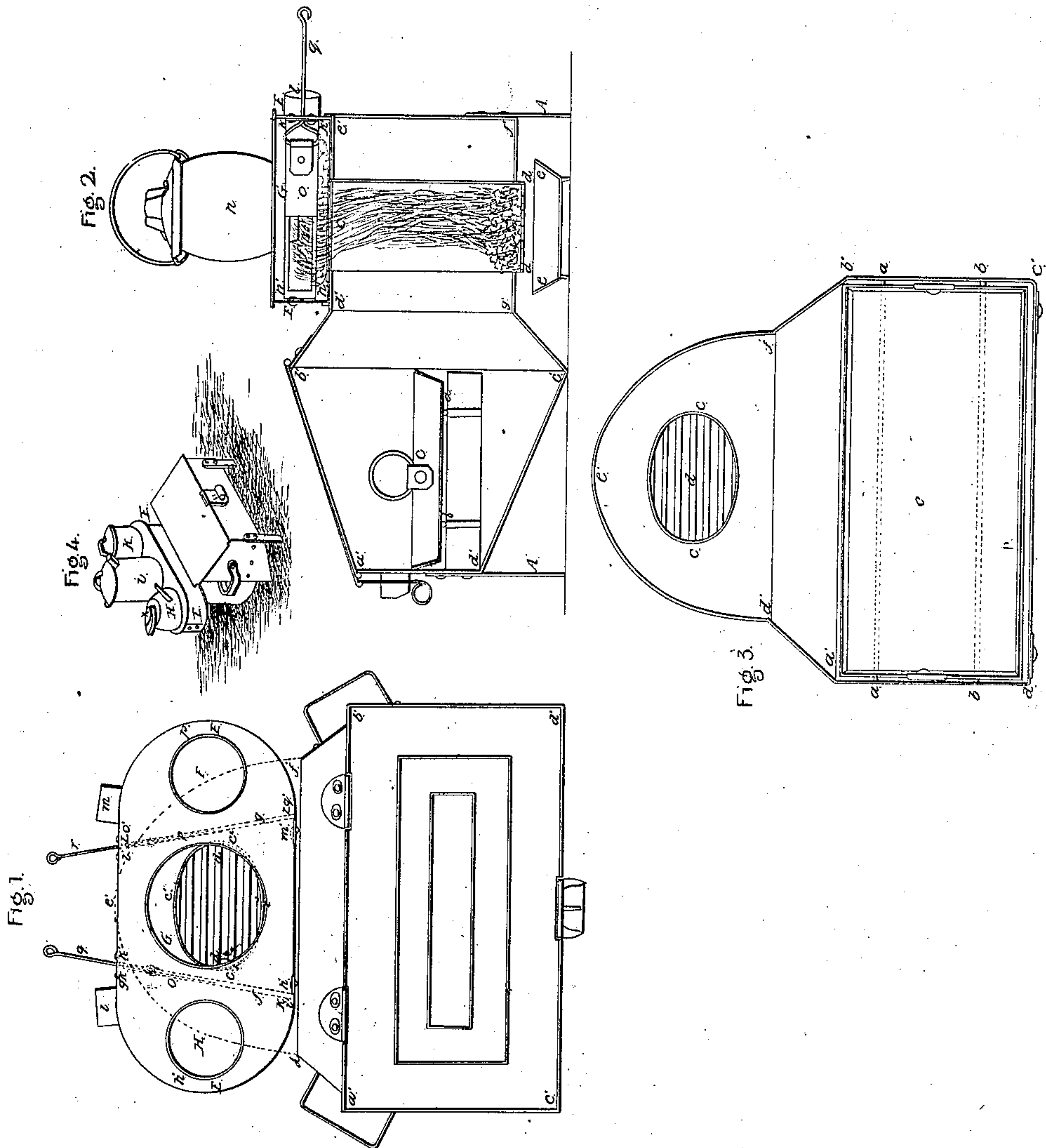


G. Chilson.

Portable Furnace.

Nº 1627.

Patented Jan. 10, 1840.



UNITED STATES PATENT OFFICE.

GARDNER CHILSON, OF BOSTON, MASSACHUSETTS.

FURNACE-BAKER.

Specification of Letters Patent No. 1,627, dated June 10, 1840.

To all whom it may concern:

Be it known that I, GARDNER CHILSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Bakers for Culinary and Such other Purposes to Which the Same May be Applicable.

These improvements, the principles thereof, and manner in which I have contemplated the application of said principles, by which the same may be distinguished from other inventions of a similar nature, together with such parts, improvements or combinations, I claim as my invention and hold to be original and new I have herein set forth and described which description taken in connection with the accompanying drawings herein referred to composes my specification.

The object of my improvements is to accomplish at the same time, several other culinary operations, with greater facility and expedition, besides that of baking (such as boiling, &c.,) without any greater expenditure of fuel than is commonly necessary in the use of such apparatus. It will therefore be perceived that economy in the use of fuel and expedition in performing the several operations are the useful effects to be attained by my improvements.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1. is a plan or top view of the baker. Fig. 2 is a vertical section taken longitudinally through the center, Fig. 3. being a horizontal section showing the parts in the interiors of the same.

A, A are the standards or legs which support the apparatus.

$a' b' c' d'$, Figs. 2 and 3 is the tin baking apartment shaped as seen in the drawings, in the interior of which are fixed the wires or rods $a a b b$ shown by dotted lines in Fig. 3, for the support of any pan or vessel c which may be placed thereon. The top, bottom, and sides of the baking apartment are arranged at such angles with each other as to reflect the heat powerfully to the article or articles in the pan or vessel at c .

A tin reflecting chamber $a' d' e' f' b'$ Figs. 1 and 3, and $b' d' e' f' g' c'$, Fig. 2, of nearly a semi-cylindrical shape is placed in front of the baking apartment and attached to the same. Near the center of this chamber is the furnace $c c$ (Figs. 2 and 3) formed of a perpendicular hollow cylindroid

the section of which is elliptical, of course, as shown in Figs. 1 and 3. The elliptical shape is preferred on account of its exposing a greater radiating surface in front and rear (with a less quantity of fuel) than can be possibly obtained in a common cylinder the circumference of whose section is equal to the perimeter of the ellipse. In the bottom of the furnace $c c$ a suitable grating $d d$ is fixed, through which the draft is derived; the ashes created from the fuel dropping through the same into a proper ash box $e e$ Fig. 2 below.

The heat radiating from all points in the surface of the furnace is conveyed in part directly to the baking pan, the other portion being reflected to the same from the sides of the reflecting chamber and the top and bottom of the baking apartment.

An elongated hot air chamber E E Figs. 1, 2 and 4 is attached to the top of the furnace $c c$ and rests on the top of the reflecting chambers $a' d' e' f' b'$: This elongated chamber is divided into three apartments $g' h' i'—k' l' m' n'$ and $o' p' q'$ Fig. 1 by the partitions $h' h' l l k' k' n' n'$ Fig. 2 (shown by dotted lines in Fig. 1.) communicating with each other by means of the openings or flues $f g$ (Figs. 1 and 2). Circular apertures F, G, H Fig. 1, are made in the top of the chamber E E opening into the apartments $g' h'$ and $k' l'$ and $o' p' q'$ in which apertures, the three boilers or other vessels $h i k$ Fig. 4 (in which the several culinary operations are performed) are inserted.

It will readily be perceived from the arrangement of the flues and chamber, that the heated air and smoke from the furnace $c c$ is diffused throughout the elongated apartment E E, after which it escapes through the discharge pipes l, m , thereby performing three or more operations, as effectually and expeditiously as one could be done, without any greater expenditure of fuel. Should it be desirable at any time to concentrate the heat in the center apartment either of the flues $f g$ may be closed by the sliding valves $o p$ operated by the rods $q r$ Figs. 1 and 2, leaving one open or partially so, in order that the hot air and smoke may pass to one of the discharge pipes. The two discharge pipes may be united in one common pipe which may communicate with an open fire place or the atmosphere to conduct the smoke, gas, &c., to the same.

The furnace is fed with fuel by removing the central boiler *i* or cover over the aperture of the central apartment,—covers being used on the apertures when the boilers are removed. When the boiler over the central aperture is removed a circular gridiron may be placed thereon, and the process of broiling accomplished;—in like manner by removing the baking pan *C* and inserting a spit &c that of roasting may be performed.

In order that the exterior of the baker and other parts may be better understood reference may be had to Fig. 4 which is a perspective representation of the same. The elongated hot air chamber *E E* may be constructed of sheet iron or other proper material.

Having thus described my improvements I shall now proceed to specifically point out those parts which I consider new and claim as my invention.

I claim—

The combination of the elongated hot air chamber *E E* (divided into three apart-

ments *g' h' i', k' l' m' n', o' p' q'*, by two partitions *K K—L L*, with sliding valves *o, p*, therein) with the elliptical or cylindrical furnace *c c*; and also the combination of the latter with the double reflecting baker surrounding the same, the whole being constructed and arranged substantially in the manner above set forth and described, for the purpose of retaining and circulating the heat throughout the apparatus and causing it to accomplish the several operations above mentioned in a very effectual and expeditious manner and with great economy of fuel.

In testimony that the above is a true description of my said invention and improvement I have hereto set my signature this thirteenth day of March in the year of our Lord eighteen hundred and forty.

GARDNER CHILSON.

Witnesses:

R. H. EDDY,
E. LINCOLN, Jr.