

W. S. GARRISON.
HEATING-STOVE.

No. 176,744.

Patented May 2, 1876.

Fig. 1.

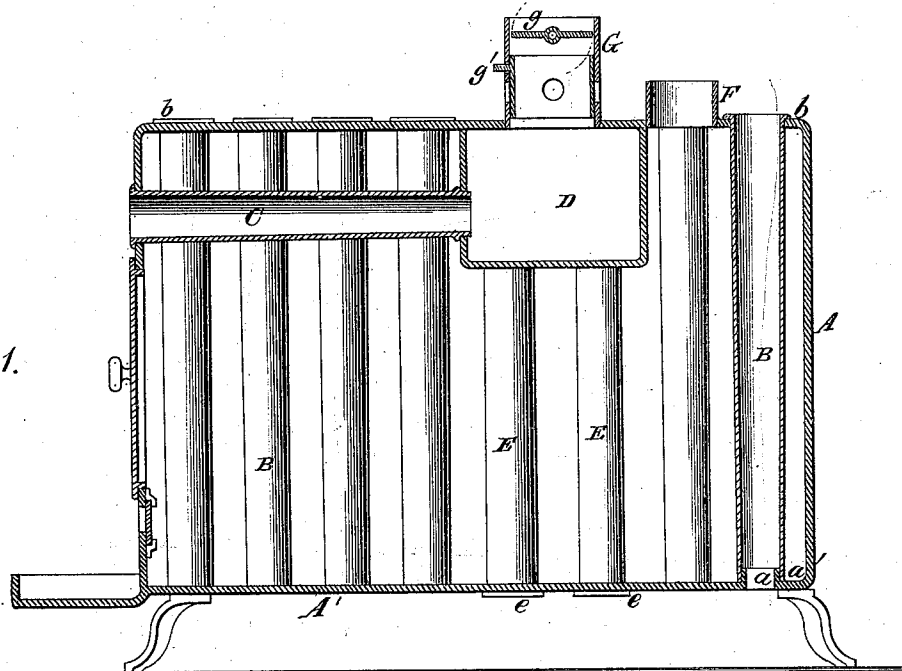


Fig. 2.

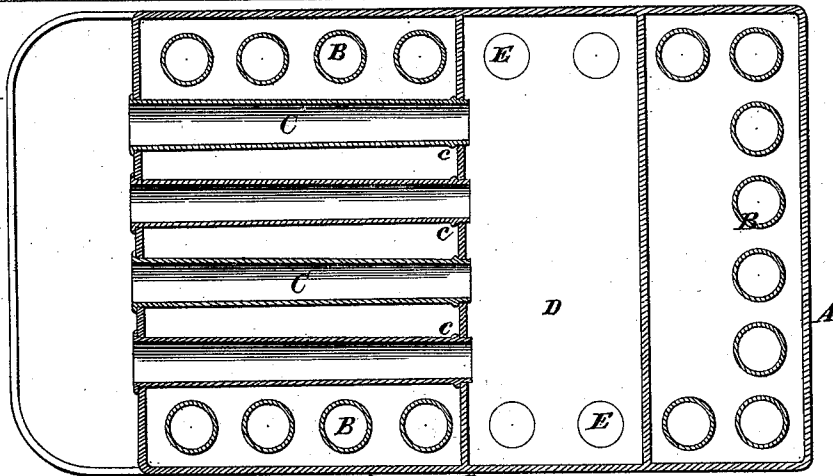
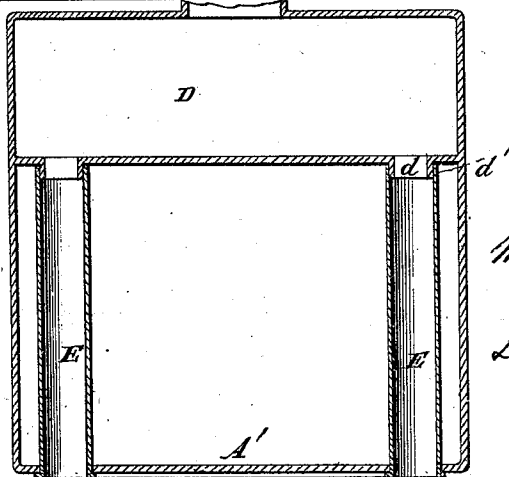


Fig. 3.



Witnesses:
A. Ruppert.
W. B. Chaffee

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Attys

UNITED STATES PATENT OFFICE.

WILLIS S. GARRISON, OF VOLGA CITY, IOWA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 176,744, dated May 2, 1876; application filed March 24, 1876.

To all whom it may concern:

Be it known that I, WILLIS S. GARRISON, of Volga City, in the county of Clayton and State of Iowa, have invented a certain Improvement in Heating-Stoves, of which the following is a full and clear specification:

This invention relates to heating-stoves in which a series of open air pipes or tubes are used, some of them being so disposed and connected with an air-chamber as to admit of the distribution of the heated air to other apartments, the object being to utilize to the fullest extent possible all the heat emitted by the fire.

My improvement consists of a novel combination of the air-pipes, air-receiver, and valves for governing the distribution of the heated air, and also in a novel construction of the pipes and some parts of the stove, providing for the ready removal of the former, should they become defective from some cause or other. These pipes are of a tapering form, gradually decreasing in size from top to bottom, so that the air which enters from below will have ample room to expand as it becomes heated, and will consequently flow more freely than if the pipes were straight. A number of these pipes are arranged vertically around the combustion-chamber, passing through the stove near its side and rear plates; a smaller number are disposed horizontally over the combustion-chamber, opening into an air-chamber which is located directly in front of the smoke-pipe. A pipe leading from the top of the stove conducts the heated air to other apartments, the flow of the air being regulated by means of a damper and register in said pipe. The bottom plate of the stove has flanges upon its upper surface, around which the tapering ends of the vertical pipes snugly fit.

In the annexed drawing, Figure 1 is a longitudinal section of my improved heating-stove. Fig. 2 is a horizontal section thereof. Fig. 3 is a vertical section through the air-receiver.

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

A' refers to the bottom plate of the stove. A. This plate has a series of flanged aper-

tures, *a*, near its sides and rear end, the flanges *a'* projecting a short distance above its upper surface. Around these flanges the lower tapering ends of the vertical pipes B fit snugly, while the rims *b* on their upper ends rest on the top of the stove. The front of the stove has a number of perforations near its top for the reception of pipes C, which conduct air to the chamber D. These pipes are also tapering in form and removable, like pipes B; but their inner ends open directly into the air-chamber, while beads or flanges *c*, formed upon them near these ends, rest against the outer surface of said chamber. As the pipes E, leading from the bottom of the stove to the air-receiver, must of necessity be removable from below, they are made straight, their upper ends fitting snugly around flanges *d'* of the flanged apertures *d* in the bottom plate of the receiver D. The apertures in plate A' receiving these straight pipes are not flanged, and the pipes may be secured in position by riveting their rims *e* to the bottom of the stove. The air-receiver D, as plainly shown in the drawings, is arranged directly in front of the smoke-discharge collar F, and extends in length from one side of the stove to the other. Its width may be varied, and its entire construction may be changed, according as it is located in a coal or a wood stove. The pipe G distributes the heated air from the chamber D to other apartments, if the damper *g* be turned up. If the damper is down, as in Fig. 1, the air will return into the same room through the register *g'*.

The drawings illustrate a wood-stove; but my improvement is applicable to all sorts of stoves and furnaces, whether the fuel burned in them be wood or coal.

The facility with which the pipes may be removed for repair, or replaced by new ones, and the means afforded by virtue of their peculiar construction for the ready flow of the air, are advantages which make my improved heater superior to all others now in use.

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

1. In a stove, the combination, substantially as specified, of the air-heating pipes B C E, the air-receiver D, the air-eduction pipe G, the damper *g*, and the register *g'*.

2. The tapering air-heating pipes C, having a flange at the outer end, and a bead, *c*, near the other end, in combination with the air-receiver D and the body of the stove, the pipes being fitted in the body of the stove and the air-receiver, substantially as specified.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

WILLIS S. GARRISON.

Witnesses:

H. H. PIERSON,

J. D. BRODIE.