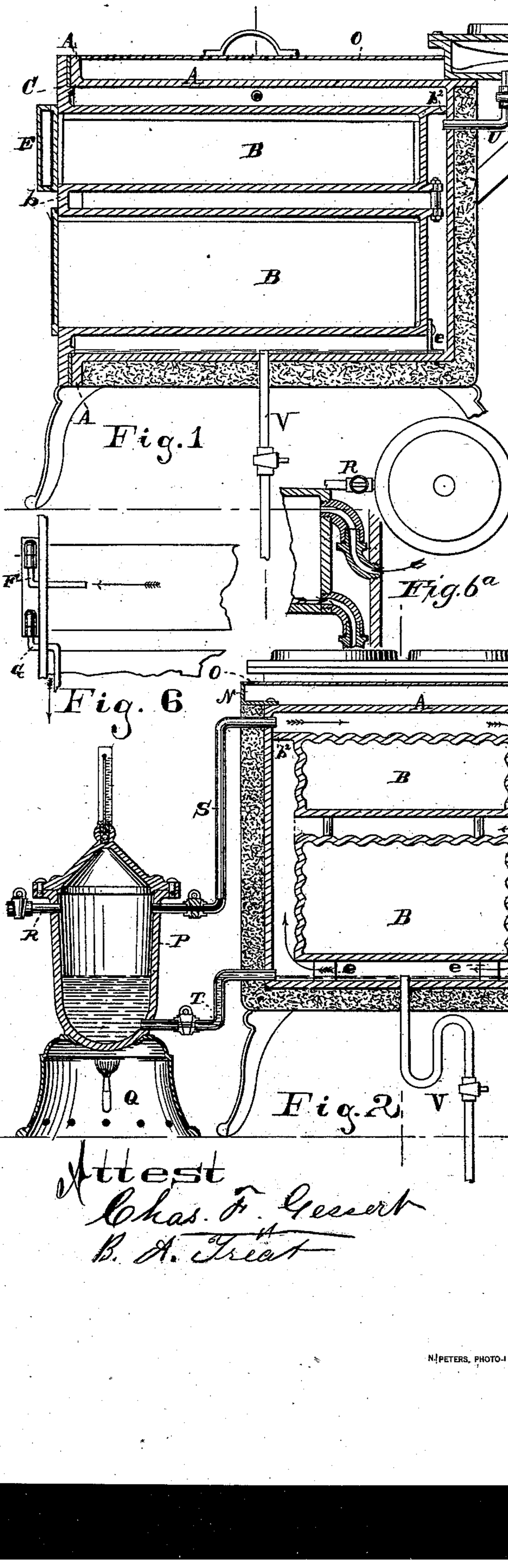
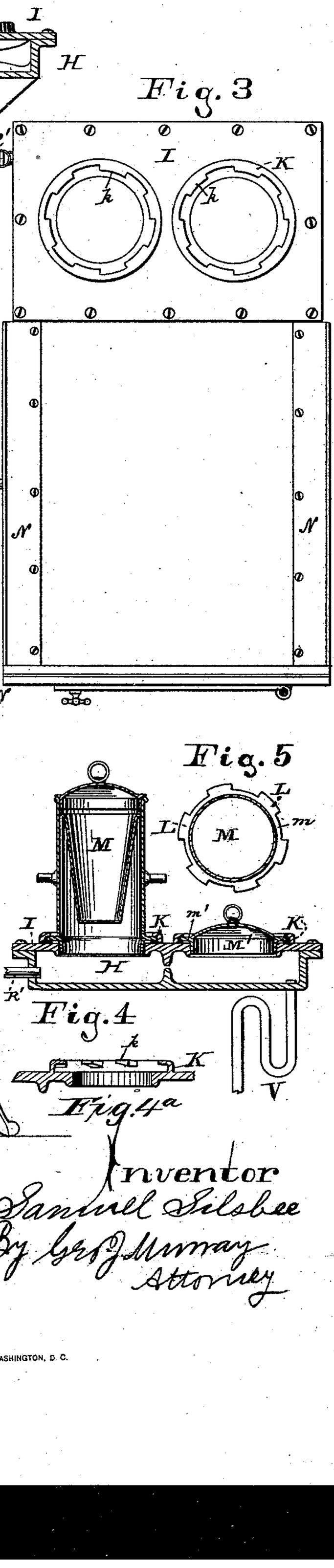
S. SILSBEE.

Steam-Stove.

No. 225,240. Patented Mar. 9, 1880.

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SAMUEL SILSBEE, OF CINCINNATI, OHIO.

## STEAM-STOVE.

SPECIFICATION forming part of Letters Patent No. 225,240, dated March 9, 1880.

Application filed July 1, 1879.

*To all whom it may concern:*

Be it known that I, SAMUEL SILSBEE, of the city of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and useful Improved Steam-Stove, of which the following is a specification.

This invention relates to steam-stoves for culinary purposes.

The objects of the improvements are, first, a stove adapted to be used in combination with any system of steam-circulation for cooking or heating, but more especially to supply a means of cooking in conjunction with the Holly system of heating cities by steam at low pressure; second, a means of raising the temperature of the stove from the point to which it is practicable to raise it by a steam circulation or generator to any degree required for baking, broiling, heating sad-irons, and other domestic or culinary purposes; third, to provide a means for heating the doors to furnish a complete radiating-surface from all sides of the interior of the ovens; fourth, to provide a steam-table to be heated directly from the superheater and stove, or independently of them, as desired; fifth, to provide a means of retaining the vessels and covers firmly upon the steam-table when used under pressure, all of which will be fully understood from the following description of the accompanying drawings, in which—

Figure 1 is a central longitudinal vertical section of a stove and steam-table embodying my improvements. Fig. 2 is a transverse vertical section of the same and superheater. Fig. 3 is a top-plan view of the stove, steam-table, and superheater. Fig. 4 is a transverse vertical section through the steam-table fitted with a cooking-vessel and cover locked in position. Fig. 5 is a view of the rim of the cooking-vessel from the under side, showing the construction of the lugs for locking it in position; and Fig. 6 shows the construction of the door and hinge and the means of conveying the steam into the door.

In the different views identical parts are represented by the same letters of reference.

A is the outer shell or case, containing the ovens B B, of which two are shown; but there may be any desired number. The shell has outwardly-projecting flanges upon the front, as have also the ovens B.

The flanges C of the ovens are rabbeted to snugly fit into the openings in the front of shell A, and the ovens and shell are secured firmly together by bolts passing through their flanges, the joint between the two being packed steam-tight. The ovens may have a corrugated top, corrugated sides, and a plain bottom, as shown. They are united by a web, *b*, and are held in proper position relative to each other and the shell A by stay-bolts and angle-piece *e* at the rear. The upper door, E, is made hollow and steam-tight when upon its hinges.

The hinge-hooks F and G in Fig. 6 are also hollow, and are screwed through the outer flange into the steam-space between the ovens and shell. These, in connection with the hinge-lugs on the door, which communicate with the steam-chamber in the door, form the hinges, which are fitted together in manner similar to a hydrant or steam cock, and provide a circulation for the steam through the door. The steam will pass in through the upper hinge, F, and the condensed steam or water will pass back through the lower hinge, G, into a pipe, which conveys it to near the bottom of the steam-space between the ovens and shell.

The steam-table is a rectangular metal box, H, and a top, I, with holes to receive the cooking-vessels. The top is secured to the box by bolts passing through flanges which project around the top of the box, the joint being, like that between the ovens and shell, packed steam-tight. The steam-table rests upon a flange which projects back from the rear upper corner of shell A, and is supported by suitable brackets J.

Around the openings in the top of the table are rings K, with inwardly-projecting flanges *k*, which are cut away to receive the lugs L upon the lower part of the vessel and cover M. These flanges are made inclined on the under side, so that by turning the vessel or cover partially around it will be firmly locked in position.

In order to make a steam-tight joint, an elastic packing-ring is placed upon the table around the opening, and a sheet-metal ring or washer above it, upon which the lugs will rest. The covers of the vessels may, of course, be locked in the same way as the stove covers and vessels, if desired.

The bottom of box H and the under side of

top I have strengthening-ribs between the vessel-openings. These also tend to retain the heated steam under any particular vessel, should it be desirable to fit the table with separate steam-cocks under the several openings.

The corners of shell A have angle-pieces N secured to or cast with the shell, to retain paper, wood-pulp, or other non-conducting material, to prevent waste of heat by radiation.

O is a loose top, which may also be lined with a non-conducting material, to retain the heat when the top is not used for heating sad-irons or culinary purposes.

The superheater is a metallic shell, P. It has a top bolted to it through projecting flanges. The top is fitted with a thermometer, and may also be provided with a steam-gage and safety-valve. The vessel P rests upon a shell, Q, which is perforated to admit air to the lamp or gas burner within it.

R and R′ are pipes leading from the Holly or other system of steam-heating.

S is the supply-pipe leading from the superheater to the stove, which it enters above the flange $b^2$, so that the steam will be first forced between the top of the stove and the top of the ovens.

T is the pipe which connects the lower parts of shell A and superheater P. U, Fig. 1, is the pipe which connects the steam-chambers of the stove and steam-table. There is also shown in dotted line, Fig. 3, a pipe which connects pipes S and R. This arrangement is for the purpose of heating the steam-table through the superheater P disconnected from the stove.

V are traps to carry off the surplus steam or water of condensation when the superheater is not used.

I will now describe the mode of operation in connection with the Holly system of steam-heating, which is designed to carry but about three-pounds pressure in dwellings. The steam passes through pipe R into superheater P; thence, by pipe S, into the stove, circulating around ovens B B in the direction of the arrows; thence, through pipe U, to the steam-table, the water of condensation passing out through traps V; but the temperature of steam coming from the generator is insufficient for some culinary purposes, as baking, broiling, roasting, &c. When it is desired to use the stove for these purposes, cut off the flow of steam through pipe R and to the steam-table through pipe U. The temperature of the ovens being now about 212°, it is only necessary to apply heat to the superheater P to raise the temperature of the inclosed steam to any degree of heat required.

If it is desired to use the steam-table alone, the steam is turned on through pipe R′ and cut off at pipes R and U; or, by placing a valve between the connection of the dotted-line pipe and the stove, the steam may be turned to the table through the superheater, and the temperature raised, if desired, in the same manner as described in relation to the stove.

It is evident that the superheater may, instead of being located as shown, be attached directly to the bottom of shell A, and that the temperature of the inclosed steam in the steam-table may be increased to the requisite degree by applying heat to the bottom of box H.

I am aware that so-called superheaters have been used to raise the temperature of a current of steam passing from a generator, and do not claim such device; nor do I claim a method of cooking by a current of high-pressure steam.

I claim—

1. The method, substantially as before set forth, of cooking by a confined volume of superheated steam, which consists in supplying the stove with steam from an independent generator, and then, after cutting off the supply of steam from the generator, heating the isolated steam by a superheater.

2. The combination, substantially as before set forth, of a steam-tight stove provided with ovens accessible without loss of steam, and a superheater for the steam supplied to the stove.

3. In combination with a steam-stove having a steam-space between the outer shell and ovens. as described, the chambered door E and hinges F and G, to form a connection between the steam-space of the stove and door and provide for a circulation of steam through such hollow door, as specified.

4. The combination, substantially as before set forth, of the superheater, the steam-stove, the steam-table, and pipe-connections with valves or cocks, so that steam, either at low pressure or superheated, can be passed through the stove to the table, or to either the stove or the table independently.

5. The steam-table, as described, having flanges K, in combination with the cooking-vessels and covers, as M, having lugs L, for the purpose of locking the parts together, as shown and described.

6. The combination, substantially as before set forth, of a steam-tight stove provided with ovens accessible without loss of steam, a superheater for the steam supplied to the stove, and pipes T and S.

SAMUEL SILSBEE.

Witnesses:
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