No. 685,235. Patented Oct. 22, 1901.

M. R. GROMER & A. M. WRIGHT.

CARBURETER.

(Application filed Sept. 11, 1900.)

(No Model.) 2 Sheets—Sheet 1.

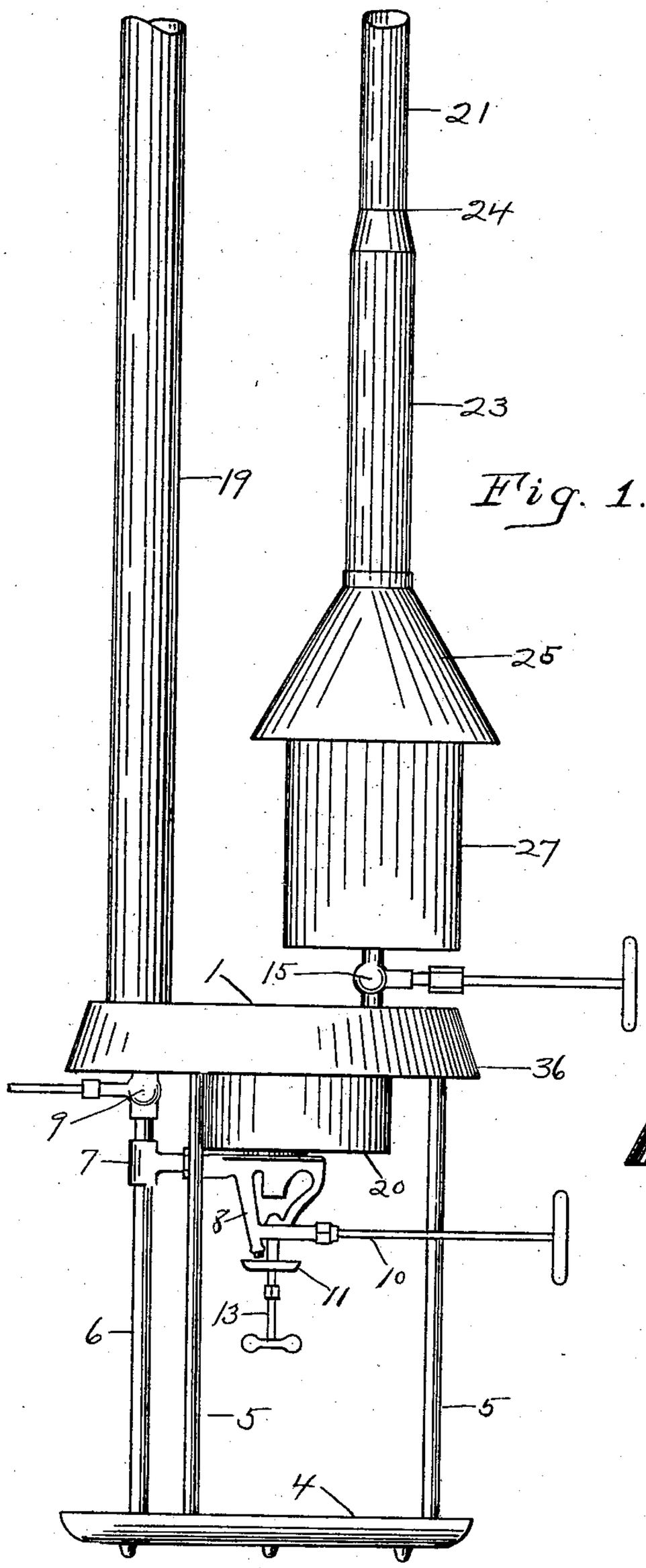

Fig. 1.

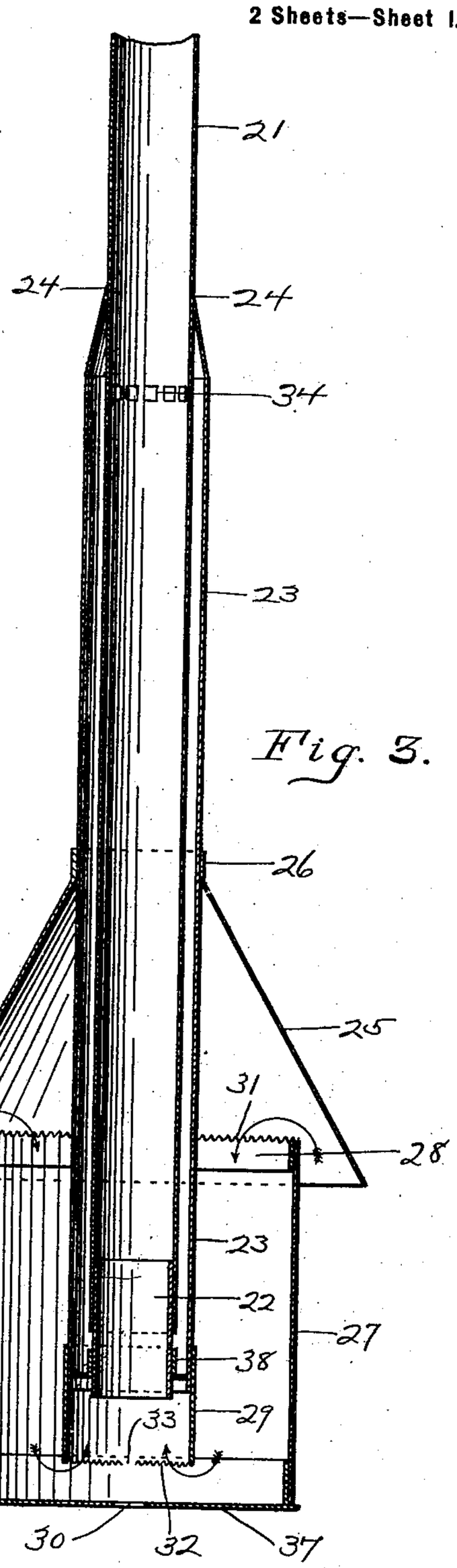

Fig. 3.

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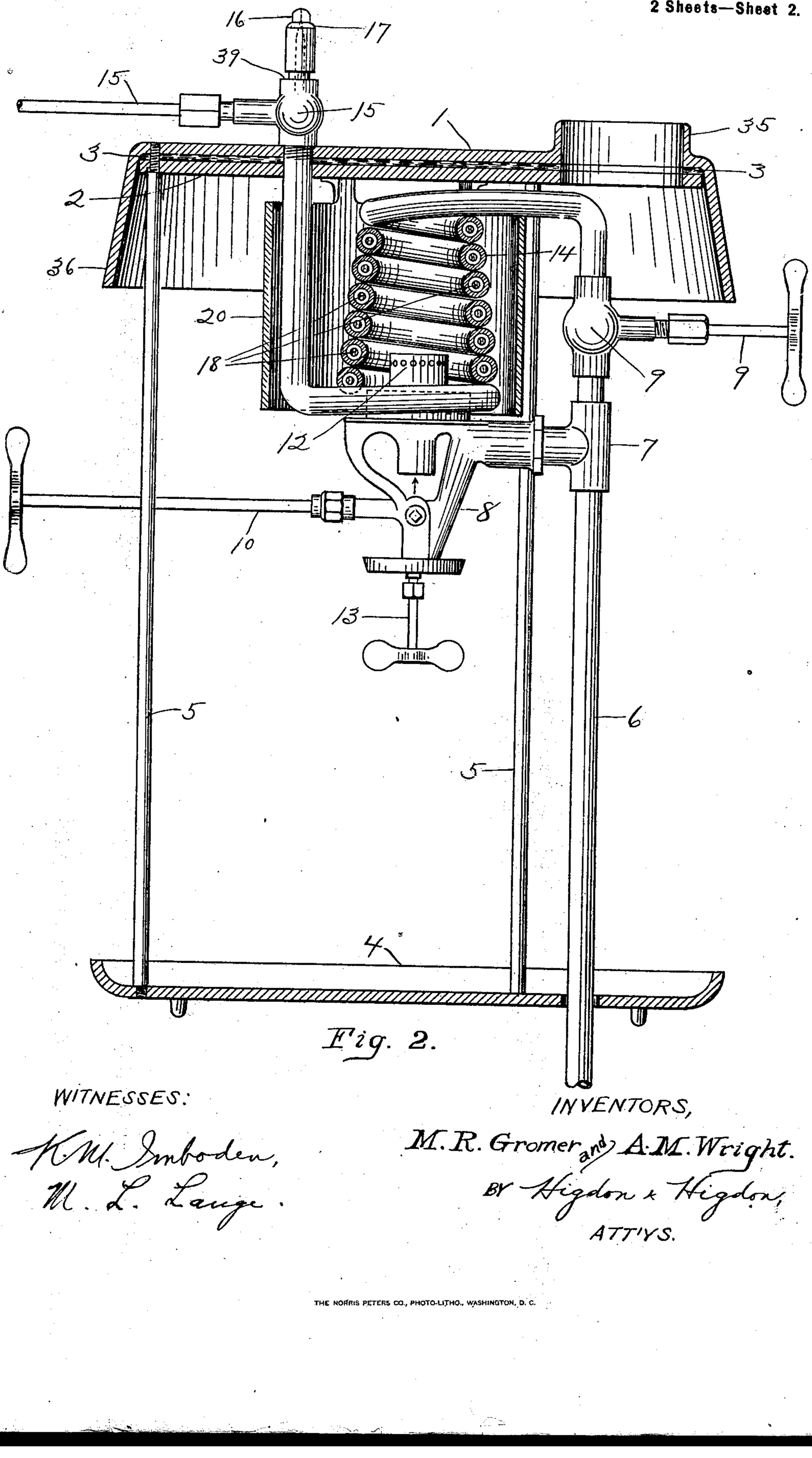

Fig. 2.

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UNITED STATES PATENT OFFICE.

MANZAL R. GROMER AND ALFRED M. WRIGHT, OF McFALL, MISSOURI.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 685,235, dated October 22, 1901.

Application filed September 11, 1900. Serial No. 29,629. (No model.)

To all whom it may concern:

Be it known that we, MANZAL R. GROMER and ALFRED M. WRIGHT, of McFall, in the county of Gentry and State of Missouri, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

Our invention relates to that class of hydrocarbon-gas generators in which the liquid fuel circulates around a burner and the gas formed thereby ascends to a carbureter, from which it is conducted to the points of consumption.

The object of our invention is to produce a gas-generator of simple, cheap, and durable construction and which will be satisfactory and reliable in its operation at all times.

With this object in view our invention comprises certain construction and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, in which corresponding numerals refer to corresponding parts, Figure 1 is an elevation of an apparatus embodying our invention. Fig. 2 is an elevation of the lower part of the same from a point of view opposite that of Fig. 1, certain parts being in central vertical section. Fig. 3 is a central vertical sectional view of the carbureter and the parts attached thereto.

The frame comprises a top plate 1, a bottom plate 4, and rods 5, connecting and suitably secured to said plates. The inlet-pipe 6 rises, preferably, through an opening in plate 4 and leads to a T-union 7, whose branches connect, respectively, with the drip-tube 8 and valve 9. From valve 9 a pipe or tube 14 extends laterally and then forms a coil or helix, having its turns increasing in diameter from above downward, as shown in Fig. 2. From the lower end of said coil the tube extends laterally, then upwardly, and passes through plates 1 and 2. A valve 15 intersects said tube above these plates, and above valve 15 the nozzle 16 is connected, preferably by screwing the lower end of the nozzle into the valve-coupling. Said nozzle has a central vertical perforation therein, tapering upward to a fine capillary opening, as indicated by dotted lines in Fig. 2. A wire 18 (or short pieces of wire) is inserted in the tube 14 in order to increase the surface exposed to the liquid and to reduce the cross-sectional area of the passage through said tube.

Below plate 1 is a sheet 3 of asbestos or other heat-insulating material, held thereto by a metal plate 2. Shoulders on rods 5 abut against plate 2, and the ends of the rods are screwed into plates 1 and 4.

Plates 1 and 2 have an opening therethrough, and plate 1 has an annular flange 35 around said opening, and this flange is embraced by the lower end of the chimney-tube 19, as shown in Fig. 1. An annular shell 20, surrounding the coiled tube 14, is secured to plate 2 in any suitable manner.

The carbureter comprises a central tube 21, an outer tube 23, secured thereto at 24, a frusto-conical canopy, a drum 27, and a smaller drum 29 adjustably mounted on the lower end of tube 23. The outer drum 27 is provided with a detachable ring or collar 28 and a detachable bottom plate 37. Said plate 37 has a central circular opening 30 therein, through which the nozzle 16 extends when said plate rests on shoulder 39, Figs. 1 and 2. A circular piece of wire gauze or netting 31 is secured to collar 28 and has a central opening that fits around tube 23. The inner adjustable drum 29 carries across its lower end a piece of wire gauze or netting 32, provided with an opening 33 concentric with opening 30 in plate 37. The lower end of inner tube 21 has a short extension 22 slidingly mounted therein, (or thereon,) and arms 38 are secured to said extension for holding it concentric with tube 23. Tube 21 is provided with openings 34 below the point 24. The canopy 25 has its collar 26 slidingly mounted on tube 23, so that it may be adjusted vertically with respect to the outer drum 27. Tube 21 extends up to the ceiling or to some other point of support. Its lower end is guided by the wire-netting 31, secured to drum 27.

The operation of the apparatus is as follows: The gasolene is forced through tube 6 from a suitable tank. Valve 10 is first opened, allowing the drip-cup 11 to fill. Valve 10 is closed and the gasolene in the cup is ignited. The burner 12, of any preferred type, is started by opening valve 13, and when the coiled tube 14 is hot valve 9 is opened, thereby admitting

liquid to the coil in which it is vaporized. When valve 15 is opened, the vapor passes through nozzle 16 and upward through carbureter-tube 21. Inner drum 29 may be raised or lowered, so that gauze 32 may rest on the shoulder 17 of tip 16 or may hang above said tip. Air is drawn into canopy 25 and through netting 31 down to the bottom of drum 27, thence up through netting 32 and mingles with the ascending hydrocarbon vapor. Canopy 25 acts as a valve for admitting more or less air to the apparatus, being adjustable vertically on tube, as aforesaid. The chimney-tube 19 may be extended to any suitable point. It carries off the greater part of the heated air and gas rising from the burner 12. The downwardly-projecting flange 36 of plate 1 aids in directing this heated air into the chimney 35.

The construction and operation of our invention having been set forth, it is to be understood that certain modifications in details or arrangement of parts may be made without departing from the spirit of the invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a hydrocarbon-gas generator, a frame comprising an upper plate having a downwardly-extending peripheral flange, a metallic plate secured to the lower side of said upper plate, a sheet or layer of asbestos or the like held between said plates, rods or bolts for supporting said plates, and a base-plate secured to said rods or bolts; substantially as described.

2. In a hydrocarbon-gas generator, in combination with a vaporizing-tube; a tube secured vertically above said vaporizing-tube, a larger tube secured around said vertical tube, openings in the sides of said smaller tube, a tubular extension or drum mounted slidingly on the lower end of said outer tube, a disk of wire gauze or netting secured across the bottom of said extension or drum, a perforation through said gauze or netting above the delivery end of said vaporizing-tube, a still larger drum secured around the lower ends of said tubes, a detachable bottom plate on said drum, a perforation through said bottom plate concentric with the delivery end of said vaporizing-tube, and a disk of wire gauze or netting secured across the upper end of said drum and having an opening embracing said outer tube; substantially as described.

3. In a hydrocarbon-gas generator, in combination with a vaporizing-tube, a drum arranged above said tube, a vertical tube having its lower end within said drum, a sleeve or collar slidingly or adjustably mounted on said vertical tube above said drum, and a canopy having downwardly-diverging sides depending from said sleeve or collar and adjustable thereon, whereby said canopy may be approached to or raised from said drum; substantially as and for the purpose set forth.

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

MANZAL R. GROMER.
ALFRED M. WRIGHT.

Witnesses:
CHAS. S. LOCKWOOD,
CLYDE COSTOLE.