(No Model.)

L. J. RICE.

GAS MIXER.

No. 579,408. Patented Mar. 23, 1897.

Fig. 1.

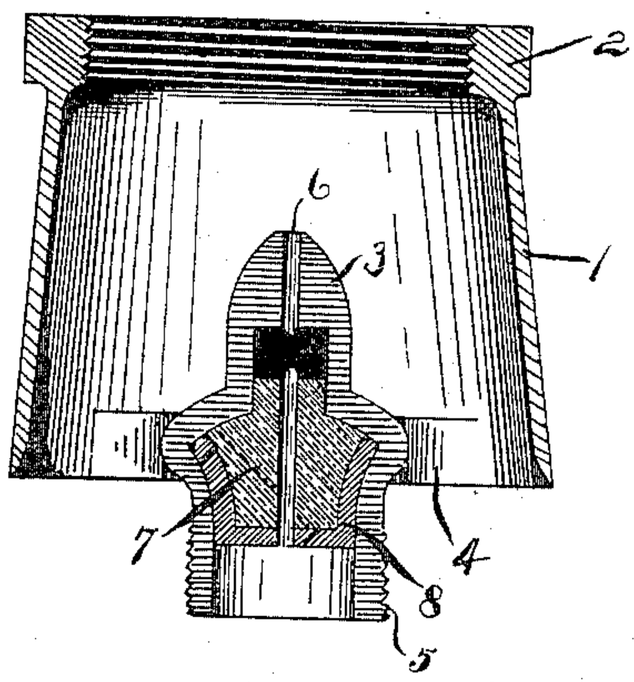


Fig. 2.

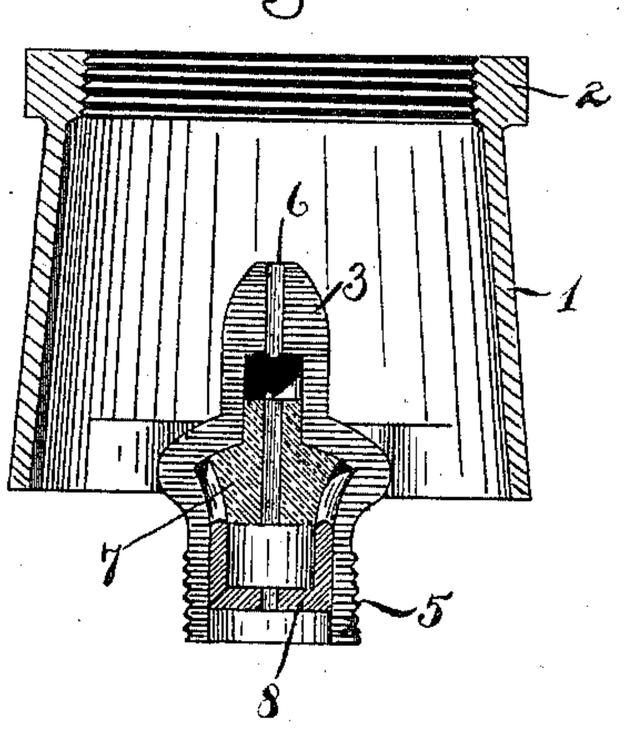
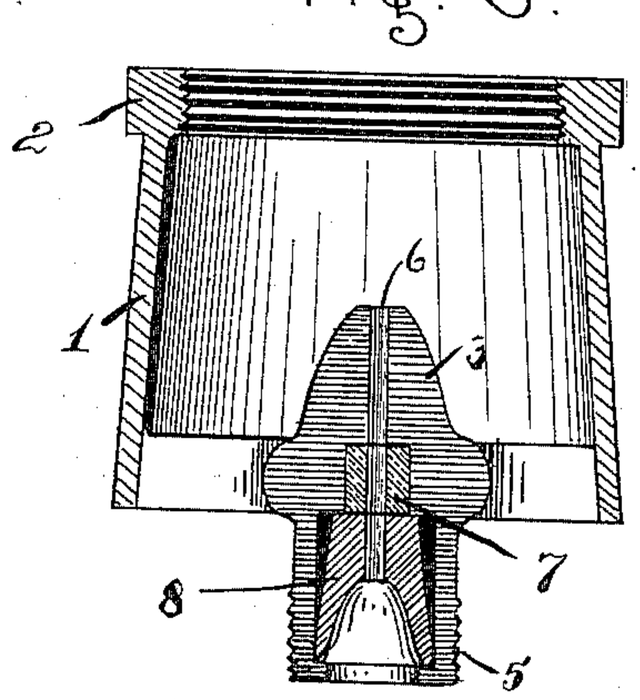


Fig. 3.



WITNESSES:

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LEWIS J. RICE, OF INDIANAPOLIS, INDIANA.

GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 579,408, dated March 23, 1897.

Application filed February 7, 1896. Serial No. 578,400. (No model.)

To all whom it may concern:

Be it known that I, LEWIS J. RICE, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Gas-Mixer; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to a mixer adapted especially for natural gas; and my object is to construct a mixer that cannot be bored out by a drill to enlarge the passage-way through it. In cities where gas-meters are not used the gas-mixer controls the supply of gas and is the basis of the charges made by the gas companies, and hence the consumers have no right, and in many places it is a criminal offense for them, to bore out their mixers in order to get a larger supply of gas than they had contracted for. Furthermore, a house is liable to be set on fire after a mixer has been bored out and an increased pressure of gas returns. I accomplish this result by placing in the gas-duct through the gas-supplying device a drill-obstructer consisting, preferably, of a chilled bead so placed as to prevent an enlargement of the passage-way.

The full nature of my invention will appear from the following description and claims and the accompanying drawings.

Figure 1 is a central longitudinal section of my mixer. Fig. 2 is the same with the cap only partially inserted. Fig. 3 shows a modified form.

The form in which I have embodied my invention consists of a shell 1, which is slightly conical and has at its smaller end an enlargement 2, with internal threads, whereby it may be screwed onto the gas-pipe leading to the burner. At the other end the shell is provided with a nozzle 3, supported and held in place by the arms 4. I show three such arms, but two are often used. I form a nozzle substantially as shown, enlarged, preferably, near its middle and provided at its larger end at 5 with threads, whereby it can be connected up with the pipe leading from the gas-supply. The nozzle is provided with a duct or passage-way 6, through which the gas passes and mixes with the air within the shell.

The difficulty sought to be met is the boring out or enlargement of the duct or passage-way 6 through the nozzle or other gas-supplying device for the purpose of securing a larger flow of gas. To meet this, I place within the duct or passage-way a drill-obstructer, that here shown being a chilled bead 7. This is made, preferably, out of case-hardened steel, and when the drill enters the duct or passage-way and engages the roller the latter rotates with the drill and prevents any further action.

In order to prevent the removal of the bead by working at the large end of the nozzle with a drill, I provide, preferably, a flaring cap 8, adapted to embrace the bead 7. One end of the bead is also made conical or bell-shaped, so that its largest diameter is just the proper size to enter the nozzle at its largest end. After the bead has thus been entered the cap 8, which is at first in the form shown in Fig. 2, is inserted as therein shown and driven in over the bead, whereby its inner end is caused to flare and assume the position shown in Fig. 1. The nozzle is preferably hollowed out in the shape shown in Figs. 1 and 2 to receive the bead and cap. It is thus observed that when the cap is in place it cannot be withdrawn, as its inner end is much larger than the aperture in the nozzle, and if the end of the cap be drilled away the bead cannot be withdrawn because of its flaring or bell-shaped form being larger than the exit. It is also clear that if the drill should come in contact with the bead it would make no headway, as the latter would rotate with it. Both the bead and the cap are preferably provided with a central bore or passage-way that registers with the duct or passage-way 6 in the nozzle, and since the bore in the bead cannot be enlarged or drilled out the flow of gas cannot be increased.

In Fig. 3 I show a modified form, the bead being plain and cylindrical and the cap being in the position the reverse of that shown in the other figures. Of these two the former is the better, however, as in the modified form the cap might be removed by drilling away a portion of the large end of the nozzle, and if the cap were removed the bead could be removed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a gas-supplying

device having a duct therethrough for the passage of combustible fluid, of a drill-obstructer rotatably supported in line with such duct.

2. The combination with a gas-supplying device having a duct therethrough for the passage of combustible fluid that is enlarged at one point, of a drill-obstructer situated in such enlarged portion, and a perforated cap sprung into such enlarged portion to prevent the removal of the drill-obstructer.

3. The combination with a gas-supplying device having a duct therethrough for the passage of combustible fluid and a chamber whose middle portion is of greater diameter than its end portions situated in line with the duct, of a bell-shaped drill-obstructer within the chamber, and a cap, with a bore in it for the passage of gas, that is driven in over the tapering end of the drill-obstructer whereby its inner edge is flared to fit snugly in the enlarged portion of the chamber.

In witness whereof I have hereunto set my hand this 29th day of January, 1896.

LEWIS J. RICE.

Witnesses:
V. H. LOCKWOOD,
ZULA GREEN.