W. W. HATCH & C. W. FULLER.

Heating-Stove.

No. 161,611. Patented April 6, 1875.

Fig. 1.

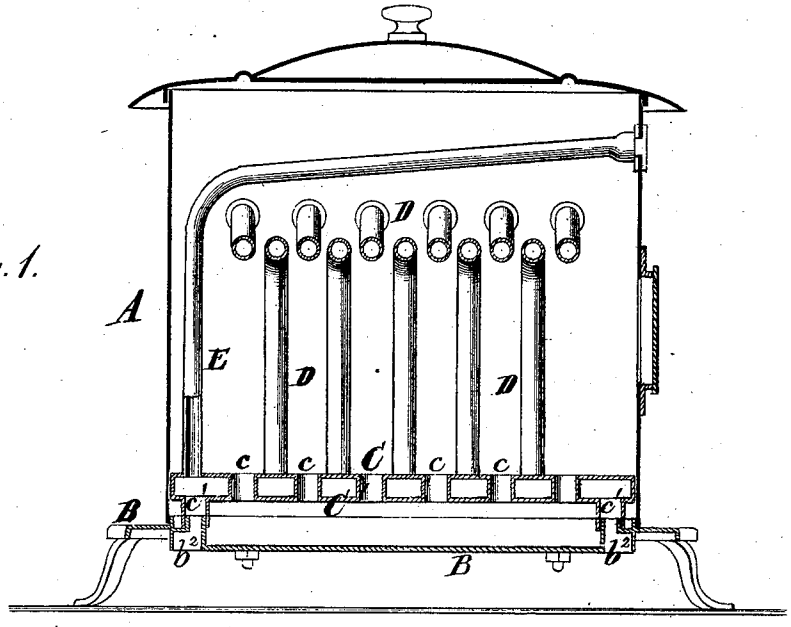


Fig. 2.

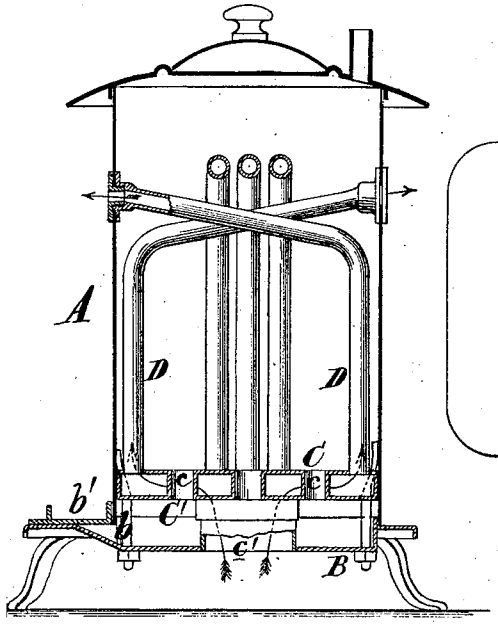
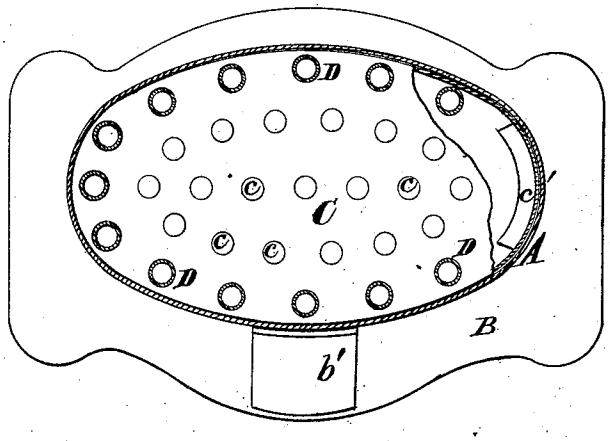


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM W. HATCH AND CHAUNCEY W. FULLER, OF LOWELL, MICHIGAN.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **161,611**, dated April 6, 1875; application filed October 30, 1874.

To all whom it may concern:

Be it known that we, WILLIAM W. HATCH and CHAUNCEY W. FULLER, both of Lowell, in the county of Kent and State of Michigan, have invented a certain Improvement in Stoves, of which the following is a specification:

This invention relates to that class of stoves in which a series of air-flues, taking in cold air at the bottom and discharging it heated from the body of the stove, is arranged within the combustion-chamber thereof.

Our improvement consists, first, in the manner of constructing the base and grate of the stove, and, secondly, in a peculiar arrangement of the air-flues, all as will be more fully explained in the ensuing detailed description, and specifically pointed out in the claims.

In the annexed drawings, Figure 1 is a vertical section through the major axial line of an elliptical-box heating-stove embodying our improvements. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a horizontal section thereof.

The same letters of reference are used in all the figures in the designation of identical parts.

The body or drum A of the stove is suitably secured to the base B, the depression in which forms the ash-pit, to which access can be had through an opening, b, ordinarily closed tight by a removable cover, b^1. The grate is composed of two plates of cast or sheet iron, C and C′, having a suitable number of perforations for the supply of air to support combustion, the perforations being connected by short pipes c, so that all the air for the purpose mentioned must come through the ash-pit, as usual, at either end of the grate. Its plate C′ (the lower one) is provided with short downwardly-projecting segmental conduits c', which connect with similarly-formed air-flues b^2, opening through the bottom plate of the base B. The air introduced between the plates C and C′ of the grate passes up into rows of vertical pipes or flues D, ranging along either side of the combustion-chamber of the stove. These flues, at the point where the flame is the most intensely hot, are bent into a nearly horizontal position and carried across the combustion-chamber, opening through the opposite side of the drum A. A similar row of flues, E, is arranged at one end of the combustion-chamber, extending with their slightly-inclined ends lengthwise across the chamber, opening through the opposite end thereof.

This arrangement of the air-flues leaves a clear space centrally within the combustion-chamber for a large body of burning fuel, and the flues are in the most advantageous position for heating the air passing through them.

We do not claim, broadly, using a fuel-support composed of a series of air-chambers or a single air-chamber, but confine ourselves to such a fuel-support or grate combined with pipes for admitting air directly into the burning fuel, and other pipes or flues for the sole purpose of heating air.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the base B, air-conduits b^2 c', and hollow grate, composed of the plates C C′, the perforations of which are connected by short pipes c, substantially as and for the purpose specified.

2. The combination of the hollow grate C C′ c, air-conduits b^2 c', and flues D, ranging along the sides of the combustion-chamber, and having horizontal portions extending across the upper portion thereof, substantially as and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM W. HATCH.
CHAUNCEY W. FULLER.

Witnesses:
HENRY M. CLARK,
E. E. WISNER.