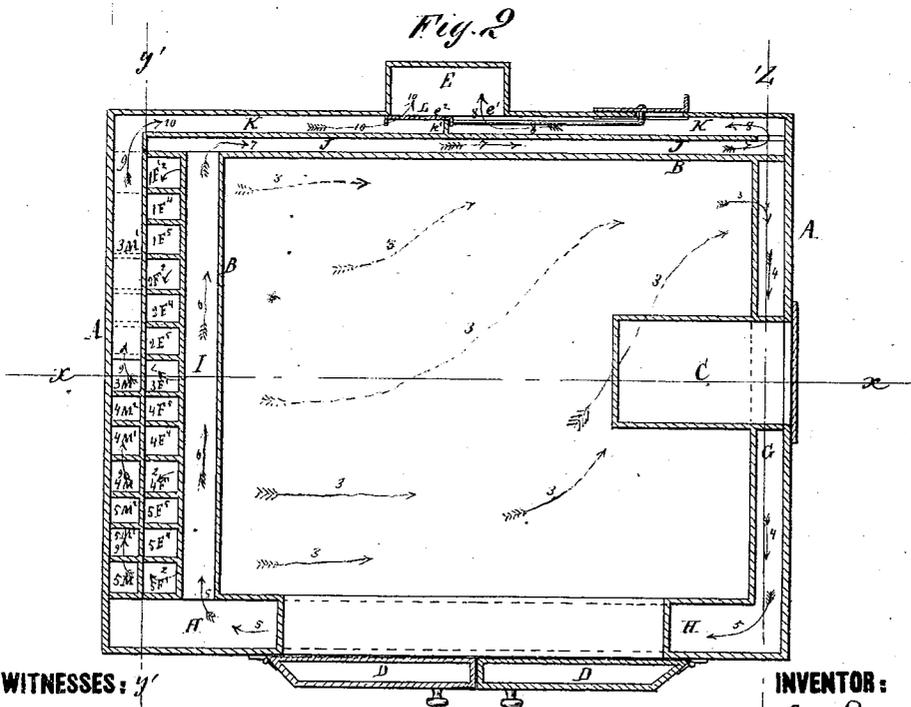
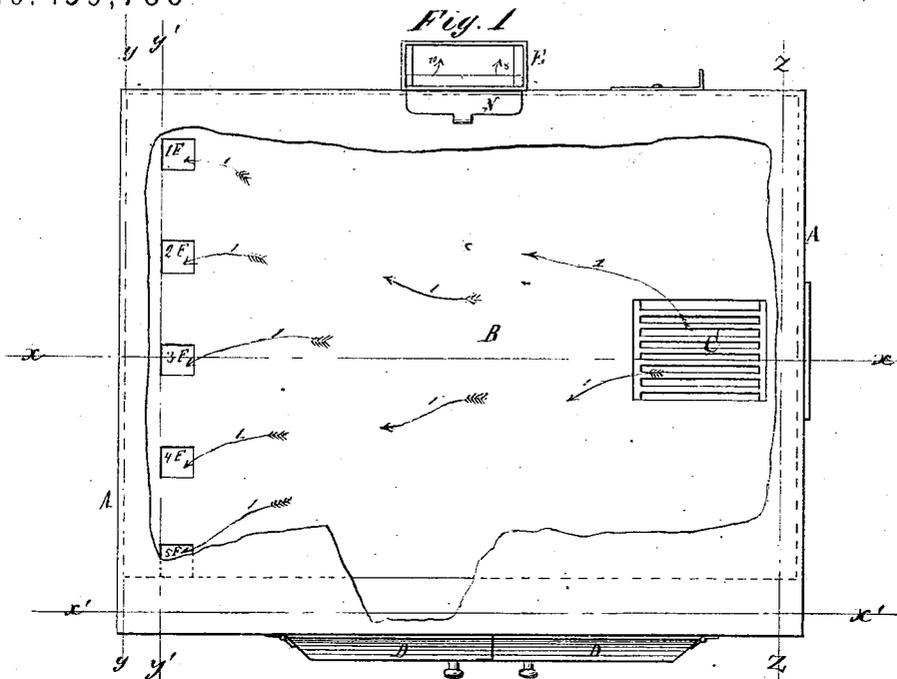


E. O. BRINCKERHOFF. Cooking-Stove.

No. 159,788

Patented Feb. 16, 1875.



WITNESSES:

A. W. Almqvist
A. F. Terry

INVENTOR:

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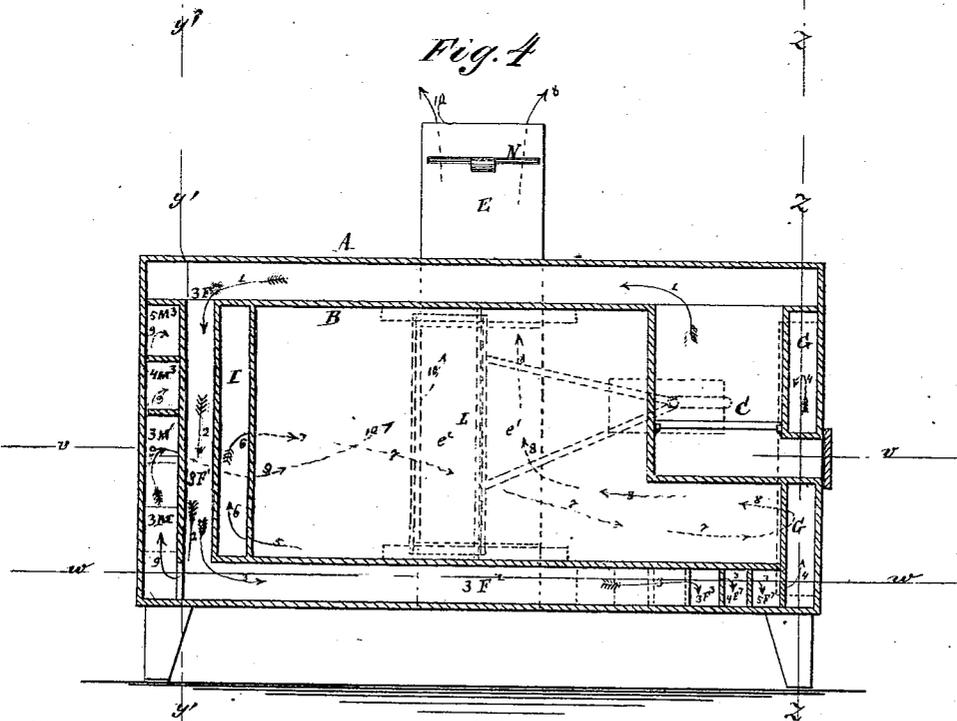
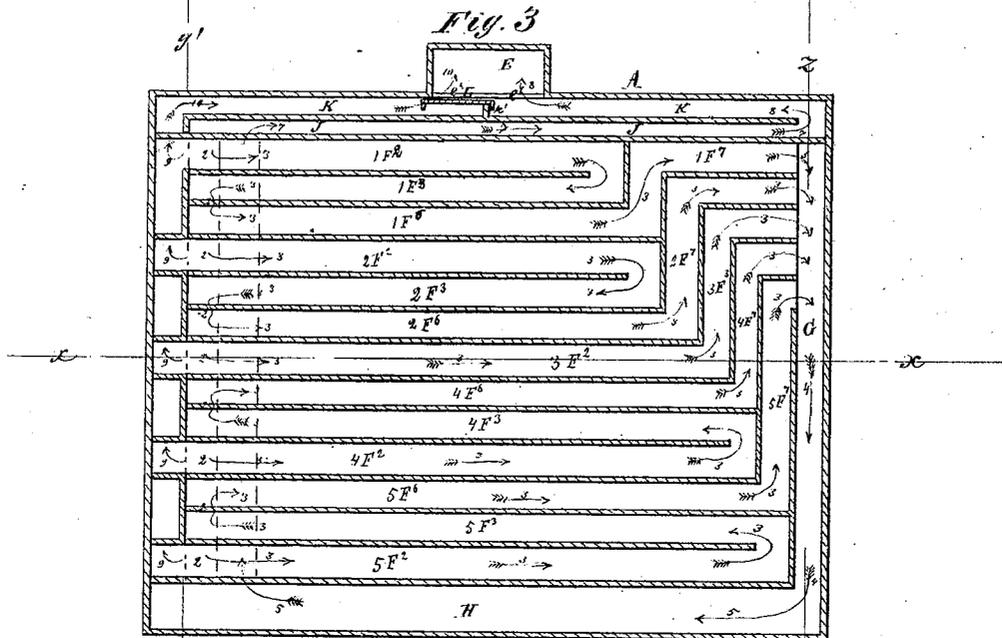
BY

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ATTORNEYS.

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Fig. 5

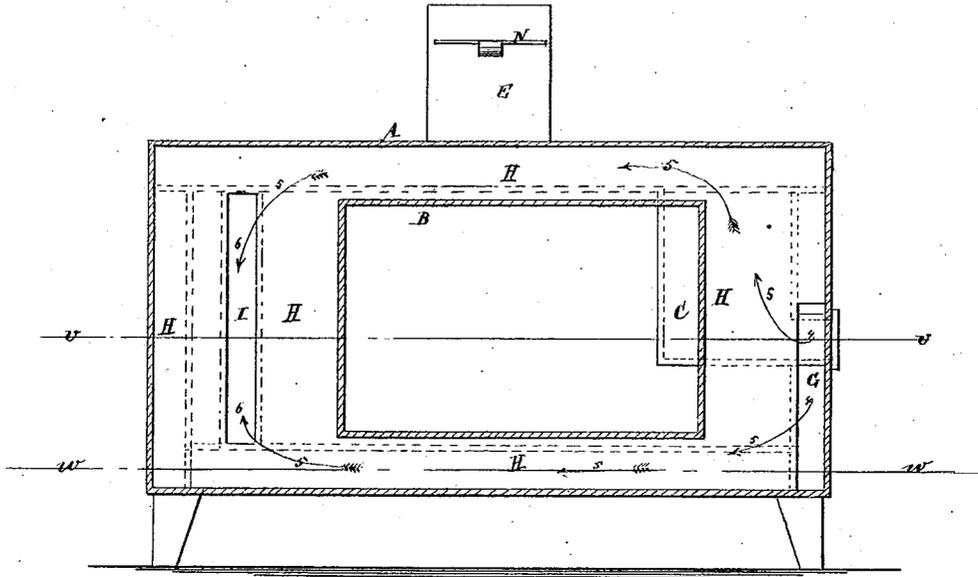
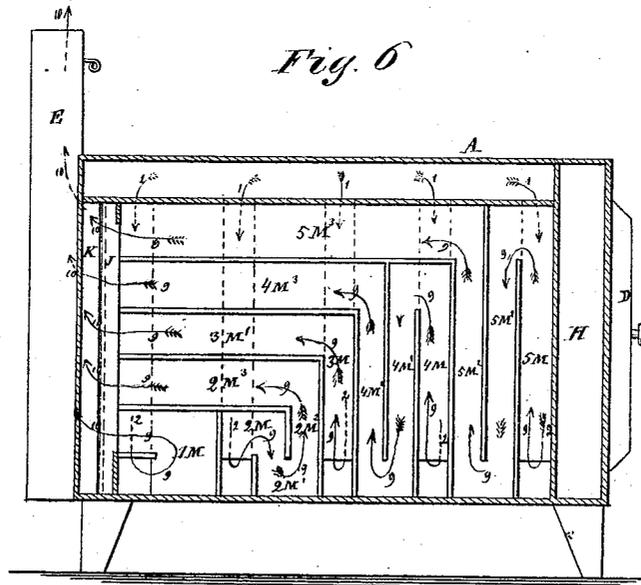


Fig. 6



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Fig. 7

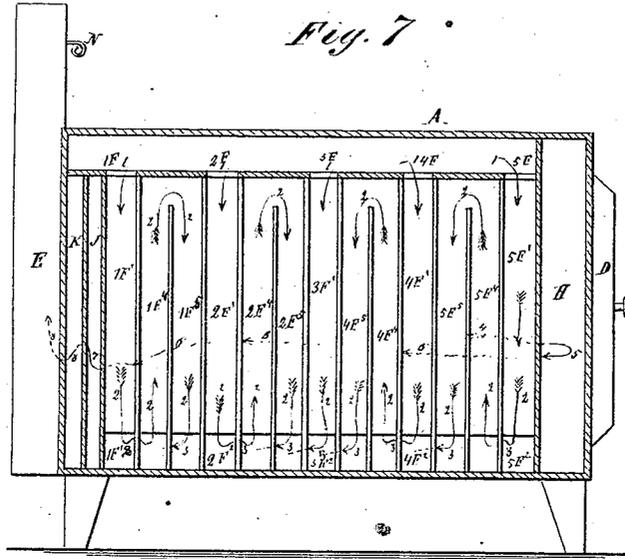
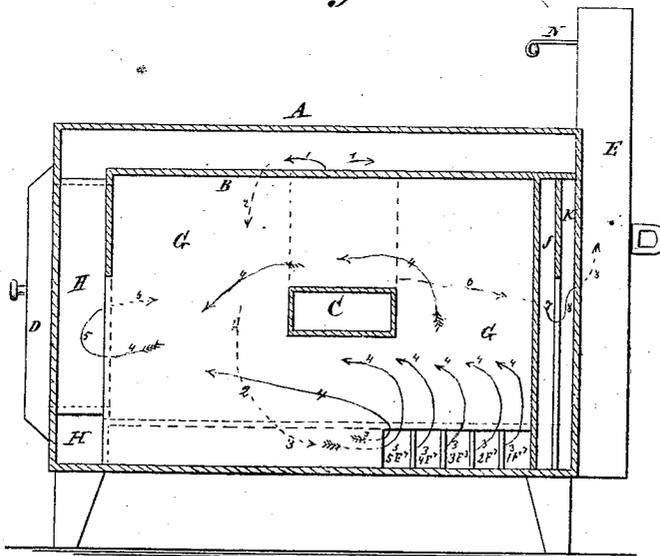


Fig. 8



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UNITED STATES PATENT OFFICE.

EDWIN O. BRINCKERHOFF, OF NEW YORK, N. Y.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 159,788, dated February 16, 1875; application filed January 30, 1875.

To all whom it may concern:

Be it known that I, EDWIN O. BRINCKERHOFF, of the city, county, and State of New York, have invented a new and useful Improvement in Cooking-Stoves, of which the following is a specification:

Figure 1 is a top view of my improved stove, part of the top plate being broken away. Fig. 2 is a horizontal section of the same taken through the line *v v*, Figs. 4 and 5. Fig. 3 is a horizontal section of the same taken through the line *w w*, Figs. 4 and 5. Fig. 4 is a vertical cross-section of the same taken through the line *x x*, Figs. 1, 2, and 3. Fig. 5 is a vertical cross-section of the same taken through the line *x' x'*, Fig. 1. Fig. 6 is a vertical longitudinal section of the same taken through the line *y y*, Fig. 1. Fig. 7 is a vertical longitudinal section of the same taken through the line *y' y'*, Figs. 1, 2, 3, and 4. Fig. 8 is a vertical cross-section of the same taken through the line *z z*, Figs. 1, 2, 3, and 4.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved cooking-stove, the flues of which shall be so arranged that when the stove is used for baking purposes it may be heated quickly, thoroughly, and uniformly, and with a comparatively small amount of fuel, and that when used for boiling purposes the entire stove need not be heated.

The invention consists in the combination of the side and bottom flues, the side flue-space, the front flue-space, the inner side flue-space, the inner rear flue-space, and the outer rear flue-space with each other, the outer and inner cases of the stove, and the chimney-flue, in the combination of the outer side flues with the vertical side flues, the outer rear flue-space, and the chimney-flue, and in the combination of the sliding damper with the set of flues used when baking, the set of flues used when boiling, and the chimney-flue, as hereinafter fully described.

A is the outer case of the stove, and B is the inner or oven case. C is the fire-box, which is placed in the middle part of one side of the stove, as shown in Figs. 1, 2, and 4. D are the oven-doors, which are placed in the front of the stove. E is the exit or chimney

flue, which is placed at the middle part of the rear of the stove. At the side of the stove opposite the fire-box are formed three flue-spaces, by the interposition of two vertical plates between the side plates of the outer and inner cases. At the rear side of the stove are formed two flue-spaces, by the interposition of a vertical plate between the rear plates of the outer and inner cases.

I will describe the various flues of the stove in connection with the course of the products of combustion in passing through them, first describing the flues brought into use when the stove is to be heated for baking purposes, and then describing the flues brought into use when the stove is to be used for boiling purposes.

The products of combustion from the fire-box C pass up into the space between the top plates of the two cases A B, pass across the stove laterally, and descend through the holes 1F 2F 3F 4F 5F into the middle flue-space at that side of the stove, as indicated by the arrows 1. The holes F are made of such a size that the sum of their areas may be equal to the area of the chimney-flue, and generally the sum of the areas of the flues through which the products of combustion may be passing at the same time, and in the same direction, is equal to the area of the chimney-flue. The products of combustion that pass down through the hole 1F pass down through the vertical flue 1F¹, pass through the bottom flue 1F², return through the bottom flue 1F³, pass up through the vertical flue 1F⁴, pass down through the vertical flue 1F⁵, pass through the bottom flue 1F⁶, and through the elbow-flue 1F⁷ into the flue-space G at the fire-box side of the stove. The products of combustion that pass down through the hole 2F pass down through the vertical flue 2F¹, pass through the bottom flue 2F², return through the bottom flue 2F³, pass up through the vertical flue 2F⁴, pass down through the vertical flue 2F⁵ through the bottom flue 2F⁶, and through the elbow-flue 2F⁷ into the side flue-space G. The products of combustion that pass down through the hole 3F, pass down through the vertical flue 3F¹, pass through the bottom flue 3F², and through the elbow-flue 3F³ into the side flue-space G. The products of combustion that pass

down through the hole 4F pass down through the vertical flue 4F¹ pass through the bottom flue 4F², return through the bottom flue 4F³, pass up through the vertical flue 4F⁴, pass down through the vertical flue 4F⁵, pass through the bottom flue 4F⁶, and through the elbow-flue 4F⁷ into the side flue-space G. The products of combustion that pass down through the hole 5F pass down through the vertical flue 5F¹, pass through the bottom flue 5F², return through the bottom flue 5F³, pass up through the vertical flue 5F⁴, pass down through the vertical flue 5F⁵, pass through the bottom flue 5F⁶, and through the elbow-flue 5F⁷ into the side flue-space G. The course of the products of combustion through the vertical and bottom flues F is indicated by the arrows 2 and 3. The products of combustion pass through the flue-space G, around the fire-box-door frame, and escape through an opening at the lower forward end of said flue-space G into the front flue-space H, as indicated by the arrows 4. The products of combustion pass through the front flue-space H, around the oven-door frame, and escape at the opposite end of said front flue-space H, into the inner side flue-space I, as indicated by the arrows 5. The products of combustion pass back through the flue-space I, as indicated by the arrows 6, and pass at the rear end of said flue-space I into the inner rear flue-space J. The products of combustion pass across the stove through the inner rear flue-space J, as indicated by the arrows 7, and escape through an opening at the other end of said flue-space J into the outer rear flue-space K, and pass thence through an opening, e¹, in the middle part of the rear plate of the outer case A, into the chimney or exit-flue E, as indicated by the arrows 8. The outer rear flue-space K is divided into two equal parts by a vertical partition, k', as shown in Figs. 2 and 3, and upon the other side of the said partition k' a second opening, e², leads into the chimney or exit-flue E. L is a damper, operated by a handle passing out through the rear plate of the outer case A to close either of the openings e¹ e².

When the stove is to be used for baking purposes, the damper L is adjusted to open the openings e¹ and close the openings e², which causes the products of combustion to take the course hereinbefore described, heating the whole stove evenly and uniformly.

When the stove is to be used for boiling purposes, the damper L is adjusted to close the opening e¹ and open the opening e². With this adjustment of the damper L the products of

combustion that pass down through the vertical flue 1F¹ of the middle side flue-space, pass into the flue 1M, and thence into the outer rear flue-space K. The products of combustion that pass down through the vertical flue 2F¹ pass out into the flue 2M, down into the flue 2M¹, up through the flue 2M², and through the flue 2M³ into the outer rear flue-space K. The products of combustion that pass down through the vertical flue 3F¹, pass out into and up through the vertical flue 3M, and thence through the flue 3M¹ into the outer rear flue-space K. The products of combustion that pass down through the vertical flue 4F¹ pass out into and up through the vertical flue 4M, down through the flue 4M¹, up through the flue 4M², and through the flue 4M³ into the outer rear flue-space K. The products of combustion that pass down through the vertical flue 5F¹ pass out into and up through the vertical flue 5M, down through the flue 5M¹, up through the flue 5M², and through the flue 5M³ into the outer rear flue-space K. The course of the products of combustion through the flues M is indicated by the arrows 9. The products of combustion pass through the outer rear flue-space K, and through the opening e² into the chimney or exit-flue E, as indicated by the arrows 10.

The draft of the stove is regulated by the damper N, placed in the chimney-flue E above the top of the stove.

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

1. The combination of the side and bottom flues F, the side flue-space G, the front flue-space H, the inner side flue-space I, the inner rear flue-space J, and the outer rear flue-space K with each other, with the outer and inner cases, A B, and the chimney-flue E, in substantially the manner herein shown and described.

2. The combination of the outer side flues M with the vertical side flues F, the outer rear flue-space K, and the chimney-flue E, in substantially the manner herein shown and described.

3. The combination of the sliding damper L with the set of flues F G H I J K, the set of flues F M K, and the chimney-flue E, substantially as herein shown and described.

EDWIN O. BRINCKERHOFF.

Witnesses:

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T. B. MOSHER.