W. C. LINDEMANN.

BURNER LID.

APPLICATION FILED MAR. 20, 1915.

1,219,014. Patented Mar. 13, 1917.

Fig. 1.

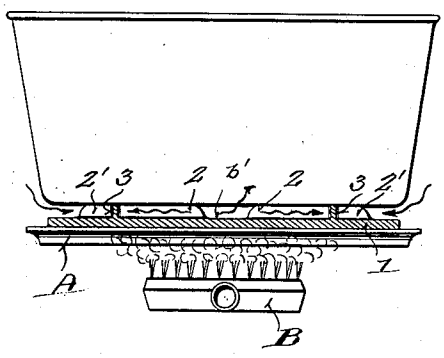


Fig. 2.

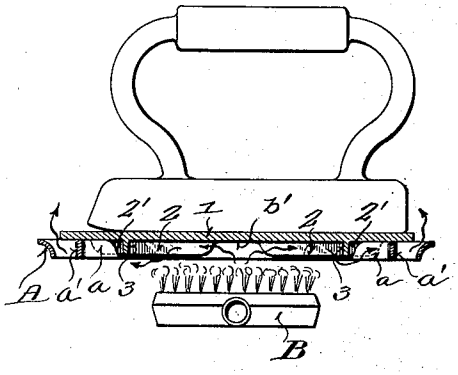


Fig. 3.

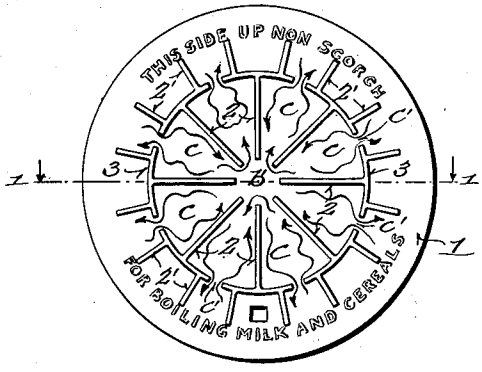
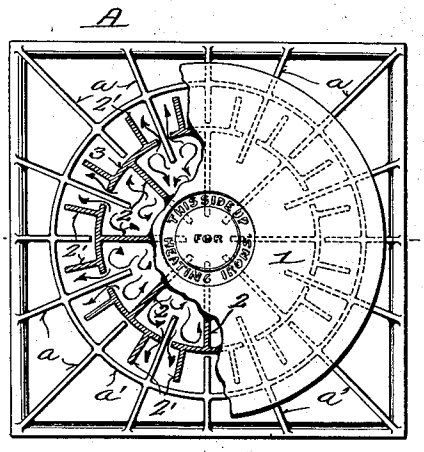


Fig. 4.



Witnesses:
Cassius E. Young
May Downey.

Inventor:
Walter C. Lindemann
By Upham & Young
Attorneys.

UNITED STATES PATENT OFFICE.

WALTER C. LINDEMANN, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO A. J. LINDEMANN & HOVERSON CO., OF MILWAUKEE, WISCONSIN.

BURNER-LID.

1,219,014. Specification of Letters Patent. Patented Mar. 13, 1917.

Application filed March 20, 1915. Serial No. 15,682.

To all whom it may concern:

Be it known that I, WALTER C. LINDEMANN, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin have invented certain new and useful Improvements in Burner-Lids; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a convertible lid for gas stove burners having a series of ribs upon one side whereby the same, when faced upwardly, forms a non-scorching rest for cooking utensils, due to the fact that the ribs produce air passages between the plate and vessel. When the lid is reversed to present a flat surface, it is used for the support of sad irons or for cooking vessels under certain conditions. The flanges then directly face the flame and serve as heat accumulators due to the fact that they are so constructed and arranged as to restrict the flow of heat from said flame, it being also understood that the ribs serve to increase the surface of the lid, whereby its heat absorbing properties are magnified.

The invention generically embodies a plate or lid having ribs upon one face so arranged in conjunction with each other as to form flow passages having restricted discharge mouths, it being understood that the ribs, under certain conditions, are also shaped to form passages having a central communication and provided with outer branch ribs, whereby the passages are restricted at their discharge ends. Hence it will be seen that when the flanges are facing the flame, they will cause the direct heat therefrom to be retarded or choked in its flow from the center portion of the plate outwardly, whereby the maximum heat units are absorbed prior to escape about the edge of said plate. Thus, in the above mentioned functional position, the plate is utilized for a rest for sad irons or for cooking purposes wherein the tendency to scorch is not present. When the plate is reversed with the flanges facing upwardly the ribs serve as rests for the bottom of a vessel and the air space between the plate body and vessel bottom is broken up into a series of channels or passages whereby currents of air are caused to travel through said passages from the outer edges. This circulation of air, more or less retarded by the formation of the ribs, is heated to a sufficient degree, whereby an indirect cooking temperature is developed sufficient for boiling or cooking products thoroughly without liability of scorching the same. Attention is also called to the fact that, in carrying out my invention, the ribs, in some instances, may be so arranged with relation to a grid, whereby they will intermesh with the grid bars to present a solid surface for the plate to rest upon when said plate is positioned with its flanges toward the flame.

With the above objects in view the invention consists in what is herein shown, described and claimed.

In the drawings—

Figure 1 represents a sectional elevation of a lid embodying the features of my invention, the same being shown resting upon a stove grid with its ribs projecting upwardly for the support of a vessel, in which position the lid constitutes a non-scorching element. The plane of the section of the stove lid is indicated by line 1—1 of Fig. 3;

Fig. 2 represents a similar view of the lid in a reverse position from that shown in Fig. 1, wherein the smooth face of said lid serves as a rest for a sad iron, it being understood, as a matter of course, that other elements such as vessels for cooking, may be fitted to the lid when in the position shown. Both the lid and the grid in this view are shown in section, as indicated by line 2—2 of Fig. 4;

Fig. 3 represents a plan view of the ribbed face of said lid, and

Fig. 4, a plan view of the smooth face of said lid with parts broken away and in section, the said lid being shown upon a stove grid formed with radial bars.

Referring by characters to Fig. 4, A represents a stove-grid having inwardly extended radial bars *a*, which are stopped off at a distant point from the center of the grid and the inner ends of the bars are reinforced by a circular bar *a'*. It is understood that, while I have shown this type of grid, various standard types other than that illustrated may be employed for the support of the lid embodying the features of my invention.

Referring especially to Fig. 1 of the drawings, 1 represents the smooth face of the lid member embodying the features of my invention, which lid member is, in this exemplification, shown circular in form, as indi-

cated in Figs. 3 and 4 of the drawings. The smooth face 1 of the lid, as shown in Fig. 1, rests upon the grid A and is presented to the direct flame of a burner B. The opposite face of the lid has extending therefrom radial ribs 2 which are stopped off at a predetermined distance from the center of the lid to form a central chamber *b*, which communicates with air passages *c* that are formed between the series of ribs. The ribs 2 are intersected by cross ribs 3, which together form an interrupted circle concentric with the contour of the lid, and the space between the cross-ribs constitute choked discharge openings *c'* for the air passages *c*. The cross-ribs 3 adjacent to their ends are connected by radial rib sections 2' which serve as flared guide channels for the passage of air from the restricted discharge openings *c'*.

Referring to Fig. 3 of the drawings, the ribbed side of the plate is marked with the words "This side up non scorch" and "For boiling milk and cereals." The smooth side of the plate is marked with the words "This side up for heating irons," as shown in Fig. 4. Thus the directions for using the plate are plainly indicated to the housewife and when the plate is positioned for boiling milk or cereals, as shown in Fig. 1, it is obvious that currents of air are caused to travel inwardly, as indicated by the arrows, through the various passages to the central communicating portions thereof. Thus the cold air entering through the restricted passages will be confined or choked between the lid surface and bottom surface of the pan due to expansion of volume caused through heating of said air and the air thus heated at a high temperature is sufficient for boiling purposes, while, at the same time, there is no liability of the boiled product being scorched or burnt.

It is also manifest when the smooth side of the plate is uppermost, the burner flame is directed to the center of the plate and the heat waves will be caused to travel outwardly through the passages between the ribs and be choked in their travel by the cross-ribs or baffle connections, whereby eddying currents of hot air will be momentarily retained under the plate, which currents will finally escape through the discharge openings between the cross-ribs and thus the heat is retarded in its flow to the outer edge of the plate, whereby said plate is heated to the desired temperature, this temperature being increased to the maximum due to the fact that the ribs form extra heat-absorbing surfaces.

I claim:

A lid for the purpose specified comprising a plate having a series of radial ribs upon one side spaced to form a series of passages, ribs extending transversely of said first ribs at their outer ends, the ends of said transversely extending ribs being spaced to form reduced mouths for said passages and ribs extending outwardly of said transverse ribs.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

WALTER C. LINDEMANN.

Witnesses:

N. E. OLIPHANT,

M. E. DOWNEY.