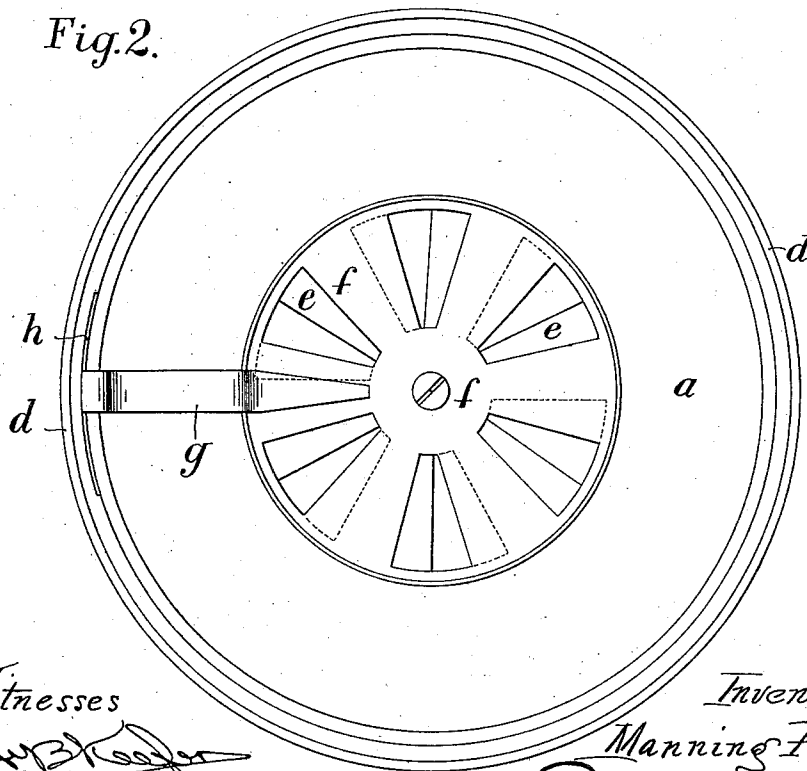
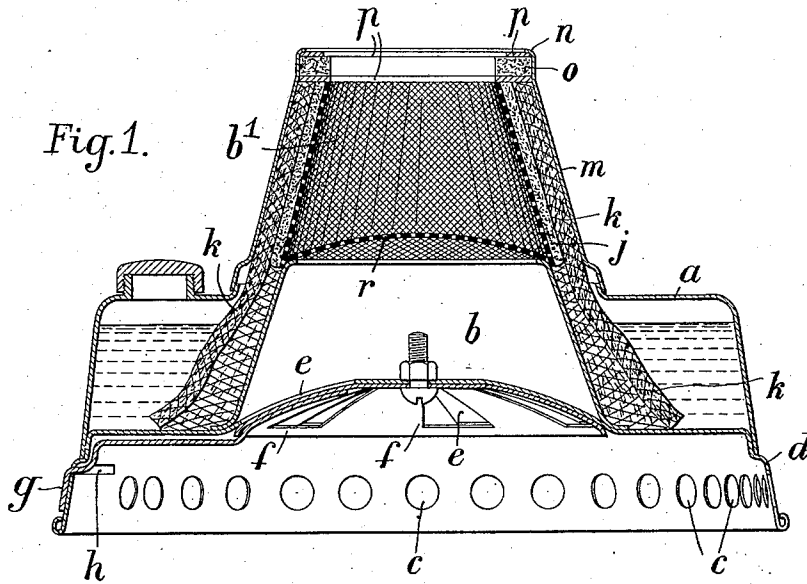


M. PIKE.
LIQUID FUEL BURNER.
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Witnesses
J. B. Keeler
J. L. Morris

Inventor
Manning Pike
by James L. Morris, Jr.
atty

UNITED STATES PATENT OFFICE.

MANNING PIKE, OF LONDON, ENGLAND.

LIQUID-FUEL BURNER.

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To all whom it may concern:

Be it known that I, MANNING PIKE, a citizen of the United States, residing at London, England, have invented new and useful Improvements in Liquid-Fuel Burners, of which the following is a specification.

My invention relates to improvements in wick lamps or burners using spirit or like volatile fuel and provides a novel construction of such lamps or burners whereby the flame can be adjusted from the largest possible in the lamp down to the smallest flicker.

My improved lamp is of the kind wherein there is a central conduit up which the air required for combustion passes in contact with the lateral surface of a wick that is in communication with a supply of liquid fuel.

According to my invention, a stationary hollow wick is used preferably supported on its inner surface by perforated metal but otherwise completely inclosed so that combustion may occur only on this inner surface. The supply of air to the exposed surface of the wick may be controlled by a suitable valve arranged in the air-conduit. When a wick made of a combustible material is used, the same is protected by a layer of asbestos or other suitable fireproof material, in order to prevent destruction of the wick in the event of the lamp being allowed to burn out. By supplying the wick with spirit or like volatile fuel, for example, a light hydrocarbon, a very useful heating flame can be obtained, the size of which can be regulated as desired by adjusting the amount of air that is allowed to pass through the supply conduit.

In the accompanying drawing, I have shown how my said invention may be conveniently and advantageously carried into practice.

In this drawing:—Figure 1 is a vertical central section of one form of my improved lamp, and Fig. 2 is an underside view thereof.

In the lamp shown, the liquid-fuel container *a* has a central air-conduit *b*, to which air passes through holes *c, c* formed in the base *d*. In the lower end of the conduit *b* is mounted a perforated diaphragm *e* and a correspondingly perforated rotary valve *f* movable thereon. This valve is provided with an arm *g*, which extends through a

slot *h* in the base *d*, so as to enable the valve *f* to be readily adjusted from the exterior.

The air conduit *b* is preferably made frusto-conical and the part thereof above the container *a* has its wall made of perforated sheet metal *b'*, on which is arranged a layer of fibrous asbestos *j* forming the flame surface of the wick. This layer is conveniently formed by winding an asbestos cord around the perforated metal part *b'*. The other part *k* of the wick may be of cotton or of any other suitable material and extends down into the container *a* in the usual manner. The wick *k* is inclosed in a frusto-conical imperforate casing *m*, the lower end of which is connected fluid-tight to the upper wall of the container *a*. The upper end of the casing *m* is provided with an inwardly-turned flange *n* for retaining in position an asbestos washer *o* protected on its upper and lower surfaces by mica washers *p, p*. A woven wire disk or diaphragm *r* is placed at the base of the part *b'* and resting on the inturned edge of the conduit *b*. This disk besides preventing striking back of the flame, also enables the size of the flame to be more easily graduated between the biggest flame and the smallest flame obtainable.

The flame is produced in the conduit *b'* above the wire disk *r* and over the exposed surface of the wick and extends out of the casing *m* through the asbestos washer *o*, the size of the flame being increased or diminished by opening or closing the valve *f*.

If desired the air-conduit *b* may be cylindrical or of other suitable form instead of frusto-conical as shown.

I claim:

1. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular wick having an exposed interior surface, a tube which completely incloses and supports the outer surface of said wick, a conduit for supplying air to said exposed interior surface of the wick, and a perforated diaphragm extending across the air-conduit substantially at the base of the exposed surface of the wick.

2. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular wick having an exposed interior surface, a conduit for supplying air to said exposed surface, a woven wire diaphragm of small mesh extending across said

conduit substantially at the base of said exposed surface, a perforated metal support for the interior of the wick, and a tube which completely incloses and supports the outer surface of the wick.

3. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular wick having an exposed interior surface, a conduit for supplying air to said exposed surface, an open mesh diaphragm of woven material extending across said conduit substantially at the base of said exposed surface, a perforated metal support for the interior of the wick, a tube which completely incloses and supports the outer surface of the wick, and a valve for controlling the passage of air through said conduit.

4. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel container, a tubular wick comprising an outer portion of non-fireproof material and an inner portion of fire-proof material which has an exposed interior surface, a tube which completely incloses and supports the outer surface of the wick, a conduit for supplying air to said exposed interior surface of the wick, and a perforated diaphragm extending across the air conduit substantially at the base of the exposed interior surface of the wick.

5. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular fibrous wick comprising an outer portion of non-fireproof material and an inner portion of asbestos having an exposed interior surface, a tube which completely incloses and supports the outer sur-

face of the wick, a conduit for supplying air to said exposed interior surface of the wick, and a perforated diaphragm extending across the air conduit substantially at the base of the exposed interior surface of the wick.

6. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular wick, comprising an outer portion of non-fireproof material and an inner portion of asbestos having an exposed interior surface, a conduit for supplying air to said exposed surface, a woven wire diaphragm of small mesh extending across said conduit substantially at the base of said exposed interior surface, a perforated metal support for the interior of the wick, and a tube which completely incloses and supports the outer surface of the wick.

7. A lamp for burning spirit and like volatile fuel, said lamp comprising a fuel-container, a tubular wick comprising an outer portion of non-fireproof material and an inner portion of asbestos having an exposed interior surface, a conduit for supplying air to said exposed surface, an open mesh diaphragm of woven material extending across said conduit substantially at the base of said exposed surface of the wick, a perforated metal support for the interior of the wick, a tube which completely incloses and supports the outer surface of the wick, and a valve for controlling the passage of air through said conduit.

MANNING PIKE.

Witnesses:

GEORGE HARRISON,
G. DONALD HARRISON.