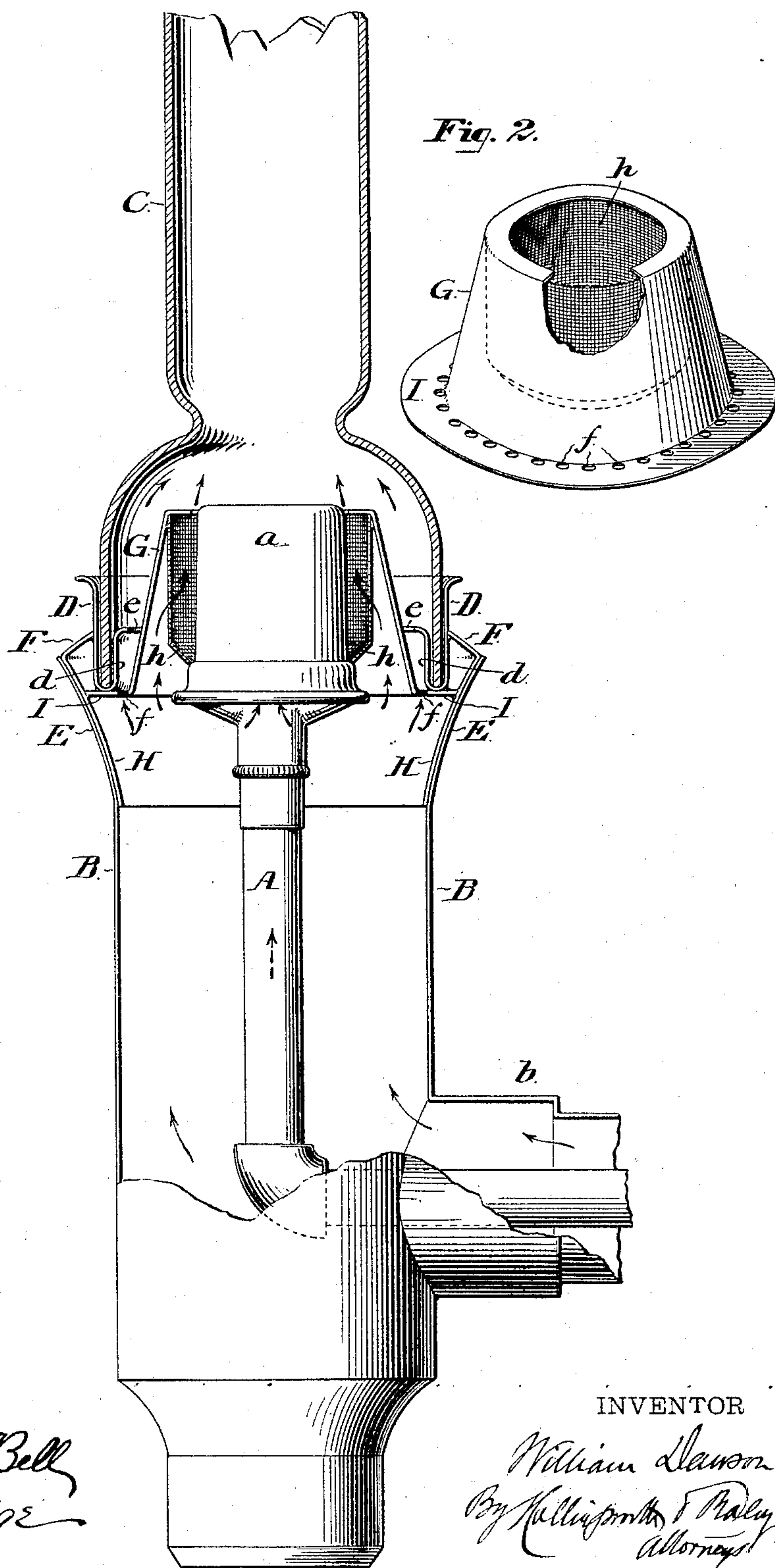


(No Model.)

W. DAWSON.
GAS BURNER.

No. 433,675.

Patented Aug. 5, 1890.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM DAWSON, OF OGONTZ, PENNSYLVANIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 433,675, dated August 5, 1890.

Application filed June 6, 1890. Serial No. 354,459. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DAWSON, of Ogontz, in the county of Montgomery, State of Pennsylvania, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification, reference being had to the accompanying drawings.

My invention has special reference to gas-burners intended for use upon railway-cars or under similarly-exposed conditions; and its object is to assist in maintaining a steady flame unaffected by local currents of air.

Minor features of consideration adapted for use in connection with such fixtures as are now commonly found in railway-cars where gas or carbureted vapor is employed may be used, so that but little change is required to accommodate my improved burner to existing plants.

In the drawings I have shown the burner as applied to what is commonly called the "hurricane-lamp," largely used in railway-cars at the present time.

Figure 1 represents a vertical central section through the burner, chimney, and adjacent portion of the supporting-shell of the lamp. Fig. 2 is a view in perspective of the cone or cap and its interior shield when removed from the burner.

Referring to Fig. 1, the gas-supply pipe is indicated at A and the burner-tip by *a*, said tip being constructed in the usual manner, with a number of perforations in its annular top. The vertical portion of the gas-pipe is inclosed by a supporting-casing B, imperforate, in proximity to the burner, but having a lateral tube or pipe *b*, which may inclose the horizontal arm of the gas-pipe, and through which air is admitted, as indicated by the arrow, through an opening sufficiently remote from the burner proper to prevent any lateral currents in its vicinity, the air merely flowing in a steady stream in one direction through the hollow casing. The top of the casing B is provided with an outwardly-flaring mouth, as indicated at E, which receives and supports a correspondingly-formed tubular shell H, fitting removably but snugly within, so as to make a practically tight joint against the admission of air. A cap G surrounds the burner-tip *a*, and is pro-

vided with a downwardly-depending tubular wire-gauze shield *h*, which incloses the sides of the burner-tip and fits snugly around its base. A horizontal flange I is formed around the lower end of the cap G and extends outward to the inner side of the shell H, to which it is brazed or otherwise suitably secured by a tight joint all around its circumference. A series of small holes *f* is formed within this flange in close proximity to the line from which the wall of the cap G projects upward.

Upon the top of the flange I and outside of the circle of holes *f* is secured the chimney-gallery D, which consists of an imperforate metal shield whose cross-section is somewhat U-shaped, as shown, the outer leg, however, being of greater height than the inner one *d*, which is bent inward at a right angle and forms a close joint with the exterior surface of the cap G, preferably at a little less than half the height of the latter from its base. Perforations *e* are formed in this inwardly-projecting portion of the U-shaped shell, said perforations preferably corresponding in number with the perforations *f* in the flange I of the cap.

In addition to securing the chimney-gallery at its base to the flange I, I prefer (for the sake of symmetry as well as strength) to further secure it by means of an inwardly-projecting inclined flange F, formed at the top of the shell H, said flange being brazed or otherwise secured to the exterior of the chimney-gallery D.

The chimney C may be of the form shown or any other form adapted for use in connection with this class of burners, and its base fits snugly within the annular trough of the chimney-gallery D, as shown, forming a practically tight joint against the admission of air-currents.

As above stated, the only aperture for the admission of air is at a remote point, and in using this word I merely mean to designate a point so far removed from the vicinity of the burner proper as that the air when admitted shall by the time it reaches the burner be flowing forward in a comparatively steady stream and without lateral currents.

By reference to the drawings and the arrows, which indicate the flow at the burner, it will be seen that the greater portion of the

air enters within the cap G, and after passing through the wire-gauze shield impinges against the flame from the outside in a steady stream. The burner-tip *a* being hollow or
5 annular, a certain portion of air of course passes up the central opening. A smaller portion also passes through the holes *f* in the flange of the cap G, and thence, after passing
10 a second series of holes *e*, is carried upward and projected against the flame by the converging sides of the chimney C. It will thus be observed that no air is admitted from the exterior at any point in proximity to the burner proper, and hence no matter how much
15 disturbance may there exist the light will be unaffected thereby, as all the air-supply is from within the casing B and the distribution in the proper quantities is effected by the internal arrangement of the parts adjacent to
20 the burner.

As the shell H is removably fitted within the outwardly-flaring top *e* of the supporting-casing, convenient access can be had to the

interior of the burner for any desired purpose without removing the chimney from its
25 trough or seat in the gallery.

Having thus described my invention, I claim—

The combination, with the burner-tip, of the supporting-casing imperforate in the vi-
30 cinity of said tip and provided with a remote air-inlet, the flanged cap having an internal wire-gauze shield fitting snugly around the burner-tip, the closed chimney-gallery mounted upon the flange of said cap, said flange and
35 the internal portion of said chimney-gallery being provided with perforations within the line of contact between the gallery and the flange, the chimney fitting snugly in said gallery, and the annular shell supporting said
40 cap and fitting snugly but removably within the top of the supporting-casing, as set forth.

WM. DAWSON.

Witnesses:

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