(No Model.)

D. DRYSDALE.

GAS HEATER.

No. 492,577. Patented Feb. 28, 1893.

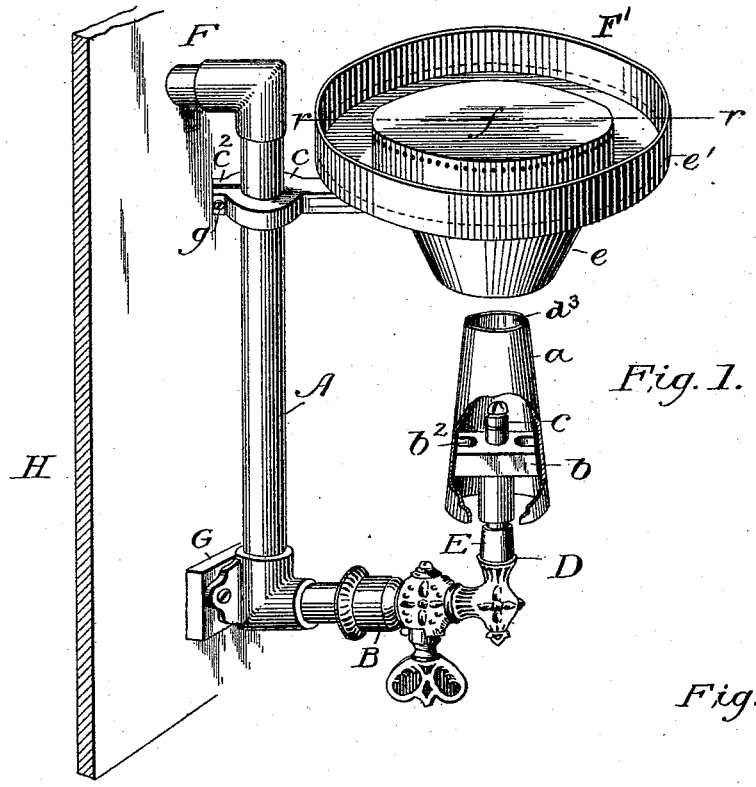


Fig. 1.

Fig. 4.

Fig. 2.

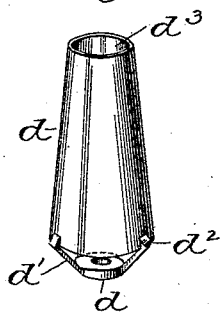
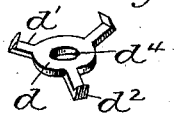
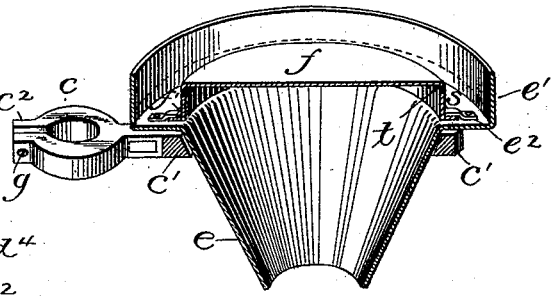


Fig. 3.





Witnesses:

J. P. Wilson

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UNITED STATES PATENT OFFICE.

DAVID DRYSDALE, OF CLEVELAND, OHIO.

GAS-HEATER.

SPECIFICATION forming part of Letters Patent No. 492,577, dated February 28, 1893.

Application filed January 14, 1891. Serial No. 377,785. (No model.)

To all whom it may concern:

Be it known that I, DAVID DRYSDALE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gas-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in gas-heaters in which a conical tube is secured upright on a gas-burner and is provided with air inlets through its base, forming in said tube, a chamber for mixing of gas from a supply-cock, with the air, which are burned together at the escape orifice of said tube, and the article to be heated is held by the hand in the flame thus produced, and the object of my improvement is, to provide a flame condensing drum, that will receive, protect, deflect and guide the flame from said tube, to furnish a supporting surface, and adapted to rest in an annular opening independent of said tube, in suitable contact therewith. I attain this object by the mechanism set forth in the accompanying drawings, in which,—

Figure 1. is a perspective view of the invention, showing the lower portion of the air and gas mixing tube, or chamber, in vertical section. Fig. 2 is a perspective view of the air and gas mixing chamber. Fig. 3 is a perspective view in detail of a chamber connection to a gas supply cock. Fig. 4 is a perspective view in vertical section of the drum, and its support taken on the dotted line *r*, *r*, of Fig. 1.

Similar letters refer to similar parts throughout the several views.

In the drawings, H, represents a wall, F, a gas-pipe projecting through a wall and extending as at A, with a gas supply cock B, and burner-tip C, forming a frame-work to which I have attached my improvement.

The air and gas mixing chamber, *a*, consists of an upright cone-shaped tube, secured to the burner E, by means of the lug *b*, encircling said burner and having lateral projecting arms b^2, b^2, the ends are tapered to correspond with the inside taper of the chamber, and is secured thereon by a driving fit. The pressure and flow of gas from the supply cock B, creates a draft of air into said chamber, which becomes thoroughly mixed with the gas in said chamber, and is consumed in an ascending hot flame at the escape orifice d^3. This flame is intercepted by means of a heat condensing drum F′ placed immediately over said chamber but independent of it. Said drum is constructed of sheet-metal, or cast-iron with its lower portion funnel-shaped as at *e*, and open at the bottom to receive said flame, a section of a drum, perforated at *t*, and having a flat top or head *f*, is provided over the top of said funnel *e*, to deflect said flame, and to provide a supporting surface on which to set an article or vessel to be heated, an outward extending L-shaped flange *s*, adapted to rest on the rim of an annular opening in a place convenient to lead the gas supports said drum, and guides the escaping heat and flame from said drum upward around the sides of the article to be heated.

To the gas-pipe extension A, I have secured an arm *c*, by means of a split-collar c^2, and a set-screw *g*, the opposite end of said arm terminates in an annular ring *c*′, that supports said drum F′ in proper conjunction with said gas and air mixing chamber, the flame therefrom and aforedescribed, enters through the opening into said drum, and is deflected by the flat top or head *f*, passes out at the perforations *t*, and is guided upward around the sides of the article or vessel, that may be resting on said head, by means of the L-shaped flange *e*′, it, extending above the level of said head. Said funnel *e*, also serves as a protection to the flame and heat against stray drafts from any cause, and of the flame to other combustibles. The flame receiving orifice of the drum F′ is somewhat larger than the escape orifice of the chamber *a*, and is immediately over, and slightly elevated above the same for convenience of ignition.

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

In gas-heaters, the burner E, lug *b*, gas and air mixing chamber *a*, in combination with a drum F′, constructed of a lower portion *e*, funnel-shaped, and adapted to receive and protect a flame from said chamber, of an upper portion *f*, perforated at *t*, and adapted to deflect a flame from said chamber, and to

support an article to be heated, and of an outward entending L-shaped flange *s* and *e'*, perforated and adapted to guide the escaping heat from said drum, and to rest on the rim of an annular opening, and to support said drum in suitable conjunction with said gas and air mixing chamber, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 12th day of January, 1891.

DAVID DRYSDALE.

Witnesses:
HUGH DRYSDALE,
JAMES L. HANWAY.