

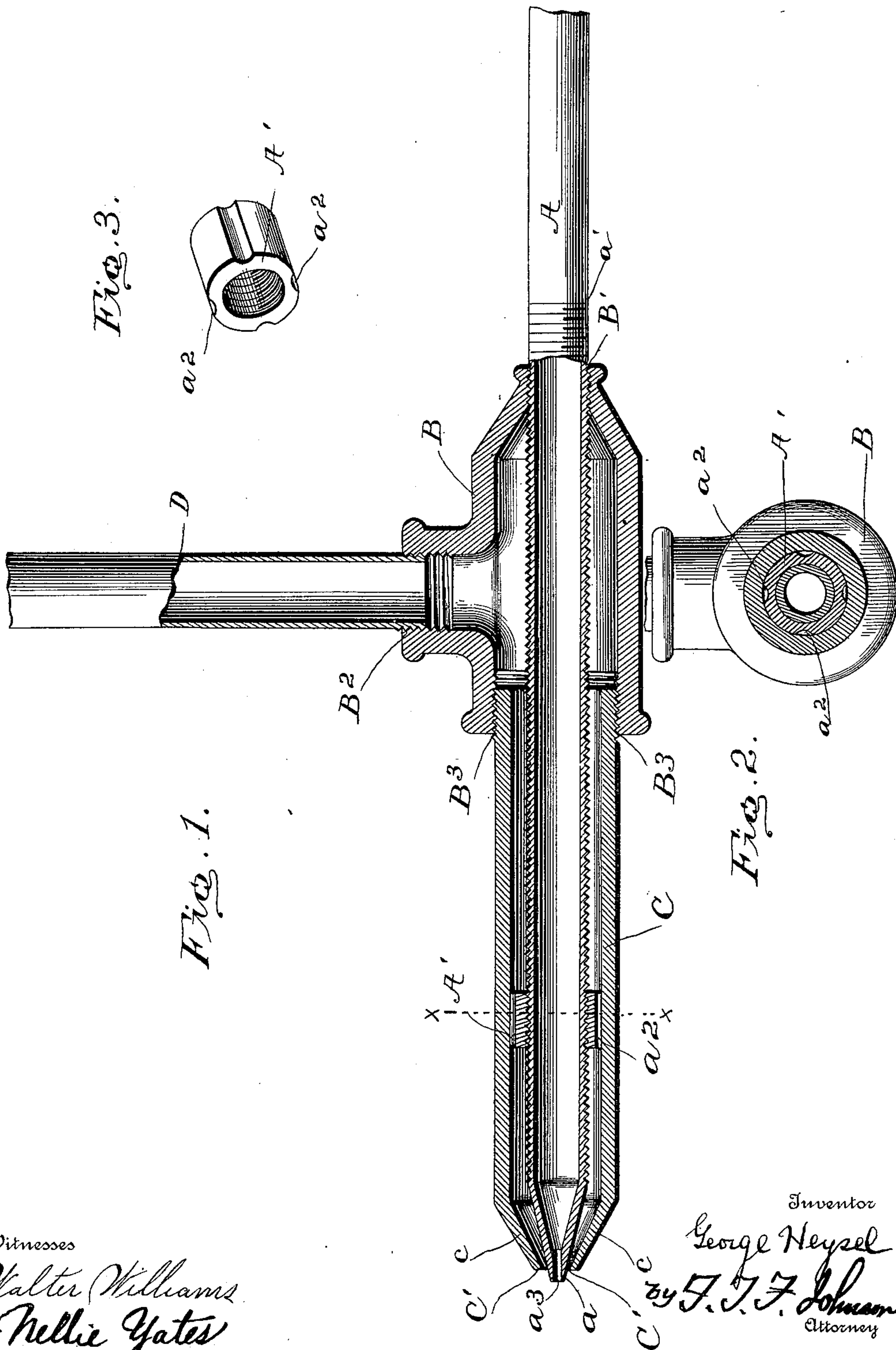
No. 622,146.

Patented Mar. 28, 1899.

G. HEYSEL.
HYDROCARBON BURNER.

(Application filed July 30, 1898.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

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HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 622,146, dated March 28, 1899.

Application filed July 30, 1898. Serial No. 687,373. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HEYSEL, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to hydrocarbon-burners; and it consists generally in the novel construction and combination of the various parts, as will be hereinafter more fully described, and particularly pointed out in the claims.

The primary object of the invention is to produce a burner of the character mentioned which will be inexpensive to construct and at the same time durable and efficient in operation.

Other objects will be apparent from the detailed description of the invention.

These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of my improved burner, showing the relative arrangement and positions of the several parts. Fig. 2 is a cross-section on the line $x x$ of Fig. 1, and Fig. 3 a detail.

Referring to the several views, the letter B indicates a T-shaped coupling having a solid outer end provided with a screw-threaded opening B^1 , in which is received the externally-screw-threaded oil or gas supply pipe A, which is adjustable longitudinally therein. The coupling is also provided with an opening B^2 , in which is secured a supply-pipe D, connected with an air or steam holder. (Not shown.) The forward end of the coupling is provided with an opening B^3 , in which is removably secured a suitable nozzle or casing C, preferably of steel, and said nozzle has its forward end tapered and provided with an exit C' of sufficient diameter to receive and permit the conical end of the oil or gas pipe to project therethrough a short distance in

order that the flame may be established just before air or steam is admitted to the flame. The diameter of the forward end of the coupling and nozzle is greater than that of the pipe A, so as to form an air or steam passage between the coupling and nozzle and oil-supply pipe. This pipe A is provided with a small opening a^3 in its conical end, and the external screw-threads extend, preferably, from the end a to about the point indicated by the letter a' . Upon the screw-threaded portion of the pipe A is mounted a suitable screw-threaded centering-block and pressure-regulator A' , provided with small steam or air passage $a^2 a^2$. This guide and pressure-regulator is adapted to be adjusted along the screw-threaded portion of the pipe A and serves to guide and properly center the conical end of said pipe to its position in the nozzle or casing. It also serves to increase or diminish the steam-pressure according to its location on the pipe A, and thereby regulate the velocity of the air or steam. If adjusted close to the conical end of said pipe, the pressure of the air or steam passing around the tube A and out through the exit will be greater than when the said guide or pressure-regulator is located farther from said exit. When the guide or pressure-regulator is at or very near the exit, the expansion of steam is very greatly diminished and the pressure not materially lessened; but when it is located some distance from the exit the expansion of the steam between the guide and pressure-regulator and the exit will be sufficiently great to materially diminish the pressure of the flow of steam through the exit, whereby the degree of combustion of the hydrocarbon and the extent of the heat may be regulated. When it is desired to increase the pressure of the flow of steam or air from the nozzle into the flame, the guide or pressure-regulator is adjusted on the pipe A toward the conical end thereof. Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hydrocarbon-burner, the combination with a T-shaped coupling having a screw-threaded inner end and a screw-threaded outer end, a nozzle or casing detachably secured in said inner end and an externally-screw-threaded supply-pipe adjustably se-

cured in said outer end, of a longitudinally-adjustable centering-guide and pressure-regulator situated in the steam-pipe and surrounding the oil or gas supply pipe, whereby
5 the forward end of the supply-pipe is properly positioned and the pressure of the steam or air supplied thereto regulated.

2. In a hydrocarbon-burner, the combination with the T-shaped coupling provided with
10 a detachable nozzle or outer casing, and with a screw-threaded outer end, of a supply-pipe externally screw-threaded and adapted to be longitudinally adjusted in the screw-threaded outer end of the coupling, and a longitudi-
15 nally-adjustable pressure-regulator situated in the steam-pipe and surrounding the oil or gas supply pipe, adapted to vary the expansive force of the steam or air between said regulator and the exit in the nozzle, as set
20 forth.

3. In a hydrocarbon-burner, the combination with a suitable coupling provided with a nozzle and having its outer end screw-threaded to receive a supply-pipe, of the supply-pipe externally screw-threaded approxi-

mately its entire length, said pipe being longitudinally adjustable to vary the volume of air or steam, through the exit of said nozzle, and a pressure-regulator longitudinally adjustable on said supply-pipe whereby the
30 pressure of the air or steam may be regulated between said regulator and the nozzle-exit.

4. In a hydrocarbon-burner, the combination with a suitable coupling, provided with a nozzle and having its outer end screw-
35 threaded to receive a supply-pipe, of the supply-pipe externally screw-threaded so as to be longitudinally adjustable in said screw-threaded end of the coupling, and a pressure-regulator provided with suitable longitudinal
40 channels, said regulator being longitudinally adjustable on said supply-pipe, whereby the pressure of the air or steam may be regulated.

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

GEORGE HEYSEL.

Witnesses:

F. T. F. JOHNSON,
J. R. NOTTINGHAM.