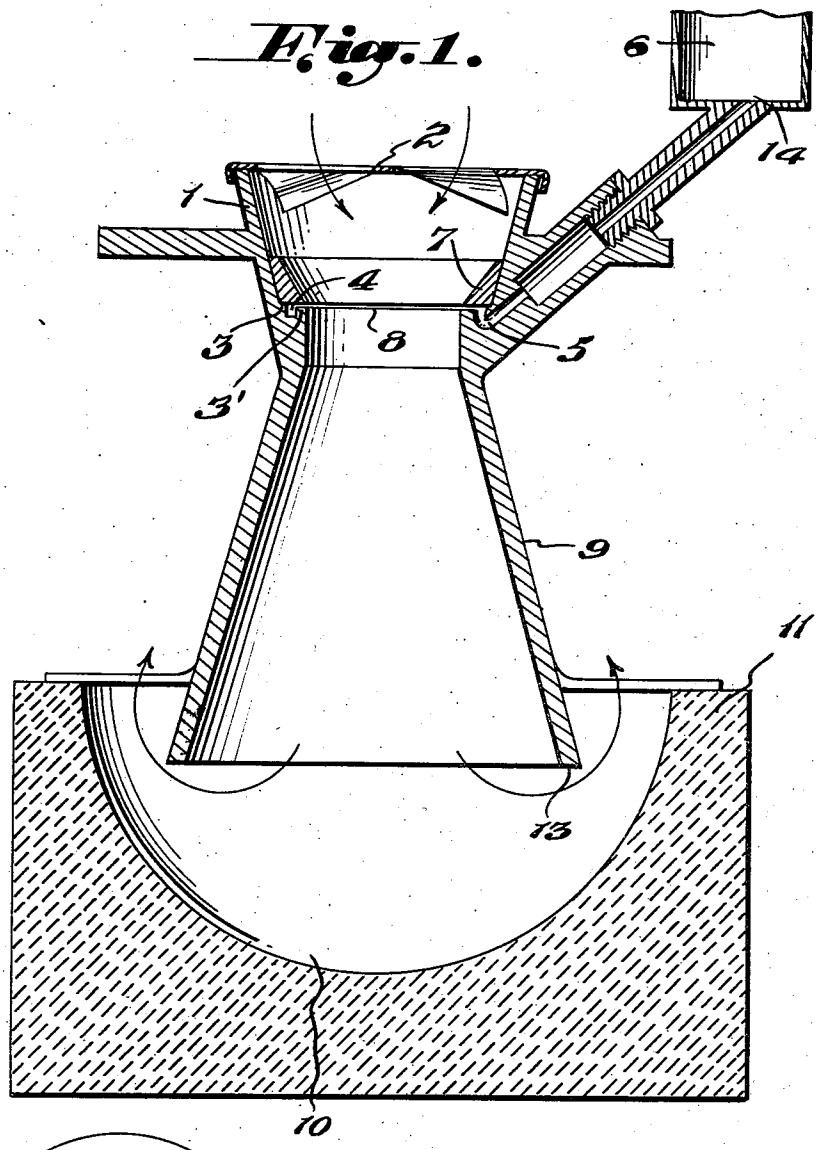
May 26, 1942. R. BRAIDA 2,284,037

BURNER FOR LIQUID FUEL

Filed Sept. 6, 1939

Fig. 1.



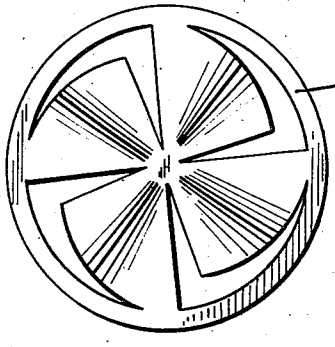


Fig. 2.

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Patented May 26, 1942 2,284,037

UNITED STATES PATENT OFFICE

2,284,037

BURNER FOR LIQUID FUELS

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Application September 6, 1939, Serial No. 293,637
In Argentina December 12, 1938

1 Claim. (Cl. 158—4)

The present invention relates to a novel type of burner for liquid fuels.

In the burning of fuels of a liquid nature difficulties are experienced in avoiding the presence of carboniferous residues and the formation of monoxides which will interfere with the useful utilization of the fuels. It is therefore an object of the present invention to obviate in a simple manner all such difficulties by admitting the fuel at the middle part of the burner, in a continuous manner or, in the case of liquid fuels, to cause the liquid to flow down directly along the walls, of the burner.

In order to improve conditions of draft in the system use is made of a baffle or partition at the rear portion between the burner element and the support of the unit so that the natural draft created within the burner cooperates in the gasification of the liquid fuel.

The aforementioned problems are solved in a simple and efficient manner by providing an inverted frusto-conical member from the end of which projects downwards a further frusto-conical member with its base or larger end directed downwards, and the lower member is maintained separated from the base by adequate means.

In order to permit of the escape of the combustion gases, and to create a natural draft, the base is made of concave shape, so that the gaseous products of combustion escape along the curved surfaces thereof.

A feature of the present invention is the provision of means for the gradual admission of fuel in accordance with the requirements. A further feature of the invention pertains to the provision of means that will facilitate the discharge or escape of the combustion gases, and, simultaneously, gasification of the liquid fuel. A still further feature of the invention is the provision of two frusto-conical members receiving at the junction point thereof a greater or lesser amount of fuel.

A still further feature of the invention is the provision of air deflecting means by which the air receives a whirling motion, whereby the air is brought into intimate contact with the fuel it being possible thus to secure maximum output.

Other features and advantages will appear from an inspection of the drawing wherein are shown by way of example an embodiment of the invention, and to which reference will be had below, the following being a detailed description of the invention.

In the drawing:

Fig. 1 is a vertical section through a burner wherein the fuel injected flows down along the walls of the burner, this view clearly showing all the parts of the unit.

Fig. 2 represents the disc provided with deflector blades which serves as a covering member for the upper frusto-conical member.

The upper portion of the unit is formed of an inverted frusto-conical member 1 having a cover in the shape of a disc 2 formed with cuts whereby it acquires the shape of deflector blades.

The frusto-conical member 1 is connected at its smaller end to a frusto-conical member 9 thereby forming a seating 3 formed with a groove 4 which directly receives the liquid fuel from a tank 6 by means of a duct 5.

Upon the seat 3 is seated an annular member 7 also conical at its inner portion and which, in combination with the lower level of seat 3', forms a groove 8 along which the fuel flows. The frusto-conical member 9 is a continuation of the member 1 and is joined thereto with its smaller end, and is supported on a block of material 11, preferably of refractory material, at its cavity 10, whereby a certain clearance is provided between the edge 13 and the cavity.

Thus the liquid contained in the tank 6 flows down from the groove 8 on the internal surface of the member 9, which during operation is in a heated condition, and the liquid is completely gasified.

The air of combustion is admitted through the disc 2 whereby it is forced to effect a whirling motion, this facilitating a perfect mixture of the fuel with the oxygen from the air.

It is obvious that any kind of modifications or amendments may be made without exceeding the scope of the present invention, as clearly defined in the appended claim.

I claim:

A burner for liquid fuel comprising in combination, an inverted hollow frustoconical member, a refractory block having a hemispherical-shaped recess therein, a second hollow frustoconical member depending from the inverted hollow frustoconical member into said hemispherical-shaped recess, said second hollow hemispherical member flaring outwardly at the lower end thereof with the lower end spaced from the surface of the refractory block within said recess, said inverted hollow frustoconical member having an annular groove therein adjacent the second hollow frustoconical member, means for supplying liquid fuel to said annular groove, an apertured disc covering the top of the inverted hollow frustoconical member, and an annular member carried by the inverted hollow frustoconical member adjacent said groove.

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