B. SHEPARD.

Cooking Stove.

No. 2,659. Patented May 30, 1842.

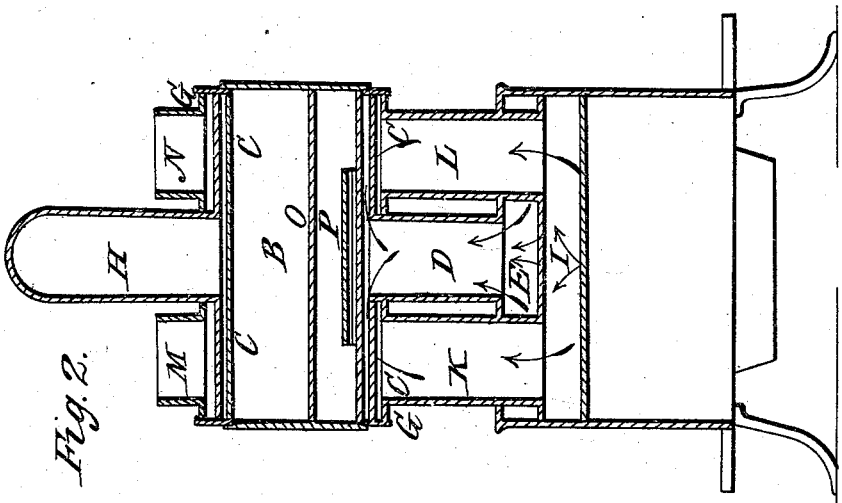

Fig. 2.

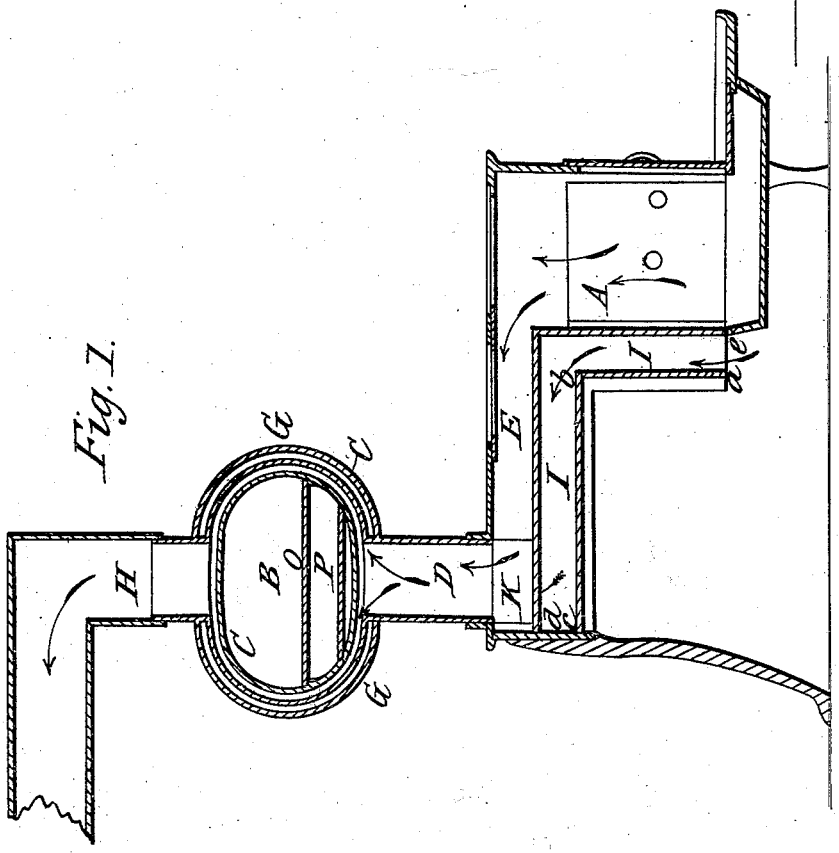

Fig. 1.

UNITED STATES PATENT OFFICE.

BENJN. SHEPARD, OF BOSTON, MASSACHUSETTS.

CULINARY AND AIR-HEATING STOVE.

Specification of Letters Patent No. 2,659, dated May 30, 1842.

To all whom it may concern:

Be it known that I, BENJAMIN SHEPARD, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Stoves or Apparatus for Culinary and other Purposes, the following being a full and exact description of the same, which taken in connection with the accompanying drawings thereof forms my specification.

In the same I have set forth the nature and principles of my invention, by which it may be distinguished from others of like character, together with such parts or combinations as I claim and for which I solicit Letters Patent.

Of the drawings above mentioned Figure 1, represents a central vertical and longitudinal section of a stove as improved by me. Fig. 2, is another vertical but transverse section, taken through the center of the oven.

Such other drawings as may be necessary to a full explanation of the several parts will be hereinafter referred to and described.

A, Fig. 1, represents that part of the stove usually denominated the fireplace, which may be arranged in any convenient manner for the combustion of coal or wood.

B, Figs. 1 and 2, is the oven which is to be placed somewhat in rear and above the fuel chamber, as seen in the drawing, the said oven being there shown as elliptical in cross section. The oven B is surrounded on its exterior surface by a casing C, C, &c which is situated at a few inches more or less in distance therefrom, and into the lower part of which casing a pipe or flue D is inserted and is connected at its lower end with the chamber of combustion A by a passage or flue space E which extends in rear of said chamber for the purpose of supporting one or more boiling kettles—whose lower ends are inserted in suitable orifices in the top plate of said passage E in the usual manner. As the smoke and heated air arises from the fire, it passes through the passage E into the pipe D, thence around the oven or between the casing C and the oven, and escapes into the chimney through a pipe H Figs. 1, and 2 which communicates therewith and is inserted in the upper part of the casing C, the course of said smoke being denoted in the drawing by the blue arrows.

A casing *a b c d*, Fig. 1, is arranged in rear of the chamber of combustion A and below the smoke passage E at a few inches more or less in distance therefrom, so as to form an air passage or chamber I, which is open at the bottom *a e*, so as to permit the air of the apartment to enter it and to circulate in contact with the rear plate or back of the fire place and with the lower side of the bottom of the chamber or passage E.

The casing C which was before described as surrounding the oven is itself inclosed within another and similar casing G, so as to form around it an air chamber, which communicates with the air passage I by two pipes K, L, situated on each side of the central pipe D, and extending through the chamber E as seen in Fig. 2.

One or more pipes M, N, Fig. 2, may be inserted in the top of the casing G, and may lead therefrom to one or more apartments of the house, into which it may be desirable to introduce warm air. The chamber I may also be connected with the external atmosphere by pipes arranged in any convenient manner. Therefore from the above it will be seen, that the air in its passage from the chamber I, through the pipes K and L into the space between the casings G and C becomes further heated by coming into contact with the exterior surface of the casing C and finally escapes into the apartments to be warmed through the pipes M, N.

I sometimes intend to pass the smoke and other products of combustion, between the two casings G and C, by pipes connecting the space between said casings with the fireplace and permit the air which is to be warmed and conveyed to different apartments to be introduced between the oven and the casing C, but as I apprehend that in most cases, where this latter plan of construction might be adopted, that more or less difficulty would be experienced in the process of baking. I do not deem this latter method of so much utility as that, first described.

The articles to be baked are supported in the oven upon a suitable shelf O, under which, and at some distance therefrom, and directly over the smoke pipe D a plate P is placed, which plate extends across the lower part of the oven from one side to the other as seen in Fig. 1, and in length is about half of that of the oven as seen in Fig. 2. This plate is polished or covered with tin on its

upper and lower sides so as to reflect heat, and thus prevents that which rises directly through the pipe D from acting too strongly upon the articles situated upon the center of the shelf O, so as to scorch or burn the same, thus distributing the heat more uniformly over the lower side of the shelf O. The oven may have similar plates arranged in such other parts thereof as may be deemed necessary.

Having thus explained my invention I shall claim, surrounding the fire or flue space which encircles the oven and through which the smoke and heated products of combustion pass from the fire place to the chimney by an exterior casing G, so as to form another space around said oven into which atmospheric air may be introduced and be warmed by contact with the casing C, and from thence be conveyed to one or more apartments by pipes suitably arranged, in combination with a hot air chamber I arranged in rear of the fire place and below the smoke passage E and open at bottom for the free admission of air therein, said two hot air spaces or chambers being connected together by one or more suitable pipes K, L, and otherwise arranged substantially as hereinbefore set forth.

In testimony that the foregoing is a true description of my said invention and improvements I have hereto set my signature this twenty-fourth day of March in the year eighteen hundred and forty-two.

BENJAMIN SHEPARD.

Witnesses:

R. H. EDDY,

EZRA LINCOLN, Jr.