J. BRADLEY.

Cooking Stove.

No. 3,636.

Patented June 24, 1844.

Fig: 3.

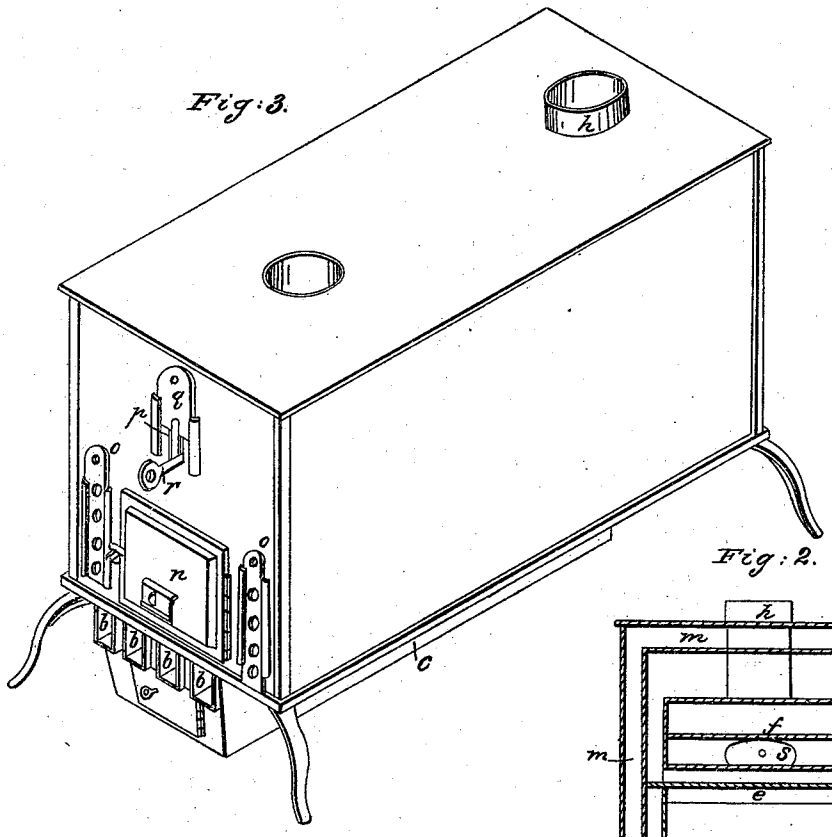


Fig: 2.

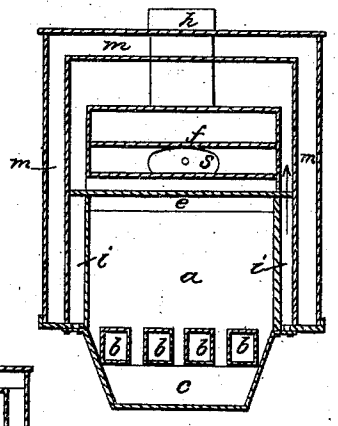
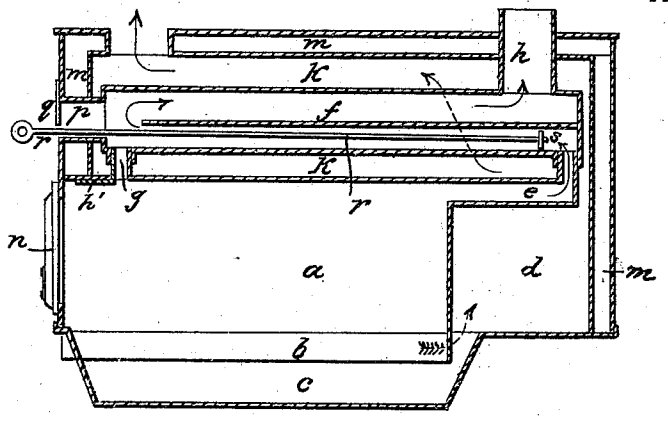


Fig: 1.



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

UNITED STATES PATENT OFFICE.

JEPTHA BRADLEY, OF ST. ALBANS, VERMONT.

AIR-HEATING FURNACE.

Specification of Letters Patent No. 3,636, dated June 24, 1844.

To all whom it may concern:

Be it known that I, JEPTHA BRADLEY, of St. Albans, in the county of Franklin and State of Vermont, have invented a new and useful Improvement in Furnaces or Stoves for Heating Buildings by Means of Hot Air; 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 vertical section longitudinally; Fig. 2, a vertical cross section; Fig. 3, an exterior view; Fig. 4, modification for burning coal.

The nature of my invention consists in surrounding the fire with compartments for receiving air and heating it, which compartments are surrounded by a double casing that is filled with a nonconductor of heat.

The construction of my furnace or stove admits of some minor variations from the one described; but this I deem a convenient and durable form; there is an oblong fire chamber (*a*) having a grating formed of tubes (*b*) for the wood to lay on; and under them, there is an ash pan (*c*) as is usual in stoves; behind the fire chamber there is another chamber (*d*) separated from it by a single plate into which the tubes of the grate open; this chamber (*d*) does not extend quite up to the top of the fire chamber but leaves a space (*e*) between it and the top for a flue that runs back to the outer case, and then turns up into a long flat case or horizontal flue (*f*) that has a horizontal partition therein, dividing it into an upper and lower flat horizontal flue, about the width of the fire chamber and extending out to the front over the fire chamber at which point the two divisions are united through the partition; at this end, there is a small oblong aperture which is connected by a tube (*g*) with the top plate of the fire chamber, this is ordinarily laid closed by a damper or slide valve (*h'*) below the upper or return flue is connected with the smoke pipe (*h*) that passes up through the outer case; the black arrows show the course of the smoke through these flues.

Besides the air chamber (*d*) and tubes (*b*) of the fire grate, the sides are surrounded by air chambers (*i*) and there is also a chamber (*k*) on top large enough to surround the flue (*f*) with a stratum of air surrounding it; the air from all the other chambers, enters this last named and is drawn from the top thereof through one or more tubes to the apartment to be heated; the course of the air is shown by red arrows. Around the outside of this apparatus there is an inclosing case on the sides back and top between which and the outside of the chambers there is a space (*m*) that is filled with any nonconductor of heat that completely insulates it from the apartment in which it is contained. In front, is situated the door (*n*) of the fire chamber which is made double and on each side of it there is a vertical row of holes that open into the chambers (*i*) these can be opened or closed more or less at pleasure by dampers (*o*) of common construction. The grate tubes also open in front through which air is supplied to the chambers. The fire is regulated in the ordinary way and by the usual fixtures.

Through the front of the stove there is an aperture (*p*) Figs. 1, and 3, covered by a sliding door (*q*) through this there is the handle (*r*) of a scraper (*s*) projecting the scraper being for the purpose of cleaning out the long horizontal flue (*f*) both above and below the partition, the dirt falls down through the tube (*g*) into the fire chamber the valve (*h'*) being open for this purpose.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the air chambers (*i*, *i*,) and (*d*, *k*) surrounding the fire with the tube grate, the chamber (*k*) having a double return flue (*f*) therein, as described.

JEPTHA BRADLEY.

Witnesses:

J. J. GREENOUGH,

S. C. DONN.