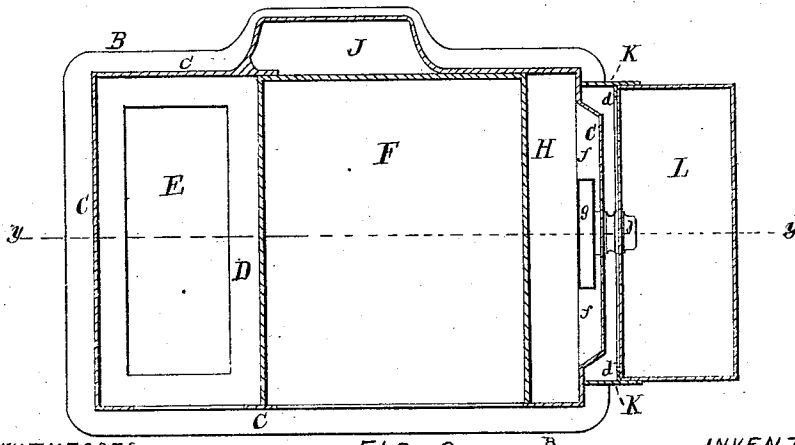
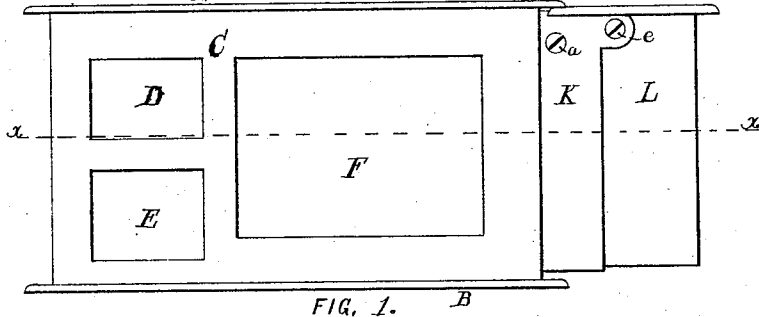
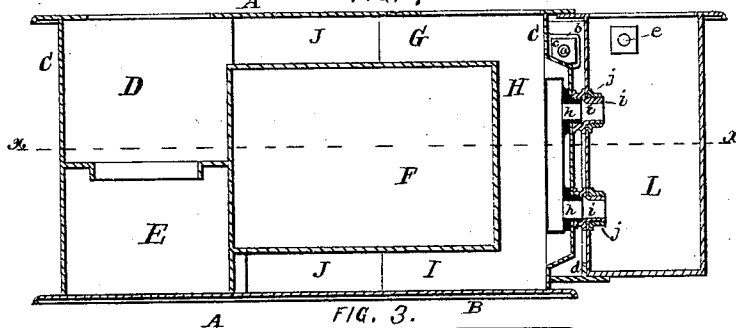
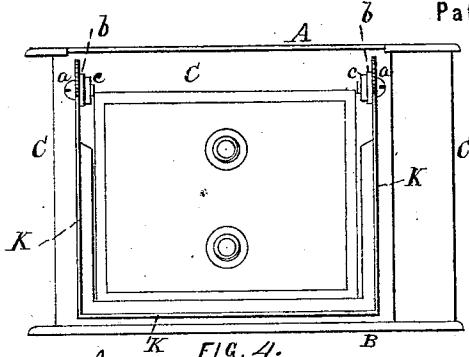


J. H. WENTWORTH.  
Cooking-Stove.

No. 159,727.

Patented Feb. 9, 1875



WITNESSES,  
Wm. D. Edwards,  
B. Andrews, Jr.

FIG. 2.

INVENTOR.  
James H. Wentworth  
by his Attorney  
N. S. Lombard

# UNITED STATES PATENT OFFICE.

JAMES H. WENTWORTH, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 159,727, dated February 9, 1875; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, JAMES H. WENTWORTH, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cooking-Stoves, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to an attachment to a cooking-stove for heating water without diminishing the capacity of the stove for other cooking; and it consists, first, in the use of a water-tank attached to the side or end of a stove, to which it is secured by bolts, from which it is suspended a little distance away from the wall of the stove, so as to leave an air-space between said tank and the wall of the stove, said tank being without other support than that derived from its connection to the stove, in combination with a heating-chamber placed in the rear drop-flue of the stove, in such a position as to not obstruct the passage of the hot gases through said flue, while at the same time said gases may surround the chamber, and impart a portion of their heat thereto.

This heater is made in the form of a thin hollow box—say, six inches wide by ten or twelve inches high, and about one inch thick—and has two small circular openings upon one side, which communicate by means of two short tubes with the interior of the water-tank.

My invention further consists in inclosing the space between the wall of the stove and the water-tank by means of a casting bolted to ears cast upon the exterior of the stove, said casting being formed so as to cover the space between the tank and stove upon the two sides and the bottom, and extend out a short distance onto the tank, and is provided with a rib projecting inward therefrom, against which the inner wall of the tank rests, as will be described.

The heater is placed in a recess formed in the descending flue by the formation of a raised or projecting panel on the rear end of the stove, by which means the drop-flue is unobstructed, and retains its full capacity.

In the drawings, Figure 1 is a side elevation of a stove illustrating my invention. Fig. 2 is a horizontal section on line *x x* on Fig. 1.

Fig. 3 is a vertical section on line *y y* on Fig. 2; and Fig 4 is an elevation of the rear end with the water-tank removed.

A is the top plate provided with suitable openings for kettles. B is the bottom plate, and C C the wall or vertical outside plates. D is the fire-box; E, the ash-pit; F, the oven; G, the horizontal flue above the oven; H, the drop or descending flue; I, the return flue beneath the oven, and J the uptake or flue leading to the chimney. K is a casting in the form of a stirrup or frame, forming three sides of a square or parallelogram, attached to the end or side of the stove by the bolts *a a* passing through said casting, and the ears *b b* cast upon the exterior of the stove, and secured by the nuts *c c*. The frame K is provided with the rib *d*, projecting inward therefrom, as seen in Figs. 2 and 3. L is the water-tank set partly into the frame K, so that its inner side rests against the rib *d*, and secured to said frame by the bolts *e e*. In the rear of the descending flue H is formed the recess *f*, in which is placed the hollow cast-iron heater *g*, held in position a short distance away from the wall-plate C, to which it is firmly secured by two short tubes, *h h*, and coupling-tubes *i i*. The tubes *i i* pass through openings formed in the side of the tank L, and have screwed thereon the couplings *j j*, which are packed to form water-tight joints. The tubes *h* and *i* serve as means of communication between the tank L and the interior of the heater *g*, through which water circulates freely when the tank is filled.

I am aware that water-tanks have been attached to stoves with heaters in the form of a small pipe bent in the form of the letter U, with both ends opening into the tank, while the bend of the pipe is exposed to the direct heat of the fire in the fire-box, or in the ascending flue near the fire, where the heat is very great. This device worked very well until the pipe was burnt out by the intense heat, which was in a comparatively short time, and besides it was not a convenient arrangement, as the tank must, almost of necessity, be located at the opposite end of the stove from the fire-box.

The object of my invention is to place the heater at a point in the stove where it will

not be exposed to the direct heat of the fire, so that its durability will be greatly increased, while its heating capacity is rendered ample by the enlargement of the exterior area exposed to the action of the heated gases passing down the rear or descending flue, while at the same time it is brought into more direct connection with the tank than could be the case if the heater were in the fire-box.

The U-shaped pipe above described, if placed in the rear or descending flue at the opposite end of the stove from the fire-box, would not be adequate to heat the water in the boiler; hence the necessity of the enlarged hollow chamber, so arranged that the hot gases may surround it, as illustrated in my present invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination with the tank L, bolted

to or suspended upon the rear wall of the stove, as set forth, the hollow heating-chamber *g*, constructed as specified, located in an enlargement of the drop-flue at the end of the stove opposite the fire-box, and communicating with the interior of the tank L by means of the pipes *h h* and *i i*, or their equivalents, substantially as described.

2. In combination with the drop or descending flue H, and the heating-chamber, constructed as set forth, the recessed enlargement *f* of said flue to receive the heater, substantially as described.

Executed at Bellows Falls, Vermont, this 28th day of September, 1874.

JAS. H. WENTWORTH.

Witnesses:

A. WENTWORTH,  
C. B. HYDE.