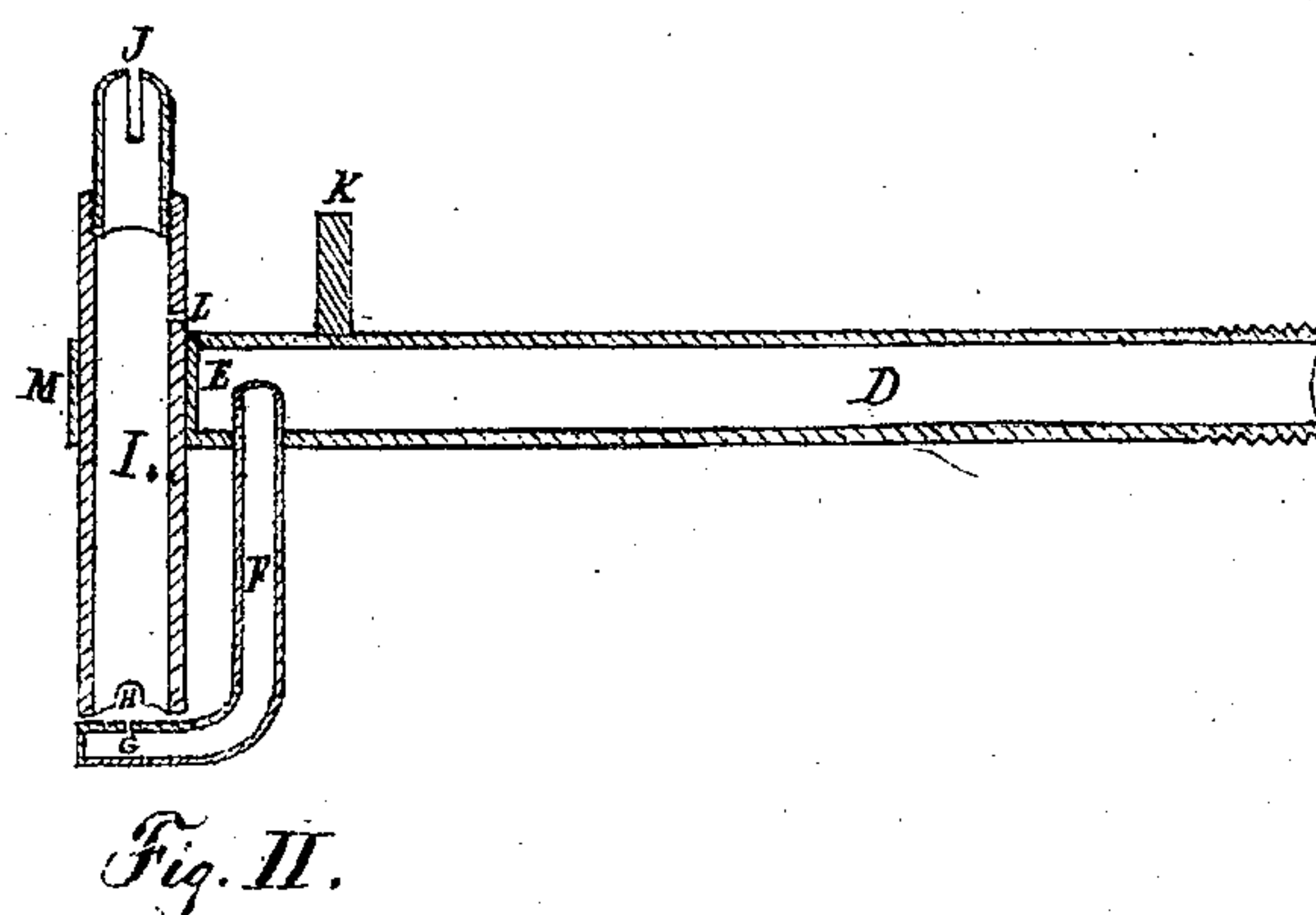
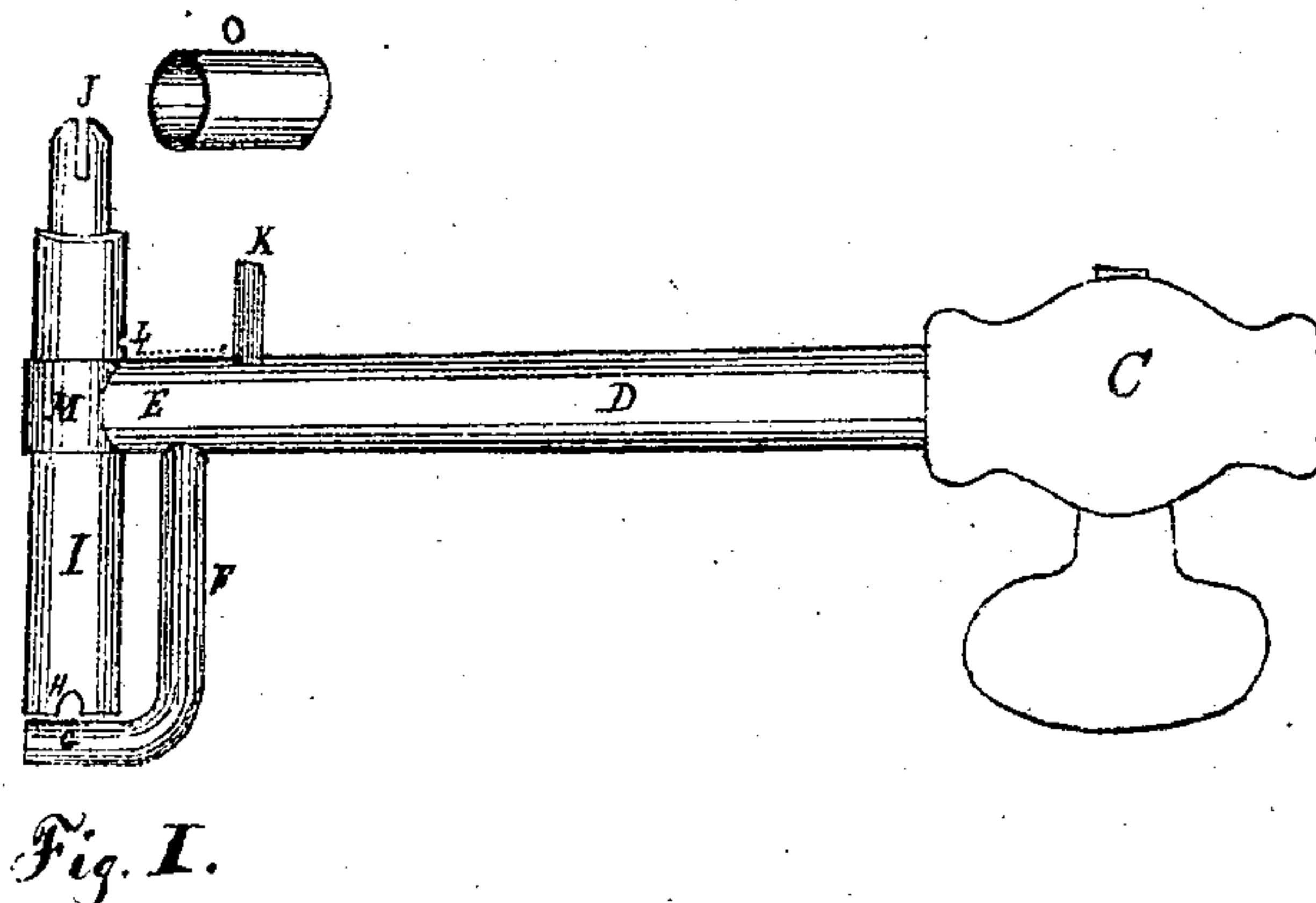
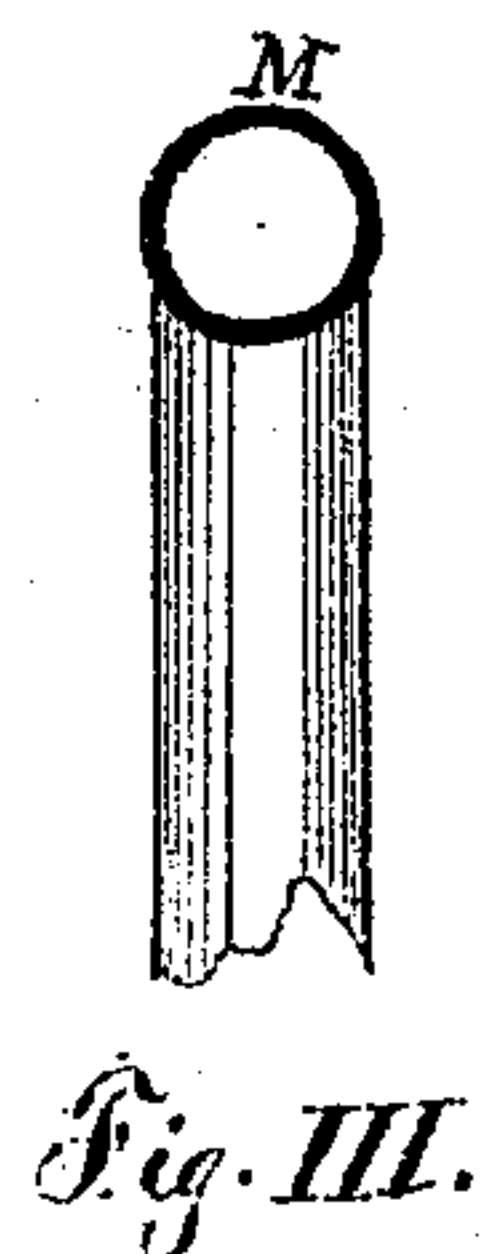


THOMAS S. GATES & ALEXANDER H. FRITCHEY.

Vapor Burner.

No. 119,839.

Patented Oct. 10, 1871.



Witnesses.

H. C. Morton
C. W. Ross

Inventors.

Thomas S. Gates
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UNITED STATES PATENT OFFICE.

THOMAS S. GATES AND ALEXANDER H. FRITCHEY, OF COLUMBUS, OHIO.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. 119,839, dated October 10, 1871; antedated September 25, 1871.

To all whom it may concern:

Be it known that we, THOMAS S. GATES and ALEXANDER H. FRITCHEY, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Vapor-Burners; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a portion of this specification, in which—

Figure I is a perspective view of a vapor-burner constructed according to our invention, showing detached jet-cover. Fig. II is a cross-sectional view of the same.

Similar letters of reference indicate corresponding parts in all the figures.

The object of this invention is to produce a cheap, safe, and brilliant light from benzine, gasoline, naphtha, and other products of petroleum. The invention consists in an upright piece of metal or lip attached to the outer surface of the generating-chamber.

To enable others to understand the nature and construction of our invention, we will proceed to describe it with reference to the drawing.

C represents the stop-cock which is to be attached to the arm of the lamp. D represents the packing-tube provided with suitable material, such as cotton or candle-wicking, to regulate the flow of the fluid in its passage to the generating-chamber. E represents the generating-chamber, provided with, on its outer surface, a lip or upright piece, K, permanently attached, which becomes thoroughly heated and provides heat to the generating-chamber by means of an auxiliary jet burning against it from the opening L. Said auxiliary jet also is caused, by its man-

ner of construction, to touch the outer surface of the generating-chamber before it reaches the said lip K, and thereby furnishes additional heat for generating purposes. F represents an auxiliary tube or passage through which the gas is conducted, after it is generated, to the mixing-chamber I. Said auxiliary tube is so constructed that the upper portion of it projects about half way into the generating-chamber for the purpose of preventing any fluid passing into it before the same is generated into gas. G represents a small pin-hole through which the gas passes into the mixing-chamber. H represents openings constructed for the purpose of providing oxygen to the mixing-chamber. I represents the mixing-chamber where the gas and oxygen are united and through which the same pass upward and out at the slot J, where combustion takes place and a bright illuminating flame is produced. M represents a band or broad ring attached to the end of the generating-chamber for the purpose of holding the parts of the burner together. The same is more particularly shown in Fig. III. O represents the cap or cover, constructed so as to be sprung on that part of the generating-chamber shown by the dotted line *i e*, for the purpose of covering the auxiliary jet from view, and also to protect the same from being easily blown out.

We claim—

The band *m*, constructed and operating as and for the purposes hereinbefore set forth.

THOS. S. GATES. [L. S.]

ALEXANDER H. FRITCHEY. [L. S.]

Witnesses:

H. C. MORTON,

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