

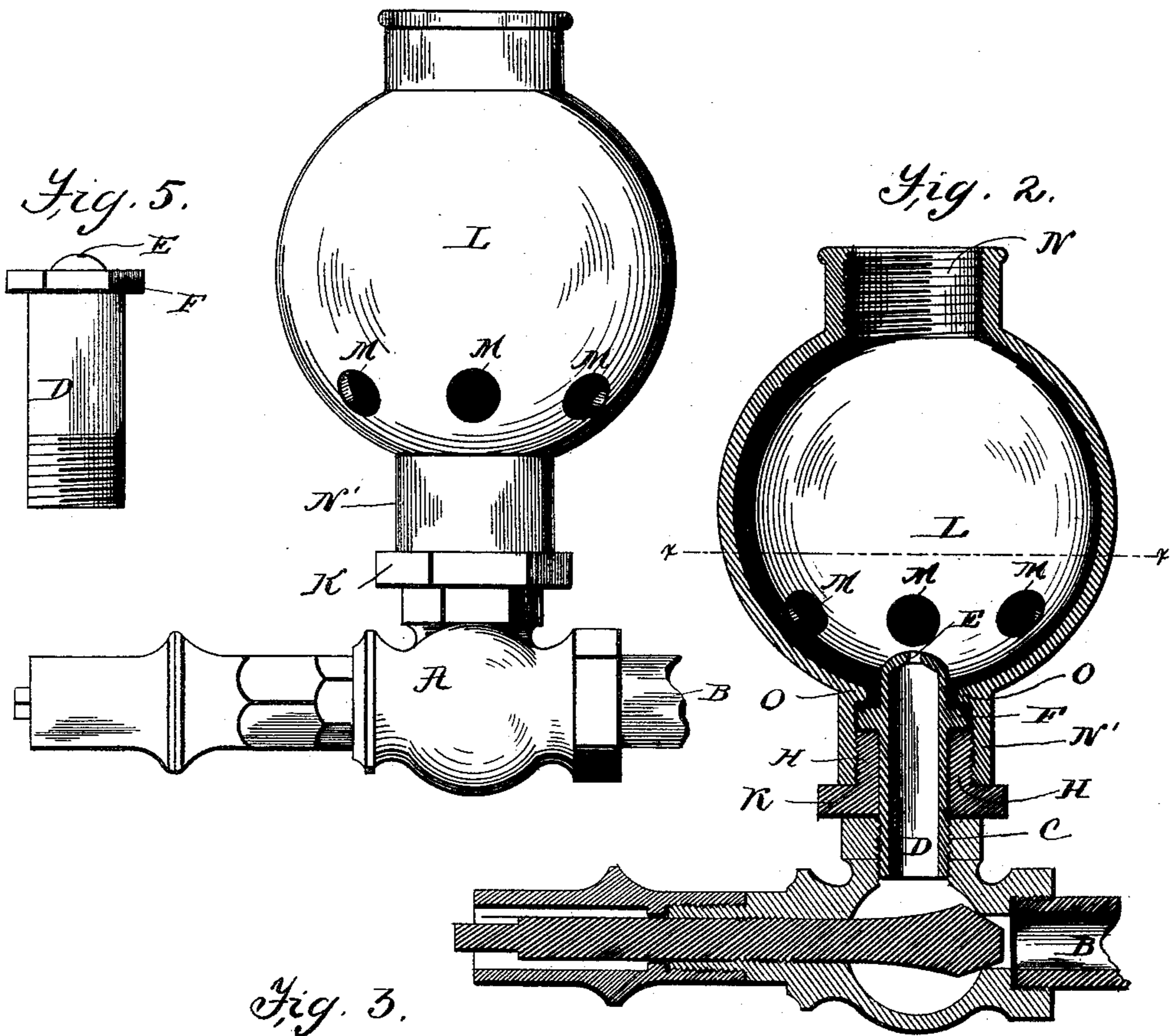
(No Model.)

W. S. PAYNE.  
GAS MIXER.

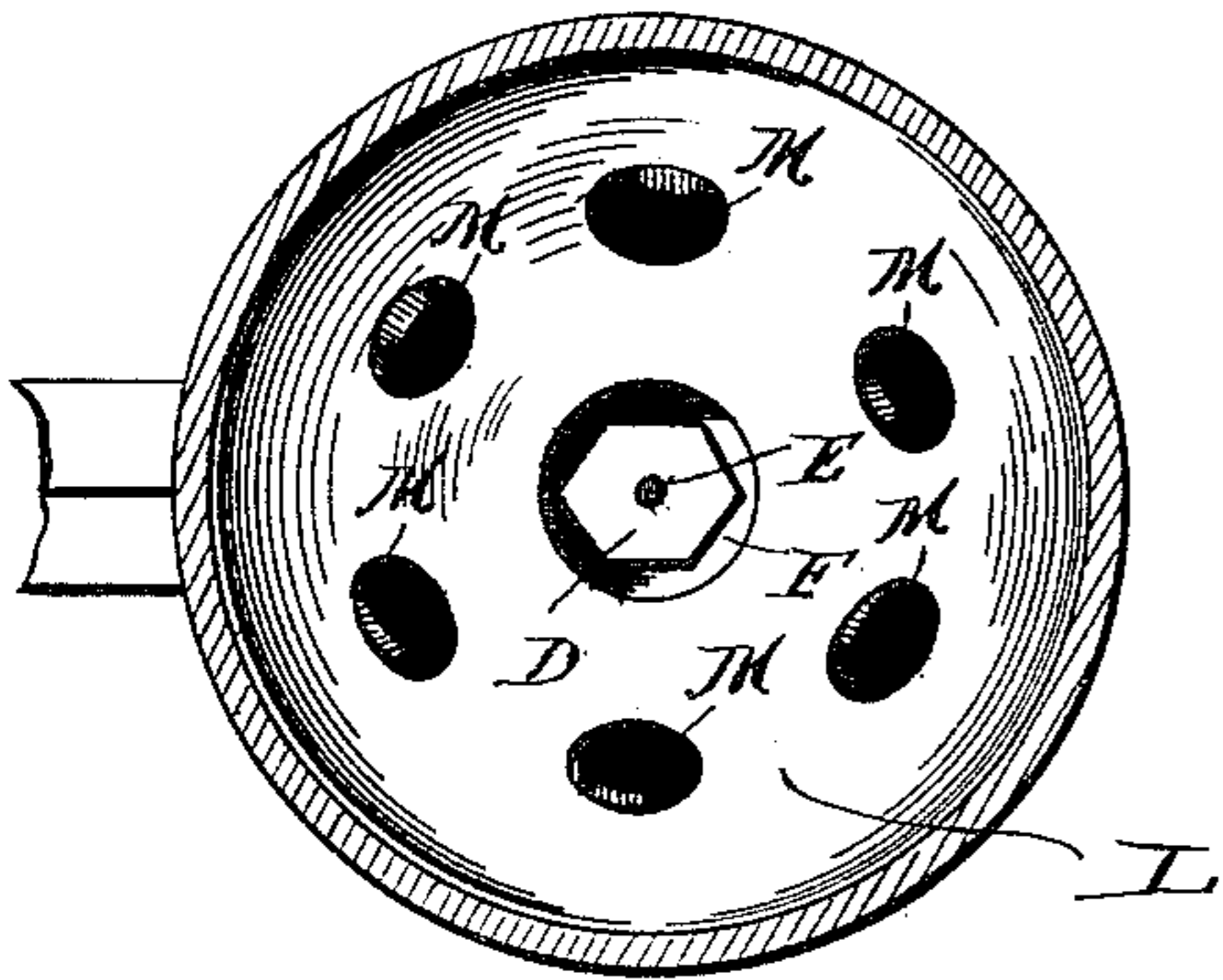
No. 407,237.

Patented July 16, 1889.

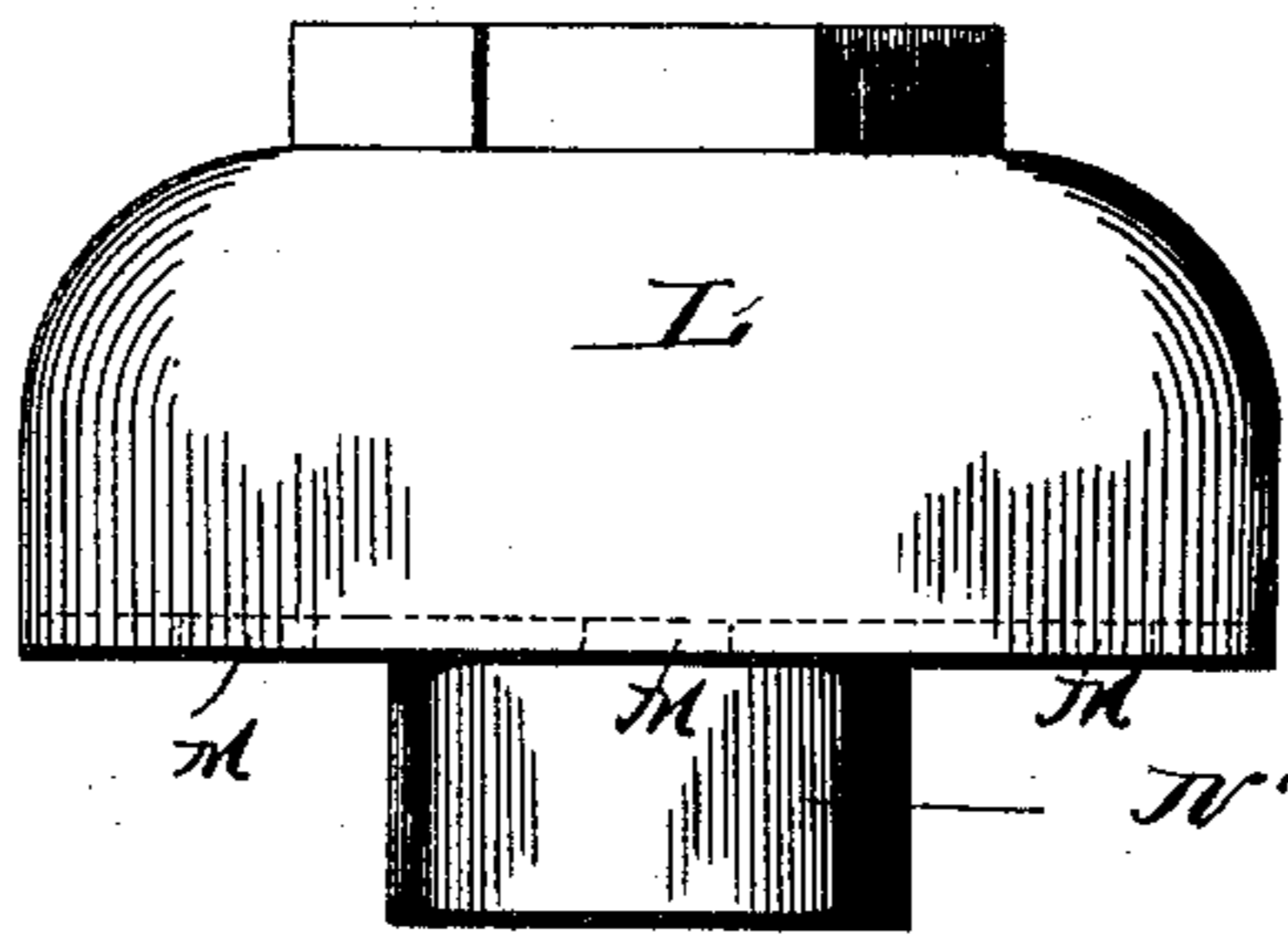
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



Witnesses

Frank S. Galt.  
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Inventor:

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# UNITED STATES PATENT OFFICE.

WALTER S. PAYNE, OF FOSTORIA, OHIO.

## GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 407,237, dated July 16, 1889.

Application filed April 12, 1888. Serial No. 270,408. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER S. PAYNE, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Improvement in Gas-Mixers, of which the following is a specification.

My invention relates to an improvement in gas-mixers; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

The object of my invention is to provide a gas-mixer for mixing air with natural gas, in which the jet-tube is located in the union formed between the globe or mixing-chamber and the valve, to the end that an economy in the construction of the apparatus may be effected and to enable the jet-tube or nipple to be removed and replaced by another having a larger or smaller discharge-orifice, as may be required, without the necessity of turning off the gas at the main stop-cock.

In the accompanying drawings, Figure 1 is an elevation of a gas-mixer embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a horizontal sectional view taken on the line  $x$  of Fig. 2. Fig. 4 is an elevation of my improved gas-mixer, showing the same provided with what is known in the trade as a "half-globe." Fig. 5 is a detail view of a modified form of the jet or nipple.

A represents a valve, which is of the usual construction, and which communicates with a gas-supply pipe B. In one side of the valve-case is a threaded opening C.

D represents a jet tube or nipple which is provided with screw-threads adapted to engage the threaded opening C and has an aperture E at its outer end. At a suitable distance from the outer end of the jet-tube or nipple is an annular collar or flange F, and the sides of the said projecting outer end of the jet or nipple are polygonal in form and are thereby adapted to be engaged by a wrench, so that the said jet-tube or nipple may be screwed into or unscrewed from the valve-case.

H represents a sleeve, which fits snugly on the smooth portion of the jet-tube or nipple, is provided with external screw-threads, and

has a polygonal flange K at its lower side, said polygonal flange being also adapted to be engaged by a wrench.

L represents the globe which forms the mixing-chamber, the said globe or mixer being provided with openings M, which are adapted to admit air to the interior thereof. In the upper end of the globe or mixer is a threaded opening N, adapted to receive one end of a gas-pipe to convey commingled gas and air to a burner, (not shown,) and the lower end of the globe or mixer is provided with a collar N', which is interiorly threaded and adapted to be engaged by the sleeve H, and the said collar is provided at its upper side with a seat O, against which the flange F of the jet-tube or nipple firmly impinges, as shown in Fig. 2.

It will be readily understood from the foregoing description and by reference to the accompanying drawings that the jet-tube forms one element of the union, which connects a globe or mixer to the valve-case, thereby simplifying the construction of the apparatus, and that the union is arranged between the valve and the mixer or globe and the nipple located therein, so that the jet-tube or nipple may be removed and replaced by another having a larger or smaller discharge-orifice, as may be required, without turning off the gas at the main stop-cock. (Not shown.)

The operation of my invention will be very readily understood by those skilled in the art to which it pertains. The gas is discharged from the jet-tube into the globe or mixer, when the valve A is opened and atmospheric air is drawn into said tube or mixer through the openings N by the partial vacuum formed in the said globe or mixer by the jet of gas, and thereby the gas and air become thoroughly commingled, thus rendering the gas combustible.

The modified form of the jet-tube or nipple shown in Fig. 5 has the projecting outer end shortened and rounded, so as to project only a slight distance into the mixing-chamber, and has its flange F polygonal in form, and thereby adapted to be engaged by a wrench.

Having thus described my invention, I claim—

1. The combination of the valve-case, the jet or tube screwed thereto and having the

flange F, the collar or sleeve loose on the jet-tube and having the exterior screw-threads, and the globe or mixer having the openings for the admission of air and having the threaded opening at its lower end adapted to receive the threaded sleeve, whereby said globe or mixer is connected to the valve-case and to the jet-tube, substantially as described.

2. The combination of the valve-case having the threaded opening in one side, the jet tube or nipple B, adapted to enter the said threaded opening, having the polygonal projecting end and the flange F, the sleeve slipped loose on the jet-tube, bearing against the flange F thereof, and having the exterior screw-thread, and the polygonal flange K at the base of said threaded portion, and the globe or mixer having the openings M and provided on the lower side with the threaded

collar to receive the threaded sleeve, said collar having the seat at its upper end, against which the flange F of the jet-tube or nipple impinges, substantially as described.

3. The combination of the valve-case, the jet or tube secured thereto having the flange F and adapted to be engaged by a wrench, the collar or sleeve loose on the jet-tube and having the exterior screw-threads, and the globe or mixer having the threaded opening at its lower end adapted to receive the threaded sleeve, substantially as described.

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

WALTER S. PAYNE.

Witnesses:

E. G. SIGGERS,  
R. J. MARSHALL.