C. M. BAXTER.

Hot-Air Furnace.

No. 208,784. Patented Oct. 8, 1878.

Fig. 1.

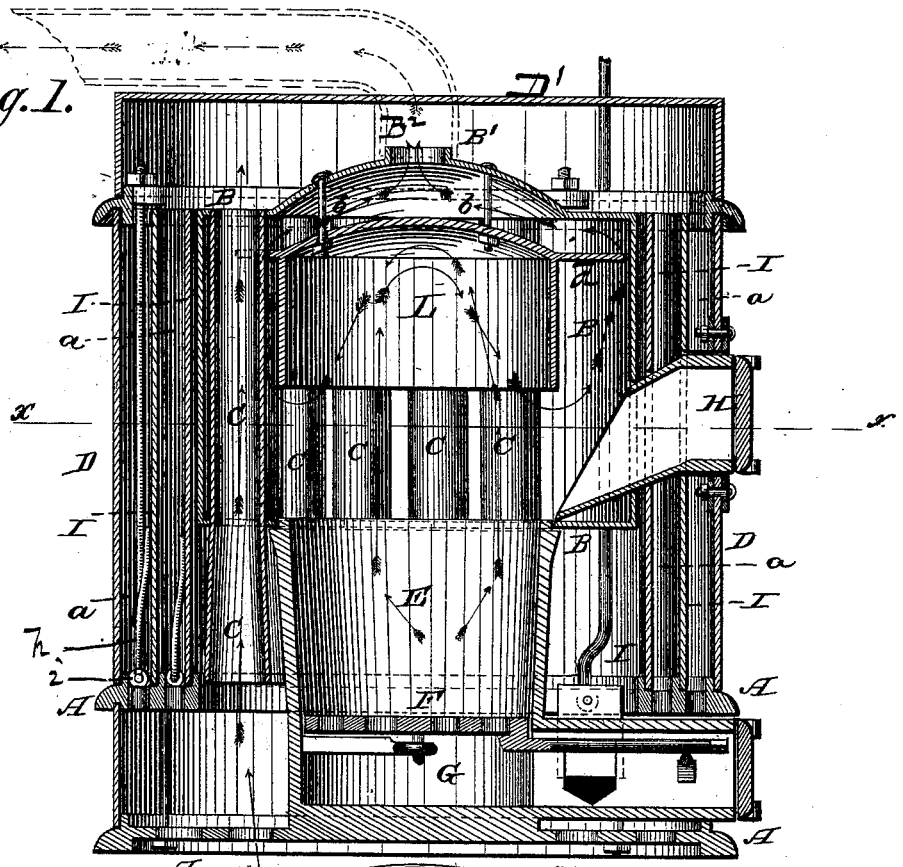
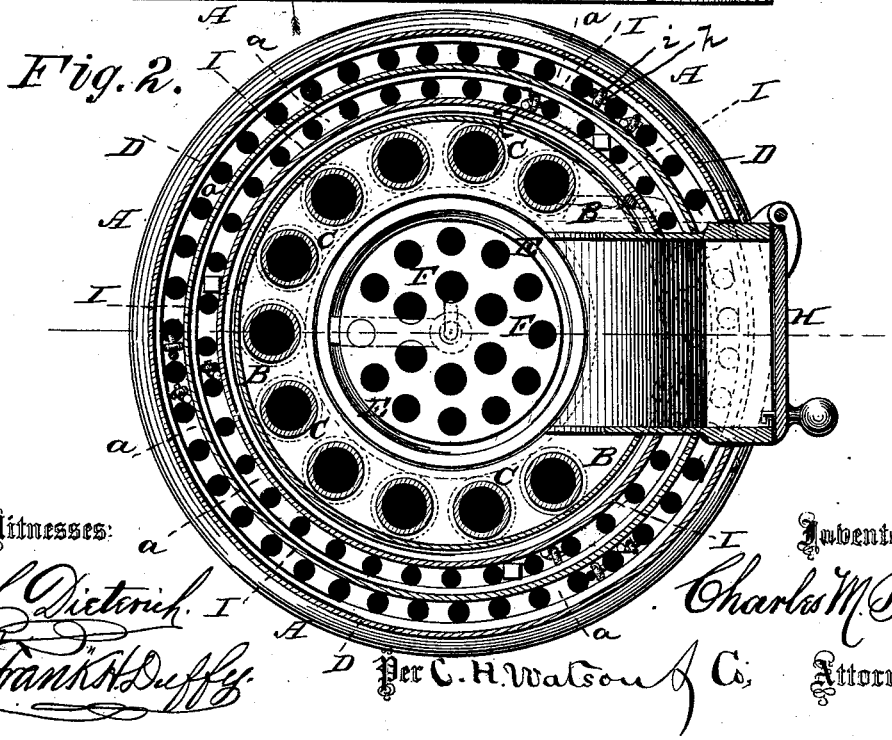


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES M. BAXTER, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **208,784**, dated October 8, 1878; application filed August 10, 1878.

To all whom it may concern:

Be it known that I, C. M. BAXTER, of Lebanon, in the county of Grafton and State of New Hampshire, have invented certain new and useful Improvements in Hot-Air Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a hot-air furnace, as will be hereinafter more fully set forth.

In the annexed drawing, to which reference is made, and which fully illustrates my invention, Figure 1 is a central vertical section of my improved hot-air furnace. Fig. 2 is a transverse section of the same on the line *x x*, Fig. 1.

A represents the base of my hot-air furnace or radiator. B is the furnace proper, with fire-pot E, having grate F and ash-pit G, as shown. D is the outside jacket, and on top of the furnace is the hot-air chamber D′. H is the door for admitting fuel into the fire-box.

Within the furnace B is arranged a series of vertical air-pipes, C C, having their lower ends made flaring and opening within the base A, the upper ends of said pipes opening into the hot-air chamber D′. These pipes C C are arranged in a circle concentric with the shell B and fire-pot E.

The top of the furnace or shell B forms a dome, B^1, having a smoke-outlet, B^2, which latter may have a smoke-pipe, passing out as indicated by the dotted lines in Fig. 1, or in any other suitable manner.

Above the fire-pot E is a dome, L, suspended from the furnace-dome B^1 by rods *b*, or any other suitable or convenient means. This dome L is made somewhat in inverted-cup form, and has at or near the top a projecting flange, *d*, which is cut out for the passage of the tubes C. In other words, this flange *d* extends between the tubes to within a certain distance of the furnace-shell B, leaving, however, a suitable space between said shell and the edge of the flange for the escape of the smoke.

The products of combustion from the fire-pot E pass upward into the dome L, where proper combustion takes place, and then downward under the lower edge of the dome, between and around the tubes C, striking the inner surface of the shell B, and then upward around the flange *d* to the furnace-dome B^1, and out at the exit B^2. Between the furnace-shell B and the outside jacket, D, I interpose one or more concentric jackets, I, so as to form a succession of jackets around the furnace, with annular air-spaces *a a* between the same for the passage of air from the base A to the top hot-air chamber, D′, whereby all loss of heat by radiation into the cellar is prevented. The intermediate jackets I are held to the base by means of hooks *h* and eyes *i*, as shown.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a hot-air furnace, the combination of the furnace-shell B, with dome B^1 and smoke-exit B^2, the fire-pot E, tubes C C, and interior dome L, with flange *d* cut to project between the tubes, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES M. BAXTER.

Witnesses:
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