K. A. A. STAAHLGREN.

WINDPROOF CASING FOR INVERTED INCANDESCENT GAS BURNERS.

APPLICATION FILED OCT. 21, 1910. RENEWED AUG. 24, 1911.

1,024,106. Patented Apr. 23, 1912.

Fig. 1.

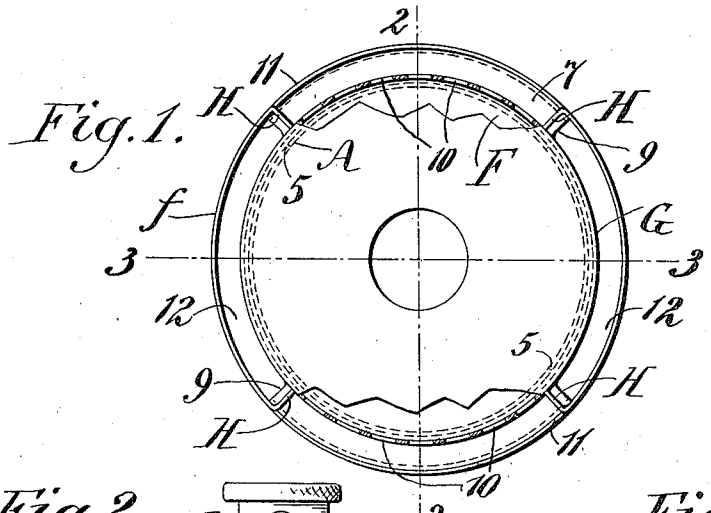


Fig. 2.

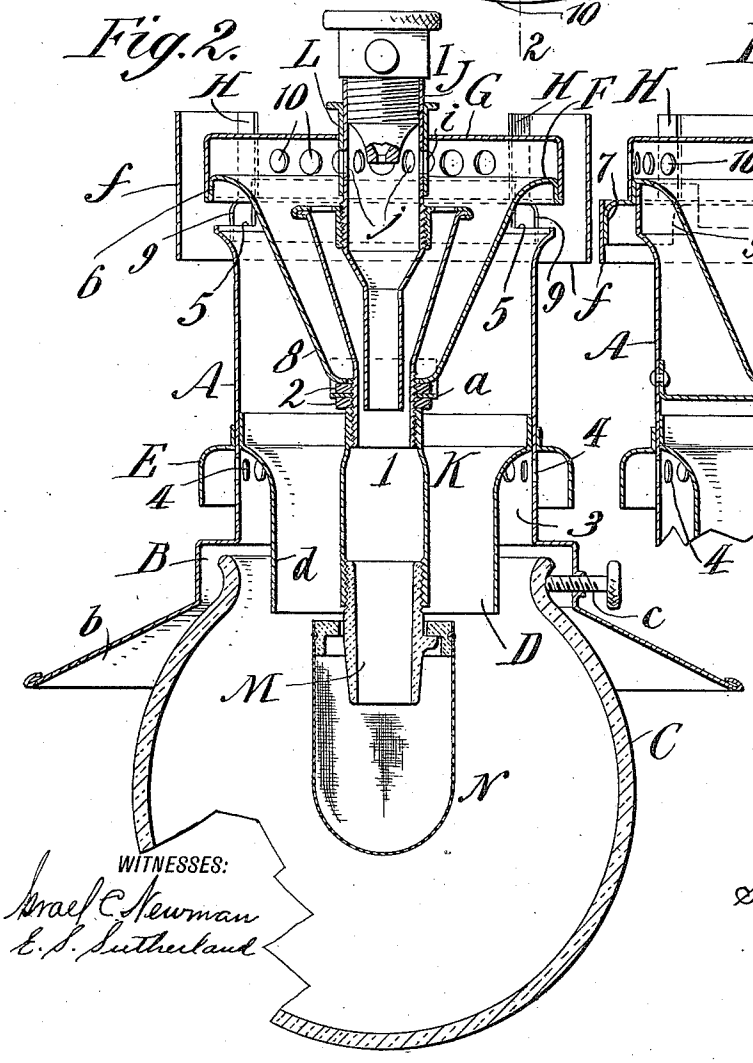
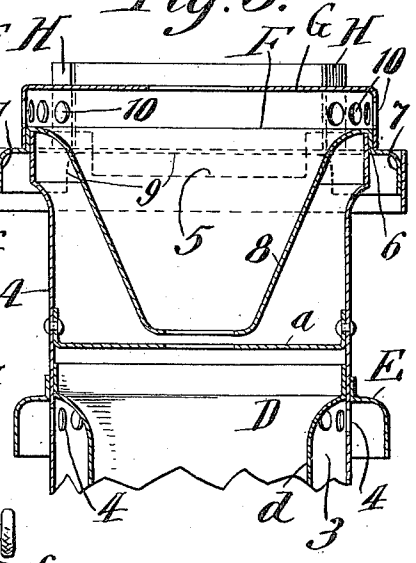


Fig. 3.



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WINDPROOF CASING FOR INVERTED INCANDESCENT GAS-BURNERS.

1,024,106. Specification of Letters Patent. Patented Apr. 23, 1912.

Application filed October 21, 1910, Serial No. 588,297. Renewed August 24, 1911. Serial No. 645,723.

To all whom it may concern:

Be it known that I, KARL A. A. STAAHLGREN, a citizen of the United States, and resident of New York, State of New York, have invented certain new and useful Improvements in Windproof Casings for Inverted Incandescent Gas-Burners, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to windproof casings for inverted incandescent gas burners of the "Bunsen" variety, the device being especially adaptable for out-door use.

The invention has for its object the production of a novel, durable and inexpensive structure of this character which is efficient in general operation and of such construction as to obviate all liability of a mixture of the discharged burnt gases with the fresh air supplied to the mixing-tube of the burner; further objects being to thoroughly protect the burner from the action of the elements, and to maintain a perfectly steady and highly incandescent light.

The invention will be hereinafter fully described and specifically set forth in the annexed claims.

In the accompanying drawings forming part of this specification, Figure 1, is a plan view of my improved casing; Fig. 2, is a vertical sectional elevation taken on the line 2—2 of Fig. 1, and having a burner incased therein; and Fig. 3, is a vertical sectional elevation of the casing taken on the line 3—3 of Fig. 1.

My improved casing embodies primarily a sheet metal cylinder A, having an interiorly located horizontal bridge *a*, comprising a hanger for engagement with a burner-tube, as 1, the same being secured to the bridge by means of nuts 2, which engage around and are threaded to an exterior screw-thread formed on said burner-tube.

Extended from and around the lower end of the cylinder A, is an enlarged annular chamber B, having an outwardly extended conical flange embodying a reflector *b*. This said chamber is adapted for receiving the open end of a globe, as C, which is secured by means of set-screws *c*.

Secured within the casing A, near the lower end thereof, is a cylindrical chimney D, having a depending and contracted extension *d*, whereby an annular air-space or chamber 3, is provided between said chimney and the cylinder A, air being admitted thereto through an annular series of perforations 4. Located over and around the said perforations is a hood E, which is open to the atmosphere at the bottom, whereby the amount of air requisite for combustion is freely admitted to the casing and allowed to circulate in the chamber 3, but at the same time the flame is protected from the action of strong currents.

The upper end of the cylinder A, is of larger diameter than the body and it is provided with oppositely located outlet-ports 5, for discharging burnt gases. Secured over and around the upper end of the cylinder A, is a cap F, embodying the cylindrical part 6, the overhanging hood 7 and the cup-shaped deflector 8, which depends into the cylinder A, and surrounds the burner-tube 1. The said hood 7, is provided with outlet-ports 9, which register with the outlet-ports 5, of the cylinder A, for discharging burnt gases.

Fitted over and around the part 6, of the cap F, is a dome G, having in its vertical wall air-inlet openings 10, for admitting air to the mixing-tube of the burner. Surrounding and secured to the vertical wall 7, of the cap F is a ring *f*, having recesses 11, located adjacent to the air-inlet openings 10, of the dome G, whereby said openings are directly open to the atmosphere for freely admitting a supply of air to the burner. Separating the recesses 11, from the outlet-ports 5 and 9, are inwardly extended vertical partitions H. These said partitions rest on the horizontal upper surface of the hood 7, and effectually prevent hot, burnt gases from mingling with the air supply to the burner, such gases being discharged through the vertically directed segmental channels 12, which have their outlets above the level of the air-inlet openings 10, thus liability of having any part of the discharged burnt gases enter the mixing-tube of the burner is obviated.

In conjunction with my improved casing, I employ an ordinary nozzle or gas-in-

jector I, which is adapted for engagement with a supply pipe and is threaded into the mixing-tube J, forming part of a burner, as K; said mixing-tube having air-inlet ports *j*, which are surrounded by the cylindrical regulating-shutter L, having the openings *i*, for communicating with the ports *j*. The shutter L, and also the injector I, are extended beyond the upper wall of the dome G, to facilitate their operation. The burner-tube is provided at its lower end with a burner-tip M and a mantle N.

In the operation and use of the invention, gas, under ordinary obtainable pressure, is injected through the nozzle I, into the mixing-tube J, thoroughly mixed with the air which is supplied by means of the openings 10, drawn through the ports *j*, and thence conducted to the burner-tip and mantle in a manner common to incandescent burners of the "Bunsen" variety. The air admitted through the perforations 4, allows of perfect combustion, and the chimney D, effectually conducts the hot, burnt gases into the cylinder A, from whence they are deflected by means of the cup 8, to the openings 5 and 9, and discharged through the channels 12, without liability of mixing with the air supplied to the burner through the openings 10.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A casing for "Bunsen" burners comprising a cylinder open at the bottom and having a lateral outlet leading through its upper part, a cap on said cylinder embodying an inwardly and downwardly directed deflector and an overhanging outwardly located hood having a lateral opening which registers with the said outlet of the cylinder, a dome fitted over said cap and having a lateral air-inlet and a centrally located vertical opening for engaging around a burner, and a ring secured to the periphery of the hood of said cap and having a recess communicating with said air-inlet, and partitions separating said air-inlet from said outlet, substantially as shown and described.

2. A casing for "Bunsen" burners comprising a cylinder flared at top and bottom, open at the bottom and having means for securing a globe, said cylinder having near its lower end an annular series of perforations, and an overhanging hood surrounding said perforations, and a chimney adjacent to said perforations and having a flared top which is secured to the inner wall of the said cylinder, the cylinder also having a lateral outlet leading through its upper part, a cap on said cylinder embodying an inwardly and downwardly directed cup-shaped deflector and an overhanging outwardly located hood having a lateral opening which registers with the said outlet-opening of the cylinder, a dome fitted over said cap and having a lateral air-inlet opening and a centrally located vertical opening for engaging a burner-tube, and a ring secured to the outer periphery hood of said cap and having a recess communicating with said air-inlet opening, and partitions separating said air-inlet opening from said outlet openings substantially as shown and described.

3. The combination, with an inverted incandescent gas burner of the "Bunsen" variety, of a casing comprising a cylinder flared at top and bottom, open at the bottom and having means for securing a globe, and a bridge for supporting the burner, said cylinder having near its lower end a series of perforations, and a hood surrounding said perforations, and a chimney adjacent to said perforations and having a flared top which is closely secured to the inner wall of the said cylinder, whereby an annular air-space is formed around said chimney, the cylinder also having a lateral outlet leading through its upper part, a cap on said cylinder embodying an inwardly and downwardly directed cup-shaped deflector and an overhanging outwardly located hood having a lateral opening which registers with the said lateral outlet of the cylinder, a dome fitted over said cap and around said burner and having a lateral air-inlet for supplying air to the burner, and a ring secured around the hood of said cap and having a recess communicating with said air-inlet and a channel which communicates with the said outlet of the cylinder and discharges above the level of said air-inlet, substantially as shown and described.

4. A casing for "Bunsen" burners comprising a cylinder flared at top and bottom, open at the bottom and having an interior bridge for supporting a burner, and means in its lower part for hanging a globe, said cylinder having an annular series of perforations, and a hood surrounding said perforations, and a chimney adjacent to said perforations and having a flared top which is closely secured to the inner wall of the said cylinder, whereby an annular air-space is formed around said chimney, the cylinder also having lateral outlet-openings through its upper part, a cap on said cylinder embodying an inwardly and downwardly directed cup-shaped deflector and an overhanging outwardly located hood having lateral openings which register with the said outlet-openings of the cylinder, a dome fitted over said cap and having lateral air-inlets and a centrally located vertical opening for engaging around a burner, and a ring secured around the hood of said cap and having recesses communicating with said air-inlets and vertical channels closed at their ends adjacent to said air-inlets, said

channels open at top and bottom and communicating with said outlets of the cylinder, said channels extended above the level of the said air-inlets, substantially as shown and described.

In testimony that, I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 4th day of October 1910.

KARL A. A. STAAHLGREN.

Witnesses:
ISRAEL C. NEWMAN,
E. S. SUTHERLAND.