2 Sheets—Sheet 1.

H. W. AUSTIN & W. B. HOSFORD.

Furnace.

No. 204,939. Patented June 18, 1878.

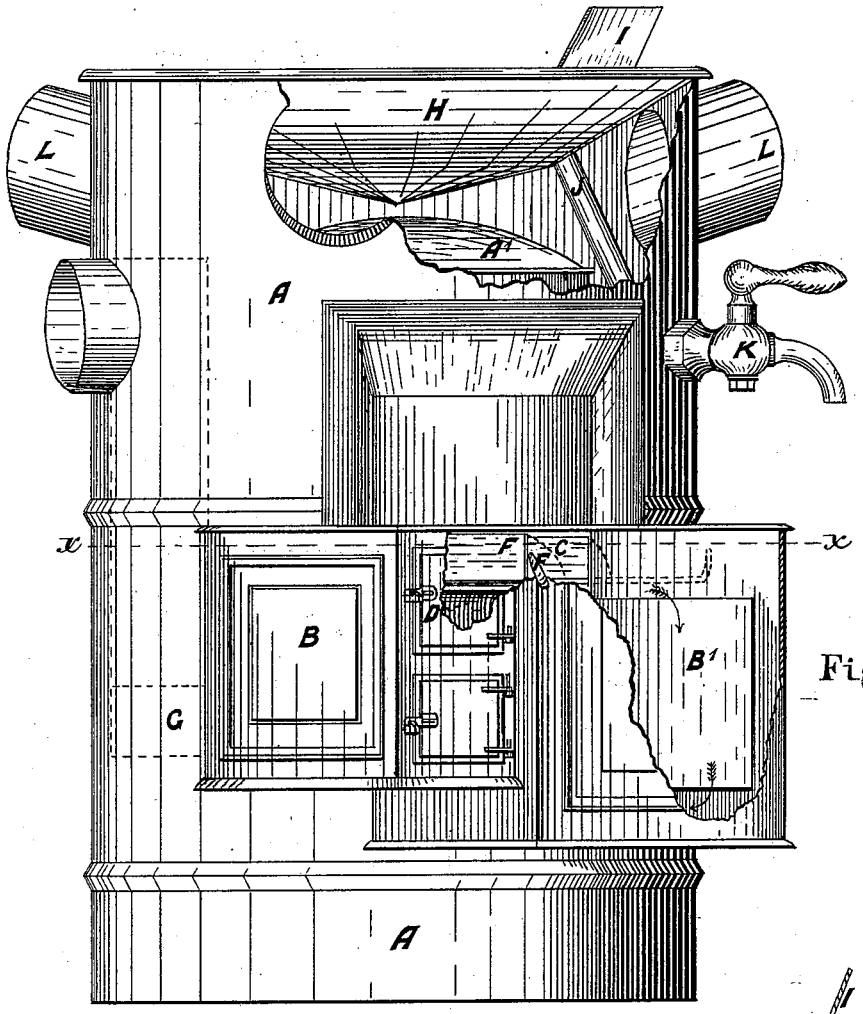

Fig. 1.

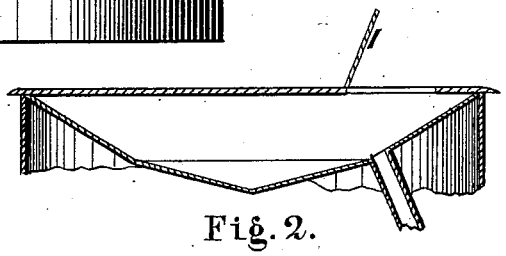

Fig. 2.

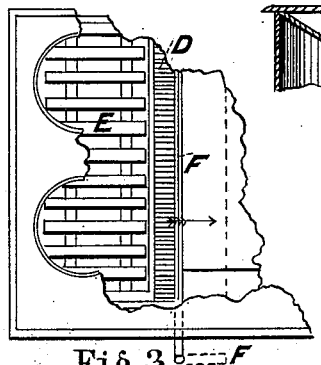

Fig. 3.

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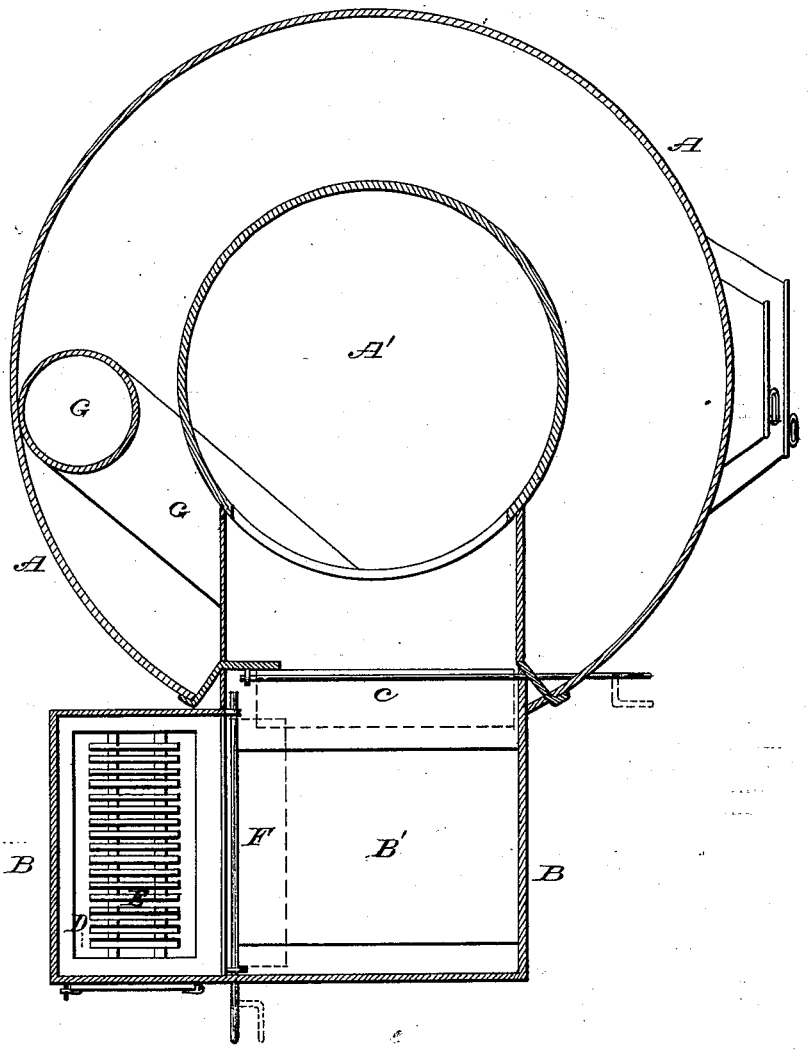
2 Sheets—Sheet 2.

H. W. AUSTIN & W. B. HOSFORD.

Furnace.

No. 204,939. **Patented June 18, 1878.**

Fig 4



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UNITED STATES PATENT OFFICE.

HENRY W. AUSTIN AND WILLIAM B. HOSFORD, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN FURNACES.

Specification forming part of Letters Patent No. **204,939**, dated June 18, 1878; application filed July 19, 1877.

To all whom it may concern:

Be it known that we, HENRY W. AUSTIN and WILLIAM B. HOSFORD, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Furnaces, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a furnace containing our improvements; Fig. 2, a detail view, in section, of the upper part of the furnace; Fig. 3, a plan view of a portion of the cooking attachment, with the top partly broken away; and Fig. 4, a horizontal section in line *x x*, Fig. 1.

Our invention relates to improvements of the furnace for which Letters Patent No. 191,746 were granted to us June 12, A. D. 1877.

The invention consists in providing the furnace cooking attachment described in the patent named above with a small fire-box which may be used in warm weather when the furnace-fire is out.

It also consists in a hot-water reservoir arranged in the top of the furnace-case, and supplied with a suitable pipe and stop-cock for drawing off hot water for use.

In our prior patent, mentioned above, there is no means of supplying heat for the cooking attachment except by the regular furnace-fire, so that in warm weather, when the furnace is not in use, the cooking attachment is of no service. The general construction of this attachment and the furnace is the same as in our prior patent, and need not be described in detail here; and we shall therefore describe only those parts which are necessary to an understanding of our present improvement.

In the drawings, A represents the furnace, and B the cooking attachment, connected by a flue directly with the combustion-chamber of the furnace, in which flue is placed a damper, C, by means of which the passage into the furnace may be opened or closed, or regulated at pleasure.

At one side of the cooking attachment—preferably that opposite to the oven-door—is a fire-box, D, which may be of any ordinary construction suitable for burning either wood or coal. In the drawings this fire-box is shown with a grate, E, across its central portion, below which is the ash-pit, and in the top above are boiler-holes for cooking purposes.

The upper part, or fuel-chamber, of the fire-box opens directly into the upper part of the cooking attachment B—that is, into the space directly over the oven B′. A damper, F, is placed in the throat of this passage into the cooking attachment B, so that it may be entirely closed, opened, or regulated at pleasure.

In warm weather, when the furnace is not in use and it is desired to use the cooking attachment, a fire may be built in the supplementary fire-box D, and all communication between the cooking attachment and furnace being cut off by closing the damper C, the cooking attachment may be heated from the fire-box D, the damper F being opened, so that the heated products of combustion may circulate around the oven B′, as indicated by the arrows in Fig. 1 of the drawings, and escape through the pipe G (shown in dotted lines in Fig. 1) into the exit-pipe of the furnace.

In cold weather, when the furnace is in use and it is desired to heat the cooking attachment, the damper C is opened, and the damper F must be closed, to shut off all communication with the fire-box D.

A water pan or reservoir, H, is constructed to exactly fit the upper end of the furnace-cases, so as to be arranged directly over the combustion-chamber A′, and surrounded by the hot air in the hot-air chamber. This reservoir has a tight cover, in which a small door, I, is provided, to permit the filling of the reservoir with water. A pipe, J, is connected with the reservoir at its bottom, and extends thence downward and out through the casing of the furnace, and is provided with a stop-cock, K, at its lower end, by means of which water may be drawn from the reservoir whenever desired.

It is evident, from the location of the reservoir, that the water therein will be readily heated by the hot air extending all around the dishing bottom of the reservoir. The hot-

air pipes L of course cannot be attached to the top of the furnace, as usual, but must be attached at the sides thereof, just below the water-reservoir H, as shown in Fig. 1 of the drawings, and communicating with the hot-air chamber at those points. It is also evident that the water in the reservoir at the top of the case will prevent the rapid radiation of heat from the top of the furnace, which it is necessary to provide against. This is usually done by covering the top with a layer of sand; but we have found the water-reservoir a much more efficient protection.

We do not confine ourselves to the particular construction and arrangement of parts herein described, as shown, for it is evident that they may be changed in many ways without departing from the nature and characteristics of our invention.

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

1. A cooking-stove, B, provided with a fire-box, D, in combination with a furnace, A, to which it is attached, and with which it is directly connected, and adapted to be heated from either the furnace or its own fire-box, substantially as and for the purpose set forth.

2. The furnace A, in combination with the cooking attachment B, provided with a fire-box, D, and dampers C and F, substantially as and for the purpose set forth.

3. The casing of the furnace A, in combination with a water-reservoir, H, arranged directly over the hot-air chamber, and fitted permanently to the top of the casing, to form the cover thereto, substantially as and for the purpose set forth.

4. The furnace A, in combination with the hot-water reservoir H, fitted to the top of the casing, and the outlet-pipe J, arranged within the hot-air chamber, and provided with a stop-cock, K, on the outside of the casing, substantially as and for the purpose set forth.

5. The casing of the furnace A, in combination with the water-reservoir H and hot-air pipes L, entering the casing to communicate with the hot-air chamber at the sides of the furnace, just below the reservoir, substantially as described.

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