

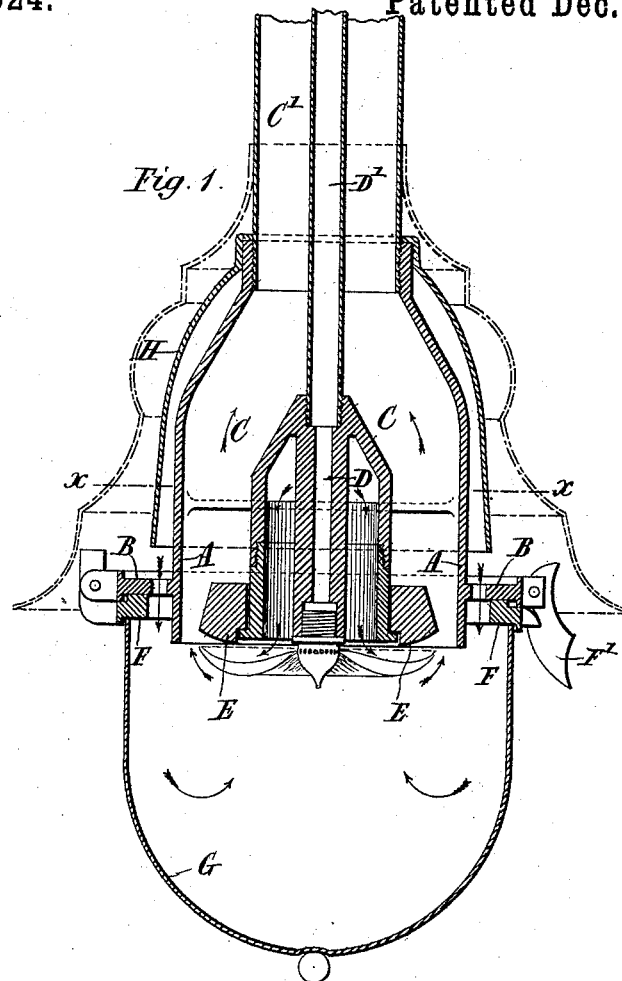
(No Model.)

3 Sheets—Sheet 1.

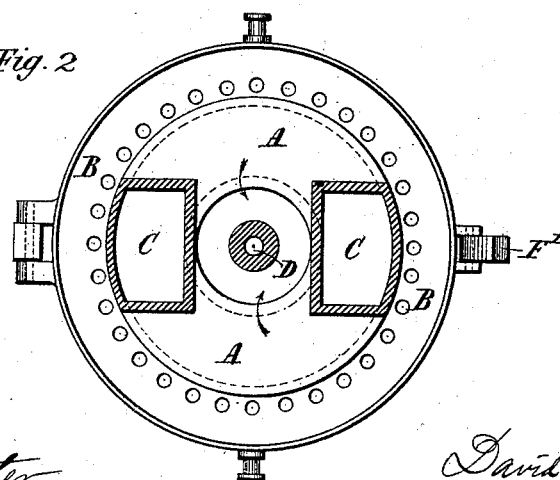
D. W. SUGG.  
CONSTRUCTION OF GAS LAMPS.

No. 418,324.

Patented Dec. 31, 1889.



*Fig. 2*



*Witnesses.*

Emil Hester

Henry J. McBride

*Inventor:*

David W. Ligg  
by his attorneys  
Brewster & Hall

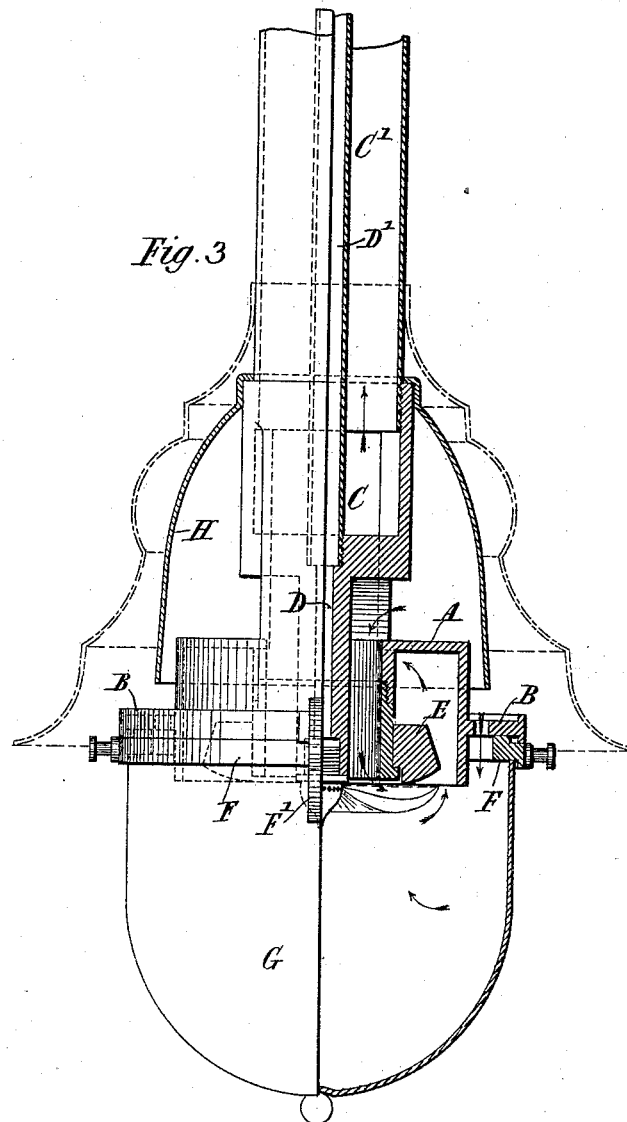
(No Model.)

3 Sheets—Sheet 2.

D. W. SUGG.  
CONSTRUCTION OF GAS LAMPS.

No. 418,324.

Patented Dec. 31, 1889.



Witnesses.

Emf Harter  
Henry J. McBride

Inventor.

David W. Sugg  
by his attorneys  
Brown & Ball

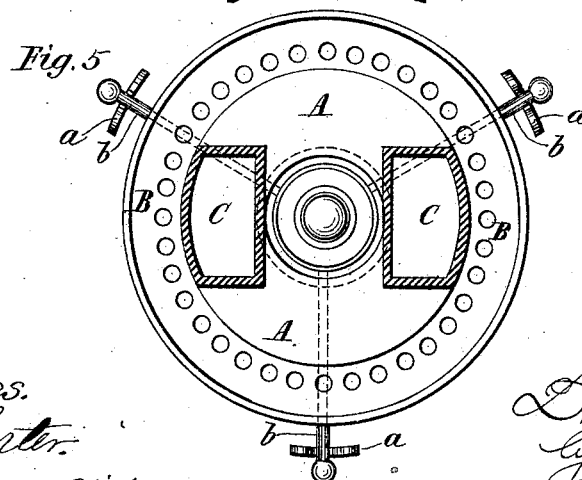
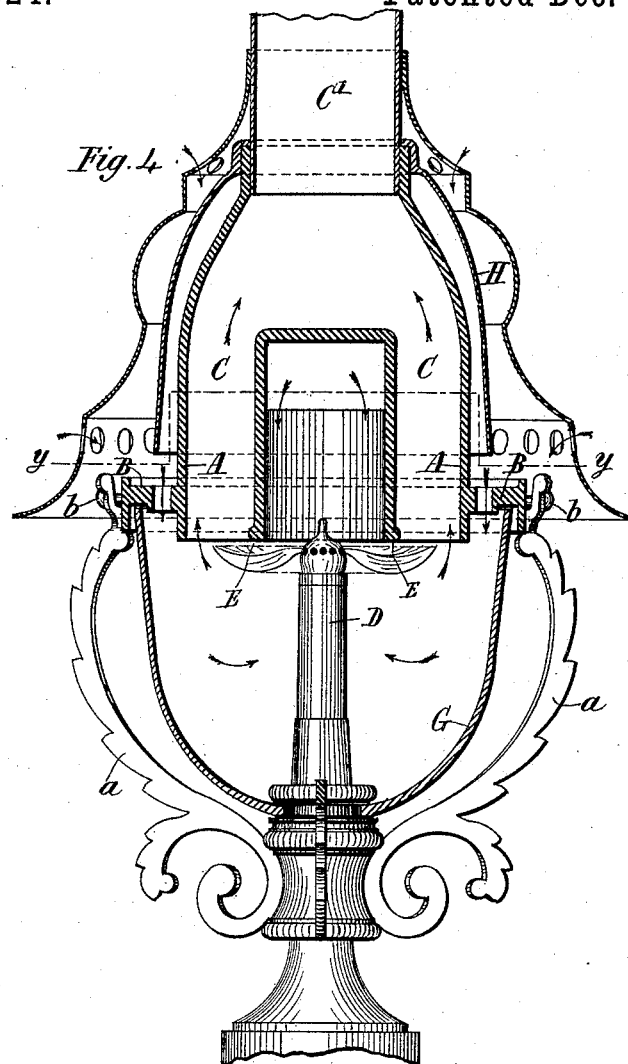
(No Model.)

3 Sheets—Sheet 3.

D. W. SUGG.  
CONSTRUCTION OF GAS LAMPS.

No. 418,324.

Patented Dec. 31, 1889.



Witnesses.  
Emil Heiter.  
Henry J. McBride

Inventor.  
David W. Sugg  
by his attorneys  
Brown & Hall

# UNITED STATES PATENT OFFICE.

DAVID W. SUGG, OF WESTMINSTER, ENGLAND.

## CONSTRUCTION OF GAS-LAMPS.

SPECIFICATION forming part of Letters Patent No. 418,324, dated December 31, 1889.

Application filed July 13, 1887. Serial No. 244,144. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID WILLIAM SUGG, of Vincent Works, Vincent Street, Westminster, England, have invented a new and useful Improvement in the Construction of Gas-Lamps, of which the following is a specification.

The object of this invention is to simplify the construction of that class of gas-lamps in which the body of the lamp is above the flame and the flame issues in a more or less horizontal direction, and as a result of such simplified construction to admit of an uninterrupted supply of air to the upper side of the flame.

In the accompanying drawings, Figure 1 is a sectional elevation of the simplified construction of lamp for burning six cubic feet of gas per hour and drawn to a scale of three-fourths the original size, the gas-supply being from above; and Fig. 2 is a cross-section taken on the line *xx* of Fig. 1. Fig. 3 is an elevation, partly in section, taken at right angles to Fig. 1. Fig. 4 represents a central vertical section of the same construction of lamp and adapted to burn three cubic feet of gas per hour, the gas-supply being from below; and Fig. 5 is a cross-section on the line *yy* of Fig. 4, with the outer bell removed.

The same letters of reference apply to corresponding parts in all the figures.

The body of the lamp, which may be in one piece, consists of an inverted annular trough A, having on its lower part or below the middle of its depth an external rib or flange B, and having extending upward from its bottom and open to the same two hollow arms or branches C, which converge and center in the socket for the reception of a common chimney C'.

When the gas-supply is from above, the burner socket or tube D is cast with the body, as shown at Fig. 1, and the gas-supply pipe D', which also carries the lamp, is screwed into this socket D. The inner wall of the trough is formed with a flange, or it may be three pegs or projections on its inner edge to support a deflector E, which consists, preferably, of a ring of fire-clay and asbestos fiber. In order to get this ring into position when the flange is used, I form the inner wall in two parts, the lower portion screwing into or being otherwise secured to the upper portion, as

clearly shown in the drawings. If the pegs are used, the deflector will be made with three vertical grooves, so that it may be pushed up into its place and then turned around, after the manner of a bayonet-joint.

For small lamps—such as are called “three-foot lamps” and under, (see Figs. 4 and 5)—the deflector, which will be of comparatively small dimensions, may be cast with the inner wall of the trough and will be little more than a narrow flange, as shown.

F is a ring, which is hinged to the flange B and carries studs, to which a wire for supporting the glass globe G is attached. A catch F' is also provided to secure the ring.

When the gas is supplied from below, the gas-pipe passes through the bottom of the globe, which rests on a collar on the pipe. The ring F is dispensed with in this case and the body of the lamp is supported just clear of the globe by three or more forked arms *a a*, secured to the gas-pipe, in the forks of which rest studs *b b*, fitted to the body. The body of the lamp is raised off the glass in order to prevent the possibility of fracture of the latter. The supporting-arms *a a* are so arranged as to insure the body of the lamp being placed so that the burner will be exactly in the center. Otherwise tongues of flame would be formed on the side nearest the burner-tip and would smoke.

Outside the body of the lamp in all cases I secure a hood H, which is arranged to leave an annular space between it and the trough A, (see Figs. 1 and 3,) and is intended to equalize the currents of air going to supply the upper side of the flame, and it also insures that this current of air shall take the proper downward direction when the gas is first lighted. This air-supply passes freely direct to the central space formed by the trough A and reaches the flame in the form of an unbroken annular current and in a number of separate streams, as when it has to pass through a number of radial passages arranged in the chimney or past a series of obstructions. This unbroken annular current gives the requisite amount of oxygen to produce the perfect combustion of the carbon of the gas without such an excessive draft as to render the flame unsteady. A second current of air to supply the under side of the flame is admitted to the lamp

through holes in the flange B in the now well-known manner.

The depth of the trough will be such that the draft up the chimney shall not cause horns of flames to form at the parts immediately below the openings to the hollow arms C, but will leave the flame even all round. The proportionate dimensions of the lamps are shown in the drawings.

By the above-described construction of lamp clear ways or passages are provided upward to the chimney for the products of combustion, and of a comparatively large area. The inlet-passage for the air is also open and without obstruction. Consequently the friction caused by the air passing obstructions is practically minimized, and a high speed of draft, to overcome the friction, is rendered unnecessary, thus enabling me to reduce the length of the chimney from fourteen to eighteen inches to six or eight inches. The clear passages also allow for a brush being passed freely up the chimney to remove any deposits that may be formed therein, due to the action of the water of condensation produced when the lamp is first lighted, or to deposits

of carbon should the governor or regulator, from any cause, get out of order and allow an excess of gas to flow in over and above the specified quantity required by the regulated supply of air, in which case the flame would smoke.

Having now particularly described my invention, I wish it to be understood that I claim—

In a lamp-body for an inverted lamp, the combination of an inverted annular trough, a single externally-perforated flange extending horizontally from the lower part of said trough, and two hollow arms extending upward from the bottom of said trough and converging to form a central socket for a chimney, substantially as shown and described.

In witness whereof I, the said DAVID WILLIAM SUGG, have hereunto set my hand and seal this 30th day of June, in the year of our Lord 1887.

DAVID W. SUGG. [L. s.]

Witnesses:

H. K. WHITE,

S. H. S. MATHIESON,

6 Bream's Buildings, London, E. C.