

(No Model.)

T. HOLLIDAY.
GAS BURNER.

No. 581,117.

Patented Apr. 20, 1897.

Fig. I

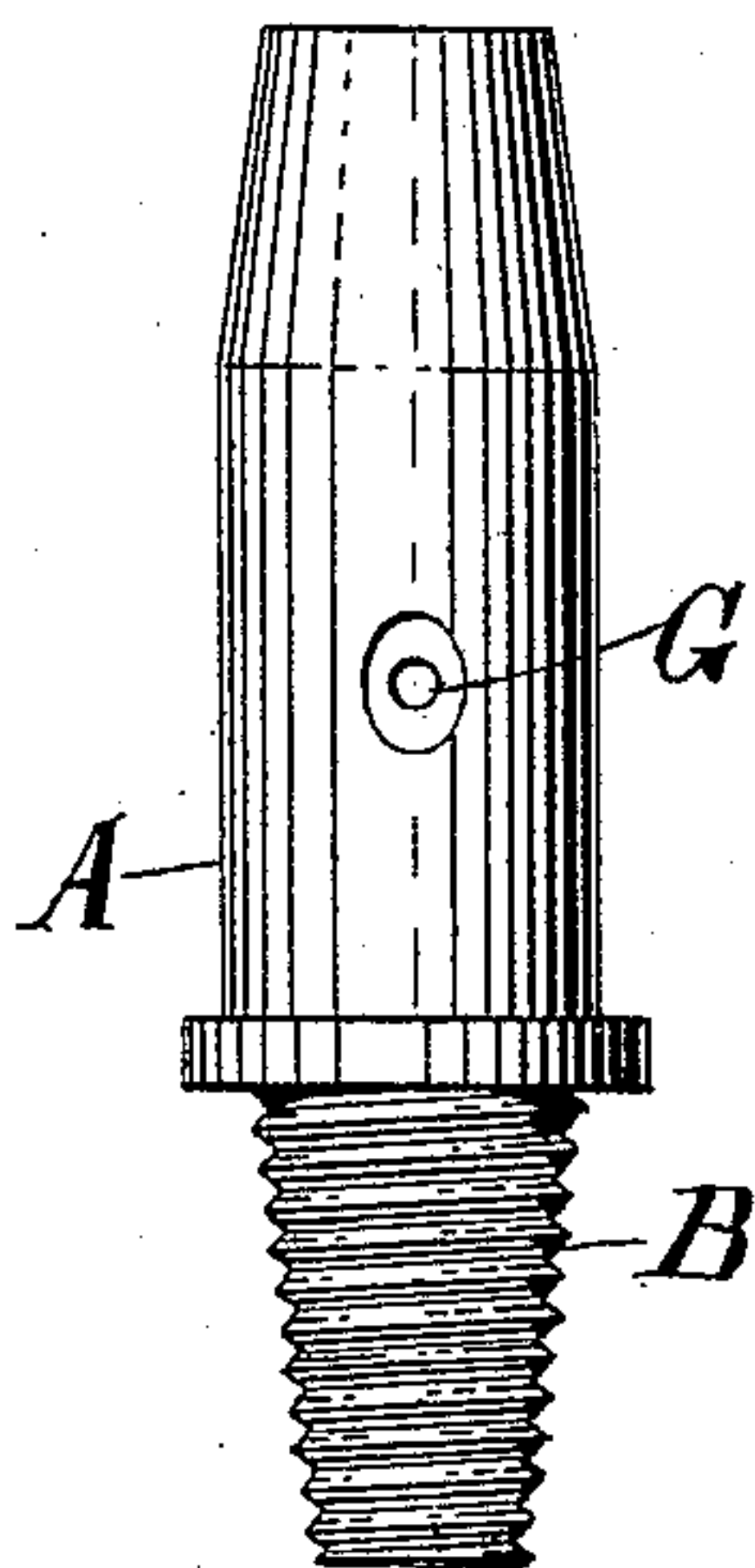
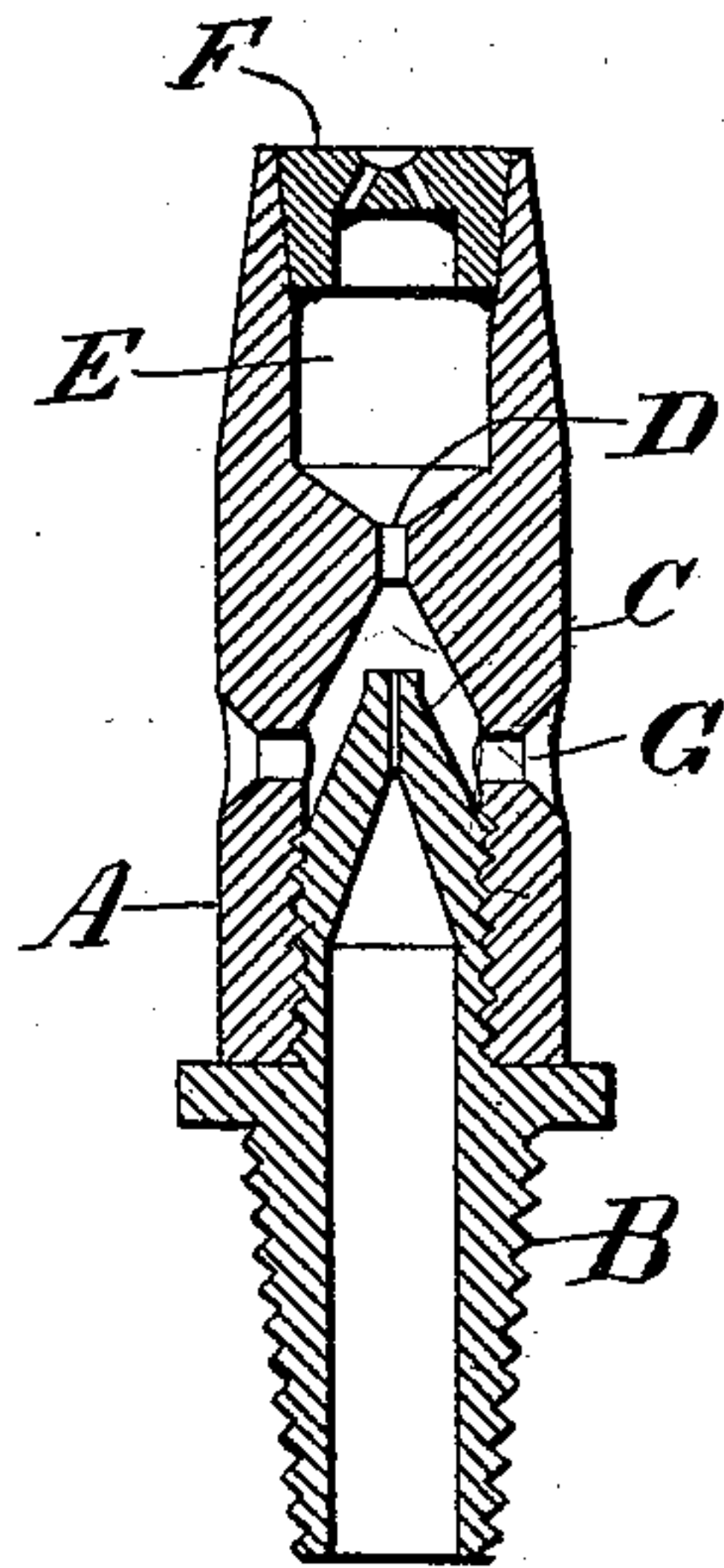


Fig II



WITNESSES:

H. Contant
Thomas Littlejohn

INVENTOR

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UNITED STATES PATENT OFFICE.

THOMAS HOLLIDAY, OF HUDDERSFIELD, ENGLAND.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 581,117, dated April 20, 1897.

Application filed October 23, 1895. Serial No. 566,584. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HOLLIDAY, a subject of the Queen of Great Britain, residing at Edgerton, Huddersfield, in the county of York, England, have invented certain new and useful Improvements in Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved process of and apparatus for diluting gas rich in carbon with air at the burner, and it is especially applicable to mingling acetylene with air at the point of combustion.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a vertical elevation, and Fig. 2 a cross-section, of my improved burner.

A represents the burner-column, screwing upon a suitable support B. The column A may be made adjustable upon the support B by turning the column. The support B terminates in a small jet C below the opening D in the column. The column again extends to the mixing-chamber E, the upper end of which connects with the burner F, preferably of the union-jet type. Air-openings G pass through the column and into the interspace above the jet C.

The operation is as follows: Gas under sufficient pressure passes through the opening C and then through the opening D into the mixing-chamber. The opening D, being larger than the opening C, allows for the passage of air with the gas into the chamber E. The relative size of the openings C and D determines the proportion of gas to air, which may also be varied by the adjustment of the column A upon the support B. The openings in the burner F should be made of sufficient size to allow the escape of the mingled air and gas without forcing them backward through the openings G.

I am aware of the patent to Jones and Collins, No. 55,949, dated August 7, 1866, and the patent to Averill, No. 141,415, dated August 5, 1873, and do not claim the structure there shown. These and similar structures operate by mingling the air and gas in a lower chamber and then passing them in a mingled condition through a constricted orifice. By my apparatus the gas is jetted in a thin stream through a chamber, where by its passage it causes an influx of air, and then the jet, without breaking up, passes into an upper chamber through a constricted orifice in which the mingling of the air and gas is done. This can only be done by an arrangement in which the gas-jet and the constricted orifice are properly proportioned and close together, and by means of it an air and gas pressure is maintained in an upper chamber. By my apparatus, for instance with a pressure of six inches in the gas-supply pipe to which the support is connected and a constricted orifice D of four times the diameter of the gas-jet C, a pressure of two inches of water can be attained in the upper mixing-chamber, a result impossible with any of the previous jets known to me.

What I claim as my invention, and desire to secure by Letters Patent, is—

A gas-burner for mingling air with a gas rich in carbon, comprising a support having a fine jet, a column having an opening to the air adjacent to the jet, a mixing-chamber, a constricted opening into the mixing-chamber, above, close to and in line with the jet, but larger than the jet, and a burner in the column above the mixing-chamber, substantially as described.

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

THOMAS HOLLIDAY.

Witnesses:

CHAS. MILLS,
THOMAS A. BARRON.