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PATENTED AUG. 1, 1905.

S. KAUFMAN.
GAS BURNER.

APPLICATION FILED APR. 18, 1905.

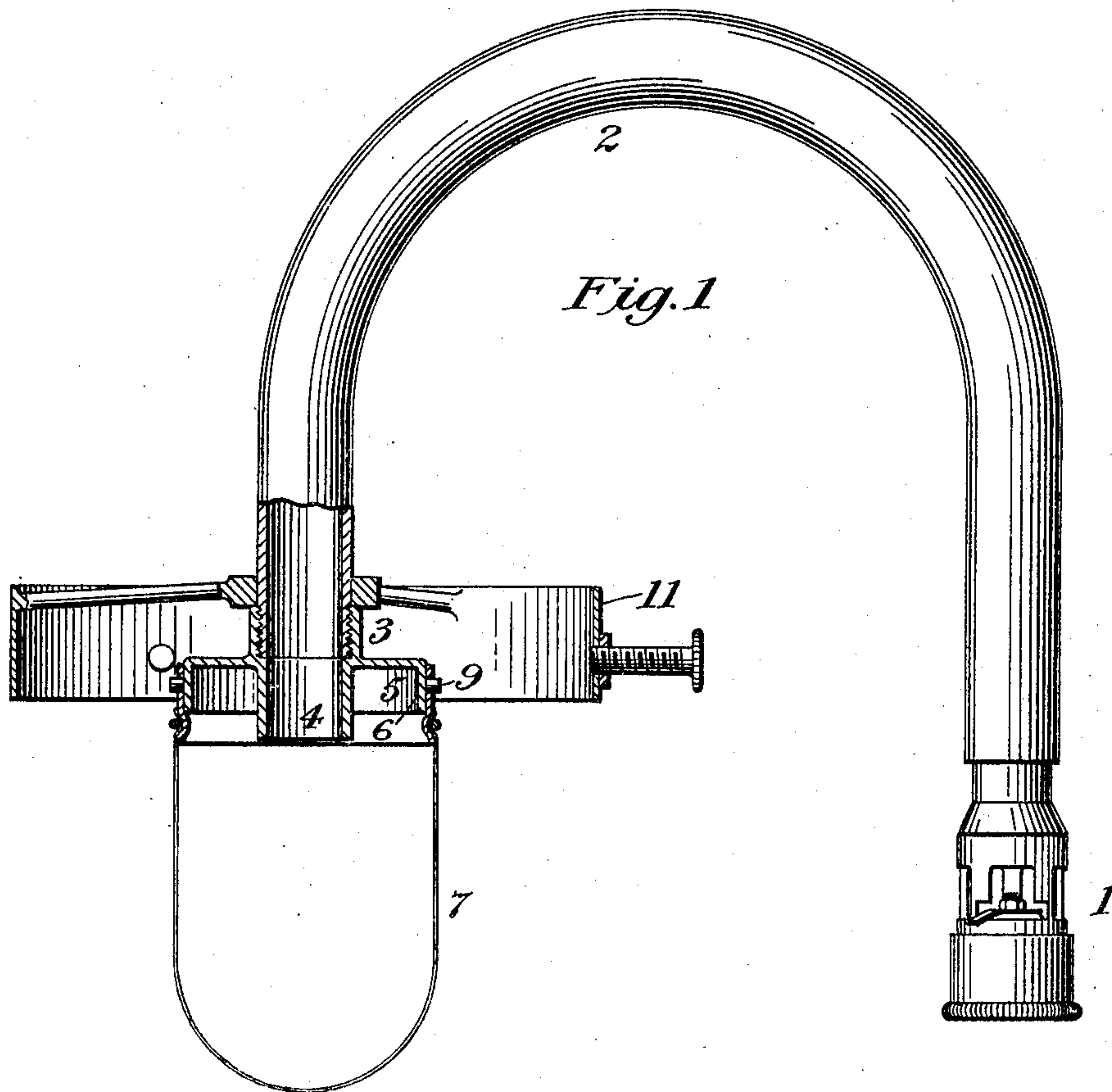


Fig. 2

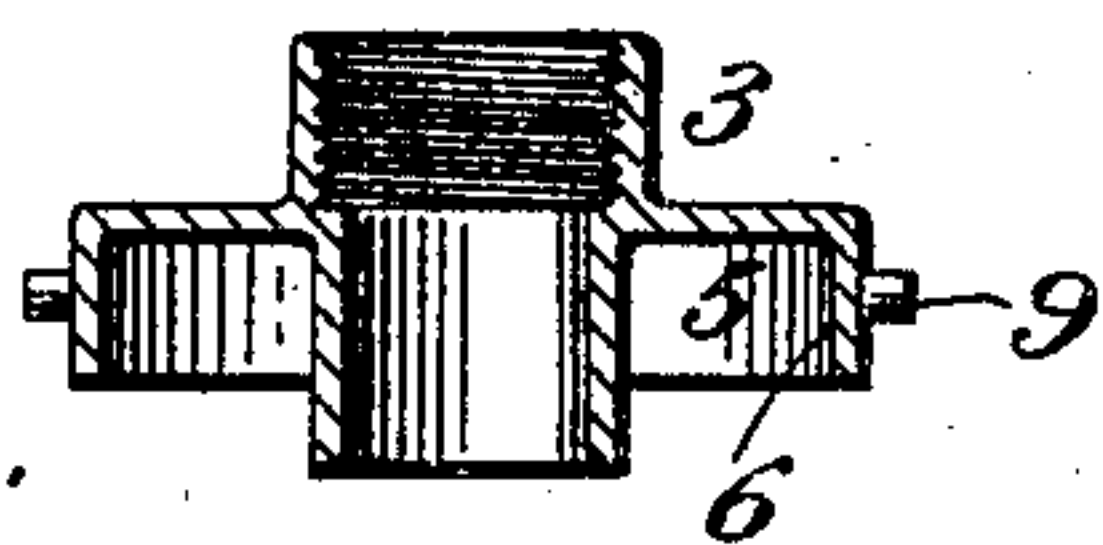
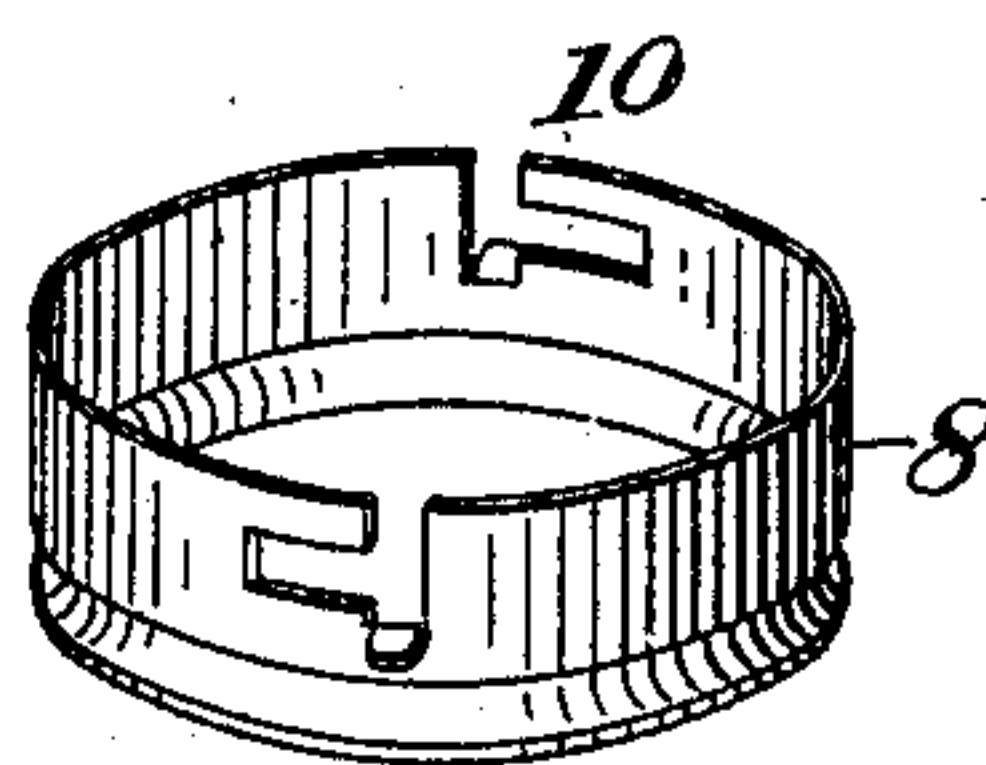


Fig. 3



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

SOLOMON KAUFMAN, OF NEW YORK, N. Y.

GAS-BURNER.

No. 795,917.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed April 18, 1905. Serial No. 256,268.

To all whom it may concern:

Be it known that I, SOLOMON KAUFMAN, a subject of the King of Roumania, (but having declared my intention of becoming a citizen of the United States,) residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Gas-Burners, of which the following is a full, clear, and exact specification.

The said invention relates to that type of incandescent gas-burners wherein the burner is inverted, and has for its object to provide means whereby the burner-head will be less liable to become overheated and destroyed, a fuliginous deposit upon the burner-head will be prevented, the flame will be caused to penetrate the mantle more uniformly and to a greater extent, and thereby the durability of the mantle and the illuminating power thereof will be increased.

My invention is designed to overcome the defects of burners of this type in which the flame passes upward from the mouth of the burner-head and remains in contact with the burner-tube sufficiently long to cause the same to become highly heated. The results of this are, first, a heated current passes upward along the burner-head and still further deflects the flame; second, part of the oxygen in the mixed gas and air is consumed inside the burner by contact with the heated walls of the burner-head, and an imperfect combustion takes place at the burner-mouth, which causes a deposit of a smoky, sooty, or fuliginous nature upon the outside of the burner which is apt to drop upon the mantle and ruin the same; third, another result of this upward tendency of the flame is that the same is not driven against the mantle with sufficient force to properly penetrate the same and all parts thereof, whereby the mantle is deprived of much of its illuminating power. In order to overcome these defects, I have provided the burner-head, at a proper distance above its mouth, with a laterally-projecting annular plate, which is imperforate and serves as a deflecting or baffle plate and overcomes the upward tendency of the flame. This plate effectually prevents the overheating of the burner-head and the accumulation of deposits thereon and causes a uniform mixture of gas and air to be presented at the burner-mouth. The flame is driven toward the mantle under pressure by the use of gas at the ordinary pressure and evenly and uniformly penetrates the same and all parts

thereof, thereby causing a greatly-increased incandescence.

Other details of improvement are set out in the following description and are fully illustrated in the accompanying drawings, wherein—

Figure 1 illustrates a plan view of a burner and connected parts containing my invention. Fig. 2 is a sectional elevation in detail of said burner-head, plate, and connecting fuel mixing and supply tube; and Fig. 3 is a perspective view of the mantle-holding ring.

In the drawings the usual apparatus for regulating the supply of gas and air is shown at 1. This may be of any convenient form and forms no part of my present invention. This regulator is attached to the gas and air mixing and supply tube 2, wherein the fuel is thoroughly commingled and delivered to the burner. Said fuel inlet and mixing pipe 2 is threaded exteriorly at its end and is adapted to screw into the corresponding threaded end of a tube 3, at the lower end of which is the tubular burner-head 4. It will be observed that the inner surface of the fuel and mixing pipe 2 is flush with the inner surface of the burner-head 4, whereby the passage of the fuel is unobstructed. Projecting laterally at a proper distance above the mouth of the burner-head 4 is an imperforate annular plate 5. As shown, this plate projects laterally from a point just about opposite the lower end of the fuel supply and mixing tube 2; but it may be arranged at any suitable distance above the mouth of the burner-head 4. The said plate 5 serves as a baffle or deflecting plate and prevents the upward movement of the flame adjacent to or in contact with the burner-head 4 and likewise prevents the formation of an upward current of highly-heated air close by the said burner-head which frequently occurs in incandescent burners of the inverted type. Projecting downward from the plate 5 is a flange 6, which is situated at the periphery of said plate and extends throughout the entire circumference thereof. The mantle 7 is supported upon the customary ring 8, which is secured and held upon the flange 6 by the pin 9 and slot 10, constituting a bayonet-joint connection. This manner of supporting the mantle and the use of the bayonet-joint connection for this purpose are usual and customary and form no part of my present invention. The tube 3 provides a convenient method of supporting the usual globe-holding bracket 11, which may be held as shown at the upper

part of said tube. I have shown the said tube 3, plate 5, burner-head 4, flange 6, and pin 9 as cast in one piece, and I have found that these may advantageously be cast of some suitable material, such as brass; but obviously, if desired, the parts may be drawn or formed by spinning instead of casting, in which case the tubes 3 and 4 could advantageously be in one piece with an offset at the point of function of the said tubes. The annular plate 5 and the flange 6 would then be formed in another piece adapted to fit tightly over the tube 4. The pin 9 could be formed by punching out a projection of the flange 6.

By use of the imperforate deflecting-plate 5 I find that the tendency of the flame to pass upward along the burner-head 4 is prevented, and the pressure of the gas at the ordinary service pressure thereof is sufficient in the absence of any deflection of the said flame to project the flame evenly and uniformly to all parts of the mantle 7 and to cause the same to thoroughly penetrate and permeate the fabric composing the said mantle and render the same highly incandescent. In addition to this the burner-head 4 will not become overheated, but on the contrary will remain in such condition that the fuel will be supplied invariably at the mouth of the burner-head 4 in a uniform condition, and owing to the more perfect combustion all fuliginous deposit on the said burner-head 4 and any carbonization thereof will be prevented.

It is obvious that changes from the precise construction shown by me may be made, for instance, in the manner of connecting the burner to the fuel inlet and supply tube, the manner of connecting the mantle to the flange of the annular deflecting-plate, and the manner of supporting the deflecting-plate upon the burner-heads without departing from my invention.

The operation of my device will be apparent to those skilled in the art from the foregoing description.

Having now fully described the said structure, what I claim, and desire to secure by Letters Patent, is—

1. In an inverted incandescent gas-burner, a burner-head, an imperforate annular deflecting-plate surrounding said burner-head, a flange depending perpendicularly from said burner-head and integral therewith and adapted to support a mantle, substantially as described.

2. An inverted incandescent gas-burner,

comprising a burner-head, an imperforate annular deflecting-plate surrounding said burner-head, a flange depending perpendicularly directly from the periphery of said plate, and means for supporting a mantle from the outer face of said flange, the said parts so arranged that vertical lines defining the periphery of said plate will fall within the side walls of the mantle, substantially as described.

3. An inverted incandescent gas-burner, comprising a fuel supply and mixing tube, a tubular burner-head, an imperforate annular deflecting-plate surrounding said burner-head having a peripheral flange depending perpendicularly therefrom and adapted to support a mantle whereby a substantial chamber is formed between said burner-head and said flange, substantially as described.

4. An inverted incandescent gas-burner comprising a fuel supply and mixing tube, a burner-head having an extension for attachment to said tube, an imperforate annular deflecting-plate surrounding said burner-head provided with means for supporting a mantle, substantially as described.

5. An inverted incandescent gas-burner comprising a fuel supply and mixing tube, a burner-head having an integral extension for attachment to said tube, an imperforate annular deflecting-plate surrounding said burner-head and provided with an integral depending peripheral flange, adapted to support a mantle, substantially as described.

6. An inverted incandescent gas-burner comprising a connecting-tube, a burner-head, an imperforate annular deflecting-plate, a peripheral flange depending from said plate and adapted to support a mantle, all of said parts being formed in one piece, substantially as described.

7. An inverted incandescent gas-burner, comprising a tube adapted for connection to the fuel supply and mixing tube, a burner-head, an imperforate annular deflecting-plate, having a peripheral flange depending perpendicularly therefrom, said plate adapted to support a globe-holding bracket, and means on said flange for supporting a mantle, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

SOLOMON KAUFMAN.

Witnesses:

WM. E. McREYNOLDS,
ADOLPH F. DINSE.