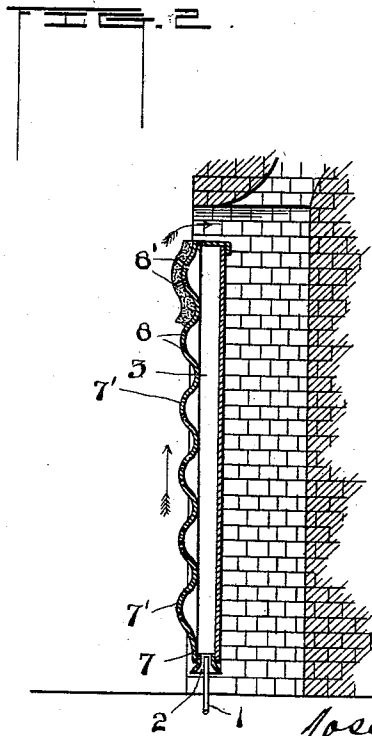
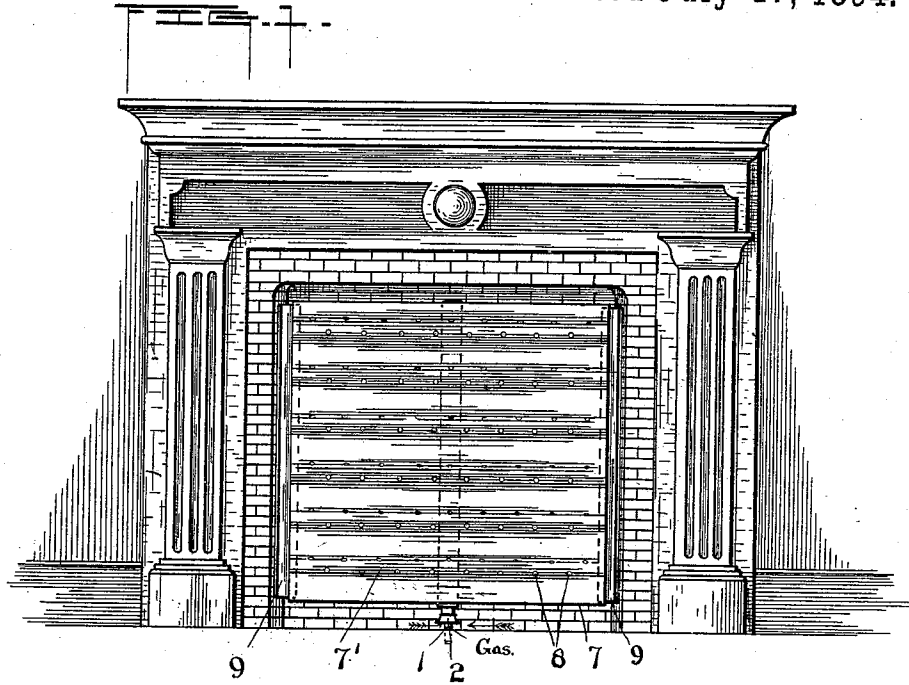


(No Model.)

J. F. HEWITT.  
BURNER FOR BURNING GASEOUS FUEL.

No. 523,036.

Patented July 17, 1894.



Witnesses  
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Inventor  
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# UNITED STATES PATENT OFFICE.

JOSEPH F. HEWITT, OF ALLEGHENY, PENNSYLVANIA.

## BURNER FOR BURNING GASEOUS FUEL.

SPECIFICATION forming part of Letters Patent No. 523,036, dated July 17, 1894.

Application filed June 21, 1892. Serial No. 437,515. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH F. HEWITT, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Burners for Burning Gaseous Fuel; and I do hereby declare the following to be a full, clear, and exact description thereof.

The invention has for its object to provide a simple and efficient gas burner adapted to be easily fitted in and to fire places of usual form and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings: Figures 1 and 2 are respectively front and end elevations.

Numeral 1 denotes a gas pipe and 2 an air induction tube these parts being of usual form and 3 indicates a conduit for mingled air and gas closed at its ends, except at the point of application of the air and gas mixing devices 1 and 2.

7 denotes a sheet of asbestos or other refractory material formed to produce corrugations 7'. This sheet is cemented or otherwise fixed in a gas-tight manner upon the plate 4 so that the spaces within the corrugations 7' in the front plate shall freely communicate with the conduit 3 formed by the transverse corrugation in the back plate. The burner consists essentially therefore of two plates secured in contact with each other and provided with the conduits specified formed by corrugating said plates and conduit 3. The sheet 7 may be provided with burner openings 8 disposed lengthwise of the corrugations and particularly if plate 7 is not of sufficiently open texture to permit the passage of gas.

In some cases plate 7 is covered with a coat of fire proof material which is sufficiently plastic to conform when applied to said corrugated sheet, and this material is provided with burner openings 8'.

Flexible wings or flanges 9 are fixed to the back plate 4 to adapt the burner for application to fire places.

In operation mingled air and gas is introduced through the conduit 3 into each of the transverse spaces inclosed by the corrugated front plate from which it passes through the burner opening 8 where it is ignited and burned. The corrugations aid in reflecting

the heat and the gas is distributed and burned over practically the whole surface of the device which fills the fire place. The escape of the products is provided for by a small opening, the fire place being otherwise closed, as by the flexible strips, the object being to provide a heater rather than a ventilator, such as is produced by an ordinary gas log, over and about which latter much unconsumed air passes up the chimney.

So far as respects an asbestos sheet provided with a molded fire proof material having burner openings its use is not necessarily confined to the form of burner illustrated.

It is obvious that the flexible flanges provide that the device may be fitted to fire places of different widths or be adjusted at different depths in the same fire place and that the whole construction is such that the area of combustion is only limited by that of the fire place and that direct and indirect radiation occur in an area of like extent.

As the pressure of gas will be the greatest in the region of the lowest burner openings, more gas will be there supplied for combustion than at higher points, but the heat of such combustion will be conveyed upwardly so as to equalize to some degree the heat of the device and its radiating effect.

I do not herein broadly claim flanges whether flexible or otherwise in combination with a burner having a gas receptacle provided with an air and gas mixer for supplying mingled air and gas to the said receptacle and having perforations in practically its entire face, said burner and flanges filling the fire place laterally and fitting the sides of the same to exclude excess of air, a narrow space being left at the top whereby a suitable exit for the products of combustion is provided, such matter being set forth and claimed in my pending application, Serial No. 484,713.

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

1. In a gas burner for fire places the back plate provided with a main gas and air conduit formed by a corrugation therein the front plate having corrugations inclosing conduits transverse to the said main conduit and provided with burner openings, said front plate being joined to the face of the back

plate substantially as set forth whereby a burner is made of two plates and whereby the entire fireplace may be practically filled with heat radiating flames and radiating surfaces.

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2. In a gas burner for fire places the back plate provided with a main gas and air conduit formed by a corrugation therein the front plate having corrugations inclosing conduits  
10 transverse to the said main conduit and provided with burner openings, said front plate

being joined to the face of the back plate and flexible flanges attached to the sides of the plates, all substantially as set forth, whereby .5 the device may be fitted to a fire place and superfluous air excluded from the draft.

In testimony whereof I have hereunto set my hand this 20th day of June, A. D. 1892.

J. F. HEWITT.

Witnesses:

A. C. JOHNSTON,  
FRANK H. ROBB.