D. P. & J. A. ALLEN.

Combined Boiler and Stove.

No, 220,106. Patented Sept. 30, 1879.

Fig. 1

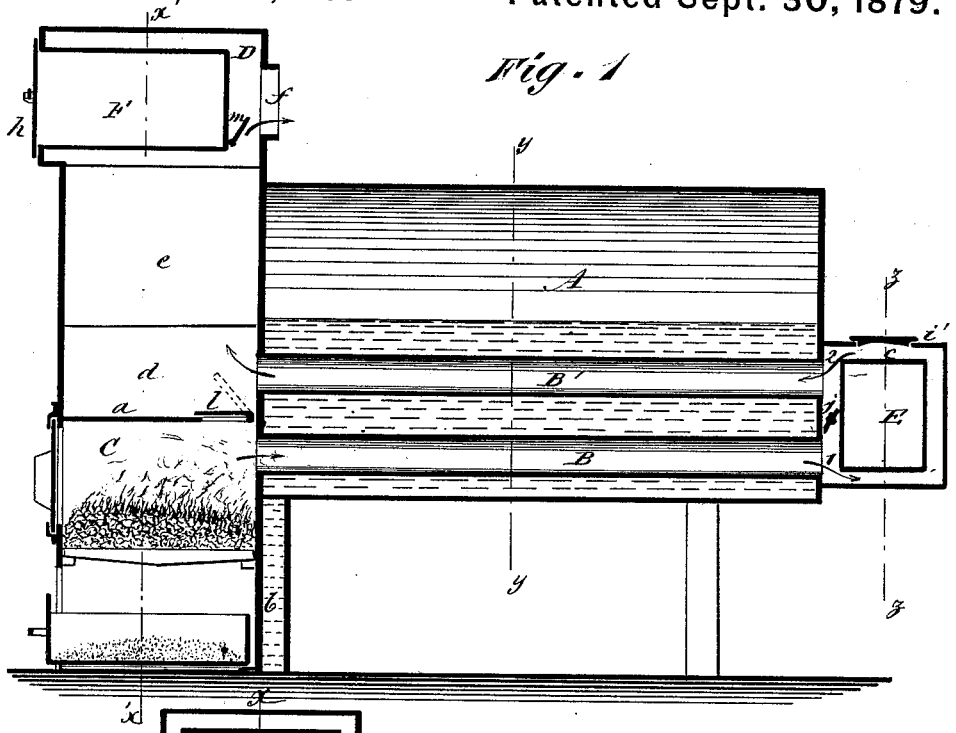


Fig. 2

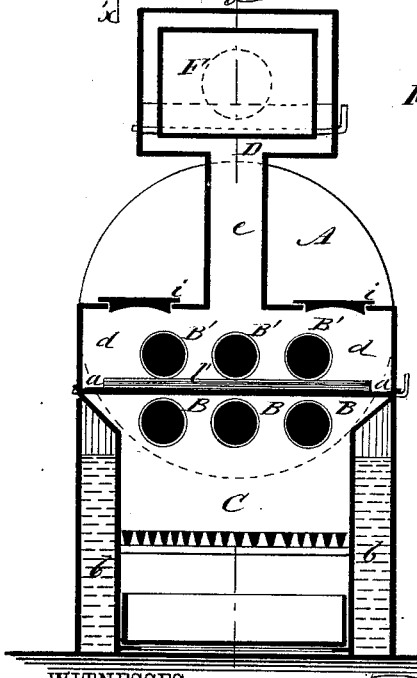


Fig. 3

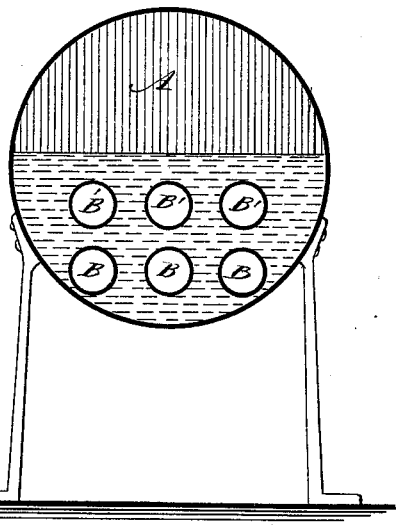
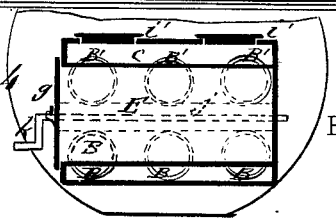


Fig. 4



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UNITED STATES PATENT OFFICE.

DAVID P. ALLEN AND JOHN A. ALLEN, OF BRIAR BLUFF, ILLINOIS.

IMPROVEMENT IN COMBINED BOILER AND STOVE.

Specification forming part of Letters Patent No. **220,106**, dated September 30, 1879; application filed February 20, 1879.

To all whom it may concern:

Be it known that we, DAVID P. ALLEN and JOHN A. ALLEN, of Briar Bluff, in the county of Henry and State of Illinois, have invented a new and Improved Combined Boiler and Stove, of which the following is a specification.

The object of this invention is to provide a boiler for supplying hot water or steam for heating and other domestic purposes, and combining with it, so as to utilize the heat from the water and from the furnace-fire, baking-ovens and the ordinary parts of a cooking stove or range.

The invention will be first described in connection with the drawings forming part of the specification, and then specifically ascertained in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of our improvement on line *x x* of Fig. 2. Fig. 2 is a vertical transverse section through the oven and fire-chamber on line *x' x'*. Fig. 3 is a section on line *y y*, and Fig. 4 is a section on line *z z*.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an ordinary cylindrical boiler with direct flues B and return-flues B'. C is the furnace or fire-chamber, provided with a crown, *a*, and surrounded on three sides by a water-space, *b*, which communicates with the boiler. The direct flues start from the fire-chamber just under the crown, and open into a chamber, *c*, at the head of the boiler. The return-flues B' start from chamber *c*, and open into a chamber, *d*, over the crown of the fire-chamber.

From the top of chamber *d* proceeds upward a flue, *e*, opening into a chamber, D, in the rear whereof is a pipe-hole, *f*, from which a pipe leads to the chimney.

In chamber *c* is placed an oven, E, with a space between it and the walls of the chamber on all sides but the front or entrance, which is closed by a door, *g*.

A similar oven, F, is placed in chamber D, with a space all around, except at the door end *h*.

In the top of chamber *d* are griddle-holes *i*, to adapt this top to the customary purposes of stove-tops, and in the top of chamber *c* are also griddle-holes *i'*.

Between the entrances to flues B B' in chamber *c*, and between the head of the boiler and the adjacent wall of the oven, is placed a damper, *j*, extending from end to end of the chamber, and provided with a handle, *k*, for operating it. By closing this damper the heat is directed around the oven E, as indicated by the arrows 1 2. When opened it passes from the direct flue into the return-flue.

The crown *a* is between the two flue-openings, and at its rear edge or side is an elongated opening, *l*, provided with a damper, *l'*, operated from the outside. By means of this damper the heat can at will be directed through the flues B B', or directly up through chamber *d*, flue *e*, chamber D, and thence through opening *f* to the stack.

Between the end of oven F and the adjacent wall of the chamber a damper, *m*, is placed, the purpose of which is to permit the products of combustion to pass directly to the stack or direct it around the oven F.

When all the parts of the boiler and stove are to be heated the dampers *j*, *l'*, and *m* are closed. This causes the heat and other products of combustion to pass (as indicated by the arrows) through direct flues B, through chamber *c*, around the oven to the return-flues, thence through chamber *d*, up flue *e* to chamber D, around and about oven F, and finally to escape-hole *f*.

To cut off chamber *c*, open damper *j*. To utilize the heat at the front without having it pass through the boiler, open damper *l'*. It then passes directly upward; and, lastly, to cut it off from oven F, open damper *m*.

By properly adjusting the dampers the quantity of heat admitted to any part or parts of the boiler can be regulated.

If desired, an oven can be placed in the chamber *d* from the side thereof, so as to occupy a position lengthwise thereof, and with a space around three sides of it, as described in connection with ovens E F.

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

1. A combined flue boiler and stove, composed of boiler A, with direct flues B and return-flues B', and fire-chamber C, in combination with chamber *c*, having oven E, chamber

d, having stove-top, flue *e*, and chamber D, having oven F, substantially as described.

2. In combination with boiler A, having direct flues B and return-flues B′, and chamber *c*, provided with oven E, the damper *j*, for regulating the supply of heat to said chamber and oven, substantially as described.

3. In combination with fire-chamber C, chamber *d*, and flues B B′, the damper *l′* in crown *a*, for regulating the passage of the products of combustion from the fire-chamber, substantially as described.

DAVID PRICHARD ALLEN.
JOHN ANTHONY ALLEN.

Witnesses:
FRANK COLLINS,
MILTON PERSHING.