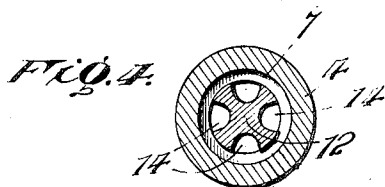
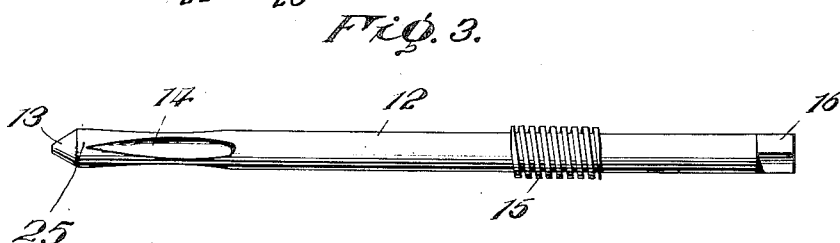
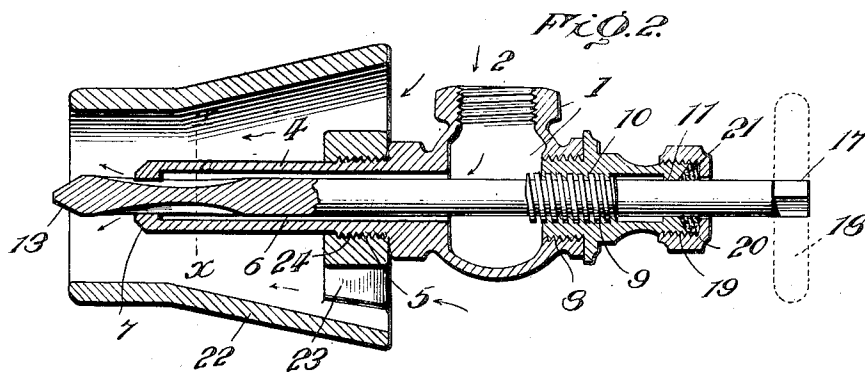
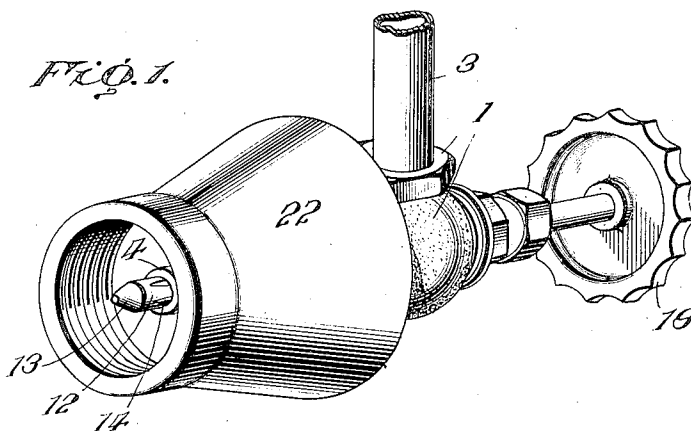


No. 893,418.

PATENTED JULY 14, 1908.

A. L. AVERY.
GAS MIXER.

APPLICATION FILED JAN. 16, 1906.



Witnesses
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AMOS L. AVERY, OF BRADFORD, PENNSYLVANIA.

GAS-MIXER.

No. 893,418.

Specification of Letters Patent.

Patented July 14, 1908.

Application filed January 16, 1906. Serial No. 296,336.

To all whom it may concern:

Be it known that I, AMOS L. AVERY, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Mixers, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in gas mixers.

The object of my invention is to provide a mixer of this character in which the gas is fed to the burner in a series of small streams and in which the size of the streams may be readily regulated.

Another object of my invention is to provide a more simple, cheap and effective mixer of this character to accomplish the above mentioned results.

In the accompanying drawings, Figure 1, is a perspective view of my improved mixer. Fig. 2, is a vertical longitudinal sectional view of Fig. 1. Fig. 3, is an enlarged side elevation of the controlling stem. Fig. 4, is a transverse sectional view of the stem chamber with the stem therein.

Referring now to the drawings, 1 represents the angle valve which is provided with an opening 2 in which is screwed the gas supply pipe 3, and cast as a part of the angle valve is the stem chamber 4 which is externally screw-threaded at 5 for the purpose hereinafter described. The said stem chamber, as shown, is cast as a part of the angle valve, and extends from one end and is of an elongated form. The said stem chamber 4 is provided with an opening 6 extending longitudinally therethrough, which communicates with the angle valve at its inner end. The outer end of said stem within the opening, is provided with an inwardly-extending circumferential flange 7 which forms the contracted portion of the opening, and the inner face of said flange is ground so as to form a tight joint with the valve stem, as will be more fully described. The opposite end of the angle valve is provided with the internally screw-threaded portion 8 on which is screwed the cap 9. The said cap is of an elongated form and is provided with a longitudinally-extending opening therethrough. The inner end of said opening is screw-threaded at 10 to receive the valve stem, while the outer end is provided with an inwardly-extending flange

11 which serves as a stop to limit the outward movement of the valve stem.

The valve stem, as shown, is composed of an elongated body portion 12 of a length sufficient to extend through the angle valve, the stem chamber, and through the cap, and extend a considerable distance therebeyond. The extreme outer end of said stem is beveled at 13 so as to insure it passing through the opening at the end of the stem chamber, and absolutely preventing it from engaging the flange 7, and thus the stem is guided through the opening within the flange. The said valve stem adjacent the beveled end is provided with four longitudinally-extending semi-circular grooves 14 which gradually diminish in width and depth towards the ends, and while I have shown and described four of these grooves, it is understood that any desired number may be used, either more or less than four. The said valve stem, a distance from the opposite end, is provided with a screw-threaded portion 15 which screws into the internal threads 10 of the cap 9, and thus the valve stem is moved inwardly or outwardly through the stem chamber.

The valve stem, as before stated, extends a distance beyond the cap, and is provided with the squared end 16 which passes through a correspondingly shaped opening 17 in the hand-operating wheel 18. By this structure, it will be seen that the stem is readily rotated, and the valve stem caused to move longitudinally. The cap 9 is externally screw-threaded at its outer end at 19, and upon which a stuffing-box 20 is screwed, said stuffing-box carrying a packing 21 surrounding the stem, and by means of which a tight joint is made, and the gas prevented from passing from the valve around the same, yet allowing the free rotation of the stem, as is well understood.

The stem chamber 4, adjacent the angle valve, is provided with the screw-threads 5, as heretofore described. Surrounding the said chamber is a funnel-shaped air-feeding chamber 22 which, at its large end, is provided with a transverse bar 23 having a screw-threaded opening 24 which is screwed upon the threads 5 of the stem chamber, and whereby the same is supported. The said funnel-shaped chamber 22 is of a length greater than that of the stem chamber, and thus the passage of the gas from the end thereof causes a suction within the funnel-

shaped member, and draws the proper amount of air in to be mixed with the gas. As is understood the larger the jet of gas, the greater the suction, and thus the greater the amount of air drawn in, and by this arrangement the proper mixture of air and gas is at all times effected.

From the foregoing description it will be seen that by turning the stem, the outer end carrying the grooves is either moved in or out, so that a larger or smaller opening is directly below the flange 7, and thus a greater or less amount of gas passes from the stem chamber.

When the valve stem is drawn inward, so that the solid portion 25 between the grooves 14 and the beveled end 13 is opposite the flange 7 of the chamber 4, the gas is entirely cut off.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. A device of the character described, comprising an elongated tubular chamber having at its outer end a broad contracted portion forming a reduced ground opening, a stem of the same diameter throughout its length except at the center, which is provided with threads of greater diameter, the outer end of the stem passing through said ground opening and at all times forming a tight joint therewith, the outer periphery of the stem adjacent its outer end provided with a series of narrow elongated grooves gradually tapering in width and depth towards the outer end to a needle opening, said grooves being spaced a distance from the end of the stem to form a

solid portion to form a tight joint with the ground opening, and means for moving said stem longitudinally within the tubular chamber.

2. A device of the character described, comprising an elongated tubular chamber having at its outer end a broad contracted portion forming a reduced ground opening, a stem of the same diameter throughout its length except at the center, which is provided with threads of greater diameter, the outer end of the stem passing through said ground opening and at all times forming a tight joint therewith, the outer periphery of the stem adjacent its outer end provided with a series of narrow elongated grooves gradually tapering in width and depth towards the outer end to a needle opening, the said grooves being spaced a distance from the ends of the stem to form a solid portion to form a tight joint with the ground opening, the inner end of the chamber having a supply pipe connection formed integral therewith, an internally screw-threaded portion carried by the inner end of the tube and into which is screwed the threaded portion of the stem for moving the stem in or out, the said tubular chamber intermediate its ends having threads, and a tubular air-feeding chamber screwed on said threads of the tubular chamber.

In testimony whereof I affix my signature in presence of two witnesses.

AMOS L. AVERY.

Witnesses:

G. M. HEDRICH,
S. H. BERRY.