

J. A. MOORE.

Stove.

No. 167,852.

Patented Sept. 21, 1875.

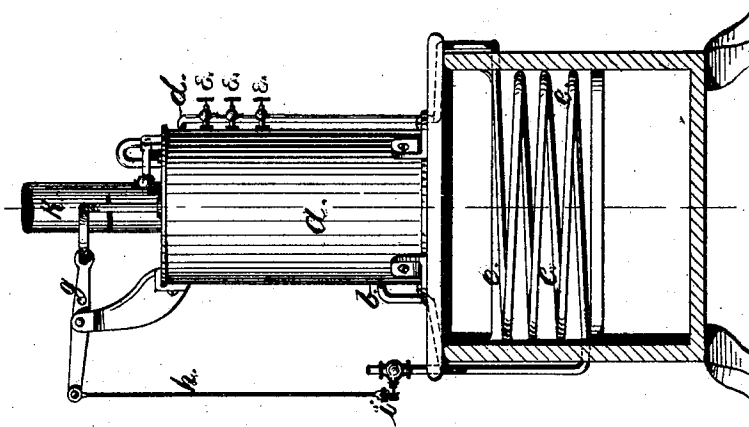


Fig. 2.

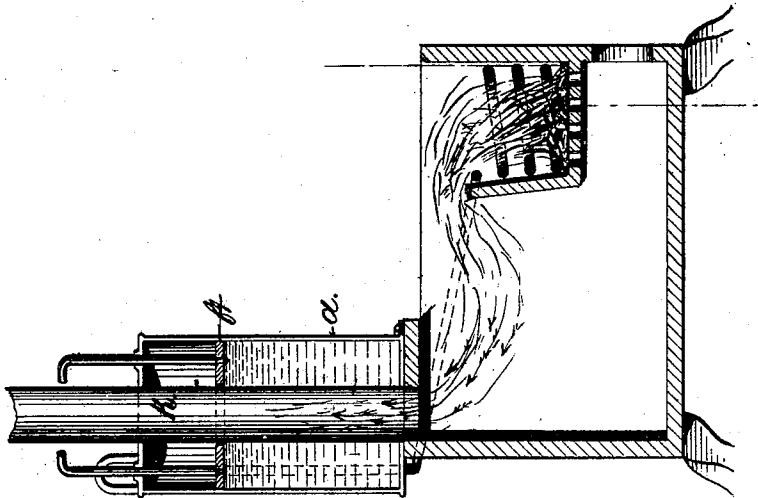


Fig. 1.

WITNESSES.

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JOHN A. MOORE, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **167,852**, dated September 21, 1875; application filed August 7, 1875.

To all whom it may concern:

Be it known that I, JOHN A. MOORE, of the city and county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Stoves; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

Figure 1 is a sectional view of my improved stove. Fig. 2 is a front elevation of the same, partly in section.

Similar letters of reference indicate corresponding parts.

In the drawings, *a* is a heater, placed on the rear end of a cooking-stove, so that the waste products of combustion pass through a flue in the same. *b* is a pipe, connected with the lower part of the water-space of the heater, and also with the coil of pipes *c c c* surrounding the fire on all sides, the water entering the lowest end of this pipe, the upper end being connected with the steam-space of the heater by the pipe *d*. Three gage-cocks, *E E E*, are placed in the heater to ascertain the water-level. A glass gage may also be used for this purpose, and the boiler or heater is also provided with a safety-valve. The float *f*, made of suitable material to float on the water, is connected, through the lever *g* and rod *h*, with the supply-valve *i*, so that when the water-level falls below a certain line the valve *i* is opened, and water, either from a cistern overhead or from the water-supply of the city water, will enter through the valve *i* into the coil *c c c*, and so to the heater, until the proper level is reached, when, the float rising with the water, the valve is closed and the water-supply shut off. The flue *k* allows the products of combustion from the stove to pass through the heater, and the waste heat to be absorbed by the water in the same.

My invention consists in placing a heater on the rear end of a stove, provided with a flue through which the products of combustion pass on their way to the chimney provided with circulating-pipes surrounding the fire, one end of which is connected with the lower part of the water-space, and the other

with the steam-space of the heater, and in which heater the water-supply is regulated by a float operating a water-supply valve, so that the heater and pipes are not subjected to the pressure of the water in the water-mains.

The object of the invention is to utilize the heat usually wasted in stoves, by storing this heat in a heater having a steam-space, from which steam may be supplied to radiators for heating the house, or used for other purposes, and in which only such steam-pressure shall exist as may be required, the water not being under the usual pressure, thus relieving the heater from the pressure of the water, which in most cities is very great, and requires extra strength of material to resist.

Water-heaters connected with stoves or ranges, as at present constructed, are placed on one side of such stoves or ranges, and connected with water-backs or circulating-pipes. Such heaters and water backs or pipes are subjected to the pressure of the water in the mains, and must be made of great strength. In such heaters the products of combustion are not utilized in the heater, but allowed to escape into the chimney. Steam cannot be drawn from such heaters, as the water fills the heater, and will flow into any connecting-pipes so as to flood the radiators. A much higher temperature and greater amount of heat is required to boil the water in these heaters, as the water is under pressure, and cannot boil at the ordinary boiling-point of water.

In my heater the supply of water is regulated by the float *f*, which opens and closes the supply-valve *i*. The water circulates freely through the coiled pipes *c c c*, and the steam is conveyed to the steam-space of the heater by the pipe *d*, while the waste heat is absorbed by the heater in passing through the flue *k*. The heater and circulating-pipes, or the water-back, if such is used, are not subjected to the water-pressure in the supply-mains, but only to the slight steam-pressure required to carry steam to such places as may be desired to heat. They can be constructed of lighter materials, thus offering less resistance to the transmission of heat to the water.

Another advantage in my heater over the heaters now in use consists in the provision

of a steam-space, from which steam may be drawn for heating purposes, so that a stove on which the food is cooked also supplies steam to radiators to heat other parts of the house, while hot water may also be drawn from the heater. The float regulating the supply will maintain a uniform level of water in the heater, and the fresh water, before entering the heater, passing through the coiled pipe or the water-back, will be thoroughly heated.

A cooking-stove or range with my improvements will heat a moderate-sized house comfortably, and also cook the food required, so that one fire will be all that is required in a house, thus saving fuel and labor, and adding

greatly to the comfort and convenience of the occupants.

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

The combination, with a stove, of the heater *a*, provided with the flue *k*, the pipes *b*, *c*, and *d* connected therewith and surrounding the fire on all sides, and the float *f*, operating the supply-valve *i*, the whole constructed substantially as and for the purpose set forth.

JOHN A. MOORE.

Witnesses:

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