

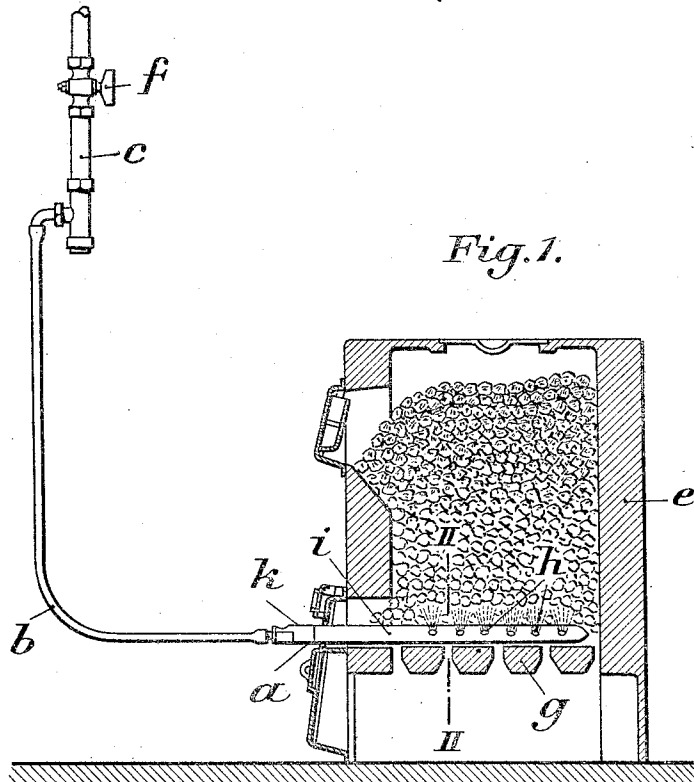
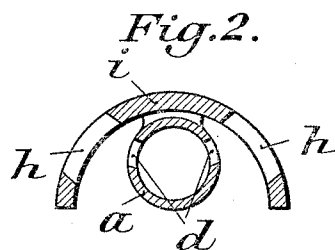
Jan. 19, 1932.

E. WIRTH

1,842,227

IGNITION DEVICE FOR USE WITH FIRE GRATES BURNING SOLID FUELS

Filed Dec. 6, 1928



INVENTOR:
Elias Wirth

BY
Dennis Davis Marvin + Edmonds
ATTORNEY.

UNITED STATES PATENT OFFICE

ELIAS WIRTH, OF WINTERTHUR, SWITZERLAND, ASSIGNOR TO THE FIRM OF SULZER FRERES SOCIETE ANONYME, OF WINTERTHUR, SWITZERLAND

IGNITION DEVICE FOR USE WITH FIRE GRATES BURNING SOLID FUELS

Application filed December 6, 1928, Serial No. 324,099, and in Switzerland December 24, 1927.

This invention relates to ignition devices for use with fire grates burning solid fuels and has for its object to provide an improved gas burning device particularly suitable for use with central heating boilers burning coke or like fuel.

According to this invention the burner proper which is preferably of the Bunsen type, is mounted in a trough-shaped member having holes through which the gas flames can pass and the whole device is adapted to be placed upon the fire grate with the open side of the trough downwards so that the burner is protected from the burning solid fuel and is cooled by air flowing through the grate. Preferably the trough-shaped member is tapered at its front end so that it can be pushed into a grate already charged with fuel and the holes in it are sufficiently large to admit air from below the grate for combustion of the solid fuel as well as the gas flames and sufficient air for their combustion.

One construction in accordance therewith is illustrated by way of example in the accompanying drawings, in which

Figure 1 shows the ignition device applied to a central heating boiler which is shown in section, and

Figure 2 a cross-section on the line II—II of Figure 1 drawn on an enlarged scale.

The gas burner *a* of the Bunsen type and provided with an opening *k* for the admission of air, is connected by a flexible pipe *b* to a gas pipe *c* having a tap *f*. The burner *a* is provided with jet openings *d* (Figure 2) and is mounted in a trough-shaped member *i* having larger openings *h* through which the flames from the jets *d* can pass.

In using the device to ignite a furnace such as *e* (Figure 1), after lighting the burner it is pushed into the furnace so that the trough-shaped member rests with its open side facing downwards on grate bars *g*. The burner is thus protected from the solid fuel by the trough-shaped member *i* and is at the same time cooled by combustion air passing upwards through the grate bars. Preferably the holes *h* are made sufficiently large to allow combustion air for the solid fuel to pass

through them as well as the gas flames and in addition to such air as may be required for the complete combustion of the gas thus facilitating the burning of the solid fuel.

Because of the trough-shaped construction of the member *i*, air for combustion is led to the gas flames from the front of the stove where the burner is introduced, as well as from below through the grate.

I claim:

1. An ignition device for solid-fuel furnaces, comprising an elongated, semi-circular member arranged with its open side down, outlet ports on its periphery, and a burner tube of the Bunsen type extending parallel with but eccentric to said member and embraced and included entirely within the skirts of said member, said tube having an opening near one end for the admission of air and a separate opening at said end for the admission of fluid fuel and having outlet ports on its periphery registering with the ports on said first member, the burner tube being arranged in said semi-circular member to leave a considerable intermediate space between all points of said tube and the nearest corresponding points of the semi-circular member, the bottom of said tube lying on a line connecting the lowermost opposite sides of the semi-circular member.

2. An ignition device as in claim 1, in which the outlet ports in the semi-circular member are made considerably larger than necessary for the passage of the burner flames and have their lower edges lying considerably below the lower edges of the burner outlets, whereby air from outside the furnace is inducted by the action of the burner flames through said intermediate space and positively injected thereby into the solid fuel to thereby cool the tube and member and accelerate the ignition of said fuel.

In testimony whereof I have affixed my signature.

ELIAS WIRTH.