

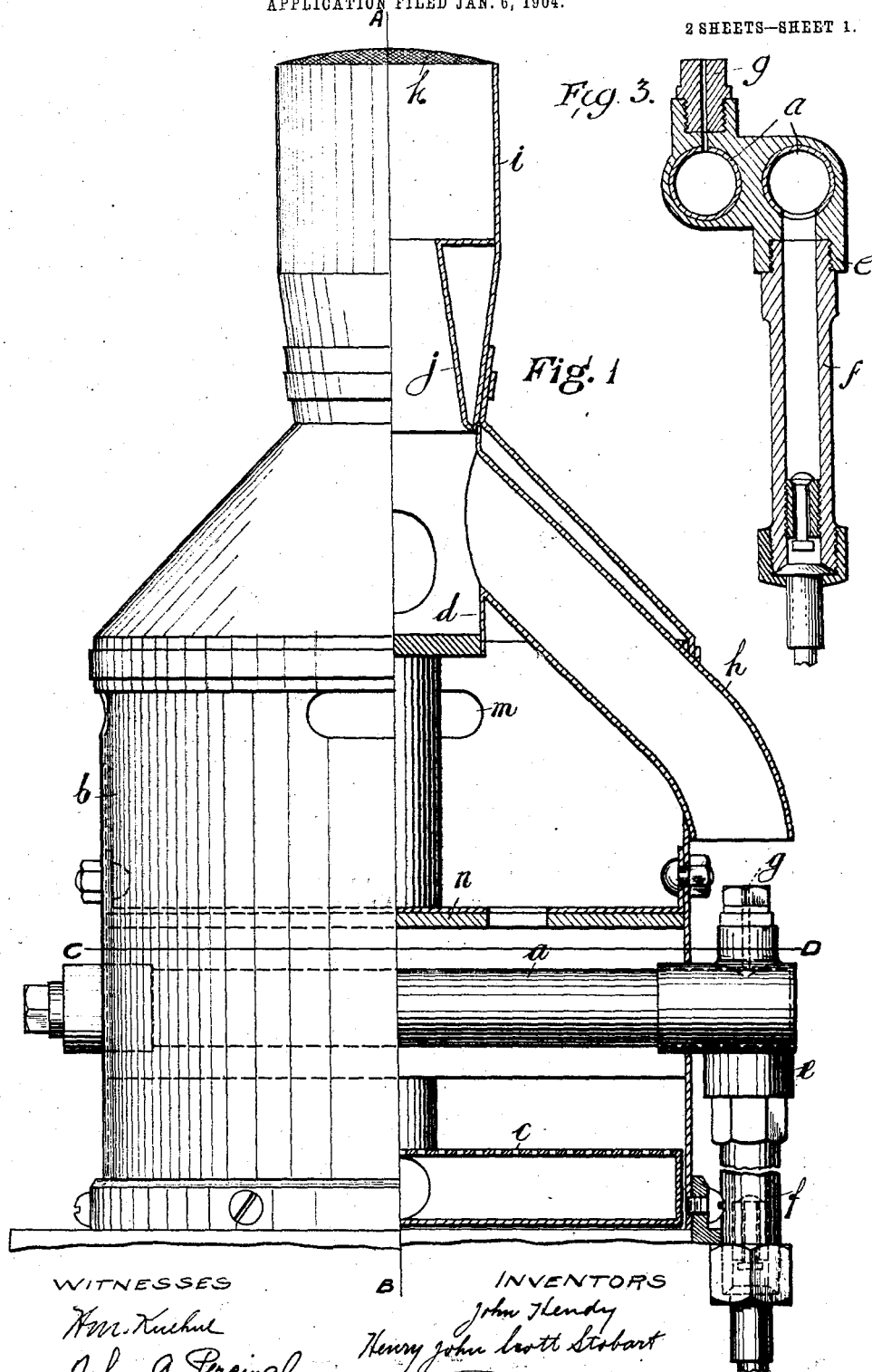
No. 782,962.

PATENTED FEB. 21, 1905.

J. HENDY & H. J. S. STOBART.
INCANDESCENT VAPOR BURNER.

APPLICATION FILED JAN. 6, 1904.

2 SHEETS—SHEET 1.



WITNESSES

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INVENTORS

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Henry John Smith Stobart

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ATTORNEYS

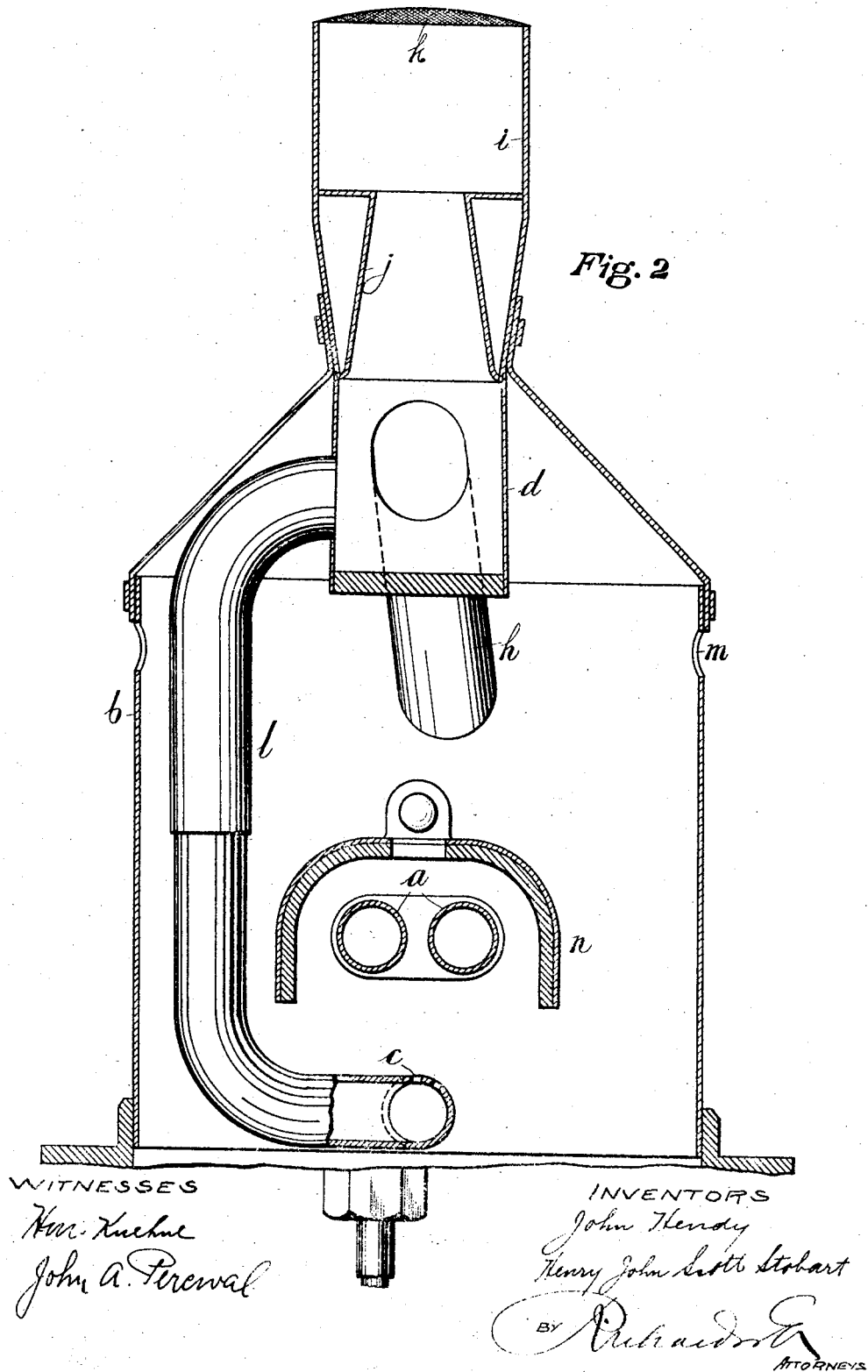
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

JOHN HENDY AND HENRY JOHN SCOTT STOBART, OF LIGHTHOUSE WORKS,
NEAR BIRMINGHAM, ENGLAND.

INCANDESCENT VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 782,962, dated February 21, 1905.

Application filed January 6, 1904. Serial No. 187,896.

To all whom it may concern:

Be it known that we, JOHN HENDY and HENRY JOHN SCOTT STOBART, subjects of the King of Great Britain and Ireland, and residents of Lighthouse Works, near the city of Birmingham, England, have invented certain new and useful Improvements Relating to Incandescent Vapor-Burners, (for which we have filed an application in Great Britain, No. 3,421, bearing date February 13, 1903,) of which the following is a specification.

This invention has for its object the construction of incandescent vapor-burners for various purposes, but particularly incandescent petroleum-vapor burners adapted for lighthouse service.

Referring to the four accompanying sheets of explanatory drawings, Figure 1 is an elevation with one-half in section of an incandescent petroleum-vapor burner constructed in accordance with our invention. Fig. 2 is a sectional elevation on the line A B, Fig. 1. Fig. 3 is a sectional elevation of the vaporizer, showing the oil-inlet and vapor-outlet to the same.

The same reference-letters in the different views indicate the same parts.

In the construction of an incandescent petroleum-vapor lamp or burner in accordance with this invention a vaporizer, consisting, preferably, of a pair of tubes, as *a*, arranged in series or so that the petroleum can flow through each in turn is detachably fixed within the chamber formed by the cylindrical or other base part, as *b*, of the burner. The said vaporizer is heated by a subsidiary burner *c*, supplied with gaseous mixture from the mixing and superheating chamber *d*, to be hereinafter referred to.

Before its admission to the vaporizer-inlet connection *e* the oil is caused to pass through a short length of tube *f*, considerably larger in diameter than the supply-tube from the pressure-tank or other source. By employing such an enlarged tube we obviate the difficulties usually experienced from deposits in

the vaporizer. The said tube *f* is fitted with a valve, as shown, to prevent pulsation of the light.

The vapor passes out from the vaporizer by way of a small orifice *g*, above which, but separated by an air-space, is the mouth or inlet-aperture of the supply connection *h* of the combined mixing and vapor-heating chamber *d*, formed in the upper part of the cylindrical base *b*. The jet of oil-vapor projected into the said aperture induces and carries along with it into the chamber *d* the required quantity of atmospheric air.

The main or illuminating burner-tube *i* has its lower end, which projects within the chamber *d*, made to a conical form, and it is also provided with a nozzle-like internal fitting *j*, forming the conduit or connection between the burner and the said chamber. The upper end of the burner is fitted with gauze *k*. The mantle is arranged and supported above it in any convenient manner.

The subsidiary or vaporizer heating burner *c* is supplied with gaseous or vapor mixture through a by-passage or tube or conduit *l* from the chamber *d*. The hot gaseous products of combustion from the said vaporizing heating-burner have no access to the chamber *d*, being discharged to atmosphere through lateral apertures, as *m*, in the vaporizing-chamber *b*; but before passing out to atmosphere the said hot gases impinge upon the chamber *d* and its connections *h* and *l*, and thus superheat the gaseous mixture before it passes to the respective burners.

The superheating and mixing chamber is sometimes formed by the upper part of the cylindrical base or casing *b* itself, a plate being fitted within the casing above the vaporizer to completely separate the upper and lower parts and prevent access of the waste gases from the vaporizer-burner *c* to the upper part or superheating-chamber.

In starting the apparatus the vaporizer *a* is heated to the required temperature by a removable spirit-lamp or otherwise.

We preferably surround the vaporizer by a heat retaining guard or shield, as *n*, arranged in any ordinary manner.

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

10 In incandescent vapor-burners, a casing having at its upper part a mixing-chamber surmounted by a main burner, said mixing-chamber being closed to the interior of the casing and in communication with the exterior of the casing, a vaporizer horizontally disposed in the lower part of the said casing, said vaporizer extending through the wall of the casing and carrying at its outer extremity a delivery-nozzle, an oil-supply tube connected
15 with the vaporizer and having an enlargement

adjacent to the said vaporizer, a valve situated within the lower portion of the said enlargement, a vapor-tube having one end in line with the vaporizer delivery-nozzle and the other connected to the mixing-chamber, a heat-retaining shield surmounting the vaporizer, an auxiliary burner below the vaporizer, and a pipe or tube connecting the mixing-chamber with the auxiliary burner, substantially as described. 25

In witness whereof we have hereunto set our hands in presence of two witnesses.

JOHN HENDY.

HENRY JOHN SCOTT STOBART.

Witnesses:

EDWARD MARKS,

JOHN MORGAN.