No. 894,523. PATENTED JULY 28, 1908.

T. J. McGEE & J. GALLAGHER.

BURNER.

APPLICATION FILED DEC. 26, 1907.

2 SHEETS—SHEET 1.

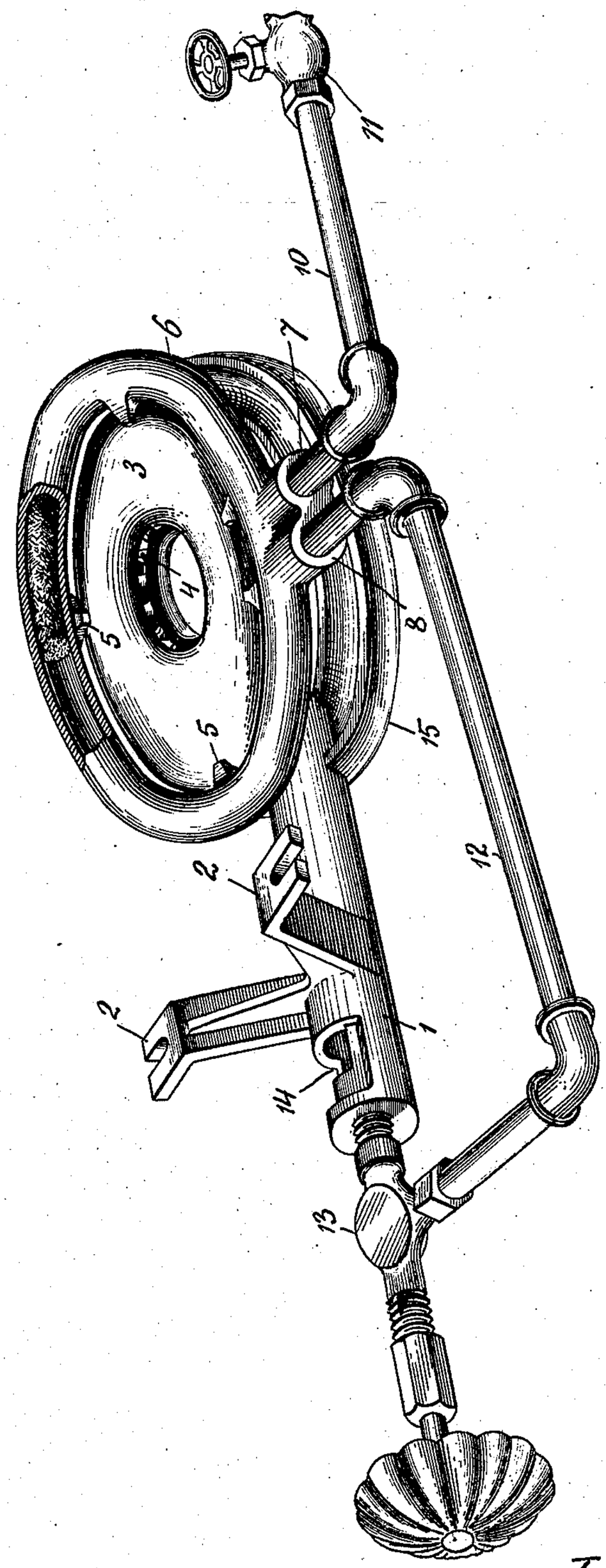

Fig. 1.

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2 SHEETS—SHEET 2.

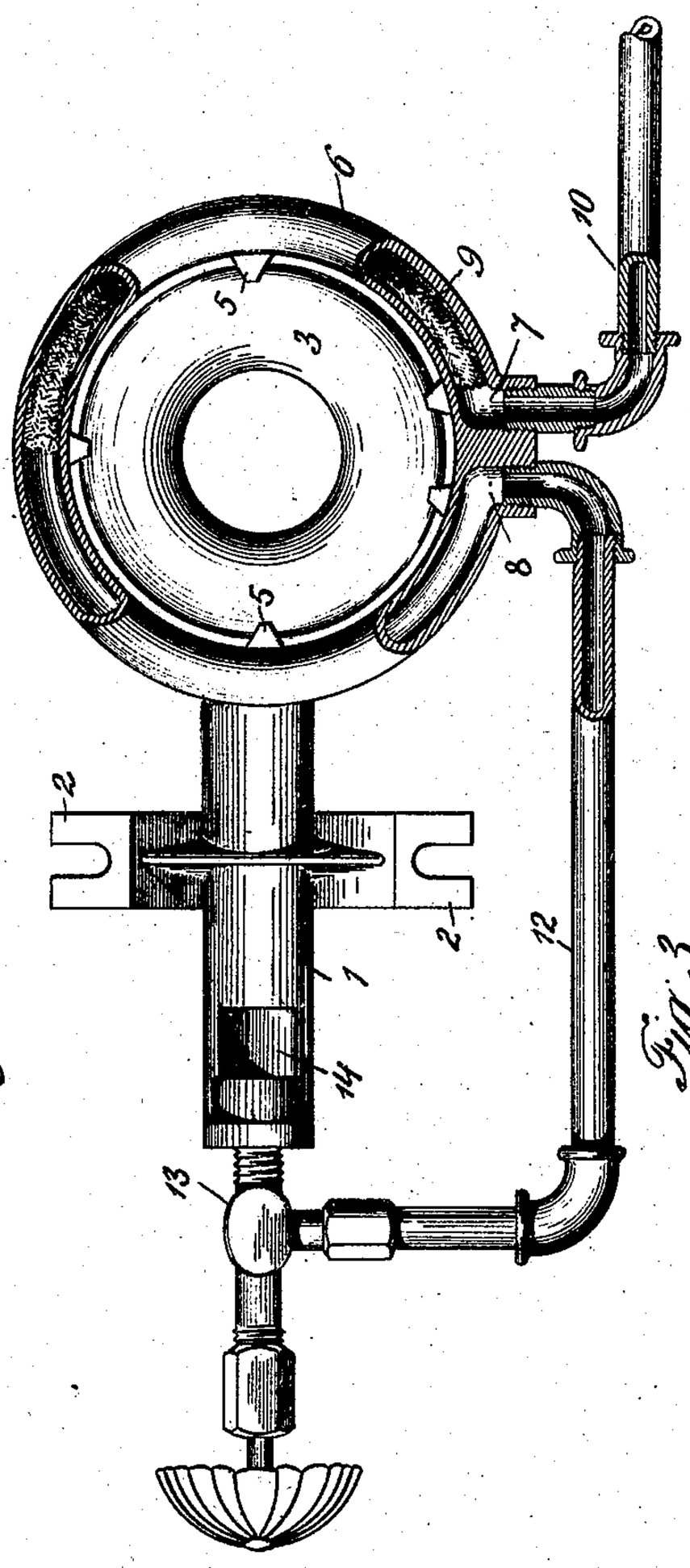

Fig. 2.

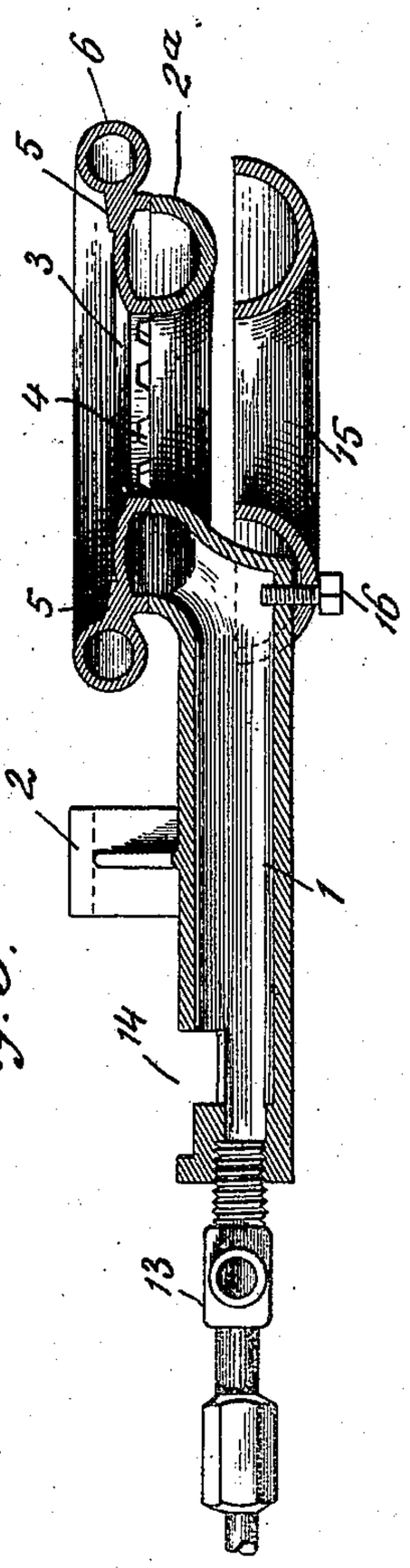

Fig. 3.

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UNITED STATES PATENT OFFICE.

THOMAS J. McGEE AND JAMES GALLAGHER, OF ALLEGHENY, PENNSYLVANIA.

BURNER.

No. 894,523. Specification of Letters Patent. Patented July 28, 1908.

Application filed December 26, 1907. Serial No. 408,078.

To all whom it may concern:

Be it known that we, THOMAS J. McGEE and JAMES GALLAGHER, citizens of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Burners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a burner, particularly designed for denatured alcohol and gas.

The objects of the invention are, first, to provide a simple and inexpensive burner of the type described; second, to provide a burner wherein denatured alcohol can be easily and quickly generated into a gas; and third, to provide a burner that will serve functionally as a generator of the gas to be used by said burner.

We attain the above mentioned objects by the novel structure that will be presently described, and then specifically pointed out in the appended claims.

Referring to the drawing forming a part of this specification, Figure 1 is a perspective view of a burner constructed in accordance with our invention, Fig. 2 is a plan of the same partly in section, and Fig. 3 is a longitudinal sectional view of the same.

In the accompanying drawings, 1 designates a pipe having integral brackets 2 for securing the burner to a suitable support, such as a stove casing. This pipe at one end is formed with a circular trough-shaped head 2^a, said head being in a plane slightly above the longitudinal axis of the pipe 1.

Mounted upon the head 2^a is a circular cover 3 having its inner sides provided with notches or openings 4, while the outer edges of said cover are provided with a plurality of integral lugs 5 supporting a circular tubular pipe 6. This pipe is formed with an inlet port 7 and an outlet port 8, and in approximately one-half of the pipe is located a piece of wire gauze 9.

The alcohol supply pipe 10 is connected to the inlet port 7 of the pipe 6, said supply pipe being provided with a valve 11 of a conventional form.

The outlet port 8 of the pipe 6 is connected by a pipe 12 with a needle valve 13 secured to the end of the pipe 1, this pipe 1 being cut away as at 14 to allow air to enter said pipe. The needle valve 13 can be of any desired type.

Below the head 2^a we locate a circular pan 15, said pan being secured to the end of the pipe by a set screw 16 or similar fastening means.

To place our burner in operation, we deposit a small quantity of alcohol in the pan 15 and ignite the same. The valve 11 is then immediately opened to allow denatured alcohol to flow into the casting or pipe 6. As the denatured alcohol encounters the gauze 9 its flow is retarded and it is immediately generated into gas by the heated action of the flame from the alcohol in pan 15.

The generated gas passes through the pipe 12 to the needle valve 13, where a proper mixture of air is obtained, while the same passes through the pipe 1 to the head 2^a and is ignited at the notches or openings 4.

The heat of our burner when in action is sufficient to provide a continuous generation of alcoholic gas, so long as denatured alcohol is supplied to the pipe 6. The alcohol pan 15 is simply used to generate a sufficient quantity of gas to start the burner after which the generation of gas is continuous during the operation of the burner.

We can advantageously use natural or artificial gas in connection with the burner by heating and expanding the gas and before it is burned obtain a better combustion. It is of course understood that the artificial and natural gas is first burned in its raw condition, until the pipe 6 has become sufficiently heated to expand the gas.

It is apparent from the novel construction disclosed in the drawings that our burner comprises practically three pieces that can be easily and quickly assembled, the type of burner being commonly known as a hot-plate burner that can be easily arranged in series with other burners.

Having now described our invention what we claim as new, is:—

1. A burner of the type described comprising a pipe terminating at one end in a circular trough-shaped head, a cover fitting upon said head provided with outlets and carrying a circular pipe, the inlet and outlet of the circular pipe being located at the same side of the head, a supply pipe connecting with the inlet of said circular pipe and an outlet pipe connected at one end with the outlet of said circular pipe, a needle valve mounted

in the outer end of said first-mentioned pipe and having the other end of said outlet pipe connected with the casing thereof, and a circular pan carried by said first-mentioned pipe and supported thereby underneath the said trough-shaped head.

2. A burner of the type described comprising a pipe terminating at one end in a circular trough-shaped head, a cover fitting upon said head provided with outlets and carrying a circular pipe, the inlet and outlet of the circular pipe being located at the same side of the head, a fluid retarding element arranged in said circular pipe, a supply pipe connecting with the inlet of said circular pipe and an outlet pipe connected at one end with the outlet of said circular pipe, a needle valve mounted in the outer end of said first-mentioned pipe and having the other end of said outlet pipe connected with the casing thereof, and a circular pan carried by said first-mentioned pipe and supported thereby underneath the said trough-shaped head.

In testimony whereof we affix our signatures in the presence of two witnesses.

THOMAS J. McGEE.
JAMES GALLAGHER.

Witnesses:
MAX H. SROLOVITZ,
C. V. BROOKS.