

No. 882,544.

PATENTED MAR. 17, 1908.

P. VON WOUWERMANS.

BUNSEN BURNER.

APPLICATION FILED DEC. 4, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

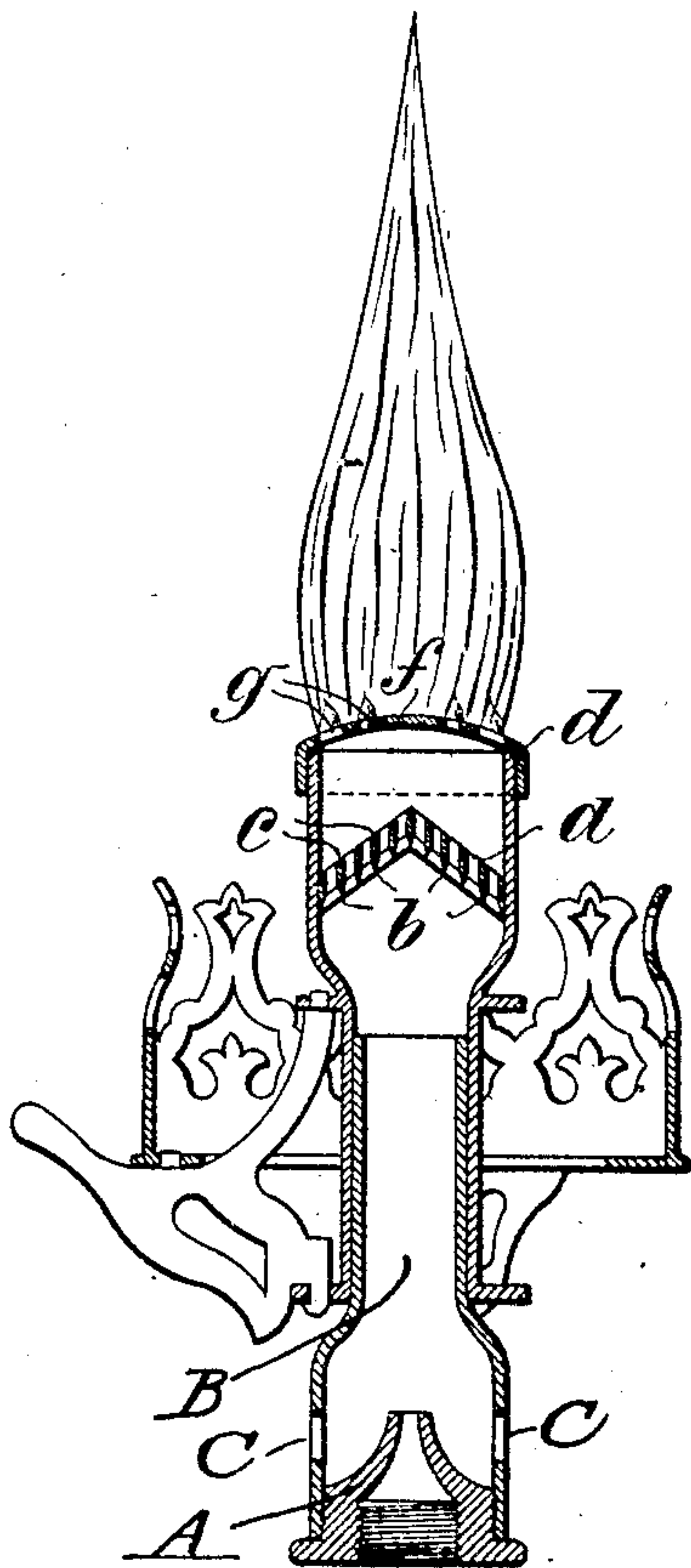


Fig. 2.

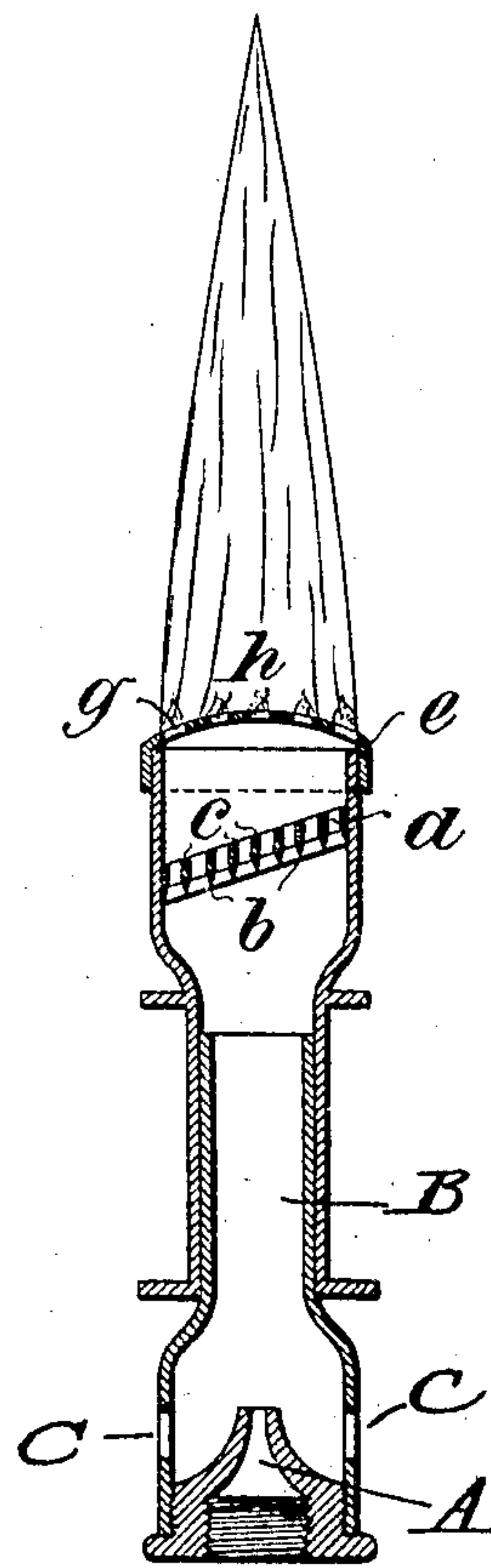


Fig. 3.

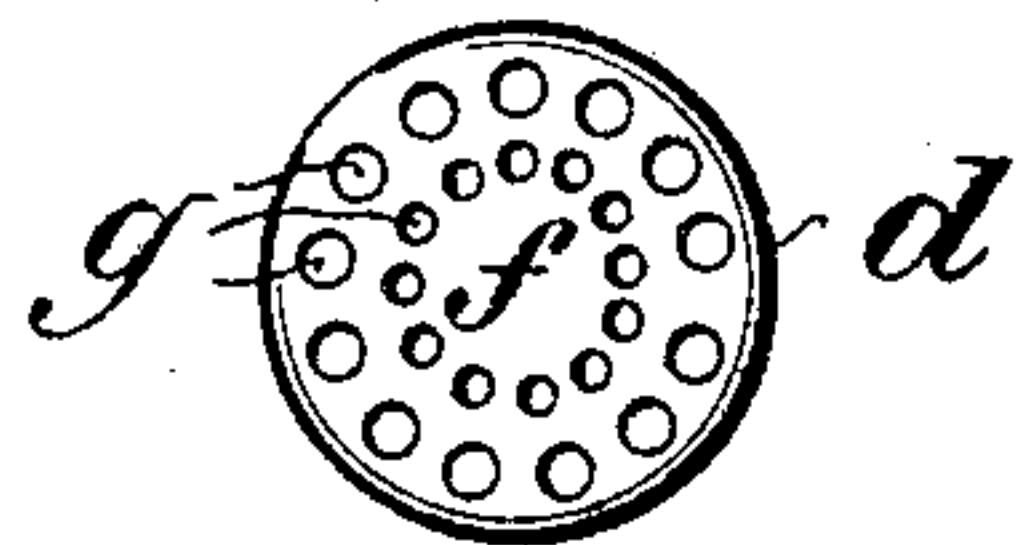
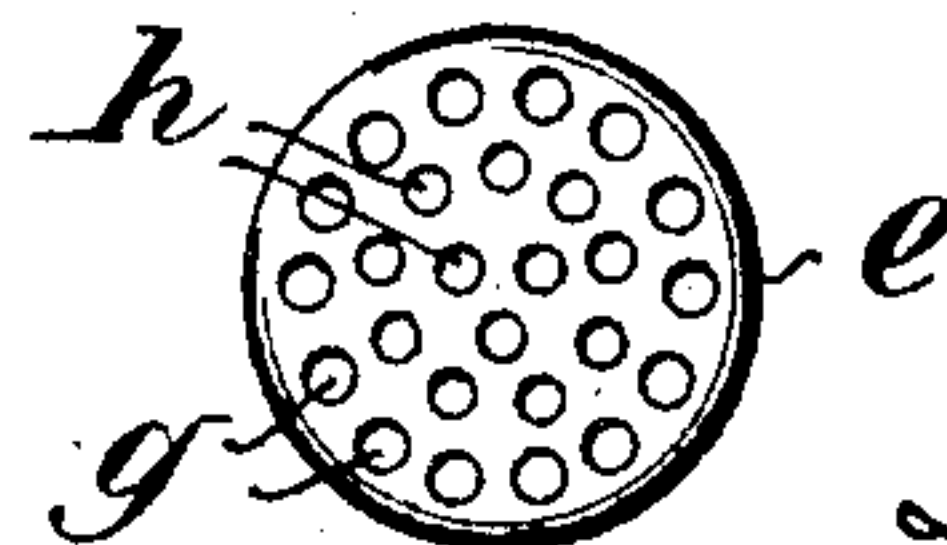


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

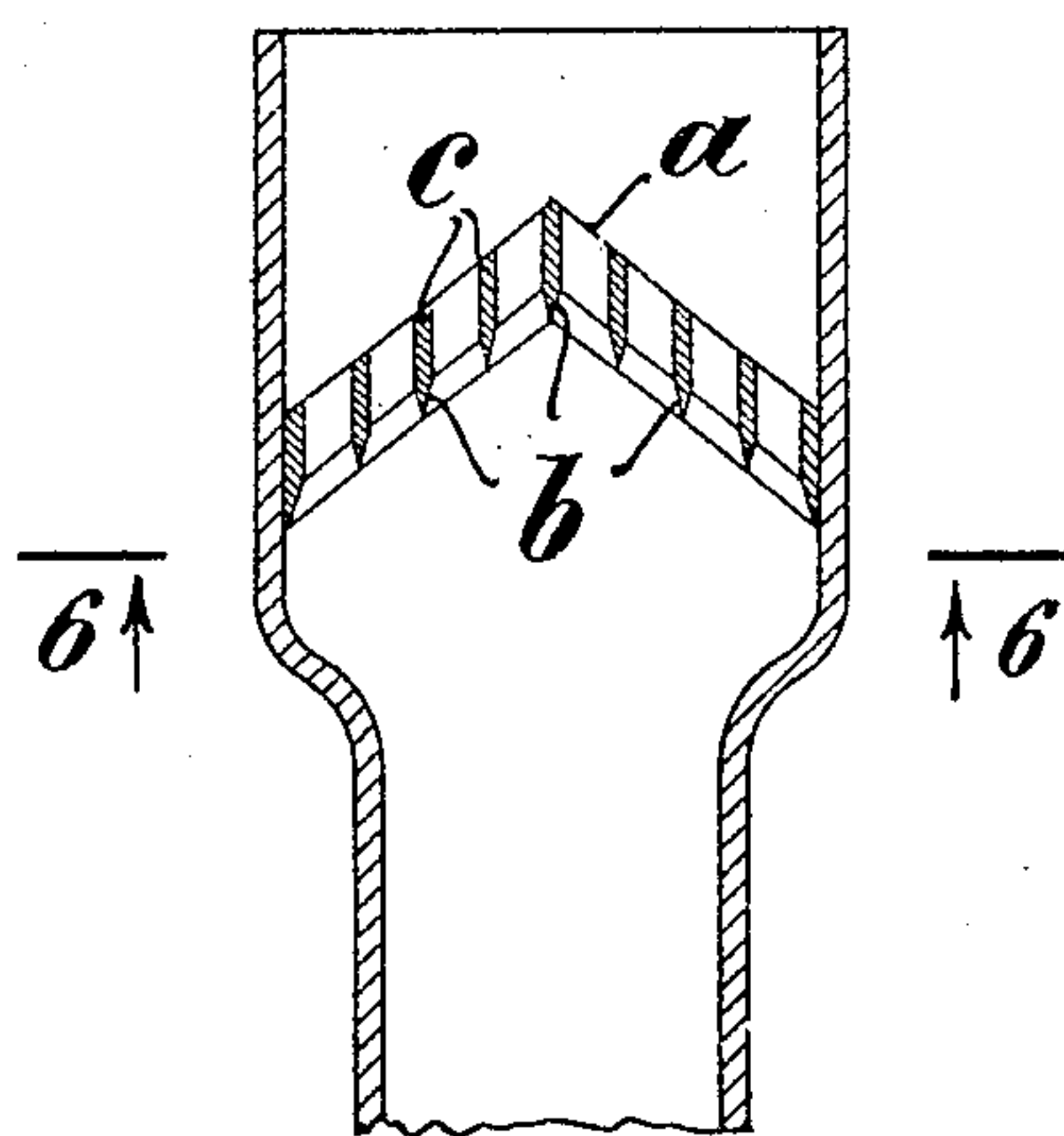
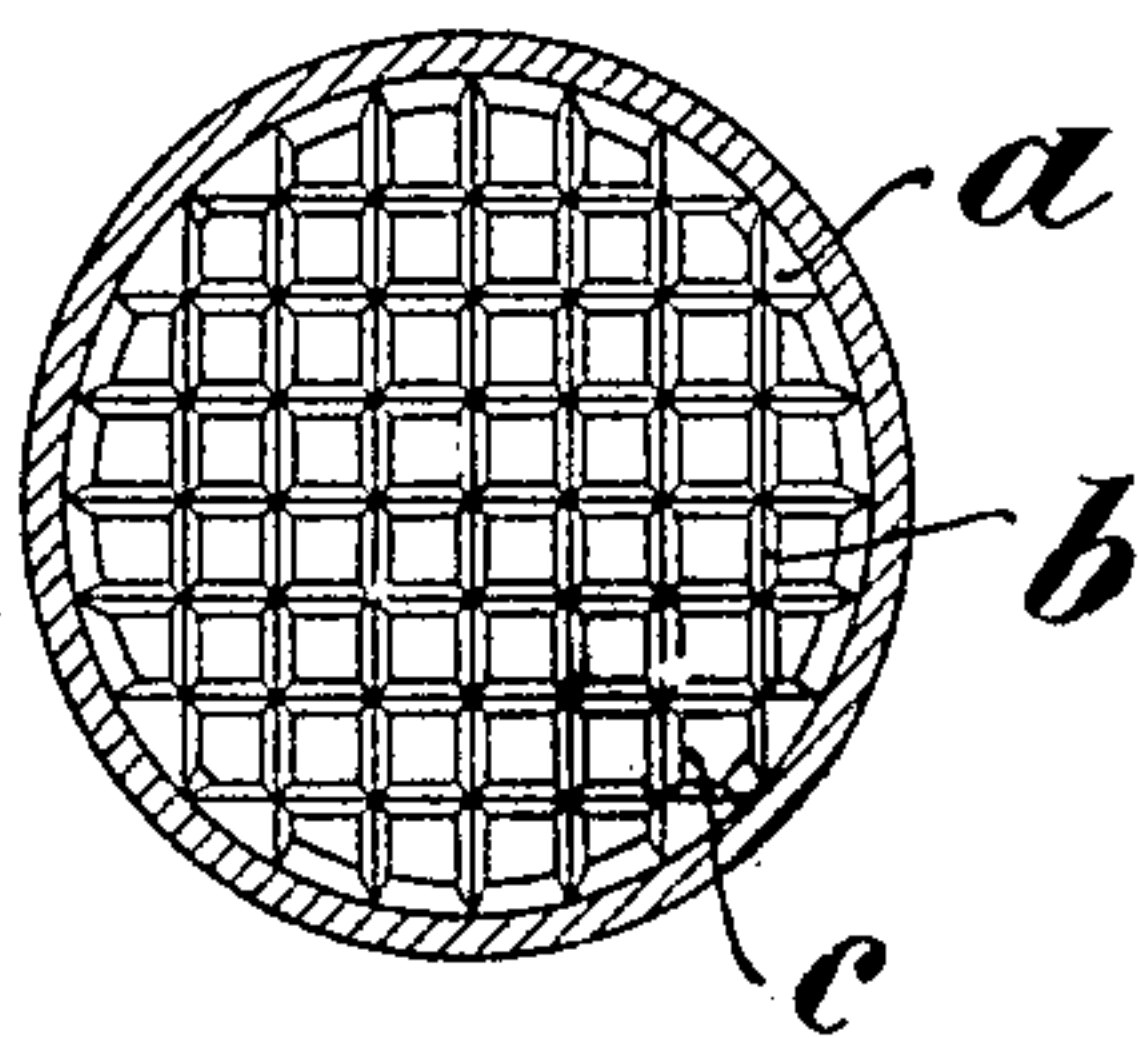


Fig. 6.



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UNITED STATES PATENT OFFICE.

PHILIPP VON WOUWERMANS, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR TO GASSPAR-
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BUNSEN BURNER.

No. 882,544.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed December 4, 1906. Serial No. 346,321.

To all whom it may concern:

Be it known that I, PHILIPP VON WOUWERMANS, of Vienna, Austria-Hungary, a subject of the Emperor of Austria-Hungary, and
5 whose post-office address is No. 33 Alserbachstrasse, Vienna, Austria-Hungary, have invented a new and useful Improved Bunsen Burner, of which the following is a specification.

10 The invention relates to improvements in connection with the Bunsen burner described in the applicant's prior application for United States Letters Patent Serial No. 376,221, filed May 10, 1906, and it has for its
15 object to increase the effect of the same as much as possible. In order to do this, it has been found necessary in the first place to give the distributing grate or "distributor" such a shape that it will offer the largest free section with the least resistance to the entering
20 gas; secondly, to make the size of the holes in the cap of the burner to correspond with the pressure of the gas.

The largest free section available with the
25 least resistance to the entering gas is obtained by making the distributor—containing the small channels—conical or Λ shaped, or by simply arranging the same at an incline, at the same time sharpening the channel walls, which must be kept as thin as possible, on their lower ends, so that they will
30 not offer resistance to the entering gas, but rather tend to cut the current.

With regard to the burner cap, it has been
35 found that in case of high pressure a better result is obtained if the holes are limited to two or three outer rows, the center part being a blank. In case of low pressure it is, however, preferable to perforate the center
40 portion as well and make the holes of the center part of a greater or of the same diameter as the holes of the outer rows, as required. At the same time it is advantageous to make the cap smaller in diameter.

45 In the accompanying drawings Figure 1 is a vertical section through a burner the distributing grating in the head of which is constructed in the shape of a double sloping roof, and Fig. 2 is a vertical section through a
50 burner the distributing grating in the head of which is arranged at an incline, Fig. 3 is a plan of a cap adapted for high gas pressure, and Fig. 4 is a plan of a cap adapted for

low gas pressure. Fig. 5 is a vertical section showing on a larger scale the enlarged upper
55 portion of the mixing tube, and the distributing grating therein, Fig. 6 is a horizontal section on the line 6—6, Fig. 5, looking upward and showing a bottom view of the distributing grating.

60 In all these figures identical letters of reference are used to indicate corresponding parts.

A is the gas nozzle, B is the mixing tube the enlarged upper portion of which constitutes the burner head being provided with a distributing grating *a*, and C are the air-
65 inlets.

The head of the burner shown in Fig. 1 is provided with a distributing grating or distributor *a* the lower edges *b* of the walls *c* of which are beveled at both sides so as to present cutting-edges to the current of gas and
70 air. In this instance the distributor is constructed in the shape of a double sloping roof.

In Fig. 2 the distributor *a* is constructed in the shape of a shed-roof.

The burner Fig. 1 is provided with a cap *d* adapted for high gas-pressure. As will be
80 seen from the plan shown in Fig. 3 this high gas-pressure cap has two circumferential rows of holes *g*, the holes of the inner row being of smaller width than those of the outer row; the center portion *f* of the cap is entirely
85 without holes.

The burner Fig. 2 is provided with a cap *e* adapted for low gas-pressure. As shown in the plan Fig. 4 the center-portion of this low gas-pressure cap is perforated with holes *h*
90 having a slightly smaller diameter than the holes *g* of the outer row.

What I claim, and desire to secure by Letters Patent of the United States, is:

1. In a Bunsen burner, the combination
95 with a gas-nozzle and a mixing tube having air-inlets in its lower portion; of a distributing grating in the burner head having parallel top and base planes at an angle to the vertical axis of the mixing tube, the passage
100 walls in said grating being vertical to the horizontal plane of the mixing tube, and a cap provided with inner and outer rows of holes, the holes of the inner rows being smaller in diameter than those of the outer
105 row, substantially as set forth.

2. In a Bunsen burner, the combination with a gas-nozzle and a mixing tube having air inlets in its lower portion; of a distributing grating in said mixing tube having parallel base and top planes oblique to the vertical axis of the mixing tube and constructed with passage walls vertical to the horizontal plane of the tube, the bottom edges of said walls being beveled to form cutting edges, and a cap provided with inner and outer rows of holes, the holes of the inner rows being smaller in diameter than those of the outer row, substantially as set forth.

3. In a Bunsen burner, the combination with a gas nozzle and a mixing tube having air inlets in its lower portion; of a distributing grating constructed in the shape of a double sloping roof having walls vertical to the horizontal plane and with lower edges beveled to form cutting edges; and a cap provided with rows of holes the holes of the inner

rows being smaller in diameter than those of the outer rows, substantially as set forth.

4. In a Bunsen burner, the combination with a gas nozzle and a mixing tube having air inlets in its lower portion; of a distributing grating constructed in the shape of a double sloping roof and having vertical walls whose lower edges are beveled to form cutting edges; and a cap provided with circumferential rows of holes the holes of the inner row or rows being of smaller diameter than those of the outer row, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIPP VON WOUWERMANS.

Witnesses:

ALVESTO S. HOGUE,
AUGUST FUGGER.