

No. 816,045.

PATENTED MAR. 27, 1906.

M. SCOTT.
GAS MIXER.

APPLICATION FILED OCT. 26, 1905.

Fig. 1.

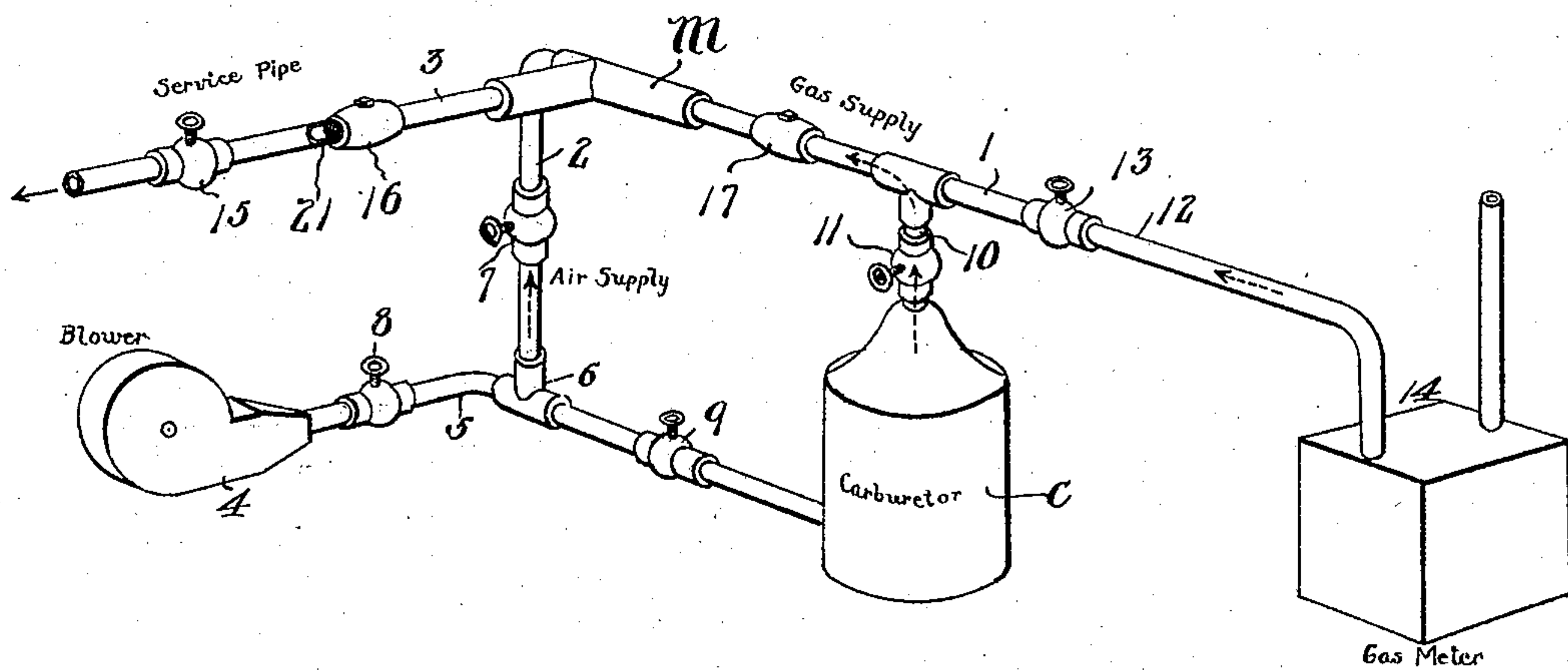


Fig. 2.

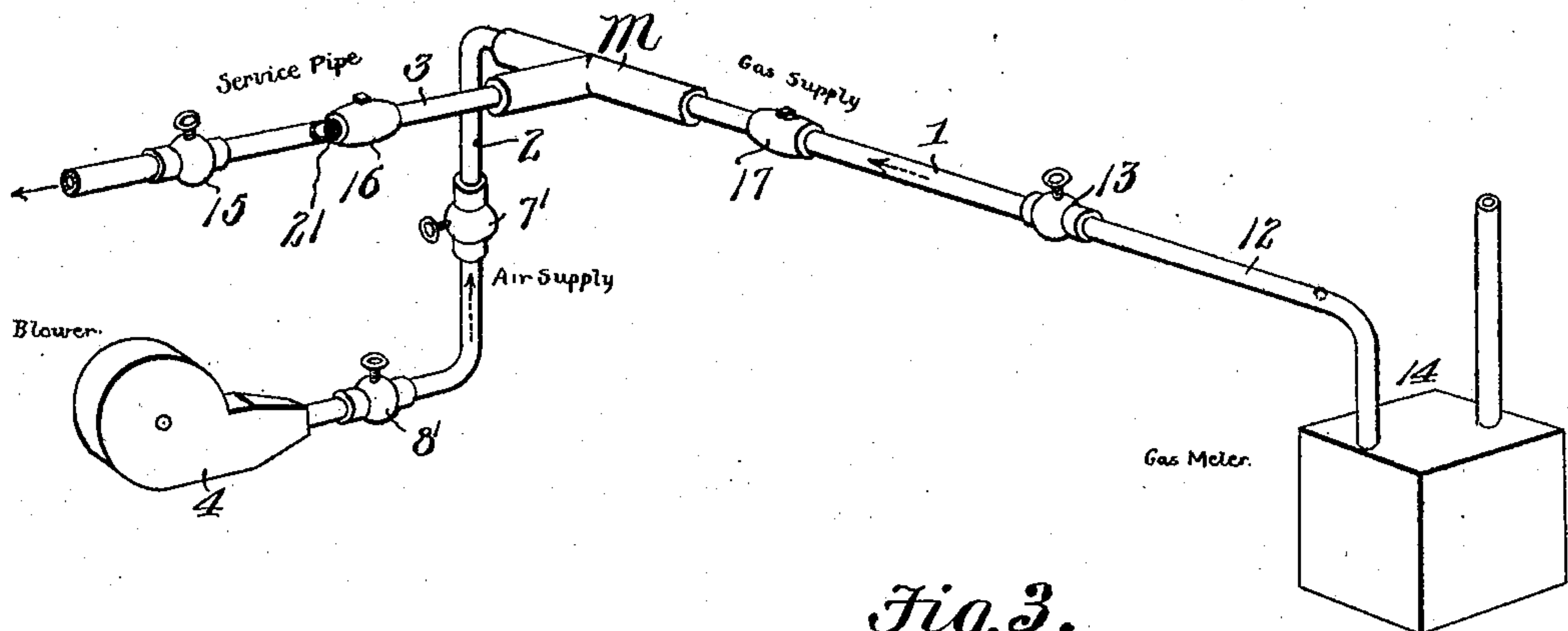
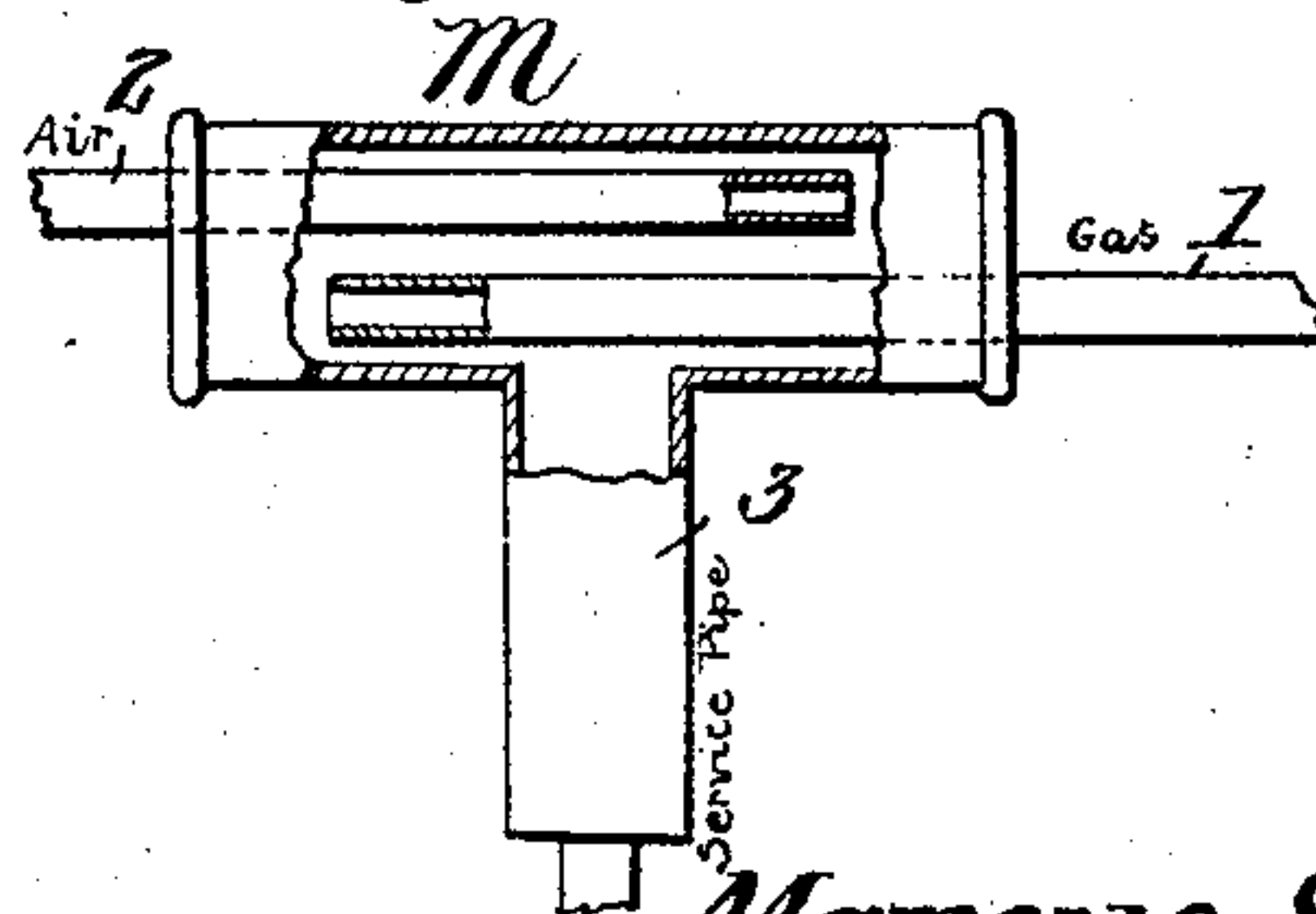


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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GAS-MIXER.

No. 816,045.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MARCUS SCOTT, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Gas-Mixer, of which the following is a specification.

This invention relates to gas-mixing devices having for their object to provide for the admixture with gas of atmospheric air at a point relatively near the point where the gas is produced or generated, so as to provide an inflammable-gas compound which may be distributed through a service-pipe to individual burners without necessity for the further admixture of air at each individual burner, and thus providing a gas compound especially suited for heating purposes, the quality of which may be regulated by the addition to the gas of just the proper proportion of atmospheric air at a central distributing-point, and thus dispensing with the necessity of mixing chambers or retorts at the individual burners.

The invention consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings have been illustrated simple and preferred forms of the invention, it being understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be made when desired.

In the drawings, Figure 1 is a diagram illustrating the invention arranged for operation. Fig. 2 is a diagram illustrating a modification. Fig. 3 is a sectional detail view of the mixing-chamber.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

M designates a mixing-chamber which consists of a casing that has been illustrated in each case as being provided with three branches that are connected by suitable piping 1 and 2 with the sources of supply of gas and atmospheric air, respectively, while the third branch is connected with the distributing-pipe or service-pipe 3. In Figs. 1 and 2 the air-supply is provided through the medium of a suitably-operated blower 4.

In Fig. 1 of the drawings the blower is con-

nected with a carbureter C by means of a pipe 5, having a T 6 from which the air-supply pipe 2 extends to the mixing-chamber M, said pipe 2 being provided with a valve 7, which may be a globe-valve of ordinary construction. The pipe 5 is also provided with globe-valves 8 and 9, disposed between the T and the blower on one side and the carbureter on the other side. The hydrocarbon gas coming from the carbureter is conveyed to the pipe 1 through a pipe 10, having a valve 11. The supply-pipe 1 has also been shown as being connected by a pipe 12, having a valve 13, with a gas-meter 14, which also constitutes a source of gas-supply which may be either of natural or artificial gas. The service-pipe is provided at a point not far from the mixing-chamber with a valve 15, and said service-pipe also has a check-valve 16 intermediate the valve 15 in the mixing-chamber. The gas or supply pipe has a check-valve 17 intermediate the mixing-chamber and the source of gas-supply.

The form of the invention illustrated in Fig. 1 is applicable to establishments that are provided with plants for generating hydrocarbon gas as by means of the carbureter shown in said figure. In Fig. 2 the gas is supplied only through a meter 14, and the carbureter being absent the blower is connected direct with the mixing-chamber by the pipe 2, which has here been shown as provided with regulating-valves 7' and 8'. In other respects the construction shown in Fig. 2 is identical with that shown in Fig. 1, and the same numerals have been employed to distinguish the several parts.

The construction of the mixing-chamber will be best understood by reference to Fig. 3 of the drawings, where it will be seen that the pipes 1 and 2 enter the opposite branches of the T, which constitutes the mixing-chamber, and extend past each other and past the inner end of the branch communicating with the service-pipe, terminating within the branches of the T opposite to those through which they enter. Thus the air entering through the pipe 2 and the gas entering through the pipe 1 will be compelled to move back to the common outlet through the lateral branch of the T, where a thorough admixture takes place.

In the several forms of the invention a thorough admixture of the gas and the atmospheric air will take place within the mixing-chamber, from which the mixture passes

into the service-pipe. The check-valves are arranged to regulate the passage of gas and air to the burners by automatically opening wider when additional burners are lighted
 5 and by automatically diminishing the size of the gas and air passage when burners are turned off or extinguished, and the proportions of gas and atmospheric air entering into the mixing-chamber may be very accurately
 10 gaged or regulated according to the quality and nature of the gas by simply manipulating the valves upon the supply-pipes.

When, as in Fig. 1 of the drawings, the invention is applied to a plant including a gas-
 15 generator, such as the carbureter C, the pipe 12, leading from the meter, may be normally closed by the valve 13, which latter will be opened only in the event of the failure of the carbureter or generator to provide the need-
 20 ed supply of gas when the valve 11 may be closed, as well as the valve 9 between the carbureter and the supply-pipe 2, which connects the mixing-chamber with the blower.

It is to be understood that the use of this
 25 invention is not limited to private establishments, manufactories, laundries, and the like where gas with an admixture of atmospheric air is to be supplied to a plurality of burners, but that said invention is equally
 30 applicable on a large scale at gas-manufacturing plants, where it may be desired to supply the gas with an admixture of atmospheric air previous to its being distributed through the mains.

35 Having thus described the invention, what is claimed is—

1. A mixing-chamber having a branch connected with a source of gas-supply, a branch connected with a source of air-supply, and a
 40 branch connected with a service-pipe; said

gas and air supply pipes being extended into the mixing-chamber past each other and past the branch connected with the service-pipe; the several supply-pipes and the service-pipe being provided with independent regulating-
 45 valves, and the gas-supply pipe and the service-pipe being provided with check-valves intermediate the regulating-valves and the mixing-chamber.

2. A mixing-chamber having a branch connected with a plurality of independent
 50 sources of gas-supply, a branch connected with a source of air-supply, and a branch connected with a service-pipe; the gas and air supply pipes being extended into the mixing-
 55 chamber past each other and past the inner end of the branch connected with the service-pipe; the sources of gas-supply having independent valves controlling their connection
 60 with the mixing-chamber.

3. A mixing-chamber, sources of supply of gas and of atmospheric air connected with said mixing-chamber by means of pipes having regulating-valves, said pipes being extended into the mixing-chamber past each
 65 other; a valved service-pipe extending from the mixing-chamber, at a point intermediate the inner ends of the gas and air pipes; a check-valve in the service-pipe intermediate the regulating-valve and the mixing-cham-
 70 ber, and a foraminous diaphragm in the pipe adjacent to the check-valve.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARCUS SCOTT.

Witnesses:

A. P. FRIES,
 J. R. LOCKHART.