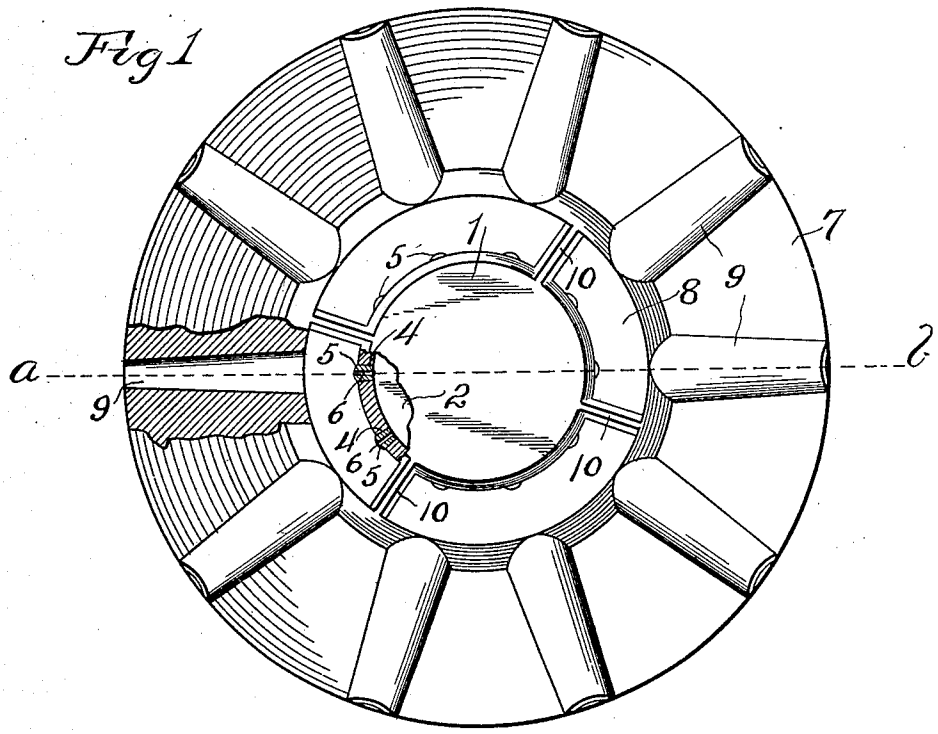
A. F. BAUER.

BURNER.

APPLICATION FILED DEC. 28, 1907.

913,803. Patented Mar. 2, 1909.

Fig 1



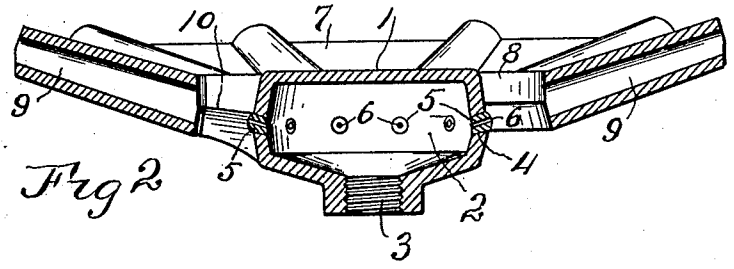


Fig 2

WITNESSES:

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AUGUST F. BAUER, OF KANSAS CITY, MISSOURI.

BURNER.

No. 913,803. Specification of Letters Patent. Patented March 2, 1909.

Application filed December 28, 1907. Serial No. 408,378.

To all whom it may concern:

Be it known that I, AUGUST F. BAUER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Burners, of which the following is a specification.

My invention relates to improvements in burners.

My improved burner is adapted for use in burning gas or liquid fuel and embodies the principle of the Bunsen burner.

The object of my invention is to provide a construction which is light, strong, durable, cheaply manufactured, efficient in operation, and not liable to disarrangement or to get out of order.

In its preferable form the burner comprises a body consisting of a single cast piece of metal containing a receiving chamber having openings discharged into mixing tubes located in a plate separated from the chamber by an air space, the plate and chamber being connected by integral supporting arms.

In the accompanying drawings illustrating this form of my invention, Figure 1 is a top view partly in section. Fig. 2 is a vertical section on the line *a*—*b* of Fig. 1.

Similar characters of reference denote similar parts.

1 denotes a central body portion, preferably circular, and having a chamber 2 for receiving the gas or other fuel. Said chamber is provided with a threaded inlet hole 3 for receiving the supply pipe, not shown. The chamber 2 is provided also with a plurality of radial peripheral holes 4, preferably upwardly and outwardly inclined, and preferably inwardly tapered so as to tightly hold therein the jet tips 5, which are driven into the holes from the outer side of the chamber. The jet tips 5 are provided with the usual discharge openings 6 also inclined upwardly and outwardly.

Encircling the body portion 1 is an annular plate portion 7, preferably upwardly and outwardly flaring and separated from the body 1 by an air space 8 across which passes the gas or vapor from the jet tips 5. The annular plate portion 7 is provided with a plurality of radial and upwardly and outwardly inclined holes 9 which form mixing tubes to receive the gas and air, and disposed respectively in alinement with the holes 4 and discharge openings 6. The mixing holes or tubes 9 preferably converge outwardly, thereby effecting a better mixing of the gas and air. Connecting the portion 1 and annular portion 7 are one or more supporting arms 10 integral with the body 1 and annular portion 7 and disposed across the air space 8 intermediate the jet tips 5 and forming lateral wind guards for said tips.

By reason of the unitary structure of the body bolts or screws for connecting the annular and body portions are eliminated, thus cheapening the construction of the burner and obviating the liability of disarrangement of the parts and consequent relative change in position of the tips 5 and holes 9. Furthermore the arms 10 being integral parts of the body 1 and annular portion 7, heat from the latter portion will be more readily conducted to the body and the gas in chamber 2 more highly heated than would be the case if the parts 1 and 7 were separable.

The operation of the burner will be readily understood. The gas enters the chamber 2 through the inlet hole 3 and passes out through the jet openings 6. In passing across the air space 8 the gas carries with it air which mixes with the gas in the holes or mixing tubes 9, the mixture being ignited after emerging from the upper ends of said holes or tubes.

My invention may be modified, within the scope of the appended claims, without departing from its spirit.

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

1. A burner comprising a body having a receiving chamber provided with a plurality of discharge openings, an annular plate encircling said body and separated therefrom by an air space and provided with a plurality of radial holes forming mixing tubes and disposed respectively in alinement with said discharge openings, and radial supporting arms connecting said body and plate across said air space and disposed so as to form wind guards for said discharge openings.

2. A burner comprising a casting having a central body portion having a chamber provided with a plurality of radial discharge openings, an annular portion encircling said central portion and separated therefrom by an air space, and having a plurality of holes forming mixing tubes disposed in alinement

respectively with said discharge openings, and radial arms integral with and connecting the central and annular portions and disposed intermediate said discharge openings and forming lateral wind guards therefor.

3. A burner comprising a central body portion having a chamber provided with a plurality of radial peripheral discharge openings, an annular portion encircling said central portion and separated therefrom by an air space and having a plurality of upwardly and outwardly inclined holes forming mixing tubes disposed in alinement respectively with said discharge openings, and one or more supporting arms connecting the central and annular portions.

4. A burner comprising a central body portion having a chamber provided with a plurality of radial peripheral upwardly and outwardly inclined discharge openings, an upwardly and outwardly flaring annular portion encircling said central portion and separated therefrom by an air space and having a plurality of outwardly diverging holes forming mixing tubes disposed in alinement respectively with said discharge openings, and one or more arms connecting said central and annular portions.

5. A burner comprising a central body portion having a chamber provided with a plurality of radial inwardly tapering holes, removable jet tips in said tapering holes, an annular portion encircling said central portion and separated therefrom by an air space, said annular portion having a plurality of holes forming mixing tubes disposed respectively in alinement with said tapering holes, and one or more supporting arms connecting said annular and central portions.

6. A burner comprising a central body portion having a chamber provided with a plurality of radial inwardly tapering holes, removable jet tips in said holes, an annular portion encircling said central portion and separated therefrom by an air space and having a plurality of radial and upwardly and outwardly inclined holes forming mixing tubes disposed in alinement respectively with said holes, and connecting arms connecting said annular and body portions and disposed intermediate and forming lateral wind guards for said jet tips.

7. A burner comprising a single casting having a central body portion, an annular upwardly flaring plate encircling said central portion and separated therefrom by an air space, and radial arms extending across said air space and connecting the central body portion and annular plate, the body portion having a plurality of radial upwardly inclined inwardly tapering holes, the annular plate having a plurality of outwardly converging holes disposed respectively in alinement with said tapering holes and forming mixing tubes, and removable jet tips in said tapering holes.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

AUGUST F. BAUER.

Witnesses:
E. B. HOUSE,
I. M. WOOD.