

J. S. PERRY, A. DICKEY & R. Z. LIDDLE.
Magazine Cooking-Stove.

No. 168,047.

Patented Sept. 21, 1875.

FIG. 5.

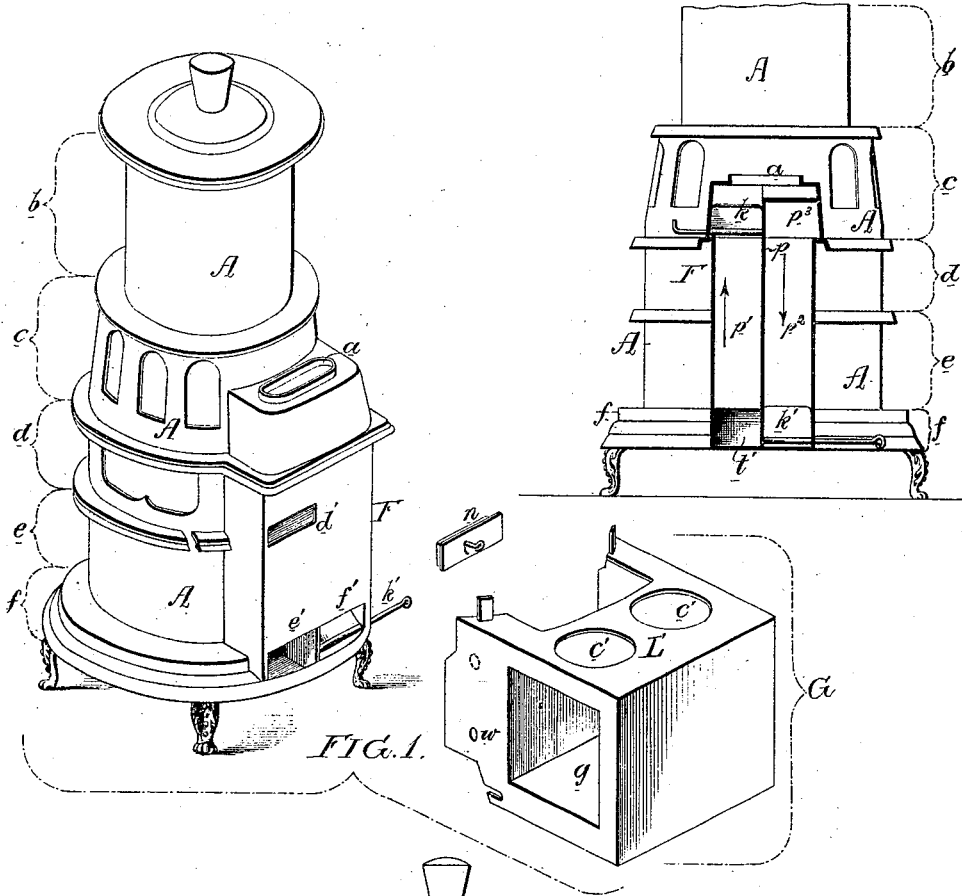


FIG. 1.

FIG. 2.

Witnesses, Hubert Howson
Thomas M. Strain

J. S. Perry
Andrew Dickey
R. Z. Liddle
By their attys
Howson & Son

J. S. PERRY, A. DICKEY & R. Z. LIDDLE.
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2 Sheets--Sheet 2.

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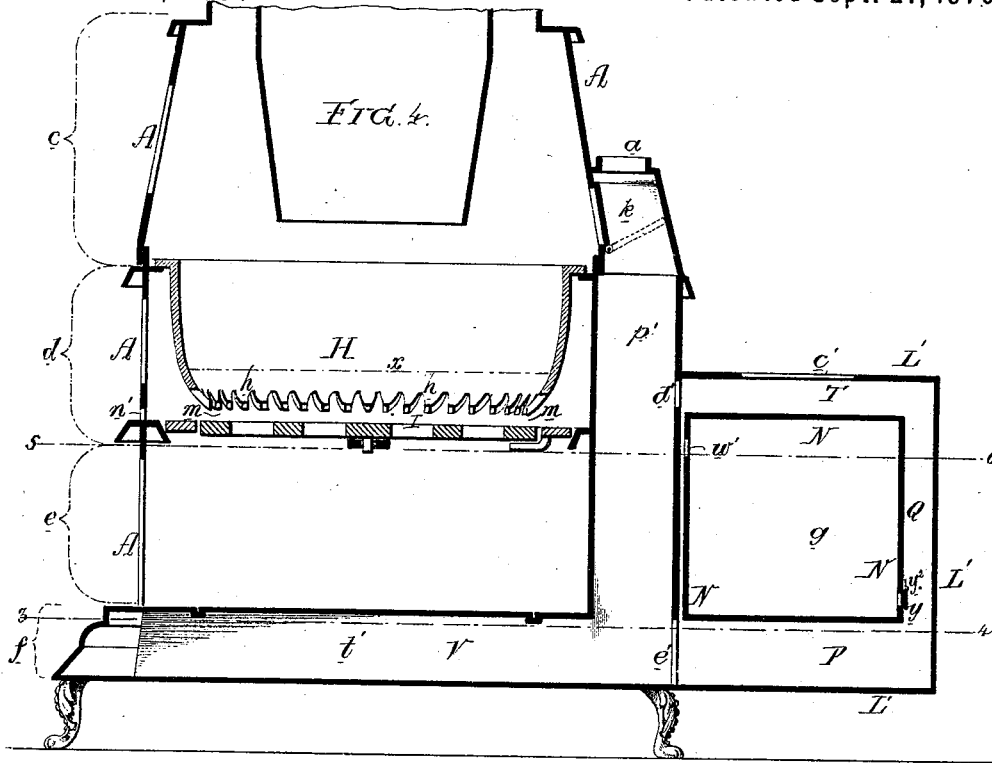


FIG. 5.

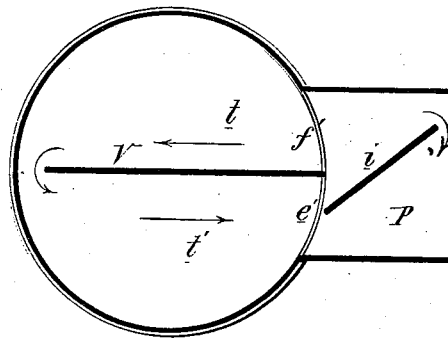


FIG. 7.

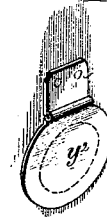
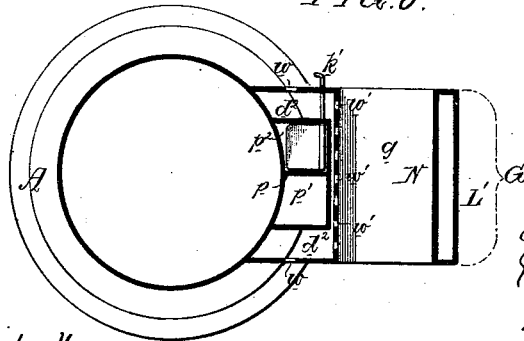


FIG. 6.



Witnesses Nubert Howson
Thomas McIlwain

J. S. Perry
Andrew Dickey
R. Z. Liddle
By their attys
Howson & Son

UNITED STATES PATENT OFFICE.

JOHN S. PERRY, ANDREW DICKEY, AND ROBERT Z. LIDDLE, OF ALBANY,
NEW YORK, ASSIGNORS TO JOHN S. PERRY, TRUSTEE AND EXECUTOR,
NATHAN B. PERRY, AND ANDREW DICKEY, OF SAME PLACE.

IMPROVEMENT IN MAGAZINE COOKING-STOVES.

Specification forming part of Letters Patent No. 168,047, dated September 21, 1875; application filed
March 4, 1875.

To all whom it may concern:

Be it known that we, JOHN S. PERRY, ANDREW DICKEY, and ROBERT Z. LIDDLE, all of Albany, county of Albany and State of New York, have invented certain Improvements in Stoves, of which the following is a specification:

The main object of our invention is to so combine a culinary attachment with an illuminated heating-stove that the structure of the latter and its flues, and its effective operation as a heater, shall not be impaired by the removal of the said culinary attachment.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of the stove and culinary attachment removed from each other; Fig. 2, a side elevation of the stove and culinary attachment connected together; and Fig. 3, a rear elevation of the stove with the culinary attachment removed, and showing the descending and ascending flues, with their openings and dampers. Fig. 4, Sheet 2, is a vertical section of the stove and culinary attachment connected together; Fig. 5, a sectional plan on the line 3 4; Fig. 6, a sectional plan on the line 5 6; and Fig. 7, a perspective view.

As regards the general conformation of the stove proper, it is similar to the ordinary illuminated heating-stoves now in common use, having an outer casing or shell, A, composed of the following parts: the cylinder *b*, containing the magazine, and resting on the ring of the upper illuminating-section *c*, which incloses the combustion-chamber; the lower mica section *d*, containing the fire-pot, and inclosing, with the base-section *e*, the ash-chamber and ash-pit; and the hollow base *f*, which contains the flues, explained hereafter. At the rear of the stove is the hollow projection F, terminating at the top in the exit-pipe *a*, for the escape of the products of combustion.

G is the culinary attachment, constructed for application to the rear of the base-section of the stove, to which it may be secured by such fastenings as will permit its ready disconnection from the same. This attachment has an oven, *g*, flues P, Q, and T between the

oven and outer casing. It will be observed, on reference to Fig. 1, that the hollow projection F at the rear of the stove has three openings, *d'*, *e'*, and *f'*, the latter being furnished with a damper, *k'*. It is only when the culinary attachment is connected to the stove that these openings *d'*, *e'*, and *f'* are of any service, as will appear hereafter, the said openings being closed by removable plates *n*, when a simple heating-stove, without the culinary attachment, is required. Although we prefer to so construct the combined heating and cooking stove that the culinary attachment may be readily connected to, and disconnected from, the heating portion, the two may be so constructed as to constitute permanent parts of each other. In the casing L' over the top of the oven there are openings *e'* for the reception of culinary vessels, which are heated from the same source which heats the oven *g*.

H is the fire-pot suspended in the ash-chamber within the lower mica section *d*, the sides of this fire-pot being vertical, or nearly so, from the upper edge to about the line *x*, below which the sides, together with the projections or fingers *h* at the base of the fire-pot, either together or separately, are curved inward and downward. As this feature forms the subject of a separate application for a patent filed by J. S. Perry, further description of it will be unnecessary.

It will be seen on referring to Fig. 3 that the interior of the projection F at the rear of the stove is separated by a vertical partition, *p*, into a descending flue, *p*², and ascending flue *p*¹. Each of these flues communicates with the combustion-chamber through an opening in the wall of the same, and the flue *p*¹ also communicates with the exit-opening *a*; but a damper, *k*, can be so adjusted as to close the communication of this flue *p*¹ with the exit-opening *a*, in which case the products of combustion must pass off directly from the combustion-chamber to the chimney, or it may be so adjusted as to close the opening between the flue *p*¹ and the combustion-chamber, in which case the products of combustion must

necessarily pass into the descending flue p^2 , which communicates with a horizontal flue, t , in the hollow base f . The interior of this hollow base is devoted to two flues, t and t' , between which is a partition, V , an opening in the latter near the front of the base forming a communication between these flues and the flue t' , communicating with the ascending flue, p^1 . When the structure is used solely for heating purposes the openings d' , e' , and f' being closed by the removable plates n , the products of combustion may be permitted to pass off directly to the chimney, or may be caused to traverse first the descending flue p^2 , then the base-flues t and t' , and, finally, to escape through the ascending flue p^1 to the chimney.

The culinary attachment consists of the oven g , between the casing N of which and the outer casing L' intervenes the lower flue P , the rear flue Q , and upper flue T , and the attachment is so constructed that it shall fit snugly against the rear of the stove, the upper flue T of the oven communicating with the ascending flue p^1 through openings d^1 , while the lower flue P of the attachment shall communicate through the opening e' with the base-flue t , and also through the opening f' with the descending flue p^2 , when the adjustment of the damper k' permits such communication. In kindling a fire in the stove with the culinary attachment the damper k should, in the first instance, be turned down, so that the products of combustion may pass directly from the combustion-chamber to the exit-pipe, and after the fire has been thoroughly kindled the said damper k should be turned up, when the products of combustion will pass from the combustion-chamber, through the opening p^3 , down the descending flue p^2 , thence into the flue t in the hollow base f , then into the flue t' , thence through the opening e' into the lower flue P of the oven, up the rear flue Q of the same, along the upper flue T through the opening d^1 into the ascending flue p^1 , and through the latter to the exit-pipe a . Thus the products of combustion, by the co-operation of the flues of the stove proper with those of the oven, impart the desired heat to both without any additional consumption of fuel, and produce at the same time a perfect baking-oven, g , and boiling appliances.

Should it be desirable to heat the oven rapidly by first directing the products of combustion around the same, this can readily be accomplished by closing the damper k in the flue p^1 , opening the damper k' in flue p^2 , when the products of combustion will pass down the latter flue through the openings f' at the base of the same into the flue P under the oven, thence upward through the flue Q at the rear of same, and flue T at the top of the oven, to the opening d^1 in flue p^1 , through which they escape to the exit a . It will thus be seen that by this simple arrangement the products of combustion can be thrown first into the hollow base and thence around the

oven, or first around the latter, if a more intense heat shall be desired for culinary purposes.

The products of combustion in passing through the flues P , Q , and T , surrounding the oven g , are distributed so as to most effectually heat the surfaces of the latter by the introduction at the desired points of suitable flue-strips, one of which is shown under the oven bottom at i in Fig. 5, Sheet 2.

When the culinary attachment is connected to the stove two chambers, d^2 d^2 , are formed by the extension of the walls of the former to the base-section of the latter, and these chambers we utilize by making them the medium to further increase the heat in the oven without additional fuel, and also for ventilating the same. Air is permitted to enter each of these chambers through openings w , and, becoming highly heated by contact with the surfaces of the base-section of the stove and those of the projection F containing the descending and ascending flues, passes through openings w' into the front of the oven and near the top, and escapes from the same through one or more openings, y , at the rear of the oven and near the bottom into the rear flue Q , whence it passes off with the products of combustion to the chimney. The outlet-openings y are covered with self-adjustable valves y^2 , Fig. 7, which open or close according to the degree with which the heated air circulates through the oven, thus regulating the heating and ventilating of the same. The oven g is thus supplied with a constant circulation of heated air, which thoroughly ventilates it.

We do not confine the openings w , w' , and y to the position shown, but reserve the right to so place them as to produce the best practical results. The openings w may be made in the walls of the culinary attachment at the point indicated by the dotted line on Figs. 1 and 2, Sheet 1, and the openings w' and y may have their positions reversed from near the top to near the bottom of the oven, and from near the bottom to near the top of the oven, or these openings w , w' , and y may occupy such relative positions in the structure as shall insure their most perfect co-operation to facilitate the heating and ventilating of the oven g .

We do not claim the combined fire-pot and grate shown in the drawing, and briefly alluded to in the first part of this specification, inasmuch as a separate application for a patent for this feature was filed by J. S. Perry on the 24th day of June, 1875; but

We claim as our invention—

1. The combination of a culinary attachment, having flues and openings, substantially as described, with a heating-stove, having an ascending and descending flue upon the rear, and openings by which the said flues may be made to co-operate with those of the culinary attachment, all substantially as and for the purposes specified.

2. The combination described of the flues

P, Q, and T of the culinary attachment, with the ascending and descending flue on the rear of the heating-stove.

3. The combination described of the flues P, Q, and T of the culinary attachment, with the circulating flue in the base of the stove, and the ascending and descending flues at the rear of the same, all as set forth.

4. The combination of a heating-stove, having an ascending and descending flue at the rear, with the side plates of the culinary attachment, by which plates, in conjunction with

the stove-chambers d^1 d^2 , are formed for heating air preparatory to its admission into the oven, all substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN S. PERRY.
ANDREW DICKEY.
ROBERT Z. LIDDLE.

Witnesses:

FRANK A. TREADWELL,
CHAS. W. SIMON.