I. COOK.

Gas-Burner.

No. 164,527. Patented June 15, 1875.

FIG. 1.

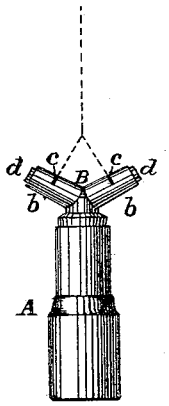


FIG. 4.

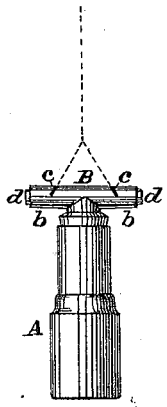


FIG. 3.

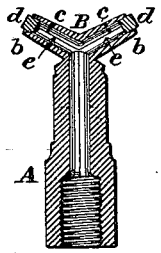


FIG. 2.

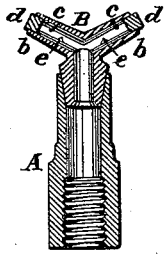
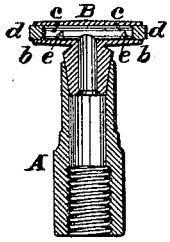


FIG. 5.



ATTEST:

Robert Burns.
Henry Tanner

INVENTOR:

Isaac Cook.
By Knight Bros.
Attys.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ISAAC COOK, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO JACOB R. SPRAGUE, OF SAME PLACE.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **164,527**, dated June 15, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that I, ISAAC COOK, of St. Louis, St. Louis county, State of Missouri, have invented a certain new and useful Improvement in Gas-Burners, of which the following is a specification:

My improvement consists in a T or Y formed burner, whose horns are slotted for the gas-jet, as shown, to cause the jets from the two horns to impinge against each other at the proper angle to give a brilliant flame, and cause the complete consumption of the gas.

The ends of these horns have removable plugs enabling the complete cleaning of the inside of the tip with ease, and without removal from the pillar.

In the drawings, Figure 1 is a side view of a tip of the Y form. Fig. 2 is an axial section of the same. Fig. 3 is a section similar to Fig. 2, except that in this the tip and pillar are in one piece. Fig. 4 is a side view of the T form of burner. Fig. 5 is an axial section of the same.

A is the pillar, and B the tip, having two horns, *b b*, each of which has a gas vent or orifice, *c*. The cavity in each horn is stopped by a plug, *d*. In place of the plug *d* a screw may be used, or a cap fitting over the end of the horn. The gas-passage *e* is made axially in the horns, which are made open at the ends, so as to be accurately bored out, the inner and outer circumference being concentric, so that the gas-orifice *c* is made perfectly symmetrical. Any burr that occurs on the inside in cutting the slot, may be dressed off. These provisions insure a perfectly even flame, which is not only a thing of beauty in itself, but the combustion of gas is more perfect than where the gas-jet is uneven, and this evil is aggravated where the two impinging jets are mutually dependent on each other for the horizontal or side extension of the flame. The removable plug *d* allows the passage *e* and the inner end of the orifice *c* to be cleaned whenever required. This is a matter of importance, as the impurities of the gas, and the fine dust collecting in the orifice when the burner is not in use, cause a scaly deposit, which destroys the symmetry of the orifice, and consequently of the flame.

This burner will be seen to be a union of the "bat-wing" and "fish-tail" burners, as it has the lengthened slot of the former, and the impinging jets of the latter.

The horns may be made at right angles with the jets, as shown in Figs. 1, 2, and 3, or may be made horizontal, as shown in Figs. 4 and 5. In the latter case the jet-orifices *c* must be cut obliquely to the horns, so as to cause the impingement of the jets, as shown by dotted lines in Figs. 1 and 4.

As a modification, the plug *d* may be used in a burner having a single horn, *b*, with one or more gas-orifices, *c*, made inclined to each other, or made parallel, the sole novelty claimed in this form being the removable plug to allow the cleansing of the inside of the tip.

I am aware that T-shaped gas-burners have been constructed with orifices so arranged as to cause two jets to impinge to form a single flame; this, therefore, I do not claim.

The following is claimed as new—

The removable stoppers or plugs *d*, in combination with a gas-burner having horns *b*, and gas-vents *c*, substantially as described.

ISAAC COOK.

Witnesses:
SAML. KNIGHT,
ROBERT BURNS.