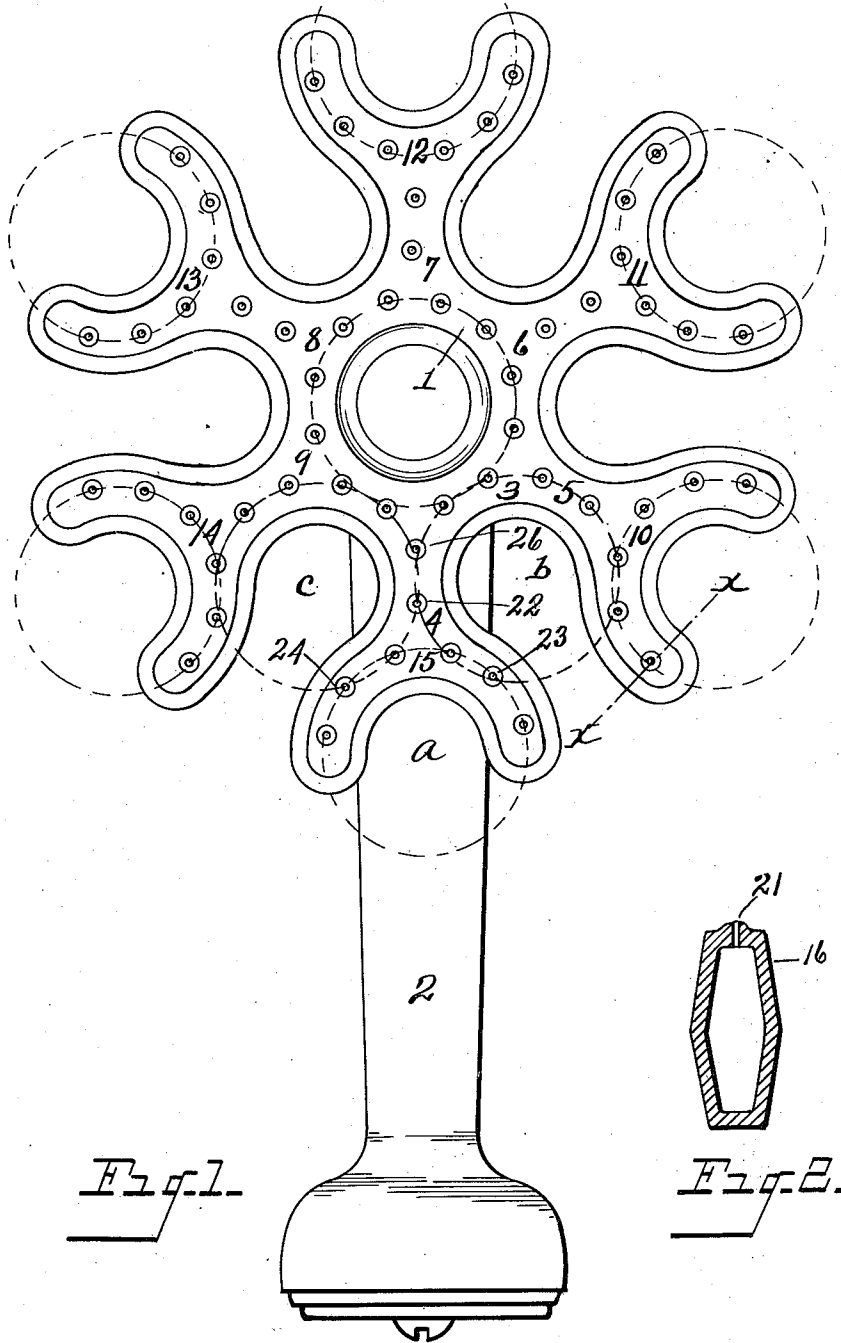


A. G. SHERMAN.
GAS BURNER.
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1,008,741.

Patented Nov. 14, 1911.



Witnesses
O. B. Baenziger.
V. C. Spratt.

Inventor
Alvin G. Sherman.
By Parker & Burton
Attorneys

UNITED STATES PATENT OFFICE.

ALVIN G. SHERMAN, OF DETROIT, MICHIGAN.

GAS-BURNER.

1,008,741.

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To all whom it may concern:

Be it known that I, ALVIN G. SHERMAN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Gas-Burners, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to gas burners.

It has for its object an improved construction of gas burner which equalizes the heat across the surface of the burner and in which provision is made for the proper access of air to the flame.

It is well known that for the proper combustion of a mixture of any gaseous or vaporous fuel and oxygen, that there not only must be the proper primary mixing of air and gas, or oxygen and gas, but that at the place of combustion where the mixture is fired there must be a secondary access of air, and to get the best results this secondary access of air must rise freely from near the bottom of the little flame of burning gases. There have been many burners made in which provision has been made for producing this access of secondary air to some of the little jets of burning gases issuing from the burner, but no one, so far as I am aware, has devised a burner in which the jets of burning gas may be increased indefinitely, and all of them be provided equally well with access of secondary air.

In the embodiment of this invention provision is made for a substantially equal access of air to each one of a great number of burning jets which may be increased indefinitely.

In the drawings:—Figure 1, shows a burner in plan view. Fig. 2, is a cross section on the line $x-x$ of one branch of the burner.

The burner is made preferably as a casting with an inlet pipe 2 which conducts the gas from the source of supply to the interior of the large head of the mixing chamber 3, in which the branches or extensions 4, 5, 6, 7, 8 and 9 radiate from a central chamber and expand at their terminals into semi-circular chambers 10, 11, 12, 13, 14, 15. The branches 4 and 5 are so related that the line of burner holes from the center of the branch 4 to the center of the branch 5 is itself semi-

circular and intersects a circular line which is central to the inner portion 1 of the head. Each semi-circular chamber at the extremity of a branch intersects the circular center line of two adjacent branches, and along its center line the shell of the burner is bored for the jet mouths 21. The jet mouths for the outer semi-circular chamber in the chamber 15 are arranged in a semicircle whose center is located at the point a in the open space between the constituent arms or branches of said extension 15. The jet mouths issuing from the chamber between the branches 4 and 5 are located equidistant from a center located at b , and this arc of jet mouths having its center at b intersects the arc of jet holes of the semicircle of jet holes having its center at a , so that the jet hole 23 is common to both. The jet hole 24 is common to the semi-circle of holes having its center at a and the arc of holes having its center at c , and the holes 22 and 26 are common to the holes centered at b and centered at c . In this way each circle intersects two at least of the other circles of holes in the burner head. This arises from the construction in which there is in the head a central circle of jet holes surrounded by a plurality of arcs of jet holes, each of which intersects the central circle, and each of which intersects two of the circles lying adjacent one on either side. Around this row of circles, as shown in the drawing, there is another row of half circles. The holes are all equally spaced from each other, and all substantially equally spaced from the margin of the casing of the head so that the access of air to each opening is substantially uniform to that of any other hole in the burner head.

What I claim is:—

1. A gas burner, comprising a casing having a centrally apertured central portion and branching radial extensions therefrom, each extension being spaced from those adjacent by an intervening air space the top surface of both the central portion and its branching extensions being perforated with a plurality of burner jet apertures, said apertures being spaced equidistant from one another and being arranged in intersecting arcs about the open air spaces which separate the extensions from one another, substantially as described.

2. In a gas burner, a casing provided with a plurality of branching extensions spaced

from one another and whose innermost portions are substantially radial in extent, all portions thereof being provided on their upper side with burner jet apertures arranged
5 equidistant from one another in intersecting arcs the center of each of which is located in an open air space between two adjacent extension portions, substantially as described.
10 3. In a gas burner, a casing member having branch portions arranged about a central portion with open air spaces separating the adjacent sides thereof, both the body

portion and the branch portions of the casing being provided with burner jet apertures
15 equally spaced and arranged in series of intersecting arcs of circles, each arc being arranged around an air space separating two of the branch portions of the casing, substantially as described. 20

In testimony whereof, I sign this specification in the presence of two witnesses.

ALVIN G. SHERMAN.

Witnesses:

CHARLES F. BURTON,
VIRGINIA C. SPRATT.