

J. NEAL.
GAS BURNER.

No. 14,822.

Patented May 6, 1856.

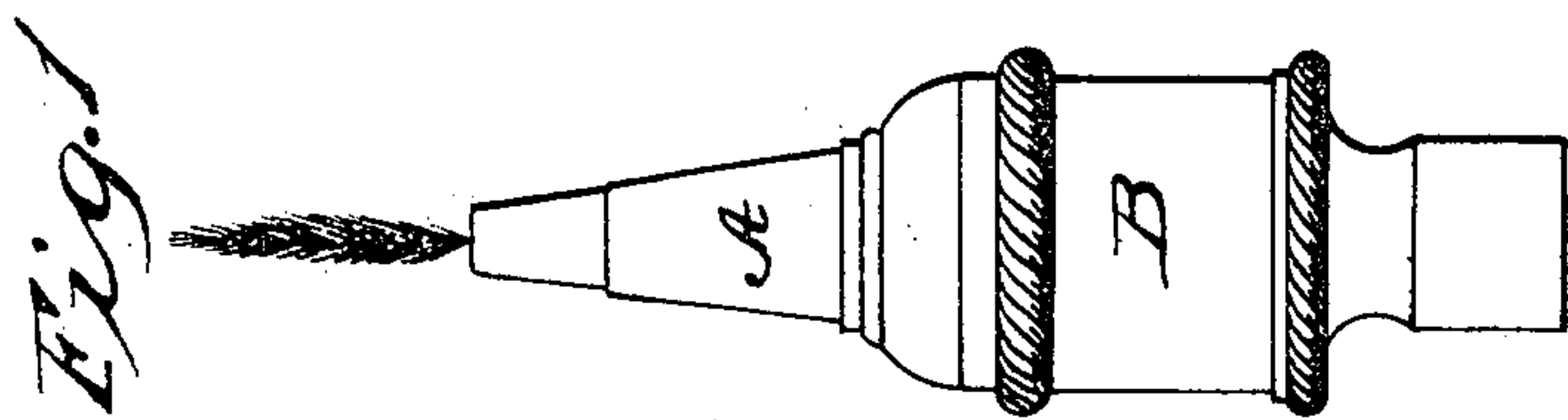


Fig. 2.

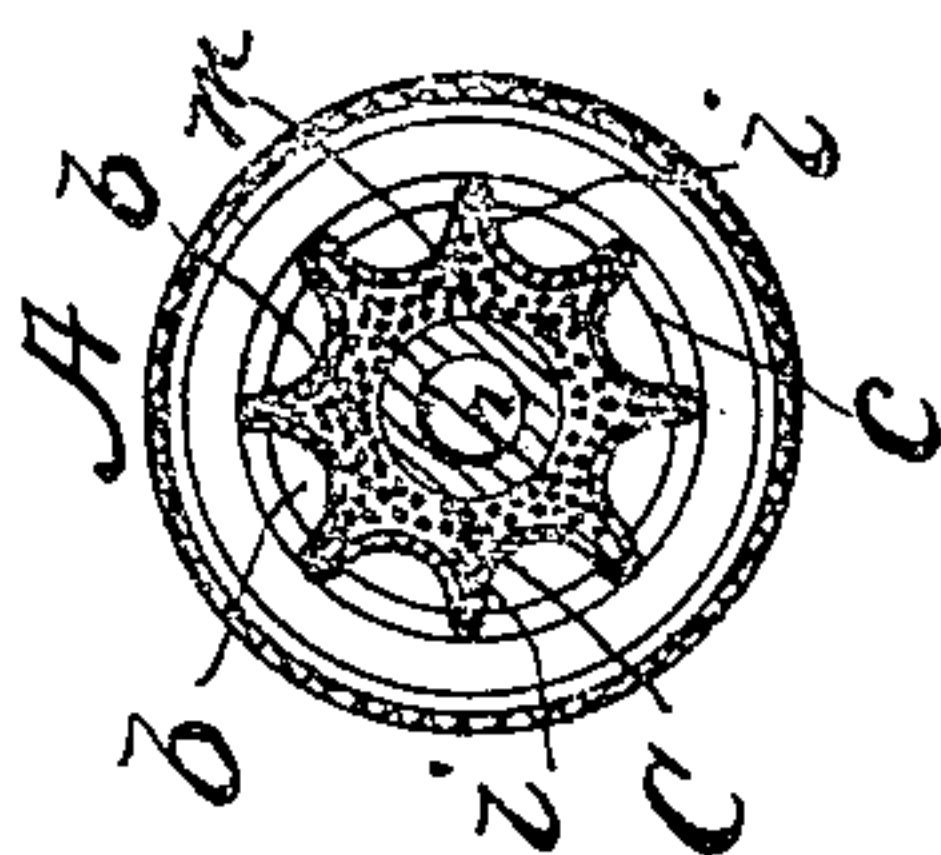
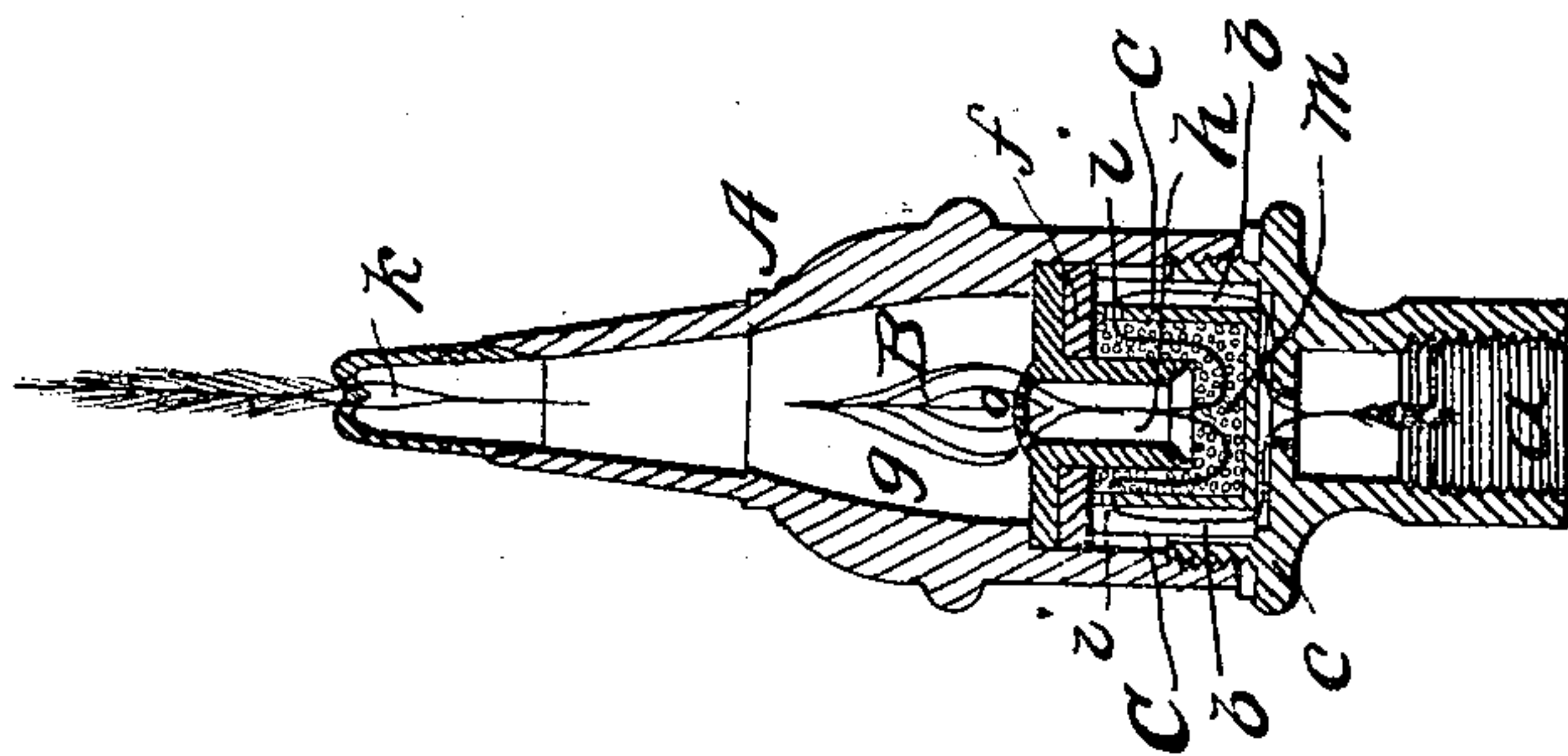


Fig. 3.

UNITED STATES PATENT OFFICE.

JAS. NEAL, OF BOSTON, MASSACHUSETTS.

GAS-BURNER.

Specification of Letters Patent No. 14,822, dated May 6, 1856.

To all whom it may concern:

Be it known that I, JAMES NEAL, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Gas-Burners, which I do hereby declare is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

10 In said drawings, Figure 1 exhibits an external view or elevation of one of my improved gas burners; Fig. 2, a vertical and longitudinal section of it; Fig. 3, a transverse section taken through its filtering cup.

15 In such drawings, A, exhibits the gas burner provided with a cylindrical chamber, B, constructed so that its bottom or lower part may be connected to its sides or upper portion by a screw. The bottom is
20 provided with an opening, *a*, through it for the gas to flow into the chamber of the burner. Within the chamber I arrange a cup or sand reservoir, C, whose sides I corrugate or form with passages, *b, b*, so that
25 the gas which enters the chamber of the burner may flow around the cup, such cup being supported on a shoulder, *c*, and above the entrance hole of the burner, in such manner that the gas on entering the burner,
30 may flow against the bottom of the cup and thence upward around its sides. In the upper part of the chamber, B, I arrange an elastic or rubber packing, *f*, against which the top edge of the cup may be forced, when
35 the bottom of the chamber is screwed up. Downward from the top of the chamber, and nearly to the bottom of the cup, a tube, *h*, extends as seen in Fig. 2, the said tube being open at its upper and lower ends and
40 made to open into a conical conductor, *g*, leading to the fish tail nipple, *k*, of the burner. The cup near its upper edge is to be perforated with several holes as seen at *i, i*, in Fig. 2, such cup being for the purpose of holding powdered quartz, or very
45 coarse sand or mineral matter as seen at *m*, and which extends somewhat above the bottom of the tube, which projects down into the said cup.

50 When a burner so constructed is in use,

the current of gas flowing into the cup will strike into the powdered quartz or sand and pass through the same and in and up the tube of the cup before reaching the nipple where it is burned. In its passage through
55 such sand or mineral matter, it will keep the particles thereof in constant motion within the cup, the rapidity and force of the current being sufficient to produce such an effect upon them. In this way, the deposited coal tar will be prevented in a great
60 measure from choking the filtering medium in comparison to what usually occurs, when such medium is composed of cloth, felt, or fibrous material, such as wool or cotton. Besides this, the flowage of gas through the
65 burner is more regular through a loose material like sand or pounded stone, than it is through a fibrous material and consequently the flame is steadier.

70 The top of the small tube should be furnished with a perforated diaphragm, *o*, such as will admit of the passage of gas through it and prevent the escape of the filtering material when blown into the tube by the
75 current of gas.

I do not claim providing a gas burner with a filter or strainer arranged within it; nor the application of felt, cloth or other
80 fibrous material or fabric, as a strainer, but

What I do claim as my improvement is—

Constructing the burner, not only with a covered cup or sand reservoir, C, and a discharging pipe, *h*, extending into said reservoir, as described, but with one or more pas-
85 sages *b, b, i, i*, for the gas to flow around and into the cup C and through its loose sand or straining contents as specified, my improvement enabling me to employ powdered quartz or a loose mineral matter or substance, as a
90 filter or strainer and thereby attain advantages as herein before stated.

In testimony whereof, I have hereunto set my signature this thirtieth day of January A. D. 1856.

JAMES NEAL.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.