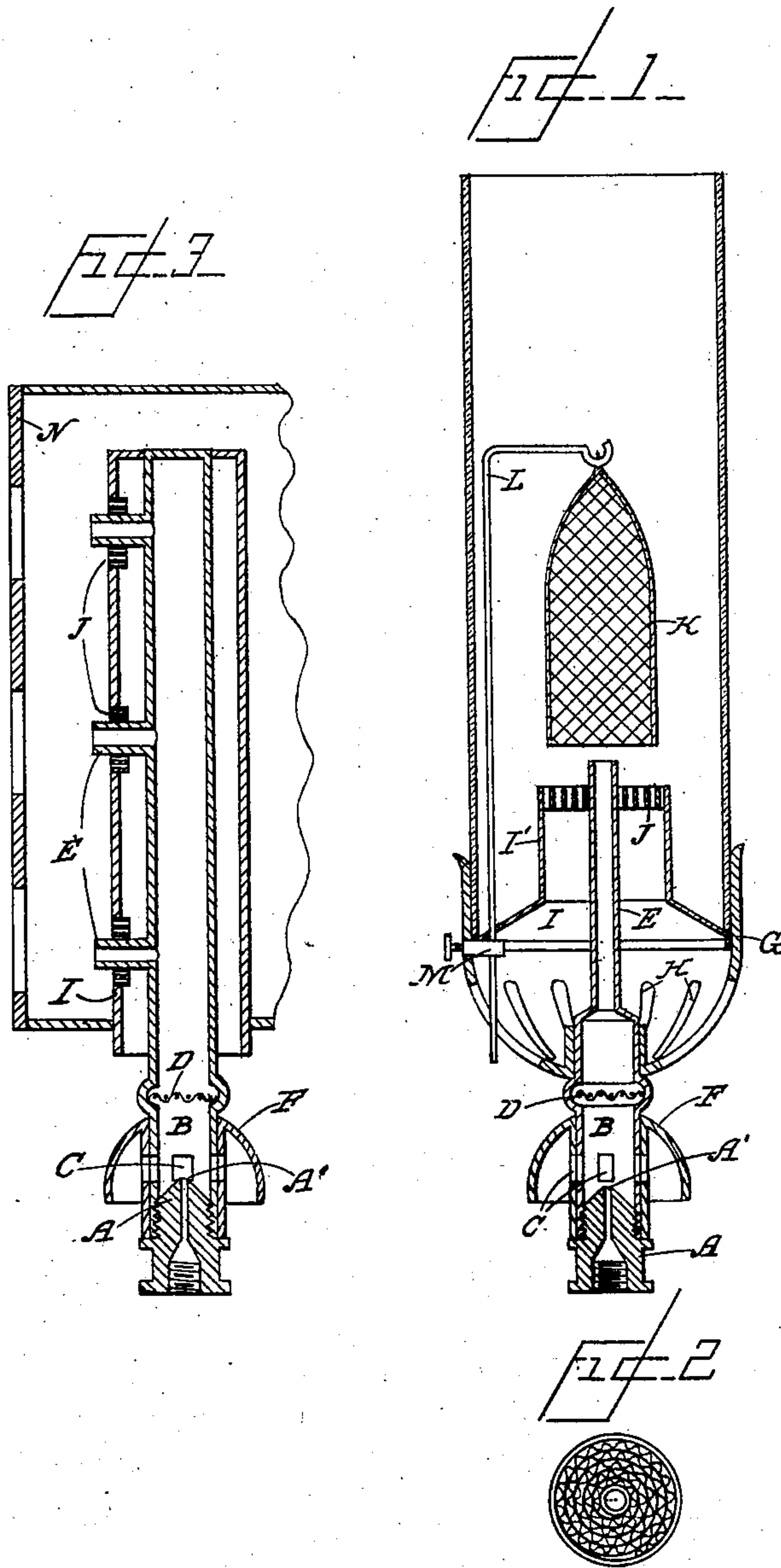


No. 755,965.

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H. SYMONDS.  
ACETYLENE GAS BURNER  
APPLICATION FILED FEB. 16, 1903.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## ACETYLENE-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 755,965, dated March 29, 1904.

Application filed February 16, 1903. Serial No. 143,702. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY SYMONDS, a citizen of the United States, residing at Longbeach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Acetylene-Gas Burners, of which the following is a specification.

My invention relates to a burner designed primarily to burn acetylene gas; and the object thereof is to produce an efficient incandescent acetylene-gas burner. I accomplish this object by the burner described herein and illustrated in the accompanying drawings, forming a part hereof, in which—

Figure 1 is a central vertical section of my improved burner. Fig. 2 is a plan of the top of the gas-tube and surrounding hood. Fig. 3 is a central section of a modified form of burner applied as a heating-burner.

In the drawings, A is the gas-supply tube, provided with a central discharge-orifice A'. Surrounding the upper portion of the gas-tube and preferably secured thereto is mixing-chamber B, having the usual air-admission ports C just above the top of the gas-tube. Extending across this chamber above the air-ports is screen D, which prevents the flame from flashing back through the mixing-chamber. Above the screen the mixing-chamber is provided with a long slender tubular outlet E, which forms the burner-tube, at the top of which the gas is burned. Surrounding the lower part of the mixing-chamber around the air-ports is an air-shield F, which may be rotated thereon to control the size of the air-ports. Surrounding and supported by the upper portion of the mixing-chamber is the removable chimney-support G, provided with air-inlets H. Above these inlets an imperforate air-concentrating hood I, having a tubular outlet I', surrounding a part of the upper portion of the burner-tube, is secured to the chimney-support. This outlet terminates a short distance below the top of the burner-tube and is provided with a screen J, which breaks up the air which passes therethrough and prevents sudden fluctuations of the air-draft. The air-hood concentrates the air passing therethrough around the burner-tube

to keep it cool. It is very desirable that the burner-tube of an acetylene-gas burner should be as cool as possible to prevent any coke or carbon forming at the outlet. The mantle K is supported by rod L, which is held secured to the chimney-support by the usual clamp M.

In Fig. 3 I have shown a modified form of burner adapted for heating purpose, the same being applied to a stove N, a fragment of which is shown. In this construction the tube O operates to concentrate the air around the burner-tubes to keep them cool.

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

1. A gas-burner having the following: a mixing-chamber; a slender burner-tube having thin walls and a non-constricted outlet affixed to the top of said mixing-chamber and constituting the outlet thereof; a screen in said mixing-chamber; means to supply air and gas to said chamber; means to concentrate air around said burner-tube.

2. In a gas-burner an imperforate air-concentrating hood having a draft-channel there-through surrounding the burner-tube near the outlet thereof, said draft-channel being intermediate said hood and tube; a screen in the top of said hood surrounding said burner-tube.

3. In an acetylene-gas burner a mixing-chamber having a screen therein extending across the chamber and a slender burner-tube of less diameter than the mixing-chamber and having thin walls and a non-constricted outlet affixed to and forming the outlet of said chamber; an air-concentrating hood surrounding a portion of the upper part of the burner-tube and having a portion of the upper walls thereof parallel with the walls of the burner-tube.

4. A gas-burner comprising a Bunsen pillar having a slender burner-tube having thin walls and a non-constricted outlet affixed to the top of the mixing-chamber thereof and forming the outlet thereof; and a screen extending transversely said mixing-chamber; and an air-concentrating hood surrounding a portion of the upper part of the burner-tube.



5. A gas-burner comprising a Bunsen pillar having a slender burner-tube with thin walls and a non-constricted outlet affixed to the top of the mixing-chamber thereof forming the outlet thereof; and a screen extending transversely said mixing-chamber; and an air-concentrating casing having a draft-channel there-through surrounding a portion of the upper part of the burner-tube, said draft-channel being intermediate said casing and tube and having a screen therein.

6. In an acetylene-gas burner means to keep the burner-tube cool comprising an imperforate casing having a draft-channel there-through the top of which surrounds the burner-tube near the top thereof and is adapted to concentrate the air around said tube,

said draft-channel being intermediate said casing and tube and having a screen therein.

7. In an acetylene-gas burner the combination of a burner-tube having thin walls and a non-constricted outlet with an air-concentrating hood surrounding said burner-tube, said concentrating-hood having the upper portion of the walls thereof parallel with the walls of said burner-tube.

In witness that I claim the foregoing I have hereunto subscribed my name this 9th day of February, 1903.

HENRY SYMONDS.

Witnesses:

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