(No Model.)

B. C. WILSON.

GAS BURNER.

No. 479,128. Patented July 19, 1892.

Fig. 1.

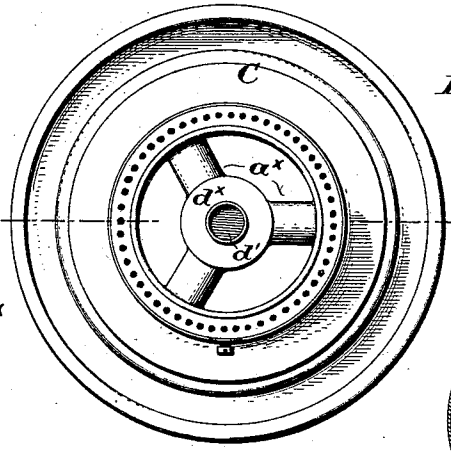


Fig. 4.

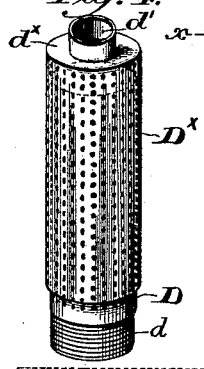


Fig. 5.

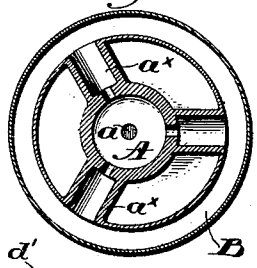


Fig. 2.

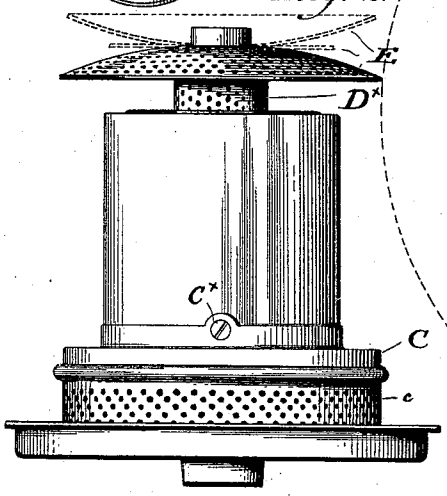


Fig. 3.

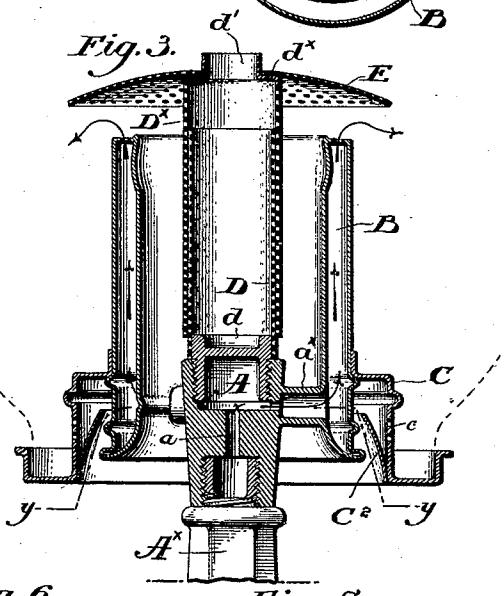


Fig. 7.

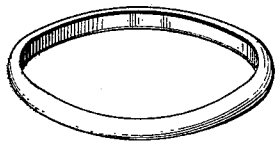


Fig. 6.

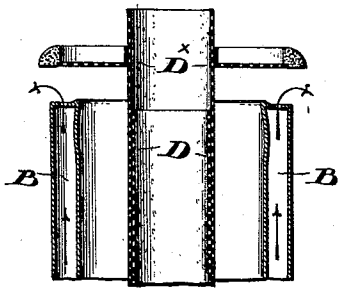
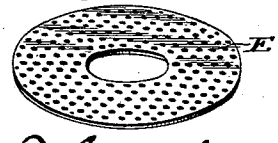


Fig. 8.



WITNESSES:

J. Norman Dyson,

J. Howard Morris.

B. C. Wilson,

INVENTOR:

By his Attorneys

M. C. Mawbridge

J. Bonsall Taylor

UNITED STATES PATENT OFFICE.

BENNET C. WILSON, OF PHILADELPHIA, PENNSYLVANIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 479,128, dated July 19, 1892.

Application filed April 13, 1891. Serial No. 388,706. (No model.)

To all whom it may concern:

Be it known that I, BENNET C. WILSON, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Gas Burners, of which the following is a specification.

My invention relates in general to what are known as Argand burners, and more particularly to that variety of these burners, which are provided with spreaders, or flame deflectors.

It is the object of my invention to so construct a burner as to obtain every advantage due to the spreading of the flame, and at the same time to regulate the character of the flame itself, and diminish the heat thrown off.

A burner embodying my improvements is represented in the accompanyings drawings and hereinafter described, the particular subject matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a top plan view of an Argand burner, provided with my improved chimney holder and spreader carrier, the spreader, however, being removed. Fig. 2 is a side elevational view of the same, showing the spreader applied, and indicating in dotted lines a flat and a concave spreader. Fig. 3 is a central, vertical, sectional elevation, through the devices represented in Fig. 2. Fig. 4 is a perspective view of the spreader-carrier removed from the burner. Fig. 5 is a sectional plan view, through the gas-receiving chamber and the branch pipes of the burner, and through the annular chamber itself, section being supposed in the plane of the dotted line *y y*, of Fig. 3. Fig. 6 is a view similar to Fig. 3, of the upper portion of the burner and spreader carrier, representing upon the spreader an incandescent rim. Fig. 7 is a view in perspective of the incandescent rim of Fig. 6. Fig. 8 is a view in perspective, of the spreader represented in Fig. 6.

Similar letters of reference indicate corresponding parts.

In the drawings A represents the gas-receiving chamber of an Argand burner, into which the gas from the supply pipe $A^{\times}$ flows through the orifice *a*, and from out of which it flows through radiating branch pipes $a^{\times}$, which support the annular chamber B which constitutes the Argand burner proper. The outer walls of the burner are smooth and cylindric, and about them is snugly fitted free for vertical adjustment a chimney holder C, the side walls *c* of which are perforated, the top of which is closed, the bottom of which is open to admit air to the fullest extent, and which is provided with an internal conical deflector C^2. This chimney holder is conveniently provided with a set screw $C^{\times}$ by which it can be secured at any height with respect to the Argand burner. The set screw, however, is simply instanced as a type of device for adjusting the set to the holder.

D $D^{\times}$ represent an extensible spreader carrier, composed, in the construction represented, of two telescopically-related open-ended cylinders composed of sheets of perforated metal or other refractory material. The innermost or lower of the cylinders which compose this carrier is closed at its lower end, being there provided with a threaded plug, *d*, adapted to be screwed into the threaded interior of the gas-receiving chamber $A^{\times}$. The outer and upper cylinder $D^{\times}$, is provided with a shoulder $d^{\times}$ to adapt it to receive the spreader E, and is open at its upper end *d'*.

It is obvious that when the lower member of the spreader, the cylinder D, is fixedly secured with respect to the gas-receiving chamber, the upper member $D^{\times}$ can be vertically moved with relation to it, so as to extend or contract the length of the carrier proper, the frictional resistance between the walls of the cylinders making it possible to relatively adjust them in any desired position. Of course in the adjustment of the carrier the spreader is correspondingly adjusted, and, obviously also, the chimney holder may be adjusted with relation to the adjustment of the spreader.

The spreader E, is a perforated disk of metal or other incombustible material, which may be either flat, concave, or convex, according to the desired character of the deflection of the flame, and it may be provided with a rim, of incandescent material, such, for instance, as shown in Figs. 6 and 7, the said rim being adapted to rest upon the spreader, and to be connected, if desired, therewith.

Such being a description of a form of burner embodying my improvements, it is obvious that the construction is such that a free circulation and ascent of air will exist within

the confines of the burner, around and up and through or across the spreader carrier, and through the spreader itself,—with the result that while the supply of fresh air is unobstructed, an ample opportunity is afforded for the heated air to vent itself through the spreader in order to diminish the reflected heat.

It is further obvious that the direction of the flame may be controlled, the flame being elongated or shortened or deflected at different angles according to the form of the spreader and the relative adjustment of the spreader carrier and spreader with reference to the escape orifices of the flame from the burner; the adjustment being, as already explained, accompanied, if desired, by a corresponding adjustment of the chimney holder.

As a result of the construction of the chimney holder with the deflector, the imperforate top, and the perforations in its walls, the incoming air will be deflected away from the walls of the burner and not so quickly heated.

The incandescent rim, when employed, may be formed of any of the well known light-reflecting substances, of vitreous or other composition.

My improvements are applicable to Argand burners for use with oil or other burning fluids.

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

1. In combination, an annular chamber or Argand burner, a gas-receiving chamber connected by branch pipes therewith, an extensible spreader carrier composed of two telescopically related perforated cylinders one of which is connected with the burner and the other with the perforated spreader, and a perforated spreader, substantially as set forth.

2. In combination with an Argand burner provided with a longitudinally adjustable spreader carrier equipped with a perforated speader, a chimney holder applied to and vertically adjustable with respect to the walls of the burner and having an imperforate top and perforated walls, whereby the relative adjustment of the chimney and spreader is rendered possible, substantially as set forth.

3. In combination with an Argand burner and with a spreader carrier connected therewith,—a perforated metal spreader provided with a rim of incandescent material, substantially as set forth.

4. The combination to form an extensible spreader carrier for an Argand burner, of two telescopically-related perforated cylinders, and means for connecting one of said cylinders with the burner proper, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 25th day of March, A. D. 1891.

BENNET C. WILSON.

In presence of—
WM. C. STRAWBRIDGE,
J. BONSALL TAYLOR.