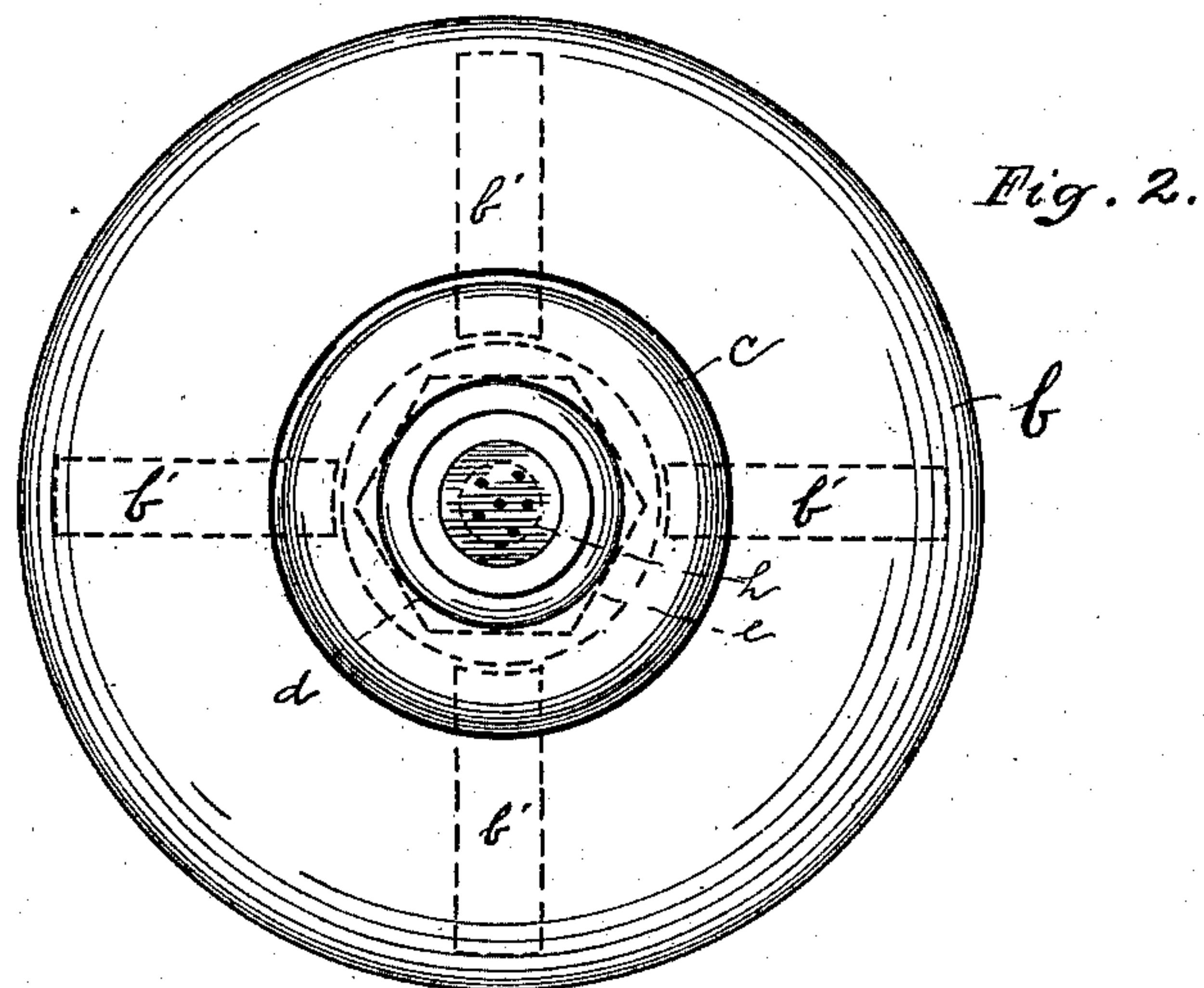
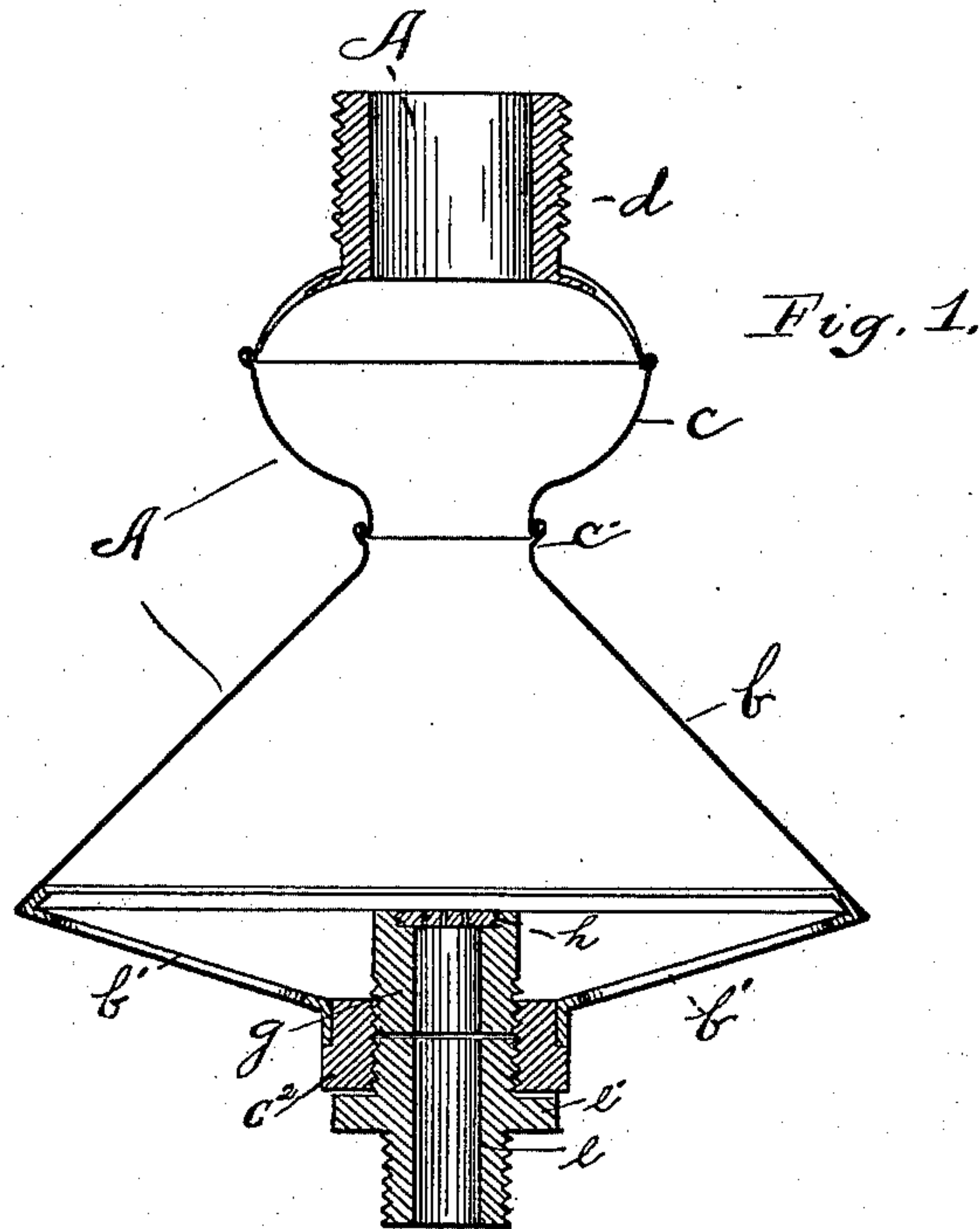


(No Model.)

J. G. STEPHENS & H. W. HOLMES.
GAS MIXER.

No. 474,781.

Patented May 10, 1892.



W. C. HESS & SONS
H. L. Reese.
H. E. Harrison.

INVENTORS.
James G. Stephens
Harry W. Holmes
John H. Roney
ATTY.

UNITED STATES PATENT OFFICE.

JAMES G. STEPHENS AND HARRY W. HOLMES, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO THE WELSBACH INCANDESCENT GAS LIGHT COMPANY, OF GLOUCESTER CITY, NEW JERSEY.

GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 474,781, dated May 10, 1892.

Application filed March 14, 1891. Serial No. 385,129. (No model.)

To all whom it may concern:

Be it known that we, JAMES G. STEPHENS and HARRY W. HOLMES, both citizens of the United States, residing at the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Mixers, of which the following is a specification.

Our invention relates to devices adapted to be interposed between a gas-burner and a gas-supply pipe in order to effect an admixture of air with the gas before the same is delivered to the burner for consumption.

The principal object of our invention is to provide a device of the type mentioned by the use of which gas and air are so thoroughly mixed that a substantially complete combustion of the gas is effected.

The invention consists of the improvements hereinafter fully described and claimed.

The characteristic features and scope of the invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a vertical central section of a gas-mixer embodying features of our invention, and Fig. 2 is a top or plan view of the same.

In the drawings, A is a gas-mixer comprising a conical receiver *b*, having the base-plate thereof provided with air inlets or ports *b'*.

c is an expanding-chamber communicating with the receiving-chamber *b* by a neck or contracted portion *c'* and provided with an externally-threaded nipple *d*, adapted for the reception of a gas-burner. (Not shown.)

*c*² is an internally threaded or tapped socket inserted into the base-plate of the receiver *b* and located at or near the center thereof.

e is a double-ended nipple provided with a polygonal collar *e'* for the reception of a wrench. One of the threaded extremities of this nipple is screwed into the lower portion of the socket *c*² and the other extremity thereof is adapted to be screwed into the tapped extremity of a bracket or gas-fixture delivery-pipe. (Not shown.)

g is an internally-threaded thimble adapted to be screwed into the upper portion of the

socket *c*² and serving to deliver a supply of gas to the interior of the receiving-chamber *b*. This construction is advantageous for the following reasons: First, it enables the lower portion of the socket *c*² to be applied to an internally-threaded gas bracket or pipe through the instrumentality of the thimble *e*, and it also enables the lower portion of the socket *c*² to be applied directly to an externally-threaded gas bracket or pipe without the employment of the nipple; second, it permits of the proper adjustment of the discharge end of the thimble *g* with reference to the ports *b'*, and prevents the thimble from being accidentally shifted out of adjustment during the operation of applying the device to a gas-fixture, and, third, it enables the nipple and thimble to be screwed into contact with each other, thereby forming a sort of jam-nut for preventing the accidental detachment of the mixer.

h is an externally-threaded and perforated disk or diaphragm adapted to be screwed into a correspondingly-threaded upper portion of the thimble *g* in order to break the column of gas into a number of jets before it is permitted to enter the receiver *b*. It may be remarked that the perforated disk *h* is protected from accidental injury because it is connected with a thimble *g*, that need not be removed from the mixer during the operation of attaching the latter to a gas-fixture arm or bracket.

In use the jets of gas issuing from the thimble *g* and a supply of air entering the ports *b'* are permitted to become thoroughly mixed in the receiving-chamber *b*, and this mixture passes through the neck *c'* and is permitted to expand in the chamber *c*, from which it escapes through the nipple *d* to the burner.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A gas-mixer comprising a receiving-chamber having the base-plate provided with air inlets or ports and a socket adapted for connection with a gas-supply pipe, an expanding-chamber communicating with the receiving-chamber by a contracted passage or neck and provided with a nipple adapted

for the reception of a burner, a thimble extending into said receiving-chamber and connected with said socket, and a perforated diaphragm in said thimble, substantially as
5 and for the purposes set forth.

2. A gas-mixer comprising a receiving-chamber having the base-plate provided with air inlets or ports and a socket, an expanding-chamber communicating with the receiving-chamber by a contracted passage or neck
10 and adapted for connection with a burner, a thimble extending into said receiving-chamber and adjustably connected with the upper portion of said socket, a perforated diaphragm in said thimble, and a nipple connected
15 with the lower portion of said socket and adapted for insertion into the arm of a gas bracket or fixture, substantially as and for the purposes set forth.

20 3. A gas-mixer comprising a receiving-chamber having the base-plate thereof provided with air inlets or ports and an internally-tapped socket, an expanding-chamber

communicating with the receiving-chamber by a contracted passage or neck and provided
25 with an externally-threaded nipple adapted for the reception of a burner, an externally-threaded thimble extending into said receiving-chamber and engaging in the upper portion of said socket to permit of the adjustment
30 of the point of discharge of said thimble toward and away from the center of the receiving-chamber, a perforated diaphragm in said thimble, and an externally-threaded nipple secured into the lower portion of said
35 socket and adapted for insertion into the gas-pipe of a bracket or gas-fixture, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we hereunto affix our signatures this 2d day
40 of March, A. D. 1891.

JAMES G. STEPHENS. [L. S.]

HARRY W. HOLMES. [L. S.]

In presence of—

C. C. LEE,

JNO. H. RONEY.