

W. J. HERRIOTT.

Gas-Burner.

No. 163,929.

Patented June 1, 1875.

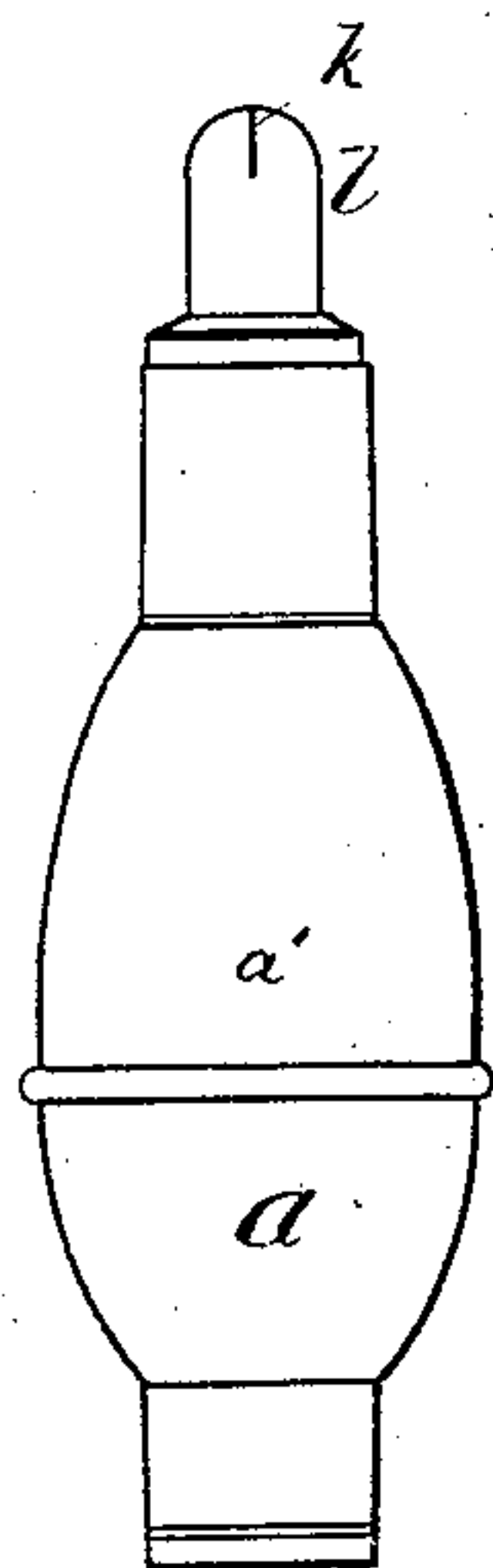


Fig. 1.

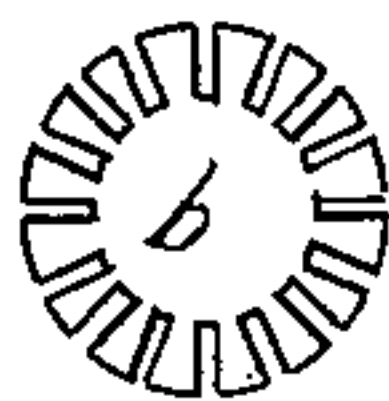


Fig. 5.

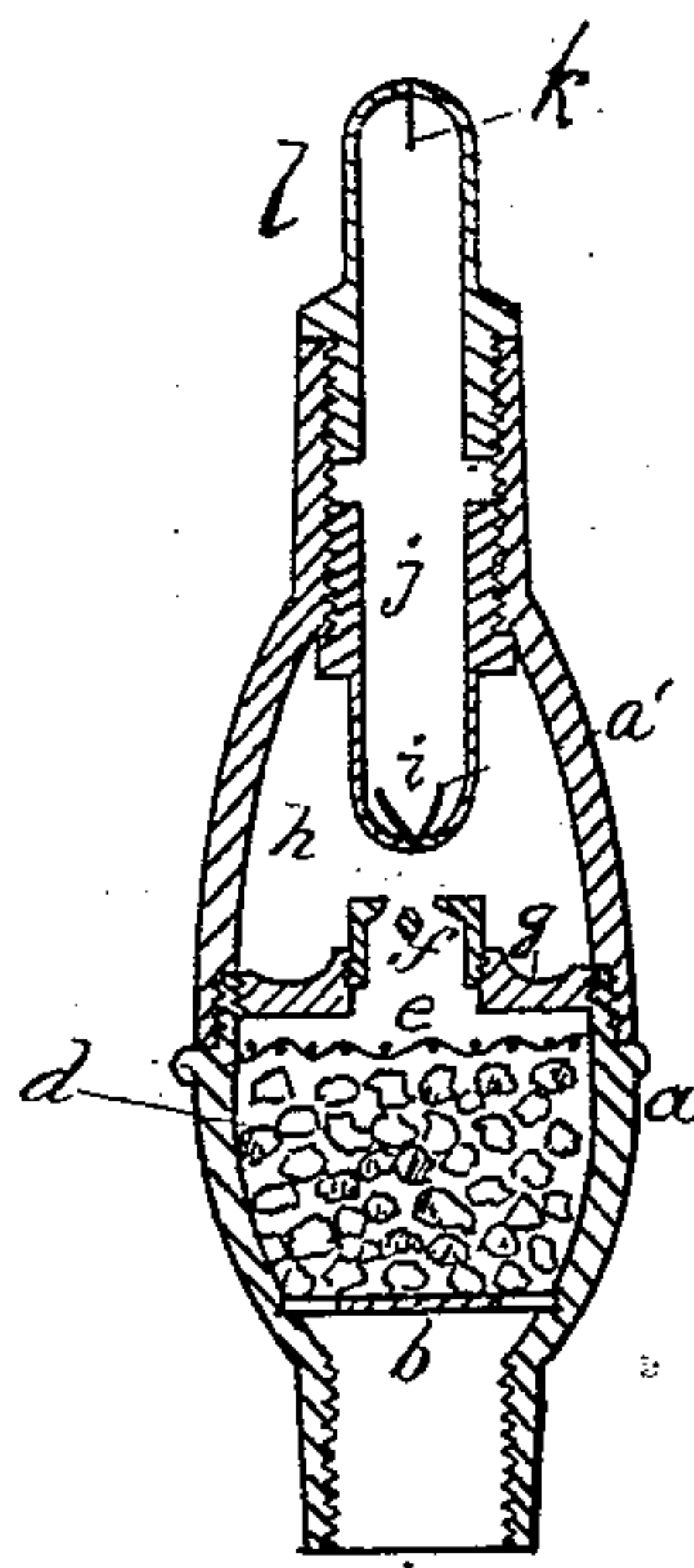


Fig. 2.

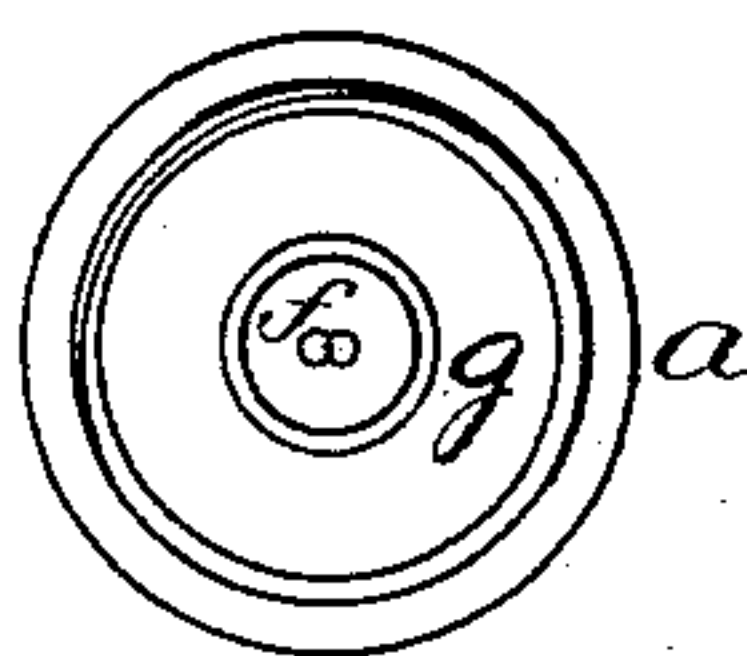


Fig. 3.

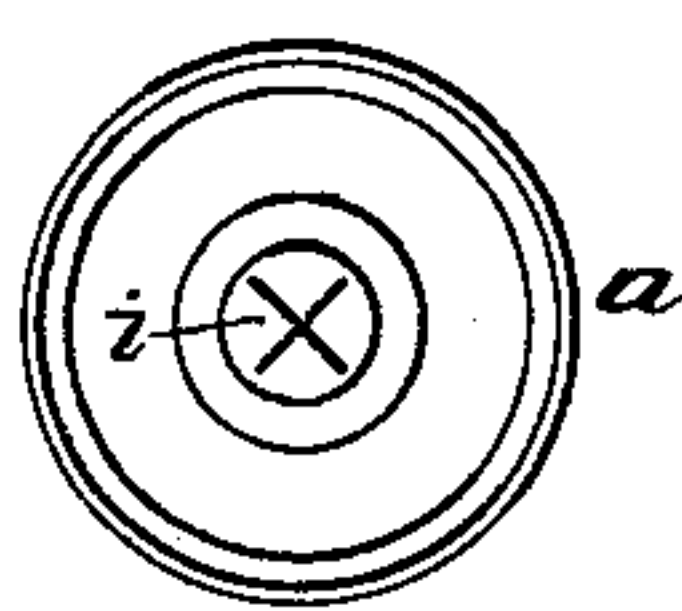


Fig. 4.

WITNESSES

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INVENTOR

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# UNITED STATES PATENT OFFICE.

WILLIAM J. HERRIOTT, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **163,929**, dated June 1, 1875; application filed March 19, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM J. HERRIOTT, of Boston, Suffolk county, and Commonwealth of Massachusetts, have invented Improvements in Gas-Burners, of which the following is a specification:

This invention relates to gas-burners, and has for its object to prevent the gas-issuing orifice of the burner from becoming stopped by the iron scale and other particles which pass with the gas through the pipes, and usually into the burner, and also to obtain the greatest amount of light with the least amount of gas; and my invention consists of a gas-burner, constructed as hereinafter fully described and explained.

Figure 1 is a perspective view of one of my gas-burners; Fig. 2, a longitudinal section; Fig. 3, top view, with the upper portion of the burner removed. Fig. 4 represents the interior of this removed portion, showing the end of the distributing-burner; and Fig. 5 represents the disk.

The outer shell or case of the burner consists of two cylindrical and cup-like parts, *a* and *a'*, screwed together, and provided at each end with internal screw-threads to permit the burner-shell to be connected with a fixture, and to receive the tips for governing the exit of the gas. In the lower portion of the burner-shell is placed a plate, *b*, provided about its periphery with radial slots, and the plain center of the plate is larger than, and is located immediately above, the opening in the fixture, through which the gas passes into the burner, and particles of iron scale, rust, and other impurities moving with the gas strike against the plate, and are broken or checked, the gas passing through the openings in the plate and into and among the small pebbles or stones *d*, where impurities which pass through the slots in plate *b* are collected.

The irregular openings between the pebbles permit the gas to flow without too much obstruction. They do not corrode, and when dirty or gummed in any way may be removed and washed.

Above the pebbles is placed a wire-gauze cover, *e*, to prevent the pebbles from getting into the orifice of the gas-regulator *f*, which is made as a fish-tail burner, and removable from its holding-plate *g*, screwed into the part *a*. This fish-tail-burner-like piece *f* determines

the quantity of gas consumed, and gas issuing from it passes into an enlarged chamber, *h*, from which it passes through slits *i*, crossing each other, and into a cylindrical space, *j*, and out at the slit *k* of the bat-wing tip *l*, where it is ignited. This tip may be of any desired style or variety.

The plate *b* finds, or has made for it, a seat in the part *a*, and the holding-plate *g* for the piece *f* is screwed into the part *a*, and the pebbles are therefore securely held in position, and the upper part of the burner *a'* may be removed for the insertion or removal of a tip, *f*, for regulating the quantity of gas to be consumed.

The gas issuing from the piece *f* is delivered into a chamber, where it is allowed to expand, and the crossing slots distribute the gas evenly in the space *j*, where, through the action of the tip *l*, which is heated, the gas is further expanded, and in such condition the gas ignited and passing through slit *k* is found to burn with but little blue flame.

The slits *i* and *k* are so proportioned with relation to each other that the pressure shall be just sufficient to permit the gas to flow without singing.

I am aware that a chambered burner with an interior and an upper tip is not new, and I am aware that shot has been placed within a chamber of a burner, and therefore I do not claim these things, broadly; but

I do claim—

1. The combination, with the chambered burner *a a'* and its tip *l*, of the slotted plate *b*, fitted to a seat in the bottom of the burner, the pebbles, the plate *g*, securely fitted to the shell *a*, and the removable tip or gas-regulating piece *f*, all constructed and combined as described, to arrest the impure or other particles moving with the gas, and to deliver the gas in measured quantities into the chamber, from which it is consumed through an opening in the tip *l*, as set forth.

2. The combination of the burner *a a'*, regulating-tip and plate *f g*, tip *l*, and tube, provided with crossing slots *i*, and fitted to the interior of the removable shell *a'*, and projecting within the chamber, all as shown and described.

WILLIAM J. HERRIOTT.

Witnesses:

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