Aug. 15, 1933. E. V. COULSTON 1,922,420

ATTACHMENT FOR STOVES

Filed Feb. 17, 1932

FIG. 1

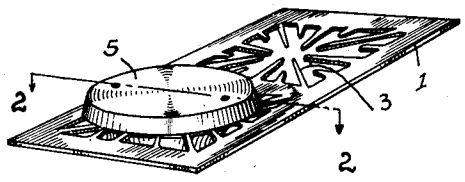


FIG. 2

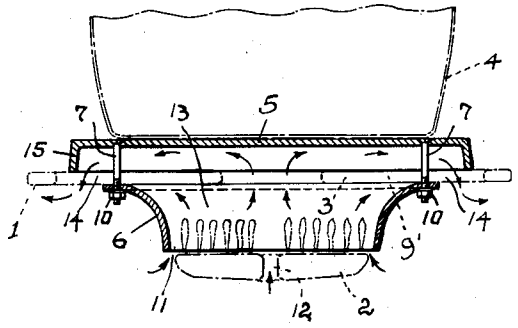


FIG. 3

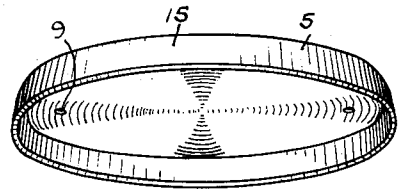
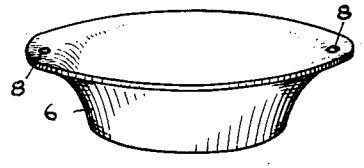


FIG. 4



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Patented Aug. 15, 1933 1,922,420

UNITED STATES PATENT OFFICE

1,922,420

ATTACHMENT FOR STOVES

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Application February 17, 1932. Serial No. 593,592

7 Claims. (Cl. 126—215)

This invention relates to attachments for gas, oil, gasoline and other stoves commonly provided with open grates positioned above their cooking burners.

The general object of the invention is to provide a fuel saving and heat equalizing attachment for stoves and ranges which can be readily attached to and as easily removed from the grates of conventional open top stoves.

A further object of the invention is to provide an attachment for open top flame stoves which serves to protect the handles and sides of enameled or other cooking vessels from burning and scorching respectively.

A further object of the invention is to provide an attachment for open top flame stoves, which is capable of being quickly assembled and which includes means for automatically accelerating the flow of air into the combustion chamber or zone of the stove burner to facilitate combustion with corresponding cut in fuel cost.

Other objects and advantages will be apparent from the following descriptions and accompanying drawing, in which:

Figure 1 is a perspective view of the grate of a stove showing the improved attachment assembled therewith;

Figure 2 is a fragmentary section on the line 2—2 of Figure 1, showing the relative positions of the stove burner to the attachment;

Figure 3 is a perspective view of the top plate portion of the invention detached; and

Figure 4 is a perspective view of the collar member or portion of the invention.

Referring more particularly to the drawing 1 denotes the grate of an open top stove and 2 the usual gas, oil, gasoline or other burners of a conventional stove or range. The bars 3 of such grates 1 are designed to offer minimum obstruction or opposition to the burner flame, while still serving to support any cooking vessel 4 placed thereon, down to approximately three inches in diameter, which is about the standard minimum, the idea being to bring the heat of the flame as directly and quickly as possible into contact with the vessel above. Heretofore, it has been possible to accomplish this with fairly efficient results when the base of the cooking vessel being used was of considerable diameter, say about eight inches. However, the bases of the majority of cooking vessels in every day domestic use are much less in width than eight inches, and in consequence considerable heat passes up alongside the vessel and escapes into the air, some without any contact and some chiefly contacting above the water line and with the handles, which of course is objectionable.

In order to avoid this loss of heat and at the same time prevent undue concentration at a single point or area of the cooking vessel, I provide a top plate 5 and a collar like member 6, which are respectively attached to the top and bottom of the grate 1 by means of a pair of headed bolts 7. Collar 6 which is preferably of substantially circular form, flares outwardly from its lower to its upper end and the latter end is perforated as at 8 to receive the bolts 7. These bolts pass through perforations 9 in the plate 5, thence between the grate bars 9' and finally through registering openings or perforations 8 in the collar member, nuts 10 being employed to clamp the parts tightly in place.

The lower edge of collar 6 terminates in substantially the horizontal plane of the top of burner 2, and the diameter of the collar member 6 is slightly greater than that of the area occupied by the burner. It should be noted here in all stoves the distance between the burner and the top grate is standardized and that collar 6 is therefore applicable to all makes. Thus an ample space or passage 11 is provided between the burners and the collar for the admission of sufficient air to the latter and to insure perfect combustion. The central opening in burner 2 provides an additional air passage 12. The diverging walls of collar 6 form a restraining housing or combustion chamber 13, which provides gradually increasing room for the expanding products of combustion as well as restraint from too rapid sidewise movement and a guiding channel or passage for directing the heat to the most effective point of application.

When heat is generated by lighting the burners it will be noted that the impulse of the burner action plus the action of the heat within the collar or housing will result in an accelerated and much more positive upward motion of the gaseous mixture, than in the case of an open burner, because there is no drag from the surrounding atmosphere. This causes air to flow faster to and through the burner from below, which improves and intensifies combustion and results in a higher degree of heat.

Plate 5, preferably of heavy cast metal construction and of circular shape, is also preferably of greater diameter than the housing or collar member 6 to provide ample space 14 between the upper flared end of member 6 and the downwardly extending peripheral flange 15 and also to afford ample seating surface for cooking vessel 4.

The flange 15 rests upon and spaces the plate from the grate, and the top face of the plate, in turn is adapted to support a cooking pot or pan, as previously stated. Flange 15 also serves to form in effect a reservoir from which escape of the hottest stratum of burner heat will be prevented or retarded. The course taken by the products of combustion is indicated by the arrows in Figure 2.

From the foregoing it will be seen that an unskilled person can readily install the attachment on any open top burner stove of conventional construction.

What I claim is:

1. An attachment for stoves with open top grates having bars with intervening spaces, comprising a truncated housing member and a flat member, and means extending through the spaces between said bars for interconnecting said members and seating same upon opposite sides of said top grate, whereby channels enclosed between the bars of said top grate and said members are formed, the channels communicating both with the interior of the truncated housing section and the outer air.

2. An attachment for stoves with open top grates having bars with intervening spaces, a housing member having both ends open, a flat member, and means extending through said top grates for interconnecting said members and drawing same flush against the top and bottom face of said top grate for forming channels between the top grate bars communicating with the interior of said housing section and with the outer air, said top plate having a depending flange outwardly spaced from the top of the housing.

3. An attachment for stoves with open top grates having bars with intervening spaces, an open ended housing member having an outwardly flaring upper end, a plate member, means extending through the spaces of said top grates for respectively connecting the plate member and the flared end of said housing member together and to opposite sides of said grate.

4. An attachment for stoves with open top grates having bars with intervening spaces, an open ended housing member having an outwardly flaring upper end, a plate member, readily removable means common to both of said members and extending through the spaces of said top grates for respectively connecting the plate member and the flared end of said housing member together and to opposite sides of said grate.

5. An attachment for stoves with open top grates having bars with intervening spaces, an open ended housing member having a contracted lower end, a flanged top plate member and means extending through the spaces of said top grates for connecting the said members to opposite faces of the stove grate, and with the contracted lower end of the housing member in line with but spaced outwardly from the burner of the stove.

6. An attachment for a flame burner cooking stove, comprising a housing of greater diameter than the burner, said housing extending upwardly in increasing diameter, a plate member positioned above said housing and of greater diameter than the upper end thereof, and means for interconnecting the plate member and housing in spaced relation for, forming a substantially annular channel communicating with the interior of said housing and the outer air.

7. In a stove with an open flame burner, a perforated cooking stove plate, a cone-shaped hollow housing open at opposite ends and of greater diameter than said burner depending in inverted position from said plate in axial alignment with said burner, and a cover plate for said housing seated upon said cooking stove plate in spaced relation above and in axial alignment with said housing, said cover plate being of greater diameter than said housing to form an annular outlet passage between said housing and said cover plate.

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