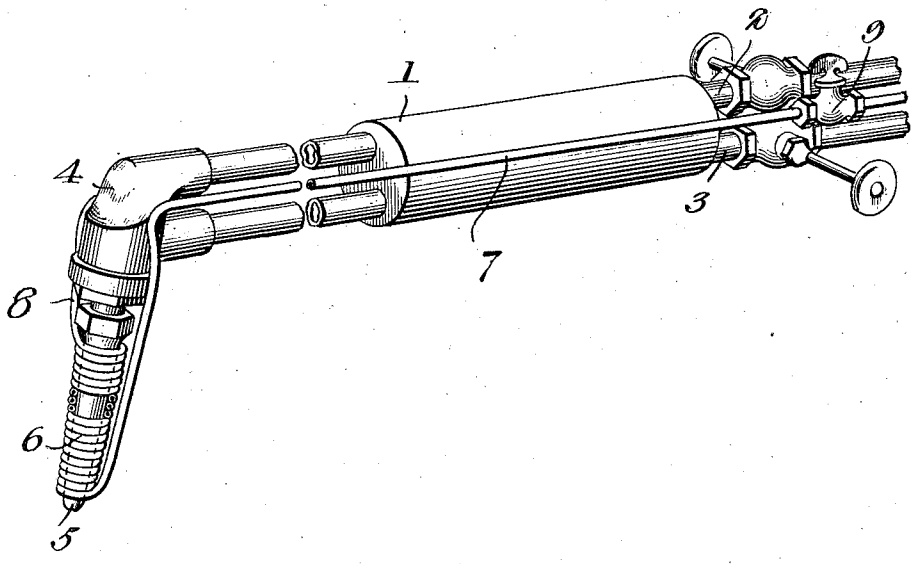
J. S. FREDERICKSON.

TORCH.

APPLICATION FILED JULY 17, 1914.

1,138,549. Patented May 4, 1915.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES SHERIDAN FREDERICKSON, OF VALLEJO, CALIFORNIA.

TORCH.

1,138,549. Specification of Letters Patent. Patented May 4, 1915.

Application filed July 17, 1914. Serial No. 851,610.

To all whom it may concern:

Be it known that I, JAMES SHERIDAN FREDERICKSON, a citizen of the United States, residing at Vallejo, in the county of Solano and State of California, have invented new and useful Improvements in Torches, of which the following is a specification.

This invention relates to torches and particularly to tips for oxygen gas, hydrogen gas or oxy acetylene gas cutting or welding torches. In using this type of torch it has been found highly desirable to keep the tip cool so as to prevent back firing or premature ignition which puts out the flame. When this happens while making the weld the oxygen gas oxidizes the metal and ruins the weld at the same time cutting right down into the metal.

Another object in cooling the tip is to prevent damage to the tip which frequently occurs where the torch is used for any length of time.

It is, therefore, the object of this invention to provide novel and efficient cooling means which prevents excessive heating of the tip, thereby eliminating premature ignition and avoiding damage to the tip.

Another object of the invention is to provide a novel cooling means which may be readily removed and applied to the tips and which may be adapted for tips of any character.

Further objects of the invention will appear as the following description is read in connection with the accompanying drawing, which forms a part of this application, and in which the figure is a perspective view showing the invention applied to an ordinary oxy acetylene burner with parts in section.

Referring more particularly to the drawing, 1 represents an ordinary oxy acetylene torch connected with the supply pipes 2 and 3, the former adapted to convey oxygen to the burner head 4 and the latter adapted to convey acetylene gas to said head. The head 4 is shown as provided with the usual form of tip 5 and in this instance the head is wound with a spirally arranged cooling coil 6 connected to a source of supply by the tube 7 and discharging through a similar tube 8. The tubes 7 and 8 are held alongside of the torch in any suitable manner and the supply tube is preferably provided with a regulating valve 9. The supply tube may be connected to any suitable source of supply and the cooling fluid which passes therethrough may be under pressure or otherwise. These coils are preferably constructed of soft, copper tubing so that they can be wound around the tips to conform thereto and lie against all portions of the outer surface. The unequal expansion between the tip and the coils effectively holds the coil in position upon the head when the burner is in use but when the parts are restored to normal position the coil may be readily removed for repair or replacement of the tip if found to be necessary. It is believed, however, that with the use of this coil that the tips will have a life equal to the life of the torch proper.

What is claimed is:—

In a torch, a burner tip, a cooling coil removably surrounding the tip and held in position thereon by expansion of the tip when in operation, supply and discharge pipes connected to the coil, and means for controlling the supply of cooling fluid to the coil.

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

JAMES SHERIDAN FREDERICKSON.

Witnesses:

J. F. SILVA,

WADE H. MADREN.