

UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR BASE-BURNING COAL-STOVES.

1,173,581.

Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed September 1, 1915. Serial No. 48,432.

To all whom it may concern:

Be it known that I, CARL A. JOHNSON, citizen of the United States, resident of Escanaba, county of Delta, State of Michigan, have invented certain new and useful Improvements in Attachments for Base-Burning Coal-Stoves, of which the following is a specification.

The object of my invention is to provide means for effecting a more complete combustion of the gases and coal on the grate than ordinarily takes place in a stove of this kind.

A further object is to provide means for deflecting a portion of the heat downwardly into the ash pit for the purpose of heating the lower portion of the stove and thereby obtaining more radiation therefrom and also increasing the natural draft through the stove base.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all, as hereinafter described and particularly pointed out in the claims.

In the accompanying drawing forming part of this specification, Figure 1 is a vertical elevation of a stove embodying my invention, a portion of the wall being broken away to illustrate the position of the attachment on the grate, Fig. 2 is a detail sectional view of the attachment ready to be mounted on the grate, Fig. 3 is a transverse sectional view on the line $x-x$ of Fig. 2.

In the drawing, 2 represents a base burning stove having a magazine 3, a fire-pot 4 and a grate 5 of the duplex type, or one where a central opening is provided with hinged sections 6.

7 is a base, circular in form, fitting within the central opening in the grate 5 and having air passages 8 therethrough and a cross bar 9 through which a bolt 10 passes for securing the base to the grate sections 6. Upon the top of the base a member 10' is seated, having a cylindrical lower portion and a conical upper end 11. This member or cap is made of fire-brick or cement, capable of withstanding high temperature, or other suitable material which may be subjected to intense heat without damage, and projects up into the body of coal on the grate, where it will contact with the burning fuel and be heated to such a degree that heat will be deflected down into the ash pit

to raise the temperature therein and heat the walls of the pit and the outer walls of the stove and provide a greater effective radiating area for the stove. This heating of the base also serves to increase the natural draft therethrough. The heated air from the hollow member, passing through the base, flows up through the grate around the hollow member and mingling with the fuel, hastens combustion thereof to such an extent that the coal will be consumed and leave no clinkers. The member 10' is centered on the base ring and held against displacement thereon by means of suitable upwardly projecting guards, such as the fingers 7' provided at intervals around the periphery of the base ring. I prefer also to provide a series of holes 12 in the upper walls of the member having outer portions 13 provided with horizontal upper walls and downwardly and outwardly inclined lower walls, so that a portion of the air passing up into the hollow member may be discharged through these holes into the fuel to assist combustion, while at the same time ashes accumulating outside the hollow member cannot, because of the inclined walls of the openings, flow into these openings and clog the hollow member. The number of holes in the hollow member depends upon the size of the stove. I have found with this attachment that the fire will last longer and will keep brighter, throwing off more heat even when the drafts are shut off. I have also found that fire can be kindled quicker than by the usual method. The holes are made comparatively small and there are just enough of them so that most of the heated air in the ash pit will be compelled to pass up through the grate at the bottom of the fire-pot and come in contact with the unburned coal. The cone is seated a sufficient distance below the magazine to insure proper feeding and prevent the coal in the magazine from igniting. I have found that in base burner stoves there will be more heat radiated from the sides of the ash pit and the base or bottom of the stove and that there will be a better draft in connection with a stove of this type than is ordinarily attained.

I claim as my invention:

1. The combination, with a fire-pot and grate having a central opening therein, of a hollow member composed of refractory material supported over said opening and

projecting upwardly therefrom into said fire-pot and surrounded by the fuel upon said grate, said member becoming heated through contact with the burning fuel and radiating heat downwardly through said opening into the space beneath said grate, a base ring seated on said grate over said opening and whereon said member is mounted, said ring having a cross bar and a bolt passing therethrough for securing it and said grate together.

2. The combination, with a fire-pot and grate, of a base ring centrally mounted on said grate and having upwardly projecting

guard fingers, a hollow, substantially cone-shaped member composed of refractory material seated on said ring and open at the bottom and projecting upwardly into the fuel in said fire-pot, the walls of said member becoming heated by contact with the burning fuel, and means for removably clamping said base ring upon the grate.

In witness whereof I have hereunto set my hand this 28 day of August, 1915.

CARL A. JOHNSON.

Witnesses:

PETER N. PETERSON,
ELSA FRANCKE.