

No. 860,494.

PATENTED JULY 16, 1907.

A. RECTOR.
BUNSEN BURNER.

APPLICATION FILED SEPT. 28, 1906.

FIG. 1

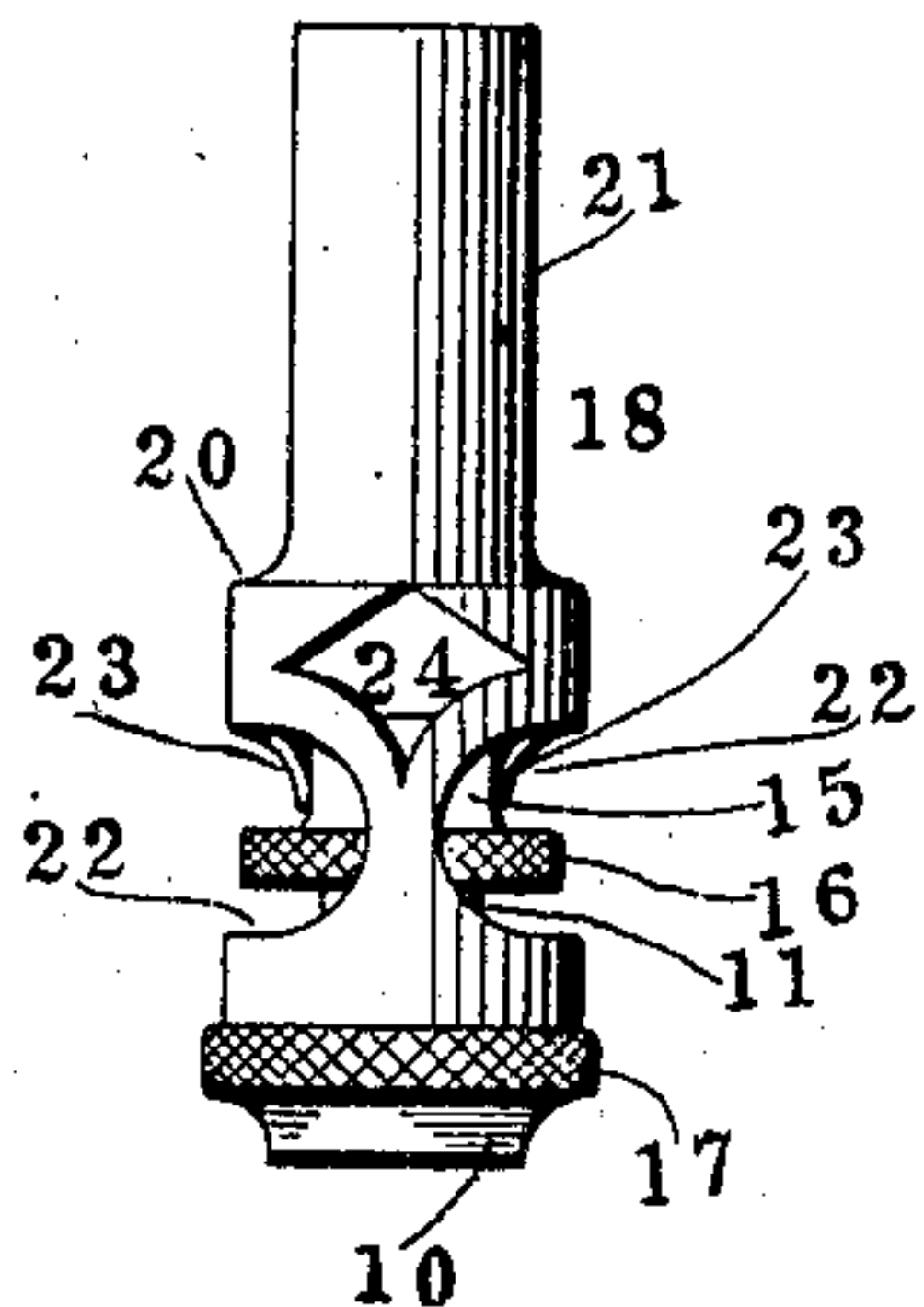


FIG. 2

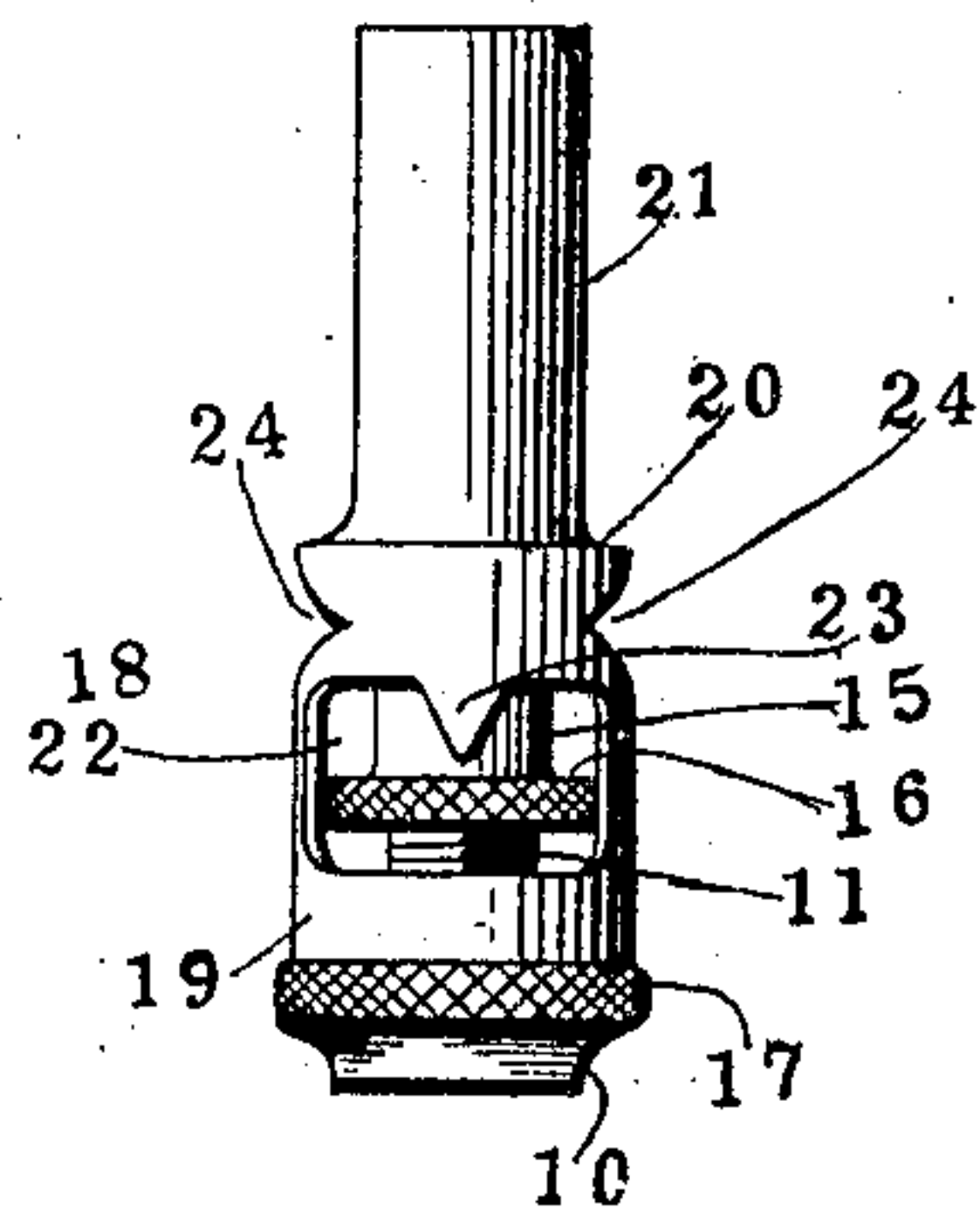
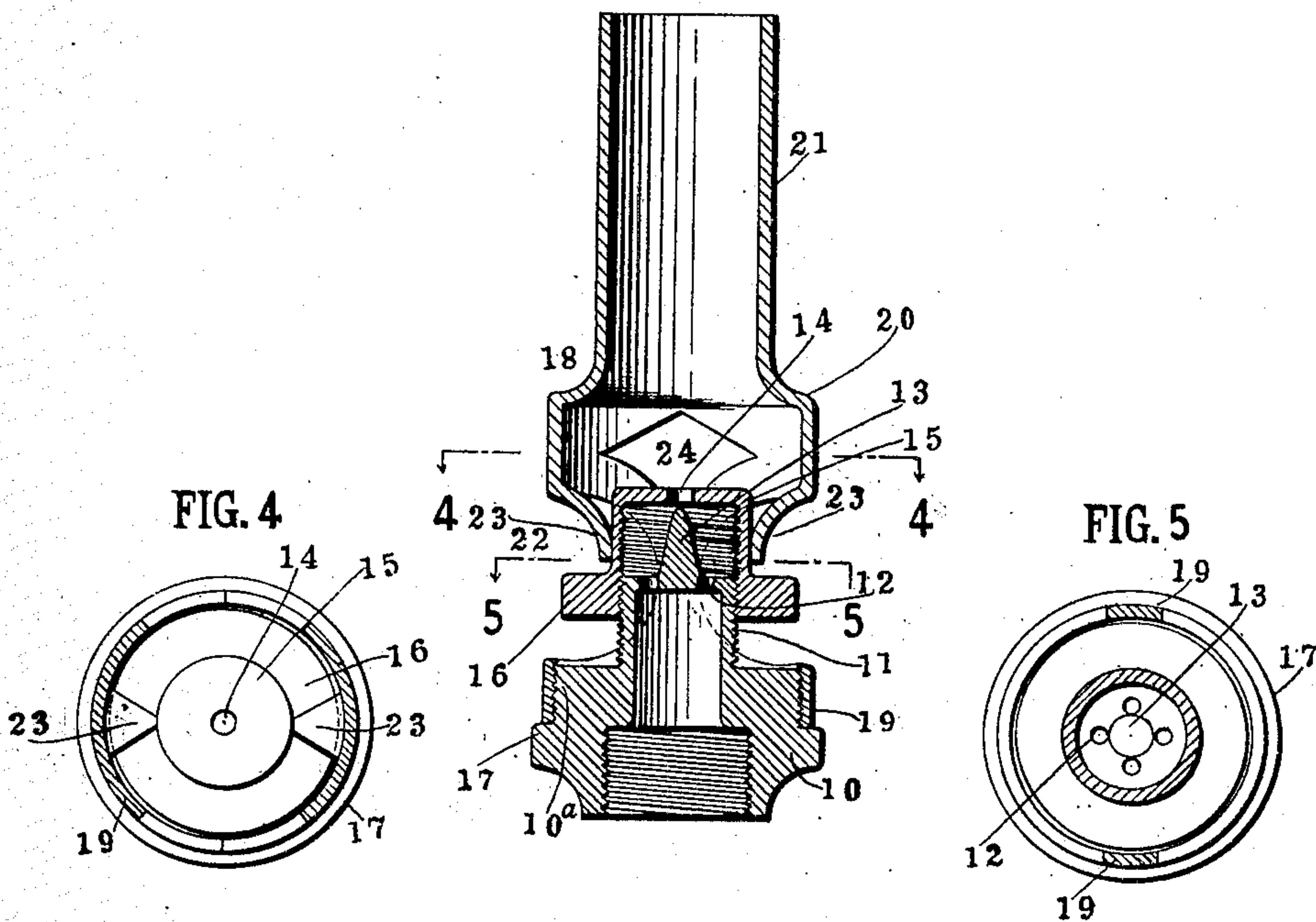


FIG. 3



WITNESSES

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BUNSEN BURNER.

No. 860,494.

Specification of Letters Patent.

Patented July 16, 1907.

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To all whom it may concern:

Be it known that I, ALCORN RECTOR, of the city, county, and State of New York, have invented a new and Improved Bunsen Burner, of which the following is a full, clear, and exact description.

My invention relates to improvements in Bunsen burners, and especially that sort of burner which is adapted to be used to heat the mantle of an incandescent gas lamp, although it can be used in any place where it is required to get intense heat out of a mixture of gas and air.

The difficulty with most Bunsen burners is that they are hard to regulate, and it requires considerable adjustment to get the proper quantity of gas with relation to the influx of air.

Another difficulty is that it is hard to get all the air that is required at the desired point, and if it were possible to support the chimney portion of the Bunsen tube at the right distance above the needle valve or gas inlet without having any surrounding material so that the air could flow freely into the chimney part and mix with the gas such a burner would be very efficient, but the chimney or mixer portion must be supported.

To attain this result as nearly as possible, I produce a skeleton Bunsen tube in which the flow of air to the mixer or chimney is unhindered practically, and by so doing I also attain another very important result, to wit, I leave the cap of the needle valve exposed so that it can be gripped by the fingers and readily adjusted to get the right flow of gas. Where the milled part of the adjusting cap is left exposed it may move too freely so that a person in dusting the lamp, for instance, might accidentally turn the cap and disarrange the burner, as is the case in usual needle valve burners, and to obviate this, I produce friction attachments which are preferably a part of the Bunsen tube and which by bearing against the cap prevent it from being too readily turned.

To still further improve the burner I make the lower portion comparatively large and produce a sharp inward bend at a point a little above the air intake and gas inlet so that the large quantity of inrushing air together with the gas will be compressed through the reduced upper portion of the mixer and will get sufficient velocity to be thrown well into the mantle. All this to the end that a highly efficient and easily regulated burner may be produced.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the burner embodying

my invention; Fig. 2 is a side elevation, but taken at right angles to the view shown at Fig. 1; Fig. 3 is an enlarged vertical section of the burner; Fig. 4 is a cross section on the line 4—4 of Fig. 3; and Fig. 5 is a cross section on the line 5—5 of Fig. 3.

The burner has the usual base or nipple portion which is adapted to screw to the service gas pipe, and it has a reduced upper end 11 and also gas openings 12 grouped around the needle valve 13 which extends upward about the top of the nipple and which is preferably integral therewith. The nipple or base has the usual large bore so that an adequate supply of gas can always reach the outlets 12.

The needle valve 13 is adapted to enter the hole 14 in the cap 15 which is internally screw threaded so as to fit the threaded part 11 of the nipple 10, and for convenience the cap 15 has a milled flange 16 by which it can be turned, and the base or nipple 10 has also a milled flange 17 for the same reason. The burner tube 18 has its lower portion 19 very much enlarged up to the point 20 which is just above the highest air intake and here the tube bends sharply inward and merges into the mixer or chimney part 21. The large part 19 of the tube screws to the nipple 10 although it can be otherwise fastened, and this portion of the tube is of skeleton formation, being cut away as much as possible to permit the greatest inflow of air. The openings 22 thus appear on opposite sides of the tube as shown in the several figures, and the upper wall of each opening 22 is extended downward and inward as shown at 23, and these friction fingers or brakes 23 press against the cap 15 so as to prevent the latter from being accidentally turned. Obviously this braking device can be applied in any other convenient way and can be extended inward from any part of the tube or adjacent structure so as to frictionally engage the cap 15, and it will be understood that the flange 16 is a part of the cap. In addition to the openings 22 I provide openings 24 just below the bend 20 and above the openings 22, these openings 24 being also above the cap 15 and located at right angles to the openings 22 so that the air will flow inward to the tube from all sides.

Referring specially to Figs. 1 and 2 it will be seen that by making these large openings 22 on the opposite sides of the Bunsen tube it exposes the flange 16 to such an extent that it can be conveniently gripped by the thumb and finger and can be easily turned to regulate the gas flow. So far as this regulable feature is concerned, it will be seen that it is not limited to any particular arrangement of the valve and that both this and the braking attachment 23 above described are applicable to any burner having a rotating part to regulate the valve.

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

1. The combination with a burner having a rotary part to regulate the gas flow, of a tube on the burner and
5 fingers extending from the tube into a frictional contact with the said rotary part.

2. The combination with a burner having a rotary part to regulate the gas flow, of a mixing tube on the burner, said tube having side openings therein, and spring fingers
10 extending inward from the walls of the openings into engagement with the said rotary part.

3. A burner, comprising a base or nipple portion having a reduced and screw threaded upper portion with gas openings therethrough, and a needle valve thereon, a flanged cap secured to the reduced part of the nipple and having a hole in the top to receive the needle valve, and a mixing tube supported on the nipple and having openings in the side, said tube also carrying friction fingers to engage the cap.

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Witnesses:

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