

YOUMANS & REED.

Vapor Stove.

No. 60,455.

Patented Dec. 11, 1866.

Fig. 3

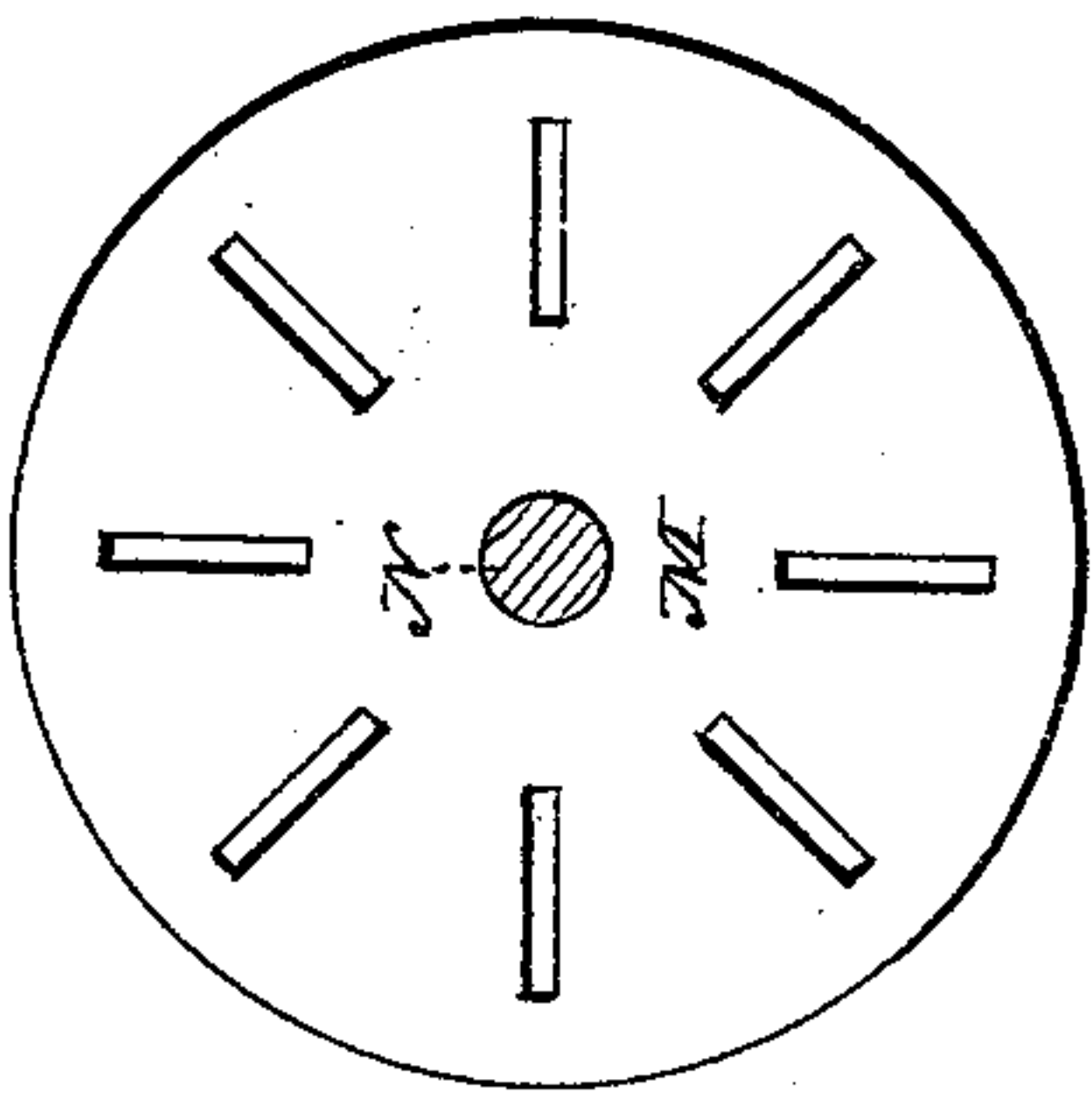


Fig. 2

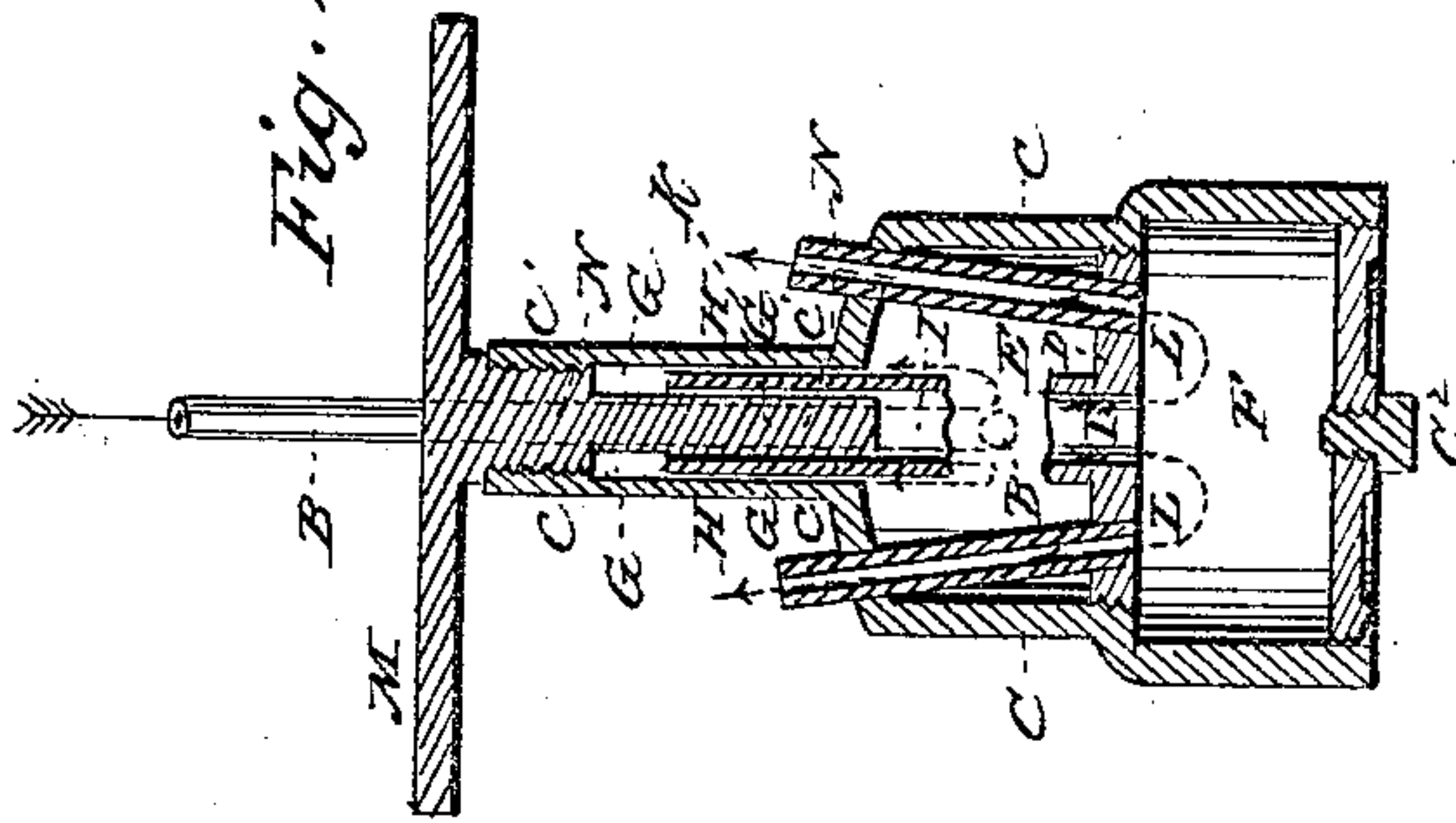
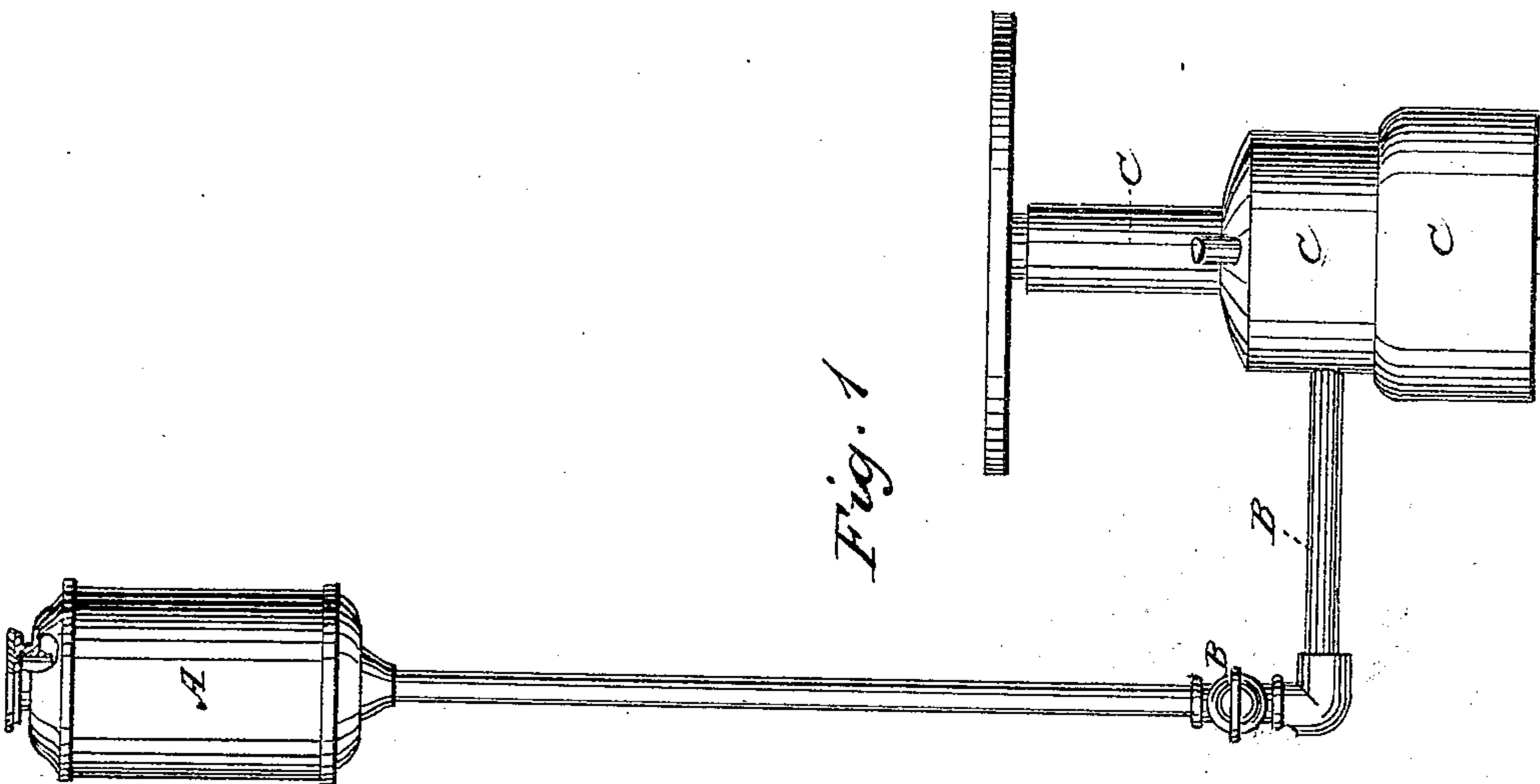


Fig. 1



Witnesses:

*G. Glaufer*  
*L. A. Murphy*

Inventors:

*Jas. Youmans & Jno. Reed*  
by

*D. D. McWay*  
Attys.

# United States Patent Office.

## HYDRO-CARBON BURNER FOR HEATING PURPOSES.

JAMES YOUMANS AND JOHN REED, OF DAVENPORT, IOWA.

*Letters Patent No. 60,455, dated December 11, 1866.*

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, JAMES YOUMANS and JOHN REED, of Davenport, in the county of Scott, and State of Iowa, have invented a new and useful improvement in Gas Generators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, made part of this specification. In the drawings—

Figure 1 is a perspective view.

Figure 2 is a vertical central section.

Figure 3 is a plan of the disk under which the flame is applied.

The same letters always refer to identical parts.

A is a reservoir in which the hydro-carbon oil intended to be used is stored. It is discharged through the induction pipe B into the chamber C, the flow being regulated by a stop-cock B'. The chamber C is divided into two compartments E and F by the partition D. The induction pipe B discharges the oil into the oil chamber E. Should it not be evaporated as it enters by the heat of that chamber, it will rise in the space G, between the internal pipe I and the tubular portion of the chamber, where it will be exposed in a thin cylindrical space to a more intense heat, and vaporized. The gas thus created passes through the space G to the annular chamber G'; from thence it descends, as shown in the section in fig. 2, by the arrows, through the annular space H, between the internal surface of the tube I and the stem N, into the gas chamber F. The great expansion occasioned by its high degree of heat expels it thence with force through the burners L, at the top of which it is ignited. Over the jets from the burners L is placed a perforated disk M, against which, on the under side, the flame strikes. This disk is supported upon the stem N, which is screwed into the top of the pipe C<sup>1</sup>, and is so cut away below as to be received within the pipe I, leaving the annular chamber G' and space H as described. This stem will be made very hot, and will entirely prevent any un-reduced oil passing over the pipe I into the chamber F; for, in doing so, it must pass along the surface of the stem. A plug C<sup>2</sup>, in the chamber C, enables any oil that may, under any circumstances, get into the gas chamber F to be drawn off.

Having described the construction of our improved gas generator, what we claim as our improvement and desire to secure by Letters Patent, is—

A gas generator constructed with a chamber C, divided by a partition D into two compartments E and F, and having also a pipe I, burners L, disk M, and stem N; said several parts being respectively constructed and arranged in relation, one to another, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES YOUMANS,  
JOHN REED.

Witnesses:

BL. PETERS,  
LOUIS FEID.