

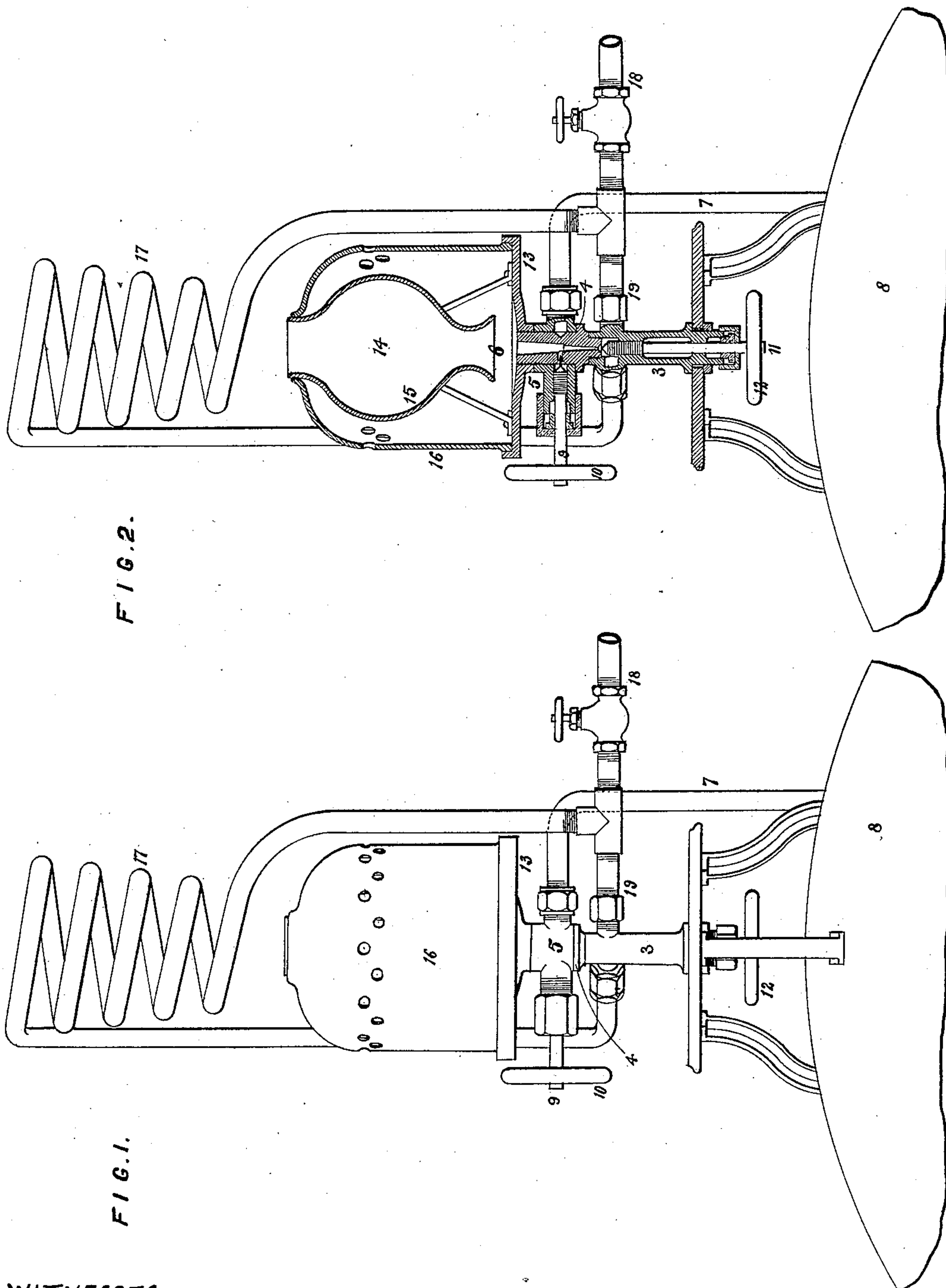
(No Model.)

A. NEILSON & J. TAYLOR.

OIL SPRAY OR VAPOR LAMP.

No. 397,745.

Patented Feb. 12, 1889.



WITNESSES

John Revell.
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UNITED STATES PATENT OFFICE.

ALEXANDER NEILSON, OF INKERMANN, COUNTY OF RENFREW, AND JAMES TAYLOR, OF LINLITHGOW, COUNTY OF LINLITHGOW, SCOTLAND.

OIL SPRAY OR VAPOR LAMP.

SPECIFICATION forming part of Letters Patent No. 397,745, dated February 12, 1889.

Application filed July 24, 1888. Serial No. 280,883. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER NEILSON and JAMES TAYLOR, subjects of the Queen of Great Britain and Ireland, and respectively residents of Inkermann, in the county of Renfrew, and Linlithgow, in the county of Linlithgow, both places being in Scotland, have invented certain Improvements in Oil Spray or Vapor Lamps, of which the following is a specification.

Our said invention has for its object to improve the construction and action of oil spray or vapor lamps of the kind described in the specification of our United States patent, dated May 1, 1888, No. 382,106, and which are designed for being worked with steam or compressed air, so as to produce oil spray or vapor which is burned for illuminating or heating purposes.

Figure 1 of the accompanying drawings is an elevation of our improved oil spray or vapor lamp, and Fig. 2 is a corresponding vertical section.

In carrying out our present invention we employ a vertical burner-body consisting of three parts, a bottom part, 3, into the top of which is screwed a main jet-tube, 4, having screwed upon it an upper outer body-piece, 5. The jet-tube 4 is made with a central bore having a small hole at its bottom end for the admission of steam or compressed air, the bore widening toward the top orifice, 6. The oil-supply pipe 7, which extends up from a tank or receiver, 8, is connected to the upper body-piece, 5, at one side, the oil passing to the interior of the jet-tube 4 through a small hole made through from a groove formed round the jet-tube, and which forms a communication between the oil-supply pipe 7 and the hole. The admission of the oil is regulated by a conical valve formed on the inner end of a spindle, 9, which, entering through a stuffing-box, is screwed into a part formed on the body-piece 5. The valve-spindle 9 is turned by means of a hand-wheel, 10, fixed on it. A similar screw-spindle, 11, with a hand-wheel, 12, and which enters through a stuffing-box into the lower body-piece, 3, has a conical valve-point on its inner end for regulating the passage of the steam or compressed air

into the bottom end of the jet-tube 4. A horizontal or slightly-dished flange or disk, 13, is screwed upon the upper end of the jet-tube 4, and above this disk there is a combustion-chamber, 14, formed or encompassed by two metal shells, 15 16, the inner one, 15, being of an approximately-globular form and the outer one, 16, dome-shaped. The inner shell, 15, is supported by legs, with its bottom open end raised a little above the disk 13, and with its upper open end extending up into an opening in the outer shell, 16. This outer shell, 16, rests by the edge of its lower cylindrical part upon the disk 13, and within a retaining-flange formed on that disk, and holes are formed round the upper part of the shell 16 to admit air, which air being by the action of the burning jet of spray or vapor drawn between the outer and inner shells, 16 15, becomes heated on its way to the flame.

The steam or compressed air for forcing the oil into spray or vapor is superheated by passing it through a coil, 17, of tubing, which is placed so as to encompass the flame as it issues from the top of the shells 16 15. One end of the tubing 17 is connected to a supply-pipe, 18, (which for convenience is connected by a blind coupling, 19, to the lower body-piece, 3,) and the other end is connected to the lower body-piece, 3. The steam or compressed air superheated by passing through the coil 17, entering the bottom of the jet-tube 4 with great velocity, which increases with the gradual widening of the tube, acts on the oil which enters through the lateral hole in the jet-tube and very forcibly projects it in the form of spray or vapor outward through the combustion-chamber 14, so that it issues thence in the form of a large and brilliantly-illuminant flame.

What we claim is—

An oil spray or vapor lamp in which are combined a jet-tube with a bore gradually enlarging from its inner end to its outer orifice, a supply-inlet and valve for steam or compressed air at the bottom of the jet-tube bore, a supply-inlet and valve for oil at the side and between the inner and outer ends of the jet-tube bore, two shells forming a combustion-chamber in the inner of the two shells,

with holes to admit air between the shells, and
access for the air so admitted at the inner end
of the inner shell into the inner chamber, and
a coil of tubing for superheating the steam
5 or compressed air, such coil being placed in a
position to encompass the flame issuing from
the combustion-chamber, the said parts being
arranged and combined together, substan-
tially as and for the purposes herein set forth.

In testimony whereof we have signed our 10
names to this specification in the presence of
two subscribing witnesses.

ALEXR. NEILSON.
JAMES TAYLOR.

Witnesses:

EDMUND HUNT,
DAVID FERGUSON.