

(No Model.)

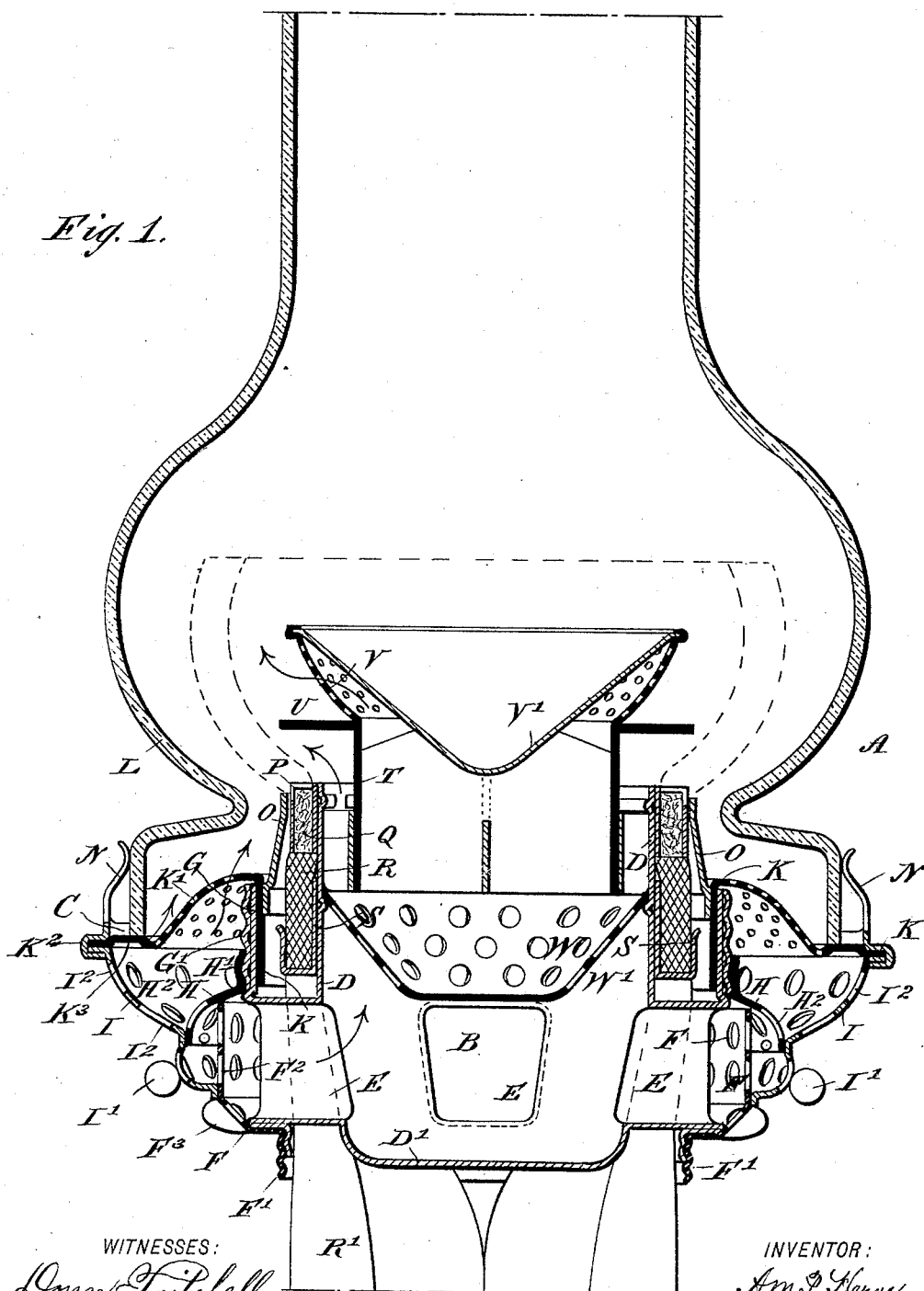
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A. M. P. HERVY.
KEROSENE BURNER.

No. 458,901.

Patented Sept. 1, 1891.

Fig. 1.



WITNESSES:

Donn Twitchell
C. Sedgwick

INVENTOR:

A. M. P. Hervey
Munn & Co.

BY

ATTORNEYS

(No Model.)

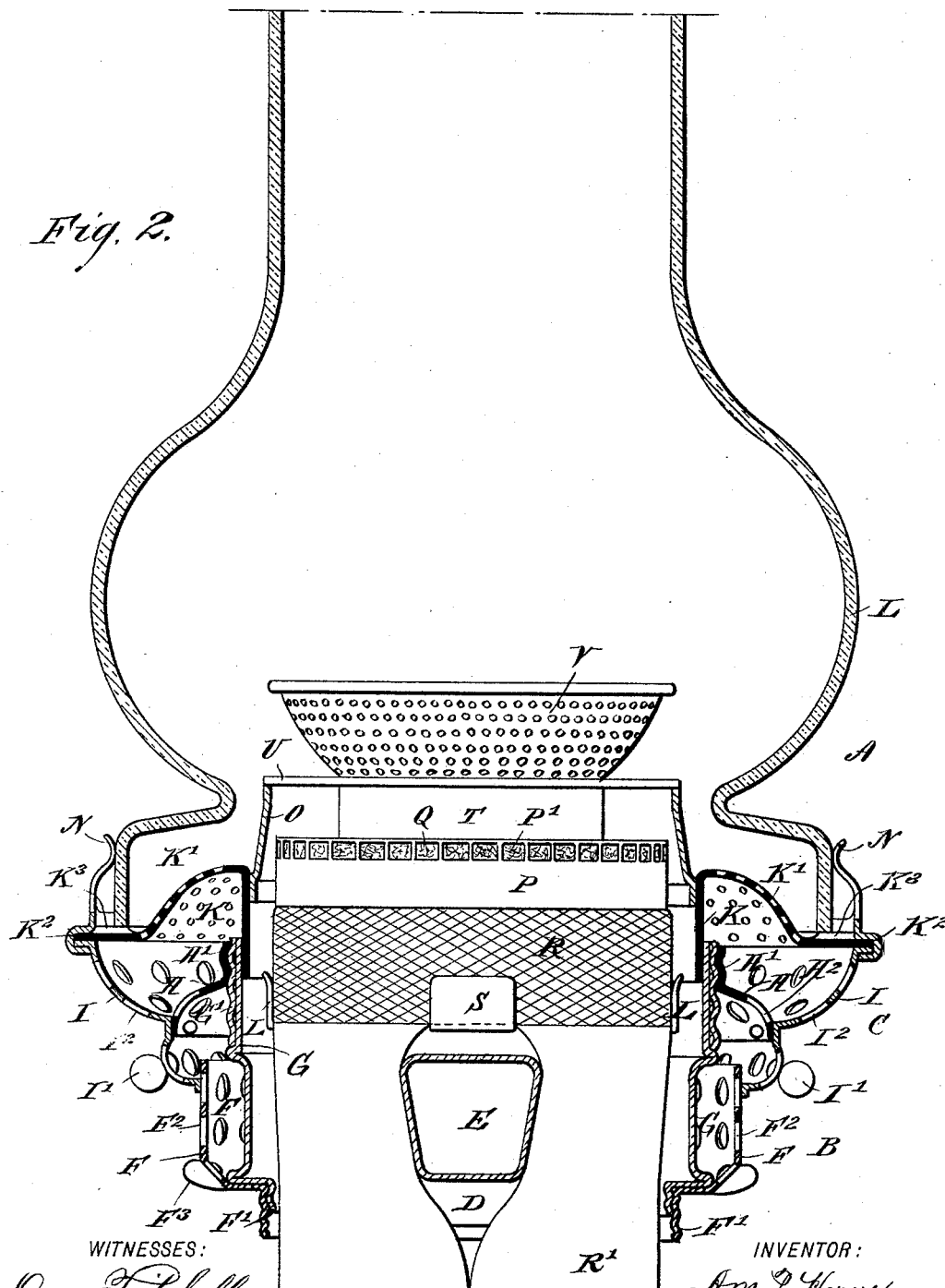
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Fig. 2.



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UNITED STATES PATENT OFFICE.

ALPHONSE MARIE PIERRE HERVY, OF AIXE-SUR-VIENNE, FRANCE, ASSIGNOR
OF ONE-HALF TO HENRI MORAND, OF ROXBURY, MASSACHUSETTS.

KEROSENE-BURNER.

SPECIFICATION forming part of Letters Patent No. 458,901, dated September 1, 1891.

Application filed February 18, 1890. Serial No. 340,854. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSE MARIE PIERRE HERVY, of Aix-sur-Vienne, Department of Haute-Vienne, France, have invented a new and Improved Kerosene-Burner, of which the following is a full, clear, and exact description.

The invention relates to lamps used for kerosene-oil or other liquid fuel.

The object of the invention is to provide a new and improved burner which is simple and durable in construction and insures complete combustion and permits of easily increasing or diminishing the size of the flame without producing the obnoxious smell and smoke so frequently encountered with the ordinary lamps now in use.

The invention consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a similar view of the same in a different position and with the wick and other central parts in elevation.

The improved burner A is provided with an inner part B, adapted to be secured to the fount of the lamp, and with an outer part C, held movably on the inner part B to regulate the flame of the burner. The inner part B is provided with a cylinder D, having a central chamber and a closed bottom D' and transverse channels E, adapted to be connected with the outside, so as to supply the said central chamber with air for the inside of the flame. The channels E open at their outer ends onto a ring F, having a horizontally-extending flange secured to the under side of the channels E and provided with a threaded ring F', extending downward from the said flange to screw onto the fount of the lamp. In the ring F are arranged perforations F² to permit air from the outside to flow to the channels E and from the latter to the central chamber formed in the part B by the cylinder D. The outer ends of the channels E are secured in an outer cylinder G, held at its lower

edge to the ring F and provided on its outside at its upper part with a threaded collar G', on which screws a nut H', formed on the curved ring H, extending downward and fastened to the exterior ring I of the outer movable part C. The ring I is preferably curved outward, as is plainly shown in the drawings, and its lower end rests on the outside of the ring F, being also provided on its lower part with knobs I' for conveniently turning the said ring I and the ring H to screw the nut H' up or down on the threaded part of the stationary cylinder G. The curved ring H is provided with openings H², and similar openings I² are formed in the ring I, so that the air from the outside can pass through the said openings I² and H² and through the openings F² in the ring F to the interior of the central chamber.

On the inside of the cylinder G is arranged to slide up and down a cylinder K, connected at its upper end with an outwardly and downwardly curved and perforated flange K', connecting at its outer end with a horizontally-extending flange K², held on the upper end of the ring I. On this horizontally-extending flange K² are arranged upwardly-extending projections K³, on which rests the lower end of the chimney L, held in place on the said projections by the usual springs N, formed on the upper end of the ring I. The projections K³, on which the chimney L rests, forms spaces to permit the entrance of air from the outside under the said chimney and to the interior of the latter over the outside of the perforated and curved flange K'.

From the cylinder K, held to slide in the cylinder G, extends upward the truncated cone O, the upper end of which extends onto the outside of an annular receptacle P, secured to the outside of the cylinder D at the upper end of the latter. In this receptacle P is placed an indestructible or incombustible material Q, connected at its lower edge with the upper end of a wick made in two parts, of which the upper part R is made of a woven fabric, while the lower part R' is formed of loose strands passing downward along the sides of the channels E into the oil or other liquid contained in the fount of the lamp. The part R of the wick is held with its upper

edge in contact with the indestructible material Q by means of the hooks S, secured on the outside of the cylinder D, and on which the said woven fabric R is hung, as is plainly shown in the drawings.

The receptacle P is open at its top and is provided on the outside, near the upper end, with openings P'. (Plainly shown in Fig. 2.) From this open top and the said openings P' issues the flame formed by the burning oil supplied to the incombustible material Q by means of the wick connected by the woven fabric R with the said incombustible material. When the outer movable part C is in the position shown in Fig. 1, the upper part of the conical cylinder O is below the openings P', so that the flame issuing from the said indestructible material Q attains its largest size; but when the part C is screwed up the size of the flame is diminished by the said cylinder O cutting off the openings P'.

In the inside of the cylinder B and near the upper end of the same is supported a smaller cylinder T, provided at its upper end with an outwardly-extending circular flange U, reaching above and over the receptacle P, so that when the movable part C is screwed upward the upper edge of the cylinder O is adapted to abut against the under side of the said flange U, as is plainly shown in Fig. 2, to entirely cut off the flame, thereby extinguishing it. From the upper end of the said cylinder T also extends upward and outward a slightly-curved flange V, having perforations and supporting at its upper end an inverted cone V', extending with its apex into the cylinder T, as is plainly shown in Fig. 1.

Below the cylinder T is arranged a dish W, having an annular inclined side containing perforations W', through which air from the cylinder D can pass to the space formed between the upper end of the cylinder D and the cylinder T, and from which air can also pass through the cylinder T against the cone V' to be deflected through the perforations in the flange V to the upper part of the inside of the flame. The air passing to the flame through the space between the cylinders D and T passes to the lower part of the inside of the flame.

The operation is as follows: When the several parts are in the position shown in Fig. 1, the outer part C is in its lowermost position, and when the fuel in the indestructible material is lighted the flame will issue through the side and top openings of the receptacle P and be deflected outward by the flange U of the inner cylinder T. The air necessary for combustion passes through the openings I² in the ring I and through the openings in the perforated flange K' to the outside of the upper end of the receptacle P, while another supply of air passes through the openings in the cylinder F to the channels E, to the interior chamber formed by the cylinder D, and through the openings in the perforated side of the dish W to the space between the cylin-

ders D and T, to finally pass to the inside of the flame. Part of this air entering the dish W passes through the cylinder T to be deflected by the cone V' to the upper part of the flame, as previously described. Thus it will be seen that all the air necessary for combustion is furnished both on the inside and the outside of the receptacle P and to the upper end of the flame. It will further be seen that the air passing to the inside of the flame is heated before it reaches the same. When the operator desires to lower the flame, he takes hold of the knobs I', so as to turn the movable part C, which then screws upward on the fixed part B, so that the truncated cone O moves over the openings P', whereby this part of the flame is cut off. When the operator still continues this movement, the flame is cut off still more until the flame is finally cut off entirely, and is extinguished when the upper edge of the said cone abuts against the under side of the flange U, so that the air passing up the space between the cylinders T and D has no further outlet.

It will be seen that in this device no wheels, cog-wheels, or other similar mechanism are employed to raise or lower the wick, and at the same time the latter is closed to all exterior openings, so as to avoid leakage of the fuel. The burner can be very easily kept clean, as the several parts can be conveniently removed for the purpose of cleaning, and the fount can be refilled at any time without removing the parts from the fount. It will further be seen that as the wick is securely held in place by the hooks S it can never fall into the fount, thus avoiding all danger of explosion by the ignition of the gases by a burning wick dropping into the fount, as has been frequently the case in the lamps now in use. It will further be seen that as the fuel burns through the material in the fixed receptacle P the flame will be constant, requiring no trimming of the wick whatever. As the air passing to the inside of the flame is partly heated before it reaches the same, it furnishes a brightness and a white flame which cannot be well surpassed. As a frequent renewal of the air in the central or inner part of the lamp takes place, a large quantity of the oil can be saved, as the said air assists in complete combustion. The flame can be increased or diminished without giving the slightest odor of the petroleum. In case it is necessary, the indestructible material held in the receptacle P can at any time be supplied with oil or other suitable fuel.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a burner, the combination, with a fixed cylinder closed at its bottom and provided with lateral channels for the admission of fresh air to the interior of the cylinder, and also provided with an exterior threaded cylinder fastened to the said channels, of a threaded ring adapted to screw on the said ex-

terior cylinder and supporting the chimney and a truncated cone, and a wick secured to the outside of the said fixed cylinder and comprising a receptacle open at the top and fitted to the upper end of the said fixed cylinder, the said truncated cone being adapted to slide up and down the outside of the said receptacle, an incombustible material held in the said receptacle, and woven fabric connected with the lower end of the said incombustible material and provided with strands adapted to pass into the oil, substantially as described.

2. In a burner, the combination, with a fixed cylinder closed at its bottom and provided with lateral channels for the admission of fresh air to the interior of the cylinder, and also provided with an exterior threaded cylinder fastened to the said channels, of a threaded ring adapted to screw on the said exterior cylinder and supporting the chimney and a truncated cone, and a wick secured to the outside of the said fixed cylinder and comprising a receptacle open at the top and fitted to the upper end of the said fixed cylinder, the said truncated cone being adapted to slide up and down the outside of the said receptacle, an incombustible material held in the said receptacle, and woven fabric connected with the lower end of the said incombustible material and provided with strands adapted to pass into the oil, and a plate supported on the said inner cylinder and extending over the

said wick and adapted to be engaged by the upper edge of the said truncated cone, substantially as described.

3. In a burner, the combination, with an inner fixed cylinder closed at its bottom and provided with lateral channels for the admission of air to the said cylinder, of a wick substantially as described and securely held on the outside of the said fixed cylinder, an exterior part held vertically movable on an exterior cylinder or flange on the said interior cylinder, a truncated cone secured on the said movable part and adapted to engage the outside of the upper part of the said wick, a concentric smaller cylinder held in the said inner cylinder and provided at its upper end with an exterior flange extending over and above the said wick, the said flange being adapted to be engaged by the said truncated cone, an outwardly and upwardly curved perforated flange extending from the upper end of the said concentric cylinder, an inverted cone secured with its base to the upper end of the said perforated flange, and a perforated disk secured in the inside of the said exterior cylinder below the said concentric cylinder, substantially as shown and described.

ALPHONSE MARIE PIERRE HERVY.

Witnesses:

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ALBERT LAGORCE.