

W. McILVAIN.
WASH-BOILER.

No. 189,765.

Patented April 17, 1877.

FIG. 1

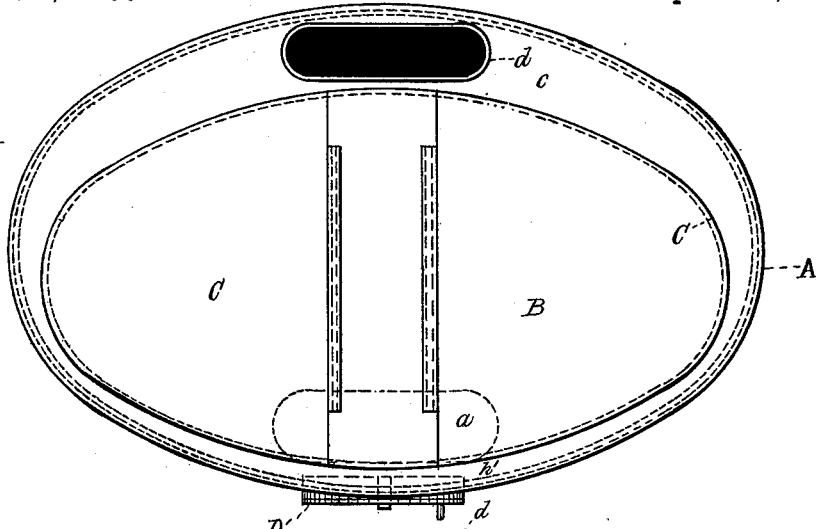


FIG. 2

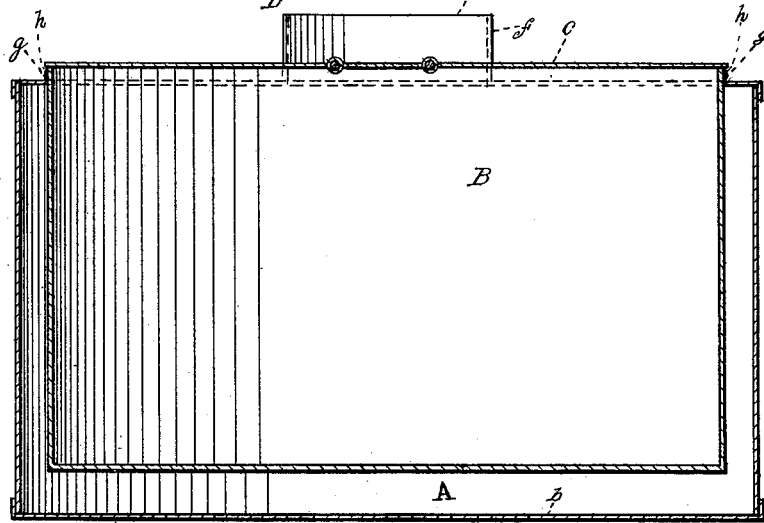
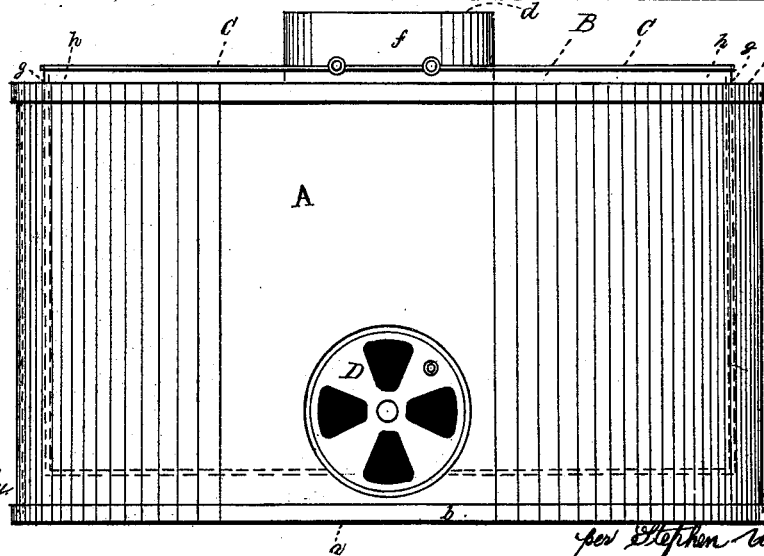


FIG. 3



Witnesses

Thomas Dewley
W. H. C. Lathrop

Inventor

William McIlvain

per Stephen Vastick, atty.

UNITED STATES PATENT OFFICE.

WILLIAM McILVAIN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN WASH-BOILERS.

Specification forming part of Letters Patent No. **189,765**, dated April 17, 1877; application filed March 6, 1877.

To all whom it may concern:

Be it known that I, WILLIAM McILVAIN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Wash-Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of my improved boiler. Fig. 2 is a vertical section, at the line *x x*, of Fig. 1. Fig. 3 is a front elevation.

Like letters of reference in the several figures indicate the same parts.

My invention consists of a boiler of any suitable form and dimensions, in combination with a case which has an opening in its bottom to fit over the smoke-collar of a cooking-stove, and an opening in its top plate surrounded by a collar to receive the smoke-pipe, the said top plate of the case having an opening which receives the boiler, between which and the bottom plate of the case and its walls there is a continuous flue or space for the circulation of the products of combustion, as they pass out of the stove through the smoke-collar and flow to the smoke-pipe which connects with the collar above mentioned on the top plate of the case, so that in such circulation of the products of combustion beneath the bottom of the boiler, and all around its side the heat contained in said products is mainly given out to heat the contents of the boiler, thereby utilizing all the heat which passes from the stove through the smoke-pipe. For regulating the draft around the boiler I connect a register with the surrounding case, as hereinafter described.

A is a case made of either wrought or cast iron. It is placed on the top plate of a cooking-stove, with the opening *a* in its bottom *b* around the smoke-collar of the top plate of the stove. The top plate *c* of the case has an opening, *d*, and a collar, *f*, to connect with the smoke-pipe. B is the boiler, which is placed in the opening *g* in the top plate *c*, with its head *h* resting upon the plate. The case A and boiler B are of such form and size in

relation to each other that when the boiler is placed in position, as shown in the drawings, a space is formed between their bottom and a space continued therefrom between the sides of the boiler and the walls of the case for the circulation of the products of combustion as they pass through the opening *a*, in the bottom of the case A, from the stove in their passage to the smoke-pipe, so as to utilize the heat in said products for heating the contents of the boiler.

In order to equalize the heat all around the boiler as much as practicable, I form the space *h'* at the front part of the boiler, where it is of the highest temperature, of less area than at the rear side, where the temperature is reduced in consequence of the products of combustion having given out a considerable portion of their heat in their passage around the boiler. C is the cover of the boiler B, which may be either used or not, as desired. D is a register (shown in the front side of the case A) for regulating the draft of the stove and the temperature of the air around the boiler B. It may be placed in any convenient part of the case.

I claim as my invention—

1. The case A, having openings *a*, *d*, and *g*, and a smoke-collar, *f*, in combination with the boiler B and the top plate of a cooking-stove, the boiler being so arranged within the case as to form a space or flue between their bottoms and around the sides of the boiler, for the circulation of the products of combustion in their passage to the smoke-pipe, substantially in the manner and for the purpose set forth.

2. In combination with the case A and wash-boiler B, the register D, substantially in the manner and for the purpose set forth.

3. The combination of the register D with the case A, substantially in the manner and for the purposes set forth.

WILLIAM McILVAIN.

Witnesses:

STEPHEN USTICK,
THOMAS J. BEWLEY.