2 Sheets--Sheet 1.

L. G. HALLBERG.

Combined Hot-Air Furnace and Range.

No. 164,916. Patented June 29, 1875.

Fig. 1.

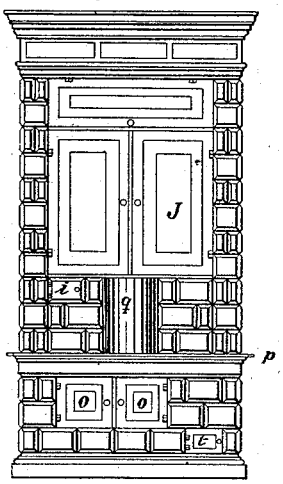


Fig. 2.

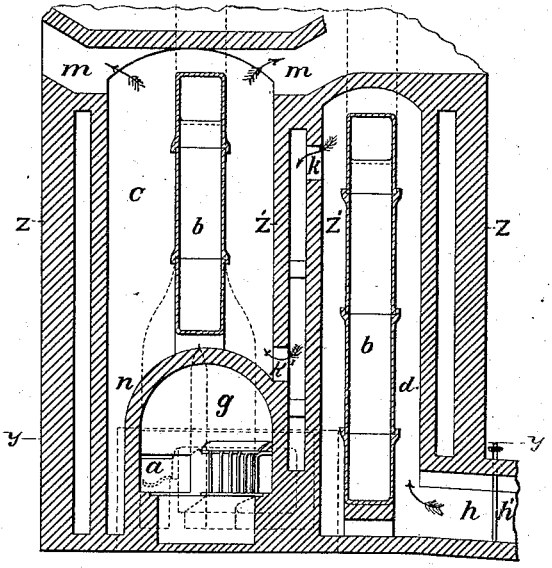


Fig. 3.

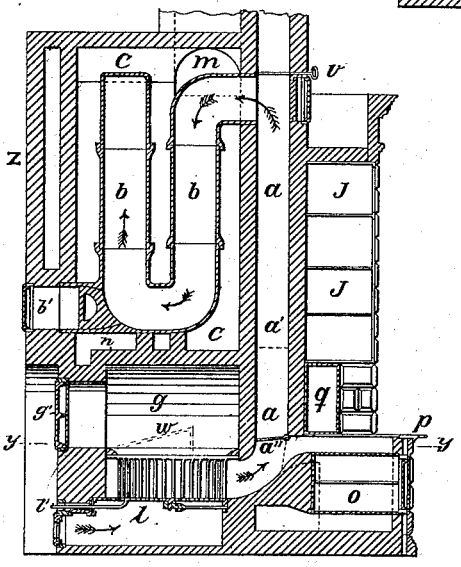


Fig. 4.

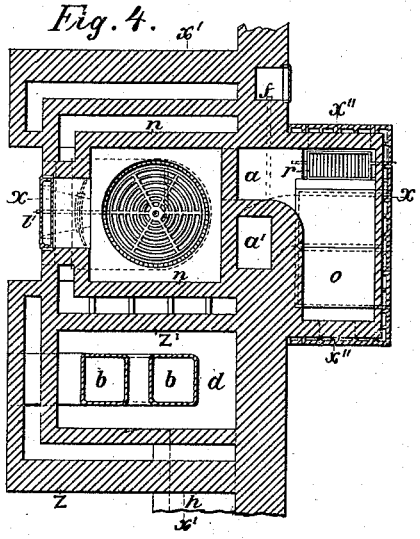


Fig. 5.

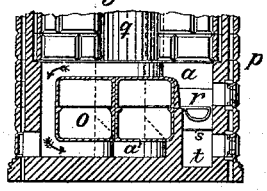


Fig. 6.

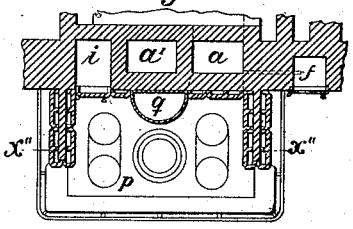
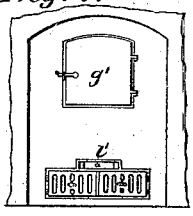


Fig. 7.



Witnesses:
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Inventor
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2 Sheets--Sheet 2.

L. G. HALLBERG.

Combined Hot-Air Furnace and Range.

No. 164,916. Patented June 29, 1875.

Fig. 8.

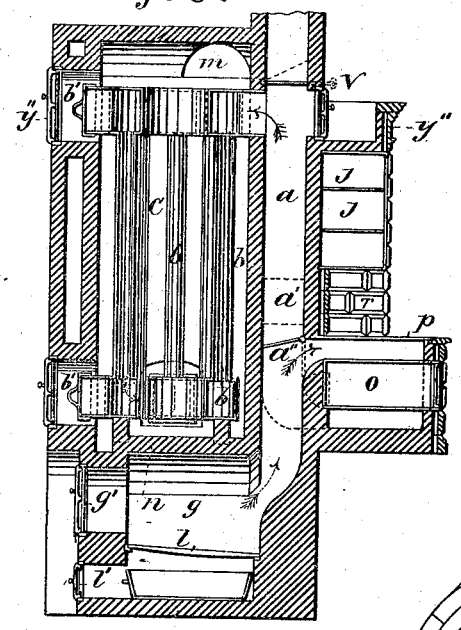


Fig. 9.

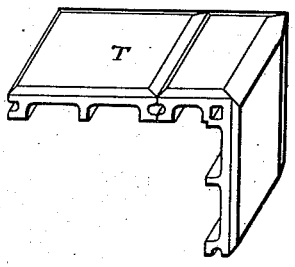


Fig. 10.

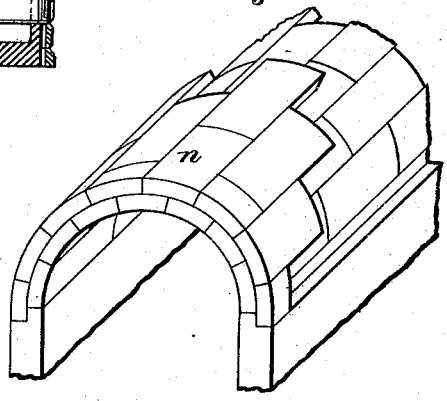


Fig. 11.

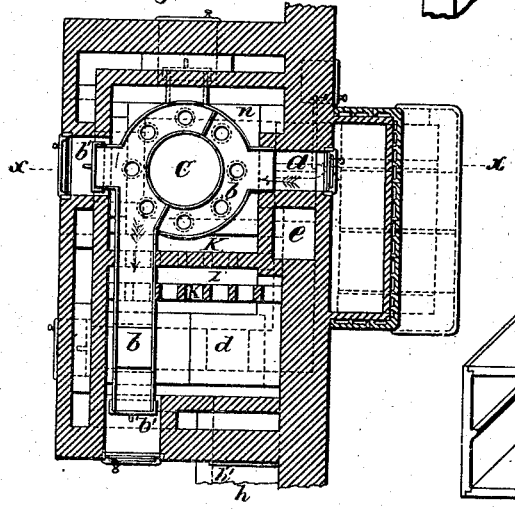
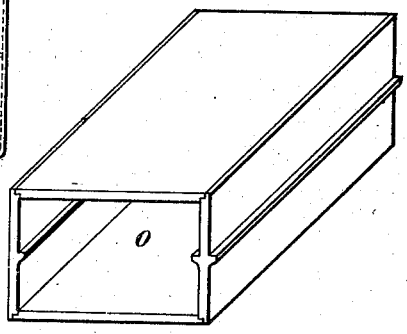


Fig. 12.



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Inventor;
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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

LARS G. HALLBERG, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN COMBINED HOT-AIR FURNACES AND RANGES.

Specification forming part of Letters Patent No. **164,916**, dated June 29, 1875; application filed March 25, 1874.

To all whom it may concern:

Be it known that I, L. G. HALLBERG, of Chicago, county of Cook, State of Illinois, have invented a Combined Hot-Air Furnace and Cooking-Range, of which the following is a specification:

The object of my invention is to utilize the heat from a furnace, either for heating or cooking purposes.

The nature of my invention consists in the special construction of the various parts of my combined hot-air furnace and cooking-range, and their combination, whereby the heat of the furnace is utilized and controlled according to the requirements of the user, and is used economically.

In the annexed drawings, Figure 1 represents a front elevation. Fig. 2 is a vertical sectional view taken at the line x' x'. Fig. 3 is a vertical section taken at the line x x. Fig. 4 is a horizontal section taken at the line y y, Fig. 2. Fig. 5 is a vertical section of the range only. Fig. 6 is a plan of the range, with a section of a part of the flues. Fig. 7 is an elevation of a part of the furnace, showing the feeding and ash-pit doors. Fig. 8 is a vertical section taken at the line x x in Fig. 11. Fig. 9 is a perspective view of glazed tiles used on the outside of the range. Fig. 10 is a perspective of the arch of the furnace. Fig. 11 is a transverse section taken at the line y'' y'' in Fig. 8. Fig. 12 is a perspective view of the oven *o*.

g' is the furnace-door, through which the fuel is fed to the furnace. l is the fire-grate, and l' the door opening into the ash-pit below the fire-grate. This door is provided with a suitable damper for controlling the admission of air. n is the arch over the fire-grate, and it is made of tile, as clearly shown in Fig. 10.

The heat and smoke pass up the flue a direct when the damper a'' is turned down, as shown in dotted lines in Fig. 8, and pass from this flue down through the system of pipes b, which are arranged in the hot-air chamber c, and pass over into the heating-chamber d. The smoke passes out into the chimney through the flue e. The hot air is taken from the heating-chambers c and d, through suitable openings in the walls of the furnace, and conducted to any part of the building.

When it is desired to use the cooking-range the damper a'' is turned across the flue a, and the heat thereby directed to pass about the oven o beneath the boiler-plate p, and out through the flue a' into the flue a, and out, as above described.

b' are openings through the wall of the furnace, and into the pipes b, for the purpose of cleaning the same, removing the soot therefrom. r is a fire-place placed in the range beside the oven o, and is connected with the flue a', and may be used for heating the range when it is not desired to use the heat of the furnace. s is coal-grate, and t the ash-pit of the fire-place r.

The oven o is made of fire-proof tiles, made in large slabs, as shown, with ribs and notches for fittings. The front of the range is finished with glazed tiles, and put together as shown in Fig. 9. I also construct a furnace-arch of tiles, as clearly shown in Fig. 10.

i (shown in Fig. 6) opens into the recess over the boiler-plate, and is for the purpose of carrying away the steam and vapor produced by the cooking. j are shelves suitably arranged to keep articles upon them warm. Cold air is admitted through the channel or flue h, into which is placed h', for the purpose of regulating the flow of the air. The air passes into the chamber d, and through openings in the wall k into the heating-chamber c, from whence it is conducted through suitable openings in the furnace-wall, as above described.

The products of combustion can be carried into the system of radiating-pipes directly through the flue a, or through the cooking-range, and through a', as above described. Provision is made, however, for conducting the products of combustion from the flue a directly into the chimney without passing through the pipes b by opening the damper V.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the flues *a* and *a'* with the oven *o* and furnace, substantially as specified.

2. The combination of the flues *a* and *a'*, oven *o*, fire-place *r*, and furnace, substantially as specified.

3. The combination of the system of pipes *b*, air-chambers *c* and *d*, and openings *b'* for cleaning the said pipes, substantially as and for the purpose specified.

LARS G. HALLBERG.

Witnesses:

JOSEPH H. FOX,

HANS. E. ANDERSON.