(No Model.)

H. TILDEN.

STOVE.

No. 498,826. Patented June 6, 1893.

Fig. 1

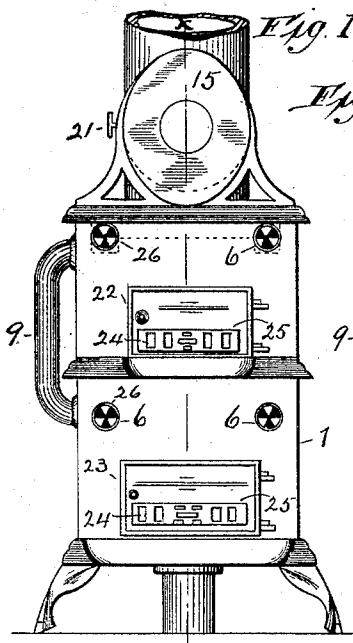


Fig. 4

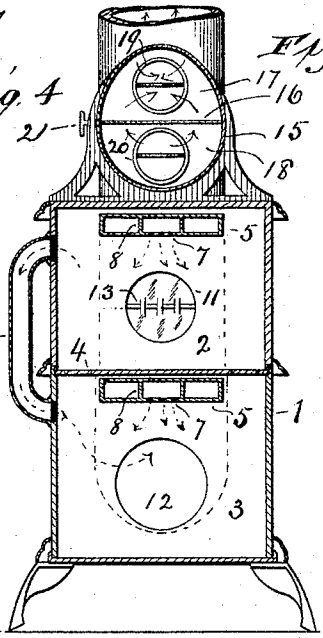


Fig. 2

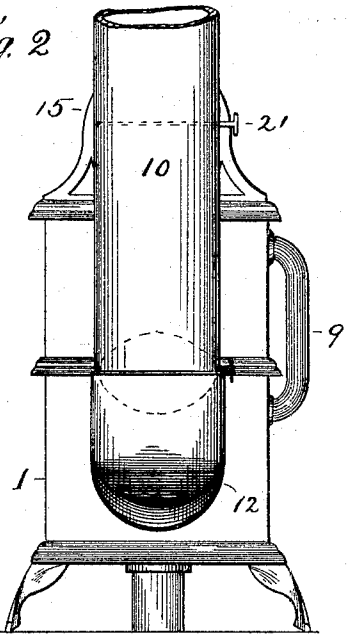


Fig. 3

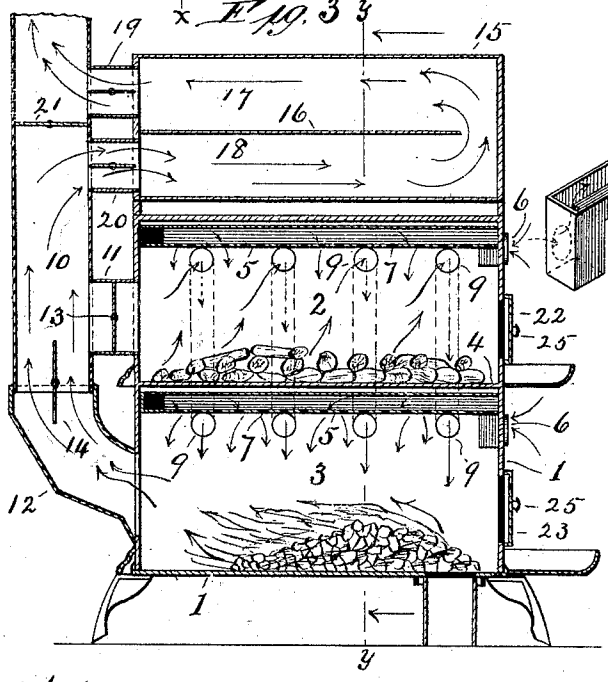
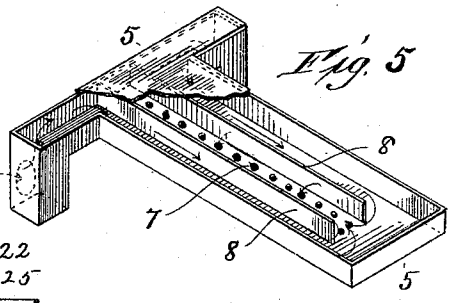


Fig. 5



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UNITED STATES PATENT OFFICE.

HENRY TILDEN, OF MINNEAPOLIS, MINNESOTA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 498,826, dated June 6, 1893.

Application filed August 2, 1892. Serial No. 441,963. (No model.)

To all whom it may concern:

Be it known that I, HENRY TILDEN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My invention relates to stoves or heating apparatus and has for its object the construction of a heater adapted to effect thorough combustion of the fuel and to utilize for warming purposes a maximum amount of the heat produced.

The features of novelty will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings, illustrating my invention, Figure 1, is a front elevation, and Fig. 2, a rear elevation of a heater or stove embodying my improvements. Fig. 3, is a vertical longitudinal section on the line *x*—*x* of Fig. 1. Fig. 4 is a vertical transverse section on the line *y*—*y* of Fig. 3 and Fig. 5 is a perspective view of a chambered box for supplying air to the combustion chambers.

In said drawings 1 designates the box of the stove which is divided into upper and lower compartments 2 and 3 by a tight horizontal partition 4, the former compartment serving as the primary, and the latter as the secondary combustion chamber.

The air supply for combustion in the chamber 2 is provided by a box 5 located in its upper portion and having controllable openings 6 at the front of the stove, and perforations 7 in its bottom. The air is admitted through the openings 6 at the front of the stove and is compelled to pass to the rear by reason of longitudinal partitions 8, shorter than the sides of the box, and then finds its only escape through the perforations 7 in the box-bottom between the partitions. A similar air-supply box may be used for the lower combustion chamber. The volatile products of combustion pass from near the top of the upper chamber to the same portion of the lower chamber, through pipes 9. In rear of both chambers is an exit flue 10 communicating by branches 11 and 12 respectively with both chambers. Dampers 13 and 14 are provided by means of which connection between the flue and either chamber can be controlled. Above the box is a drum 15 having a horizontal partition 16 forming upper and lower flues 17 and 18; and these flues are respectively connected with the smoke-pipe 10 by short pipes 19 and 20. A damper 21 coincident with the partition 16 enables the pipe 10 to be closed or opened, so as to cause the smoke and gases to pass through the drum or directly through the pipe, as desired.

In use, fuel is placed in both chambers 2 and 3 access being had for the purpose through doors 22 and 23 at the front. It is then ignited in the upper chamber (and in the lower also when necessary) and for a time a direct draft may be had through openings 24 in the doors. When the fire has reached some headway the front openings 24 are closed by means of slides 25, after which the air supply for supporting combustion will be introduced through the boxes 5, the quantity of air admitted to either chamber being controllable by dampers 26 exterior to the openings 6. By this arrangement the consumption of fuel will be slow and the products of combustion escaping from the upper will be consumed in the lower chamber.

Having described my invention, what I claim is—

1. In a stove, a fire-box partitioned into upper and lower chambers, each being provided with an air-supply compartment in its upper portion and an independent air-inlet at its front, the air supply being controllable; pipe connections between the chambers; and separate smoke flue connections for the chambers, having dampers, whereby either chamber may be used independently of the other or either as the primary and the other as the secondary chamber.

2. In a stove, a fire-box divided by a tight horizontal partition into upper and lower compartments, pipes connecting them, a smoke flue having a separate connection with each compartment, dampers separately controlling

said connections, and independent controllable air inlets provided for the fire-box compartments, substantially as set forth.

3. In a stove, a fire-box and in its upper portion a horizontal compartment having its bottom partly perforated and suitable partitions separating the perforate from the imperforate portions, whereby air introduced thereto may be heated before passing into the fire-box to support combustion, substantially as set forth.

HENRY TILDEN.

Witnesses:
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