No. 790,078. PATENTED MAY 16, 1905.

N. L. RIGBY.

VAPORIZER AND BURNER.

APPLICATION FILED DEC. 18, 1903.

Fig. 1.

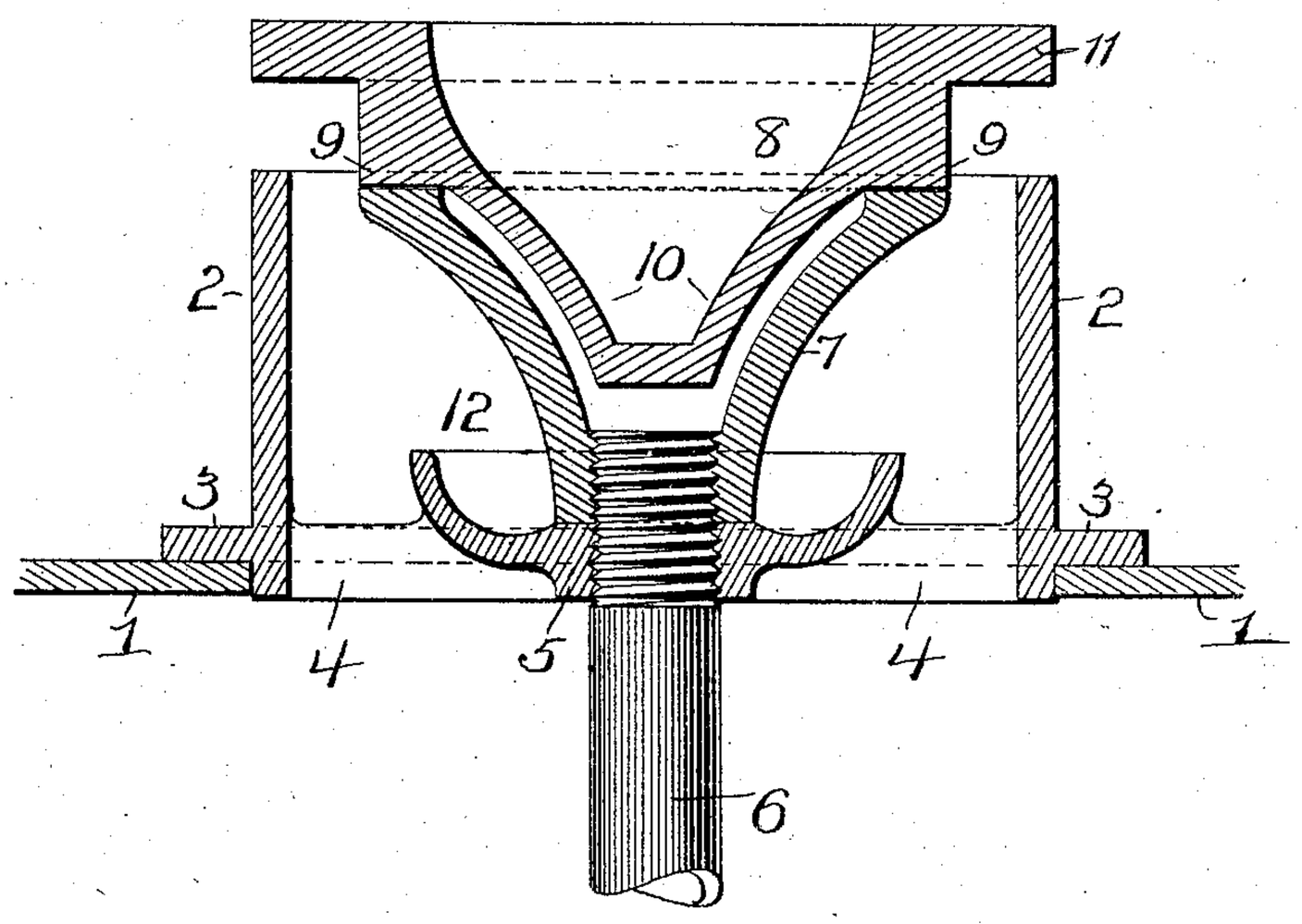
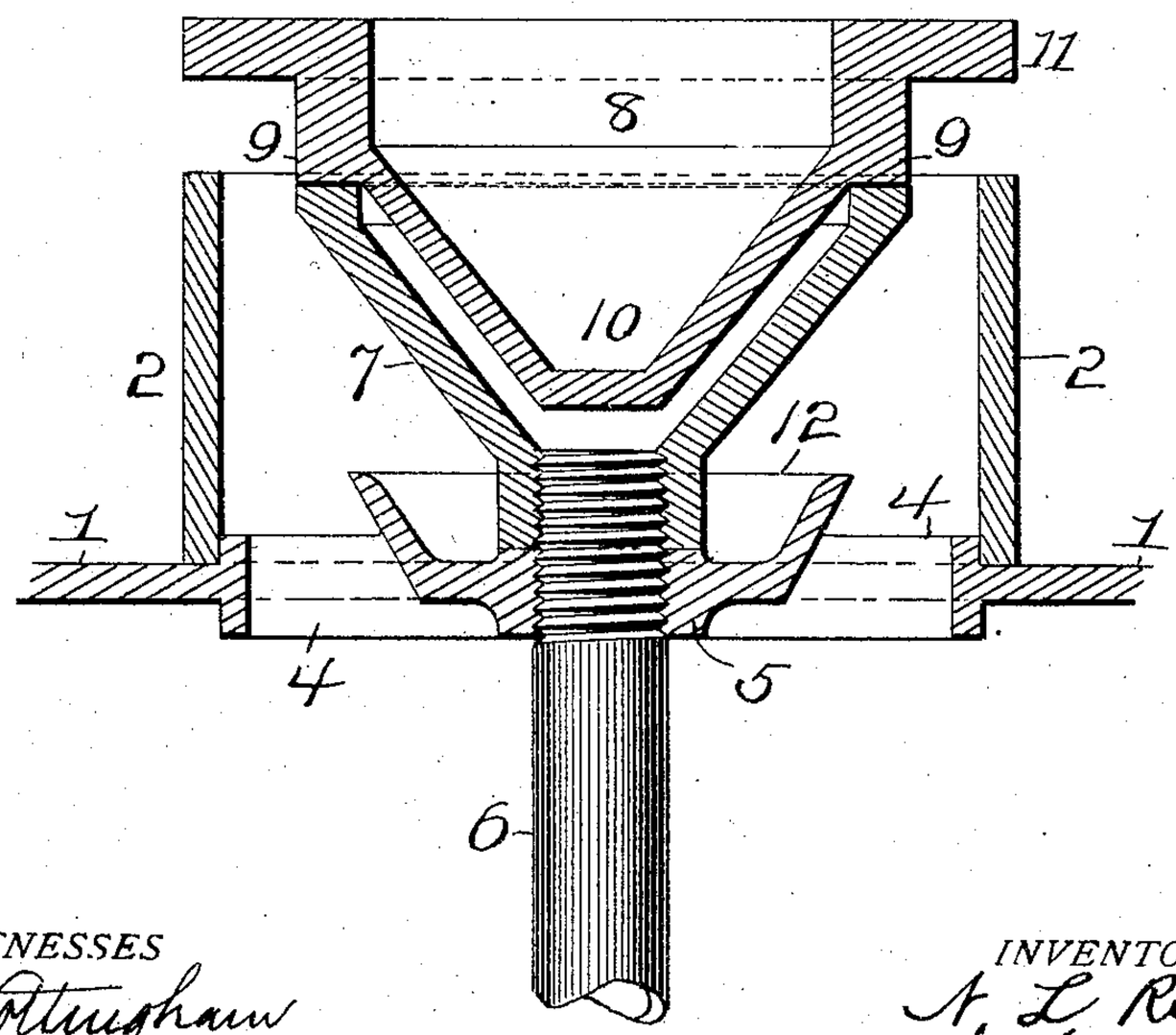


Fig. 2.



WITNESSES

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No. 790,078. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

NICHOLAS L. RIGBY, OF GARVANZA, CALIFORNIA, ASSIGNOR OF ONE-HALF TO SILAS S. SPRAGUE, OF LOS ANGELES, CALIFORNIA.

VAPORIZER AND BURNER.

SPECIFICATION forming part of Letters Patent No. 790,078, dated May 16, 1905.

Application filed December 18, 1903. Serial No. 185,741.

To all whom it may concern:

Be it known that I, NICHOLAS L. RIGBY, a resident of Garvanza, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Vaporizers and Burners; 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.

My invention relates to an improved hydrocarbon vaporizer and burner, the object of the invention being to provide a device of this character which will be simple in construction, the component parts thereof being assembled without the employment of screws, bolts, rivets, and the like, and which when assembled will result in a combined vaporizer and burner whose operation will be perfect.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in vertical section, illustrating my improvements; and Fig. 2 is a view of my improvements slightly modified in shape.

1 represents a platform having an opening therein over which my improved device is supported. A tubular or cylindrical chamber 2 is provided with an annular ring or flange 3 to rest on platform 1 and has an internal spider 4 at its lower end, in the center of which a screw-threaded hub 5 is located and into which latter the upper threaded end of an oil-supply pipe 6 is screwed. Upon this pipe 6, which projects above hub 5, a cup-shaped casting 7 is screwed and is made with a flat-surfaced upper edge, as shown. The upper edge of this cup 7 is in a horizontal plane, approximately the same as the upper edge of cylinder 2, although it may be slightly above or below the same without materially affecting the operation of my improvements.

An upper cup 8 is made with a shoulder 9 to rest on the upper edge of cup 7 and has a downwardly-projecting central hollow extension 10, located in cup 7 and of approximately the same shape as said cup, to provide a narrow annular vaporizing-space around said extension 10 in cup 7. At the upper end of cup 8, which projects above chamber 2, an annular flange 11 is provided, extending out over the chamber 2 and against which the flame burns.

A starting-cup 12 is provided around hub 5, and the operation of my improvements is as follows: Hydrocarbon is supplied by pipe 6 to cup 7, filling the space between the same and cup 8 and overflowing down the outside of cup 7 into starting-cup 12. When a sufficient quantity of oil has collected in cup 12, it is ignited, and the flame encompasses cups 7 and 8, heating them to the proper degree to vaporize the oil in cup 7, when the vapor will escape from between the cups 7 and 8 and be ignited by the flame from starting-cup 12. This vapor from the cups will commingle and burn with air passing up chamber 2, and as the latter and cup 7 are heated by the flame the air is preheated before admixture with the vapor, and a perfect combustible mixture is the result.

My aim has been to construct a vaporizer and burner of this character with a limited outlet, to heat the air before it reaches the gas or vapor outlet, to heat the vaporizer before the flame leaves it, to secure a thorough commingling of the air and gas or vapor, to have no parts to carbonize and stick together, and to have a burner which will not require more than an ordinary draft.

It is not necessary that the parts be made in the identical form shown in Fig. 1, and I illustrate in Fig. 2 a modified construction whose contour is angular rather than curved.

A great many other changes might be made in the general form and arrangement of the parts described without departing from my invention, and hence I would have it understood that I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A vaporizer and burner, comprising a cup having a smooth face or bearing at its upper edge, an upper cup having a face resting on the smooth face of the lower cup and having a downward extension projecting down into the lower cup and forming a vaporizing-chamber between said cups, an outwardly-projecting flange at the upper end of the upper cup, an oil-pipe discharging oil into said chamber, a cylindrical wall forming a chamber open at its bottom and surrounding the lower cup and constituting an air heating and mixing chamber into the upper end of which the vapor from the cups escapes to commingle with the heated air passing up through said chamber forming a heated combustible mixture burned around the upper cup and over the cylindrical chamber, heating said cups and chamber.

2. A vaporizer and burner, comprising a cylindrical chamber, a spider therein, a hub at the center of said spider, a starting-cup around the hub, an oil-supply pipe screwed up through the hub, a cup screwed onto the projecting upper end of the pipe, an upper cup supported on the lower cup, an extension on the upper cup projecting down into the lower cup forming a vaporizing-chamber around the same, and an outwardly-projecting annular flange on the upper cup projecting over the upper end of the cylindrical chamber, substantially as and for the purpose set forth.

3. The combination with a base or support having an opening therein, a starting-cup within said opening and supported from the wall thereof, and an oil-pipe screwed through said starting-cup, of a lower burner-cup screwed on the projecting end of said pipe, an upper burner-cup resting upon the lower burner-cup and coöperating therewith to form a vaporizing-chamber and a vapor-outlet, a flange on the upper cup over said vapor-outlet, and a cylinder resting on the base or support and inclosing the lower burner-cup.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

NICHOLAS L. RIGBY.

Witnesses:
JESSE H. ARNOLD,
F. A. HUTCHINSON.