

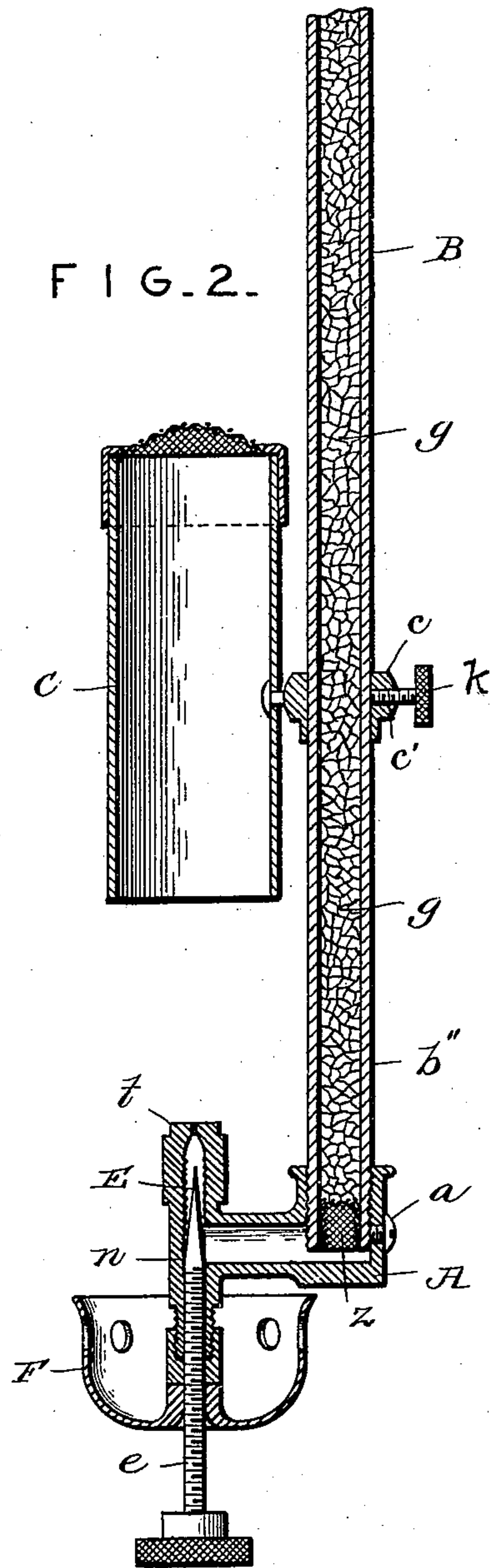
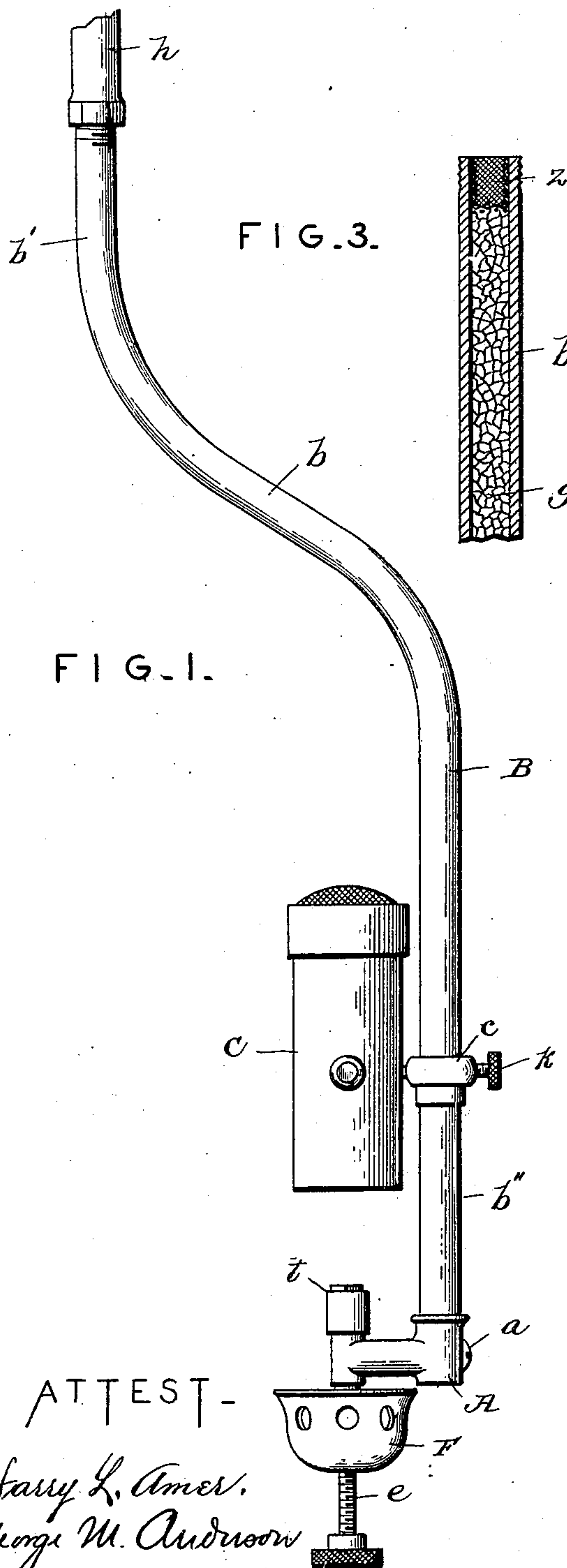
No. 677,766.

Patented July 2, 1901.

G. C. HOLT & J. W. McDANIEL.  
HYDROCARBON VAPOR BURNER.

(Application filed Aug. 8, 1900.)

(No Model.)



ATTEST-

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# UNITED STATES PATENT OFFICE.

GEORGE C. HOLT AND JOHN W. McDANIEL, OF CHICAGO, ILLINOIS.

## HYDROCARBON-VAPOR BURNER.

SPECIFICATION forming part of Letters Patent No. 677,766, dated July 2, 1901.

Application filed August 8, 1900. Serial No. 26,309. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE C. HOLT and JOHN W. McDANIEL, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have made a certain new and useful Invention in Hydrocarbon-Vapor Burners; and we declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of the invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a detail fragmentary view of the upper portion of pipe B to show the gauze diaphragm at the upper end thereof.

The invention has relation to hydrocarbon-vapor burners; and it consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings the letter B designates the generator-pipe, having a curved transverse bend *b* at or about its middle portion, whereby its upper portion *b'* while in the same plane with the lower portion *b''* is out of line therewith. This pipe is provided with a gauze diaphragm at each end, as indicated at *z*, and in said pipe is a filling of gravel, (shown at *g*.) This generator-pipe is connected to the supply-pipe *h* from the gasoline-tank.

To the lower end of the generator-pipe B is connected a burner-joint A, which is secured by means of a set-screw *a* in such position that it will be directly below and in the plane of the bend *b* of the generator-pipe. This burner-joint is provided with a burner-tip at *t* and below the same with a needle-valve E, the screw-stem *e* of which works into the threaded lower end of the burner-joint, as indicated at *n*. The needle-valve is provided with an adjustable drip-cup F, screwed thereon.

C represents the tubular heater for the generator-pipe. This consists of a tubular body portion of larger diameter than the pipe B, provided with a wire-gauze cap or covering

at its upper end and open at its lower end. This heater-tube is provided with a ring-form attachment device *c*, which is pivoted thereto at its back and which is located on the lower portion *b''* of the generator-pipe. A set-screw *k*, passing through a threaded aperture *c'* in said ring, serves to secure the heater in position. This heater is adjustable up or down on the lower branch *b''* of the generator-pipe and may be also adjusted circularly as well as angularly to enable the operator to bring its heat to bear on the bend *b* of the generator-pipe. The flame from the burner-tip is designed to pass up into or in the direction of the hollow body of the tube, and the heat thereof soon raises the heater to a high temperature on account of the gauze cap or covering, which, being convex, also serves to concentrate the upward heated currents on the bend of the generator-pipe. In this manner the heat of the burner-flame is held and concentrated on the gravel-filled generating-pipe, especially at the bend thereof, whereby the vaporizing is designed to be effected in an efficient and satisfactory manner.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

1. In a hydrocarbon-vapor burner, the bent generator-pipe having the gauze-stopped ends and gravel filling, the burner-tip at its lower end, and the adjustable heater attached to the pipe above the burner-tip and below the bend and in line with said tip and bend, substantially as specified.

2. In a hydrocarbon-vapor burner, the combination with the gravel-filled generator-pipe having the transverse bend in its middle portion, of the burner-tip and needle screw-valve at its lower end below said bend, and the tubular heater open at its lower end and having a gauze cap at its upper end provided with a ring-form attachment and adjustable on the lower portion of said pipe between and in line with said burner-tip and transverse bend, substantially as specified.

3. In a hydrocarbon-vapor burner, the combination with the bent generator-pipe, of the burner-tip at its end, and below the bend,

and the adjustable tubular heater open at its lower end, partially closed at its upper end with wire-gauze, and provided with a sliding attachment on the lower portion of said pipe,  
5 between, and in line with said burner-tip and the bend of the pipe, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEO. C. HOLT.

JOHN W. McDANIEL.

Witnesses:

ALPHEUS MCCALLUM,  
JOHN G. MCGREGOR.