

(No Model.)

W. M. JACKSON.
BURNER TIP OR PILLAR.

No. 403,592.

Patented May 21, 1889.

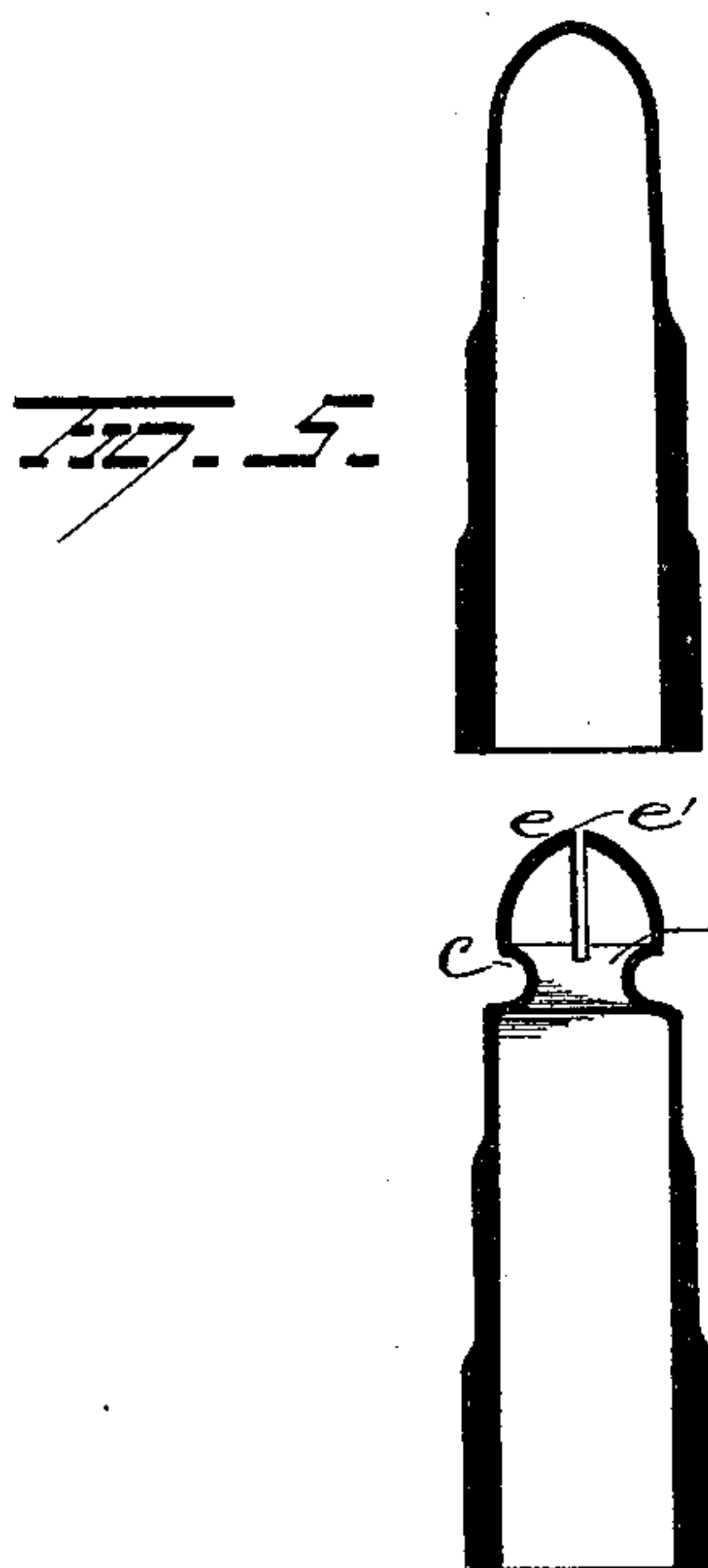
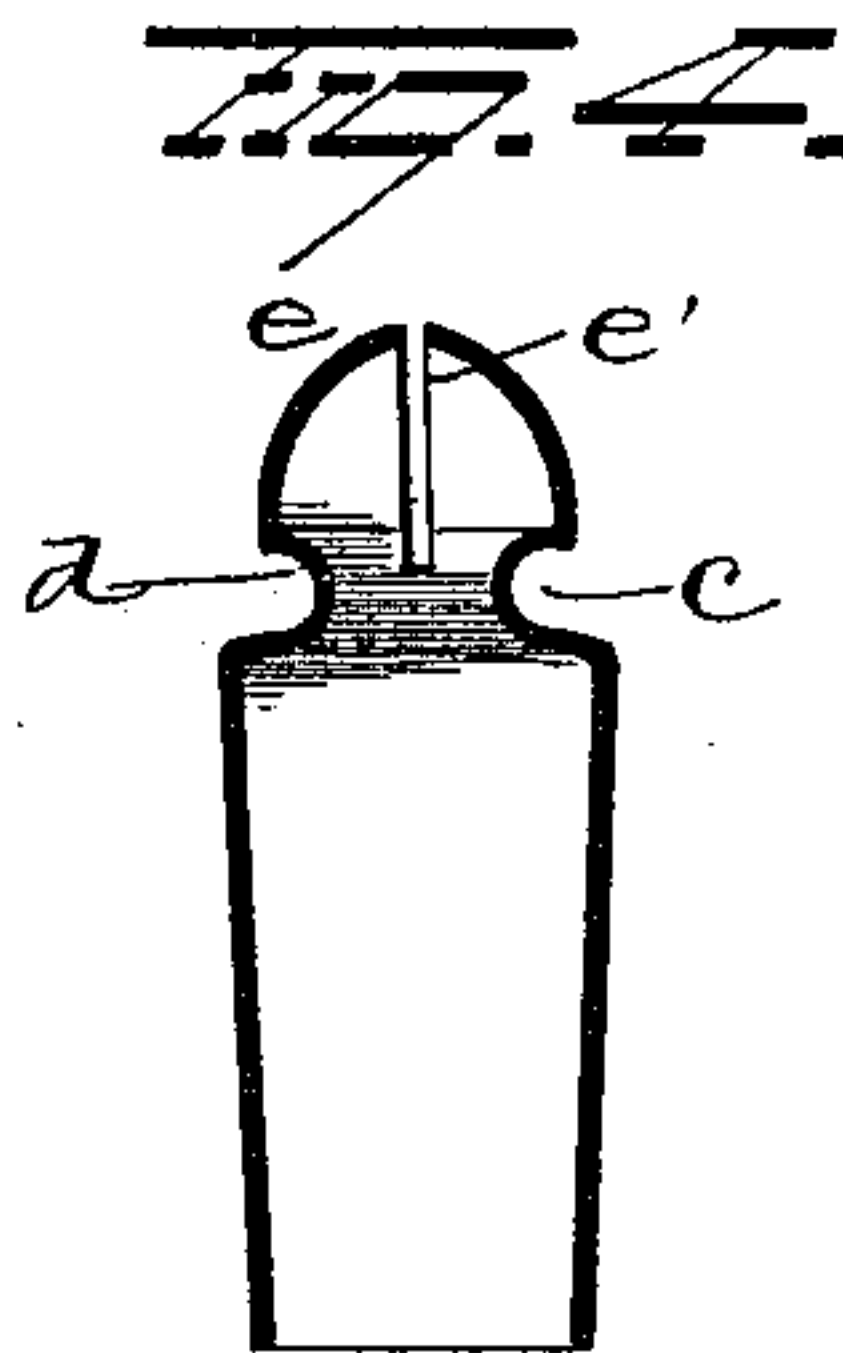
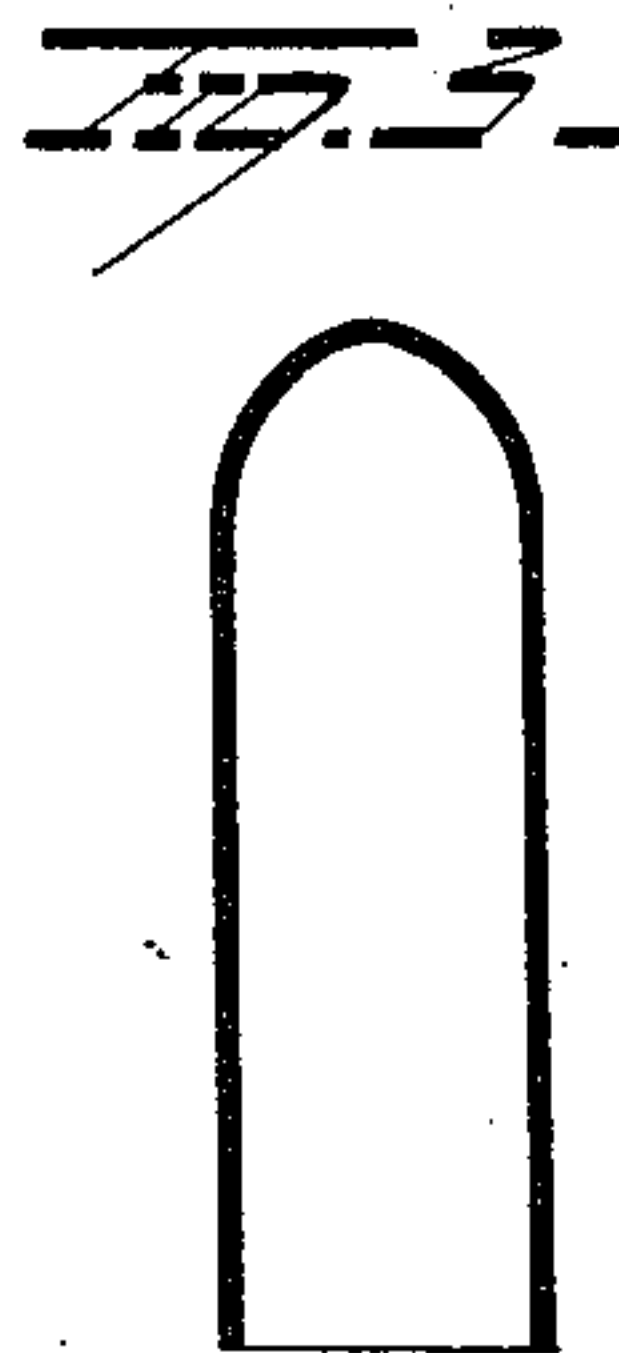
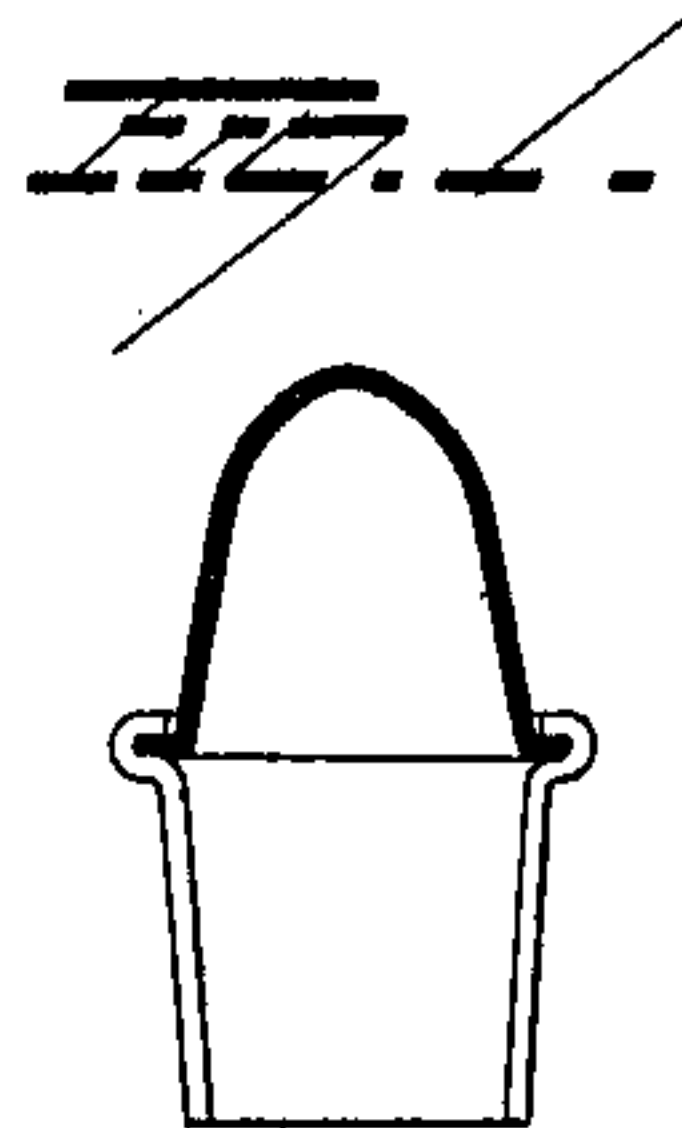
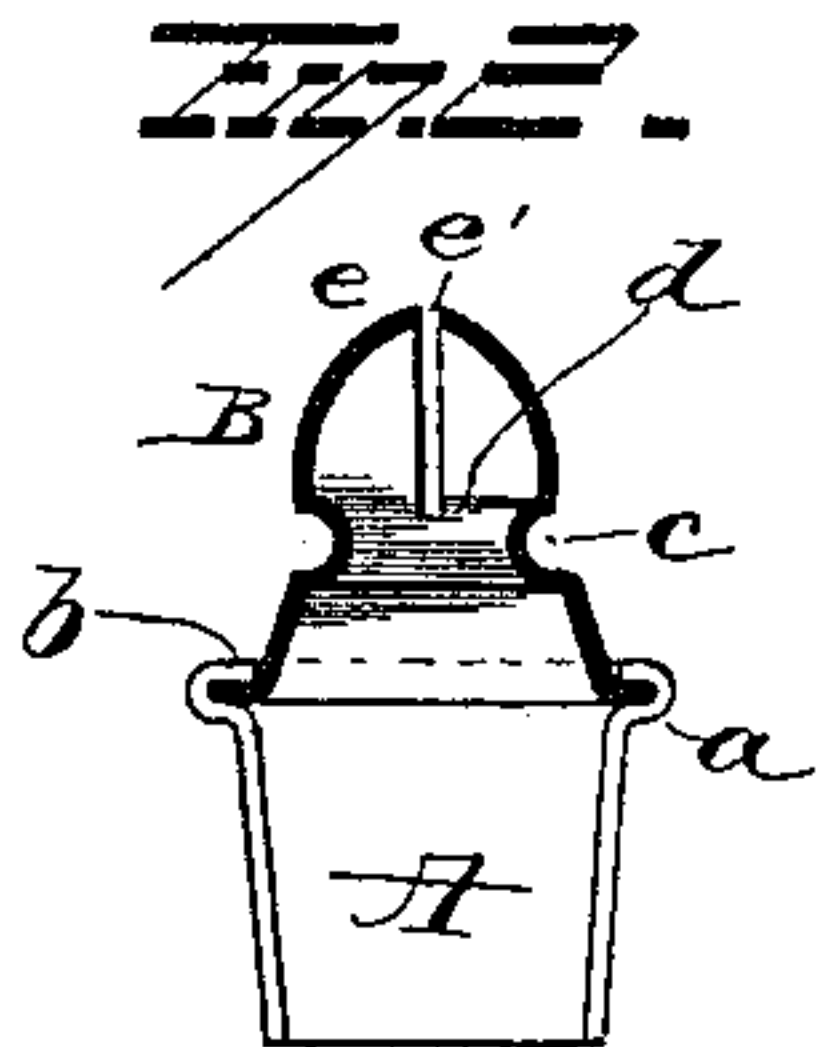


Fig. 6.

Witnesses,
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UNITED STATES PATENT OFFICE.

WALTER MARSH JACKSON, OF NEW YORK, N. Y.

BURNER TIP OR PILLAR.

SPECIFICATION forming part of Letters Patent No. 403,592, dated May 21, 1889.

Application filed November 1, 1888. Serial No. 289,753. (No model.)

To all whom it may concern:

Be it known that I, WALTER MARSH JACKSON, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Burner Tips or Pillars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in gas-burner tips or pillars. After having tried many experiments with flames or jets of different character and shape it has been found that the degree of illumination changes with each variety. Mere approaches at first toward the production of a round flame led me to the belief that a circular or nearly-round flame would produce the best possible results and give the most light with least consumption of gas. With this idea in view I have made hundreds of different-shaped heads and outlets in order to obtain a flame of the desired shape, and this is the object of my present invention—to form a gas-outlet of such shape that the issuing jet shall be round or as nearly so as possible; and to this end it consists in certain peculiar features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a sectional view of a sectional tip before rolling the countersink. Fig. 2 is a similar view of the same tip after rolling. Fig. 3 is a sectional view of a tip made of one integral piece of metal before rolling. Fig. 4 is a similar sectional view after rolling. Fig. 5 is a sectional view of a pillar before rolling, and Fig. 6 is a similar view of the same after rolling.

My invention may be embodied in any of these articles illustrated, but is always cut, stamped, spun, rolled, struck, drawn, or forced up out of sheet metal.

In Figs. 1 and 2 a tip is shown composed of two separate pieces—a shank, A, and a head, B. The former is preferably tapering, as in ordinary forms of tips, and may be provided with screw-threads, smooth surface, or other-

wise, and is constructed with an outwardly-extending flange, *a*, turned up to receive the outwardly-turned flange *b* of the head B, after which the two are folded together. After this a constricted neck or annular countersink, *c*, is made to encircle the entire head, thus depressing the metal on the inside to form a level, or preferably an inclined, shelf, *d*. This countersinking is done by means of an outside roll running against a notched arbor within, with the metal head intervening. In connection with this constricted or countersunk neck with its inclining shelf I so draw, strike, mold, spin, or form the apex or crown *e* of the tip, either at the time of molding or afterward, that it assumes a conoidal shape or parabolic curve. Having thus constructed the head, the slot *e'* is sawed, filed, cut with a die, or otherwise made across the conoidal head or parabolic curve *e* until it extends into the inclined shelf *d*, thus dividing the head into two half-conoids, the bases of which are constructed below the upper angle of the shelf. It is essential that the slot should extend into, but not necessarily through, the shelf, though if it extends through the flame is good; but if the slot does not extend into or through the shelf the flame is practically worthless and will smoke in high candle-power gases, break glass globes, and give a large percentage less light per cubic foot of gas passed.

In Figs. 3 and 4 a tip is also shown—in the former just as it has been cut, rolled, struck, spun, or punched from the sheet metal, while in the latter after the countersunk or constricted neck and the shelf have been made and the shank formed. Thus the only difference between this construction and the former one is that one is composed of two parts and the other of only one. The shapes of the head, countersink, and slot are precisely the same.

In Figs. 5 and 6 the peculiar-shaped head is formed right on the pillar instead of the tip. With these slight exceptions, the three formations are precisely similar.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, a gas-
burner tip or pillar having a conoidal head,
an internal shelf, and a gas-exit slot dividing
the head into two parts and extending down
5 into the inclined shelf, substantially as set
forth.

In testimony whereof I have signed this

specification in the presence of two subscri-
ing witnesses.

WALTER MARSH JACKSON.

Witnesses:

GEO. T. GADEN,
GEO. M. WARD. •