

No. 683,262.

Patented Sept. 24, 1901.

A. C. EINSTEIN.
ACETYLENE GAS BURNER.

(Application filed Apr. 15, 1901.)

(No Model.)

Fig. I.

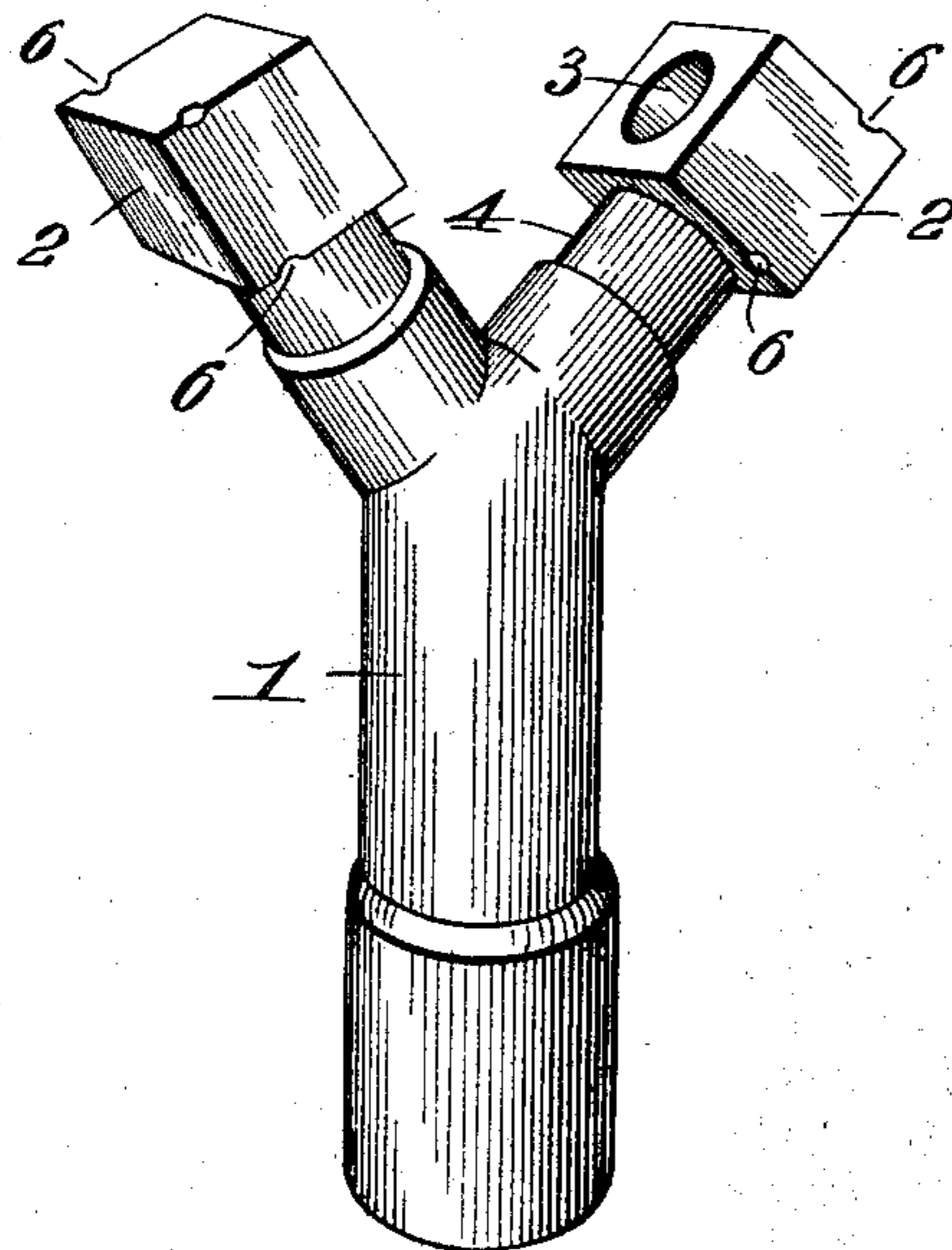


Fig. II.

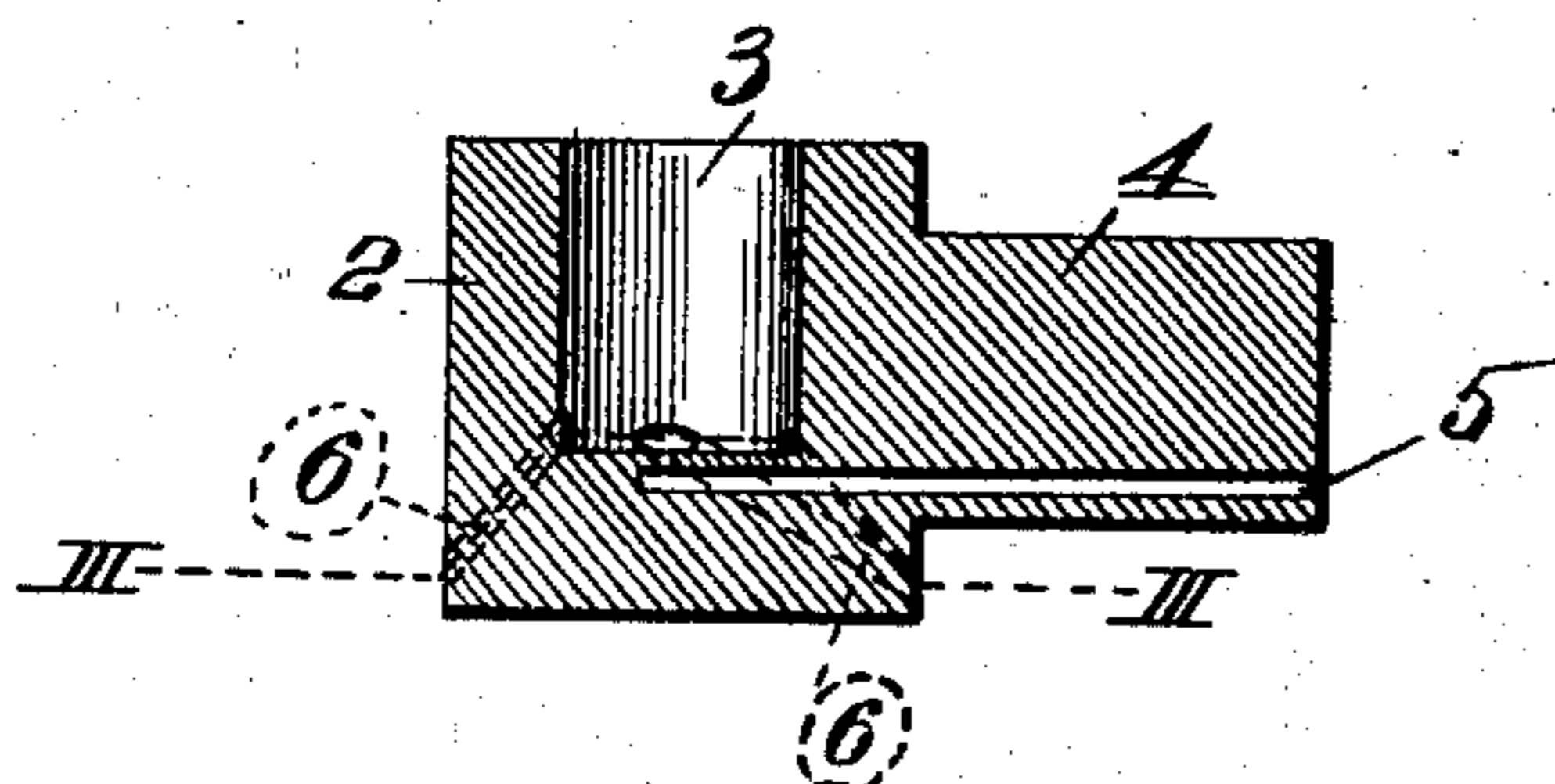


Fig. IV.

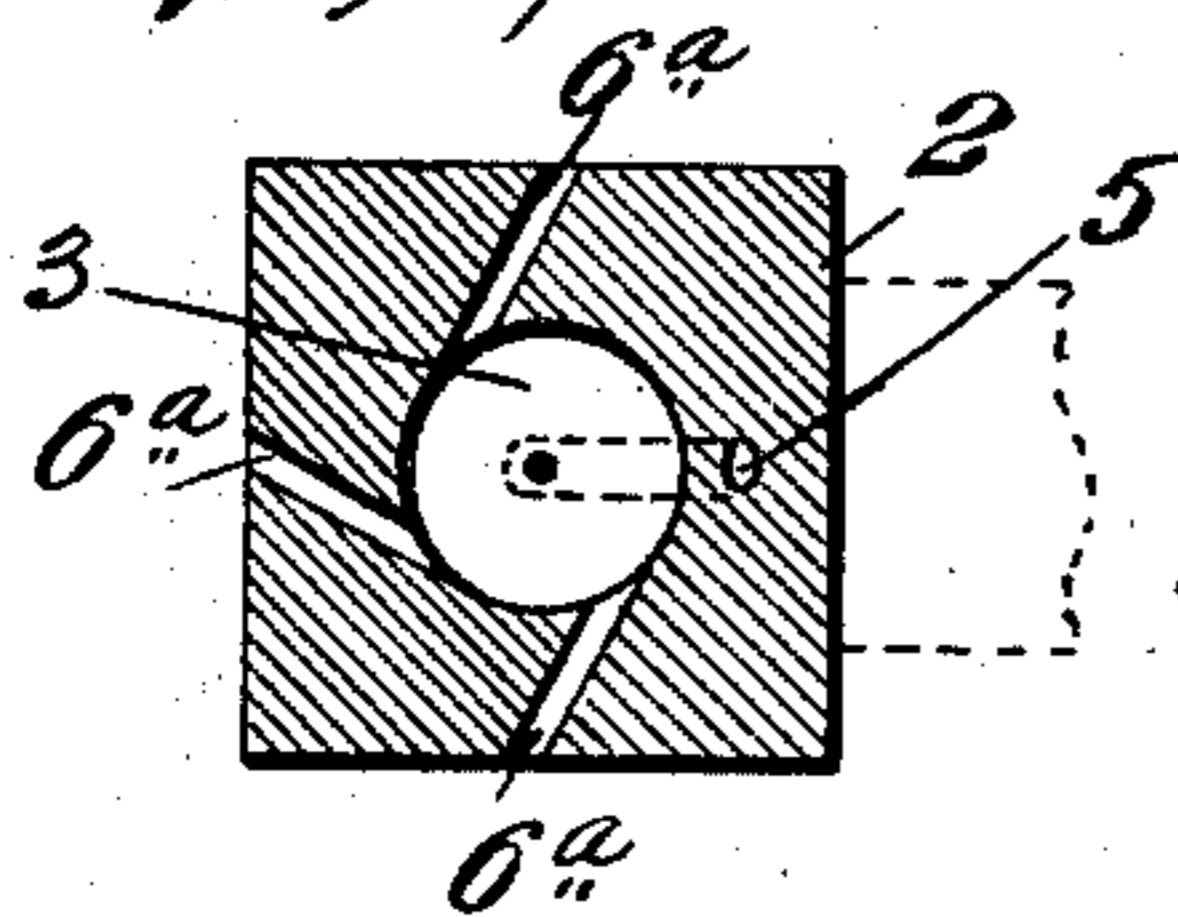


Fig. III.

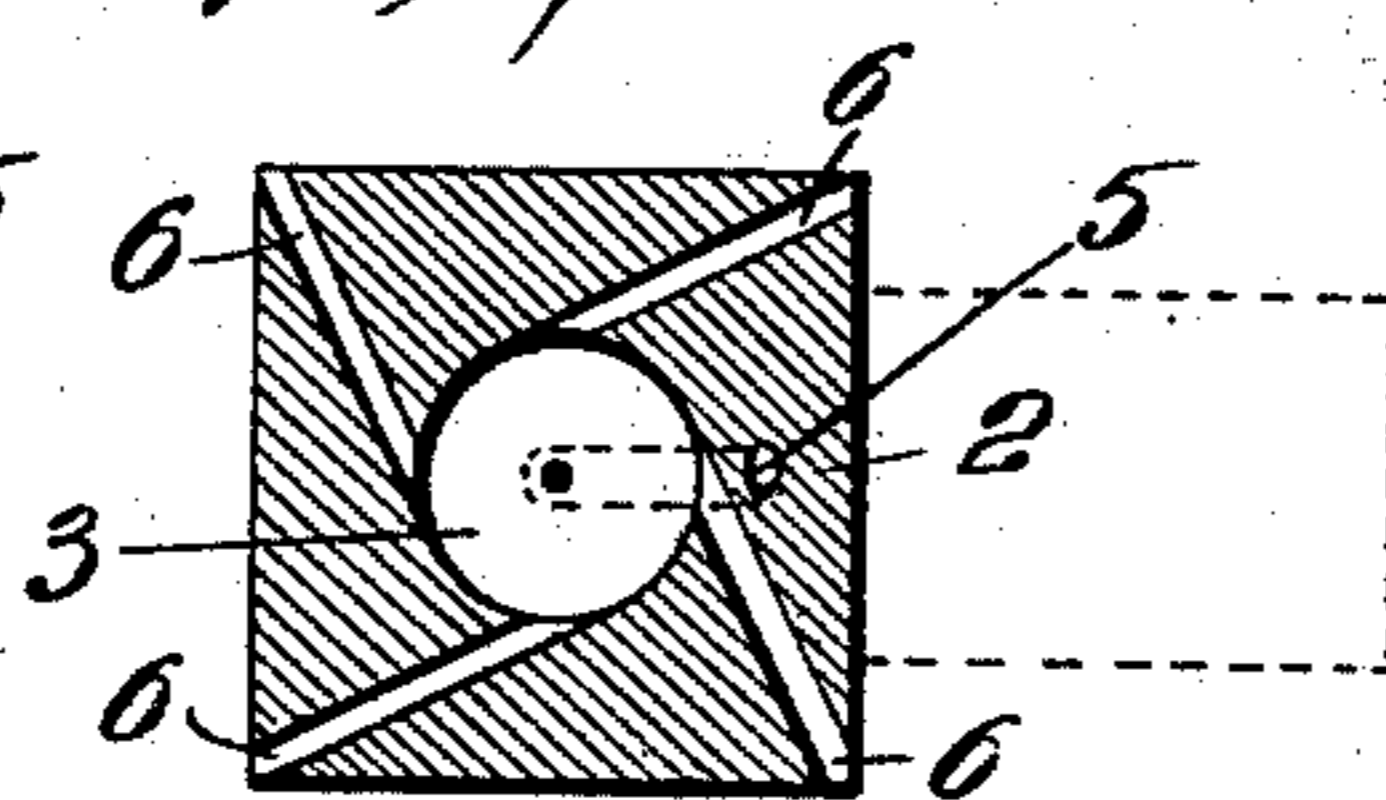


Fig. V.

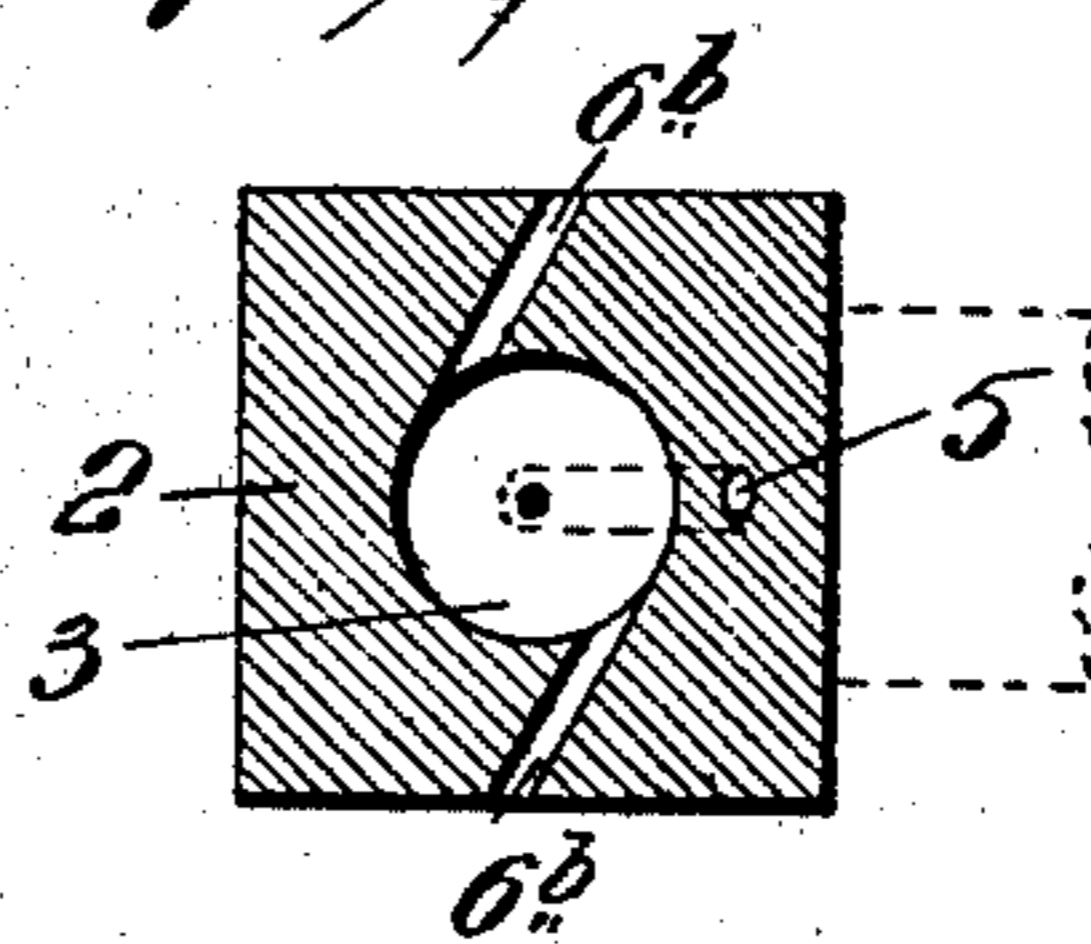
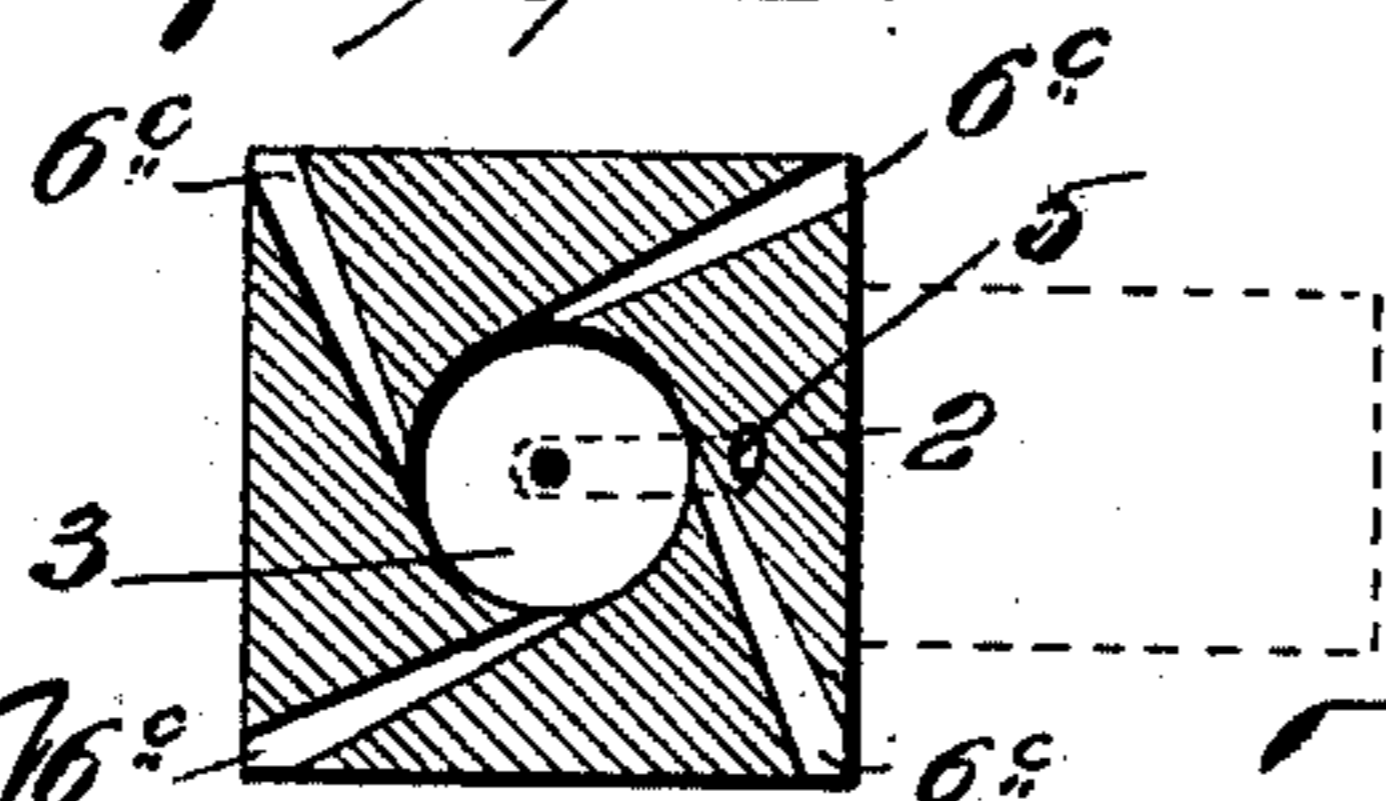


Fig. VI.



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ALFRED C. EINSTEIN, OF ST. LOUIS, MISSOURI.

ACETYLENE-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 683,262, dated September 24, 1901.

Application filed April 15, 1901. Serial No. 55,893. (No model.)

To all whom it may concern:

Be it known that I, ALFRED C. EINSTEIN, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Acetylene-Gas Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of gas-burners used in the consumption of acetylene gas for illuminating purposes, the object of the invention being to provide a burner wherein provision is made for the complete intermingling of air in the mixing-chamber with the gas, and wherein the mixed gas and air are caused to be delivered from the mixing-chamber in a more effectual manner than in burners of the same class as at present constructed.

The invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view of a burner constructed according to my invention. Fig. II is an enlarged longitudinal sectional view of one of the burner-tips. Fig. III is a cross-sectional view taken on the line III-III, Fig. II. Figs. IV, V, and VI are cross-sectional views similar to Fig. III, illustrating modifications.

1 designates the body of the burner, which may be of any desirable form or configuration.

2 designates the burner-tips, containing mixing-chambers 3 and having necks 4, provided with gas passage-ways 5. (See Fig. II.)

In the burner-tips 2 are air-ducts 6, that extend from the outer surfaces of the tips inwardly to the mixing-chambers 3 and enter said mixing-chambers tangentially to the wall of said mixing-chambers, as most clearly shown in Fig. III. The air-ducts 6, in addition to entering the mixing-chambers 3 at a tangent to the walls thereof, are also preferably positioned at an angle relative to the wall of the mixing-chambers, as seen in Fig. II, so that the air passing therethrough from the exterior of the tip into the mixing-chamber enters said chamber at an angle to the wall thereof and in a direction toward the

mouth of said chamber. The air-ducts 6 may be of any desirable number and may extend to the mixing-chamber from the corners of the burner-tips, or from points intermediate of the corners of the tips.

In the form of burner shown in Figs. I, II, and III the ducts are four in number and extend from the corners of the tips.

In the modification shown in Fig. IV the ducts designated by 6^a are three in number and extend from points intermediate of the corners of the burner-tip.

In the modification shown in Fig. V the ducts designated by 6^b are two in number and extend from points intermediate of the corners of the tip.

In the modification shown in Fig. VI the ducts designated by 6^c are of tapering form, being of greater diameter at their outer ends than at their inner ends in order to provide for more ready ingress of the air into the ducts for passage to the mixing-chamber.

In the practical use of the burner the gas enters the mixing-chamber 3 from the passage-way 5, and the pressure under which it flows causes air to be drawn by suction through the ducts 6 into the mixing-chamber to mingle with the gas. As the air is drawn into the mixing-chamber through the ducts, tangentially arranged, as explained, the said air circulates in the mixing-chamber in a rotative or whirling motion as a result of the tangential introduction. As a consequence a whirling or rotative motion of the intermingling gas and air is produced, so that the gas and air are thoroughly combined before delivery from the mouth of the mixing-chamber for consumption. The entrance of the air through the ducts in an inclined direction relative to the wall of the mixing-chamber causes the gas and air to be directed toward the mouth of the mixing-chamber, with the result that the mingled gas and air receive the impulse of the intruding air and are caused to flow from the chamber as rapidly as the proper mixture is obtained.

I claim as my invention—

1. As a new article of manufacture, a gas-burner tip provided with a mixing-chamber and a series of air-ducts having their inner

ends positioned to enter said mixing-chamber at a tangent to the wall thereof, substantially as described.

2. A gas-burner tip having a mixing-chamber and provided with a series of air-ducts
5 extending from the exterior of the tip into said mixing-chamber at a tangent to the wall

of said mixing-chamber and positioned at an angle to the bottom wall of said chamber, substantially as described.

ALFRED C. EINSTEIN.

In presence of—

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