipe O to an upper or an adjoining room.

P is an oval opening in the bottom plate of the stove to admit air into the chamber K′, and from said chamber K′ the air, after becoming heated therein, passes out at the opening *f³*, up the flue S′, and into the chamber E through the opening *f²*. Q is a smaller aperture in the bottom plate, to admit air to the flue T, whence the air is conducted, through the opening F³, into the chamber N′. R is an opening in the bottom plate to admit air into the flue S, in which it becomes heated in ascending, and passes into the oven or hot-air chamber H. F² is an opening in the plate C′, through which the heated air from chamber E passes into flue T′, and from said flue, through the opening F′, enters the oven or hot-air chamber H.

By adjusting the movable plate G′ the heated air escaping from chamber E may be conducted into the oven H, or may be conducted off through the pipe O without entering the chamber H. This will be the case when the plate G′ is in the position shown in the drawings; but if the plate G′ be drawn back to the line *o* all the air escaping from chamber E must enter the oven or chamber H.

It is manifest that said plate G′ may be so adjusted that part of the air escaping from chamber E will enter the chamber H, and part pass out of the pipe O without entering said chamber.

When the plate G′ is in the position shown in the drawings, and the register M closed, the heated air from chamber H will pass out at opening *f′* and reach the exit-pipe O through opening *f*.

O′ is the exit-flue, to carry off the smoke and other unconsumed products of combustion. As shown in the drawings, it is inclosed in the hot-air flue O; but it is not essential that it should be so constructed.

By means of the damper I the draft may be regulated by enlarging or diminishing the throat at *t*. Said damper I also serves as a scraper to keep the space between the plates D^2 and G free of ashes.

A fire being built in the grate L of either hard or soft coal or wood, the air in chamber N′ will immediately become rarefied and cause an ascending current through the opening Q, up the flue T, and through the opening F^3 into said chamber N′, from which it will escape through the perforations *n* into the combustion-chamber above the grate. By means of the bail or pawl *l* and the ratchet *l′* the fuel in the grate may be brought up nearer to said jets of heated air, or removed farther away from the same, according to the nature of the fuel used. The flame and other products of combustion will pass up the vertical flue *w*, along the horizontal flue *w′*, and out at exit-pipe O′, acting immediately upon the plates D D′ D^2, forming three sides of the chamber E, which will cause the air in said chamber to become highly heated and to escape through the opening F^2, ascend through the flue T′, and either enter the chamber H through the opening F′ or pass out of the exit-pipe O, according as the movable plate G′ may be adjusted. At the same time the cold air will rush in through the opening P in the bottom plate, pass into the flue S′ through the opening f^3, and enter said chamber E through the opening f^2.

Having thus fully described our invention, and the mode of carrying it into effect, what we claim as new, and desire to secure by Letters Patent, is—

1. The lower hot-air chamber, E, in combination with the upper hot-air chamber or oven, H, with a flue and air-passage, for conducting heated air from the lower to the upper chamber, substantially as shown and described.

2. In combination with the hot-air chamber N′ and the perforations *n*, the hinged adjustable grate with the bail or pawl *l* and the ratchet *l′*, substantially as shown and described.

3. In combination with the lower chamber, E, and the upper chamber, H, with flue and air-passages communicating between them, as described, the movable plate G′, as and for the purpose described.

4. In combination with the flue *w′* and throat *t*, the damper I, to perform the double function of a damper and scraper, substantially as described.

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Witnesses:
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