No. 612,055. Patented Oct. 11, 1898.

W. H. PORTER.

NESTING GAS TIPS.

(Application filed Mar. 13, 1896.)

(No Model.)

Fig. 1.

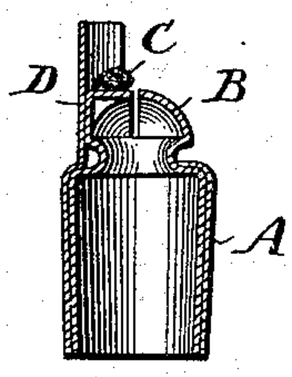


Fig. 3

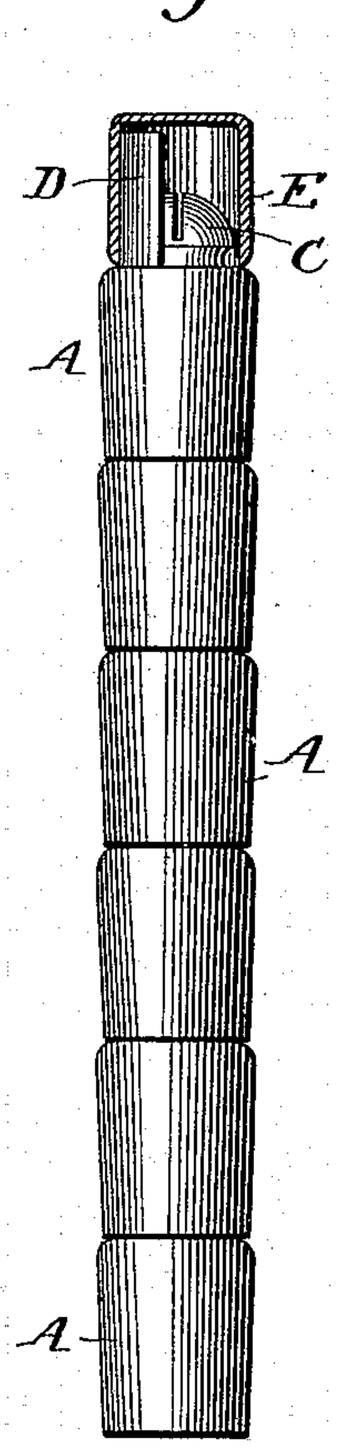


Fig. 2.

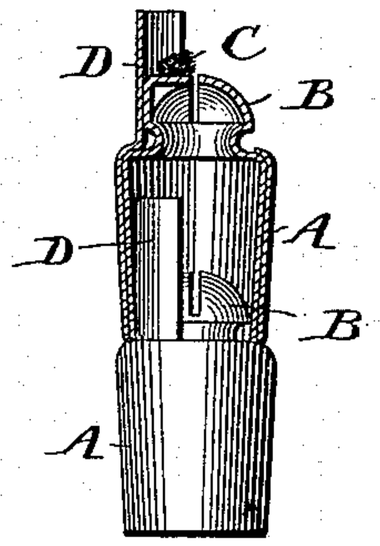
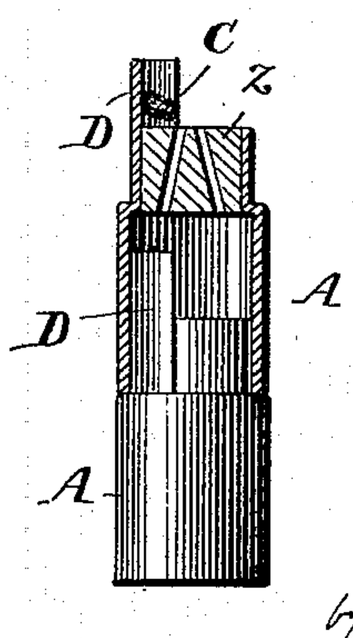


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. PORTER, OF NEW YORK, N. Y., ASSIGNOR TO THE AIR LIGHTER COMPANY, OF SAME PLACE.

NESTING GAS-TIPS.

SPECIFICATION forming part of Letters Patent No. 612,055, dated October 11, 1898.

Application filed March 13, 1896. Serial No. 583,093. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. 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 Nesting Gas-Tips, of which the following is a specification.

This invention relates to catalytic gas-tips and to means whereby to produce packages thereof, which may be stored and shipped without danger of injury to the catalytic material.

In catalytic gas-tips or attachments thereto there is combined with each tip a small portion of catalytic igniting material which is liable to be displaced or injured in handling or during transportation by the contact of the tips one with the other or with other articles or substances, and when the articles are not handled but are unpacked, if stored where dust can get access thereto, the catalytic material may become coated and its qualities impaired. To avoid such results, I so construct the tips in any suitable manner, form, or proportions that each tip may constitute a cap and protector for the upper portion of another, the tips being arranged one upon the other and the outermost covered by a cap, as fully set forth hereinafter and as shown in the accompanying drawings, in which—

Figure 1 represents a vertical section of a catalytic gas-tip, showing one form in which it is made. Fig. 2 represents in section two gas-tips, of which the base of the one surrounds the dome of the other, forming a semirigid connection. Fig. 3 represents in section a pile or stick of six gas-tips, the topmost being protected by a cap; Fig. 4, a section showing a modification.

In the several figures the same letters represent the same parts.

In Fig. 1, A represents the base of the tip, B the dome, and C the catalytic material which causes the ignition of the illuminating-gas when the latter is turned on. In such a tip the diameter of the base is so proportioned as to make the latter fit accurately around the dome, resting against the shoulder D. By this construction of the parts the base of one tip may be placed over the dome of another, and in this way a pile or stick of tips of any length may be made, and which in this form may be placed in a box or other receptacle, and which may be sent by mail without injury to the catalytic material, even when the fibers thereof are of a rather delicate character.

While the piles of sticks are normally somewhat rigid, they can be bent by the application of only moderate pressure, and the connection between the tips may therefore be described as "semirigid." Each tip fits over the dome of the subjacent tip only tight enough to retain its place, and so that it can be removed without jarring or shaking. A tight fit would be neither desirable nor permissible.

In Fig. 3, E indicates the cap covering the dome and the catalytic material of the last tip of the pile or stick, and which cap may be of metal, paper, wood, or any other suitable material.

Piles or sticks of gas-tips made as above may be packed in boxes like lead-pencils, so that in addition to the safety secured it is possible to introduce a greater number of catalytic tips of this kind into a receptacle than of the ordinary so-called "lava" tips.

Preferably the gas-tip to be best capable of packing, as above, must be possessed of a certain amount of elasticity, and therefore may consist of metal, preferably aluminium or steel.

In the construction shown in Fig. 4 the base A is cylindrical and the upper end is contracted to form a boss onto which may fit the lower end of the base of another tip. In this case the tip is perforated instead of slit, the perforations being made in a block *z*, of lava or other material, secured in the upper end of the base.

A single gas-tip may also be protected by a cap, as described, and which serves as a protection in the handling or shipping of single tips, and this embodies my invention.

What I claim is—

1. A catalytic gas-tip having a shoulder and a base, the inner diameter or shape of the base being proportioned to fit the exterior diameter or shape of the shoulder, whereby the base of one such tip may be fitted as a cap to

another similar tip and form a semirigid connection between the two, substantially as described.

2. A pile or stick of catalytic gas-tips, each tip having a dome, shoulder and base, the base of one tip fitting around the dome of the one below and abutting against the shoulder thereof so as to form a semirigid connection, substantially as described.

3. A pile or stick of catalytic gas-tips each having a shoulder, the base of one tip fitting removably around the dome of the tip below and resting against its shoulder, the upper tip being provided with a cap, substantially as described.

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

WILLIAM H. PORTER.

Witnesses:

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