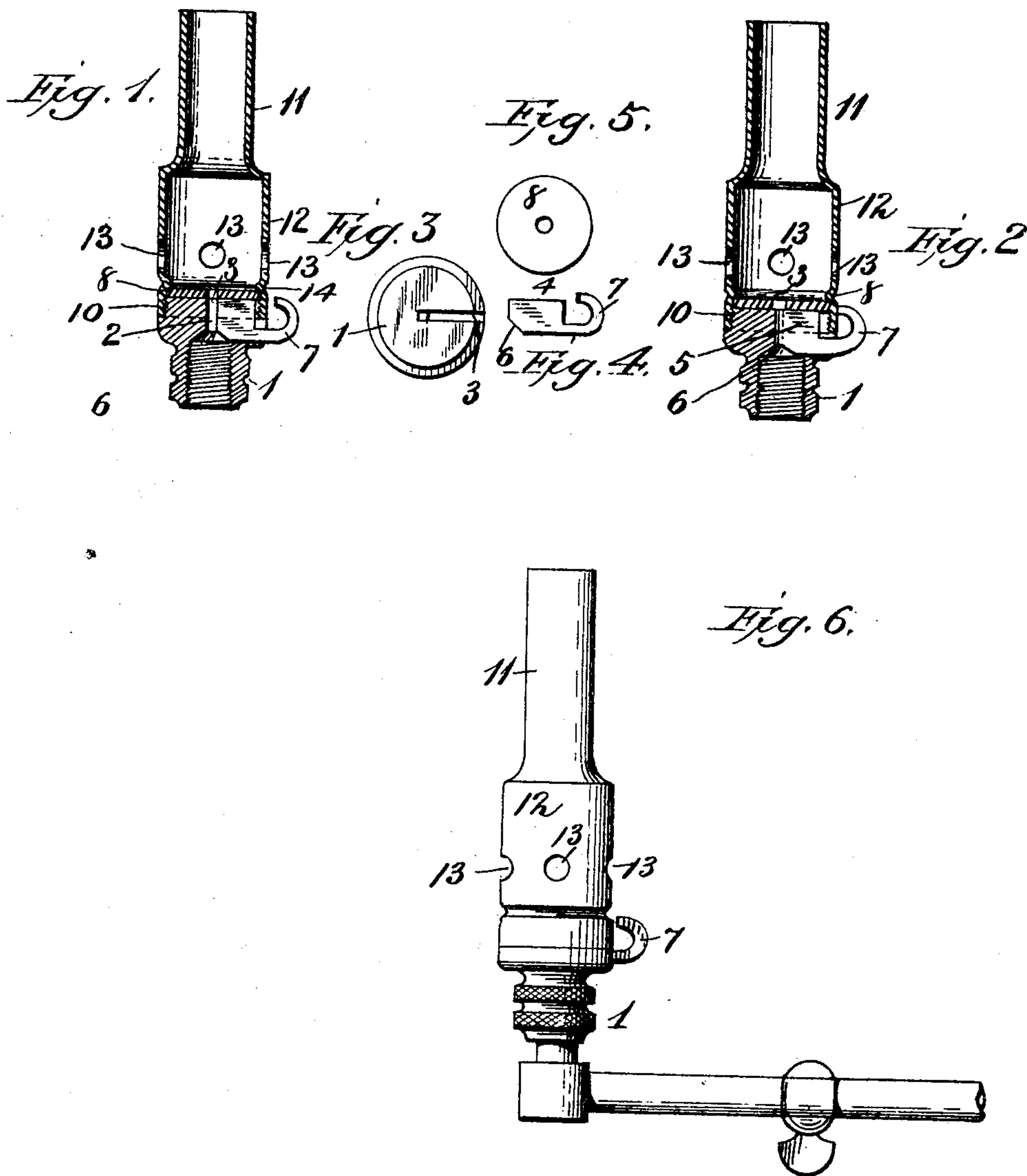


No. 803,433.

PATENTED OCT. 31, 1905.

A. RECTOR.
BUNSEN BURNER.

APPLICATION FILED APR. 30, 1904. RENEWED SEPT. 19, 1905.



Witnesses
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ALCORN RECTOR, OF NEW YORK, N. Y., ASSIGNOR TO THE RECTOR
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BUNSEN BURNER.

No. 803,433.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed April 30, 1904. Renewed September 19, 1905. Serial No. 279,191.

To all whom it may concern:

Be it known that I, ALCORN RECTOR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Bunsen Burners, of which the following is a specification.

My invention is an improved Bunsen burner; and it consists in a nut adapted to be screwed on the threaded end of a gas-chandelier, a gas-regulator secured in said nut, and a perforated tube and retort secured on the upper end of said nut. The purpose of this burner is to admit an uninterrupted stream of gas to pass through the nut up into the tube and retort, where it immediately comes in contact with the air and is oxygenated. This method of oxygenating the gas produces a combination that immediately spreads and fills the tube and when lighted produces an intense heat, immediately heating the mantle to a white heat, whereby a pure and perfect white light is produced.

In the accompanying drawings, Figure 1 is a sectional elevation of my invention, the inlet for the gas being open. Fig. 2 is a sectional elevation of my invention, the inlet for the gas being closed. Fig. 3 is a top plan view of the nut. Fig. 4 is a side view of the gas-regulator. Fig. 5 is a face view of the perforated disk. Fig. 6 is a perspective view of my invention mounted on the arm of a gas-chandelier.

My invention is described as follows: The numeral 1 represents a nut internally threaded for part of its way from its lower end, the outer face of which may be knurled, so that it may be easily turned. The nut is provided with a vertical opening 2, running from the upper end of its threaded part to its extreme upper end. Running from the outside of said nut is a vertical slot 3, which runs into the vertical opening 2. Fitting in this vertical slot 3 is a gas-regulator 4, consisting of a body 5, having its lower left-hand corner cut away, leaving an upward slope 6, the balance of its inner end being on a vertical line. The body of this regulator is long enough when pushed home to entirely close the vertical opening 2, and said regulator is provided with a handle 7, by means of which it may be operated. As the pressure of gas is not always the same, it is necessary to regulate the flow according to the pressure, and the flow of the gas must also

be regulated to suit the altitude of the burner, as the air is less dense the greater the altitude. In order to keep this regulator in place, there is placed over the upper end of the nut and over the regulator a perforated disk 8, the gas escaping up through the perforation of said disk. The upper end of the nut is recessed and provided with a thread 10. Screwing onto the thread 10 is the lower end of a tube 11. The lower end of this tube is enlarged, forming a retort 12. Passing through the wall of said retort are a number of perforations 13, through which the air enters and immediately mixes with the gas as it passes up through the vertical opening 2 of the nut and through the perforation of the disk 8.

The lower end of the tube, or that part of it which I call the "retort," has a circular indentation 14 to hold the disk 8 down. When I wish to move the regulator, I unscrew the tube just a little and then set the regulator as desired, and when I get it in position to exactly suit the pressure of the gas or the altitude, or both, I turn down the tube, and thereby hold the regulator in place. I am aware that there have been burners with a screw to regulate the flow of the gas; but such a construction is deficient because as the gas must pass around the point of the screw through the narrow opening left when the screw is turned a little back the speed of the gas is slowed up materially because it immediately passes into the large part of the opening, and therefore as it does not flow upwardly with any force it does not entrain with it a sufficient quantity of air to produce the proper combination to make a sufficiently intense heat to whiten the mantle.

By reference to Fig. 1 it will be seen that when the regulator 4 is pulled back the vertical opening 2 left thereby is the same size its entire length, and consequently the speed of the gas is not lessened.

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

1. The combination of a nut 1, internally threaded for a part of its way from its lower end, and having extending from the upper end of its threaded part to its upper end, a vertical opening 2, and from its outside a slot 3, extending into said opening; a gas-regulator 4, having the lower corner of its body 5, cut

away, forming an upward slope 6, said gas-regulator adapted to work back and forth in said slot; a perforated disk 8, fitting on the upper end of said nut and down against the
5 upper edge of the regulator, and a perforated tube and retort fitting on the upper end of said nut, with means for holding said disk down, substantially as shown and described and for the purposes set forth.

10 2. A Bunsen burner consisting of an internally-threaded nut for part of its length, and having a vertical opening from the upper part of its threaded opening to its upper end, and a vertical slot from the outside of said nut to

said opening; a gas-regulator fitting in said 15 slot, and adapted to close or partly close said vertical opening, and a perforated tube secured to the upper end of said nut, and adapted to hold said regulator in place, substantially as shown and described and for the pur- 20 poses set forth.

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

ALCORN RECTOR.

Witnesses:

A. E. OSBORNE,

M. J. CRAWFORD.