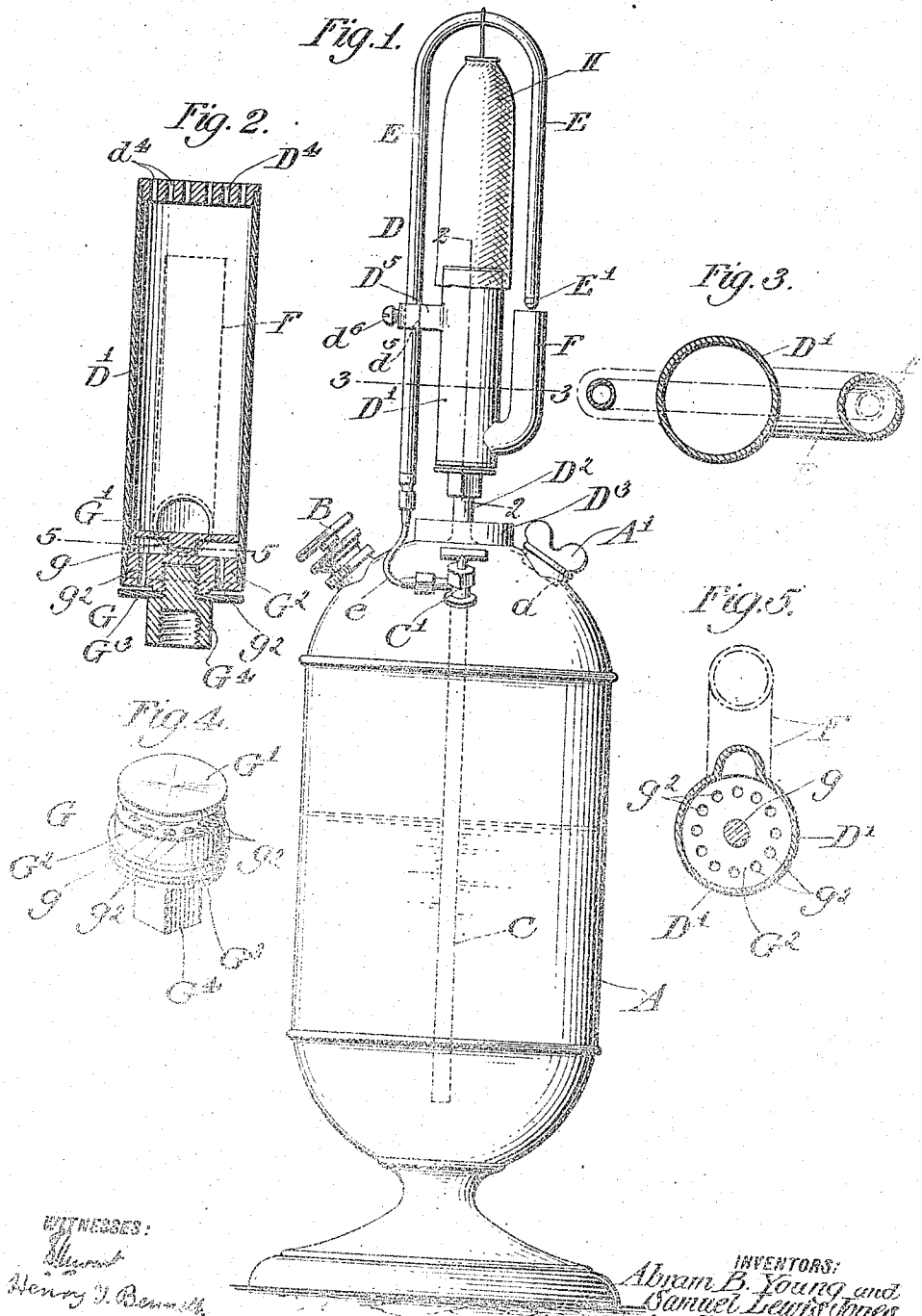


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HYDROCARBON INCANDESCENT LAMP.
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930,714.

Patented Aug. 10, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ABRAM B. YOUNG AND SAMUEL LEWIS JONES, OF PHILADELPHIA, PENNSYLVANIA; SAID YOUNG ASSIGNOR TO SAID JONES.

HYDROCARBON INCANDESCENT LAMP.

No. 930,714.

Specification of Letters Patent.

Patented Aug. 10, 1909.

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To all whom it may concern:

Be it known that we, ABRAM B. YOUNG and SAMUEL LEWIS JONES, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrocarbon Incandescent Lamps, of which the following is a specification.

Our invention relates to hydro-carbon incandescent lamps having for its object to provide for an improved and efficient heating of the mixing tube to prevent condensation therein of the fluid ejected by the vaporizer and also to provide for a pre-heating of the vaporizing tube.

The nature of our improvements will be understood as described in connection with the accompanying drawings, in which:

Figure 1 illustrates a front elevation of a hydro-carbon lamp constructed in accordance with our invention and mounted upon an oil reservoir. Fig. 2 shows an enlarged vertical section of the burner body detached from the lamp, the section being taken on a line 2—2 of Fig. 1. Fig. 3 denotes an enlarged horizontal section of the burner body and mixing tube, the section being taken on the line indicated at 3—3 in Fig. 1. Fig. 4 illustrates a detached perspective view of the lower end of the burner body and Fig. 5 shows a horizontal section of the burner-body taken on the line 5—5 of Fig. 2.

Referring now in detail to the drawings, A is the oil reservoir adapted to hold a quantity of oil preferably kerosene, which may be supplied through an opening *a* at the top of the reservoir provided with a tight fitting cap *A*¹. The reservoir A, is also provided with a pump B, of the conventional type by which the oil is subjected to pressure to force it from the reservoir through a tube C, controlled by a valve C¹, to a vaporizer E.

The lamp D, which as shown in the drawings is located directly above the reservoir, may if desired be located some distance therefrom, and connected in the well known manner by a line of small tubing. In the present instance, however, our invention is illustrated in connection with a portable lamp in which the burner-body D¹ is connected to the reservoir by means of a stem D², around which is a cap D³, to contain alcohol employed in the initial heating of the lamp.

The burner body D¹, is provided with a cap D⁴, which is provided with a number of small openings *d*¹, to prevent backfiring of the flame. The burner body D¹ is also provided with a projection D⁵, having an opening *d*⁵, and a set-screw *d*⁶, the former being designed to receive one end of the U-shaped vaporizing tube E, and the latter serving to hold the vaporizer firmly in place.

The vaporizer E, consists of a steel tube one end of which is connected by a section of small tubing *e*, to the tube C of the reservoir, while the other end is provided with a discharge nozzle E¹ adapted to discharge a fine stream of vapor into a mixing tube F. The mixing tube F, is open at the top to permit an induction of air by the jet of vapor issuing from the nozzle of vaporizing tube and at the bottom is curved toward and connected to the burner body D¹.

At the bottom of the burner body D¹ is a deflector G, employed in the formation of an auxiliary burner around the bottom of the lamp comprising a plate G¹, arranged within the burner body in such a manner as to cross the path of the mixing tube F and in so doing divert a portion of the mixed air and vapor from the mixing tube.

Below the plate G¹ and connected to it by a short stem *g* is another plate G², which constitutes the bottom of the burner body and which is furnished with a series of small holes *g*² *g*² etc. to permit the mixed air and vapor deflected by the plate G¹ to escape downward where it is arrested and its path turned by another plate G³, which will cause the mixed air and vapor to spread out around the bottom of the burner body in such a manner as to cause when ignited a flame of sufficient size to heat both the mixing tube and a portion of the vaporizer and thereby facilitate a thorough vaporization of the hydro-carbon fluid.

The plate G³ is held in position by means of a socket G⁴ which as shown in Fig. 2 is externally threaded to receive the plate G² and internally threaded to receive the stem D². The cup D³ which surrounds the stem D² is preferably filled with asbestos or mineral wool which will act as a sponge to absorb the alcohol employed in the initial heating and later as a shield to protect the reservoir from the heat of the auxiliary burner.

The top of the burner body as shown in Fig. 1 of the drawings is provided with a

filamentary web or mantle H, which may as shown be supported from the top of the vaporizing tube E, or in any other well known manner.

5 Having described our invention what we claim and desire to secure by Letters Patent is:

1. A hydro-carbon lamp comprising in combination with the burner body, a mixing
10 tube communicating with the burner body through an opening in its side, a plate located within the burner body and crossing the opening in the mixing tube to deflect a portion of the mixed air and vapor entering
15 from the mixing tube, a plate arranged at the bottom of the burner-body provided with a circular series of openings, and a plate located below the same to spread the mixed air and vapor around the other surface of the
20 burner body.

2. A hydro-carbon lamp comprising in combination with the burner body, a mixing tube opening into said burner body, a deflector, arranged within the burner body having a plate G¹ adapted to cross the open- 25 ing of the mixing tube and deflect a portion of the mixed air and vapor therefrom, a plate G² connected to the first mentioned plate and provided with a circular line of holes, and a plate G³, arranged below the second men- 30 tioned plate G² to spread the mixed air and vapor around the outer surface of the burner body for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ABRAM B. YOUNG.

SAMUEL LEWIS JONES.

Witnesses:

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ARNOLD KATZ.