U. G. & C. T. BOSWELL.

LIQUID FUEL BURNER.

APPLICATION FILED MAR. 25, 1910. RENEWED APR. 24, 1911.

994,090. Patented May 30, 1911.

Fig. 2.

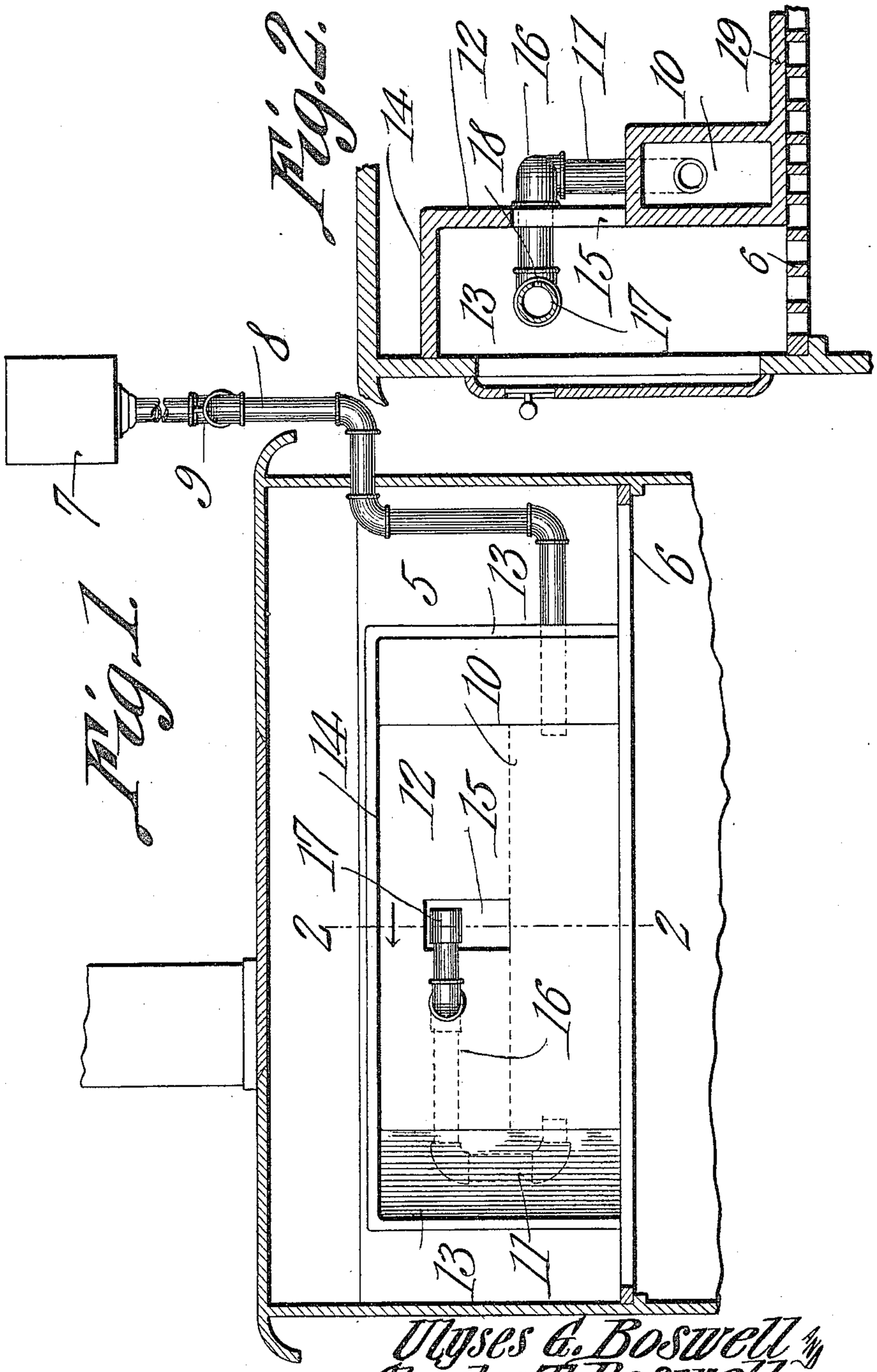

Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

ULYSES G. BOSWELL AND CHARLES T. BOSWELL, OF DURANT, OKLAHOMA.

LIQUID-FUEL BURNER.

994,090. Specification of Letters Patent. Patented May 30, 1911.

Application filed March 25, 1910, Serial No. 551,478. Renewed April 24, 1911. Serial No. 623,056.

To all whom it may concern:

Be it known that we, ULYSES G. BOSWELL and CHARLES T. BOSWELL, citizens of the United States, residing at Durant, in the county of Bryan and State of Oklahoma, have invented a new and useful Liquid-Fuel Burner, of which the following is a specification.

This invention relates to liquid fuel burners designed for application to cooking stoves, and it is the object of the invention to provide a burner which is compact in form, simple in construction, and highly efficient in operation, and also to provide a burner which can be readily applied to any ordinary cooking stove.

The invention also has for its object to provide improved means for vaporizing the fuel, and for mixing air with the vapor to produce a highly combustible mixture.

The invention is illustrated in the accompanying drawing forming a part of this specification, in which drawing,

Figure 1 is a vertical section taken through the fire pot of the stove, showing the burner in position therein. Fig. 2 is a cross section on the line 2—2 of Fig. 1.

Referring more particularly to the drawing, 5 denotes the fire pot of an ordinary cooking stove, and 6 is the grate. The latter supports the burner. A tank 7 supplies fuel to the burner, the tank being connected by a pipe 8 to the burner, said pipe entering the stove through an opening in the wall thereof. In the pipe 8 is a valve 9 for controlling the flow of fuel to the burner. The tank is suitably elevated to give a gravity feed.

At 10 is indicated the vaporizing chamber of the burner, said chamber comprising a rectangular casing suitably dimensioned to fit in the fire pot of the stove. One end of the casing is entered by the fuel supply pipe 8, and to the other end of the casing is connected a vapor outlet pipe 11.

In front of the vaporizing chamber is a hood, the inner wall of which is formed by the front wall of the vaporizing chamber, and a wall 12 rising therefrom, and extending flush therewith, and throughout its entire length, and from these walls extend forwardly the side walls 13 of the hood, said side walls being flared. A wall 14 extending between the walls 12 and 13 at the top thereof, forms the top of the hood. The hood is open at the bottom so that the air passing upwardly between the grate bars may pass into the hood.

In the wall 12, between its ends, is an opening 15. The vapor outlet pipe 11 extends upwardly from the vaporizing chamber, and then is connected by an elbow to a pipe 16 extending horizontally behind the wall 12. At a point adjacent to the opening 15, on one side thereof, this pipe passes through the wall 12, and then extends in front of the opening 15, it being fitted in front of said opening with a cap 17 having an outlet aperture 18 which is located so as to discharge in the direction of the opening 15, and therethrough.

From the rear side of the vaporizing chamber, at its bottom, extends a horizontal flange 19, which is flush with the bottom of the chamber and engages the grate. The side walls 13 of the hood also rest at their lower ends on the grate, in view of which the entire burner structure will be firmly supported on the grate.

The side walls 13 of the hood extend up to the front wall of the fire pot, so that no air can enter the hood except through the front door of the stove, and through the spaces between the grate bars.

To start the burner, a small quantity of fuel is allowed to run on the outside of the vaporizing chamber 10 and on the flange 19, and the same is ignited, the flow being first shut off. The burning fuel quickly heats the walls of the vaporizing chamber, so that when the fuel is again turned on, it will be vaporized in the chamber, and the vapor passes out of the same through the pipe 11, and issues in a jet from the aperture 18. This jet passes through the opening 15, and strikes the rear wall of the fire pot and is ignited. The vapor is forced out of the aperture with sufficient force to fill the entire fire pot, and it burns with an intense heat, without stain, smoke or soot. Air is mixed with the vapor as it passes through the opening 15, whereby a highly combustible mixture is produced. The heat from the burning vapor keeps the chamber hot so that the fuel is vaporized as long as the burner is in operation.

The burner is especially adapted for crude oils, and by reason of its simplicity of con-

struction, it can be readily applied to any ordinary cooking stove without in the least altering or modifying the structure thereof.

What is claimed is:

1. A liquid fuel burner comprising a hood adapted to be supported in the fire pot of the stove on the grate thereof, said hood being open at the bottom to permit passage of air thereinto from the grate, a vaporizing chamber behind the hood, a fuel supply pipe connected to the vaporizing chamber, and a vapor outlet pipe leading from the chamber to the hood, said hood extending above the vaporizing chamber, and having an opening above the vaporizing chamber, the vapor outlet pipe having an outlet aperture in line with said opening to discharge the vapor therethrough.

2. A liquid fuel burner comprising a vaporizing chamber adapted to be supported in the fire pot of a stove, on the grate thereof, a wall rising from the top of the chamber, said wall having an opening, walls extending forwardly from the ends of the last mentioned wall and the ends of the vaporizing chamber, said forwardly extending walls being in contact at their lower ends with the grate, a wall extending between the last mentioned walls at the top thereof and to the first mentioned wall, a vapor outlet pipe extending from the vaporizing chamber through the wall rising therefrom into the space between the forwardly extending walls, and below the top wall, said pipe having an outlet aperture in line with the aforesaid opening to discharge therethrough, and a fuel supply pipe connected to the vaporizing chamber.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

ULYSES G. BOSWELL.
CHARLES T. BOSWELL.

Witnesses:
S. H. KYLE,
J. H. WORK.