No. 675,524. Patented June 4, 1901.

W. H. PORTER, Dec'd.

C. G. PORTER, Administrator.

CATALYTIC GAS LIGHTER.

(Application filed Sept. 3, 1898.)

(No Model.)

Fig. 1.

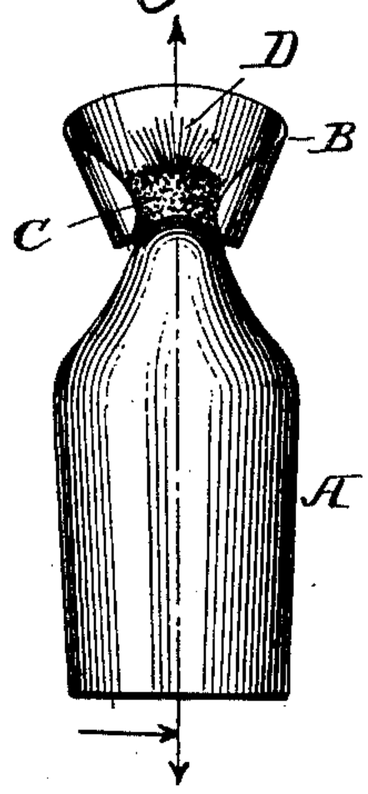


Fig. 2.

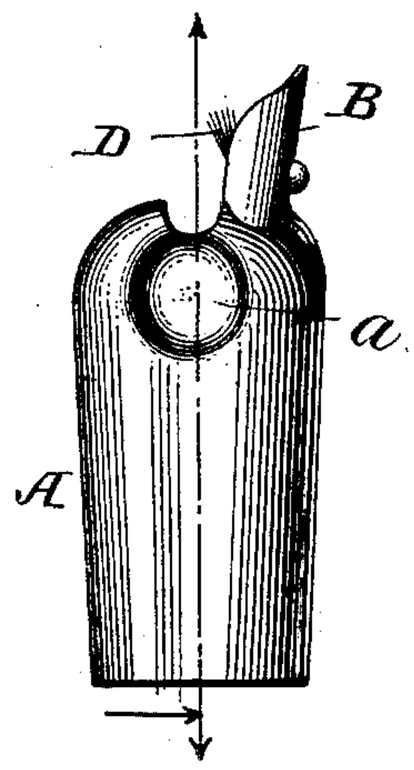


Fig. 3.

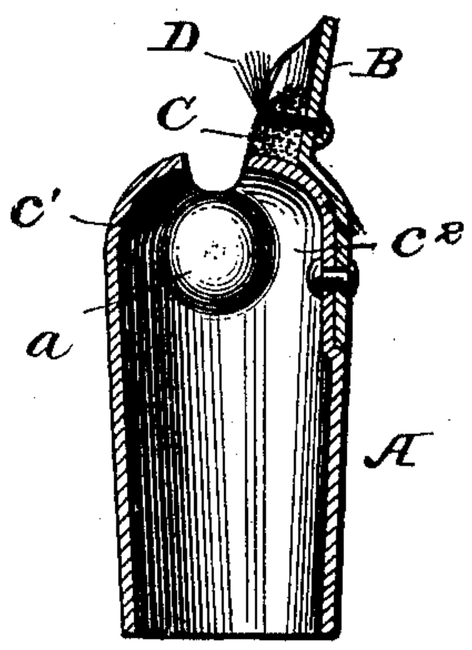


Fig. 6

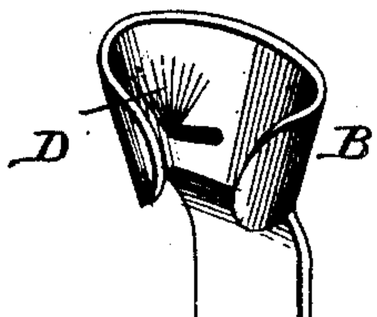


Fig. 4.

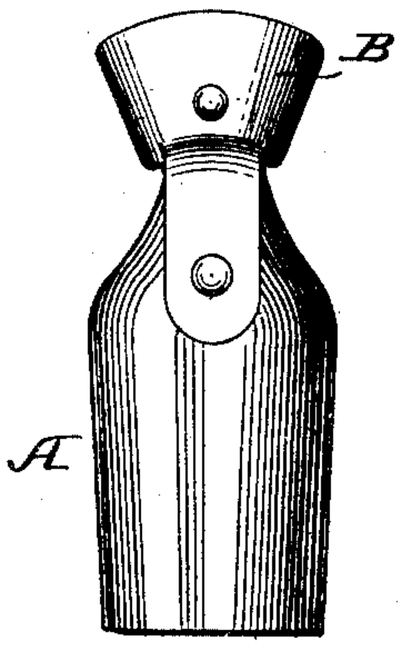


Fig. 7

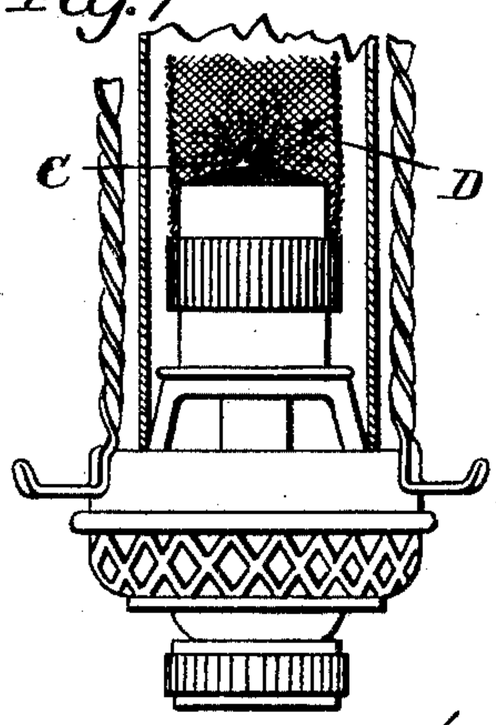
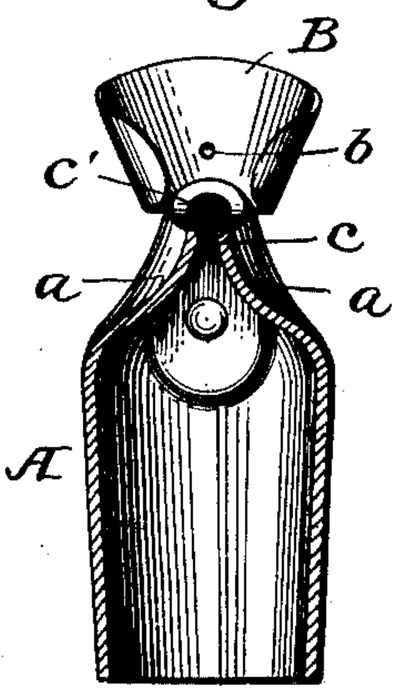


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY PORTER, OF NEW YORK, N. Y.; CHARLES G. PORTER ADMINISTRATOR OF SAID WILLIAM HENRY PORTER, DECEASED.

CATALYTIC GAS-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 675,524, dated June 4, 1901.

Application filed September 3, 1898. Serial No. 690,179. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY PORTER, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Catalytic Gas-Lighters, of which the following is a specification.

My invention relates to catalytic gas-lighters; and it consists of a catalytic gas-lighting tip embodying the various features of construction, substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, Figure 1 is a front elevation of a complete lighting-tip. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section of Fig. 2. Fig. 4 is a rear elevation of the tip. Fig. 5 is a vertical section of Fig. 1 with the material and wires removed. Fig. 6 is a perspective view of a hood, showing the wires affixed thereto; and Fig. 7 is a view illustrating one way of applying the catalytic material to a burner of the incandescent type.

In the drawings, A represents the body of the tip, to which the hood B is attached, which hood maintains the catalytic material C in position and forms a support for the wires D. The wires may be attached in any desired manner, and, as shown, the fine wires, preferably of platinum, are made into a bundle or cable and secured in an opening *b* in the hood, and the free ends of the wires preferably are bent upward, so as to occupy a position at or near the side of the flame and not within reach of the hottest portion thereof.

If very fine platinum wires were placed on the tip without a hood in the relation shown, the ends would become enlarged into globules by fusion and the wires would be less efficient. The hood acts as a protector, preventing free access of air to that part of the flame near which the ends of the wires are located. The number of metallic wires used is not of importance; but I generally use from six to twenty, so as to make the lighting expeditious.

When a hood is placed on an ordinary gas-tip, it is apt to bring the flame toward one side. In order to avoid this inconvenience, the tip is so formed as to produce a flame normally leaning toward one side, and when the hood is present the flame will take a perpendicular position. An inclination of the flame toward one side of about four degrees when the tip is without a hood will generally be found to be sufficient to produce a perpendicular flame when a hood is used.

The inclination of the flame without the hood may be produced in any desired manner, and in the form of tip taken to illustrate my invention the sides *a* of its dome-like end are compressed to form a passage *c* between the indented portions and substantially cylindrical channels c' c^2 at each side, and by making the channel c^2 slightly larger than the channel c' the normal position of the flame will be slightly inclined to one side, which inclination is overcome by placing the hood in the position shown.

In Fig. 7 I indicate one way of applying the catalytic material to a burner of the incandescent type, in which the material C and wires D are secured in any desired manner to the dome of the burner within the gas-outlet, and as the gas usually flows through an annular opening a hood such as above described is not necessary.

What I claim is—

1. A catalytic lighting-tip comprising a body having a passage for the gas, a hood located at one side of the passage, catalytic material supported by the hood and fine metallic wires mounted in the hood and projecting toward the side of the flame.

2. A catalytic lighting-tip comprising a body having a passage for the gas, a hood located at one side of the passage, catalytic material supported by the hood and fine metallic wires projecting toward the side of the flame and bent upward so as not to extend into the hot portion of the flame.

3. A catalytic lighting-tip consisting of a body, a hood, fine metallic wires, and catalytic material so located as to be protected by the hood against fusion by the flame, substantially as described.

4. A catalytic lighting-tip consisting of a tip producing a flame leaning toward one side, a hood located on said tip so as to substantially overcome the inclination of the flame,

and catalytic lighting material located in the hood, substantially as described.

5. A catalytic lighting-tip consisting of a tip providing a flame leaning toward one side, a hood located on said tip, so as to substantially overcome the inclination of the flame, and catalytic material and fine wires located in the hood, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HENRY PORTER.

Witnesses:
W. M. ANDRUS,
JOHN B. WEBBER.