July 28, 1925. 1,547,381

P. GOLSAN

GAS BURNER CARBURETOR

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Fig. 1

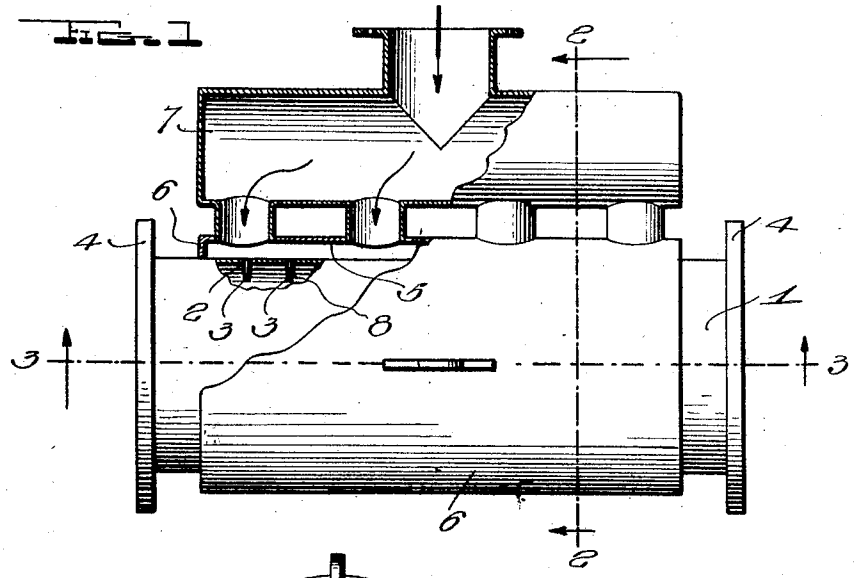


Fig. 2

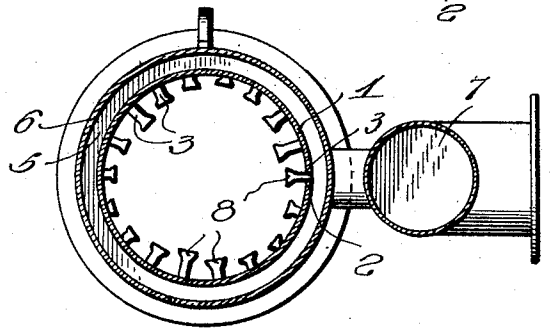


Fig. 3

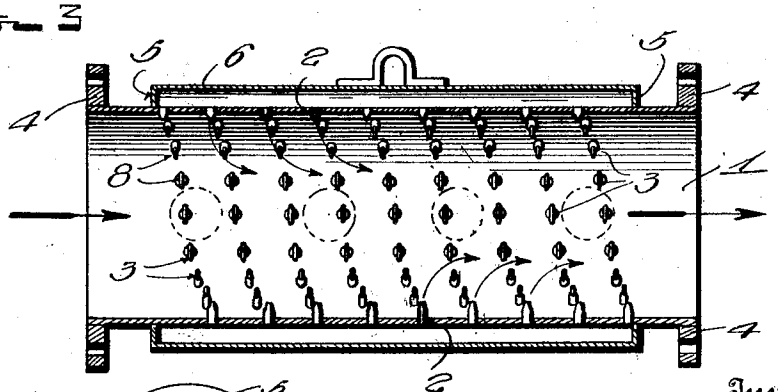
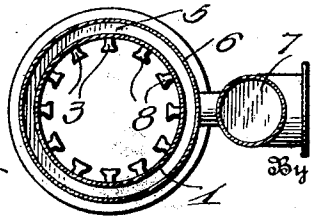


Fig. 8



Witness

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Fig. 4

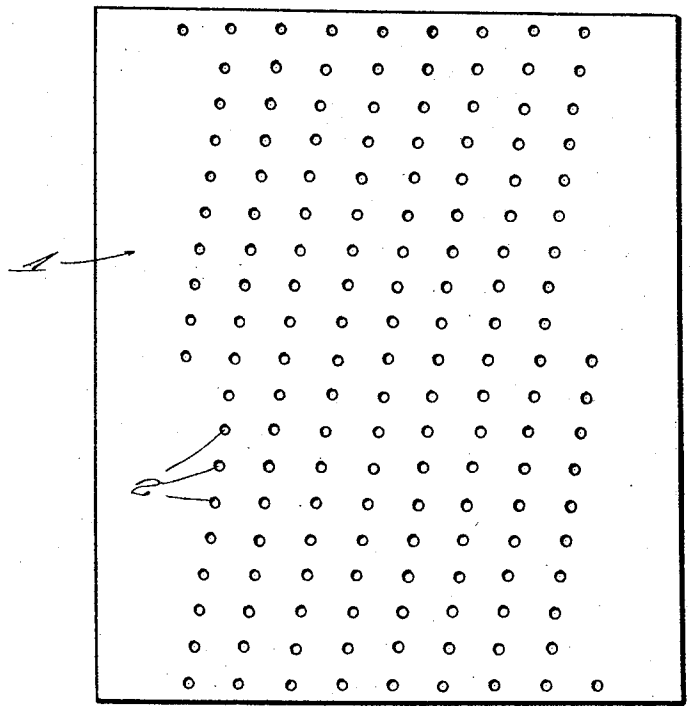


Fig. 5

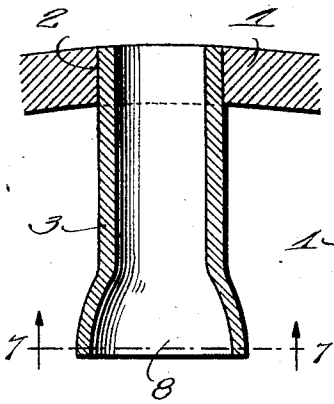


Fig. 7

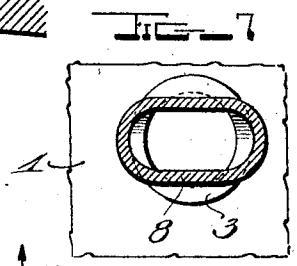
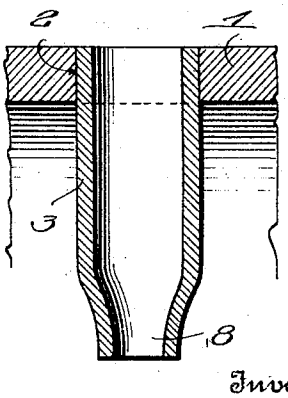


Fig. 6



Witness

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UNITED STATES PATENT OFFICE.

PAGE GOLSAN, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE GREAT WESTERN PORTLAND CEMENT COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF MISSOURI.

GAS-BURNER CARBURETOR.

Application filed November 3, 1924. Serial No. 747,619.

To all whom it may concern:

Be it known that I, PAGE GOLSAN, 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 Gas-Burner Carburetors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in gas and air mixers designed for use in connection with gas burners and commonly known as gas burner carburetors. The carburetor is of the type in which a gas barrel surrounds a portion of an air pipe, which leads from a suitable blower to the burner tip, the portion of the pipe within the barrel having passages which admit gas from said barrel into the air pipe so that the gas and air mix for passage to the burner. It is the principal object of the invention to provide an improved type of nipple, a plurality of which are extended inwardly from the wall of the air pipe to conduct the gas to the air, and with this object in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Figure 1 is a plan view partly in section, showing a carburetor constructed in accordance with my invention.

Figures 2 and 3 are vertical sectional views as indicated by the lines 2—2 and 3—3 of Fig. 1.

Figure 4 is a plan view of the blank from which a section of the air pipe may well be formed.

Figure 5 is an enlarged transverse sectional view through a portion of the air pipe and one of the gas feeding nipples.

Figure 6 is a sectional view taken at right angles to Fig. 5, that is cut longitudinally through a portion of the air pipe and one of the nipples.

Figure 7 is a transverse sectional view through one of the nipples as indicated by line 7—7 of Fig. 5.

Figure 8 is a duplicate of Fig. 2, on a smaller scale, showing a slightly different arrangement of nipples.

In the drawings above briefly described, the numeral 1 designates one section of an air pipe which is adapted to lead from a suitable blower (not shown) to a burner tip (not shown). This pipe section may well be formed from a single metal sheet, such as that illustrated in Fig. 4, said sheet having openings 2 punched or drilled therein to receive a plurality of gas feeding nipples 3 which project inwardly from the pipe. The section 1 may of course be of any desired length and it may well be provided with flanges 4 on its ends for coupling it to other pipe sections.

Surrounding the nipple-carrying portion of the air pipe and having tightly closed ends 5, is a gas barrel 6 to which gas may be supplied through suitable piping and a manifold 7. From the barrel 6, the gas passes through the nipples 3 and mixes with the air blown through the air pipe. This air, if desired, may be whirled by any one of known devices for this purpose.

Each nipple 3 has its discharge end flattened as indicated at 8, so that the width of the nipple is increased in one direction and decreased in the other direction, forming it with an elongated discharge mouth. The greater widths of the flattened nipple ends 8 are disposed transversely of the axis of the air pipe and by this arrangement, the air passing through the pipe, will entrain gas from the nipples, even though such gas be under exceptionally low pressure.

All of the nipples 3 may be of the same lengths as indicated in Fig. 8, or they may be of varying lengths as disclosed in Fig. 2, and when the latter arrangement is used, more effective agitation of the air passing through the air pipe, is effected, so that more thorough mixing of gas and air is produced.

In comparison with other carburetors, the present invention has been found to be much more efficient, owing principally to the novel formation of the nipples 3, which is inducive to thorough mixing of gas and air. The carburetor is so designed that the full theoretical requirement of air is admitted and intimately mixed with the gas, making a thoroughly combustible mixture which gives maximum efficiency at the burner tip.

The nipples 3, shaped as disclosed or substantially in this manner, permit the carburetor to use gas at an exceptionally low

pressure, thus enabling the use of natural gas for a considerable period after such use would be impossible with an ordinary carburetor or burner. Thus, the gas from wells which have heretofore been considered exhausted, may be readily consumed with my invention. When the greater widths of the nipples are placed crosswise to the stream of air, experiment shows that there is a maximum entrainment of gas. Other forms of connection between the gas barrel and the interior of the air pipe, and other shapes of nipples, do not give maximum efficiency and entrainment.

Since the volume of air used is large and the necessary pressure of gas may be exceptionally low, the range of control of this carburetor is very wide and it permits full flexibility of operation. Furthermore, the high velocity of air passing through the air pipe and the consequent velocity of the gas entrained by such air, prevents back-fire and thus reduces the hazards heretofore existing in connection with similar carburetors.

As excellent results have been obtained from the details disclosed, they are preferably followed, but within the scope of the invention as claimed, modifications, such as changes in shape, proportion, etc., may well be made.

I claim:

1. A gas burner carburetor comprising an air pipe, a gas barrel around a portion of said pipe and having gas inlet means, and gas feeding nipples projecting from said portion of the pipe into the interior of the latter and communicating with said gas barrel, said nipples being of different lengths to effect agitation of the air passing through the air pipe, insuring thorough mixing of air and gas.

2. A gas burner carburetor comprising an air pipe, a gas barrel around a portion of said pipe and having gas inlet means, and gas feeding nipples projecting from said portion of the pipe into the interior of the latter and communicating with said gas barrel, the discharge ends of said nipples being flattened to transversely widen the same in one direction and decrease their width in the other direction, said nipples being disposed with their greater width transverse to the axis of the air pipe.

In testimony whereof I have hereunto affixed my signature.

PAGE GOLSAN.