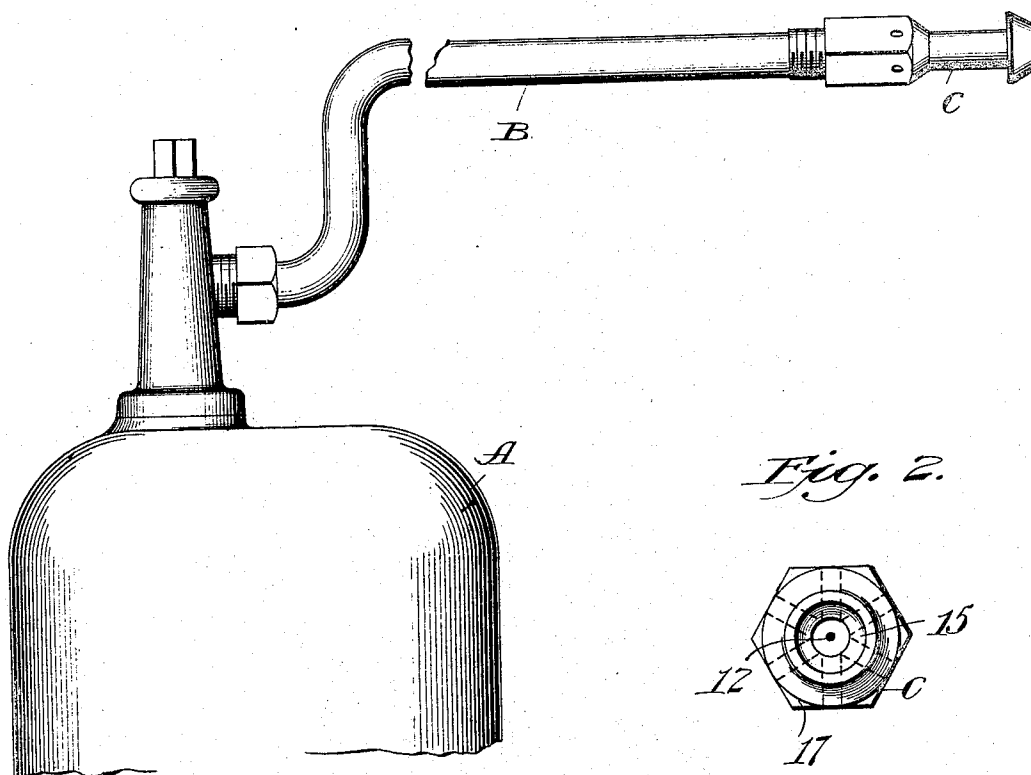


O. H. SKINNER.  
ACETYLENE GAS TORCH.  
APPLICATION FILED NOV. 20, 1911.

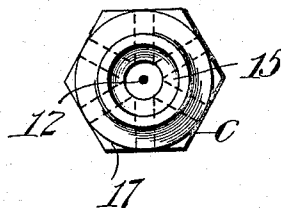
1,046,880.

Patented Dec. 10, 1912.

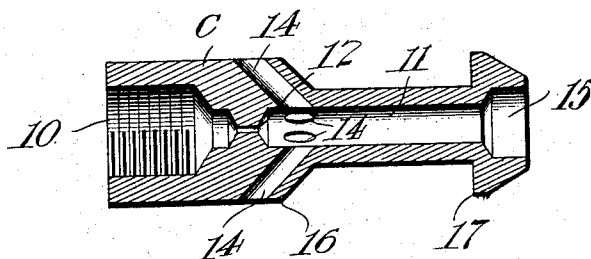
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES

*T. L. MacKassey*  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

ORAMEL H. SKINNER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE PREST-O-LITE COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

## ACETYLENE-GAS TORCH.

1,046,880.

Specification of Letters Patent. Patented Dec. 10, 1912.

Application filed November 20, 1911. Serial No. 661,438.

*To all whom it may concern:*

Be it known that I, ORAMEL H. SKINNER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Acetylene-Gas Torches, of which the following is a specification.

The object of my said invention is to provide an acetylene torch, or a torch adapted to operatively connect with an acetylene gas tank, whereby such torch may be fed directly from such a tank and used for all purposes for which torches are commonly provided. It is especially adapted for use as a part of the tool equipment of such motor vehicles as are provided with an acetylene lighting system. Such use of acetylene gas has heretofore been found impracticable for various reasons, such as the difficulty of securing a proper mixture to render the gas practically combustible for such a purpose, and providing a form of burner which will protect the combustion to make it in any degree permanent or practical. The intense heat generated also commonly serves to destroy the burners provided, and renders them quickly useless for any practical purposes.

My said invention consists, therefore, in an improved form of acetylene torch burner, or fixture, by which these difficulties are overcome and success assured, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts: Figure 1 is a view showing one end of an acetylene gas tank with a hose connection thereto and one of my improved torch attachments thereon, Fig. 2, an end view of said torch attachment, and Fig. 3, a longitudinal section through the same.

In said drawings the portions marked A represent the gas tank, B the hose, and C the burner, or torch attachment, said attachment comprising a metal body having a rear chamber 10 formed internally screw threaded, or otherwise appropriately formed for connection with the hose B. Its opposite or front end is formed with an elongated chamber 11 of uniform diameter connected with chamber 10 by means of a very small perforation 12 through an otherwise solid partition between said chambers 10

and 11. Air ducts 14 lead through the several sides of the chamber from the outside at an angle toward the front of the torch fixture into the inner end of chamber 11, their discharge ends being just in front of perforation 12. The outer end of said burner is formed with a cup-shaped combustion chamber 15 of approximately double the diameter of the chamber 11. The metal of the body C is cut out from point 16 to point 17, as shown, so that the metal surrounding the greater length of chamber 11 is comparatively thin, which permits the rapid or free radiation of the heat and preserves this part of the burner from destruction.

In operation, the torch fixture is attached to the hose B and the hose B attached to the acetylene tank A, as shown in Fig. 1. The gas is then turned on and rushes through hose B into chamber 10 and through the small perforation 12, under considerable pressure, into chamber 11 and causes a suction through the air ducts 14 which, as shown, are many times the area of the perforation 12 and thus admit comparatively large quantities of air which mixes with the acetylene gas in chamber 11. Said chamber 11, because of its elongated form, confines the gas and air until the elements have commingled sufficiently to form a combustible mixture which is ignited in the chamber 15. The expansion of the mixture into chamber 15 reduces the pressure sufficiently so that said mixture will ignite and burn with a steady, permanent and practically useful flame. The walls of said chamber also protect the flame so that it cannot be readily extinguished except by an intentional effort. Such a device is of great convenience as a part of the equipment of a motor vehicle, the hose B being readily connected with the ever ready supply of acetylene gas in the acetylene tank, which is a part of the vehicle equipment. The hose may be of such length as to enable such torch to be used around any part of the vehicle, thus providing a torch of a character that is especially efficient as well as convenient for the purpose.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. An acetylene torch burner comprising a unitary body formed with a pipe connection

tion and receiving chamber at one end, an elongated mixing chamber at its other end, a partition between said receiving chamber and said mixing chamber with a small gas inlet port leading therethrough into said mixing chamber, air ducts through the walls of said body leading into said mixing chamber adjacent to said gas inlet, and an enlarged cup-shaped combustion chamber formed on the outer end of said mixing chamber and beyond the inner ends of said air ducts, substantially as set forth.

2. An acetylene torch burner comprising a body formed with an enlarged inlet chamber in one end, an elongated mixing chamber in its other end, a partition between said chambers formed with a fine perforation

leading from said inlet chamber into said mixing chamber, a number of air ducts leading through the wall into the inner end of said mixing chamber, and an enlarged combustion chamber at the outer end of said mixing chamber, the wall of said body being formed of reduced thickness and diameter between said combustion chamber and the air ducts, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 13th day of November, A. D. nineteen hundred and eleven.

ORAMEL H. SKINNER, [L. S.]

Witnesses:

S. M. COOLEY,  
F. W. HICKS.