

G. S. G. SPENCE.  
Cooking Range.

2 Sheets—Sheet 1.

No. 10,076.

Patented Oct. 4, 1853.

Fig. 2.

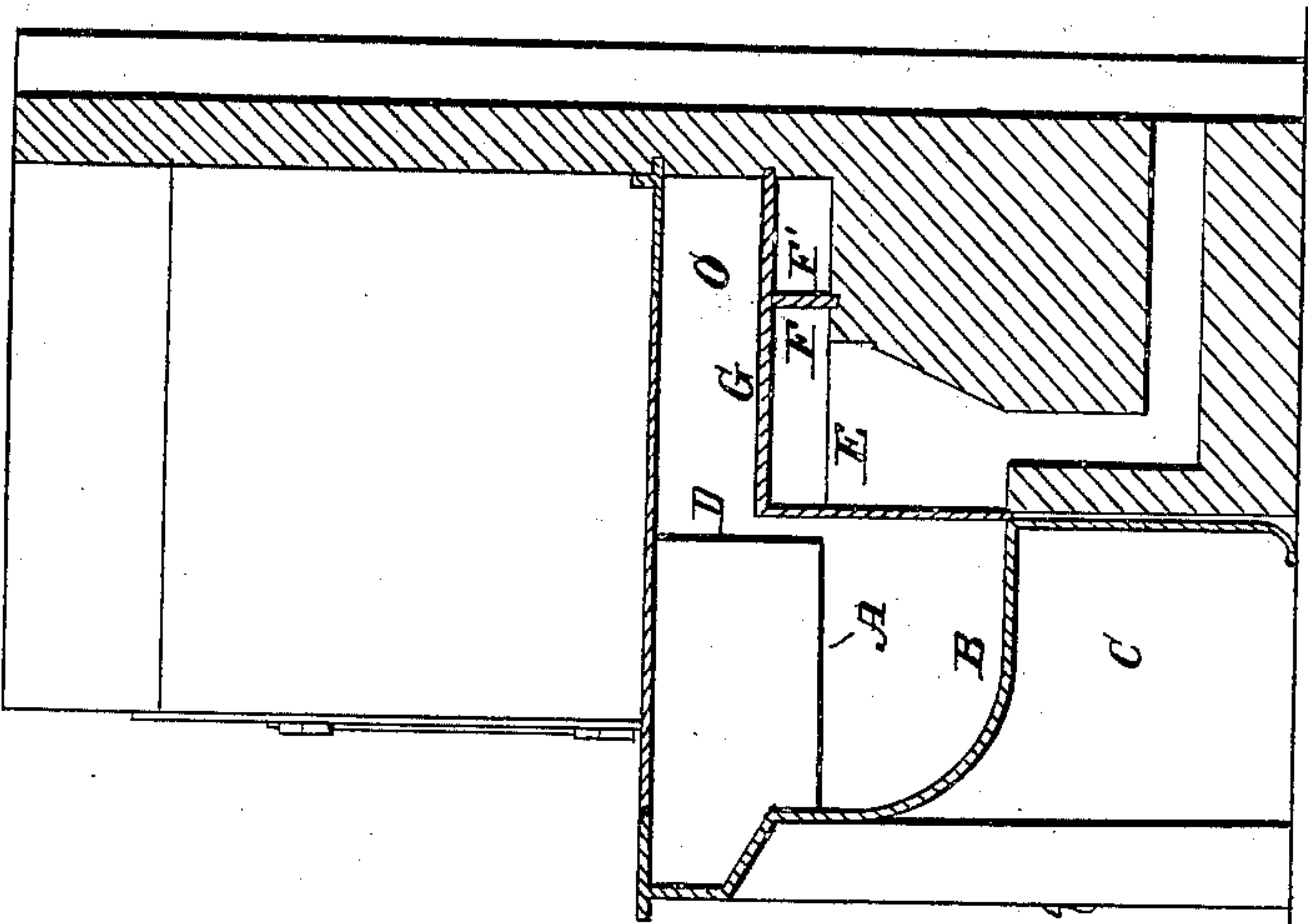


Fig. 3.

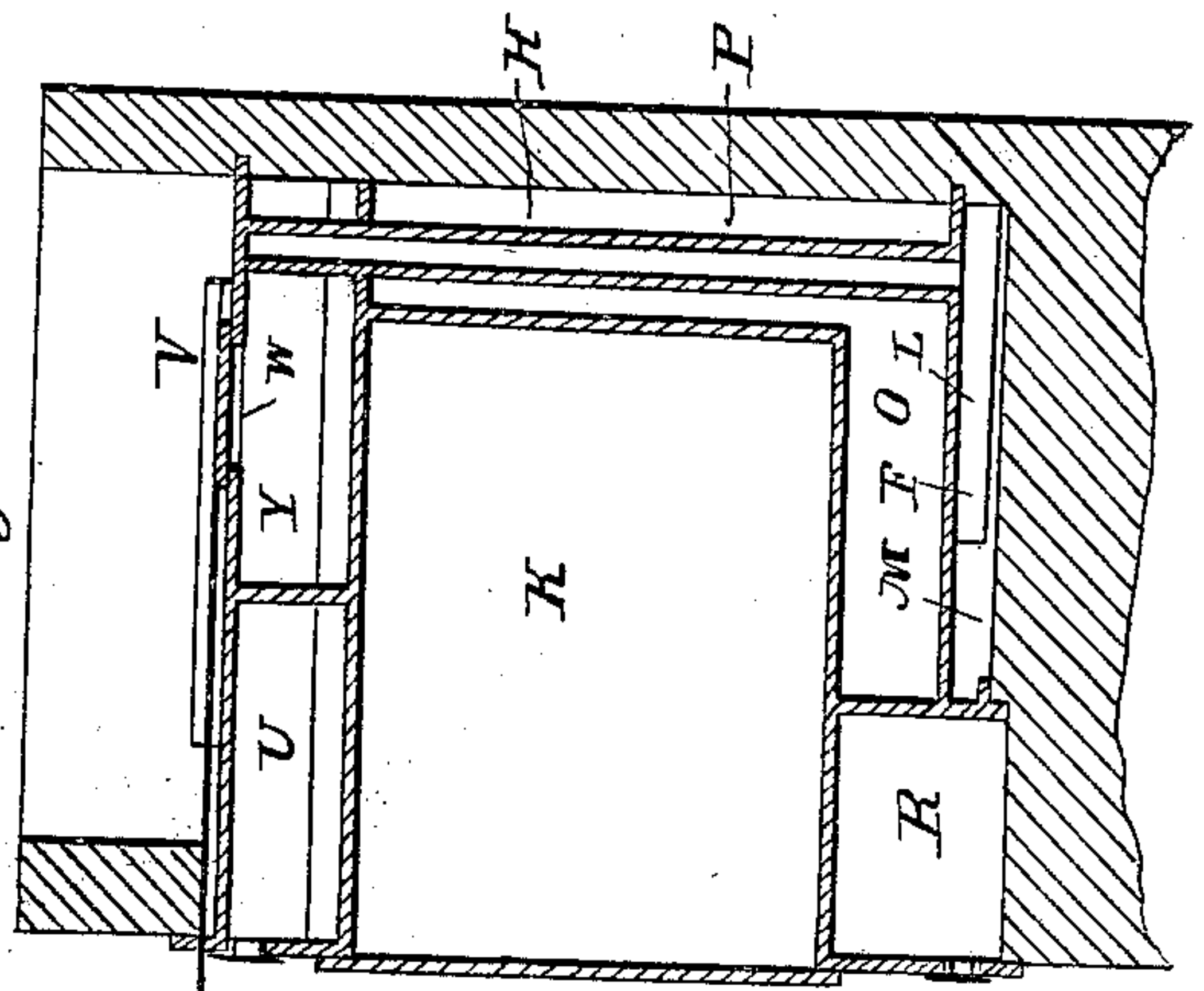


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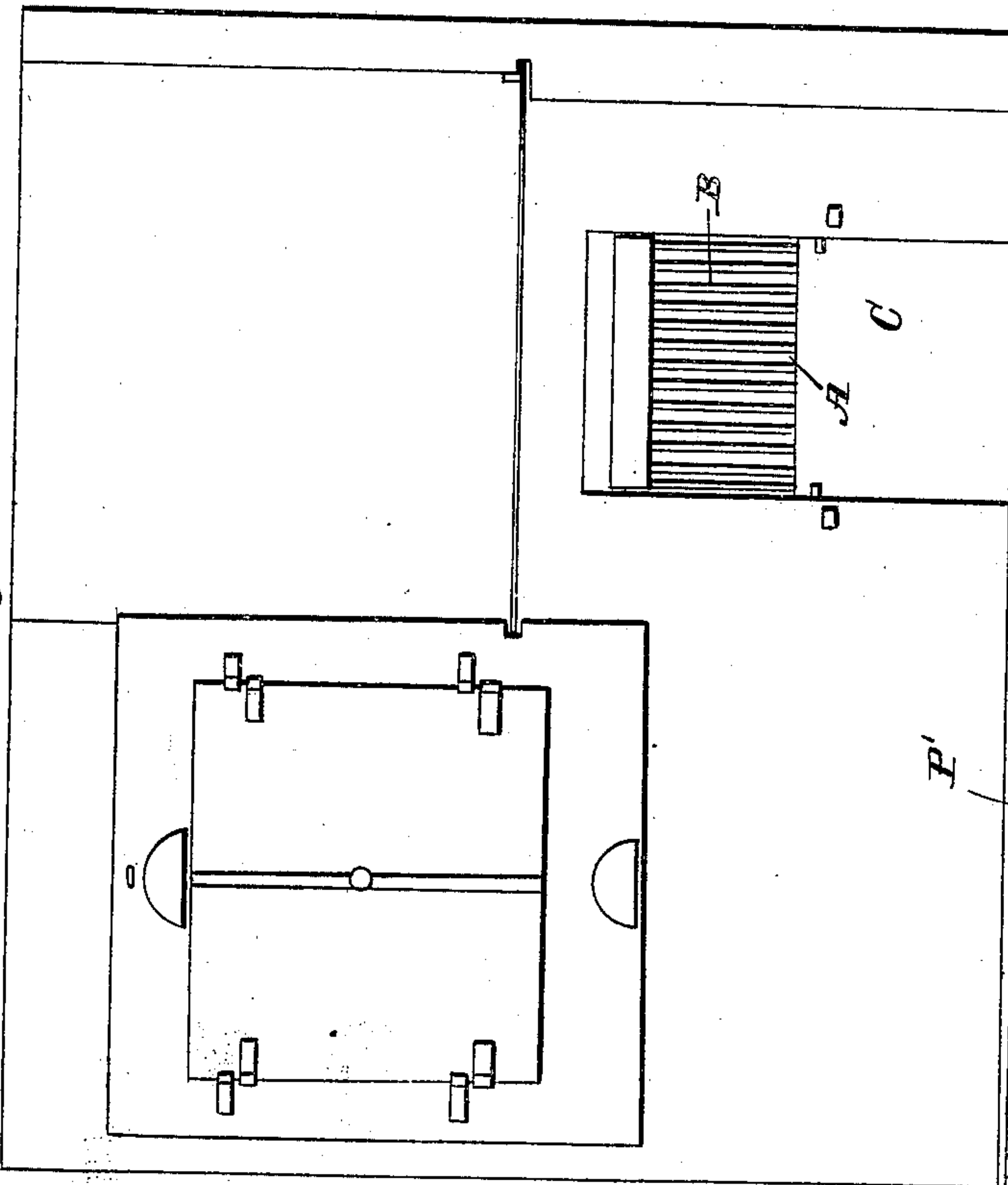
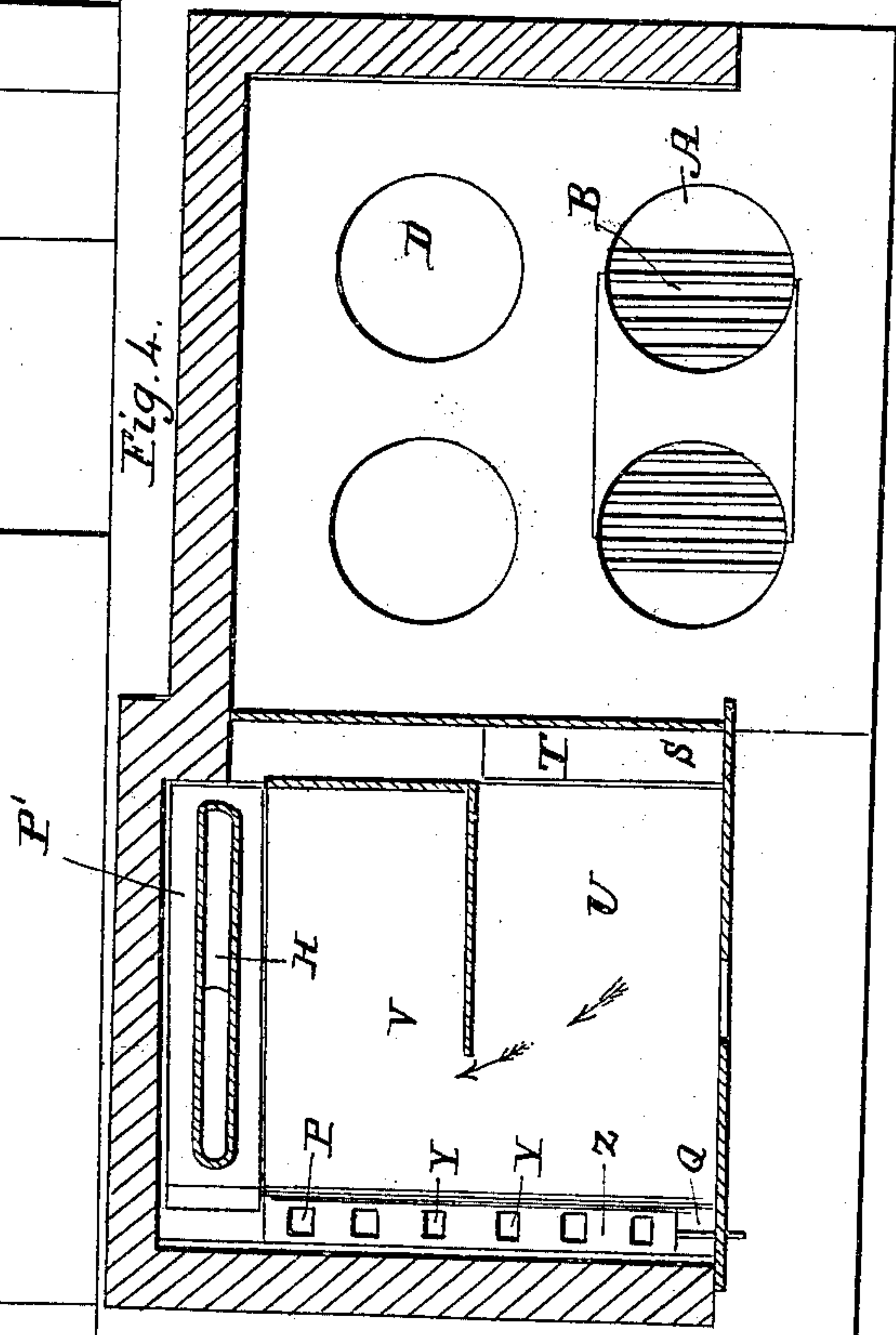


Fig. 4.

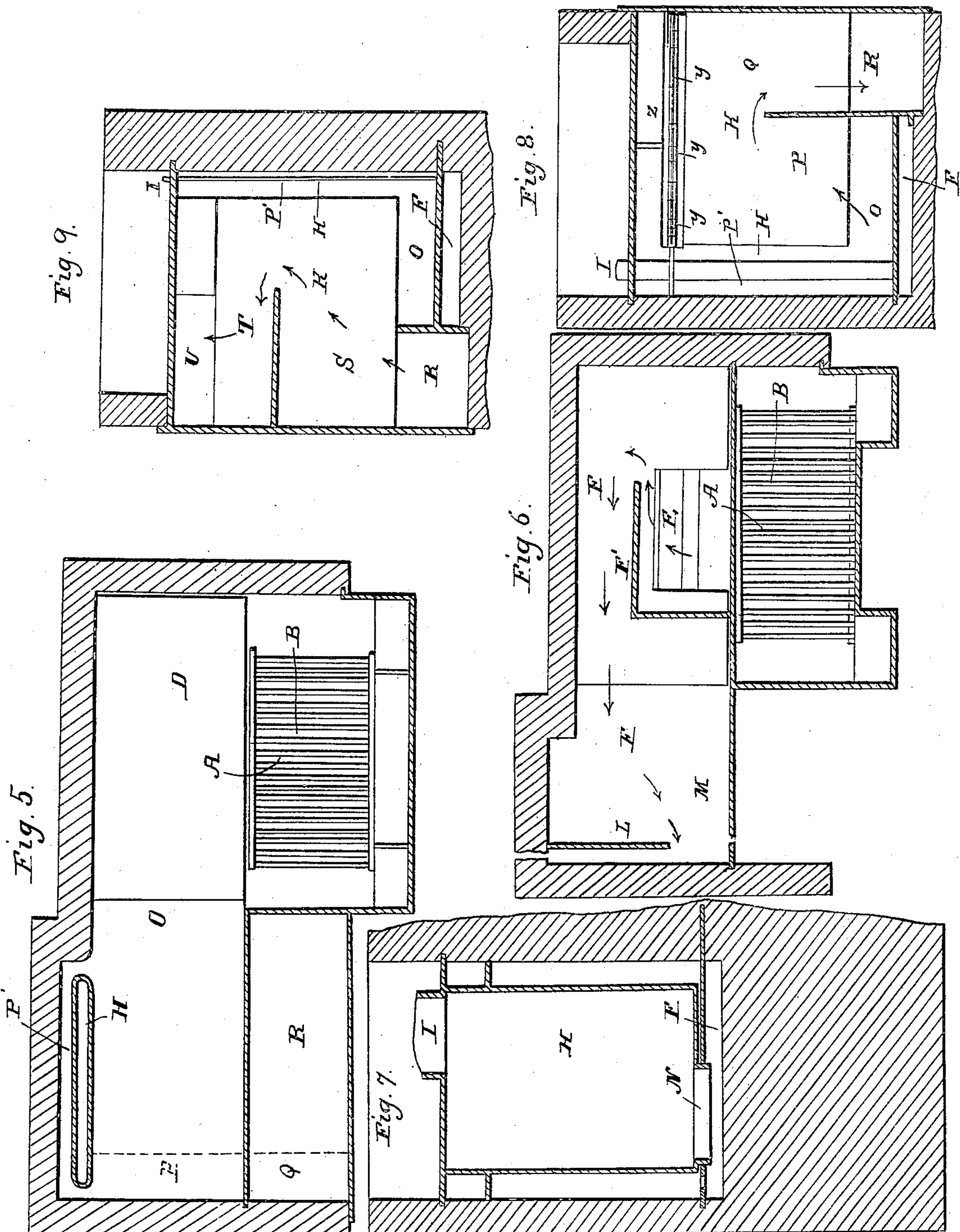


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# UNITED STATES PATENT OFFICE.

GEO. S. G. SPENCE, OF BOSTON, MASSACHUSETTS.

## COOKING-RANGE.

Specification of Letters Patent No. 10,076, dated October 4, 1853.

*To all whom it may concern:*

Be it known that I, GEORGE S. G. SPENCE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Elevated-Oven Air-Heating and Cooking Range; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and reference thereof.

Of the said drawings, Figure 1, denotes a front elevation of my improved range. Fig. 2, is a vertical and transverse section taken through the fire grate. Fig. 3, is a vertical and transverse section of it taken through the middle of the oven. Fig. 4, is a horizontal section taken through the flues over and against the top of the oven. Fig. 5, is a horizontal section taken so as to exhibit the flues underneath the oven. Fig. 6, is a horizontal section taken through the hot air flues underneath the bottom of the oven. Fig. 7, is a section taken through the hot air chamber or tube in rear of the oven, said section being made parallel to the front of the range.

In the said drawings, A, exhibits the chamber for combustion of the fuel, of which, B, denotes the fire grate, and, C, the ash pit. This chamber communicates with a boiling chamber or smoke space, D, placed directly over it and extending some distance back of it, the top plate of the said boiling chamber being suitable made or fitted in the usual way with fixtures for supporting boiling vessels. The fire-place may be provided with a "hot water back" or a metallic back for the radiation of heat into a chamber or space, B, placed in rear of it, and made to communicate at bottom with the external atmosphere and at top with a long horizontal chamber, F, extending directly under the bottom, G, of that part of the boiling chamber which is in rear of the fire-place, and along under the smoke flue that extends under the rear portion of the bottom of the oven. A partition, F', within the chamber F, causes the air to circulate through it as denoted by arrows in the drawings. This air space communicates with a thin flat metallic drum or chamber, H, that projects up into the flue P' at the rear part of the oven and has a discharge

pipe, I, carried out of the top of it for the purpose of carrying heated air to any rooms or apartments to be warmed.

Within that portion of the horizontal air chamber, F, which extends underneath the oven, there is a partition L, which divides it into two parts, such partition being made to extend from the back of the chamber, F, to within a short distance of the front of it, so as to leave a free communication or opening, M, between the two parts of such chamber, F. The drum H, opens into that part which is on the left of the partition as seen at N, in Fig. 7.

The oven is shown at, K, in the drawings, it has a flue, O, extending out of the rear part of one side of the boiling chamber, and underneath the rear part or bottom of it and made to open into a flue, P, that runs up against the rear part or half of the left side of the oven and freely communicates with the flue space P' back of the oven. This flue, P, opens into a diving flue, Q, that extends down along the front portion of the left side of the oven, and opens into an enlarged or deep flue, R. The said flue, R, at its right hand opens upward into the horizontal flue, S, that extends along and against the right hand side of the oven and opens at its rear upward into another flue, T, that passes along the upper portion of the right side of the oven and from rear to front of the oven and is made to open into a flue, U, that extends over the front part of the top of the oven and opens at its left end into a flue, V, that is carried across the rear portion of the top and opens out to the chimney through an opening, W, to which a slide valve or damper, X, is applied.

At the top of the flues, P, Q, such flues are provided with openings, Y, Y, Y, into the flues that run over the top of the oven, a long damper, Z, being applied to such openings for the purpose of closing them when necessary. When these openings are opened, the direct heat and smoke passing along under the rear part of the bottom of the oven up the back and up the rear part of its left side may be caused to pass off into the discharge flue over the oven without being made to pass down against the front portion of the left side of the oven, or under the front portion of the bottom of



the oven and against the right hand side of the oven and over the top of the oven as it does when the damper, Z, is closed.

Fig. 8. represents a vertical section of the flues on the left side of the oven. Fig. 9. is a vertical section of those on the right side of the oven.

The hot air fixtures of most if not all other ranges are so arranged, that when the draft is taken to them (*i. e.* the hot air fixtures) it is taken away from the oven, and vice versa, to the great loss of heat. It is different with my improved range as I can heat the oven and hot air fixtures at the same time to great advantage. These hot air fixtures may go with the oven, when arranged on either side of the fire.

The above described arrangement of smoke flues around the oven is essentially the same, as that represented in Letters Patent numbered "nine thousand three hundred and ninety three" and granted to me on the 9th day of November A. D. 1852. But I have combined with this arrangement certain hot air fixtures and I have applied to the oven flues, the openings Y. Y. and damper Z. by which latter arrangement I have effected an important improvement on the range as described in the specification of said patent, inasmuch as I carry more heat to the oven by the direct or kindling draft, and by this draft also can throw heat around the hot air fixtures, while the course of the indirect or long draft remains the same as in the specification of said patent.

I therefore claim as my invention—

1. The arrangement of the openings Y. Y.

and damper Z. with respect to the arrangement of smoke flues above and below them substantially as above specified, by which combined arrangement I am enabled when desirable by the direct draft to cause the heat to pass under the back half of the bottom of the oven up alongside the entire back of the oven and up the rear portion of the left side of the oven and over the top of the oven into the chimney, instead of carrying it entirely around the oven as set forth.

2. I do not claim to so combine a hot air flue with a fireplace and a flue extending directly therefrom to and underneath an oven and up the rear end of such oven, that such hot air flue, shall pass only in contact with the back of the fireplace and with the oven flue—but what I do claim is the above described arrangement of the fireplace, boiling chamber, and smoke flues leading under the oven and in rear of the back thereof, in combination with the peculiar arrangement of the hot air chambers E. F. and H. whereby the fireplace and oven flues are not only made to heat the air flues, but the bottom plate of the boiling chamber is also made to impart heat thereto, and the back as well as the front of the upright air flue, H, is also heated by the smoke flue through which it passes as specified.

In testimony whereof, I have hereto set my signature this fifteenth day of April A. D. 1853.

GEO. S. G. SPENCE.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.