May 7, 1940. W. E. KULLBERG 2,200,180

STOVE LID

Filed March 15, 1938

Fig. 1.

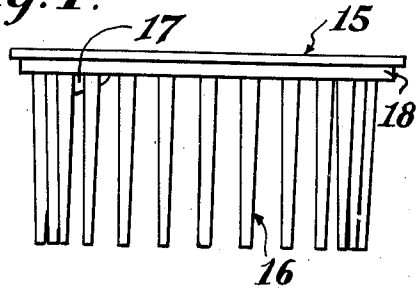


Fig. 4.

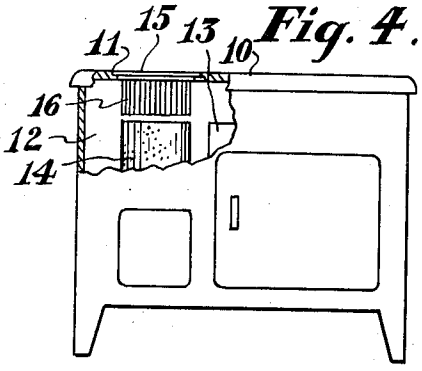


Fig. 2.

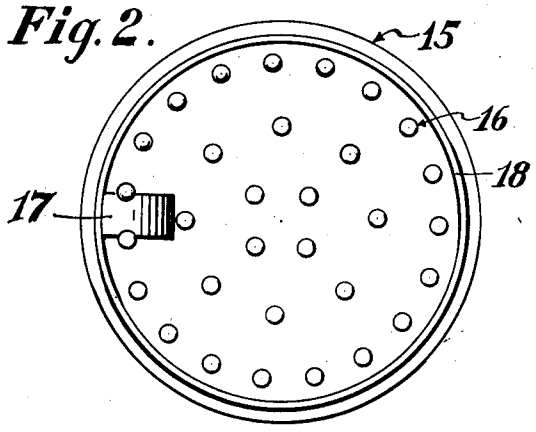


Fig. 5.

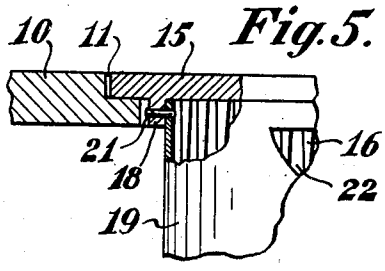


Fig. 3.

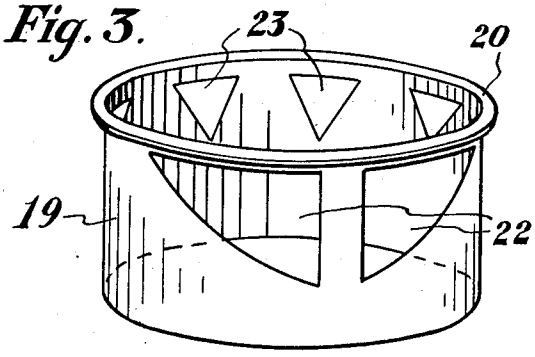
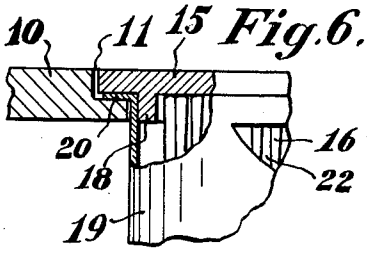


Fig. 6.



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Patented May 7, 1940 2,200,180

UNITED STATES PATENT OFFICE

2,200,180

STOVE LID

William E. Kullberg, Avon, Conn.

Application March 15, 1938, Serial No. 196,022

2 Claims. (Cl. 126—220)

My invention relates to cooking stoves. More particularly my invention includes an improved stove lid which is designed to increase the heating efficiency of the stove.

One object of my invention is to improve the transfer of heat from the fire box to the top of the stove and thus decrease the amount of fuel needed to attain a desired cooking heat.

Another object is to increase the effective heat in the entire stove by slowing up the draft going toward the chimney.

Still another object is to design a stove lid so that heat will be concentrated on the lid rather than on the stove top surrounding the lid. An advantage of this action is the fact that in warm weather a cooking utensil on the lid can be kept at a desired temperature without heating the whole stove top and thus over-heating the kitchen.

These, and other objects are obtained primarily by means of rods which extend downwardly into the flame area in the fire box, together with a draft deflector or chimney cooperating with the rods.

At the present time many kitchen stoves originally designed for burning wood or coal have been equipped with oil burning heating units, known as "range oil burners." Ordinarily, these stoves equipped with range oil burners are not capable of reaching the same degree of heat as they would if they were burning coal. My invention is especially designed to improve the heating in a stove using range oil burners so that it may equal and even surpass the performance of a coal burning stove.

To explain the best mode of construction of my invention now known to me, reference will be had to the following description and the accompanying drawing in which:

Fig. 1 is a side elevational view of a stove lid according to my invention.

Fig. 2 is a bottom plan view of the same.

Fig. 3 is a perspective view showing one form of a chimney or baffle collar used with my stove lid.

Fig. 4 is a front elevation of a conventional type of stove with parts broken away to show my stove lid in its proper position for use.

Figs. 5 and 6 are broken views at the fitting between a stove top and stove lid showing two methods of securing the chimney or baffle in proper position for use with my stove lid.

The ordinary stove has a top 10 with flanged openings 11 for stove lids over the fire box 12. At one side of the fire box is an oven 13. When a coal or wood stove is equipped for burning oil, the range oil burner 14 is placed in the fire box alongside the oven and spaced a distance of from about three to eight inches away from the stove top. If spaced too far away the heating effect on the top is lost or diminished. If placed too close to the top the burner may smoke, or the oven alongside may fail to be heated.

My stove lid consists of a flat top plate 15 and a plurality of closely and uniformly spaced elongated rods or prongs 16 fixed to and projecting from its bottom. These rods or prongs may be cast integral with the plate or made separately and attached to the plate by pressing or butt welding. Preferably the prongs are slightly tapered so as to become heated more readily toward their tips.

I have found that a spacing of about one to one and one half inches between the center of each prong produces good results, each prong at its thickest part being about three-eighths of an inch in diameter.

These prongs are made of a length to reach very close to the top of the oil burner. The best spacing seems to be within about an inch from the top of the burner or as close as possible without interfering with the burner. Of course commercially these lids are made with different lengths of prongs so that varying levels of oil burners can be fitted.

The conventional pocket 17, for a lifting handle, is provided in the top plate.

The plate is provided with a flange 18 which seats the lid in the flanged opening in the top of the stove.

I have found that the beneficial effects of my improved stove lid may be greatly increased by the use of a chimney or baffle 19, one form of which is illustrated in Figs. 3 and 6. This may consist of a sheet metal cylinder, open at both ends, with a flange 20 for supporting the chimney in the flanged opening in the top of the stove. An alternate method of supporting the chimney 19 is illustrated in Fig. 5 where it is shown that the top of the chimney is connected by pegs or rivets 21 to the flange 18 on the bottom of the plate. In either case, the chimney can be turned in any desired direction so as to guide the draft to obtain the desired results.

The direction of draft depends upon the position of large holes 22 in the wall of the chimney. The same effect as the large holes may be obtained by cutting a portion of the cylinder away entirely, leaving no margin. In order to insure

proper combustion, additional smaller holes are provided around the top of the chimney.

The chimney 19 is made long enough to extend along substantially the entire length of the prongs on the lid, and may be made longer where it does not interfere with the top of the range oil burner. In order to direct the draft along the major portion of the lengths of the rods, the draft-directing holes in the walls of the chimney are preferably made near the top, as shown.

In use, the prongs on the lid, being very close to the fire, get extremely hot. Heat is conducted up the rods to the plate top or lid which heats much more quickly and gets much hotter than an ordinary stove lid. The presence of the closely spaced rods in the fire box, immediately above the flame source, is also believed to cause a turbulence in the draft which allows more time for heat to be absorbed and utilized in the stove.

The chimney further concentrates the heat on the top of the lid by confining heat radiation from the prongs. The chimney also is used to guide the direction of draft. The direction of draft is from the bottom of the chimney toward the large holes, in whatever direction they are turned. Although the holes are illustrated as being triangular, it is obvious that they may be made of any other shape.

A peculiar effect has been observed when my invention is used with a kitchen stove equipped with a range oil burner. This is the fact that the oven temperature is increased as much as 100° F. by using my stove lid. The draft may be changed by turning the chimney, still further increasing oven temperature, when desired.

This lid minimizes soot film because the prongs get so hot that soot is either burned off or heated until it flakes and drops off. The heat of the prongs also seems to make more complete combustion of the fuel in the stove.

Having thus described my invention, what I claim is:

1. In a stove having a fire box and an oven at one side of the fire box with a stove top having an opening over the fire box, a stove lid assembly comprising a top plate adapted to seat in the opening, a plurality of elongated rods fixed to the bottom of the plate and extending well into the fire box, a chimney rotatably supported in said opening and surrounding said rods along substantially their entire length, said chimney having draft holes near its top, at least one of the holes being larger than the others, whereby the chimney may be rotated to direct draft either toward or away from the oven.

2. A stove lid assembly comprising a top plate adapted to seat in an opening of a conventional stove top, a plurality of closely spaced elongated rods projecting from the bottom of the plate and extending well into the fire box of the stove when the top plate is seated in the said opening, a cylindrical chimney closely surrounding said rods along substantially their entire length, and draft directing means in the chimney near its top and adjacent the bottom of the top plate.

WILLIAM E. KULLBERG.