

No. 849,359.

PATENTED APR. 9, 1907.

B. A. BAXTER.
BURNER.

APPLICATION FILED MAR. 10, 1905.

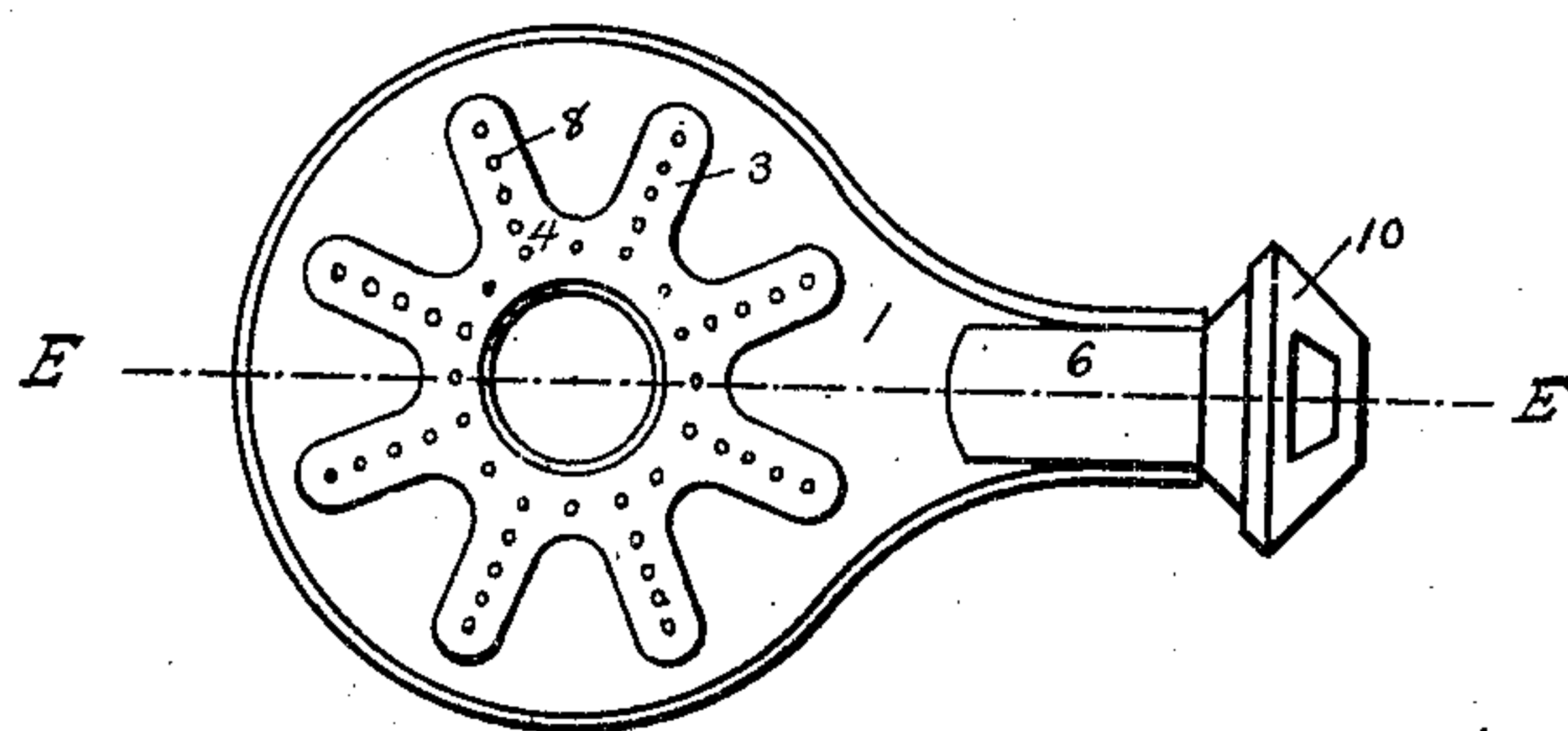


Fig. 1.

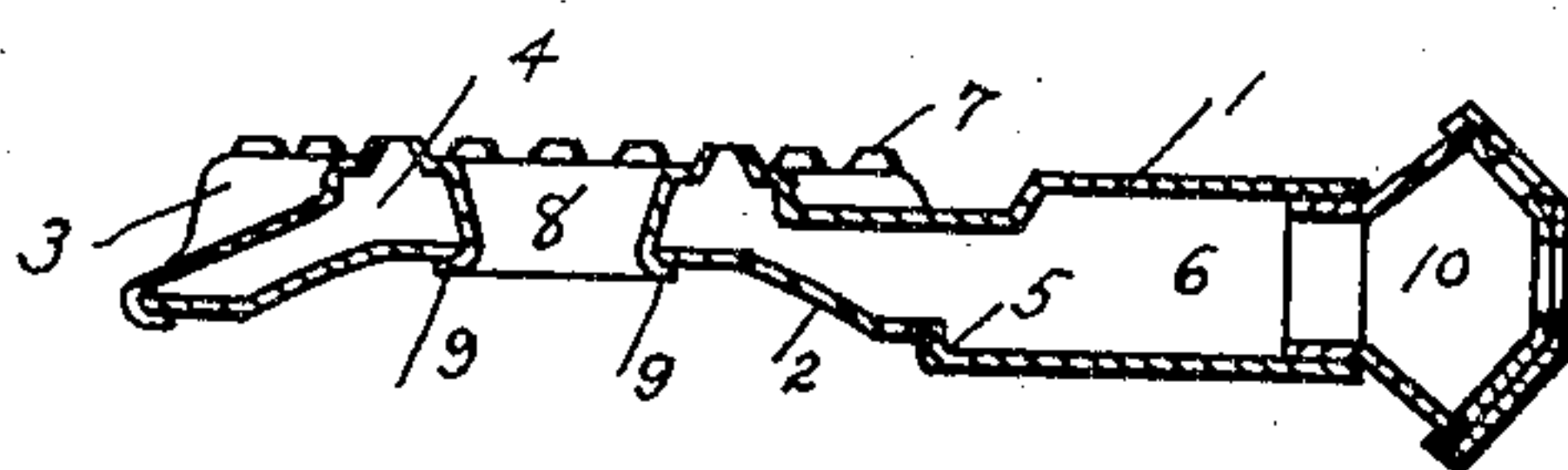


Fig. 2.

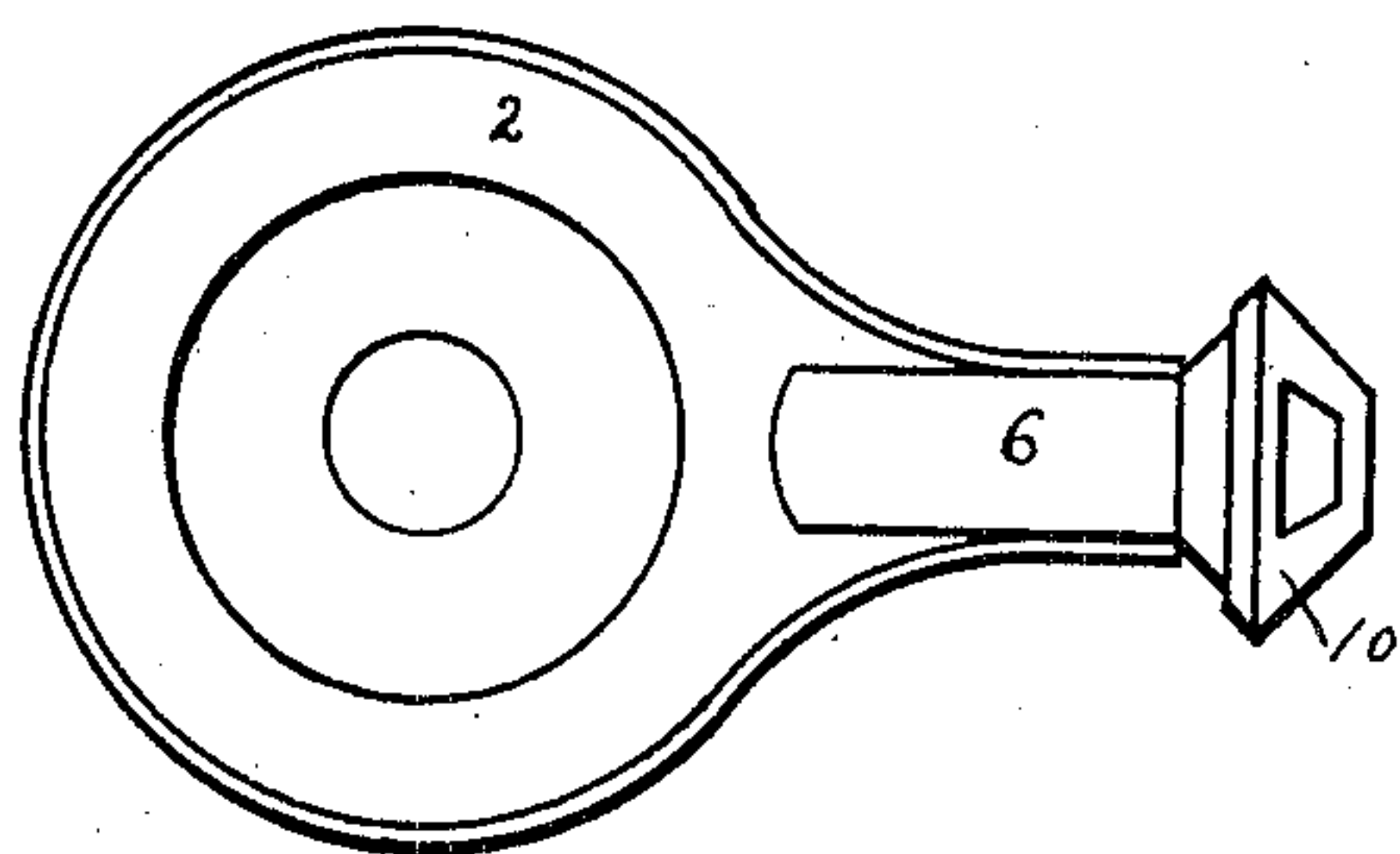


Fig. 3.

WITNESSES:

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BERRY A. BAXTER, OF MANSFIELD, OHIO.

BURNER.

No. 849,359.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BERRY A. BAXTER, a citizen of the United States of America, and a resident of Mansfield, county of Richland, and State of Ohio, have invented certain new and useful Improvements in Burners, of which the following is a specification.

My invention relates to a burner to be used in the consumption of gas for heating or fuel.

It is well known to those skilled in the art that the ordinary burners now in use are constructed of cast-iron. In order to give the burner the tensile strength required, the walls are made considerably thicker than necessary, which greatly interferes with the passage of the gas through the apertures to the point of ignition. To obtain the best results as to economy in the use and the maximum heat radiation from a given quantity of gas, free and unobstructed passage or flow is desirable, and a smooth interior of the supply-pipes and inner surface of the walls of the burner obviates undue friction of the gases in passing through, which retard and impede it, causing improper combustion. The upper wall of the burner, which is provided with suitable apertures, should be very light, so as to prevent undue resistance to the flow at the point of ignition.

The object of my invention, therefore, is to construct a burner in such a manner as to overcome the defects and disadvantages common in burners now in use.

A further object is to design a burner that will leave a minimum amount of unconsumed gases in the chambers of the burner when the supply is cut off, thereby avoiding the necessity of reducing the size of the orifice of the supply-pipe in order to prevent a sufficient quantity of the unconsumed gases from remaining in the pipe to cause an explosion, and means of distributing the gas to the chambers uniformly.

An essential feature of my invention consists in pressing the surface of the upper wall of the burner in such a manner as to form a series of cones above the plane of the surface with suitable apertures in the center for the delivery of the gas and air for consumption.

I attain these and other objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view showing arrangement of the cones. Fig. 2 is a cross-sectional side view of Fig. 1 taken on the line

E E, showing shape of depressed bottom. Fig. 3 is a bottom plan view.

The burner consists of an upper portion 1 and a lower portion 2, formed, preferably, out of sheet metal. The upper portion is provided with a series of radial chambers 3, formed by pressing the metal above the plane of the surface. An annular chamber 4, communicating with the chamber, 3 is also provided. The lower portion 2 from the point indicated by reference-figure 5 is depressed and formed concavo-convex for the purpose of reducing the area of the chambers and distributing the gas uniformly after admission. It will be noted that the orifice in the neck 6 of the burner is also reduced in size, which in conjunction with contracted chambers prevent the gases from accumulating and exploding when the supply is cut off by closing the inlet-valve, thereby making it unnecessary to change the size of the pipe or neck of the burner. In the upper portion of the burner a series of conical projections 7 are formed by pressing part of the body portion above the plane of the surface. In the center of the conical projection outlet-apertures 8 are provided. The novel method of delivering the gas through the conical projection permits it to flow freely to the point of ignition and combustion without friction or obstruction, as the metal is so light that it does not retard or impede it, as in the case of the ordinary burner, where the gas flows through apertures formed in the heavy wall of the burner. The shape of the conical projections is also a great advantage, as the gas enters freely, the aperture being large at the bottom or inlet, and any foreign substance falls through said aperture instead of lodging, as would be the case if the walls were parallel. The upper and lower portion of the burner are securely fastened together by beading the edges, as shown by reference-figure 2. An air-mixer 10, preferably of the kind shown, is fitted to the inner periphery of the neck of the burner.

What I claim, and desire to secure by Letters Patent, is—

1. A burner composed of an upper portion pressed from metal forming an annular chamber with a series of radial chambers communicating therewith, conical projections pressed from said chambers from which the gas is emitted, a lower portion formed concavo-convex contracting the chambers

and the neck of the inlet-pipe, a separable mixer secured to the end of the neck of the burner, said upper and lower portions being provided with an orifice in the center of the chamber, a bushing fitted to said aperture to connect the upper and lower portions in conjunction with beading.

2. In a gas-burner composed of an upper portion having an annular concavo-convex portion with a series of radial chambers extending above the plane of the top surface, tubular conical projections pressed from the surface of the upper portion, a lower portion formed concavo-convex secured to the upper portion, a separable mixer fitted to the inlet-aperture of the neck of the burner as described and set forth.

3. A burner composed of an upper portion having a series of radial chambers extending above the plane of the surface, an annular chamber communicating with said radial chambers, a series of conical projections extending upward from the plane of the radial chambers, a lower portion raised from the plane of the bottom contracting the chamber, said upper and lower portion secured together by beading and an annular collar as described and set forth.

4. A burner composed of an upper portion having a series of radial chambers extending above the plane of the top surface, an annular chamber communicating with said radial chambers, a lower portion raised concavo-convex contracting the chambers, said upper and lower portions connected together by beading and a ring, a series of conical projections pressed outward from the plane of the radial chambers forming gas-ajutages with the base of the conical projections communi-

cating with the chambers forming an enlarged opening at the base and a contracted opening at the point of ignition.

5. A burner composed of an upper portion having an aperture in the center pressed from metal forming an annular chamber and a series of radial chambers communicating therewith, a series of hollow and conical projections extending above the plane of said chambers, a lower portion formed concavo-convex with an aperture in the center contracting said chambers.

6. In a gas-burner the combination of a two-part burner and neck pressed from sheet metal comprising an upper portion with a series of radial chambers pressed outwardly therefrom, tubular conical projections pressed outwardly from said radial chambers, a lower portion formed concavo-convex, both of said lower and upper portions having an opening in the center of the burner.

7. In a gas-burner the combination of a two-part burner and neck pressed from sheet metal comprising an upper portion with a series of radial chambers pressed outwardly therefrom, tubular conical projections pressed outwardly from said radial chambers, a lower portion formed concavo-convex, both of said lower and upper portions having an opening in the center of the burner, a ring to fit said opening and partially connect said upper and lower parts.

Signed at Mansfield, Ohio, this 13th day of February, 1905.

BERRY A. BAXTER.

Witnesses:

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JOHN H. BOSS.