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1,932,182

COOK STOVE

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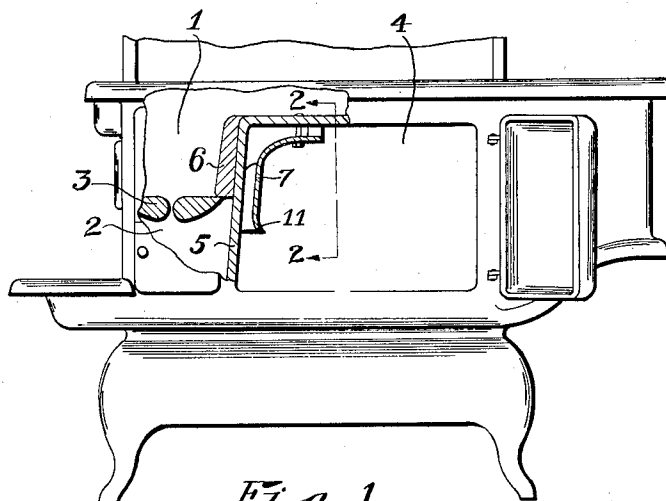


Fig. 1

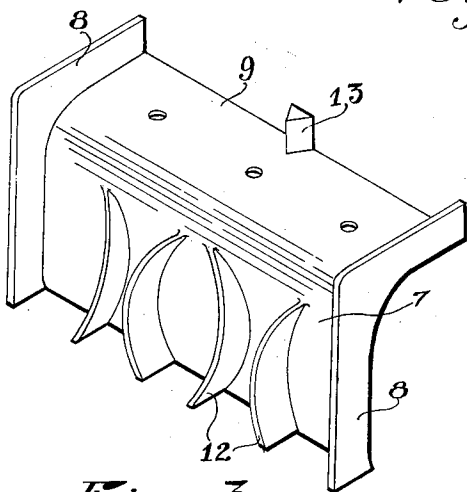


Fig. 3

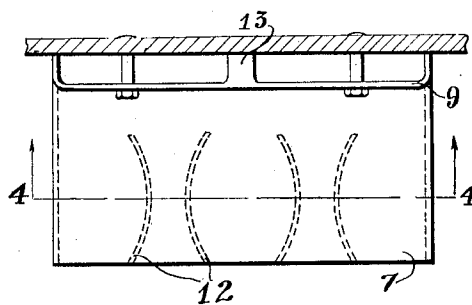


Fig. 2

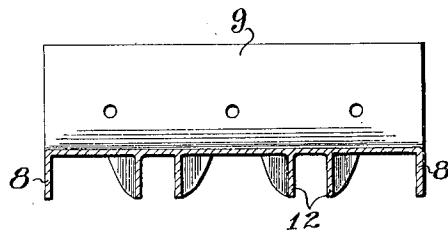


Fig. 4

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1,932,182

COOK STOVE

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Application November 5, 1931. Serial No. 573,141

3 Claims. (Cl. 126—19)

This invention relates to improvements in cook stoves, and particularly to means for heating the ovens of such stoves. The principal object of the invention is the provision of simple and inexpensive means for increasing the circulation of air in ovens of this kind, thus insuring a more uniform baking temperature throughout the space of the oven, resulting in more rapid baking action and consequently a saving in fuel.

Still another object of the invention is the provision of a curved shield between the oven and the fire box and that part of the ash pit adjacent to the fire box, and projecting rearwardly over the top of the oven and being provided with venturæ for more uniformly distributing the air velocity throughout the depth of the oven.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear from the following description when read in conjunction with the accompanying drawing, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a side elevation of a cook stove, parts being broken away and partly in section, illustrating one possible application of the invention;

Fig. 2 is a fragmentary sectional view taken substantially on line 2—2 of Fig. 1 and looking in the direction of the arrows at said line;

Fig. 3 is an isometric view of the flue forming shield shown in Figs. 1 and 2, and

Fig. 4 is a section taken substantially on line 4—4 of Fig. 2 and looking in the direction of the arrows.

The present invention is in the nature of an improvement on the cook stove shown and described in a patent to Brandenburg et al., No. 1,138,622, dated May 11, 1915. The present invention is shown applied to a cook stove of usual or well known construction comprising a fire box 1 separated from the ash pit 2 by a grate 3 on which the fire is supported. An oven 4 is provided at the rear of the fire box and ash pit in a well known manner, and is separated therefrom by a wall 5 preferably constructed of a single piece of cast iron or other suitable material. The usual fire brick 6 is arranged in the fire box in contact with the wall 5 to protect the wall from the intense heat of the fire.

Arranged on the opposite side of the wall 5 and secured in position by means of bolts or other suitable means is a shield generally referred to by the numeral 7. The shield 7 is constructed of cast iron or other suitable material, and at its ends is provided with flanges 8 adapted to engage the wall 5 and the top wall of the oven and space the shield therefrom, and to form a flue with said walls which has an upward inlet opening adjacent the wall 5 and an opening away from the fire box at its upper end. The part 9 of the shield arranged between the flanges 8 flares inwardly at 11 adjacent the wall 5 and is curved rearwardly under the top wall to provide a relatively large throat at the angle between the wall 5 and top wall of the oven. The shield extends downwardly over the wall 5 to a point below the grate in the bottom of the fire box over the back of that part of the ash pit which is nearest the fire box and is most intensely heated since it is near the fire and directly exposed thereto and is not protected by brick.

In order to further increase the velocity of the air circulating in the oven, projecting plates may be provided in the flue between the shield and the wall 5 to form a plurality of passages at the intake end of the flue. To this end, a plurality of curved plates 12 are secured to or formed integral with the shield and project therefrom into engagement with the wall 5. The plates 12 terminate at their upper ends at the point where the shield curves away from the wall 5. The free edges of these plates lie in substantially the same plane as the free edges of the flanges 8. The curved plates 12 also serve to prevent the lower part of the shield from warping in a manner to close the intake opening of the flue or to reduce its capacity. Means are also provided at the discharge end of the flue to maintain the shield in proper spaced relation to the top wall of the oven. Said means comprises an upwardly projecting lug 13 preferably formed integral with the shield, and of a length substantially equal to the height of the flanges 8 so as to engage the top wall of the oven. Although only one lug 13 arranged substantially midway between the flanges 8 is shown in the drawing, it will be understood that a plurality of such lugs may be provided, spaced equal distances from each other and from the flanges 8 in very large ovens or where intense heat is to be maintained in the oven.

It will be noted that by projecting the shield downwardly over the upper portion of the ash pit, it serves not only to protect the oven from the intense heat at this point, but this intense heat also tends to increase the velocity of the air circulating through the flue. The plates 12 curve toward and away from each other toward their

ends, forming a plurality of passageways, alternate ones of which tend to compress or to expand the rising air current so as to impart some fore and aft movement to the air circulating in the oven. The result is a more rapid movement to the circulating air in the oven and a more uniform temperature throughout the space of the oven, so that the baking operation may be performed in less time, thus increasing the output from the oven and reducing fuel consumption. All parts are preferably made of cast iron or the like, which is a good conductor of heat, and the plates 12 therefore conduct heat rapidly from the wall 5 which is transferred therefrom to the rising air in contact therewith.

Although only one embodiment of the invention is shown and described herein, it will be understood that this application is intended to cover such changes or modifications as come within the spirit of the invention or the scope of the following claims.

I claim:

1. A cook stove having a fire box, an ash pit beneath the same, an oven having a top wall and a closed front wall separating it from the fire box and ash pit, the front wall meeting the top wall to form an angle therewith, fire brick located in the fire box adjacent to said front wall for protecting said front wall from the intense heat of the fire box, an integral shield arranged in the angle between the top and front walls, said shield being provided with flanges at its ends for engaging said walls to space it therefrom to form a flue therewith and extending from a point below the fire box and opposite the ash pit to a point of discharge in a direction away from and to the rear of the fire box, and a plurality of curved flanges arranged between said first mentioned flanges and projecting from the shield into engagement with said front wall at the intake end of the flue for directing the air currents in the flue laterally of the oven.

2. A cook stove having a fire box, an ash pit beneath the same, an oven having a top wall and a closed front wall separating it from the fire box and ash pit, the front wall meeting the top wall to form an angle therewith, fire brick located in the fire box adjacent to said front wall for protecting the front wall from the intense heat of the fire box, and an integral shield arranged in the angle between the top and front walls and extending downwardly to a point beneath the fire box, the shield being provided with flanges engaging said walls to form a flue extending from a point beneath the fire box to a discharge point spaced rearwardly from the front wall and said shield being flared outwardly at the bottom to afford an enlarged inlet and curved away from the front wall toward the top to afford a relatively large throat connecting the vertical and horizontal portions of the flue.

3. A cook stove having a fire box, an ash pit beneath the same, an oven having a top wall and a closed front wall separating it from the fire box and ash pit, the front wall meeting the top wall to form an angle therewith, fire brick located in the fire box adjacent to said front wall for protecting the front wall from the intense heat of the fire box, and an integral shield arranged in the angle between the top and front walls and extending downwardly beneath the fire box, the shield having flanges engaging the walls to afford a flue extending from a point beneath the fire box to a discharge point spaced rearwardly from the front wall, means on the shield between said flanges for engagement with the oven wall acting to prevent buckling of the shield toward the wall, the shield being flared outwardly at the bottom to afford an enlarged inlet and curved away from the front wall toward the top to afford a relatively large throat connecting the vertical and horizontal portions of the flue.

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