

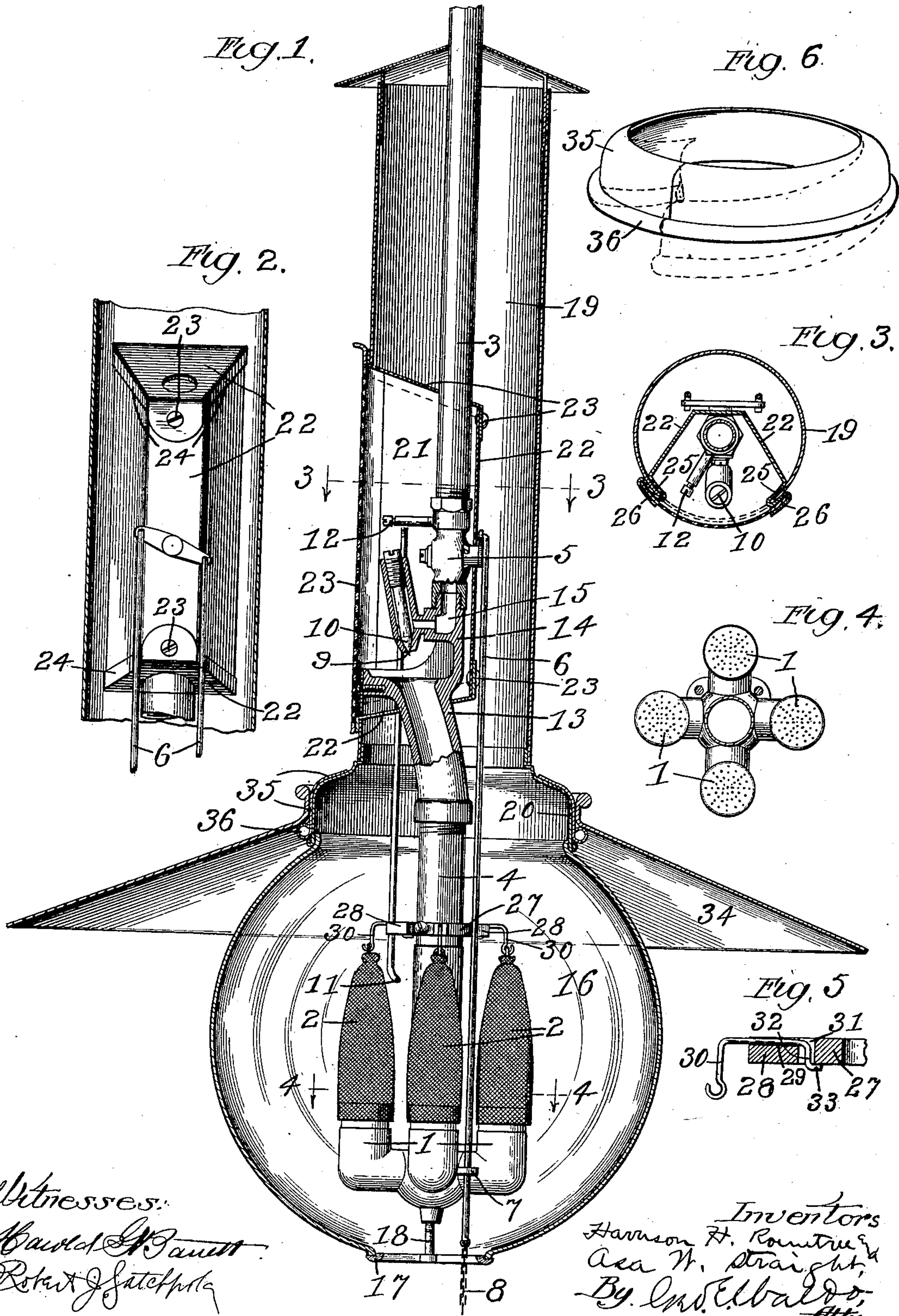
No. 742,803.

PATENTED OCT. 27, 1903.

H. H. ROUNTREE & A. W. STRAIGHT.
GAS LAMP.

APPLICATION FILED SEPT. 12, 1902.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 742,803, dated October 27, 1903.

Application filed September 12, 1902. Serial No. 123,049. (No model.)

To all whom it may concern:

Be it known that we, HARRISON H. ROUNTREE and ASA W. STRAIGHT, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented an Improved Gas-Lamp, of which the following is a specification.

This invention relates to gas-lamps.

Among the objects of the invention are to provide a gas-lamp which will embody efficiency of operation with simplicity and strength in construction, which may be quickly and conveniently assembled and dismantled, to render all parts requiring to be cleaned or adjusted readily accessible, and to provide a lamp in which the space beneath the lamp will be practically unobstructed by metallic or other opaque parts, thus avoiding shadows beneath the lamp.

A lamp of our invention consists of the various features, combinations of features, and details of construction hereinafter described and claimed.

In the accompanying drawings a lamp of our invention is fully illustrated.

Figure 1 is a vertical sectional view of a lamp of our invention. Fig. 2 is a partial sectional view of the chimney, showing the shield or screen surrounding the open end of the induction-tube and other parts of the lamp in rear elevation. Fig. 3 is a plan section on the line 3 3 of Fig. 1. Fig. 4 is a plan section on the line 4 4 of Fig. 1. Fig. 5 is an enlarged detail view of the mantle-supports, and Fig. 6 is a detail view of the shade-supporting ring.

Referring now to the drawings, 1 designates the burners of the lamp, which are of the Bunsen type and are provided with mantles 2. As shown, the lamp is of the type known as a "cluster-lamp," there being four burners. The burners 1 may be of any desired or approved construction, and their number may be increased or decreased without in any way affecting our invention.

Gas is delivered to the burners 1 from a supply-pipe 3 through an induction-tube 4, to the lower end of which said burners are secured and with which they are in open communication.

The supply-pipe 3 is controlled by a valve or stop-cock 5, which is adapted to be oper-

ated by pull-rods 6, attached to the valve-lever and which extend downward below the lamp, preferably passing through guides 7, formed in the burners in proper position and preferably having hand-chains 8, attached to their lower ends. The use of guided pull-rods insures against breakage caused by swinging thereof, while the use of the chains 8 on said rods affords cool grips to the valve-operating rods, the lower ends of which if continuous would become heated to a high degree by conduction, so that a person's hand might be burned thereby in handling.

The gas is discharged from the supply-pipe 3 into the induction-tube 4 by means of a jet 9, which is controlled by a needle-valve 10 in a familiar manner, said needle-valve affording means for regulating the amount of gas delivered to the burners and also the force of the jet which determines the quantity of air drawn into the induction-tube 4. By properly adjusting said needle-valve it is thus rendered possible to obtain a mixture of gas and air at the burners to secure perfect combustion, thus preventing wasting of the gas or, on the other hand, cooling of the mantles from an excess of cold air.

The lamp also comprises a pilot-light 11, which communicates with the supply-pipe 3 above the valve 5. Said pilot-light is adapted to be regulated by a needle-valve 12.

The induction-tube is formed in part in a fixture, preferably a casting 13, which is provided with an upward extension 14, threaded to the lower end of the supply-pipe 3, and a passage or compartment 15 which communicates with said supply-pipe and also with the interior of the casing of the needle-valve 10.

The burners 1 and mantles 2 are inclosed in a glass or porcelain globe 16, open at the bottom and top and supported by means of a skeleton ring 17, fitted to its open lower end, said ring being provided with a stem 18, threaded into the burner casting or fixture.

Above the burners 1 the induction-tube 4 and the supply-pipe 3 are surrounded by a chimney or stack 19, preferably made of suitable sheet metal and which is preferably provided with an enlargement or hood 20, the lower end of which fits over a flange on the upper end of the globe 16. As shown, said chimney is supported by the fixture 13, being

secured thereto by screws, which pass through said chimney and are threaded into said fixture.

The upper open end of the induction-tube 4, the jet 9, and preferably, also, the valve or stop-cock 5 and the pilot-light-regulating valve 12 are contained in a recess 21, which is separated from the interior of the stack or chimney 19 by substantially tight walls or partitions 22 and having its outer side open. In this manner pure air will be delivered to the burners with the gas and not dead or burned air, as would be the case were the supply drawn from inside of said chimney or stack. If desired, the open side of the recess 21 may be closed by a perforated slide 23.

Suitable holes or openings are formed in the walls of the recess 21 for the supply-pipe 3, the induction-tube 4, and the stem of the stop-cock 5.

With the described construction it is obvious that all parts of the lamp requiring adjustment will always be accessible.

The walls 22 of the recess 21 are preferably made of sheet metal, which may be easily bent, and the top, bottom, and sides thereof are made separate from each other, the top and bottom being loosely attached to the sides by means of rivets 23 at their inner sides. The top and bottom thus admit of limited movement relatively to the sides, while the sides may be sprung in to facilitate inserting the structure into the opening in the side of the stack or chimney 19. Flanges 24 on the top and bottom embrace the sides of said recess, thus preventing displacement of said top and bottom relatively to said sides. While the walls of said recess are not absolutely tight, they are substantially so, and enough dead-gases do not enter said recess to impair the quality of the air delivered to the induction-tube.

The walls of the recess 21 are preferably removable to facilitate assembling and dismantling the lamp. As shown, the edges of the side walls are bent to form open convolutions, the inner one, 25, of which is adapted to receive the edges of the chimney or stack where it is cut away to form the hole or opening to said recess, while the outer of said folds, 26, is adapted to receive the perforated slide 23.

A lamp of our invention also comprises an improved mantle-support and an improved support for the shade.

The mantle-support consists of a ring 27, which passes over the lower end of the induction-tube 4 and is adapted to be secured in any desired vertical adjustment thereon by a set-screw. Formed on the ring 27 are lugs or projections 28, provided on their upper sides with grooves 29, adapted to receive the wires 30, from which said mantles are suspended, and adjacent to their inner ends with holes 31, which extend through said lugs or projections and are adapted to receive the downwardly-bent parts 32 of the wires 30.

The extreme ends of the downwardly-bent parts 32 are bent at right angles thereto, as shown at 33, forming hooks adapted to take under the ring 27. The described mantle-support is strong and rigid, and the mantles may be removed and replaced very quickly and conveniently.

In a shade-support of our invention the shade 34 is supported upon a rigid part of the lamp—in the present case the enlargement or hood 20 on the lower end of the chimney or stack 3. To facilitate removing and replacing said shade, the hole or opening therein is larger than said enlargement 20, so that said shade may be readily passed above said enlargement from below. Fitted to the enlargement 20 of the chimney or stack is a split ring 35, (see Fig. 6,) which has a bead or flange 36 around its lower edge larger than the hole or opening in the shade 34. The split ring 35 is made of flexible material, preferably thin sheet metal, to enable the split ends of said ring to be sprung apart in order that said ring may be passed around the chimney or stack 19 above the enlargement 20.

In placing the shade in position the shade 34 is first passed up over the enlargement or hood 20. The split ring 35 is then sprung onto the chimney 19 below said shade and above said enlargement and is then allowed to resume its normal position and placed over the enlargement 20, after which the shade 34 is lowered, so as to rest upon the flange 36 on said ring. It is obvious that as soon as the shade is in position the ring 35 will be locked, so that it cannot open so as to pass over the enlargement 20, thus producing a substantially rigid structure.

We claim—

1. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe and a jet adapted to discharge gas from said supply-pipe into said induction-tube, of a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof and a shield which surrounds the open end of said induction-tube adapted to prevent the dead-gases from the burners from being drawn into said induction-tube, substantially as described.

2. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube and a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof, of a stack or chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe and a shield or screen secured in an opening in the side of said chimney or stack forming a recess separated from the interior of said chimney or stack in which are contained

the open end of the induction-tube and the gas-jet, substantially as described.

3. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and said supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube and a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof, of a chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe and a shield or screen secured in an opening in the side of said chimney forming an open-sided recess separated from the interior of said chimney in which are contained the open end of the induction-tube, the gas-jet and the valve which controls the supply-pipe, substantially as described.

4. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube and a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof, of a chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe, a shield or screen secured in an opening in the side of said chimney forming an open-sided recess separated from the interior of said chimney in which are contained the open end of the induction-tube and the gas-jet, pull-rods attached to the lever of the valve which controls the supply-pipe and guides adjacent to the bottom of the lamp through which said pull-rods pass, substantially as described.

5. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube, a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof, a chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe, a shield or screen secured in an opening in the side of said chimney forming an open-sided recess separated from the interior of said chimney in which are contained the open end of the induction-tube and the gas-jet, a globe which surrounds the burners the top end of which is fitted to the lower end of said chimney, and a support for said globe, substantially as described.

6. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube, a burner or

burners which communicate with and are secured to the induction-tube below the admission-opening thereof, a chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe, a shield or screen secured in an opening in the side of said chimney forming an open-sided recess separated from the interior of said chimney in which are contained the open end of the induction-tube and the gas-jet, a hood on the lower end of said chimney, a globe which surrounds the burners, a support for said globe, a shade provided with an opening larger than the hood on said chimney and a shade-support consisting of a split ring fitted to the hood on said chimney having a bead around its lower end of greater diameter than the opening in said shade, substantially as described.

7. In a gas-lamp the combination with an induction-tube, a supply-pipe, connection between said induction-tube and supply-pipe, a valve which controls said supply-pipe, a jet adapted to discharge gas from said supply-pipe into said induction-tube, a burner or burners which communicate with and are secured to the induction-tube below the admission-opening thereof, a chimney which surrounds the open end of the induction-tube and the lower end of the supply-pipe, a shield secured in an opening in the side of said chimney forming an open-sided recess separated from the interior of said chimney in which are contained the open end of the induction-tube and the gas-jet, a hood on the lower end of said chimney, a globe which surrounds said burners the top of which is fitted to the lower end of said hood, a skeleton ring on which the lower end of said globe is supported and a stem thereon threaded into the burner - fixture, a shade provided with an opening of greater diameter than the diameter of the hood on said chimney and a shade-support consisting of a flexible split ring adapted to fit the hood on said chimney and a bead on the lower edge of said split ring of greater diameter than the opening in said shade, substantially as described.

8. A support for a shade having an opening, consisting of a fixed member smaller than the opening in said shade and a flexible split ring fitted to said fixed member having a bead around its lower edge larger in diameter than the opening in said shade, said ring and fixed member being provided with engaging shoulders, substantially as described.

In testimony that we claim the foregoing as our invention we affix our signatures, in presence of two subscribing witnesses, this 8th day of September, A. D. 1902.

HARRISON H. ROUNTREE.
ASA W. STRAIGHT.

Witnesses:

ROBERT J. LATCHPOLE,
JOHN V. NORCROSS.