To all whom it may concern:

Be it known that I, JOSEPH MELVIN DENSMORE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Oil-Burners; and I do 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 incandescent-mantle-lamp burners for burning hydrocarbon oil; and it consists in the construction and novel combination of the parts of the same, as hereinafter fully described and claimed.

The object of the invention is to provide a simple, durable, and effective burner of this character which is not liable to get out of order and in which provision is made to prevent clogging and to enable the parts to be readily and conveniently attached and detached for cleaning and repair or substitution of new parts. I attain this object by the mechanical construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the entire burner. Fig. 2 is a vertical sectional view of the burner with the valve and casing detached, showing the vaporizing-chamber, the mixing-chamber, and the combustion-chamber made in one piece of metal.

Referring by reference letters and numerals to the accompanying drawings, A designates the supporting-incasement, which is made integral with and surrounds the mixing-chamber 6, which is located immediately below and communicates with the combustion-chamber 11.

10 B is a screen formed of wire of appropriate fineness of mesh to retrace the force of the gas and cause it to burn on said screen or point of ignition.

The oil-inlet pipe 1 is supplied with a filter 12, made of brass-wire screen material of appropriate fineness of mesh for filtering the hydrocarbon oil before entering the vaporizing-chamber, and is externally threaded on its inner end and engages a threaded seat 13, having a vaporizing-chamber 14, provided with passages 2 and 3, which are substantially siphon-shaped, the vertically-depending leg 4 communicating with the upper end of a downwardly and inwardly inclined duct 5, leading to the small chamber 6 at the lower end of said duct 5, the upper end of said chamber 6 being provided with a needle-seat 7 for receiving the point 8 of the needle 9 at the upper end of the valve-stem 10. At the lower end the valve-stem 10 is provided with a milled nut for turning said stem 10 in its seat. S is a packing-bur provided internally with asbestos packing 11 to prevent leakage at this point. The needle-point 8 is for the purpose of cleaning the needle seat or orifice 5 to keep it open.

9 is a cylindrical incasement which is attached by friction to the burner at 12 and forms a housing around the burner to protect it from sudden currents of air.

To light the lamp, heat is first applied to the interior of the burner, preferably using an alcohol-torch for said purpose. Then when turned on the oil enters at 1 and passing through filter 12 enters the vaporizing-chamber 2 and following said chamber to 3, where it enters the chamber 4 of the valve-stem. During this flow the oil has been converted into vapor and passes down and through the orifice 5 at the needle-point, where it comes in contact with the oxygen of the air, then passes through the mixing-chamber 6 and to the screen 10, where combustion takes place in the combustion-chamber, forming the flame which renders the mantle incandescent.

I am aware that prior to my invention carbon-oil incandescent-mantle lamps have been made with vaporizing-chambers operating in conjunction with needle-valves. I do not claim such a construction, broadly, herein.

What I do claim as my invention, and desire to secure by Letters Patent, is—

A hydrocarbon-vapor burner, comprising in its construction an annular shell or incasement having a vertical mixing-chamber, a combustion-chamber located above the mixing-chamber, a seat or extension formed on one side of the incasement in line with the mixing-chamber and provided with a vaporizing-chamber, a hydrocarbon-supply pipe connected with the outer end of the seat or extension for supplying oil directly to said
vaporizing-chamber, a siphon-passage in said seat or extension composed of upwardly and diagonally and vertically extending branches leading from the vaporizing-chamber inwardly to near the top of the mixing-chamber and thence downwardly and opening through the base of the shell, a pendent pipe in communication with said passage and extending diagonally to a point below the mixing-chamber and having a valve-controlled discharge at its lower end, and an annular shield inclosing the said pendent pipe and serving to receive the vapor therefrom and to act as a shield or guard to protect the same and the burner from sudden currents of air, and as an auxiliary mixing-chamber in which the vapor is initially admixed with air before entering said mixing-chamber, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH MELVIN DENSMORE.

Witnesses:
FRED C. BILLINGS,
FANNIE DE LANE.