T. J. NEWBY.

Apparatus for Evaporating, Feed Cooking, &c.

No. 108,169. Patented Oct. 11, 1870.

Fig. 1.

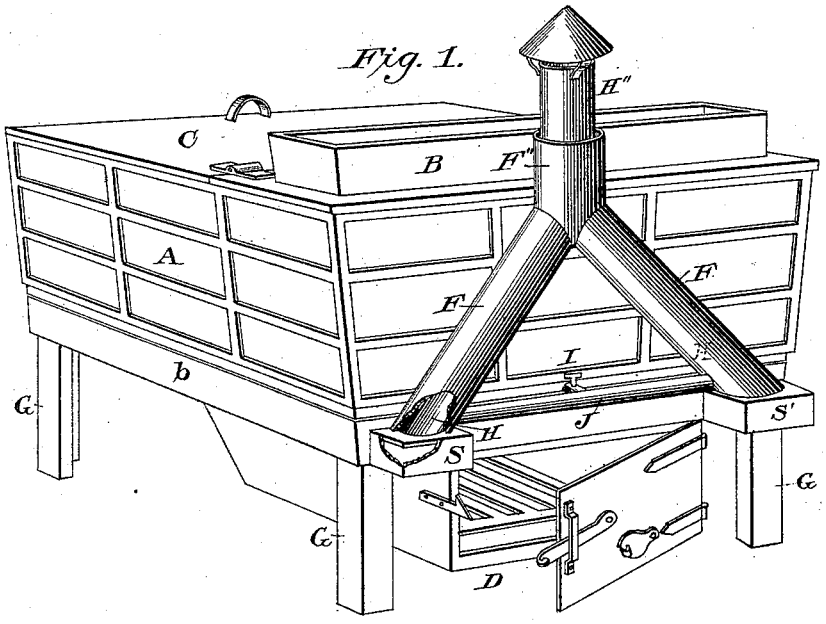


Fig. 2.

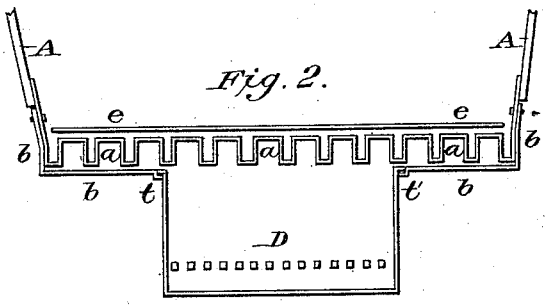
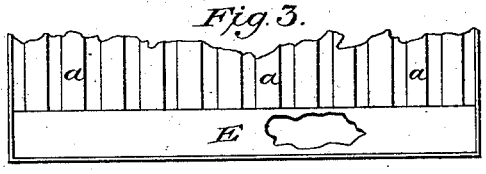


Fig. 3.



Witnesses;

A. L. Study.

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Thomas J. Newby

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United States Patent Office.

THOMAS J. NEWBY, OF RICHMOND, INDIANA.

Letters Patent No. 108,169, dated October 11, 1870; antedated October 1, 1870.

IMPROVEMENT IN APPARATUS FOR EVAPORATING SORGHUM-JUICE, COOKING FEED, &c.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS J. NEWBY, of Richmond, Indiana, have invented an Improved Apparatus for Evaporating Feed, Cooking, &c.; and I do hereby declare the following to be a full description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view;

Figure 2, a vertical section of the bottom of the apparatus; and

Figure 3, a plan view of a section of the bottom at the rear of the apparatus.

The same letters in the different figures refer to corresponding parts.

My invention relates to an apparatus designed to be applicable to the purposes of evaporating saccharine liquids and cooking feed, and also to culinary and laundry purposes, in which the advantages of cheapness in construction, economy in fuel, and convenience are obtained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

The body of the apparatus is composed of the wooden structure A, which consists of four sides, built upon corner posts G, and a cover having a hinged section, C.

The bottom *a* of the apparatus is made of galvanized iron, which is corrugated, and extends a short distance below the sides of the wooden structure.

The bottom *a* is provided with metal sides, forming it into a pan, and is attached to structure A by riveting, or otherwise securing its sides to the inner surfaces of the wooden sides.

Another bottom, *b*, of sheet-iron, is added, which is placed beneath bottom *a*, with its surface against or close to the latter.

The bottom *b* is secured by being turned up at the sides and riveted to bottom *a*.

The lower bottom covers the whole space of the bottom of the structure, excepting that occupied by the fire-box.

The fire-box D is located centrally, with reference to two sides of the structure, its size being such as may be desirable.

By the arrangement of the parts constituting the bottom of the apparatus, as in my invention, the corrugated bottom serves the double purpose of affording extra heating-surface, and of forming fire-flues.

In the accompanying example, the flues, as formed by the corrugations of bottom *a*, and the application thereto of bottom *b*, are separated into three divisions; a central division embraced within the width of the fire-box, and a division on each side thereof.

These divisions, in the example referred to, are the result of the contact of bottom *b* with the lower surfaces of the corrugations of bottom *a*, by which the products of combustion are confined to the central division of flues, until they pass to the rear and into a channel or passage, E, shown in fig. 3, by which they are allowed to pass both ways and return to the front through the side divisions.

Boxes S S′ attached to the front of bottom *b*, and communicating with the side divisions of flues, and pipes H H′ attached to and communicating with said boxes, with the addition of pipe H″, into which pipes H H′ converge, serve to carry off the products of combustion, and give the necessary draught to the fire-chambers.

In order to secure the greatest economy of heat, the liquid is passed through tubes F F′ F″ that surround pipes H H′ H″, by which it is heated before entering the interior of the apparatus, thus economizing heat otherwise lost.

B is a reservoir for the supply of liquid, from which the latter passes into tubes F F′ F″ through a short tube, connecting said reservoir with tube F″.

A small tube, J, connects tubes F F′ near their lower ends, through which the liquid flows from said tubes F F′, and by means of a short tube, I, passes into the corrugated bottom.

The latter tube is provided with a stop-cock, to regulate the flow of liquid to the apparatus.

The flow of liquid into and from tubes F F′ F″ is such as to keep them filled.

A perforated loose bottom is applied, when required, for the purpose of holding articles to be steamed in the operation of cooking, lines *e*, fig. 2, showing its position.

Fire-box D is arranged to slide into and out of its position beneath the apparatus, by means of flanges, which support it on the edges of bottom *b*, as shown at *t t′*, fig. 2.

For convenience in skimming, when the apparatus is used for evaporating saccharine liquids, it is designed to hinge one of the sides of the structure at or near its bottom, so that it may be let down or removed, in which case rubber, or other packing will be used around the corners of said hinged side, to keep the apparatus steam-tight when closed.

If desirable, the inside of the wooden structure may be lined with tin, or other sheet metal.

Pans for drying fruit may be applied beneath the apparatus, on each side of the fire-box, the pans having flanges, and provision made for sliding them in and out for convenience.

Having thus fully described my said invention,

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

1. The combination of the corrugated plate *a*, the plate *b*, and the fire-box D, when so arranged that the corrugations form fire-flues, substantially as set forth.

2. The combination of the plates *a* and *b*, fire-box D, and convergent pipes H H', when said fire-box is located centrally, and a division of flues is made, substantially as described and for the purpose set forth.

3. The combination of tube or tubes F surrounding the furnace-pipe or pipes, the reservoir B and tube I, substantially as described, and for the purpose set forth.

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Witnesses:

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