No. 646,411. Patented Apr. 3, 1900.

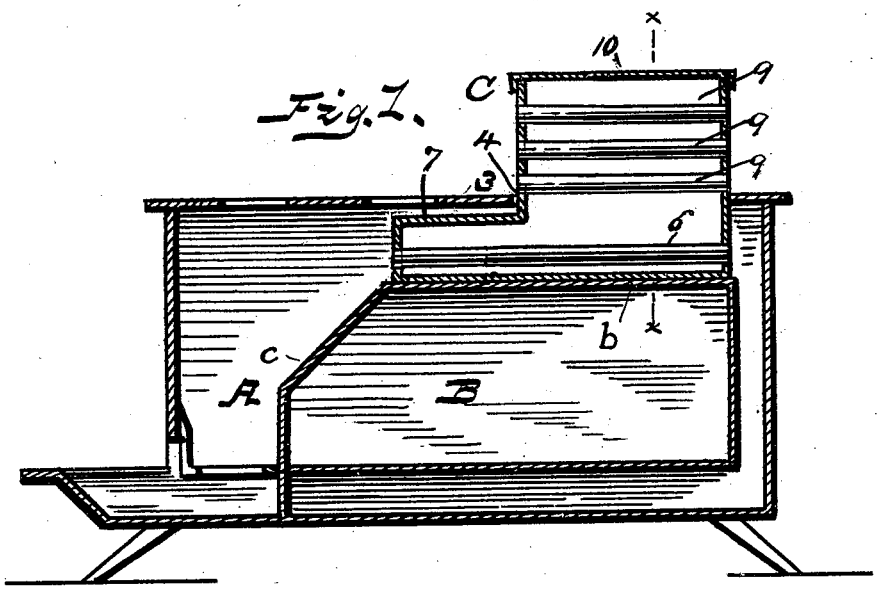
D. CLINE.

COMBINED HEATER AND BOILER FOR STOVES, &c.

(Application filed Jan. 20, 1900.)

(No Model.)

Fig. 1.



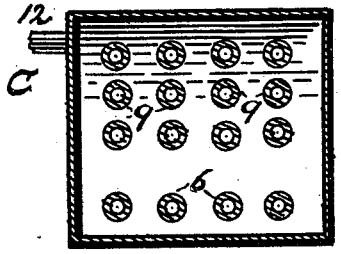


Fig. 2.

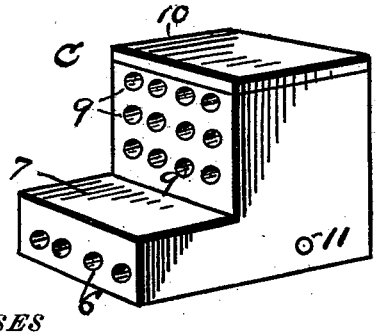


Fig. 3.

WITNESSES

E. H. Bates

E. L. Hewitt

INVENTOR

David Cline

by A. G. Heyburn

Attorney

UNITED STATES PATENT OFFICE.

DAVID CLINE, OF WATSONTOWN, PENNSYLVANIA.

COMBINED HEATER AND BOILER FOR STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 646,411, dated April 3, 1900.

Application filed January 20, 1900. Serial No. 2,154. (No model.)

To all whom it may concern:

Be it known that I, DAVID CLINE, a citizen of the United States, residing at Watsontown, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Boiler and Heater for Stoves, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in cooking and heating stoves of that kind or construction provided with a water-heater or boiler for heating the room or compartment in which the stove is situated; and the object is to provide a heating-boiler of simple construction, efficient in results, and which may be in connection with stoves of the usual make, having an oven with a flat top and an opening in the top plate of the stove through which a portion of the water-heater or boiler projects; and the invention consists in the novel construction of parts and their combination, as will hereinafter be fully described, and the novelty particularly pointed out in the claims.

I have fully and clearly illustrated the invention in the accompanying drawings, to be taken as a part hereof, and wherein—

Figure 1 is a vertical longitudinal sectional view through a cooking-stove, showing my improved water-heater arranged therein. Fig. 2 is a vertical transverse section through the heater or boiler, taken on the line *x x* of Fig. 1. Fig. 3 is a perspective view of the boiler removed from the position in the stove.

It will be premised that the stove may be of any desired build wherein the oven has a flat upper plate.

In the drawings, A designates the fire-box, and B the oven, the top plate *b* of which is substantially on a level with the upper edge of the fireback *c* of the fire-box. In the top plate 3 of the stove is formed a rectangular opening 4 of such size as may be required to admit the projecting portion of the boiler and the edges of which snugly fit around the same to hold the boiler in position and prevent the egress of smoke. The top plate of the stove is preferably made detachable and removable in order that should it be necessary to repair the boiler the top plate may be detached and lifted off by slipping it upward on the boiler.

C designates my improved boiler and heater, consisting of a metal casing of the required size, formed with a stepped front, the step being adapted to set between the top plate of the stove and the top of the oven, and thus extending the casing from the fireback to the rear of the oven, substantially as shown in the drawings. The lower portion is provided with a series of draft tubes, flues, or pipes 6, having open ends and through which the products of combustion pass from the fire-box. The step is covered with a metal plate 7, from the rear of which the front rises vertically.

In the vertical projecting portion of the boiler, intended to project above the top plate of the stove, are secured one or more series of open-end hot-air pipes 9, opening at both ends into the room or compartment, and through these pipes, under well-known laws of radiation and circulation, the air heated in the pipes speedily and extensively permeates the adjacent body of colder air and eventually extending to and heating or warming the whole room or compartment. A metal detachable cover 10 is suitably fitted over the boiler, so as to prevent the escape of steam, but so that it may be conveniently removed when necessary to supply the boiler and heater with water.

If desired to couple the boiler with a circulatory system for conveying warm water to a point remote from the boiler, a cold-water pipe 11 is detachably let into the boiler at the base, and a hot-water pipe 12, detachably secured in the boiler, leads from a point above the entrance of the pipe 11, which arrangement sets up a circulation in a well-known manner.

What I claim is—

1. A boiler and heater for a stove, consisting of a rectangular shell or casing having a step at its lower front portion adapted to set under the top plate of a stove, and a vertically-extending portion at the rear of the step, a series of draft-flues arranged and secured lengthwise of the lower portion of the shell, and a series of air-flues lengthwise of the vertically-extended portion of the shell, substantially as described.

2. In a stove or furnace, the combination

of the oven a top plate having a rectangular opening, and boiler and heater consisting of a rectangular shell or casing formed with a step at its lower front portion to set under the top plate of the stove, draft-flues open at both ends in the boiler and heater below the top plate, and air pipes or flues in the vertically-projecting portion of the boiler and heater above the top plate of the stove, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID CLINE.

Witnesses:
WM. F. SHAY,
JANET N. DIVERS.