E. G. ROESSLER.

STOVE GRATE.

APPLICATION FILED FEB. 18, 1919.

1,397,386.

Patented Nov. 15, 1921.

Fig. 1.

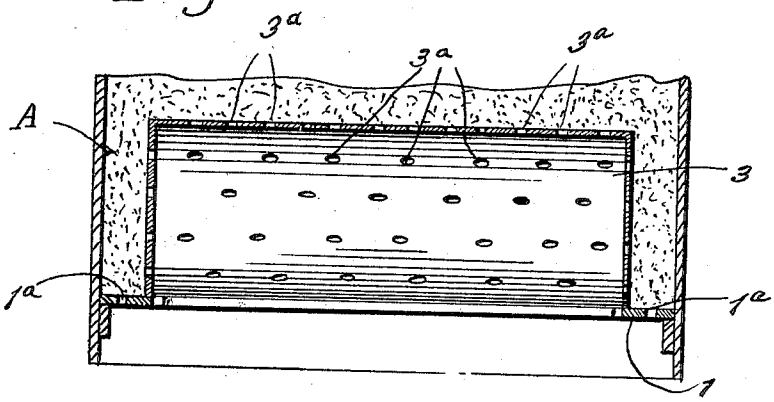


Fig. 2.

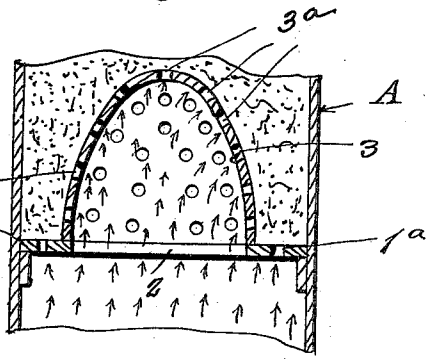


Fig. 4.

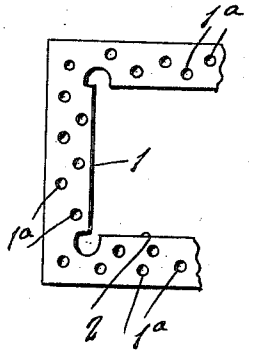
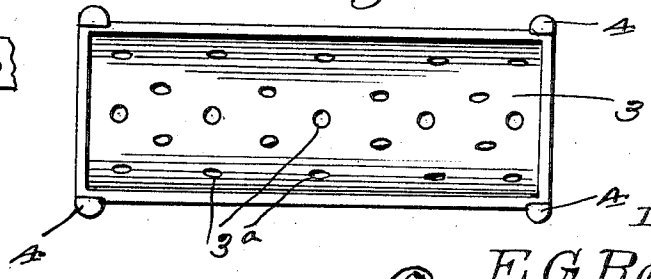


Fig. 3.



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UNITED STATES PATENT OFFICE.

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STOVE-GRATE.

1,397,386. Specification of Letters Patent. Patented Nov. 15, 1921.

Application filed February 18, 1919. Serial No. 277,803.

To all whom it may concern:

Be it known that I, EMIL G. ROESSLER, a citizen of the United States, residing at Goldfield, in the county of Esmeralda and State of Nevada, have invented certain new and useful Improvements in Stove-Grates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to stove grates, and more particularly to a grate specially adapted for burning sawdust and similar material in a finely divided state.

One of the main objects of the invention is to provide a burner of the character stated which is so constructed as to admit air to the mass of fuel at a number of points throughout the same so as to insure complete combustion.

A further object is to provide a grate comprising a central upwardly arching member and a flat peripheral portion which are so related as to insure that the fuel will be distributed about this central member in a relatively thin layer, the central member and the flat member being perforated so as to admit air into the mass of fuel, this air passing readily through the relatively thin layer thus formed so as to insure proper combustion.

Further objects will appear from the detailed description.

In the drawings:

Figure 1 is a longitudinal sectional view of a grate constructed in accordance with my invention, the fire box being indicated fragmentarily.

Fig. 2 is a transverse section showing the manner in which the fuel is distributed about the arcuate portion of the grate.

Fig. 3 is a detail underneath plan view of the central grate member.

Fig. 4 is a fragmentary top plan view of the grate frame.

The fire box A may be of any suitable or standard construction, that illustrated being of rectangular cross section and receiving a substantially rectangular frame or grate member 1 mounted therein in horizontal position, this member being preferably formed of cast iron and provided with a plurality of perforations 1^a as illustrated. The supporting frame 1 of the grate is provided with a central rectangular opening 2 which communicates with the interior of a central grate member 3 of substantial semi-elliptical cross section having end walls and said member 3 rests upon frame 1 so as to be supported thereby, member 3 being provided at each corner with an offset lug or pin 4, these lugs fitting into corresponding recesses at the corners of opening 2 of the frame. Member 3 is, like member 1, preferably formed from cast iron and is provided with a plurality of perforations 3^a. These perforations are disposed radially of the center line of the base of member 3 so as to insure that streams of air may flow readily into the mass of fuel at all points thereof, this air passing readily upward through the fuel so as to insure complete combustion of the same.

In practice, the grate composed of members 1 and 3 is mounted in a substantially rectangular fire box in the manner illustrated, member 3 being placed so as to cover the central opening 2 of the supporting member 1. The sawdust or other similar fuel is then placed upon the grate, this fuel being supported by members 1 and 3 so as to form a relatively thin layer extending about and over member 3, the thickness of this layer of material increasing toward the top or upper surface thereof, or in accordance with decrease in pressure due to the weight of the mass. As will be noted more clearly from Fig. 3, streams of air will readily flow through the perforations 1^a and 3^a of members 1 and 3, respectively, this air flowing through the mass of material so as to insure ready combustion thereof, the greatest number of air spaces being provided at the lower or more dense portion of the fuel mass so as to obtain an ample supply of air thereto. By arranging the grate members in this manner, I insure that fuel such as sawdust, which is very difficult to burn in grates of ordinary construction, will be supplied with a sufficient quantity of air throughout the mass thereof to obtain proper combustion. By removing the central member 3 of the grate, the ash resulting from the burnt material may be readily removed through opening 2, as will be understood, this opening also serving the function, as above stated, of permitting air to flow readily upwardly into the central member 3 and through the perforations 3^a thereof.

What I claim is:

A stove grate comprising a rectangular

grate member adapted to be supported within a fire box with its outer edges in engagement with the walls of the fire box and having a centrally arranged rectangular opening with recesses at its corners, said grate member having draft openings, a second grate member of a semi-elliptical shape in vertical cross section resting on the first grate member with its walls spaced from the walls of the fire box and disposed over the rectangular opening and provided with a plurality of draft perforations disposed radially of the center line of the base of said second grate member, and lugs formed on the second grate member and received by the recesses to prevent relative movement of the first and second grate members.

In testimony whereof I affix my signature in presence of two witnesses.

EMIL G. ROESSLER.

Witnesses:
J. S. McQUILLAN,
W. G. MAY.